

# Llanmaes Flood Alleviation Scheme (FAS)

Preliminary Ecological Appraisal

Vale of Glamorgan Council

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## Quality information

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## 1. Executive Summary

AECOM was instructed by Vale of Glamorgan Council to carry out a Preliminary Ecological Appraisal (PEA) of land within the proposed Flood Alleviation Scheme at Llanmaes, hereafter referred to as 'the Site'. The central grid reference for the Site is SS 9804 7013. The Site and Survey Boundary is shown on Figure 1.

The proposed Flood Alleviation Scheme (FAS) (Proposed Development) consists of flood bunds and swales/ ditches to the north and north west of Llanmaes village, together with some road reprofiling through the village and creation of SUDS. The culverted stream in the village green will be widened to increase its capacity. Access will be through existing gaps in hedgerows where possible. It is understood that construction is programmed to commence in after October 2021.

The Site is dominated by agricultural land with arable and improved grassland fields bordered by hedgerows including species rich hedgerows, hedgerows with trees and species poor hedgerows. Llanmaes Brook runs adjacent to the south of the Site and a culvert runs through the village green. Additional habitats include scrub, marshy grassland, amenity grassland, poor semi-improved grassland, rows of trees and standalone trees.

The Site has potential to support reptiles, great crested newt *Triturus cristatus*, breeding birds, dormouse *Muscardinus avellanarius*, commuting and foraging bats, roosting bats, commuting and foraging otter *Lutra lutra* and commuting and foraging [REDACTED] *Meles meles*. Hedgerows provide wildlife corridors across the Site and connect it to the wider landscape. Invasive Non-Native Species (INNS) Japanese knotweed *Reynoutria japonica* and montbretia *Crocosmia x crocosmiiflora* are present but isolated to two locations.

The development will require the partial removal of hedgerows, scrub, arable, improved grassland, poor semi-improved, amenity grassland and marshy grassland. Without mitigation, potential impacts are:

- Pollution of the Llanmaes Brook and adjacent habitats including SINC's;
- Loss of habitat and damage of retained habitats;
- Damage to TPO trees (outside but adjacent to the Site);
- Temporary habitat loss for great crested newt, reptiles, breeding birds, dormouse and commuting and foraging bats;
- Killing/injury of great crested newt, reptiles, breeding birds, dormouse and entrapment of otter and [REDACTED];
- Damage/destruction of nests of breeding birds and dormouse;
- Disturbance of foraging and commuting otter, bats and Schedule 1 birds;
- Temporary severance of wildlife corridors; and,
- Spread of INNS.

Based on the sub optimal nature of habitat on the Site, the localised nature of the works and that habitat will be reinstated following works, it is considered that potential impacts on great crested newt and dormouse can be managed through precautionary working and that an European Protected Species license is not required. This has been discussed and agreed with the County Ecologist. An Ecological Method Statement will be prepared. A Tool Box Talk will be given to all contractors and works supervised by an ecologist.

Habitat removal will be limited to the amount required to facilitate works. Bunds and swales/ ditches will be off-set by at least 2 m from hedgerows. Root Protection Zones will be applied within which tracking of vehicles, storage of materials and ground-breaking works will be avoided. Access points and designated routes will be established with the ecologist. Pollution prevention guidelines will be followed. Vegetation clearance will be timed, and methods followed to reduce risk to great crested newt, reptiles, breeding birds, and dormouse. If great crested newt or dormouse are found during the works then works must stop and Natural Resources Wales consulted, a License may be required. Habitat suitable for ground nesting birds (arable field) should be cut over winter to make unsuitable for nesting and maintained at this length to discourage breeding. All excavations will be fenced, or ramps provided overnight to avoid entrapment. Works close to the watercourse will avoid dawn and dusk to avoid disturbance to otters. Works within 7 m of recorded Japanese knotweed and 1 m of montbretia should be avoided. Where this is not possible a Method Statement must be followed to prevent the spread of INNS within the Site and off-site. Following completion of works where possible habitat will be re-instated and hedgerow gaps will be replanted with locally native species in whip and occasional feather stock. Enhancement planting of a diverse grass mix is proposed along hedgerows, swales/ ditches and bunds. The swales/ ditches and bunds will be managed to increase diversity and to benefit biodiversity.

The Executive Summary is not a substitute for the full report. Refer to the full text for further detail.

## 2. Introduction

### 2.1 Introduction

AECOM was instructed by Vale of Glamorgan Council to carry out a Preliminary Ecological Appraisal (PEA) of land within the proposed Flood Alleviation Scheme (FAS) at Llanmaes, hereafter referred to as 'the Site'. The central grid reference for the Site is SS 9804 7013. The Site and Survey boundary is shown on Figure 1.

This PEA was commissioned to identify whether there are known or potential ecological receptors (nature conservation designations or protected and notable habitats and species) that may constrain or influence the design and implementation of the Proposed Development. The approach applied when undertaking this PEA pays due regard to the *Guidelines for Preliminary Ecological Appraisal* published by the Chartered Institute of Ecology and Environmental Management (CIEEM, 2017). The PEA addresses relevant wildlife legislation and planning policy as summarised in this report.

In order to deliver the PEA, a desk study and an extended Phase 1 Habitat Survey were undertaken by an appropriately experienced ecologist, to identify ecological features within the Site and the wider potential zone of influence of the Proposed Development. The potential zone of influence was defined with reference to the project description provided by Vale of Glamorgan as shown on Figure 1. Additional details are provided in Section 3: Methodology.

### 2.2 Site Location and Description

A Survey Boundary was not provided by the client. Locations of the Proposed Development were provided, from this AECOM produced a Survey Boundary which includes all the habitats which may be influenced by the Proposed Development.

The Survey Boundary is approximately 48.5 ha and located in an area of dominated by arable land to the north of Llanmaes, National Grid Reference (NGR) SS98047013 (see Figure 1).

### 2.3 Proposed Development

The proposed FAS (Proposed Development) consists of flood bunds and swales/ ditches to the north and north west of Llanmaes village, together with some road reprofiling through the village and creation of SUDS. The culverted stream in the village green will be widened to increase its capacity. Access will be through existing gaps in hedgerows where possible. Figure 2 shows the location of proposed bunds, swales/ ditches and road reprofiling.

Swales/ ditches and bunds will be located a minimum of 2 m from existing hedgerows. Swales/ ditches and bunds will be approx. 12 – 14 m wide ('toe to toe' of the bund or 'top of ditch bank to top of ditch bank').

The Proposed Development will require the partial removal of arable, scrub, poor-semi-improved grassland, improved grassland amenity grassland, marshy grassland, other habitat (allotments) and hedgerows. Hedgerow removal will be limited to where there is a requirement for field access and crossing points, the works will not require removal of entire hedgerows. Existing field access points and tracks will be used for Site access, where possible. In total six hedgerow crossing points are required, as well as the widening of one entrance (Ditch 2 (Figure 1 Target Note 24)) and the temporarily cut-back of one hedgerow (Flood Bund 1 (Figure 1 Target Note 25)). The crossing of hedgerows is required for the construction of Ditch 1 (Figure 1 Target Note 26 and 27), Ditch 2 (Figure 1 Target Note 28, 29 and 30) and Flood Bund 3 (Figure 1 Target Note 31).

It is understood that construction is programmed to commence after October 2021.

### 2.4 Objectives

The purpose of the PEA was to:

- Identify any designated nature conservation sites on or within proximity to the Survey Boundary;
- Identify any known records of Protected or Priority Species within proximity to the Survey Boundary;
- Identify and categorise the main habitats and features of ecological interest present within the Survey Boundary;



- Appraise the potential for Protected or Priority Species of fauna and flora;
- Provide advice on any potential ecological constraints and opportunities on or within proximity to the Survey Boundary;
- Identify the requirement for further habitat and/or Protected Species surveys;
- Make recommendations to avoid and mitigate ecological impacts as well as opportunities for biodiversity enhancements; and,
- Provide a map showing the Phase 1 habitats in the Survey Boundary and any features of ecological interest.

The purpose of this report is to inform the design of the Proposed Development to support the submission of a planning application. The report identifies the scope of further work (where necessary) that would be required to support a planning application. High level recommendations are made on potential options for the avoidance, mitigation or compensation of the potential impacts of the proposed development (where known) on the identified ecological receptors, and of potential enhancements to the biodiversity and ecosystem services.

## 2.5 Wildlife Legislation and Planning Policy

### 2.5.1 Wildlife Legislation

There are several different acts of legislation and regulations which refer to the protection of wildlife. These are summarised in Appendix A. In particular, the legislation relating to possible protected species on site is outlined. This is a brief summary of the legislation and is not to be regarded as a definitive legal opinion. When dealing with individual cases, the client is advised to consult the full texts of the relevant legislation and obtain further legal advice.

The following wildlife legislation is potentially relevant to the proposed development:

- The Wildlife and Countryside Act (WCA) 1981 (as amended);
- The Countryside and Rights of Way (CROW) Act 2000;
- The Conservation of Habitats and Species (amendment) (EU exit) Regulations 2019;
- The Natural Environment and Rural Communities (NERC) Act 2006
- Environment (Wales) Act 2016;
- The Hedgerow Regulations 1997; and,



The above legislation has been considered when planning and undertaking this PEA, when identifying potential constraints to the proposed development, and when making recommendations for further survey, design options and mitigation. Compliance with legislation may require the attainment of relevant protected species licences prior to the implementation of the proposed development.

### 2.5.2 National Planning Policy

#### 2.5.2.1 Planning Policy Wales (9th Ed. November 2016)

Planning Policy Wales (PPW) sets out the land use planning policies of Welsh Government.

Chapter 5, Conserving and Improving the Natural Heritage and the Coast, outlines Welsh Government's objectives for the conservation and improvement of natural heritage. The relevant measures in place to conserve landscape and biodiversity include:

- Statutory designations;
- Non-statutory designations;
- LANDMAP Information System (LANDMAP describes and evaluates aspects of the landscape and provides the basis of a consistent Wales-wide approach to landscape assessment);
- Development plans and the conservation and improvement of the natural heritage;



- Development management and the conservation and improvement of the natural heritage;
- Development management and statutory designations;
- Trees and woods; and,
- Protected species.

Paragraph 5.3.10 states that "potential SPAs and candidate SACs (included in the list sent to the European Commission) should be treated in the same way as classified SPAs and designated SACs. Sites which the UK and the European Commission have agreed as Sites of Community Importance and which are to be designated as SACs attract the same legal protection as if they had already been designated. The same considerations should, as a matter of policy, be applied to listed Ramsar sites".

Paragraph 5.2.9 states that "Local planning authorities should seek to protect trees, groups of trees and areas of woodland where they have natural heritage value or contribute to the character or amenity of a particular locality. Ancient and semi-natural woodlands are irreplaceable habitats of high biodiversity value which should be protected from development that would result in significant damage."

Paragraph 5.5.4 states that "For all planning applications likely to result in disturbance or harm to a protected species or likely to have a significant adverse effect on sites of more than local importance, or on a designated area, local planning authorities should seek the advice of Natural Resources Wales and should always consult them before granting permission".

### 2.5.2.2 Technical Advice Note 5 (TAN5) Nature Conservation and Planning (September 2009)

The Planning Policy Wales (PPW) is supplemented by a series of Technical Advice Notes. TAN 5 provides guidance on how the land use planning system should contribute to protecting and enhancing biodiversity and geological conservation. It provides advice on areas including the key principles of positive planning for nature conservation, nature conservation in Local Development Plans and development management procedures. It also provides advice on development affecting designated sites and habitats, in addition to protected or priority habitats and species.

Key Principles include that the town and country planning system in Wales should integrate nature conservation into all planning decisions; that the town and country planning system should look for development to provide a net benefit for biodiversity conservation with no significant loss of habitats or populations of species, locally or nationally and that they should ensure that the UK's international and national obligations for site, species and habitat protection are fully met in all planning decisions.

### 2.5.3 Local Planning Policy

Local Development Plans (LDPs) must be produced by every Local Planning Authority in Wales. Any development proposal will be tested against the policies within the LDP. The LDPs follow the planning guidance provided in PPW, including biodiversity and natural heritage policies. These include protecting designated sites and other areas of importance for biodiversity conservation; safeguarding protected species and priority species, including those listed in local biodiversity action plans and retaining, creating and enhancing features of importance for biodiversity conservation where appropriate.

Relevant local planning policies for Vale of Glamorgan Council are detailed in the following document:

- Vale of Glamorgan Local Development Plan 2011-2026. Local Development Plan Written Statement. June 2017.

Appendix C provides a summary of relevant local planning policies. For the precise wording of each specific policy please refer back to the source document. This planning policy has been considered when assessing potential ecological constraints and opportunities identified by the desk study and field surveys; and, when assessing requirements for further survey, design options and ecological mitigation.

## 2.6 Quality Assurance

This survey and subsequent report were undertaken in line with AECOM's Integrated Management System (IMS). Our IMS places great emphasis on professionalism, technical excellence, quality, environmental and Health and Safety management. All staff members are committed to maintaining our certification to the international standards

BS EN ISO 9001:2015 and 14001:2015 and BS OH SAS 18001:2007. In addition, our IMS requires careful selection and monitoring of the performance of all sub consultants and contractors.

All AECOM Ecologists who worked on this project are members of (at the appropriate level) the Chartered Institute of Ecology and Environmental Management (CIEEM) and follow their code of professional conduct (CIEEM, 2019) when undertaking ecological work.

### 3. Methodology

#### 3.1 Desk Study

The objectives of the desk study are to review the existing information available in the public domain concerning species and habitats to identify the following:

- Internationally, nationally and locally designated sites, up to 2 km from the Survey Boundary using the Multi Agency Geographic Information for the Countryside (MAGIC) website ([www.magic.gov.uk](http://www.magic.gov.uk));
- Locally designated sites, up to 2 km from the Survey Boundary using the South East Wales Biological Records Centre (SEWBRc);
- Protected and Priority Species records up to 2 km from the Survey Boundary, using SEWBRc;
- Special Areas of Conservation (SAC) and Sites of Special Scientific Interest (SSSI) designated for bats within a 10 km radius of the Survey Boundary in accordance with Bat Conservation Trust (Collins, 2016) recommendations;
- Section 7 list of Species and Habitats of Principal Importance for Conservation in Wales;
- Ancient Semi-Natural Woodland (ASNW), Plantation on Ancient Woodland Site (PAWS), Restored Ancient Woodland Site (RAWS) or Ancient Woodland Site of Unknown category (AWSU) within or adjacent to the Survey Boundary using Forestry Commission Wales 2011 Ancient Woodland Inventory data set downloaded from the Lle website (NRW, 2018);
- Trees with a Tree Protection Orders (TPO) within or adjacent to the Survey Boundary, from Vale of Glamorgan Council interactive map;
- The County Ecologist and local/county recorders for bats, reptiles and amphibians were contacted for local records or knowledge about the area; and,
- Aerial photographs and Ordnance Survey (OS) maps were reviewed to identify features of ecological interest surrounding the Survey Boundary including ponds within 500 m, nearby areas of ecological interest and features connecting these habitats (hedgerows, watercourses, railway lines).

#### 3.2 Extended Phase 1 Habitat Survey

A Phase 1 Habitat Survey (JNCC, 2010) of the Site was undertaken by an experienced AECOM ecologist (BSc, MCIEEM) on 09 October 2019.

The survey involved a site walkover and preliminary assessment of habitats, land use and ecological features. The main habitats present were recorded using standard Phase 1 Habitat Survey methodology as described in the Handbook for Phase 1 Habitat Survey: A technique for Environmental Audit (JNCC, 2010). The plant species defining the habitat types on Site were recorded. Evidence of any Invasive Non-Native Species (INNS) of plant subject to legal controls was recorded.

The Phase 1 Habitat Survey was 'Extended' by including a desk study, as described above, and an assessment of the potential for the Site to support Protected or Priority Species in order to identify potential ecological constraints and to guide recommendations for further surveys. Habitat outside of but adjacent to the Survey Boundary was noted to aid in the determination of the zone of influence.

#### 3.3 Assessment of Bat Habitat Suitability

During the Phase 1 Habitat Survey, where access allowed, trees and buildings throughout the Site were classified into categories dependent on the presence of features suitable as bat roost habitat. This was conducted via an external appraisal from the ground using binoculars where necessary. Table 3.1 provides descriptions of the categories for buildings and trees.

Habitats on Site were classified into categories dependent on the presence of features suitable for bats to commute and forage. Table 3.2 provides descriptions for commuting and foraging habitats.

**Table 3.1 Building and Tree Bat Roost Suitability Categories**

<b>Roost Suitability</b>	<b>Descriptions for Buildings</b>	<b>Descriptions for Trees</b>
Known or Confirmed	Confirmed signs of bat presence/ occupation (droppings, oily staining around entry points, insect remains, odour, scratching) and actual bat presence.	Confirmed signs of bat presence/ occupation (droppings, oily staining around entry points, insect remains, odour, scratching) and actual bat presence.
High	<p>A structure with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potential for longer periods of time due to their size, shelter, protection, conditions (e.g. temperature, humidity, height above ground level, light levels or levels of disturbance) and surrounding habitat.</p> <p>Can include structures with points of access to the interior of the building and poorly maintained fabric providing ready access points for bats into structures, but at the same time not draughty. Structures of traditional stone, brick or timber construction. Structures with large (&gt;20cm) roof timbers with mortice joints, cracks and holes. Structures of pre or early 20th century construction. Structures with large complicated and/or uncluttered roof spaces providing unobstructed flying spaces. Structures with weather boarding and/or hanging tiles with gaps. Structures with accessible south facing roofs. Structures with proximity to good foraging habitat such as woodland, wetland, water and /or good hedgerows.</p>	A tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potential for longer periods of time due to their size, shelter, protection, conditions (e.g. temperature, humidity, height above ground level, light levels or levels of disturbance) and surrounding habitat.
Moderate	<p>A structure with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions (e.g. temperature, humidity, height above ground level, light levels or levels of disturbance) and surrounding habitat but unlikely to support a roost of high conservation status.</p> <p>Can include structures with some potential to support roosting bats, but fewer features than a high-risk building. Features may include areas suitable for crevice dwelling and/or access points into structures. Some proximity to foraging habitat.</p>	A tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status.
Low	<p>A structure with one or more potential roost sites that could be used by individual bats opportunistically.</p> <p>However, these potential roost sites do not provide enough space, shelter protection, appropriate conditions and/or suitable habitat to be used on a regular basis or by large numbers of bats (i.e. unlikely to be suitable for maternity or hibernation).</p>	Tree of sufficient size and age to contain potential roost features but with none seen from the ground or features seen have only very limited roosting potential.
Negligible	<p>No features suitable for roosting bats.</p> <p>Can include structures constructed from unsuitable materials e.g. prefabricated with steel and sheet material. Structure is draughty, light and cool buildings with no roosting opportunities. High levels of regular disturbance including external and/or internal lighting. Building is isolated from areas of foraging habitat.</p>	Trees with no potential to support bats.

Source: Category descriptions drawn from Collins, 2016 and Mitchell-Jones, 2004 to be applied using professional judgement

**Table 3.2 Commuting and Foraging Habitat Suitability Categories**

<b>Commuting and Foraging Suitability</b>	<b>Descriptions</b>
High	Continuous high-quality habitat that is well connected to the wider landscape that is likely to be used regularly by commuting bats such as river valleys, streams, hedgerows, lines of trees and woodland edge. High-quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging bats such as broadleaved woodland, tree-lined watercourses and grazed parkland. Site is close to and connected to known roosts.
Moderate	Continuous habitat connected to the wider landscape that could be used by bats for commuting such as lines of trees and scrub or linked back gardens. Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water.
Low	Habitat that could be used by small numbers of commuting bats such as a gappy hedgerow or un-vegetated stream, but isolated, i.e. not very well connected to the surrounding landscape by other habitat. Suitable, but isolated habitat that could be used by small number of foraging bats such as a lone tree (not in a parkland situation) or a patch of scrub.
Negligible	Negligible habitat features on site likely to be used by commuting or foraging bats.

Source: Category descriptions drawn from Collins, 2016 to be applied using professional judgement

### 3.4 Zone of Influence

The Proposed Development layout (Figure 2) was used to create a Survey Boundary taking into account all areas which may be affected by the Proposed Development. The zone of influence was defined as all areas within the Survey Boundary and Llanmaes Brook downstream of the Survey Boundary.

### 3.5 Limitations

Biological records can be received from a wide variety of sources and may or may not be comprehensive and accurate. However, if assessed in conjunction with a Phase 1 Habitat survey, they can contribute to a robust ecological assessment of a site.

Where any conclusions and recommendations contained in this Report are based upon information provided by others, it has been assumed that all relevant information provided by those parties is accurate. Any such information obtained by AECOM has not been independently verified by AECOM, unless otherwise stated in the Report. AECOM accepts no liability for any inaccurate conclusions, assumptions or actions taken resulting from any inaccurate information supplied to AECOM from others.

The methodology adopted and the sources of information used by AECOM in providing its services are outlined in this Report. The work described in this Report was conducted in October 2019 and is based on the conditions encountered and the information available during the said period of time. The scope of this Report and the services are accordingly factually limited by these circumstances. AECOM disclaim any undertaking or obligation to advise any person of any change in any matter affecting the Report, which may come or be brought to AECOM's attention after the date of the Report.

The Phase 1 Habitat Survey was undertaken in early October, the optimal time for Phase 1 habitat surveys is April to Mid-October. So, survey timing is not a limitation.

A small holding in the centre of the Survey Boundary was not accessed during the survey. From aerial footage it appears to be an area of grassland in the south and an allotment in the north. As this area has not been assessed, a survey prior to construction by a suitably experienced ecologist is recommended to identify any potential impacts not covered within this PEA. This survey would feed into the Ecological Method Statement required for the works.

One field could not be accessed due to a horse being present. The field was surveyed from the edge using binoculars. There are deemed to be no significant limitations to this PEA.

## 4. Baseline Conditions

### 4.1 Desk Study Results

The designated habitats, sites and features within proximity to the Survey Boundary are listed in Table 4.1 below.

**Table 4.1 Desk Study Results**

Designation / Feature	Description
Internationally and Nationally Designated Sites Within 2 km	There are no designated nature conservation sites within 2 km of the Survey Boundary.
Locally Designated Sites Within 2 km	<p>All SINC descriptions derived from Vale of Glamorgan Local Development Plan 2011-2026 – Identification of SINC and Priority Habitats.</p> <p><u>Frampton Court Farm SINC</u> Distance and Direction: 50 m west Description: Pond with tall herb and swamp vegetation. Stickleback present at last survey so unlikely to support great crested newt (Erica Dixon, <i>Pers Coms</i> 24/10/2019).</p> <p><u>East of Meadowvale Nursery SINC</u> Distance and Direction: 300 m west Description: Site supports areas of purple moor-grass <i>Molinia caerulea</i> and rush pasture.</p> <p><u>Land along Nant Llanmlhangel SINC</u> Distance and Direction: 1.2 km north Description: Species-moderate to rich semi-improved neutral grassland.</p> <p><u>Land South-East of Llanmlhangel SINC</u> Distance and Direction: 1.3 km north Description: A mosaic of semi-improved neutral grassland with areas of purple moor-grass and rush pasture and stands of sedge swamp.</p> <p><u>Land South of Ruff Moor SINC</u> Distance and Direction: 1.4 km north Description: A mosaic of wet neutral grassland, rush pasture and dense stands of sedge swamp and reedbed.</p> <p><u>Crookland Gorse SINC</u> Distance and Direction: 1.5 km north Description: Semi-natural broadleaved woodland, part on an Ancient Woodland site.</p> <p><u>Land near Ffynnon Math Lwdd SINC</u> Distance and Direction: 1.6 km north Description: Species-moderate semi-improved neutral grassland.</p> <p><u>Ruff Moor SINC</u> Distance and Direction: 1.6 km north Description: Semi natural broadleaved woodland, part Ancient Woodland.</p> <p><u>West of Cwm Colhuw SINC</u> Distance and Direction: 1.7 km south Description: Mosaic of semi-improved neutral and calcareous grassland with dense scrub and scrub woodland along Iron Age earthworks, supporting Section 42 bird species including yellowhammer <i>Emberiza citrinella</i>.</p> <p><u>Land to West of Coed y Pentre SINC</u> Distance and Direction: 1.8 km north Description: Species-rich semi-improved neutral grassland.</p> <p><u>South of Brookside Farm SINC</u> Distance and Direction: 1.8 km north Description: Species-rich neutral grassland.</p> <p><u>Coed y Pentre SINC</u> Distance and Direction: 1.8 km north Description: Predominantly ancient semi natural broadleaved woodland.</p> <p><u>Water Lane Ponds SINC</u> Distance and Direction: 1.8 km west Description: Two ponds in former small quarry which support great crested newt.</p>

Designation / Feature	Description
	<p><u>Cwm Colhuw SINC</u> Distance and Direction: 1.9 km south Description: Mosaic of semi-improved neutral and calcareous grassland with dense scrub and scrub woodland along Iron Age earthworks, supporting Section 42 bird species including yellowhammer.</p> <p><u>Coed yr Arglwydd SINC</u> Distance and Direction: 2.0 km north Description: Three blocks of ancient semi natural broadleaved woodland.</p>
Designated Sites Within 10 km Designated for Bats	There are no SSSIs or SACs within 10 km designated for bats.
Protected and Priority Species Records from the last 10 years within 2 km	<p><b>Plants:</b> Bluebell <i>Hyacinthoides non-scripta</i>, shepherds needle <i>Scandix pecten-veneris</i>.</p> <p><b>Invertebrates:</b> Large wainscot <i>Rhizodra lutosa</i>.</p> <p><b>Amphibians:</b> common toad <i>Bufo bufo</i>, great crested newt <i>Triturus cristatus</i> (nearest record, population recorded during bottle trapping surveys 1.3 km west, minor roads separate the Site from this population).</p> <p><b>Reptiles:</b> Grass snake <i>Natrix helvetica</i> (1.1 km north), slow-worm <i>Anguis fragilis</i> (nearest record 0.8 km south).</p> <p><b>Birds:</b> Barn owl <i>Tyto alba</i> (three records including one roost 0.34 km west), black headed gull <i>Chroicocephalus ridibundus</i>, bullfinch <i>Pyrrhula pyrrhula</i>, Cetti's warbler <i>Cettia cetti</i>, dunnock <i>Prunella modularis</i>, fieldfare <i>Turdus pilaris</i>, golden plover <i>Pluvialis apricaria</i>, goshawk <i>Accipiter gentilis</i>, house sparrow <i>Passer domesticus</i>, kestrel <i>Falco tinnunculus</i>, lapwing <i>Vanellus vanellus</i>, lesser spotted woodpecker <i>Dendrocopos minor</i>, linnet <i>Linaria cannabina</i>, marsh tit <i>Poecile palustris</i>, peregrine <i>Falco peregrinus</i>, red kite <i>Milvus milvus</i>, redwing <i>Turdus iliacus</i>, reed bunting <i>Emberiza schoeniclus</i>, skylark <i>Alauda arvensis</i>, song thrush <i>Turdus philomelos</i>, spotted flycatcher <i>Muscicapa striata</i>, starling <i>Sturnus vulgaris</i>, tree sparrow <i>Passer montanus</i>, yellowhammer.</p> <p><b>Bats:</b> Brown long-eared <i>Plecotus auratus</i> (roost recorded 0.55 km north and 0.3 km west), common pipistrelle <i>Pipistrellus pipistrellus</i> (roost recorded 0.3 km west), greater horseshoe <i>Rhinolophus ferrumequinum</i> (no records within 2 km, roost recorded 2.7 km north east), lesser horseshoe <i>Rhinolophus hipposideros</i> (foraging record within 1 km, maternity roost located 2.6 km north east), long-eared bat <i>Plecotus sp.</i> (flight record only), Nathusius' pipistrelle <i>Pipistrellus nathusii</i> (flight record only), noctule <i>Nyctalus noctule</i> (roost recorded 0.3 km west), serotine <i>Eptesicus serotinus</i> (record 1.1 km west flight record only), soprano pipistrelle <i>Pipistrellus pygmaeus</i> (nearest roost recorded 1.1 km south), whiskered bat <i>Myotis mystacinus</i> (record 0.5 km north, flight record only).</p> <p><b>Other Mammals:</b> brown hare <i>Lepus europaeus</i>, [REDACTED], [REDACTED], [REDACTED], otter <i>Lutra lutra</i> (dead otter found on road 1.8 km east), hedgehog <i>Erinaceus europaeus</i> (14 records within 2 km, nearest record 0.5 km south).</p>
Priority Habitats and Species – Section 7 List	The full list of Section 7 Habitats and Species of Principal Importance in Wales has been reviewed. Those Priority Habitats present on Site and Priority Species with potential to be on Site are listed in Table 4.2 and Table 4.3 respectively.
Surrounding Land Use	<p>The Proposed Development is located in a rural area to the north of Llanmaes.</p> <p>To the north, east and west of the Site are arable fields bordered by hedgerows. Further east is St Athans MOD Site.</p> <p>To the south is the settlement of Llanmaes with further arable land beyond this. Further south is the town of Llantwit Major. A railway line is located 0.8 km south.</p>
Ponds within 500 m	<p>There are four waterbodies within 500 m of the Survey Boundary:</p> <ul style="list-style-type: none"> <li>• Waterbody 1: A square water feature seen of OS mapping within an arable field. Approximately 30 m<sup>2</sup> located 185 m north of the Survey Boundary within an arable field. The waterbody may be used for livestock and may/may not contain water. The pond is connected to the Survey Boundary by arable fields and hedgerows. There are no barriers to movement between the pond and the Survey Boundary.</li> <li>• Waterbody 2: A square water feature seen of OS mapping within the corner of an arable field. Approximately 60 m<sup>2</sup> located 175 m east of the Survey Boundary. The waterbody may be used for livestock and may/may not contain water. The waterbody is connected to the Survey Boundary by arable fields and hedgerows. There are no barriers to movement between the waterbody and the Survey Boundary.</li> <li>• Waterbody 3: A square water feature seen of OS mapping within an arable field. Approximately 60 m<sup>2</sup> 235 m north of the Survey Boundary. The waterbody may be used</li> </ul>



Designation / Feature	Description
	<p>for livestock and may/may not contain water. The waterbody is connected to the Survey Boundary by arable fields and hedgerows. There are no barriers to movement between the waterbody and the Survey Boundary.</p> <ul style="list-style-type: none"> <li>Waterbody 4: Frampton Court Farm Pond SINC. Approximately 730 m<sup>2</sup> located 50 m west of the Survey Boundary. The pond is connected to the Survey Boundary by Llanmaes Brook and hedgerows which runs adjacent to the southern Survey Boundary. The pond is located within an area of grassland, and aerial imagery suggest the pond is completely inundated with vegetation. With scattered scrub along the boundaries.</li> </ul>
Trees with a Tree Protection Order (TPO)	<p>TPOs were identified using the VOG council's interactive map. The following TPOs are located outside of, near to the Survey Boundary:</p> <ul style="list-style-type: none"> <li>043 - 1977 - 01 - A03- Woodland block including ash, beech, holly, horse chestnut, lime, oak, sweet chestnut, sycamore, yew;</li> <li>043 - 1977 - 01 - A04 - Ash;</li> <li>043 - 1977 - 01 - T012 - Ash;</li> <li>043 - 1977 - 01 - T013 - Ash;</li> <li>043 - 1977 - 01 - T018 - cherry;</li> <li>043 - 1977 - 01 - T014 - sycamore;</li> <li>043 - 1977 - 01 - G03 - 3 x scots pine; and,</li> <li>043 - 1977 - 01 - G04 - 3 x beech and 3 x horse chestnut.</li> </ul> <p>A further 17 TPOs are located within gardens and greenspace further south of the Survey Boundary in Llanmaes.</p>
Ancient Woodland	There are no Ancient Woodland designations within or adjacent to the Survey Boundary.
Council Ecologist and Local Specialist Recorders	<p>County Council: Vale of Glamorgan</p> <p>The County Ecologist responded stating that there are hazel dormouse <i>Muscardinus avellanarius</i> records within close proximity of the Survey Boundary and great crested newt records approximately 1 km from the Survey Boundary to the west, south and east.</p> <p>No response has been received from the local bat group or amphibian and reptile group.</p>
Previous Reports	<p>A Phase 1 Habitat Survey and Report was completed by Mott MacDonald in 2012 (Mott MacDonald 2012).</p> <p>The report identified potential for great crested newt, breeding birds, roosting, foraging and commuting bats, foraging otter, dormouse, ████████ reptiles and common amphibians within the Site and identified potential impacts due to vegetation removal and ground-breaking works</p> <p>Trees with TPOs were identified and potential impacts on these trees identified.</p>

## 4.2 Extended Phase 1 Survey

### 4.2.1 Habitats

The habitats present within the Survey Boundary and their descriptions are shown in Table 4.2. A plan of the Survey Boundary showing the location and distribution of these habitats is shown in Figure 1.

**Table 4.2 Phase 1 Habitats and Descriptions**

Habitat	Description	Section 7 Habitat
Row of Trees Broadleaved	<p>Broadleaved trees are located along a field margin and Greystone House property boundary. Species include sycamore <i>Acer pseudoplatanus</i>, beech <i>Fagus sylvatica</i>, pedunculate oak <i>Quercus robur</i>, horse chestnut <i>Aesculus hippocastanum</i>, holly <i>Ilex aquifolium</i> (Appendix C: Photograph 12).</p> <p>A row of broadleaved trees is located along the northern edge of Llanmaes village green. Species include sessile oak <i>Quercus petraea</i>, silver birch <i>Betula pendula</i>, alder <i>Alnus glutinosa</i>, beech and weeping willow <i>Salix babylonica</i> (Appendix C: Photograph 9).</p>	No
Standalone Trees	Ash and beech trees are located across the Survey Boundary.	No

Habitat	Description	Section 7 Habitat
	Tree 1: Ash; Tree 2: Ash; Tree 3: Ash; Tree 4: Ash; and, Tree 5: Beech.	
Dense Scrub	Dense scrub has grown where old tracks lined with double hedgerows have become unused and scrubbed over (Figure 1 TN: 19 and 20; Appendix C: Photograph 5).  An area of dense scrub is located to the south of a small holding, bee hives are located in the corner (Figure 1: TN 3).	No
Scattered Scrub	Scattered scrub and trees run along Llanmaes Brook. Species include ash <i>Fraxinus excelsior</i> , willow <i>Salix sp.</i> and bramble <i>Rubus fruticosus</i> (Figure 1: TN21).  Two stands of scattered bramble scrub located within area of marshy grassland near Llanmaes Brook (Figure 1: TN 22).	No
Improved Grassland	There are occasional fields of improved grassland used for livestock grazing (Appendix C: Photograph 10).	No
Marshy Grassland	Within the corner of one improved grassland field, adjacent to Llanmaes Brook, is an area of marshy grassland dominated by hard rush. This area is of lower elevation than the rest of the field and becomes inundated when Llanmaes Brook floods, as was encountered at the time of survey (Appendix B, Photograph 7).	No – Would not meet criteria
Poor Semi-Improved Grassland	There is a narrow field margin around each arable field of poor semi improved grassland, approx. 1 m in width (too narrow to be mapped). (Appendix B: Photograph 2). Margins dominated by cocksfoot <i>Dactylis glomerata</i> , Yorkshire fog <i>Holcus lanatus</i> and ivy <i>Hedera helix</i> , with occasional creeping buttercup <i>Ranunculus repens</i> , speedwell species <i>Veronica sp.</i> , vetch species <i>Vecia sp.</i> and cleavers <i>Galium aparine</i> .  A poor semi-improved grassland verge runs adjacent to the road in the centre of the Survey Boundary (Appendix B, Photograph 1).	No – Would not meet criteria
Running Water	There is an unnamed stream bisecting the amenity grassland within Llanmaes 'village green'. There is no submerged vegetation or emergent vegetation, the stream bed was comprised of grass and moss, suggesting that the stream is often dry. There was a small 0.5 m by 0.5 m patch of meadow sweet at Figure 1: TN 23 (Appendix B: Photograph 9).  There is a stream, Llanmaes Brook, approx. width 3 m in the south of the Survey Boundary. The stream has a gravel bed with foals' watercress <i>Apium nodiflorum</i> and water crow foot <i>Ranunculus aquatilis</i> noted (Figure 1: TN 17). Llanmaes Brook was in full spate at the time of survey and had over spilt its banks, therefore the banks could not be accessed. (Appendix B, Photograph 8). Scrub and scattered trees run adjacent to Llanmaes Brook, but where Llanmaes Brook passes through an improved field with cows there is no bankside vegetation.  A ditch with running water runs adjacent to the double hedgerow in the centre of the Survey Boundary.	No
Arable	The Survey Boundary is dominated by arable fields. At the time of survey, the wheat (or similar) had been harvested leaving the stubble and bare earth. (Appendix B, Photograph 3 and 6).	No
Amenity Grassland	Within the village of Llanmaes there is a 'village green' of frequently mown amenity grassland. (Appendix B, Photograph 9). There is a un named stream bisecting the amenity grassland and a row of plantation broadleaved trees along the west. Species include Yorkshire fog and creeping buttercup.	No
Ornamental Planting	Within the village of Llanmaes there is an area of ornamental planting opposite the 'village green'.	No
Intact Species Rich Hedgerow	Hedgerows form the boundaries of most fields across the Survey Boundary. The majority of hedgerows in the Survey Boundary are intact species rich (Appendix C: Photograph 1).  Species compositions include woody species of elder <i>Sambucus nigra</i> , hawthorn <i>Crataegus monogyna</i> , hazel <i>Corylus avellane</i> , blackthorn <i>Prunus spinosa</i> , field	Yes

Habitat	Description	Section 7 Habitat
	<p>maple dog wood <i>Cornus sanguinea</i> <i>Acer campestre</i>, sycamore, crab apple <i>Malus sylvestris</i> and holly. Climbing species include hops <i>Humulus lupulus</i>, dog rose <i>Rosa canina</i>, bramble, black bryony <i>Dioscorea communis</i> with ground flora including nettle <i>Urtica dioica</i>, ivy, herb Robert <i>Geranium robertianum</i> and cleavers.</p> <p>The hedgerows adjacent to the road, which runs north-south through the centre of the Survey Boundary, are approximately 2 m wide with a narrow poor semi-improved grassland verge running adjacent (Figure 1: TN18).</p> <p>A double hedgerow runs through one of the arable fields in the north of the Survey Boundary. The hedgerow is approximately 3 m wide and both are growing across and joining the gap between each hedgerow creating a wider linear feature (Figure 1: TN 20).</p>	
Intact Species Poor Hedgerow	Species poor hedgerows are located across the Survey Boundary along field boundaries, they are less common than species rich hedgerows. Species include hawthorn, bramble, nettle, dog wood, dog rose, hazel, elder and blackthorn.	Yes
Defunct Species Rich Hedgerow	A defunct species rich hedgerow runs as part of a double hedgerow adjacent to a ditch in the north of the Survey Boundary (Figure 1: TN 20). Species include sycamore, elder, hazel, hawthorn, holly, elm bramble, field maple and male fern <i>Dryopteris filix-mas</i> .	Yes
Defunct Species Poor Hedgerow	A defunct hedgerow of blackthorn and hawthorn is located in the south of the Survey Boundary (Appendix C: Photograph 2).	Yes
Hedgerows with Trees Species Rich	<p>Species rich hedgerows with trees are present along field boundaries. Species include ash, elder, hawthorn, blackthorn, dog rose, bramble, black bryony, hazel, sycamore, holly and elm.</p> <p>A double hedgerow with trees is located in the centre of the Survey Boundary. It appears to be a hedgerow either side of an old disused track. The gap between the hedgerow is growing over with scrub creating a wide linear feature. The understorey is comprised of ivy, bramble, hart tongue fern <i>Asplenium scolopendrium</i>, male fern, nettle, dogwood and ash saplings (Figure 1 TN 19; Appendix C: Photograph 5).</p> <p>This hedgerow with trees extends south where a Public Right of Way (PRoW) then runs between the rows. The PRoW was very wet at the time of survey with an ephemeral stream running through it (Figure 1: TN 6 and 8).</p> <p>One species rich hedgerow with trees, within the Survey Boundary could qualify as 'Important Hedgerows' under the hedgerow regulations 1997. Figure 1 Target Note 25.</p>	Yes
Hedgerows with Trees Species Poor	One species poor hedgerow with trees is located in the north of the Survey Boundary. Species include hawthorn, blackthorn, sycamore and elder.	Yes
Other habitat	A small holding with allotments is located in the centre of the Survey Boundary. This area was not accessed (Figure 1: TN 7).	No
Hardstanding	In addition to the road through Llanmeas Village, a minor road runs north – south through the centre of the Survey Boundary, hedgerows run on both sides of the road.	No
Wall	Stone wall located along boundaries in the south of the Survey Boundary.	No
Earth bank	There are two grassed earth banks, presumably where a hedgerow used to be present. These no longer support hedgerow species and instead are just raised grass banks with nettle.	No

### 4.3 Protected and Priority Species

Details of Protected and Priority Species recorded in the Survey Boundary are listed in Table 4.3.

A plan of the Survey Boundary showing the location and distribution of features with potential for Protected or Priority Species is shown in Figure 1. Target notes of Protected Species evidence or features that have potential to support Protected Species are shown in Figure 1 and Appendix A.

**Table 4.3 Protected and Priority Species Potential**

Species/ Species Group	Associated habitat	Description	Section 7 Species
Reptiles	Species rich hedgerows and adjacent field margins	<p>There is very limited habitat suitable for reptiles. The Survey Boundary is dominated by arable land, grazed improved grassland and amenity grassland. Field margins are very narrow and are occasionally mown.</p> <p>The LERC returned no records within the Survey boundary, but returned records of slow-worm and grass snake within 2 km.</p> <p>The Survey Boundary is unlikely to support a large population of reptiles, as suitable habitat is very limited, but the presence of scattered individuals in field margins and adjacent to hedgerows cannot be fully ruled out.</p>	Yes
Great Crested Newt	Species rich hedgerows and adjacent field margins	<p>There is no breeding habitat (ponds) within the Survey boundary. There are four ponds within 500 m with no significant barriers to movement between the ponds and the Survey Boundary (one is Frampton Court Farm pond and the other three are square water features seen on OS mapping which may be for livestock and may/may not be wet).</p> <p>There is very limited terrestrial habitat suitable for great crested newt. The Survey Boundary is dominated by arable land (ploughed/crops), grazed improved grassland and amenity grassland. Field margins are very narrow and are occasionally mown. The only suitable terrestrial habitat could be the species rich hedgerows.</p> <p>Water Lane Ponds SINC is located 1.8 km west and is designated for supporting a population of great crested newt. The Survey Boundary is separated from the SINC by minor roads and is beyond the 500 m dispersal distance of great crested newt.</p> <p>The LERC returned four great crested newt records within 2 km of the Survey Boundary, these were along a railway line 1.3 km west and recorded during bottle trap surveys (maximum count of one male and one female). The Survey Boundary is separated from these records by minor roads. The County Ecologist responded stating that great crested newt have been recorded within 1 km of the Survey Boundary to the north, east and west. The data returned during the desk study suggests that great crested newt populations are present locally. Despite the limited availability of suitable habitat, presence of terrestrial great crested newt (in small numbers) cannot be ruled out due to the local presence and connectivity with the surrounding landscape. The Survey Boundary is unlikely to support a large population of great crested newt.</p>	Yes
Breeding Birds	Species rich hedgerows and adjacent field margins, scrub, rows of trees, standalone trees.	<p>Hedgerows, scrub and trees have potential to support breeding birds.</p> <p>During the Phase 1 Habitat Survey gulls were recorded foraging on one of the arable fields, a buzzard <i>Buteo buteo</i> was recorded foraging over an arable field, an old nest was recorded in a hawthorn within a species rich hedgerow with trees, and four sightings of small flocks of skylark were recorded (Figure 1: TN 2, 10, 12 and 13-16 respectively).</p> <p>The arable fields and field margins (although limited in extent) provide habitat for farmland birds including skylark, yellowhammer and lapwing. Small flocks of skylark were recorded during the Phase 1 Habitat survey (Figure 1 TN: 13-16).</p> <p>Arable fields provide foraging habitat for gulls but suitable breeding habitat is absent.</p> <p>Hobby <i>Falco subbuteo</i> are present in the Vale of Glamorgan, breeding attempts are reported annually (Glamorgan Bird Club, 2017). The Survey Boundary includes suitable habitat for breeding hobby. Hobby is a Wildlife and Countryside Act 1981, Schedule 1 Species.</p>	Yes

Species/ Species Group	Associated habitat	Description	Section 7 Species
Dormouse	Species rich hedgerows	<p>The local landscape is dominated by agricultural land interspersed with managed hedgerows, there is no woodland within the Survey Boundary and limited woodland in the local landscape. The nearest woodland is approximately 1.4 km north of the Survey Boundary near the village of Lanmighangel.</p> <p>The LERC returned no records within the Survey Boundary or within 2 km of the Survey Boundary. The County Ecologist stated that dormouse are present adjacent to the Survey Boundary and in the local area. Intact species rich hedgerows and hedgerows with trees could provide connectivity across the Survey Boundary and could provide food resources for dormouse.</p> <p>Despite the limited availability of optimal woodland habitat and limited connections to woodland within the local landscape, due to the presence of local records from the County Ecologist the presence of dormouse within the species rich hedgerows, particularly species rich hedgerows with trees, cannot be ruled out. A large population of dormouse is unlikely within the Survey Boundary.</p>	Yes
Bats	Hedgerows, rows of trees, scrub, running water.	<p>The Survey Boundary provides Moderate suitability for commuting and foraging bats.</p> <p>The LERC returned records of roosting bats within 0.3 km of the Survey Boundary. The Survey Boundary is connected to the surrounding landscape by hedgerows. Hedgerows, rows of trees and scrub provide suitable foraging and commuting habitat within the Survey Boundary. Llanmaes Brook provides a commuting corridor for bats and connects the Survey Boundary with the surrounding landscape.</p> <p>The suitability of the Survey Boundary to support roosting bats is discussed in Table 4.5.</p>	Yes
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Otter	Running water	<p>The culvert within Llanmaes village is unsuitable for otter. It is culverted at each end and the plant species present suggest it is dry much of the time.</p> <p>The LERC returned a record of otter within 1.2 km of the Survey Boundary. Llanmaes Brook is not connected to any major water courses upstream or downstream of the Survey Boundary. The Llanmaes Brook was in full spate at the time of survey and had over spilt its banks, therefore the banks could not be accessed to survey for otter signs, and any sign would likely have been washed away. Llanmaes Brook has potential to be used by commuting otter. The banks of the Brook within the Survey Boundary are accessed by livestock and some are grazed right to the water edge, with livestock having access directly into the watercourse. The section of Brook within the Survey Boundary is unsuitable for supporting breeding or resting sites (e.g. holts/couches).</p>	Yes
Water Vole	Running water	<p>The stream within Llanmaes village is unsuitable for water vole. It is culverted at each end and the plant species present suggest it dry much of the time. The banks of the stream are mown.</p> <p>The Llanmaes Brook was in full spate at the time of survey and had over spilt its banks, therefore the banks could not be accessed to survey for</p>	Yes

Species/ Species Group	Associated habitat	Description	Section 7 Species
		<p>water vole signs, and any sign would likely have been washed away or obscured. The banks of the Brook within the Survey Boundary are accessed by livestock and some are grazed right to the water edge, with livestock having access directly into the watercourse. The section of Llanmaes Brook within the Survey Boundary is unsuitable for breeding (e.g. burrows).</p> <p>The LERC returned no records within the Survey Boundary or 2 km of the Survey Boundary. Due to the absence of suitable habitat and records in the local area, water vole are considered likely absent from the Survey Boundary.</p>	

#### 4.4 Invasive Non-Native Species Subject to Legal Controls

The following INNS plant species, identified within the Survey Boundary, are listed on Schedule 9 of the Wildlife and Countryside Act 1981 making it an offence to cause the spread of these species in the wild. The location of INNS is shown on Figure 1.

**Table 4.4 Invasive Non-Native Species Subject to Legal Controls**

Invasive Species Point	Species	Description
1	<p>Montbretia <i>Crocsmia x crocosmiiflora</i>.</p> <p>Japanese knotweed <i>Reynoutria japonica</i></p>	Within unploughed corner of arable field. Seven scattered stems of Japanese knotweed and seven clumps of montbretia.
2	Montbretia	One stand within the amenity grassland 'village green'.

#### 4.5 Bat Roost Assessment

Features suitable for supporting roosting bats were assessed during the site visit and are listed in Table 4.5. The locations of suitable roost features are shown on Figure 1.

**Table 4.5 Features Assessed as Having Suitability to Support Roosting Bats**

Feature	Description	Bat Roost Suitability Category
Tree 1	Ash tree with a dead split limb at 3 m high, west facing.	Low

## 5. Ecological Constraints and Potential Impacts

The potential impacts of the Proposed Development on habitats and Protected Species are detailed below.

The constraints and potential impacts listed here do not include consideration of further surveys which have been recommended in Section 6. The results of further surveys may change the likely potential impacts.

Ecological Constraints and Impacts are based on the Detailed Design (Figure 2) provided to AECOM Ecology 03/03/2021

### 5.1 Development Proposal

The Proposed Development consists of flood bunds and swales/ ditches to the north and north west of Llanmaes village, together with some road reprofiling through the village and creation of SUDS. The culverted stream in the village green will be widened to increase its capacity. Access will be through existing gaps in hedgerows where possible. Figure 2 shows the location of proposed bunds, swales/ ditches and road reprofiling.

Swales/ ditches and bunds will be located a minimum of 2 m from existing hedgerows. Swales/ ditches and bunds will be approx. 1.2 - 1.4 m wide ('toe to toe' of the bund or 'top of ditch bank to top of ditch bank').

The Proposed Development will require the partial removal of arable, scrub, poor-semi-improved grassland, improved grassland amenity grassland, marshy grassland, other habitat (allotments) and hedgerows. Hedgerow removal will be limited to where there is a requirement for field access and crossing points, the works will not require removal of entire hedgerows. Existing field access points and tracks will be used for Site access, where possible. In total six hedgerow crossing points are required, as well as the widening of one entrance (Ditch 2 (Figure 1 Target Note 24)) and the temporarily cut-back of one hedgerow (Flood Bund 1 (Figure 1 Target Note 25)). The crossing of hedgerows is required for the construction of Ditch 1 (Figure 1 Target Note 26 and 27), Ditch 2 (Figure 1 Target Note 28, 29 and 30) and Flood Bund 3 (Figure 1 Target Note 31).

It is understood that construction is programmed to commence after October 2021.

Once works are complete, it is recommended that hedgerows are replanted. Where swales/ ditches are located, hedgerows will be replanted up to the edge of the swale/ ditch.

Figure 2 shows the location of proposed bunds, swales/ ditches, road reprofiling and SUDS locations.

### 5.2 Designated Nature Conservation Sites

#### 5.2.1 International Nature Conservation Sites

There are no internationally designated nature conservation sites within 2 km of the Survey Boundary. There will be no impact on internationally designated nature conservation sites.

#### 5.2.2 National Nature Conservation Sites

There are no nationally designated nature conservation sites within 2 km of the Survey Boundary. There will be no impact on nationally designated nature conservation sites.

#### 5.2.3 Local Nature Conservation Sites

There are 15 SINC's within 2 km of the Survey Boundary. The closest SINC is Frampton Court Farm SINC located 50 m from the Survey Boundary, this is a pond with tall herb and swamp vegetation, great crested newt are considered likely absent from this SINC by the County Ecologist.

East of Meadowvale Nursery SINC is located 300 m from the Survey Boundary and is designated for purple moor grass and rush pasture. In the absence of mitigation there is potential for pollution of these SINC's due to run-off of sediment, oil and fuel during construction. There is unlikely to be any impact on other SINC's due to distance from the Survey Boundary.



#### 5.2.4 Tree Preservation Order

A proposed swale/ ditch is located adjacent to a TPO designated woodland to the south of the Survey Boundary (outside of the boundary). There will be no direct loss of trees. Tracking of vehicles and machinery, storage of material and ground-breaking works in the Root Protection Zone has potential to damage retained trees.

### 5.3 Habitats

#### 5.3.1 Row of Trees Broadleaved

There will be no loss of rows of trees during the proposed works. A swale/ ditch will be located adjacent to a row of trees in the south. In the absence of mitigation there is potential for damage of retained trees due to tracking of vehicles and machinery, ground-breaking works within the Root Protection Zone and risk of damaging and knocking off limbs overhanging limbs. There will be no further impacts during operation.

Rows of trees are of high conservation value. Loss (through damage) of trees will have an impact on any species using this habitat and may result in loss of connectivity. Mature trees are uncommon within a landscape dominated by agricultural land. Any loss of trees will have an impact at Site and local level.

#### 5.3.2 Dense Scrub

There will be removal of dense scrub at one location where a bund crosses through the double hedgerow with trees (Figure 1: TN19). A maximum of 10 m width of vegetation removal is required. Scrub will be replanted after completion of works so any impacts will be short term and temporary.

In the absence of mitigation there is potential for damage of retained scrub due to tracking of vehicles and machinery and ground-breaking works within the root protection zone and risk of damaging and knocking off limbs overhanging limbs.

Scrub is of conservation value. Loss of scrub will have an impact on any species using this habitat. Additional areas of scrub are available within the Survey Boundary and within the surrounding landscape. Removal of scrub has potential to sever a linear corridor reducing its suitability as a wildlife corridor. There will be temporary loss of connectivity across the Site and with the surrounding landscape. Loss of scrub will have an impact at Site and local level. There will be no further impacts during operation.

#### 5.3.3 Scattered Scrub

All scattered scrub will be retained. The construction of Ditch 1 and Ditch 3 (Figure 1: TN21) will require works adjacent to scattered scrub, located alongside Llanmaes brook. No direct loss of scattered scrub is anticipated, although tracking of vehicles adjacent to scattered scrub may be required. In the absence of mitigation there is potential for damage to retained scrub, due to tracking of machinery and ground-breaking works within the root protection zone and risk of knocking off limbs and overhanging limbs. Scrub is of conservation value. Loss (through damage) of scattered scrub may result in loss of habitat connectivity. Due to the limited area of scrub impacted, any indirect loss will have an impact at Site level.

#### 5.3.4 Improved Grassland

There will be removal of improved grassland at the location of bunds and swales/ ditches. Access routes are not confirmed but tracking of vehicles over improved grassland is anticipated. Improved grassland provides habitat for ground nesting birds but is of limited conservation value to other species and widely available in the surrounding landscape. Loss and damage of improved grassland will have a Site level impact only. All areas will be replanted after completion of works so habitat loss will be short term and temporary. There will be no further impacts during operation.

#### 5.3.5 Marshy Grassland

Marshy grassland will be partially removed where a swale/ ditch will be located. Approximately 10 m wide section with a length of 30 m will be removed. Adjacent marshy grassland which is retained may be damaged during construction by tracking of vehicles.

Marshy grassland is of conservation value. Marshy grassland is limited within the Survey Boundary but available in the wider landscape. The marshy grassland within the Site Boundary is near 100% comprised of hard rush, so has

limited species diversity. Removal of this habitat will have an impact at Site level but is unlikely to have an impact at a local level.

Areas will be replanted after construction so any habitat loss will be short term and temporary. There will be no further impacts during operation.

### **5.3.6 Poor Semi-Improved Grassland**

Areas of poor semi-improved grassland along field margins will be removed where swales/ ditches and bunds cross through hedgerows. All other areas of poor semi-improved grassland will be retained.

Damage to retained poor semi-improved grassland by tracking of vehicles and machinery will be avoided as this is located within the root protection zone of adjacent hedgerows.

Loss of poor semi-improved grassland will be limited. Poor semi-improved grassland is available in the Survey Boundary and wider landscape. Due to current management, poor semi-improved grassland is of limited conservation value. Loss of poor semi-improved grassland will have a limited impact at Site level only.

There will be no further impacts during operation.

### **5.3.7 Running Water**

Two outfalls into Llanmaes Brook will be located at the end of a Ditch 1 and Ditch 3. The swale/ ditch will end and the water will flow naturally into the Brook, there will be no hard engineering (e.g. concrete pipe) at this location. Works will not require diversion or reprofiling of the watercourse. Access to the water course will not be required.

In the absence of mitigation there is potential for pollution during construction caused by run-off of sediment, fuels and oils in construction. This could impact the water quality and have impacts within the Survey Boundary and downstream of the Survey Boundary.

### **5.3.8 Arable**

There will be removal of arable at the location of bunds and swales/ ditches. Access routes are not confirmed but tracking of vehicles over arable is anticipated. Arable provides habitat for ground nesting birds but is of limited conservation value to other species and widely available in the surrounding landscape. Loss and damage of arable will have a Site level impact only. There will be no further impacts during operation.

### **5.3.9 Amenity Grassland**

There will be loss of amenity grassland in the footprint of the swale/ ditch is proposed within the village green, though the banks of the swale/ ditch will be re-seeded after construction. All other amenity grassland will be retained. Works will be undertaken at the watercourse running through the village green. Tracking of vehicles and machinery over retained grassland has potential to damage amenity grassland. Amenity grassland is of limited conservation value and widely available in the surrounding landscape. Loss of amenity grassland will have a Site level impact only. There will be no impact during operation.

### **5.3.10 Ornamental Planting**

There will be no loss or damage of ornamental planting during construction or operation.

### **5.3.11 Intact Species Rich Hedgerow**

Swales/ ditches and bunds will cross through species rich intact hedgerow at three locations (Figure 1: TN 26, 28 and 29). There will be temporary loss of hedgerow in one location (Figure 1: TN 26) and permanent loss to 10 m of hedgerow and 15 m of hedgerow at two locations (Figure 1: TN 28 and 29 respectively). Hedgerows will be replanted in one location (Figure 1: TN 26) following completion of works and replanted up to the edge of the swale/ ditch in two locations (Figure 1: TN 28 and 29) (either, preferably, removal of root balls and then moving them back in once the work is done / or buying and planting of whips). Impacts will therefore be temporary and short term.

Swales/ ditches and bunds are located adjacent to retained hedgerows but will be off set from the hedgerow to reduce damage to the hedgerow structure and hedgerow roots. In the absence of mitigation there may be damage to retained hedgerows through root compaction caused by tracking of vehicles, storage of materials and machinery and damage to roots by ground-breaking works.

The intact species rich hedgerow is of high conservation value. Severance of these hedgerows will affect its function as a wildlife corridor in the short term and result in a temporary loss of high conservation value habitat within the Survey Boundary. This will have an impact at Site and local level.

There will be no further impacts during operation.

#### **5.3.12 Intact Species Poor Hedgerow**

Swales/ ditches and bunds will cross through species poor intact hedgerow at one location (Figure 1: Target Note 30). The existing field entrance will be widened by 15 m to accommodate Ditch 2 (Figure 1: TN 24). There will be permanent loss of approximately 10 m of hedgerow. Hedgerows will be replanted to the edge of the swale/ ditch following completion of works (either, preferably, removal of root balls and then moving them back in once the work is done / or buying and planting of whips). Impacts will therefore be temporary and short term.

In the absence of mitigation there may be damage to retained hedgerows through root compaction caused by tracking of vehicles and machinery, storage of materials and damage to roots by ground breaking works.

There will be no further impacts during operation.

#### **5.3.13 Defunct Species Rich Hedgerow**

Removal of species rich defunct hedgerows is not required. Swales/ ditches and bunds will be off set from the hedgerows to reduce damage to the hedgerow structure and hedgerow roots.

In the absence of mitigation there may be damage to retained hedgerows through root compaction caused by tracking of vehicles and machinery, storage of materials and damage to roots by ground breaking works.

This will have an impact at Site and local level.

There will be no further impacts during operation.

#### **5.3.14 Defunct Species Poor Hedgerow**

Swales/ ditches and bunds will cross through species poor defunct hedgerow at one location (Figure 1: TN 27). Hedgerows will be replanted following completion of works (either, preferably, removal of root balls and then moving them back in once the work is done / or buying and planting of whips). Impacts will therefore be temporary and short term.

In the absence of mitigation there may be damaged to retained hedgerows through root compaction caused by tracking of vehicles and machinery and damage to roots by ground-breaking works.

Due to the limited diversity and frequent gaps this hedgerow is not considered to be of high value.

There will be no further impacts during operation.

#### **5.3.15 Hedgerows with Trees Species Rich**

Swales/ ditches and bunds will cross through species rich hedgerows with trees at one location (Figure 1: TN 31). There will be permanent loss to 15 m of hedgerow. Hedgerows will be replanted to the edge of the swale/ ditch following construction (either, preferably, removal of root balls and then moving them back in once the work is done / or buying and planting of whips).

One species rich hedgerow with trees, within the Survey Boundary (Figure 1: TN 31), of which 15 m will be permanently removed, could qualify as 'Important Hedgerows' under the Hedgerow Regulations 1997. Intentionally or recklessly removing an 'important hedgerow' is guilty of an offence. Before removing any 'important hedgerow', including a stretch of hedgerow, to which these Regulations apply, the owner (or in certain cases a relevant utility operator/developer) must notify the Local Planning Authority. However, the requirement for the owner (or utility operator/developer) to notify the Local Planning Authority does not apply to the permitted work described in Regulation 6. In Regulation 6, the removal of any hedgerow to which these Regulations apply is permitted if it is required (6f) 'for carrying out, pursuant to, or under, the Land Drainage Act 199, the Water Resources Act 1991 or the Environment Act 1995, work for the purpose of flood defence or land drainage'. This Project is for flood alleviation, therefore, the removal of the hedgerow does not require notification to the Local Planning Authority.

In the absence of mitigation, there is potential for damage of retained hedgerows with trees due to tracking of vehicles and machinery, storage of materials and ground-breaking works within the root protection zone, and risk of damaging and knocking off limbs overhanging limbs. However, swales/ ditches and bunds will be off set from the hedgerows to reduce damage to the hedgerow structure and hedgerow roots.

Species rich hedgerows with trees are of high conservation value. Severance of these hedgerows will affect its function as a wildlife corridor in the short term and temporary loss of high conservation value habitat within the Survey Boundary. This will have an impact at Site and local level.

There will be no further impacts during operation.

#### **5.3.16 Hedgerows with Trees Species Poor**

Removal of species poor hedgerow with trees is not required. Swales/ ditches and bunds will be off set from the hedgerows to reduce damage to the hedgerow structure and hedgerow roots.

In the absence of mitigation there is potential for damage of retained hedgerows with trees due to tracking of vehicles and machinery, storage of materials and ground-breaking works within the root protection zone, and risk of damaging and knocking off limbs overhanging limbs.

Intact hedgerows with trees are of high conservation value.

There will be no further impacts during operation.

#### **5.3.17 Other Habitat**

There will be loss to an area of the small holding of approximately 80 m in length and 10 m in width. From aerial photography the impacts will be to an area of grassland. A survey prior to construction is required with supervision by an ecologist to identify any potential impacts.

#### **5.3.18 Hardstanding**

There will be removal and replacement of areas of hardstanding. This has no conservation value so there will be no impact.

#### **5.3.19 Wall**

Removal of walls is not required. There will be no impact.

#### **5.3.20 Earth bank**

A bund will be constructed over the earth bank. This has negligible conservation value so there will be no impact.

### **5.4 Protected or Notable Species**

#### **5.4.1 Reptiles**

There is potential for a low population of reptiles to be present in hedgerows, field margins adjacent to hedgerows, scrub, earth bank and the allotment/ other habitat. In the absence of mitigation, there is potential for killing/injury of individual reptiles during construction due to ground breaking works and tracking of vehicles and machinery over reptile habitat. There will be negligible impacts to reptile populations.

There will be temporary loss/damage of reptile habitat where hedgerows are removed, or swales/ditches/bunds run adjacent to hedgerows. All hedgerows will be replanted following construction so habitat loss will be temporary.

There will be temporary severance of habitats during construction temporarily reducing connectivity across the Survey Boundary and with the wider landscape.

There will be no additional impacts during operation.

#### **5.4.2 Great Crested Newt**

There is potential for a low population of great crested newt to be present in the base of hedgerows, within areas of scrub and the earth bank. The proposed works require the crossing (cutting through) of one 15 m section of species

rich hedgerows with trees (Figure 1: TN 31), scrub and earth bank. Where possible hedgerows will be replanted following construction and will be replanted to the edge of the swale/ ditch. The maximum loss of hedgerow is 15 m.

In the absence of mitigation there is potential for killing/injury of great crested newt during construction due to ground breaking works and tracking of vehicles and machinery over great crested newt habitat.

There will be temporary and permanent loss of terrestrial great crested newt habitat and temporary reduction in connectivity during construction of the Proposed Development.

There will be no additional impacts during operation.

#### 5.4.3 Breeding Birds

The Proposed Development require the removal of hedgerow sections and adjacent field margins, scrub, arable, marshy grassland and improved grassland which are suitable for breeding birds, including ground nesting species. Removal of these habitats during the breeding season has potential to damage/destroy nest sites and kill/injure breeding birds.

There will be loss of breeding bird habitat, which is abundant in the local area. Where possible habitats will be replanted following completion of works; habitat loss will be short term and temporary.

During construction there is potential for disturbance of breeding birds using retained habitats for breeding. Disturbance of Schedule 1 species (hobby) is an offence under the Wildlife and Countryside Act 1981. Hobby don't start arriving back from migration until late April so if works are underway by then, a disturbance impact is unlikely since if Hobby choose to nest where there is ongoing disturbance they will be accepting of it. In addition, removal of rough grassland may result in the reduction in foraging habitat for barn owl. Given the small area of loss and the abundance of suitable habitat in the surrounding area this is not considered a negligible impact.

There will be no additional impacts during operation.

#### 5.4.4 Dormouse

The Proposed Developments requires the crossing (cutting through) of species rich hedgerows, species rich hedgerows with trees and scrub, which may support dormouse. Where possible hedgerows will be replanted following completion of works, habitat loss will be short term and temporary.

There will be loss of possible dormouse habitat. Hedgerow and dense scrub removal has the potential to kill/injure dormouse and damage/destroy dormouse nests, if present.

Without mitigation, severance of hedgerows and dense scrub will result in reduction of connectivity across the Survey Boundary and with the surrounding area.

There will be no additional impacts during operation.

#### 5.4.5 Bats

The Proposed Development will require temporary removal of suitable foraging and commuting habitats. The proposed works require the crossing (cutting through) of species rich hedgerows, species rich hedgerows with trees and scrub. Hedgerows will be replanted so loss of connectivity will be short term and temporary.

Hedgerow and scrub removal will result in severance of suitable commuting habitat. Without mitigation, this will result in reduction of connectivity across the Survey Boundary and with the surrounding landscape. Given the abundance of suitable habitat in the local area and the relatively small gap in hedgerows, following hedgerow replanting after construction, this reduction in connectivity is considered negligible.

Night works are not required, there will be no lighting impacts.

There is one tree (Bat Tree 1) with Low bat roost suitability located adjacent to a proposed bund. Removal of this tree or any limbs is not required. There will be no impact on roosting bats.

There will be no additional impacts during operation.



#### 5.4.7 Otter

There will be no loss of otter commuting and foraging habitat and no barriers to movement during construction or operation.

Potential pollution incidents during construction from fuel, oils, chemicals or soil run-off have the potential to impact otter. This can affect the quality and productivity of foraging areas and cause poisoning by ingestion. Otter are susceptible to oil and fuel pollution which affects the waterproofing of their pelt, resulting in pneumonia and eventual death.

Noise and vibration during construction has potential to cause disturbance to foraging and commuting otters causing a temporary barrier to movement along the stretch of the Brook.

During works if excavations are left open overnight there is potential for otter to get trapped resulting in death or injury.

Night works are not required, there will be no lighting impacts.

Potential pollution incidents during operation from fuel, oils, chemicals onto the road through Llanmaes village have the potential run through the two southernmost swales/ ditches and potentially into the Llanmaes Brook, which could impact otter.

#### 5.4.8 Invasive Non-Native Species

Ground breaking works are required within 7 m of Japanese knotweed (INNS Point 1). In the absence of mitigation there is potential to cause the spread of Japanese knotweed within the Survey Boundary and off site.

Work are not anticipated within 1 m of montbretia.

## 6. Further Surveys and Recommendations

### 6.1 Further Surveys

No further surveys are required if mitigation outline below is implemented.

### 6.2 Recommendations for Enhancement

#### 6.2.1 Biodiversity Enhancements

The National Planning Policy Framework (February, 2019) and the Environment Wales Act (2016), requires that developments enhance biodiversity, as well as just mitigating impacts.

Recommendations have been made to make the most of habitat re-instatement following construction at the Site to benefit biodiversity.

##### 6.2.1.1 Bunds and Swales/ ditches

Bunds should be seeded with a species rich grassland mix suitable for the soil type. The 'dry side' of the bunds could be seeded with a mix such as Emorsgate Seed Mix EM1- General Purpose Seed Mix. The 'wet side' of the bund could be seeded with a mix such as Emorsgate EG8 – Meadow Grass Mixture for Wet Soils, or EM4 Meadow Mixtures for Loamy Soil, or EM5 Meadow Mixtures for Loamy Soil or EM1 <https://wildseed.co.uk/mixtures/category/meadow-and-grassland>. A nutrient poor subsoil should be used on the bund to sow the seed mix (nutrient rich topsoil will not create a diverse grassland). The grassland should be managed to increase diversity, this will include a cut in late summer and early spring. Management recommendations are provided by the manufacturer.

Swales/ ditches will be planted with a species rich grassland mix suitable for wetland areas such as Emorsgate EG8 – Meadow Grass Mixture for Wet Soils <https://wildseed.co.uk/mixtures/view/41>. A nutrient poor subsoil should be used on the banks to sow the seed mix (nutrient rich topsoil will not create a diverse grassland). The grassland should be managed to increase diversity, this will include a cut in late summer and early spring. Management recommendations are provided by the manufacturer.

Seeding of swales/ ditches and bunds will have a positive impact on biodiversity, increasing the diversity compared to arable/improved grassland and also provide ecosystem services. They will provide a more diverse habitat than arable or improved grassland for Protected and Priority Species and will help slow water run-off. Once the vegetation and root network is established, the roots will help hold together the swale/ditch/bund structures increasing the stability of these features and the vegetation will slow water flow and increase natural percolation and uptake of water by plant roots for photosynthesis.

Logs generated from the hedgerow cutting will be retained and used to create log piles at the base of bunds/ top edges of swales/ ditches and base of hedgerows, to be of benefit to reptiles and amphibians.

##### 6.2.1.2 Barn Owls

There are barn owl records within 400 m. The Project will create beneficial foraging habitat for barn owls in swales/ ditches and bunds. To enhance this further it is suggested to place one or two barn owl boxes, with landowner consent, on existing trees. This is a small cost item (£100 per box). This would also be wildlife benefit visible to the local community. Boxes are available at retailers such as <https://www.nhbs.com/barn-owl-nest-box>

### 6.3 Recommendations for Mitigation

#### 6.3.1 Pollution Prevention

Pollution control measures as required in Guidance for Pollution Prevention (GPPs) and, where these have not been replaced, the Environment Agencies Pollution Prevention Guidelines (PPGs) will be implemented to avoid and minimise adverse effects of pollution and runoff on the surrounding environment (including SINCs) and species which they support (Netregs, 2019).

The following actions are recommended to control pollution, run-off and litter:

- Any litter generated should be stored in a designated area and must be removed from site at the end of each shift;



- Machinery and tools must be oiled and re-fuelled in a designated, bunded area with an impermeable base. This must not be done near the watercourse;
- To prevent spillages, refuelling will be carried out by pumping through a trigger delivery nozzle. Fuel, oil and other potential contaminants will be stored within bunded tanks to 110% of the volume stored and only the minimum quantity required will be stored on site;
- The designated area will be maintained in a secure and clean manner. An adequate quantity of oil absorbent material will be stored on site and spillages cleared up immediately;
- Machinery and tools must be inspected at the start and end of each shift for leaking oil, fuel or chemicals. Any faults must be rectified prior to taking the equipment on site and before commencing any work; and,
- Spill kits must be available on site with staff knowledgeable on how to use them.

### 6.3.2 Locally Designated Sites

Pollution Prevention Guidelines must be followed to avoid potential impacts on SINC's.

### 6.3.3 Tree Preservation Order

No ground-breaking works, tracking of vehicles and machinery or ground-breaking works must be undertaken within the Root Protection Zones of trees with a TPO.

Root Protection Zones will be marked using fencing or flagging tape. The root protection zone is defined by BS5837 (British Standard for Trees in Relation to Design) as Diameter at Breast Height (DBH) x 12 (to a maximum of 15 m).

### 6.3.4 Habitats

Removal of habitats should be limited to the amount required to facilitate the works.

There will be permanent loss to hedgerows in four locations (Figure 1: TN 28, 29, 30 and 31) Following completion of works, where possible hedgerows that have been crossed will be replanted:

- In the first instance, it is recommended that when the hedgerows are removed, that the root balls are retained at a safe location on Site and then are moved back into place once the work is complete. This will save on cost of buy new hedgerow plants and will retain the soil microbiology and ground flora seed stock within the root ball. In addition, 2 tree per hedgerow of feathered stock will be required.
- Alternatively, Hedgerows will be replanted with a range of locally native species to increase the diversity of the hedgerows. Stock should be of whips with occasional feathered stock (2 per hedgerow).

All re-planted hedgerow sections in the long term will be managed sympathetically to increase species richness, improve structure and benefit biodiversity.

All bunds and swales/ ditches will be offset from retained hedgerows by a minimum of 2 m. Works will be undertaken from the field side of bunds/swales/ditches to avoid trampling of retained habitats.

When working adjacent to trees there should be no works (including tracking of vehicles and machinery) within the Root Protection Zone. The Root Protection Zone is defined by BS5837 (British Standard for Trees in Relation to Design) as Diameter at Breast Height (DBH) x 12 (to a maximum of 15 m). Root protection zones will be marked using fencing or flagging tape. Piles of materials will be stored away from retained habitats.

Machinery access points will be kept to existing field access points where possible. Access routes will be established across habitats of low conservation value (arable or improved grassland). Vehicles must stick to the access route and not track over other retained habitats.

### 6.3.5 Ecological Method Statement

Works will follow an Ecological Method Statement. This has been discussed and agreed with the County Ecologist.

### 6.3.6 Timing of Works

Two stages of vegetation clearance are recommended to take place within the following periods:

- February: Bulk of hedgerow removal, to 0.5 m above ground level.

- Late April: Remaining 0.5 m hedgerow removal and root balls.

### 6.3.7 Hedgerow Removal – Proposed Methodology

Works will follow an Ecological Method Statement. The proposed methodology steps are outlined below.

1. Works will be timed to minimise potential impacts on great crested newt, reptiles, dormouse and breeding birds.
2. The ecologist will undertake a hand search of the hedgerow and adjacent field margin prior to vegetation removal to check for presence of hibernating great crested newt, reptiles and dormouse.
3. Where hedgerow crossings are required, the woody hedgerow vegetation will be cut to approximately 0.5 m above ground level during February. This will remove the risk to breeding birds as it falls outside the breeding bird season (March – August inclusive) and avoid impacts on species which may be hibernating at ground level within the hedgerow (including great crested newt, reptiles and dormouse).
4. The remaining 0.5 m high hedgerow and roots will be removed under supervision of an appropriately experienced ecologist in late April. This falls within the active season for great crested newt, reptile and dormouse and avoids the hibernation season when they are most at risk of disturbance. A check for nesting birds in the remaining hedgerow and adjacent field margin will also be undertaken.
5. The ecologist will supervise clearance to ground level and then undertake a hand search prior to removal of topsoil. Topsoil should be removed using hand tools or a skilled excavator operative and checked by the ecologist. Once clear, ground breaking works can proceed.
6. Brash generated from the hedgerow cutting will be retained, to use as mitigation at crossings during the works. Logs generated from the hedgerow cutting will be retained and used to create log piles at the base of bunds/edges of swales/ ditches and base of hedgerows, to be of benefit to reptiles and amphibians.
7. If dormouse or great crested newt are found during vegetation clearance, works must stop and Natural Resources Wales (NRW) consulted. A license may be required before works can resume. If reptiles are found, they should be moved to a safe location. If a significant number of reptiles, great crested newt or dormouse are found then works should stop. Natural Resources Wales must be contacted in the first instance and the County Ecologist must be consulted. The method of working may need to change, and a licence may be required.

### 6.3.8 Tool Box Talk and Supervision

The Ecologist must give a Tool Box Talk to all contractors prior to the start of works. This will detail all ecological constraints and required working methods. Contractors will be provided detail on the identification of Protected Species and INNS and locations will be shown on a plan and marked on Site. Contractors will be told what to do if Protected Species or INNS are encountered during works.

An ecologist will be present on Site to supervise vegetation clearance. Regular visits will be made by an ecologist through construction to check for any additional constraints and that the Method Statement is being followed.

Ecologist details, a copy of the Method Statement and a Plan showing location of constraints will be available at all times to contractors in the site office.

### 6.3.9 Reptiles

The Method Statement will be followed to avoid impacts on reptiles. Vegetation removal of the remaining 0.5 m of hedgerow and scrub including roots, in areas where there is a risk to reptiles, will be undertaken in April. Reptiles are active during this period and can move away or be moved by the ecologist to a safe area. An ecologist will be present on site to supervise vegetation clearance.

Hedgerow and scrub clearance will follow the Method Statement above.

Suitable field margin vegetation will be cut in stages using hand tools and supervised by an ecologist. The initial cut will be to 150 mm and left for a minimum of 24 hrs to allow reptiles to move. After 24 hrs an ecologist will hand search the area before vegetation is cut to ground level. The ecologist must then supervise the soil strip checking for reptiles beneath the soil as the top layer is removed. Vegetation clearance will be undertaken in one direction to allow any reptiles to move out of the working area.

To increase the availability of suitable reptile habitat following the completion of works, hedgerows will be replanted up to the edge of the bunds and swales/ ditches. Bunds and swales/ ditches will be replanted with a species rich grassland mix and retained habitats will be enhanced.

#### **6.3.10 Great Crested Newt**

Based on the suitability of habitat on Site, the localised nature of the works and that habitat will be reinstated following works, it is considered that potential impacts on great crested newt can be managed through precautionary working and that a great crested newt license is not required. Vegetation removal, of the remaining 0.5 m of hedgerow and scrub including roots, will be undertaken in April and will avoid the hibernation period when great crested newts are most at risk from disturbance. An ecologist will be present on site to supervise vegetation clearance.

To avoid the impacts of killing, injury and destruction of resting sites for great crested newt, where hedgerow crossings are undertaken these will be completed following the methodology set out above and will be supervised by an ecologist.

During works, a row of brash (generated from the hedgerow cutting) will be set out each night along the ground in the hedgerow gap to enable continued connectivity during the works.

If at any point great crested newts are encountered, works must stop and an ecologist consulted. A license from NRW may be required.

To avoid and reduce the impacts of habitat loss, hedgerows will be replanted with locally native species up to the edge of the bunds and swales/ ditches and the swales/ ditches and bunds will be seeded with a diverse seed mix. These actions will avoid long-term habitat loss. Seeding of swales/ ditches and bunds will have a positive impact on habitat diversity for great crested newts compared to arable/improved grassland.

#### **6.3.11 Breeding Birds**

Clearance of suitable breeding bird habitat, which includes the woody hedgerow vegetation to approximately 0.5 m above ground level, will be undertaken outside of the breeding bird season which is from March – August (inclusive). Clearance between end of August and end of February will avoid this period. It is recommended that clearance should take place in February so that the remaining vegetation removal (from 0.5 m to ground level, including roots) can be undertaken in April of the same year (avoiding risk to great crested newts, reptiles and dormouse) and will limit the period of reduced habitat connectivity and prevent a pause in works over winter.

If any vegetation clearance is required outside of this period (end of August – end of February), then an ecologist must check vegetation a maximum of 48 hrs prior to removal. If breeding birds are found a species-specific buffer must be applied around the nest site and no works can be undertaken in this area until chicks have fledged. This can take up to 8 weeks.

There is risk of ground nesting birds in improved grassland, marshy grassland and arable fields, and a risk of hobby within standalone trees. Where access tracks, swales/ ditches and bunds are located on potential breeding bird habitat, vegetation must be cut over winter (February is recommended) and maintained at a low height (ground level, where appropriate) to make them unsuitable for breeding birds (cutting of field margins must be avoided as there is a risk of reptile and great crested newt presence, a pre works check will be undertaken by an ecologist to manage risk here). Once construction starts disturbance should deter breeding, but short vegetation should be maintained to minimise the risk of breeding birds establishing nest sites. If at any point nesting birds are found to be breeding (or attempting to breed) then a species appropriate buffer will be applied around the nest Site until chicks have fledged.

During construction the ecologist will undertake regular checks. A watch for hobby should be undertaken during the site visit. If at any point hobby are found to be breeding (or attempting to breed) then a buffer will be applied around the nest Site until chicks have fledged.

#### **6.3.12 Dormouse**

Based on the suitability of habitat on Site, the localised nature of the works and that habitat will be reinstated following works, it is considered that potential impacts on dormouse can be managed through precautionary working and that a dormouse license is not required.

To avoid the impacts of killing, injury and destruction of resting/breeding sites for dormouse, where hedgerow and scrub clearance is undertaken these will be completed following the methodology set out above and will be supervised by and ecologist. Timing vegetation clearance of the remaining 0.5 m of hedgerow and roots in March will avoid hibernating dormouse and the start of the breeding season.

During works, a row of brash (generated from the hedgerow cutting) will be set out each night along the ground in the hedgerow gap to enable continued connectivity during the works.

If at any point dormouse are encountered, works must stop and an ecologist consulted. NRW must be consulted in the first instance. A license from NRW may be required before works can re-start.

To reduce the impacts of habitat loss, hedgerows will be replanted with locally native species up to the edge of the bunds and swales/ ditches.

### 6.3.13 Bats

Removal of Bat Tree 1 which has Low suitability to support roosting bats is not required. If removal of the tree or any limbs is required, an ecologist must be consulted.

Hedgerow removal will be kept to a minimum required to undertake the works and will be re-instated up to the edge of the bunds and swales/ ditches following completion of works.

During works, two mesh fencing panels (e.g. heras) weaved with brash or fitted with membrane/material will be placed across hedgerows gaps at the end of each night to maintain connectivity for bats during the works.



### 6.3.15 Otter

Pollution control measures as detailed above must be followed.

To avoid potential disturbance to commuting otters, works close to Llanmaes Brook must avoid one hour either side of dawn and dusk. Works must stop one hour before dusk and must not start until one hour after dawn.

All excavations will be fenced overnight to avoid entrapment, or a ramp fitted to provide a means of escape.

### 6.3.16 Invasive Non - Native Species

In the first instance areas where INNS are located should be avoided. An exclusion buffer of 7 m around Japanese knotweed and 1 m around montbretia should be applied where there will be no access by people and machinery and no ground-breaking works. Locations of INNS are shown in Figure 1.

Where this is not possible the following mitigation is required.

- Works within INNS buffers will require a Method Statement which will detail the options for treating INNS and working near INNS. It is recommended that the Japanese knotweed is treated on Site or removed off Site to avoid long-term land management impacts.
- Works within buffers will be supervised by a suitably experienced Ecologist.
- Biosecurity measures must be in place for all machinery, tools and persons on Site throughout the duration of the works. This will include a designated wash down area for people and vehicles working within or within close proximity to known INNS areas. All soil and plant material must be removed from boots, vehicles and tools at wash down stations.
- Contaminated soil must be taken to a pre agreed, appropriately licensed waste disposal facility.
- Contaminated soil must not be moved around Site or used to create bunds.
- Post works monitoring of the INNS area will be required to ensure that the INNS has not spread as a result of the works.

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## Figure 1: Phase 1 Habitat Map





**LEGEND**

- Site Boundary
- Target Note
- Tree
- ▲ Tree with Bat Roost Suitability - Low
- INNS Point
- INNS Area
- Mammal trail
- X Boundary removed
- Broadleaved parkland/scattered trees
- W Defunct hedge - native species-rich
- Defunct hedge - species-poor
- Earth bank
- + + + Fence
- W Hedge with trees - native species-rich
- + + + Hedge with trees - species-poor
- W Intact hedge - native species-rich
- Intact hedge - species-poor
- Running water
- X Scrub - scattered
- Wall
- X Scrub - Dense/Continuous
- Improved Grassland
- Marsh/Marshy Grassland
- Poor Semi-Improved Grassland
- Running Water
- Cultivated/Disturbed Land - Arable
- Cultivated/Disturbed Land - Amenity Grassland
- Introduced Shrub
- Other Habitat
- Hardstanding

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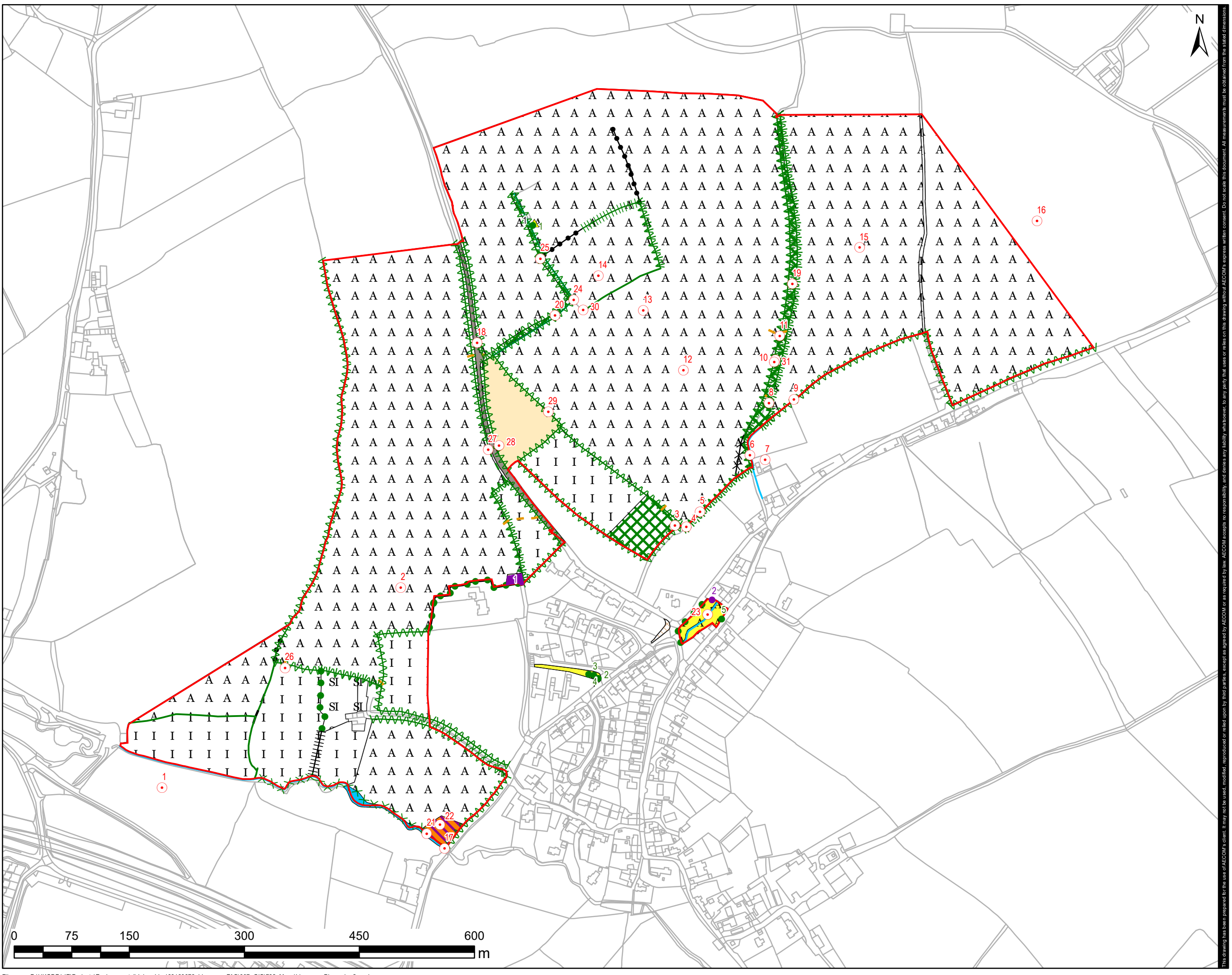
**Drawing Title:**

**LLANMAES FLOOD ALLEVIATION SCHEME - PHASE 1 HABITAT PLAN**

Scale at A3: 1:4,500

**Drawing No:** FIGURE 1 **Rev:** 02

**Drawn:** GM **Chk'd:** AM **App'd:** LF **Date:** 08/03/21



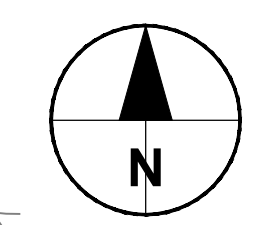
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## Figure 2: FAS Layout - Detailed Design



ISO A1 594mm x 841mm  
Approved: RM  
Checked: ATZ  
Designer: RD  
Project Management Initials:  
Last saved by: RHYS DAVIES(2021-03-03) Last Plotted: 2021-03-03  
Filename: P:\PROJECTS\HIGHWAY 5 - LLANMAES FLOOD ALLEVIATION SCHEME\B.0 CADD\B.0 DRAWINGS\SERIES 0000 - INTRO\30 0000 GENERAL\60160078-ACM-SHT-30-0000-CT-0001 (RD VERSION).DWG



**PROJECT**  
LLANMAES VILLAGE  
FLOOD ALLEVIATION  
SCHEME

**CLIENT**  
VALE OF GLAMORGAN COUNCIL



**CONSULTANT**  
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- NOTES**
1. TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT DOCUMENTATION / INFORMATION.
  2. ALL LEVELS RELATE TO ORDNANCE DATUM.
  3. DO NOT SCALE FROM THIS DRAWING. USE PRINTED DIMENSIONS ONLY.

**LEGEND**

01	SHEET LAYOUT AND NUMBER
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**STATUS**  
DETAILED DESIGN

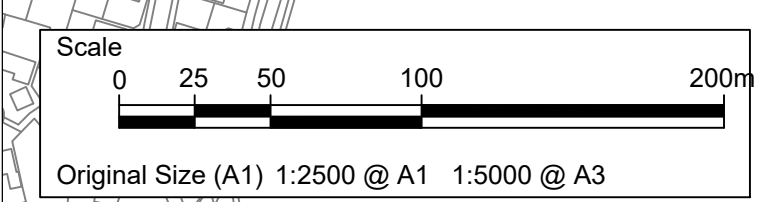
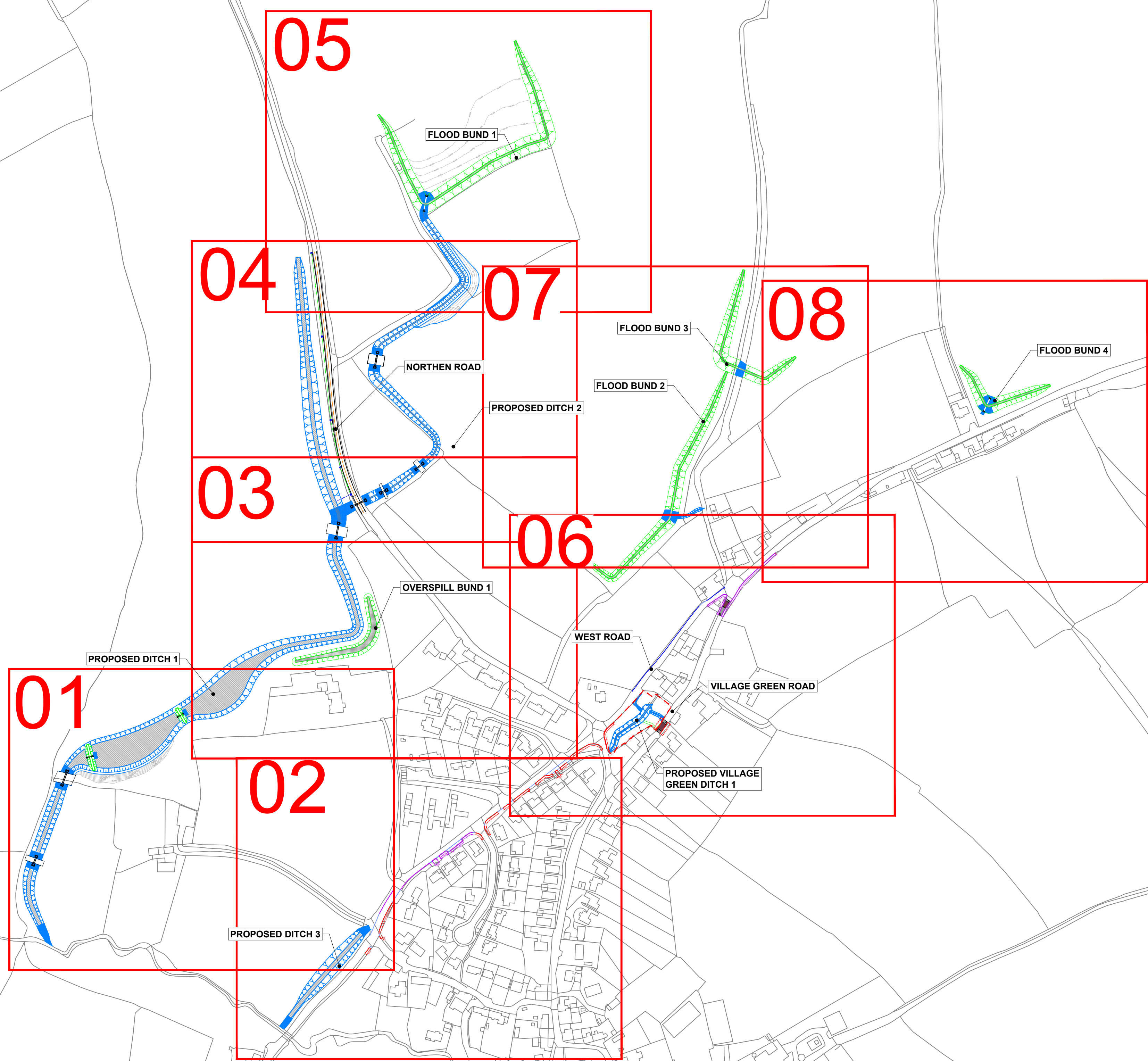
**ISSUE/REVISION**

IR	DATE	DESCRIPTION
B	26/02/2021	DETAILED DESIGN
A	16/12/2020	DRAFT DETAILED DESIGN

**PROJECT NUMBER**  
60160078

**SHEET TITLE**  
LLANMAES VILLAGE  
FLOOD ALLEVIATION SCHEME  
LOCATION PLAN  
SCALE: 1:2500

**SHEET NUMBER**  
60160078-ACM-SHT-30-0000-CT-0001



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## Appendix A Wildlife Legislation and Local Planning Policy

### A.1 Legislation – Habitats

A variety of sites are designated in the UK, under Conventions, Directives and Regulations for their nature conservation importance and interest. The general aim of these designations is to conserve and protect ecological resources, as well as raising awareness and understanding. Other non-statutory sites are afforded some protection through local plans. The following outlines the most common statutory and non-statutory designations:

Designation	Brief Description
Special Areas of Conservation (SAC)	SACs are sites selected to conserve the natural habitat types and species of wild flora and fauna listed in the Annexes of the Habitats Directive (further information regarding the Habitats Directive is set out in more detail in the table below). They are the best areas to represent the range and variety of habitats and species internationally and nationally.
Special Protection Area (SPA)	SPAs are strictly protected sites for the most important habitats for rare and migratory birds internationally and nationally classified in accordance with Article 4 of the Birds Directive information regarding the Birds Directive is set out in more detail in the table below).
Ramsar Sites	Ramsar Sites are wetlands of international importance. Ramsar Sites are protected, through the planning system, under the Wildlife and Countryside Act 1981 (as amended), and the Countryside and Rights of Way Act 2000 through their notification as SSSIs and through other regulatory systems addressing water, soil and air quality.
National Nature Reserve (NNR)	NNRs are nationally important areas of wildlife habitat and geological formations in Britain. NNRs are designated and protected under the National Parks and Access to the Countryside Act 1949 and the Wildlife and Countryside Act 1981 (as amended). They receive additional protection under the Countryside and Rights of Way Act 2000. They are managed for the benefit of nature conservation.
Site of Special Scientific Interest (SSSI)	A SSSI is a site of at least national importance for nature conservation designated under the Wildlife and Countryside Act 1981 (as amended) due to its special interest in terms of flora, fauna or geological or physiographical features. Protection afforded to SSSIs was strengthened by the Countryside and Rights of Way Act 2000. It should be noted that under the Countryside and Rights of Way Act 2000 owners of SSSIs must give Natural Resources Wales (NRW) written notice before they begin any of the operations listed in the notification as likely to damage the special interest features, or if they allow others to carry out these activities. None of the listed operations can be carried out without NRW's consent.
County Wildlife Site (Local site)	A County Wildlife Site is a non-statutory site designated by a local authority as being of local nature conservation value.
Ancient Woodland Inventory	Ancient Woodland is a term applied to woodlands which have existed from at least Medieval times to the present without ever having been cleared for uses other than wood or timber production. A convenient date used to separate ancient and secondary woodland is about the year 1600. In special circumstances semi-natural woods of post-1600 but pre-1900 origin are also included.
Wildlife Trust Reserve	These non-statutory sites are managed by the Wildlife Trusts with the purpose of conserving wildlife.

### A.2 Legislation – Protected Species

In addition to habitats, a number of species have been afforded protection through international and national law. Other species are considered to contribute to our 'quality of life'. Although these species do not benefit from legal protection, they can be material considerations in the planning process. The table below outlines the key forms of protection afforded to species. The Countryside and Rights of Way Act, the Wildlife and Countryside Act 1981 (as amended), [REDACTED]

[REDACTED]. Schedule 1 of the Wildlife and Countryside Act 1981 (as amended) covers birds, Schedule 5 covers other animals and Schedule 8 covers plants.

Species including bats, otters and great crested newts are listed under Schedule 2 of the Conservation of Habitats and Species Regulations 2018. [REDACTED]

Activities affecting protected species must usually be conducted under licence obtained from the appropriate body (in Wales, this is Natural Resources Wales).

Developers must be able to show that all reasonable measures have been taken to ensure that protected species are not subject to disturbance. The habitats which regularly support the Conservation of Habitats and Species Regulations 2018 Schedule 2 species, the Wildlife and Countryside Act 1981 (as amended) Schedule 1 species and some Wildlife and Countryside Act 1981 (as amended) Schedule 5 species are also protected from disturbance and destruction. Again, all reasonable precautions should be taken to ensure that this does not happen. The Countryside and Rights of Way Act 2000 has strengthened enforcement powers and introduced a new offence of "reckless disturbance" that applies to both protected sites and species. The table below provides a summary of the relevant legislation with regards to protected and priority species.

Designation	Brief Description
The Habitats Directive	The Conservation of Habitats and Species (amendment) (EU exit) Regulations 2019 sets out the legal framework to protect habitat sites supporting vulnerable and protected species, as listed within the Directive. The need for an assessment of impacts on national site network sites (the collective name for SPAs and SACs) is set out within the Directive.
The Birds Directive	The Conservation of Habitats and Species (amendment) (EU exit) Regulations 2019 provides a framework for the protection, management and control of all species of naturally occurring wild birds in the UK.
Wildlife and Countryside Act (1981) (as amended)	<p>The Wildlife and Countryside Act 1981 (as amended) is the principal mechanism for the legislative protection of wildlife in Great Britain. This legislation is the means by which the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) and (partially) the Birds Directive and the Habitats Directive are implemented in the UK. The Countryside and Rights of Way Act 2000 has strengthened this legal protection (see below).</p> <p>A small number of plant species are listed under Schedule 9 of the Wildlife and Countryside Act 1981, as amended, which includes species such as Japanese knotweed (<i>Reynoutria japonica</i>), Himalayan balsam (<i>Impatiens glandulifera</i>), montbretia (<i>Crocodymia x crocosmiiflora</i>), giant hogweed (<i>Heracleum mantegazzianum</i>) and some cotoneaster species (<i>Cotoneaster</i> sp.). It is illegal to plant or to cause these plants to grow in the wild, and legal disposal methods for vegetation and soil subject to disturbance or clearance from a site must be used.</p>
Convention on Biological Diversity and the Countryside and Rights of Way Act 2000	<p>The Countryside and Rights of Way Act 2000 provides a statutory framework for biodiversity conservation. The Act places a duty on Government Departments and the National Assembly for Wales to have regard for the conservation of biodiversity and maintain lists of species and habitats for which conservation steps should be taken or promoted, in accordance with the Convention on Biological Diversity.</p> <p>Schedule 9 of the Act amends SSSI provisions of the Wildlife and Countryside Act 1981, including provisions to change SSSIs and providing increased powers for their protection and management. The provisions extend powers for entering into management agreements; place a duty on public bodies to further the conservation and enhancement of SSSIs; increases penalties on conviction where the provisions are breached; and introduce a new offence whereby third parties can be convicted for damaging SSSIs.</p> <p>Schedule 12 of the Act amends the species provisions of the Wildlife and Countryside Act 1981, strengthening the legal protection for threatened species. The provisions make certain offences 'arrestable' and create a new offence of reckless disturbance.</p> <p>The UK Biodiversity Action Plan (BAP) was published in 1994, and was the UK Government's response to the Convention on Biological Diversity (CBD), which the UK signed up to in 1992. It provides the framework for fulfilling the UK's responsibilities towards the Convention on Biological Diversity. Conservation of biodiversity (the variety of life on earth) is an essential element of sustainable development.</p>
Environment (Wales) Act 2016	<p>The Environment (Wales) Act puts in place the legislation needed to plan and manage Wales' natural resources in a more proactive, sustainable and joined-up way. Part 1 relates to the sustainable management of natural resources. This ensures that the way in which the use of and the impacts on natural resources do not result in long term decline. The aim is to sustainably manage natural resources in a way and rate that meets the needs of present and current generations without compromising the needs of future generations.</p> <p>The Act also contains at section 7, a duty for the Welsh Ministers prepare and publish a list of the living organisms and types of habitat which in their opinion are of principal importance for the purpose of maintaining and enhancing biodiversity in relation to Wales. This section replaces the duty in section 42 of the NERC Act 2006.</p>



Policy	Details
	<p>under Policy MD8 and are subject to separate legislation. In addition, it recognises the importance of preserving and enhancing the natural environment, principally the countryside and the coast, which have significant landscape and nature conservation value.</p>
<p>Policy MG17 – Special Landscape Areas</p>	<p>The following areas are designated as special landscape areas:</p> <ol style="list-style-type: none"> <li>1. Castle Upon Alun;</li> <li>2. Upper &amp; Lower Thaw Valley;</li> <li>3. Ely Valley &amp; ridge slopes;</li> <li>4. Nant Llancarfan;</li> <li>5. Dyffryn basin &amp; ridge slopes; and,</li> <li>6. Cwrt-yr-Ala basin.</li> </ol> <p>Within the special landscape areas identified above, development proposals will be permitted where it is demonstrated they would cause no unacceptable harm to the important landscape character of the area.</p> <p>Special Landscape Areas (SLA) have been designated to protect areas of the Vale of Glamorgan that are considered to be important for their geological, natural, visual, historic or cultural significance. These areas have been identified through the utilisation of a methodology devised by the former Countryside Council for Wales (now Natural Resources Wales) in collaboration with a consortium of local authorities in South East Wales, which uses LANDMAP data. The process allows information about the landscape to be gathered, organised and evaluated into a nationally consistent, quality assured data set.</p> <p>Details of the identified SLAs are contained within the Vale of Glamorgan Designation of Special Landscape Areas Background Paper (2013).</p> <p>The designation of SLAs is not intended to prevent development but to ensure that where development is acceptable careful consideration is given to the design elements of the proposal such as the siting, orientation, layout and landscaping, to ensure that the special qualities and characteristics for which the SLAs have been designated are protected.</p> <p>Development proposals within SLAs will be required to fully consider the impact of the proposal on the SLA through the submission of a Landscape and Visual Impact Assessment (LVIA). A LVIA will be required for any development that is likely to have a significant impact upon landscape character, or have a significant visual effect within the wider landscape (by virtue of its size or prominence or degree of impact on the locality) and will be prepared in accordance with the latest Landscape Institute and the Institute of Environmental Management and Assessment guidelines. Where applicable, this should form a key element of a planning application's design and access statement and should demonstrate that the proposal has been designed to remove or reduce any unacceptable impacts on the qualities for which the SLA has been designated. Any cumulative impacts that the proposal may have in relation to existing or planned proposals in the locality should also be considered. This is particularly the case for wind turbines or large structures and large-scale proposals such as solar farms. The level of detail required in each landscape impact assessment should be commensurate with the scale of the proposal.</p>
<p>Policy MG18 – Green Wedges</p>	<p>Green wedges have been identified to prevent the coalescence of settlements and to retain the openness of land at the following locations:</p> <ol style="list-style-type: none"> <li>1. Between Dinas Powys, Penarth and Llandough;</li> <li>2. North West of Sully;</li> <li>3. North of Wenvoe;</li> <li>4. South of Bridgend;</li> <li>5. Between Barry and Rhooose;</li> <li>6. South Penarth to Sully; and</li> <li>7. Between Rhooose and Aberthaw.</li> </ol> <p>Within these areas development which prejudices the open nature of the land will not be permitted. Land on the urban fringe particularly around the key, service and primary settlements within the South East Zone is vulnerable to speculative development that can blur the boundaries between settlement edges and the open countryside. Unchecked this development would result in the incremental loss of open land and ultimately lead to the coalescence of settlements with a resultant detrimental impact upon agriculture, the landscape and the amenity value of land. While other policies of the LDP seek to prevent inappropriate development within the open countryside it is considered that the areas defined by the green wedges are more vulnerable and susceptible to change and require additional protection. Therefore, within the areas defined by the</p>

Policy	Details
Policy MG19 – Site and Species of European Importance	<p>green wedges there will be a presumption against inappropriate development<sup>20</sup> which would contribute to urban coalescence, prejudice the open nature of the land, or have an adverse impact upon the setting of an urban area. In applying this protection, however, it is recognised that individual or small groups of dwellings exist within the designations and that activities such as agriculture, forestry and recreation, occur. Consequently, development associated with existing uses will be limited to minor structures which are strictly ancillary to existing uses. Details of each of the designations are contained within the Green Wedge Background Paper (2013).</p> <hr/> <p>Development proposals likely to have a significant effect on a European site, when considered alone or in combination with other projects or plans will only be permitted where:</p> <ol style="list-style-type: none"> <li>1. The proposal is directly connected with or necessary for the protection, enhancement and positive management of the site for conservation purpose; or</li> <li>2. The proposal will not adversely affect the integrity of the site;</li> <li>3. There is no alternative solution;</li> <li>4. There are reasons of overriding public interest; and</li> <li>5. Appropriate compensatory measures are secured.</li> </ol> <p>Development proposals likely to have an adverse effect on a European protected species will only be permitted where:</p> <ol style="list-style-type: none"> <li>1. There are reasons of overriding public interest;</li> <li>2. There is no satisfactory alternative; and ,</li> <li>3. The action authorised will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range.</li> </ol> <p>Internationally designated sites comprise Special Areas of Conservation (SAC), Special Protection Areas (SPA) and Ramsar Sites. The Vale of Glamorgan has 2 international sites: - Dunraven Bay (SAC) and Severn Estuary (SAC, SPA, Ramsar) and is directly adjacent to the Kenfig SAC in the County Borough of Bridgend. The locations of the European sites are shown on the Constraints Map.</p> <p>Any development proposals that are likely to affect European designated sites or European Protected Species (EPS) will be determined in accordance with national planning policy set out in Planning Policy Wales and Technical Advice Note 5: Nature Conservation and Planning (2009) and relevant case law.</p> <p>In accordance with the Conservation of Habitats and Species Regulations 2010 (as amended), any development proposals that has the potential for adverse impact on the integrity of a European site will be subject to a Habitats Regulations Assessment.</p> <p>Prior to implementing any consent that may be granted which may affect species of European importance, developers will need to secure a derogation from Natural Resources Wales under the Conservation of Habitats and Species Regulations 2010 (as amended), the 'Habitats Regulations.</p>
MG20 – Nationally Protected Sites and Species	<p>Development likely to have an adverse effect either directly or indirectly on the conservation value of a site of special scientific interest will only be permitted where it is demonstrated that:</p> <ol style="list-style-type: none"> <li>1. There is no suitable alternative to the proposed development; and</li> <li>2. It can be demonstrated that the benefits from the development clearly outweigh the special interest of the site; and</li> <li>3. Appropriate compensatory measures are secured; or</li> <li>4. The proposal contributes to the protection, enhancement or positive management of the site.</li> </ol> <p>Development proposals likely to affect protected species will only be permitted where it is demonstrated that:</p> <ol style="list-style-type: none"> <li>1. The population range and distribution of the species will not be adversely impacted;</li> <li>2. There is no suitable alternative to the proposed development;</li> <li>3. The benefits of the development clearly outweigh the adverse impacts on the protected species and ,</li> <li>4. Appropriate avoidance, mitigation and compensation measures are provided.</li> </ol> <p>For the purposes of the policy, nationally designated sites include Sites of Special Scientific Interest (SSSI). Within the Vale of Glamorgan there are 28 SSSI and these are detailed in Appendix 2 and their locations are shown on the Constraints Map. Protected species are those detailed within the Wildlife and Countryside Act 1981 (as amended) and species specific legislation e.g. the [REDACTED]</p> <p>The presence of a protected species is a material consideration in the determination of planning applications. When assessing any development proposal which if carried out would be likely to result in harm to a protected species or its habitat, the Council will be guided by advice received from Natural Resources Wales.</p>



Policy	Details
	<p>There will always be a presumption against development which is likely to harm a protected site or species. However, there may also be instances when the importance of a development proposal will outweigh the conservation value, either temporarily or permanently to a SSSI / protected species and in such instances, the objective will always be to ensure that the nature conservation value of the site or protected species is preserved and where possible enhanced.</p> <p>Where development is permitted, appropriate conditions or agreed planning obligations will be used to secure adequate compensation or mitigation measures</p>
<p>Policy MG21 – Sites of Importance for Nature Conservation, Regionally Important Geological and Geomorphological Sites and Priority Habitats and Species</p>	<p>Development proposals likely to have an adverse impact on sites of importance for nature conservation or priority habitats and species will only be permitted where it can be demonstrated that:</p> <ol style="list-style-type: none"> <li>1. The need for the development clearly outweighs the nature conservation value of the site;</li> <li>2. Adverse impacts on nature conservation and geological features can be avoided;</li> <li>3. Appropriate and proportionate mitigation and compensation measures can be provided; and ,</li> <li>4. The development conserves and where possible enhances biodiversity interests.</li> </ol> <p>Sites of Importance for Nature Conservation (SINC) are identified to protect areas of high wildlife value at a local level. Regionally Important Geological and Geomorphological Sites are locally designated sites of local, national and regional importance for geodiversity (geology and geomorphology).</p> <p>Priority Habitats and Species for Conservation are identified in the Environment (Wales) Act 2016 Section 7. Species or habitats are important wildlife features, are rare or declining and are not protected by primary legislation.</p> <p>Development which is likely to have an adverse impact on SINC, RIGS or Priority Habitats and Species will be required to demonstrate that every effort has been made to avoid and mitigate any adverse impacts and that the need for the development outweighs the nature conservation or geological value. Where on site mitigation is not possible or sufficient to prevent any adverse impact then off-site compensation will be required. Off-site compensation will be secured through planning conditions or Section 106 agreements as appropriate.</p> <p>The Council will produce Supplementary Planning Guidance on 'Biodiversity and Development' to support these policies and provide advice for developers on the Council's approach to biodiversity issues.</p>

## Appendix B Target Notes

Target Note	Description
1	Cows.
2	Buzzard foraging over field.
3	Bee hives x 4.
4	Fox scat.
5	Fox scat.
6	Running water down foot path.
7	Small holding.
8	Standing water, from heavy overnight rain.
9	Fox scat.
10	Old bird nest in hawthorn.
11	Rabbit burrow, not currently used.
12	Gulls feeding on field.
13	Skylark.
14	Skylark x 4.
15	Skylark x 4.
16	Skylark x 4.
17	Stream, gravel bed, fool's cress. Potential commuting otter habitat.
18	2 m wide species rich hedgerows along lane.
19	3m wide double hedgerow. Hedgerows growing together creating 6 m wide linear feature.
20	3m wide double hedgerow. Hedgerows growing together creating 6 m wide linear feature.
21	Scattered trees and scrub along stream.
22	Scattered scrub.
23	Meadow sweet 0.5 x 0.5 m.
24	Hedgerow widening.
25	Hedgerow cutting (temporary).
26	Hedgerow crossing.
27	Hedgerow crossing.
28	Hedgerow crossing.
29	Hedgerow crossing.
30	Hedgerow crossing.
31	Hedgerow crossing.

## Appendix C Site Photographs



Photograph 1: Species rich hedgerow and poor semi-improved grassland verge along road.



Photograph 2: Defunct species poor hedgerow with narrow poor semi-improved grassland field margin.



Photograph 3: Hedgerow with trees around arable field.



Photograph 4: Example of intact species rich hedgerow.



Photograph 5: Double species rich hedgerow with trees along PRow.



Photograph 6: Example of arable field.





Photograph 7: Area of marshy grassland adjacent to Llanmaes Brook.



Photograph 8: Llanmaes Brook.



Photograph 9: Amenity grassland, row of trees and stream running through village green.



Photograph 10: Example of improved grassland field.



Photograph 11: Bat Tree 1 – Ash.



Photograph 12: Japanese knotweed, montbretia and row of trees along boundary.





Photograph 13: Approx. location of proposed hedgerow crossing. Figure 1 Target Note 31.



Photograph 14: Row of trees near Grey House.



Photograph 15: Double species rich hedgerow with trees along PRow and old track.

