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Report:	Preliminary Ecological Assessment - Extended Phase 1
Target:	Open fields and hedgerows Adjacent to Farm buildings.
Proposed actions:	Construction of a single-story cattle shed on a field currently used for cattle grazing to abut the existing cattle sheds. To include the removal of three sections of hedgerow to allow construction and access.
Location:	Pantygrwndy Farm, Nevern, Monington, Pembrokeshire, SA43 3NP
Grid reference:	SN 15744 43914 (centre)
Site Assessment date:	09/01/2023
Client:	Owen Jones
Address:	Pantygrwndy Farm, Nevern, Monington, Pembs. SA43 3NP

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Report ref:	*PantygrwndyFm/Cardigan/Jones/LE23.08*	
Records submitted to WWBIC	*N/A*	
Consultation draft1 submitted	*04/08/23*	
Final draft approved & submitted	D. Vaughan.	*09/08/23*

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This report must be read and reviewed in its entirety before deciding on appropriate action based on its interpretations and conclusions. If there are any discrepancies or doubts as to the contents of this document, please contact Landsker Ecology for clarification.

1 Executive Summary

Details

- Landsker Ecology was commissioned by Llyr Evans on behalf of the client, Mr. Owen Jones of Pantygrwndy Farm, Cardigan to undertake this Preliminary Ecological Appraisal, including an Extended Phase 1 survey.
- The proposed project consists of new cattle cubicle housing adjacent to existing sheds, with a footprint of 48.7 x 64 m, on the western edge of the existing farm complex.
- This report presents the results, interpretations and recommendations derived from the site assessment.

Desk Study

The nature and extent of the proposed development and the results of the site survey did not trigger the need for any additional searches beyond existing local knowledge of the area within Landsker Ecology and Google Earth imagery.

Site Survey

- There are no significant limitations to the assessment's findings, interpretations and recommendations.
- An extended Phase 1 survey was carried out on the target site for the development and the western A487 hedges north and south of the site access road, where hedge removal will be required for the creation of trunk road visibility splays.
- Based on the survey results and an assumption of presence for dormice, no further survey work is judged to be required.
- The site survey was carried out by Ms. K. Brown (FdSc Cons. Man.) and the report complied by D. Vaughan (BSc hons) of Landsker Ecology.

Site assessment

- The areas of grassland impacted by the proposed development consist of grazed Improved Grassland and Cultivated/disturbed arable land with negligible biodiversity value, which is enhanced by its proximity to the farmyard (re ground nesting birds). The hedge banks adjacent to the development site will not be impacted by the construction.
- The hedges affected by the creation of visibility splays will have lengths removed; the total length has yet to be confirmed, but their loss would have a low to moderate negative impact on this Section 7, Env. (Wales) Act 2016 Listed habitat, at the site and local area levels (depending on the total length affected).
- Similar impacts from the potential loss of these hedges will occur for local populations of breeding birds, small mammals and reptiles and amphibians; potentially significant within this group is the dormouse (Hab's Reg's 2019, as amended – protected species) with local records within 2km; without specific surveys, the presence of this species must be assumed at a low density.

Recommendations

- Detailed biodiversity retention and enhancement recommendations are provided in this report, including retention and translocation of any affected lengths of hedgebank and the creation of an area(s) of native meadow grassland.
- Recommendations include the management regimes necessary to maintain the ability of these habitats to support higher than current levels of biodiversity.

2 Introduction

2.1 Project Details	
Site Owner:	Owen Jones
Address:	Pantygrwndy Farm, Nevern, Monington, Pembrokeshire, SA43 3NP
Site address:	Pantygrwndy Farm, Nevern, Monington, Pembrokeshire, SA43 3NP
Project:	Conversion of formerly cattle grazed pasture into an cattle shed to the west of existing agricultural buildings. • The proposals may include the removal of two sections of hedgerow on the property boundary, adjacent to the farm entrance on the A487 trunk road, to allow construction and visibility splays if they are required. • 10m areas surrounding all aspects were surveyed to allow for manoeuvring and land works during construction. • The scheme will necessitate the removal of a small section of the adjoining barn facing the proposed development for access to a new ramp. • The building has been kept forward of the southern hedge to allow for its retention.
2.2 Aims & objectives:	1. Assess the target area for potential impacts on protected and priority species and habitats. 2. Assess the need for additional survey work. 3. If appropriate at this stage, provide recommendations for the works activity based on the interpretation and conclusions drawn from the site assessment.

3 Survey methods

3.1 Desk study	
Previous site surveys:	None.
Relevant Local Records:	• Landsker Ecology have a good knowledge of the local area. This includes records of protected species in the vicinity of the site. • No LRC data search was commissioned.
Google Earth imagery / OS maps (figs 1 to 3 below):	• The site is located to the south-east of the village of Pantygrwndy on gently sloping land with an easterly aspect. • Much of the site is at an altitude of about 171m. • Exposed location set within a landscape of intensively managed pasture lined with low hedgerows and a network of wooded river/stream valleys between fields to the north and east.
Other information:	N/A

3.2 Site assessment	• Site surveys were conducted on 09/01/23. • All boundaries and internal areas of the site were walked; their condition relative to the proposed development and the dominant species present were recorded (see figs 4 to 21 below). • 10m to the northern, western and eastern boundaries was surveys to allow for manoeuvring and land works during construction. • Evidence of or potential for protected species was recorded.

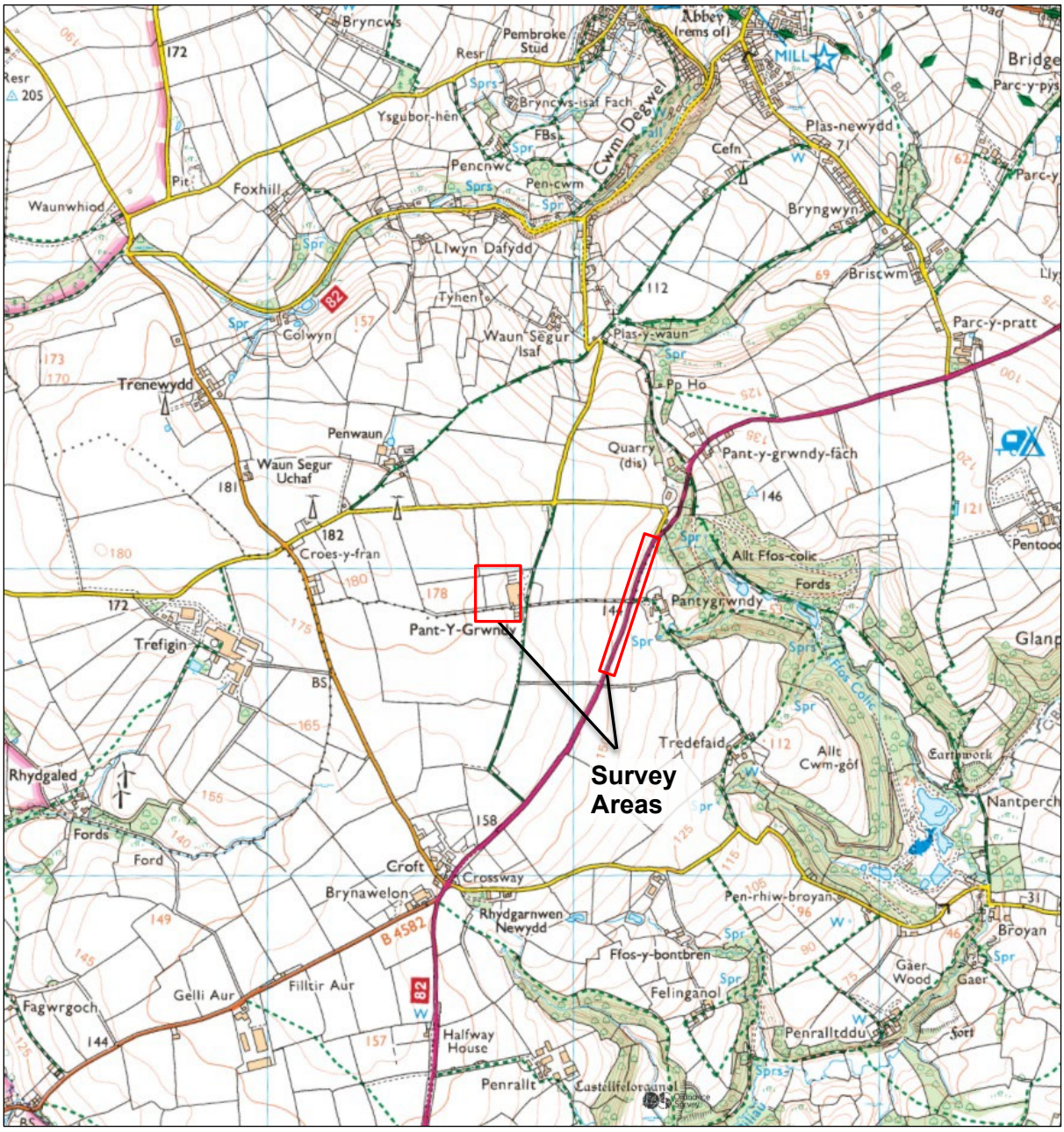


Fig.1 Location (© OS map)

Fig.2 Local area habitats and connectivity – survey areas in red

Fig.3 Site detail

3.4 Survey limitations	• In the context of the site assessment, information from the desk study and the limited extent and impact of the development, there are no significant limitations to the interpretations, conclusions and recommendations of this report. • No further survey work is considered necessary. • The survey was undertaken outside of the optimal timeframe for botanical survey (April to October inclusive). Due to the time of year the survey was undertaken, key indicator species may have been missed due to the annual nature of these species. Forb species were generally identified through vegetative identification only as many species were not flowering at the time of survey. This was not a limiting factor due to the classification of the habitats. • The field to the south was grazed by a horse at the time of survey which limited access into the field however the grassland was in poor condition at the time of survey and a robust assessment of the habitat could be made.
Personnel: D. Vaughan BSc (hons)	• Director, Landsker Ecology; a professional field ecologist with over 30 years' experience. • Specialist qualifications in bird, bat and dormouse surveys. A full time independent ecological consultant in SW Wales since 2010, with Landsker Ecology and Biodiversity Solutions.
K. Brown FdSc (conservation management)	• Project Ecologist for Landsker Ecology. • Level 4 Field Identification Skills Certificate in botanical surveying from the BSBI in 2018. • 10 years' experience carrying out botanical surveys including phase 1 and National Vegetation Classification surveys on a range of lowland habitats including Annex II habitats and designated site monitoring surveys. • Holds NRW survey licences for dormice and great crested newts • 10 years ecological consultancy experience.

4 Survey Results

4.1 Desk study	
Relevant designated Sites and significant landscape features*:	N/A
Protected Species Records:	**Bats:** All common crevice roosting species breeding and roosting in nearby woodlands and buildings; Soprano pipistrelle maternity roost within 1 km to SW. Within barbastelle commuting and feeding distance (6km) of known barbastelle roosts (Pengelli Forest). **Other Species:** Two dormouse records within 2km of the survey site.

Site photographs

Fig. 4. W barn section, S elevation showing main target survey area to W.

Fig.5.1 Gate access into the target survey area showing start of S boundary hedge.

Fig.5.1.1 S boundary hedge, S side, view to W; 'Field 3' to S.

Fig.5.1.2 S boundary hedge, N side.

Fig.6. E boundary, view from gate to N boundary.

Fig.7.1 N boundary fence line, S side, view to E.

Fig.7.2 N boundary fence line, N side: northern end of the development area.

Fig.8. SW corner.

Fig.8. W boundary hedgebank, view to N.

Fig.8.1 NW end blackthorn and bank structure.

Fig.8.2 W side of the boundary, view to S.

Fig.9. S boundary hedge, View to S from N boundary.

Fig.10.1 W edge of adjacent silage clamps, view to N.

Fig.10.2 N edge of silage clamps.

Fig.11. TN03 - Magpie nest, NW corner hedge.

Fig.12. TN04 - mammal path, W(N) boundary fence

Fig.13.1 E end of southern target survey area (Field 3), view to N.

Fig.13.2 Southern target survey area, Field 4, view to E.

Fig.13.3 SW corner of Field 3; view to N.

Fig.14.1 A487, W hedge, W side showing start of site access track - view to N from southern field.

Fig.14.2 A487, W hedge, W side showing start of site access track - view to S from northern field..

Fig.15. N end of A487 hedge target survey area.

Fig.15.1 TN06 - Log pile.

Fig.16. TN07 - Badger latrine.

Fig.17. TN08 - Mammal path.

Fig. 18. TN09 - Brash pile.

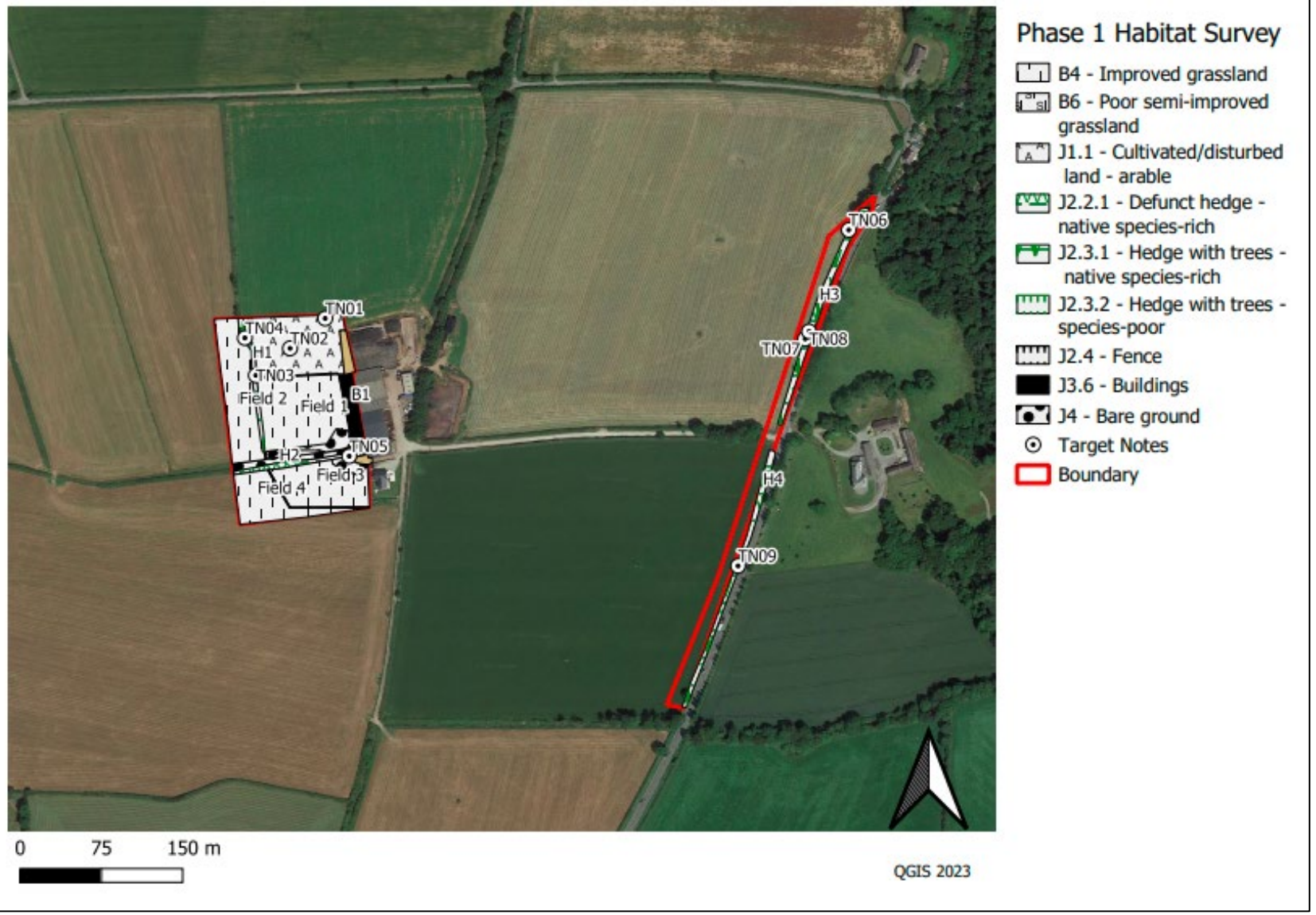
5 Site assessment

Habitats / protected species	Description / notes	Designation Classification
Boundary habitat	• The hedgerows (H3 to the north, H4 to the south) present alongside the A487 trunk road, to the northern and southern aspects of the site entrance in the east of the site, comprised species-rich hedgerows with trees and comprised the thickest, most intact hedgerows within the site boundary which had signs of annual management. • The other hedgerows to the southern (H2) and western (H1) boundaries of the site were largely defunct with no signs of recent management. The southern hedgerow was species rich. The western hedgerow was species poor with little woody vegetation. • All other boundaries of the site comprised electric and post and wire fence lines with negligible importance to nature conservation.	Local Biodiversity Action Plan: Grouped Habitat Action Plan: Lowland Farmland - field boundaries Section 7 listed habitat in Environment (Wales) Act 2016
Grassland	• The bulk of grassland on site was improved and dominated by perennial ryegrass with a very limited number of other species present. It is therefore considered to be of low ecological value. The three fields in the north-east corner are semi-improved neutral grassland and mostly of low ecological value.	N/A
Arable	• The arable field present to the north of the application boundary contained a crop of beets at the time of survey. The field boundary to the north of the application boundary comprised a field margin dominated by bare ground with sparse vegetation.	Lowland Farmland – arable field boundaries

		Section 7 listed habitat in Environment (Wales) Act 2016
Badgers	• No setts were recorded within 30m of the site boundary. • A badger latrine (TN07) was recorded from the hedgerow to the north along the A487 trunk road. • Mammal commuting paths were recorded from within the H1 (TN04) and a fox hole was recorded from the western boundary of the hedgerow. A mammal path was recorded from H3 (TN08) which was likely to be used by badgers.	Badgers act 1992
Bats	• Existing barn (B1) within eastern aspect. The building comprised a single storey agricultural barn with a pitched roof running north-south with single skin asbestos/cement fibre type roof covering with air vents along ridge line. The walls comprised concrete blockwork to 1m with single skin wooden slats to 2.5m. Sheet fascia's on northern and southern gable ends were tight. There was open flight access on southern gable end through an open sided door. The barn was used to house cattle at time of survey. Low potential for roosting bats. • Hedges, particularly those that are species rich and with trees, are valuable foraging habitat for all species.	Conservation of Habitats and Species Regulations 2017
Dormouse	• There are records of dormice in the vicinity of the site (≤2km east). • The species-rich hedgerows (H2, H3 and H4) have potential for foraging and breeding use by dormice at low density and provide good connectivity between wooded stream valleys to the north and Ffos Colic adjacent to the eastern boundary which provide high-quality habitat within the wider landscape.	Conservation of Habitats and Species Regulations 2017
Breeding birds	• Up to seven skylarks were seen to be using the arable field habitat to the north of the site during the survey (TN01 and TN02) therefore this habitat has high potential to be used by ground nesting birds. N.B. the proximity of the development site is such that breeding within the development boundary is very unlikely. • A flock of house sparrows were seen within the eastern aspect of H2 (TN05) at the time of survey. • Two flocks of starlings were seen flying over the site during the survey, indicating breeding in the local area. • There was a magpie nest within the northern section of H1 (TN03) • All of the hedgerows present within the site boundary have potential to support nesting birds.	All species of nesting birds and their nest sites; Wildlife & Countryside Act (1981) Section 7 listed species in Environment (Wales) Act 2016

Other species	• The hedgebanks offer suitable habitat for reptiles e.g. slow worm and lizards as well as amphibians. • There were log/brash piles along H3 (TN06) and H4 (TN09) from previous maintenance which potentially offer refugia and hibernacula for hedgehogs, reptiles and amphibians. • The arable field to the north provides suitable habitat for brown hares. • No non-native invasive species were identified on site.	Wildlife & Countryside Act (1981) Section 7 listed species in Environment (Wales) Act 2016 LBAP & GSAP: Targets = maintain & expand range

Figure 19. Phase 1 Habitat Map



6 Impact assessment

In the absence of mitigation - the site proposals are given in Appendix 2

Habitats/ species	Impact	Level	+ve/-ve
Hedge-banks	H2 will be unaffected by the construction of the new cubicles, while sections from H3 and H4 adjacent to the existing entrance may be removed if wider entrance visibility splays are required.	Low to Moderate at the site and local levels, depending on requirements	-ve
Improved grassland	The construction of an agricultural barn will have negligible impact on the biodiversity value of improved grassland.	Negligible	Neutral
Arable	Approximately 10m from the southern boundary has been included within the scheme which will be lost due to manoeuvring and land works which includes the area of arable field margin.	Low	-ve
Badgers	The construction of the agricultural barn will have a negligible impact upon badgers.	Negligible	Neutral
Bats	No loss of potential roosting sites, negligible disturbance during construction phase; loss of foraging and habitat fragmentation.	Low at site level, negligible at local level	-ve
Dormice	Possible loss of habitat from H3 and H4 if expanded visibility splays are required.	Potentially Moderate to low at site and local levels	-ve
Breeding birds	Loss of nesting habitat from H3 and H4 to allow entrance visibility splays, if required.	Low to Moderate at the site level, based on the low capacity of the affected lengths of hedge for abundance and diversity; dependent on the length of removal required.	-ve
Other species	Clearance of log/brash piles could lead to the loss of hedgehog, reptile and amphibian hibernacula and harm to resident animals.	Potentially low to moderate at site level	-ve

7 Recommendations

See Appendix 2 for Site plan illustrations of the biodiversity mitigation and enhancement.

	Method	**Rationale**
Enhancement of grassland species diversity	• Seeding for locally native, flowering wild meadow species of the remaining field area W of the new sheds, or a 2m headland strip along either side of the farm access road. • Not cut or grazed between March and August. Contact Matt Sutton at http://wyndrushwild.co.uk/for experienced, professional information, advice and services on local wildflower planting and enhancement.	• Improve the biodiversity of the site for resident invertebrate species. • Improve foraging opportunity, connectivity and quality for resident invertebrates and predators – dormice, birds, bat and other small mammals.
Translocation, Enhancement & change of management regime of the hedgebanks	• Translocation and/or enhancement with new planting of the sections of H3 and H4, if affected by the development. • Restrict hedgebank cutting to biennial or triennial cutting, alternating sides to retain constant presence of two or three year-old wood, for all affected lengths of hedgebank: Road visibility splays, access track and development site boundary. • Enhance species diversity and hedge development as above along the site access track. • Plant/allow the maturation of more standard trees within the hedge banks: Oak (*Quercus petraea*) Hawthorn (*Cretaegus monogyna*) Elder (*Sambucus nigra*) Blackthorn (*Prunus spinosa*) Hazel (*Corylus avellana*) Common sallow (*Salix cinereal/caprea*) Rowan (*Sorbus acuparia*) Field maple (Acer campestre) Sycamore (*Acer pseudoplantanus*) Crab apple (*Malus sylvestris*) Elm (*Ulmus glabra*) - disease resistant strains	• Allow the permanence presence of flowering and fruiting of hedge shrub and tree species. • To provide enhanced, permanent, annual provision of foraging for invertebrates, birds and small mammals and their predators; bats have been shown to benefit significantly from this type of hedge structure/composition. • Mitigate for the loss of ash trees from the local landscape, from ash die-back disease. • Increased shelter for locally foraging pollinators. • Improve connectivity between the development site and the adjacent habitats to the east.
Dormouse	In relation to potential removal of sections of H3 and H4, the following will need to take place ***in the absence of dormouse survey work.*** Prior to work on the sections of hedgerow to be altered: An appropriately licensed dormouse ecologist will attend site to inspect the hedgerow and look for dormouse nests.	• To mitigate for the risk of disturbance and harm of a protected species. • To maintain the Favourable Conservation Status of the species.

	• The cutting back of the hedgerow down to 20 cm will be undertaken using hand tools. • If a dormouse nest is found work on the hedgerow will stop and not continue until a licence is obtained from Natural Resources Wales (NRW). • If no evidence of the presence of dormice is found the hedgerow can be cleared by contractors without direct ecological supervision. • Removal or translocation of the hedge sections must take place in the late autumn (October/November (October/November) when animals are still active but have finished breeding and are not yet hibernating.	
Bats	• Any external lighting should be installed with time limited motion sensitive PIR triggers and located to avoid light spillage onto adjacent hedges. • Installation of bat boxes on new and existing buildings (away from light sources).	• To maintain favourable foraging conditions for all species around the site. • To provide additional bat roosting sites.
Birds	• It is recommended that all hedgerows and trees and areas of arable field on site are retained. • Should any tree/hedgerow works be necessary this should, wherever possible, be undertaken from September to February outside the bird breeding season (March to August inclusive – but see dormouse recommendations above). • If clearance works must be undertaken within the bird breeding season a check for nesting birds must be undertaken by a suitably qualified ecologist up to three days prior to clearance works. If any active nests are found these will be protected, along with an appropriate buffer zone, until the nesting attempt is complete. • Bird boxes could be erected in trees/on buildings for target species (house sparrow, starling).	• To protect breeding birds. • To provide additional nesting habitat for house sparrow and starling.
Other Species	• It is recommended that the existing log/brash piles are left *in situ* as possible. If they need to be removed it is recommended that this removal is timed outside of the winter months (so as not to disturb hibernating animals) and that the dismantling of the piles is undertaken by hand and carefully checking for the presence of animals. If any are found deconstruction can continue with care and the animals left to move off of their own accord or moved into adjacent areas of hedge bank, if necessary, to prevent harm.	• To prevent damage to reptile, amphibians and hedgehogs. • To provide more suitable habitat for these species.

	• It is recommended that further log, brash and stone/masonry piles are created along field margins and in corners, located in sunny aspects.	
SuDs	• If a SuDs needs to be incorporated into the scheme, this could be either a retention pond or a series of swales which may be easier to implement as they require a smaller footprint than a retention pond. • These features could be incorporated along the southern, northern and western site boundaries of the site if feasible. • They should be planted with native pond margin/native bog and marshy grassland species to increase the biodiversity of the features; species lists will be provided if required. • Any open grass areas around such features sown and maintained with native meadow species; not cut or grazed between March and August.	• Since 2019 the Welsh Government has made it a requirement for all new developments to include a Sustainable Urban Drainage system (SuDs) within the scheme. • Improve the biodiversity of the site for resident invertebrate species. • Improve foraging opportunity and quality for resident invertebrate predators –birds, bat, reptiles, amphibians, hedgehogs and small mammals.

Appendix 1 – Pantygrwndy Farm Species Lists per Habitat

The DAFOR scale is used to show the relative abundance of each species within each particular habitat such that: D = Dominant, A =Abundant, F = Frequent, O = Occasional, R= Rare. The qualifier "L" is sometimes used to mean locally so that e.g. LA means locally abundant. Abundance is relative to within each habitat area.

Improved Grassland (Phase 1 Habitat Code B4)

There are four fields within the survey area. These have all been subject to cattle and grazing in the past as well as being cut for silage. The agricultural species perennial ryegrass is dominant throughout all fields indicating the improved nature of these fields, and they have been mapped as such. Annual meadow grass is also abundant and dominant in places. The fields were in poor condition at the time of survey with large areas of bare ground and a poor diversity of herbs. The following species list is for all fields combined.

Perennial ryegrass (*Lolium perenne*) D
Annual meadow-grass (*Poa annua*) A
Cock's-foot (*Dactylis glomerata*) O
Creeping bent (*Agrostis stolonifera*) O
Chickweed (*Stellaria media*) F
White clover (*Trifolium repens*) F
Red clover (*Trifolium pratense*) O
Creeping buttercup (*Ranunculus repens*) O
Dandelion (*Taraxacum officinale* agg) O
Red deadnettle (*Lamium purpureum*) O
Common mouse-ear (*Cerastium fontanum*) O
Broad-leaved dock (*Rumex obtusifolius*) O
Cut-leaved crane's-bill (*Geranium dissectum*) R
Ragwort (*Senecio jacobaea*) R
Bracken (*Ptredium aquilinium*) R
Nettle (*Urtica dioica*) R
Shepherd's purse (*Capsella bursa-pastoris*) R
Bare ground F

Poor semi-improved Grassland (Phase 1 Habitat Code B6)

There was a very small area of poor semi improved grassland between B1 and Field 1 which was unmanaged at the time of survey.
Yorkshire-fog (*Holcus lanatus*) F
Perennial ryegrass F
Cock's-foot F
Chickweed F
Nettle O
Dandelion O
Ragwort O
Red clover O

Annual meadowgrass O
Ribwort plantain (*Plantago lanceolata*) O
Spear thistle (*Cirsium vulgare*) O
Curled dock O
Shepherd's purse O
Forget me not (*Myosotis sp*) R
Pineapple weed (Matricaria discoidea) R

Arable
There was an arable field within the north of the application boundary which contained a crop of beet *Beta vulgaris* at the time of survey. The field was relatively sparsely vegetated with typical species of bare ground.

Beet A
Creeping bent F
Chickweed F
Annual meadow grass O
Pineapple weed O
Groundsel (*Senecio vulgare*) O
Cock's-foot O
Red deadnettle O
Sticky mouse-ear (*Cerastium glomeratum*) O
Lettuce (*Lactuca sp*) O
Dandelion O
Fumitory *(Fumaria sp)* O
Perennial ryegrass O
Common mouse-ear O

Hedgerows
Hedgerows mark the western (H1) and southern (H2) boundary of the site. All other boundaries comprised post and wire and electric fencing to the northern and eastern boundaries. Additionally, there were two hedgerows (H3 and H4) along the A487 trunk road along the eastern boundary of the site which were the most intact of all the hedgerows, having evidently been cut regularly and maintained as a hedgerow. The other hedgerows on site were largely defunct with large gaps which appear to have been left unmaintained for a good while and were much more scrappy in nature. H1 had very little woody vegetation with a small patch of blackthorn along the northern section. H2 had sparse gorse in the western section but was much denser to the eastern end, a post and rail fence ran on the northern and southern boundaries of the hedge for its length. Even though they are very much depleted these hedgebanks still have some typical hedgerow/woodland herbs growing on them e.g. navelwort, wood sage and red campion. All of the hedgerows had a stone wall base.
The following species lists divide the hedgerows into two groups; the boundary hedgerows and the roadside hedgerow.

Boundary Hedgerows (hedgerow with trees- species-poor (H1) and defunct native species-rich (H2) (Phase 1 Habitat Code: J2.3.2 and J2.2.1)

Woody Species
Ash (*Fraxinus excelsior*)LF
Gorse (*Ulex europaeus*) LO
Blackthorn (*Prunus spinosa*) LF

Ground Flora
Bramble (*Rubus fruticosus*) LA
Ivy (*Hedera helix*) F-LA
Navelwort (*Umbilicus rupestris*)
Wood sage (*Teucrium scorodonia*)
Foxglove (*Digitalis purpurea*)
Dog rose (*Rosa canina*)
Bracken (*Pteridium aquilinum*)
Male fern (*Dryopteris filix-mas*)
Honeysuckle (*Lonicera periclymenum*)
Dog Violet (*Viola riviniana*)
Nipplewort (*Lapsana communis*)
Wood avens (*Geum urbanum*)
Hart's-tongue fern (*Phyllitis scolopendrium*)
Ground ivy (*Glechoma hederacea*)
Red campion (*Silene dioica*)
Common vetch (*Vicia sativa*)
Lords and ladies (*Arum maculatum*)
Common sorrel (*Rumex acetosa*)
Lesser celandine (*Ranunculus ficaria*)
Greater Stitchwort (*Stellaria holostea*)
Herb Robert (*Geranium robertianum*)
Cleavers (*Galium aparine*)
Black Bryony (*Tamus communis*)
Dog's Mercury (*Mercurialis perennis*)
Common Vetch (*Vicia sativa*)
False Brome (*Brachypodium sylvaticum*)
Wood Sage (*Teucrium scorodonia*)
Tall Oat-grass (*Arrhenatherum elatius*)
Bird's-foot Trefoil (*Lotus corniculatus*)
Common Sorrel (*Rumex acetosa*)
Germander Speedwell (*Veronica chamaedrys*)
Wood Speedwell (*Veronica montana*)

Intersecting Hedgerows (native species-rich hedgerows with trees (Phase 1 Habitat Code: J2.3.1)

Woody Species

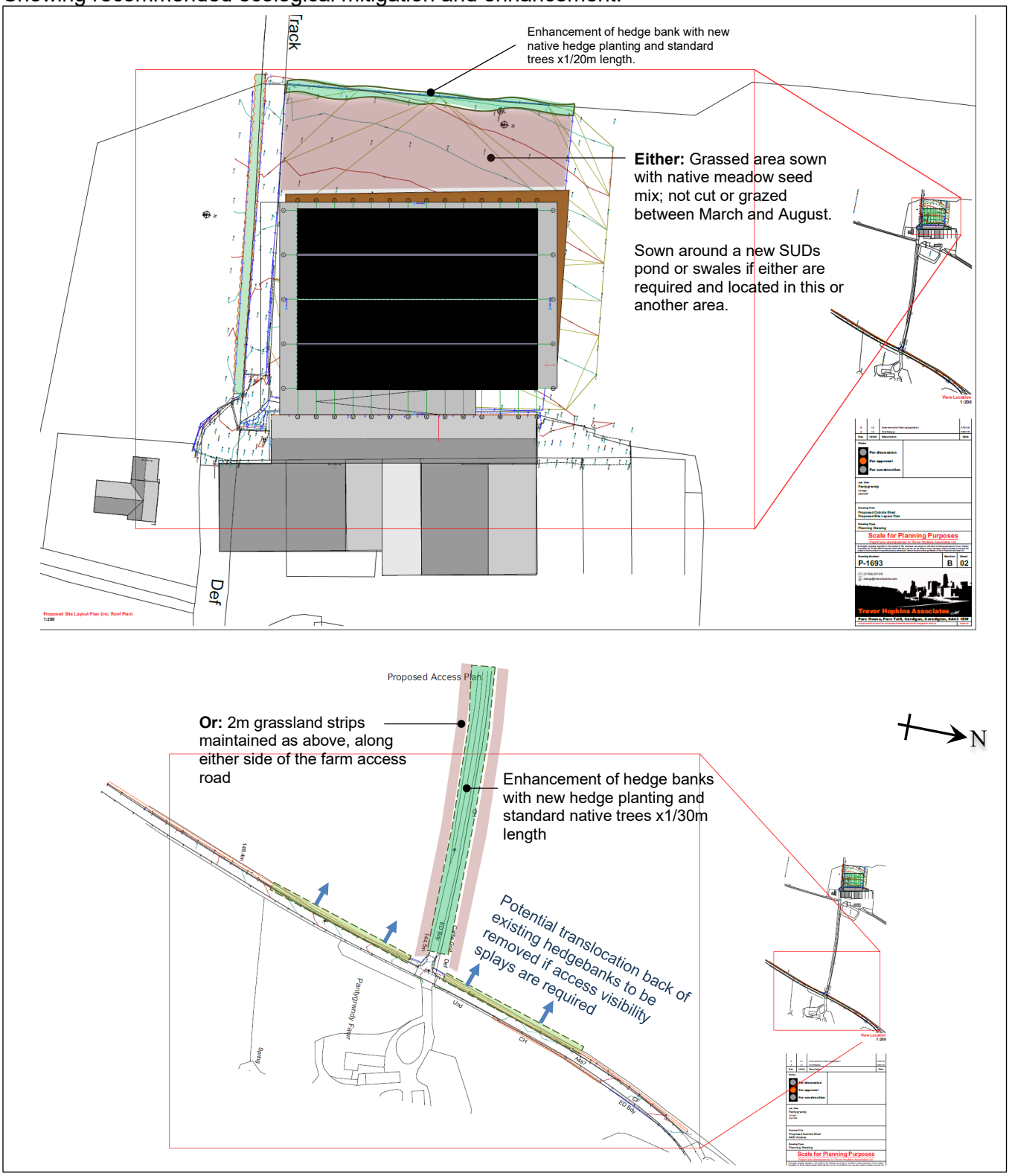
Sessile oak (*Quercus petraea*) F
Hawthorn (*Crataegus monogyna*) O
Hazel (*Corylus avellana*) O
Ash (*Fraxinus excelsior*). F
Sycamore (*Acer pseudoplatanus*) R
Pedunculate oak (*Quercus robur*) R
Grey willow (*Salix cinerea* subsp. oleifolia) R
Gorse (*Ulex europaeus*) R
Blackthorn (*Prunus spinosa*) R
Holly (*Ilex aquifolium*) R

Ground Flora

Yorkshire fog (*Holcus lanatus*)
Polypody (*Polypodium vulgare*)
Common bent (*Agrostis capillaris*)
Wood dock (*Rumex sanguineus*)
Perennial ryegrass (*Lolium perenne*)
Cleavers (*Galium aparine*)
False brome (*Brachypodium sylvaticum*)
Lesser celandine (*Ranunculus ficaria*)
Sweet vernal-grass (*Anthoxanthum odoratum*)
Common mouse-ear (*Cerastium fontanum*)
Cock's-foot (*Dactylis glomerata*)
Barren strawberry (*Potentilla sterilis*)
Dandilion (*Taraxacum officinale*)
Cow parsley (*Anthriscus sylvestris*)
Ground ivy (*Glechoma hederacea*)
Hogweed (*Heracleum sphondylium*)
Navelwort (*Umbilicus rupestris*)
Hairy bittercress (*Cardamine hirsuta*)
Dog rose (*Rosa canina*)
Wood avens (*Geum urbanum*)
Spear thistle (*Cirsium vulgare*)
Soft shield-fern (*Polystichum setiferum*)
Herb Robert (*Geranium robertianum*)
Common nettle (*Urtica dioica*)
Common vetch (*Vicia sativa*)
Primrose (*Primula vulgaris*)
Bramble (*Rubus fruticosus*)
Red campion (*Silene dioica*)
Creeping buttercup (*Ranunculus repens*)
Upright hedge-parsley (*Torilis japonica*)
Ivy (*Hedera helix*)
Creeping thistle (*Cirsium arvense*)
Daisy (*Bellis perennis*)
False brome (*Brachypodium sylvaticum*)
Foxglove (*Digitalis purpurea*)
Annual meadow-grass (*Poa annua*)
Wood sage (*Teucrium scorodonia*)
Dog violet (*Viola riviniana*)

Appendix 2 – Proposed plan

Showing recommended ecological mitigation and enhancement.



Appendix 3 - Reference/information sources

https://www.pembrokeshire.gov.uk/biodiversity/pembrokeshire-nature-partnership-plans-and-guidance Local Biodiversity Action Plan

https://www.legislation.gov.uk/ukpga/1981/69/contents (Wildlife & Countryside Act 1981)

http://jncc.defra.gov.uk/page-4341 (schedules)