

Abermule Business Park
Abermule, Powys, SY15 6ND

*Proposed change of use and construction of
recycling facility*

Preliminary Ecological Appraisal

For: Powys CC

April 2017

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Gerald Longley Ecological Consultants

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1.0 INTRODUCTION

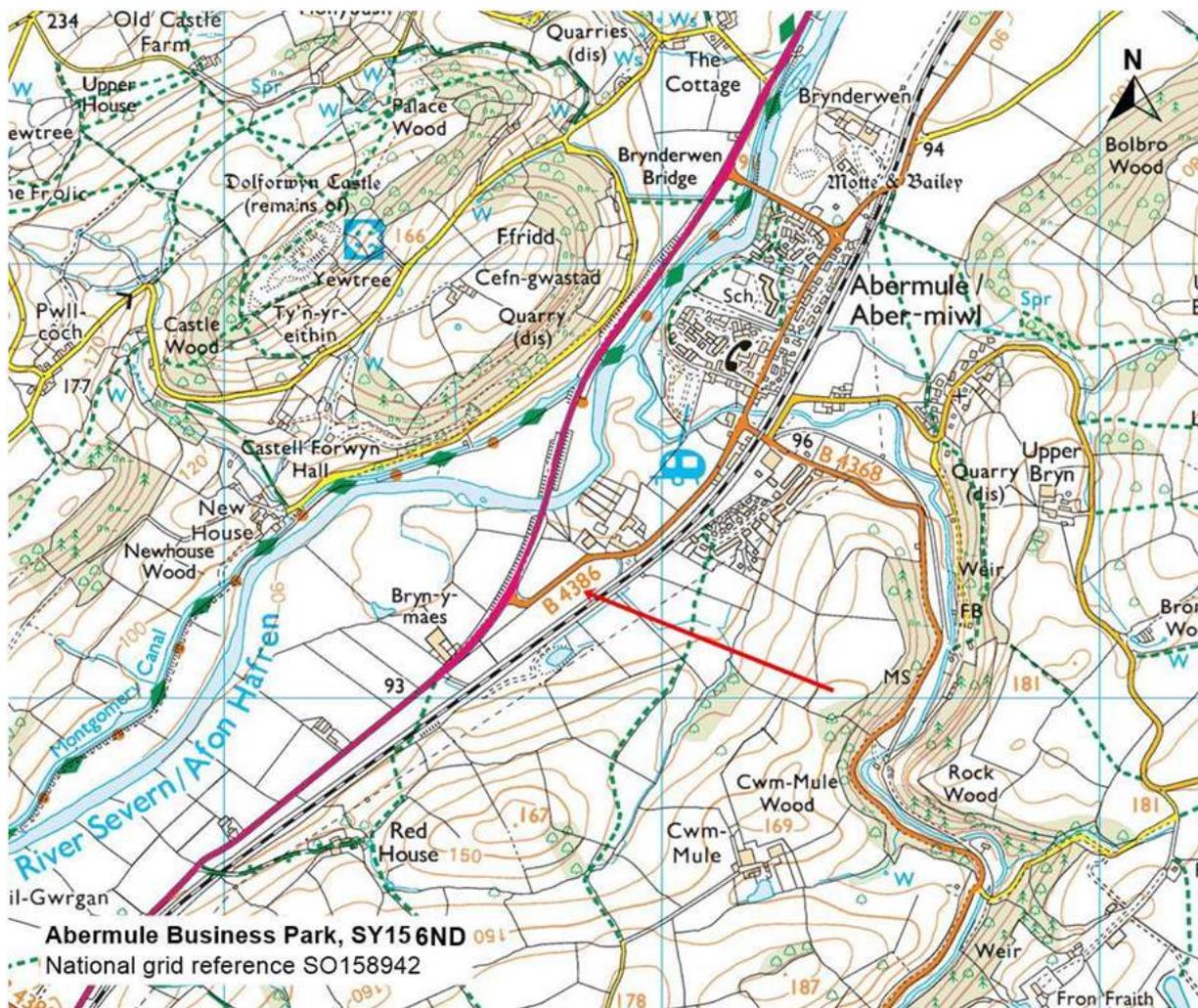
1.1 Background - Gerald Longley

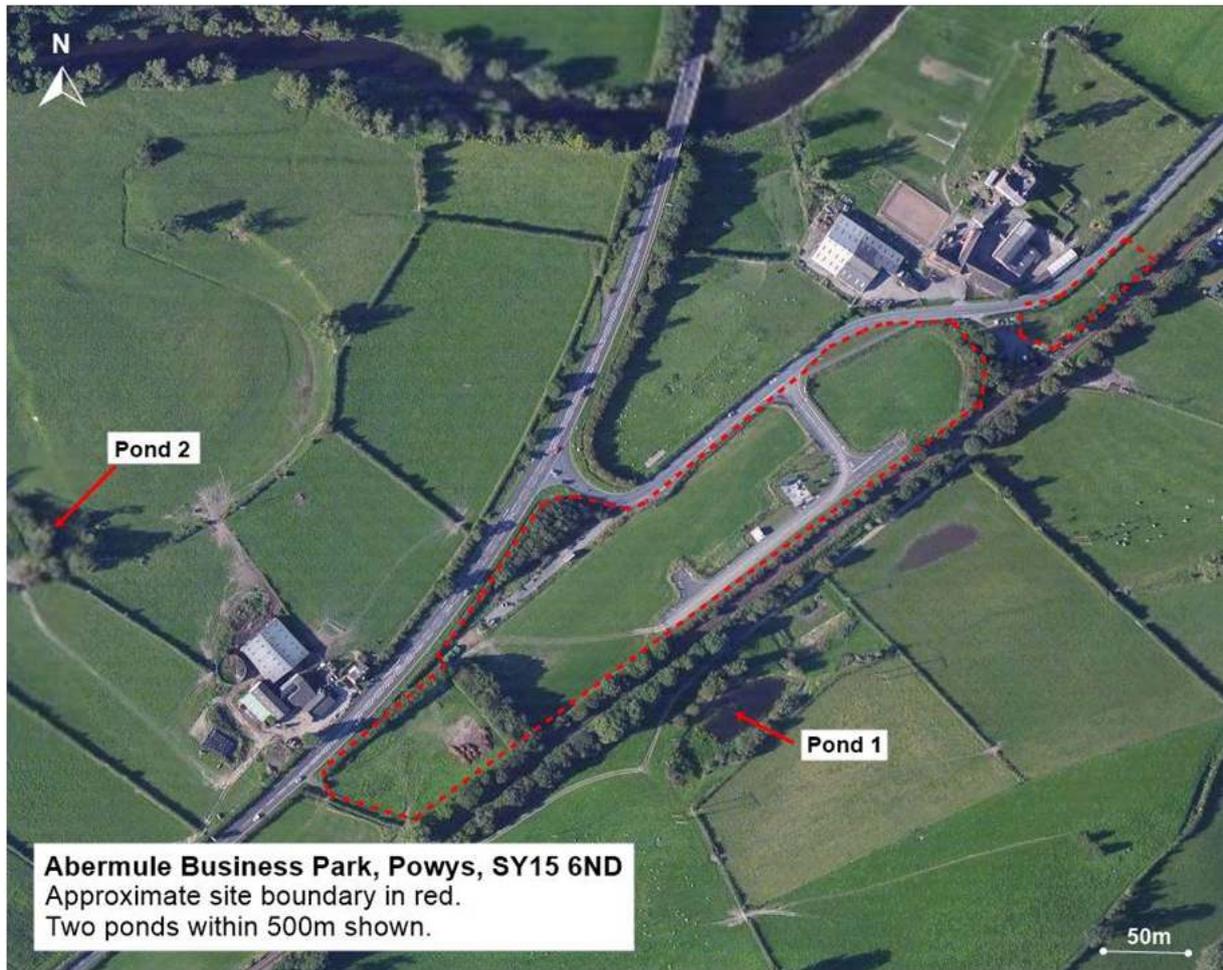
Gerald Longley Ecological Consultants (GLEC Ltd) has been commissioned to undertake a Preliminary Ecological Appraisal for a proposed development at Abermule Business Park, Abermule, Powys, SY15 6ND (national grid reference SO158942). Gerald Longley has two decades of experience of wildlife surveying and, prior to working as an independent ecological consultant, held posts as Conservation Officer with Montgomeryshire Wildlife Trust and Head of Shrewsbury Countryside Unit.

1.2 Background – This Survey

The applicant is seeking planning permission to develop the site as a recycling facility. The request for this work comes from their and the planning team's need to ensure that any valuable habitats at the site and the needs of any wildlife using the site and the nearby relevant locality are fully taken into account in the proposed development. Possibly relevant wildlife such as amphibians, birds, bats, and badgers are protected species or species of principal importance for conservation (previously biodiversity action plan species). A full citation of the law with regard to relevant protected or action plan wildlife is given in Appendix 1.

1.3 Site location





1.4 Aims of this Preliminary Ecological Appraisal

- To identify existing sites designated for their nature conservation interest in the survey area, or relevantly close to it, and assess any potential impact.
- To identify any existing records of important species recorded in or relevantly close to the survey area and assess any potential impact.
- To identify and map habitat types and species in the survey area.
- To evaluate the nature conservation importance of recorded species and habitats.
- To identify possible ecological constraints on the proposed development and management of the survey area.
- To recommend any further survey work, required mitigation measures, compensation or enhancement for wildlife as part of the planning process.

1.5 Report Summary

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Site surveys were undertaken by Mary Thornton, Gerald Longley and Ed Davies on 12 April 2017. The approximately 3.75ha Business Park site consisted of sheep grazed fields along the south side of the broad River Severn valley, just south of the large village of Abermule. Works to construct vehicular access, an estate road, sewers and services had been carried out approximately 7-10 years previously.

A 2km buffer desk study for sites and wildlife records was carried out. The main relevant findings were:

- Nearest SSSI Montgomery Canal, approx. 400m north. Also a SAC.
- Nearest ponds approx. 50m southeast and approx. 200m northwest. Nearest great crested newt record approx. 2.1km southwest (2007).
- Grass snake record for km square including northeast tip of site (2014).
- No bat records found in buffer.
- Records for otter just off northeast tip of site (2014) and approx. 300m northwest (2016). No water vole records found in buffer.
- Dormouse records found for several locations in the 2km buffer. Nearest approx. 1.5km southeast (1997).

No records of protected species, sites or habitats were found for the proposed development site itself.

Habitats on the site were improved and amenity grassland, broad-leaved plantation woodland, hedgerows, scattered trees and a stream. The native species plantations on the site were of ecological value and this would increase over time as the trees matured. Although hedgerows on site did not meet the ecological criteria to be classified as 'important' hedges under the Hedgerows Regulations 1997, they were, in the main, well-established native species hedgerows with few gaps. In association with an old hedgerow and plantation trees, the stream flowing along the northeast boundary of the main part of the site was potentially of high ecological value although at the time of the survey the banks were heavily grazed and much of the stream was very shaded.

A juvenile great crested newt was found on the site and developing great crested newt eggs in pond 1 during the survey. There were many potential refuges on the site for great crested newts and some foraging habitat along hedge bottoms around the edge of the site. With grazing removed, the grassland would also be attractive as foraging habitat for newts. The site was well connected by hedgerows, grassland and woodland to the nearby pond 1.

The northwest edge of the site and the southwest edge of the plantation along the stream contained suitable refuges and basking habitat for reptiles, most likely slow worm and grass snake.

Hedgerows around the site in conjunction with the adjacent wooded railway embankment and pond provided good foraging habitat for bats well linked to good foraging habitat in the surrounding area. It was considered likely that bats foraged along the hedgerows and around the site although no suitable roosting habitat was recorded.

(continued)

Report summary (*continued*)

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No signs of otter or water vole were found during the survey. The site did not have suitable habitat for water vole and they were not considered to be using it. The desk study found records for otter less than 1km from the site and it was considered possible that they would occasionally pass through the site along the stream.

The presence of dormice on the site was not confirmed during the survey but it did contain suitable habitat for them in the hedgerows. It was considered that their presence on the site could not be ruled out.

See in particular **section 4.3 and Table 2** in the report where the effects on Ecological Receptors are considered.

Hedgerows and a stream corridor on the site were of high ecological value. There were potential ecological constraints with regard to great crested newts, reptiles and dormice. Further survey work is required to establish what the constraints are and inform appropriate mitigation.

It is recommended that:

1. Since a great crested newt was found on the site and developing great crested newt eggs in a pond approximately 50m from the site and a second pond, approximately 200m from the site was assessed as being of 'good' suitability for great crested newts, a great crested newt survey is carried out on both ponds by a suitably licensed and experienced ecologist to establish a population class size estimate for pond 1 and if great crested newts are present in pond 2.
2. Since there is suitable habitat for reptiles on the site, a reptile survey is carried out by a suitably experienced ecologist to establish if reptiles are present.
3. Since there is suitable habitat for dormice on the site, if any trees or parts of hedgerow are to be removed, a dormouse survey is carried out by a suitably licensed and experienced ecologist to establish if dormice are present.
4. Existing hedgerows and plantation woodland on the site are retained and the plantations managed to increase their structural diversity and promote the establishment of ground vegetation.
5. An undeveloped buffer zone at least 10m wide, with access for management, is retained along the length of the stream on the northeast boundary of the main part of the site and water quality in the stream is maintained and protected by ensuring that runoff from the development site, both during and after construction, does not enter the stream.
6. All works on site take into account the "Ecological principles to follow in this development" set out in appendix 7.3.

2.0 METHODOLOGY

2.1 Desk Study

The 1:25000 Ordnance Survey map covering the site, and aerial photos accessed from the internet, were scrutinised to initially assess the wildlife value of the proposed development site and surrounding habitat at a crude level. This looked for any semi-natural habitat that may be of value to wildlife, for example ponds, hedges, parkland, wetland, and woodland with interconnecting habitat links. Searches were made on MAGIC and the NBN Atlas for statutory designated sites coincident with or adjacent to the area of search and existing records of species within a 2km radius of the site, including UK Priority and nationally protected species and habitats, and sites of national and local nature conservation importance.

2.2 Site Surveys

The site surveys were undertaken by Gerald Longley (NRW great crested newt survey licence 71877a:OTH:SA:2017), Mary Thornton (NRW great crested newt survey licence 69483:OTH:SA:2016) and Ed Davies on 12 April 2017. The HSI assessment of pond 2 (Bryn-y-maes) was undertaken on 19 April 2017.

The following site surveys were undertaken:

- An 'extended' Phase 1 habitat survey, as per JNCC (2010) of the site.
- An ecological tree and hedgerow assessment. Any large and mature trees were assessed for the presence of large bird nests and their suitability for bat roosting. The assessment of hedgerows used the ecological evaluation contained in the Hedgerows Regulations 1997.
- An assessment of the site as potential habitat for reptiles and amphibians and a search for reptiles and amphibians under bricks, logs etc.
- A habitat suitability evaluation, as per ARG UK Advice Note 5 (2010), of relevant ponds for great crested newts.
- Incidental records of amphibians, reptiles, mammals, birds and other species were made during the survey.

3.0 RESULTS

3.1. Desk Study

A 2km buffer desk study for sites and wildlife records revealed that there were no coincident statutory wildlife sites or SSSIs. The nearest SSSIs were the Montgomery Canal SSSI, approximately 400m north of the site at the nearest point, and Hollybush Pastures SSSI, approximately 1.2km north of the site. The stretch of the Montgomery Canal closest to the site is also designated as a SAC for its population of floating water plantain (*Luronium natans*).

The River Severn, flowing southwest to northeast along a broad valley, was approximately 150m north of the site at the nearest point. The Montgomery Canal also followed the line of the valley.

Two ponds within 500m of the site were found on aerial photographs and maps, one approximately 50m southeast of the site, across a railway line, and the second approximately 200m northwest, across the A483. The nearest great crested newt records found were approximately 2.1km southwest of the site (2007), however, great crested newts are known to have been recorded at the pond nearest the site as part of surveys for earlier access and services works on the site.

Records for grass snake were found for the 1km grid square SO1694 which included the northeast tip of the site (2014). No other reptile records were found in the 2km buffer.

No bat records were found in the 2km buffer. The nearest bat record found was an old record (1984) for whiskered/Brandt's bat approximately 3km southwest of the site.

The nearest records for otter were just off the northeast tip of the site on the opposite side of the railway line (2014) and approximately 300m northwest (2016) towards the River Severn. No records for water vole were found in the buffer.

Records for dormice were found for several locations in the 2km buffer. The nearest to the site were approximately 1.5km southeast (1997).

No badger records were found in the 2km buffer.

No specific records of protected species, sites or habitats were found for the proposed development site itself.

It should be noted that the lack of records for a particular species in a particular location does not confirm that the species is absent.

3.2 Site Surveys

12 April was a dry, bright and breezy day. Access was given to all areas required for the survey, except for pond 2 at Bryn-y-maes farm. See appendix 7.2 for a Phase 1 survey map.

The approximately 3.75ha Business Park site consisted of sheep grazed fields along the south side of the broad River Severn valley, just south of the large village of Abermule. The area surveyed was two parcels of land; the main part of the site (approximately 3.6ha) and part of a small paddock (approximately 0.15ha) separated from the main part of the site by a track, underpass and level crossing; access for Maesderwen farm to land beyond the railway line. Works to construct vehicular access, an estate road, sewers and services had been

carried out approximately 7-10 years previously (Powys Council planning consent M/2002/1133). The site was bordered to the southeast by a single track railway line on an embankment with a pond and sheep grazed fields beyond. The northwest the site was bordered by the A483 and B4386 roads with grazed fields and the River Severn beyond. To the northeast was the edge of the built up residential area of Abermule and to the southwest grazed fields. Maesderwen farmyard was on the north corner of the site, just across the B4386, and the buildings of Bryn-y-maes farm were across the A483 to the east of the site. The landscape surrounding the site was one of pasture fields with some hedgerows, streams, small patches of trees and larger areas of woodland.

Habitats on the site

Improved grassland (phase 1 habitat code B4)

The main habitat on the site was improved grassland with occasional patches of stinging nettle and creeping thistle. Photographs accessed via google showed that approximately 50% of the area had been re-sown following the earlier access and service works. At the time of the survey, all the grassland was heavily grazed by sheep.

Amenity grassland (phase 1 habitat code J1.2)

There were small areas of amenity grassland along parts of the estate road and around the electricity sub-station and other services.

Broad-leaved plantation woodland (phase 1 habitat code A1.1.2)

Three areas of the site had been planted with a mix of broad-leaved species including wild cherry, ash, hazel, silver birch, field maple, hawthorn and elder. The plantations were judged to be approximately 15-20 years old so would have been planted prior to the access and service works described above.

Intact, native species hedgerow (phase 1 habitat code J2.1.2)

The southeast boundary of the site was approximately 575m of outgrown native species hedge along the base of the wooded railway embankment. The hedge extended beyond the site to both the northeast and southwest. It was mainly of hawthorn and hazel with occasional trees including an ash and an elm.

The southern section of the northwest boundary hedge, approximately 100m, was also uncut and included hazel, hawthorn and blackthorn along what would once have been the south side of the old road. Immediately beyond this hedge and just outside the site was the old road, grown over with grass, and a second hedge alongside the existing road.

Of the remainder of the northwest boundary hedge, approximately 265m was planting of hawthorn associated with the creation of the business park access road, and a further 311m was mature established roadside hedge, again dominated by hawthorn.

At the north end of the main part of the site was an outgrown hawthorn boundary hedge with mature oak and ash trees along a small stream. The base of the hedge was heavily grazed by sheep.

As part of the assessment of the hedgerows, a count of the number of woody species in representative 30m sections was undertaken. A count of 7 woody species per 30m classifies hedges as "important" under the Hedgerows Regulations 1997. Other relevant features are also taken into account, including being beside a footpath, containing at least one tree per 50m, having a bank, ditch or wall associated with the hedge, having a parallel hedge within 1.5m or connections with other hedgerows. The hedgerows around the site did not meet sufficient criteria to be classified as 'important' under the Regulations.

Scattered broad-leaved and coniferous trees (phase 1 habitat code A 3.3)

A small number of trees, including pine, silver birch and holly, had been planted on the amenity grass area and at the north end of the main part of the site. Those at the north end of the site had been planted around the stump of a large, mature tree felled in the past.

Running water (phase 1 habitat code G2)

At the north end of the main part of the site a stream flowed through a culvert under the railway, along the line of an old hedge and then into another culvert. Trees around the railway culvert, just outside the site boundary, had been cut and the stumps treated to prevent re-growth. Other parts of the stream were shaded by the old hedge and adjacent planted trees and there was very little bankside vegetation due to sheep grazing and trampling under the adjacent plantation trees. Where the stream was un-shaded aquatic plants, including floating sweet grass, brooklime and water parsnip, had established.

Amphibians

There were no ponds actually on the site. There were many potential refuge sites for amphibians, including great crested newts, in piles of logs, rubble, stones and other items dumped on the site, particularly along the northwest boundary and between the main and northeast parts of the site. A juvenile great crested newt was found under a piece of wood on the northwest side of the site. There were more potential refuges for amphibians among tree roots along the bottoms of the hedgerows on the site and potential foraging habitat along hedgerows. Although the main part of the site was heavily grazed by sheep at the time of the survey, the tenant indicated that these would soon be removed and the grass allowed to grow for silage, making it temporarily more attractive for foraging amphibians. Remains of temporary amphibian fencing from the earlier works were found in various places on the site.

Under local ecological planning guidelines for assessing major (ie: more than 1ha) non-residential developments for possible effects on great crested newts, any pond within 500m should be investigated. Two ponds were found within 500m of the site; one approximately 50m southeast of the site, across a railway line, and the second approximately 200m northwest, across the A483. Both are shown on the aerial photograph in section 1.3. An initial assessment of the ponds was carried out following the ARG Great Crested Newt Habitat Suitability Index (Oldham et al, 2000). The results are in table 1.

Great crested newt eggs were found on vegetation in pond 1. They had started to develop so were estimated to be a few days old. Pond 1 had good habitat links to the site with only a narrow, un-vegetated gap across the single railway track. Even this could be avoided as pipes installed under the track at intervals, probably for cables, created possible crossing places for newts. Habitat links between pond 2 and the site were less good with grazed pasture, hedgerows with grazed bases and the A483 to negotiate.

Table 1: Great crested newt habitat suitability index results for ponds within 500m of Abermule Business Park, Abermule, Powys, SY15 6ND			
12 and 19 April 2017			
www.geraldlongley.co.uk			
Pond 1 (assessment carried out 12 April 2017)			
grid ref.	SO15769410		
approx. distance from site	50m (across single track railway line)		
HSI FACTOR ↓	Site assessment	HSI value	Notes
1. Location	Zone B	0.5	-
2. Pond area	>2000m ²	-	Factor not included as pond too large.
3. Pond drying	Never dries	0.9	Estimated from water level at time of survey and surroundings.

4. Water quality	Moderate	0.67	Sampling with net found water louse, water beetles, snails, mayfly larvae, damselfly larvae.
5. Shade	20%	1	Trees and hawthorn scrub on bank to southeast. Estimate made outside recommended period May to Sept
6. Waterfowl	Water fowl present but little indication of impact on pond vegetation	0.67	Coot nest at south end of pond. Pair of mallard present.
7. Fish	No evidence of fish	1	-
8. Nearby ponds	5 ponds/ π = 1.59	0.7	-
9. Terrestrial habitat	Moderate	0.67	Mix of heavily grazed grassland, hedgerow, wet ditch, scrub and woodland on railway embankment.
10. Macrophytes	25%	0.55	Range of aquatic plants recorded especially at south end including water mint, floating sweet grass, water plantain, water forget-me-not, branched burr-reed and brooklime. Patches of blanket weed also present.
Product		0.05210719	
HSI Score		0.74420017	
HSI Category		Good	

Pond 2 (assessment carried out 19 April 2017)

grid ref.	SO15359419		
approx. distance from site	200m (across A483)		
HSI FACTOR ↓	Site assessment	HSI value	Notes
1. Location	Zone B	0.5	-
2. Pond area	600m ²	1	-
3. Pond drying	Never dries	1	Estimated from water level at time of survey and information from tenant.
4. Water quality	Moderate	0.67	Moderate invertebrate diversity.
5. Shade	80%	0.6	Shaded on all but part of north side. Estimate made outside recommended period May to Sept
6. Waterfowl	Water fowl present but little indication of impact on pond vegetation	0.67	Coot nest with eggs.
7. Fish	No evidence of fish	1	-
8. Nearby ponds	5 ponds/ π = 1.59	0.7	-
9. Terrestrial habitat	Moderate	0.67	Pond surrounded by grazed grassland with some hedgerows.
10. Macrophytes	30%	0.6	Floating sweet grass, gypsywort, water plantain.
Product		0.03789613	
HSI Score		0.72087422	
HSI Category		Good	

Reptiles

There were potential refuge and basking sites for reptiles, most likely slow worm, among logs, rubble and other items dumped along the northwest edge of the site with foraging habitat in the plantation and hedgerow nearby. There was also potential habitat for grass snake along the stream. No reptiles were found during the survey.

Bats

The site did not contain any trees or structures with bat roosting potential. The hedgerows, particularly along the railway embankment, offered foraging habitat for bats on the site and linked it to the surrounding area which was good bat foraging habitat with hedgerows, areas of woodland and the tree-lined River Severn. No bats or signs of bats were found during the survey.

Otter and water vole

No signs of otter or water vole were found during the survey. Habitat on the site itself was not suitable for water vole or otter with little vegetation on the heavily grazed and shaded banks of the stream. The stream linked to other watercourses in the area and the culverts at each end of the stretch on the site were large enough for an otter to pass through.

Dormouse

The site contained potentially good habitat for dormice with hazel in the hedgerows and tree planted areas. A search was made under hazels around the site and some opened nuts found. Inspection of these with a hand lens confirmed that they had been opened by wood mice and voles and no nuts definitely opened by dormice were found.

Badger

No signs of badgers using the site were found during the survey. Patches of exposed soil in the field at the south end of the site did not have any holes associated with them. It was considered that the soil had been dug by humans, perhaps for trial pits of some kind.

Birds

An active rookery with four nests was recorded in trees on the railway embankment just outside the southeast boundary of the site. Groups of four to five twiggy nests were recorded in the plantation on the northwest side of the site and in trees along the stream. They were not in use at the time of the survey. A flock of linnets, along with goldfinch, blue tit and chaffinch, were also recorded during the survey.

Invasive species

No invasive species, as defined by the Wildlife and Countryside Act 1981 (amended), were recorded on the site.

4.0 DISCUSSION AND INTERPRETATION

4.1 Appraisal - Development plans & ecology baseline

The proposal is to develop the site as a recycling facility for the surrounding area.

4.2 Constraints of this survey

As with all wildlife surveys conducted, the data collected is only a representation of the habitats, species and species presence evidence found during the actual date/s of the survey/s. There are other seasons and many species are mobile or transitory. The date of the survey was only just outside the ideal time to conduct preliminary, extended Phase 1 appraisals: May to September, when many more species are active and non-woody plants are clearly more evident. However, given the limited habitats on the site, the fact that a juvenile great crested newt and developing great crested newt eggs were found and the results of the HSI assessments of the two ponds, it was not considered that the timing of the survey significantly affected the results or recommendations.

4.3 Potential effects on ecological receptors

Ecological receptors are habitats or species which may show some change in population levels at a site in response to the implementation of the desired change or development. Change/s may be neutral, minor, negligible, negative or strongly negative. They can also be positive. The more notable ecological receptors and any predicted impacts are summarised below in Table 2.

Habitats

Grassland

The improved and amenity grassland was, in itself, of low ecological value with only a very small range of plant species. With grazing pressure reduced or removed, the grassland would provide some foraging habitat for amphibians.

Plantation woodland

The native species plantings on the site were of some ecological value and this would increase over time as the trees matured so their loss would be negative. The plantations were of similar age with little shrub layer. They would benefit from coppicing management to create a more diverse structure and a reduction in grazing pressure which would allow some ground flora and seedlings to establish. The plantations were providing food and nesting sites for small mammals and birds as shown by the nests and caches of nibbled nuts and pips recorded.

Scattered trees

The small number of scattered trees on the site were all young and were of low ecological value. Their ecological value would increase over time as they matured.

Hedgerow

Although the hedgerows on site did not meet the ecological criteria to be classified as 'important' hedges under the Hedgerows Regulations 1997, they were, in the main, well-established native species hedgerows with few gaps and their loss would be negative. Hedgerows are important to a wide variety of species as refuges, breeding and feeding sites and as links between habitats and are included in the Powys LBAP Linear Habitats Action

Plan which seeks to prevent further loss of hedgerows in the county and promote traditional, ecologically beneficial, hedge management.

All hedgerows that are to remain should be protected by appropriate fencing during development works and any works to cut, prune or fell trees, hedges and other vegetation should be carried out in the dormant season, October to February to avoid disturbance to nesting birds (see Ecological principles in appendix 7.3).

Stream

Rivers and streams provide wildlife corridors which, like hedgerows, link up areas of good habitat and provide routes for many species to travel through the landscape as well as being good wildlife habitat in their own right. Bankside trees, scrub and grassland add to the ecological value of these corridors. Streams and Rivers are among the habitats that the Powys LBAP seeks to protect and ensure there is no further loss.

In association with the old hedgerow and plantation trees, the stream flowing along the northeast boundary of the main part of the site was potentially of high ecological value although at the time of the survey the banks were heavily grazed and trampled and much of the stream was very shaded. Reducing or removing heavy grazing from along the stream and maintaining some stretches as un-shaded would allow vegetation to establish and increase its ecological value.

Water quality in the stream should be maintained and protected by ensuring that runoff from the development site, both during and after construction, does not enter the stream.

Amphibians

No common amphibians (frogs, toads, smooth and palmate newts) were found during the survey although there were possible refuges for them on the site. If common amphibians are discovered during the works they should be relocated to a safe place in vegetation outside the site (see Ecological Principles in appendix 7.3).

Great crested newt

A juvenile great crested newt was found on the site and developing great crested newt eggs in pond 1 during the survey. There were many potential refuge sites for great crested newts and some foraging habitat along hedge bottoms around the edge of the site. With grazing removed, the grassland would also be attractive as foraging habitat for newts. The site was well connected by hedgerows, grassland and woodland to the surrounding countryside and nearby pond.

The nearest (pond 1) was approximately 50m southeast of the site. It scored a great crested newt habitat suitability index of 'good' and the presence of breeding great crested newts was confirmed by the presence of developing eggs. Pond 2 was approximately 200m northwest of the site and also scored a great crested newt habitat suitability index of 'good'.

Great crested newts are fully protected by law and, given the presence of a great crested newt on the site and a confirmed breeding pond approximately 50m away, mitigation and possibly a European Protected Species (EPS) licence, will be required to ensure that both individual newts and their habitat are protected during and after development. Further survey work is required to establish a population class size estimate to inform mitigation and a possible EPS licence application.

Reptiles

No reptiles were found during the survey. This was not surprising as the weather was cool on the day of the survey. The northwest edge of the site and the southwest edge of the plantation along the stream contained suitable refuges and basking habitat for reptiles, most

likely slow worm and grass snake, and their presence was considered possible. A reptile survey is required to determine if this is the case.

Widespread reptiles, such as grass snake, slow worm and common lizard are protected by law against intentional killing and less common species, such as sand lizard, receive full legal protection, both for the animals themselves and the places they use for shelter and breeding.

Bats

Hedgerows around the site in conjunction with the adjacent wooded railway embankment and pond provided good foraging habitat for bats which was well linked to good foraging habitat in the surrounding area. It was considered likely that bats foraged along the hedgerows and around the site although no suitable roosting habitat was recorded.

Otter and water vole

No signs of otter or water vole were found during the survey. The site did not offer very suitable habitat for water vole and they were not considered to be using it. The desk study found records for otter along streams and rivers less than 1km from the site and it was considered possible that they would occasionally pass through the site along the stream. Retaining a buffer along the stream would keep a corridor that could be used by otters as well as other wildlife.

Dormouse

The presence of dormice on the site was not confirmed during the survey but it did contain suitable habitat for them in the hedgerows and the desk study found records of dormice within 2km of the site. They are also known to have been recorded during surveys for the nearby Newtown bypass which was under construction at the time of the survey. It was considered that their presence on the site could not be ruled out.

Dormice and the places they use for shelter and nesting are fully protected by law and, if they are present on the site, mitigation will be required to ensure that individual dormice and their habitat are protected. If any part of hedgerows or any trees are to be removed as part of the development a dormouse survey should be carried out to determine if they are present

Badger

No signs of badger were found during the survey and they were not considered to be currently using the site.

Birds

Any trimming or removal work to hedgerows should take place in the dormant season (October – February) to avoid possible disturbance to nesting birds (see Ecological Principles in appendix 7.3).

Invasive species

No invasive species were recorded and no constraints relating to invasive species are anticipated.

Table 2: Summary of potential effects on ecological receptors

Ecological Receptor	Ecological Value	Potential Effects/Impact	Proposed mitigation or ecological enhancement
Grassland	LOW	SMALL NEGATIVE Any replacement of grassland, even improved grassland, with hard standing is an ecological	-

Ecological Receptor	Ecological Value	Potential Effects/Impact	Proposed mitigation or ecological enhancement
		negative. Loss of foraging habitat for amphibians and birds	
Plantation woodland	MODERATE (increasing with age)	NEGATIVE Loss of feeding and nesting habitat for birds, small mammals and insects. Loss of small patches of developing woodland in landscape.	Retain plantations. Carry out coppicing on rotation and remove grazing to improve structure and plant diversity.
Scattered trees	LOW	NEGLIGIBLE Small number of young trees.	-
Hedgerows	HIGH	NEGATIVE Loss/fragmentation of hedgerows as feature in landscape and corridor for wildlife to move along. Loss of possible dormouse habitat and feeding and nesting habitat for birds, other small mammals, bats and amphibians.	Retain all hedgerows. Follow Ecological Principles in appendix 7.3 for timing of any hedge or tree cutting works.
Stream	HIGH	NEGATIVE Loss or pollution of stream corridor.	Create minimum 10m wide undeveloped buffer along stream and manage to decrease shading and increase ground vegetation.
Amphibians, including great crested newt	HIGH	STRONGLY NEGATIVE Possible injury or death of individual great crested newts and loss of terrestrial habitat.	Carry out great crested newt survey of ponds 1 and 2.
Reptiles	MODERATE	NEGATIVE Possible injury or death of individual reptiles and loss of habitat.	Carry out reptile survey in areas of suitable habitat.
Bats	MODERATE	NEGATIVE. Loss of foraging habitat if any hedgerows or plantation are lost.	-
Water voles	LOW	NEGLIGIBLE Considered not present.	-
Otters	MODERATE	NEGATIVE if stream is blocked or polluted by development.	Retain 10m undeveloped buffer along stream.
Dormice	UNKNOWN	Potentially STRONGLY NEGATIVE Possible injury or death of individual dormice and loss of habitat if any hedgerows or trees are removed.	Carry out dormouse survey if any trees or any parts of hedgerow will be lost as part of the proposed development.
Badgers	LOW	NEGLIGIBLE Considered not present	Follow Ecological Principles in appendix 7.3
Birds	MODERATE	NEGATIVE Loss of nesting sites if any hedgerows or trees are to be removed.	Follow Ecological Principles in appendix 7.3 for timing of any hedge or tree cutting works.
Insects/other species	LOW	NEGLIGIBLE	-
Invasive species	LOW	NEGLIGIBLE	-

Hedgerows and a stream corridor on the site were of high ecological value. There were potential ecological constraints with regard to great crested newts, reptiles and dormice. Further survey work is required to establish what the constraints are and inform appropriate mitigation.

4.4 Proposed preliminary mitigation and enhancement

A great crested newt survey should be carried out on ponds 1 and 2 to determine if great crested newts are present. The survey will involve four or six (the latter if great crested newts are recorded, to establish a population estimate) evening and the following morning survey visits in spring (ideally two of them in mid-April to mid-May).

If any trees or parts of hedgerows are to be removed, a dormouse survey should be carried out to determine if they are present. The survey will involve setting out nest tubes in the hedgerows on site and making monthly visits to check if dormice are present. Surveys are carried out from April to November

A reptile survey should be carried out on areas of suitable habitat. This involves setting out temporary refuges of tin and roofing felt and making up to seven visits on days with suitable weather conditions to check if reptiles are present. Peak survey months for reptile surveys are April, May and September.

5.0 RECOMMENDATIONS

It is recommended that:

1. Since a great crested newt was found on the site and developing great crested newt eggs in a pond approximately 50m from the site and a second pond, approximately 200m from the site was assessed as being of 'good' suitability for great crested newts, a great crested newt survey is carried out on both ponds by a suitably licensed and experienced ecologist to establish a population class size estimate for pond 1 and if great crested newts are present in pond 2.
2. Since there is suitable habitat for reptiles on the site, a reptile survey is carried out by a suitably experienced ecologist to establish if reptiles are present.
3. Since there is suitable habitat for dormice on the site, if any trees or parts of hedgerow are to be removed, a dormouse survey is carried out by a suitably licensed and experienced ecologist to establish if dormice are present.
4. Existing hedgerows and plantation woodland on the site are retained and the plantations managed to increase their structural diversity and promote the establishment of ground vegetation.
5. An undeveloped buffer zone at least 10m wide, with access for management, is retained along the length of the stream on the northeast boundary of the main part of the site and water quality in the stream is maintained and protected by ensuring that runoff from the development site, both during and after construction, does not enter the stream.
6. All works on site take into account the "Ecological principles to follow in this development" set out in appendix 7.3.

6.0 REFERENCES

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7.0 APPENDICES

7.1 Relevant species legislation

Birds - Legislation

Under Section 1 of the Wildlife and Countryside Act 1981 it is an offence to intentionally kill, injure, handle or remove any wild bird (with the exception of a few pest species); take or damage a nest whilst in use or being built; and take or destroy eggs. A person is not guilty of any offence if their action was the incidental result of a lawful activity and could not have been reasonably avoided.

A higher level of protection is afforded to those birds listed in Schedule 1 of the Act. It is an offence to disturb Schedule 1 species whilst it is building or sitting on a nest, in addition to damaging or destroying their nests or eggs.

It is not an offence to disturb non-Schedule 1 species whilst they are building a nest or sitting on it. However, an offence may be committed if the bird is driven away from a nest by prolonged disturbance which results in the failure of eggs or death of dependent young.

In essence, the relevance of this is that any tree, hedge or similar that could have birds nesting in it can only be removed in the period October to February (inclusive) unless subject to additional onsite survey immediately prior to its intended removal by a suitably qualified ecologist.

Amphibians and Reptiles - Legislation

All native amphibian and reptile species are protected in England and Wales by specific laws to varying degrees. Amphibians and reptiles fall into three groupings with differing levels of protection:

- Widespread amphibians
- Widespread reptiles
- European protected species

Widespread Amphibians

The palmate newt, smooth newt, common frog and common toad are listed on Schedule 5 of the Wildlife and Countryside Act 1981, but are protected by Section 9(5) only. This refers to trade in animals (prohibition of sale and advertising for sale, etc.). Hence these species are not legally protected from killing, injury or development, although other considerations may be taken into account (e.g. existing site designations, planning guidance and Biodiversity Action Planning).

Widespread Reptiles

Four reptile species, slow-worm, viviparous (or common) lizard, grass snake and adder have additional protection under the Wildlife and Countryside Act 1981. Their inclusion on Schedule 5 gives 'partial protection' via Section 9(1) from intentional killing & injuring.

Section 10(3) c of the Wildlife and Countryside Act 1981 offers a defence in situations where killing and injury are an incidental result a lawful action and could not reasonably have been avoided. Interpretation can be difficult, but courts have taken the view that activities, such as

development, that lead to injuring or killing reptiles, can constitute an intentional act if insufficient care to avoid harm was taken.

European Protected Species

These are strictly protected species, great crested newt, natter jack toad, sand lizard and smooth snake, which are protected by a combination of both the Wildlife and Countryside Act 1981 (Schedule 5 - full protection) and the Conservation of Habitats and Species Regulations 2010 (listed on Schedule 2). The latter are domestic implementation of the European Commission's "Habitats Directive" 1992, hence the term.

Protection of these "European protected species" differs from that of the widespread reptiles in that not only are they protected from killing and injury, but also from disturbance and capture. Additionally, the habitat of European protected species is legally protected, from damage or destruction. The development of a site where European protected species occur can therefore go ahead only if licensed by Natural England/Natural Resources Wales.

Note that the natter jack toad, sand lizard and smooth snake are rare species, occurring in a few specific locations, so they only infrequently coincide with building development issues. In contrast, the great crested newt has a large range in England and is hence more likely to occur in areas subject to building development. The great crested newt's strict protection stems from a decline throughout its European range – England is a stronghold area for the species.

Bats – Legislation

All British bat species receive legal protection in the United Kingdom. The Wildlife and Countryside Act 1981 (WCA) (as amended) transposes into UK law the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention). The 1981 Act was amended by the Countryside and Rights of Way (CROW) Act 2000 and the more recent Conservation of Habitats and Species Regulations 2010 . All British bat species are listed under Schedule 5 of the 1981 Act, and is therefore subject to the provisions of Section 9, which makes it an offence to:

- Intentionally kill, injure or take a bat [Section 9(1)];
- Possess or control any live or dead specimen or anything derived from a bat [Section 9(2)]
- Intentionally or recklessly disturb a bat while it is occupying a structure or place which it uses for shelter or protection [Section 9(4)(b)];
- Intentionally or recklessly obstruct access to any structure or place which a bat uses for shelter or protection [Section 9(4)(c)]
- Sell, offer for sale, possess or transport for the purpose of sale or publish advertisements to buy or sell a bat [section 9(5)]

Bats are also included on Annex IV of Council Directive 92/43/EEC of 21 May 1992 on the Conservation of Natural Habitats and of Wild Fauna and Flora (known as the Habitats Directive). As a result of the UK ratifying this directive, all British bats are protected under The Conservation of Habitats and Species Regulations 2010. Regulation 39 makes it an offence to:

- Deliberately capture or kill a bat [Regulation 39(1)(a)];
- Deliberately disturb a bat in such a way as to be likely to significantly affect i) the ability of any significant group of animals of that species to survive, breed or rear or nurture their young, OR ii) the local distribution of that species. [Regulation 39(1)(b)];
- Damage or destroy a breeding site or resting place of a bat [Regulation 39(1)(d)].

Under the law, a roost may be any structure or place used for resting, shelter or protection. This could be any structure, for example any building or mature tree. Bats

use many roost sites and feeding areas throughout the year. These vary according to bat age, condition, gender and species, as well as season and weather. Since bats tend to re-use the same roosts for generations, the roost may be protected whether the bats are present or not.

Otters - Legislation

Otter are a European protected species under **The Conservation of Habitats and Species Regulations 2010**

Regulation 39 (1) contains the following offences:

- (a) deliberately or recklessly to capture, injure or kill a wild animal of a European protected species;
- (b) deliberately or recklessly:
 - (i) to harass a wild animal or group of wild animals of a European protected species;
 - (ii) to disturb such a wild animal while it is occupying a structure or place which it uses for shelter or protection;
 - (iii) to disturb such an animal while it is rearing or otherwise caring for its young;
 - (iv) to obstruct access to a breeding site or resting place of such an animal, or otherwise to deny the animal use of the breeding site or resting place;
 - (v) to disturb such an animal in a manner that is, or in circumstances which are likely to significantly affect the local distribution or abundance of the species to which it belongs ;or
 - (vi) to disturb such an animal in a manner that is, or in circumstances which are, likely to impair its ability to survive, breed or reproduce, or rear or otherwise care for its young;
- (c) deliberately or recklessly to take or destroy the eggs of such an animal ;or
- (d) to damage or destroy a breeding site or resting place of such an animal

Importantly the regulations previously provided a defence for offences which were the incidental result of lawful operations (subject to certain conditions). This defence has now been removed.

There are provisions in the legislation to allow actions to take place under licence that would otherwise contravene the law. Licences may be given authorising activities involving European Protected Species which would otherwise be illegal under the Regulations. For a licence to be issued the following three tests must be satisfied:

That the development is 'in the interest of public health and safety, or for other imperative reasons of overriding public interest, including those of a social or economic nature and beneficial consequences of primary importance for the environment;

That there is 'no satisfactory alternative';

That the derogation (i.e. any permission/licence granted) is 'not detrimental to the maintenance of the populations of the species concerned at a favourable conservation status in their natural range'.

Dormice – Legislation

The dormouse was given partial protection under the **Wildlife and Countryside Act 1981**. Schedule 5 of this Act was amended in 1988 making it a fully protected species. Protection is also afforded by Schedule 2 of the **Conservation (Natural Habitats &c.) Regulations 2010**, making the dormouse a European protected species.

Dormice are listed on Schedule 5 of the 1981 Act (as amended), and are therefore subject to the provisions of Section 9, which makes it an offence to:

- Intentionally kill, injure or take a dormouse [Section 9(1)].
- Possess or control any live or dead specimen or anything derived from a dormouse [S 9(2)] (unless it can be shown to have been legally acquired).
- Intentionally or recklessly damage, destroy or obstruct access to any structure or place used for shelter or protection by a dormouse [S 9(4)(a)].
- Intentionally or recklessly disturb a dormouse while it is occupying a structure or place which it uses for that purpose [S 9(4)(b)].

The Conservation (Natural Habitats &c.) Regulations (known as the Habitats Regulations) transpose into UK law Council Directive 92/43/EEC of 21st May 1992 on the Conservation of Natural Habitats and of Wild Fauna and Flora (often referred to as the 'Habitats [and Species] Directive.'). Dormice are listed on Annex IV ('European protected species') of the Directive meaning that member states are required to put in place a system of strict protection as outlined in Article 12; this is done through inclusion on Schedule 2 of the Regulations. Regulation 39 makes it an offence to:

- Deliberately capture or kill a dormouse [Regulation 39(1)(a)].
- Deliberately disturb a dormouse [R. 39(1)(b)].
- Damage or destroy a breeding site or resting place of a dormouse [R. 39(1)(d)].
- Keep, transport, sell or exchange, or offer for sale or exchange a live or dead dormouse or any part of a dormouse [R. 39(2)]

Water vole - Legislation

The water vole is fully protected under Schedule 5, **Section 9 of the Wildlife and Countryside Act 1981** (as amended), which makes it illegal to:

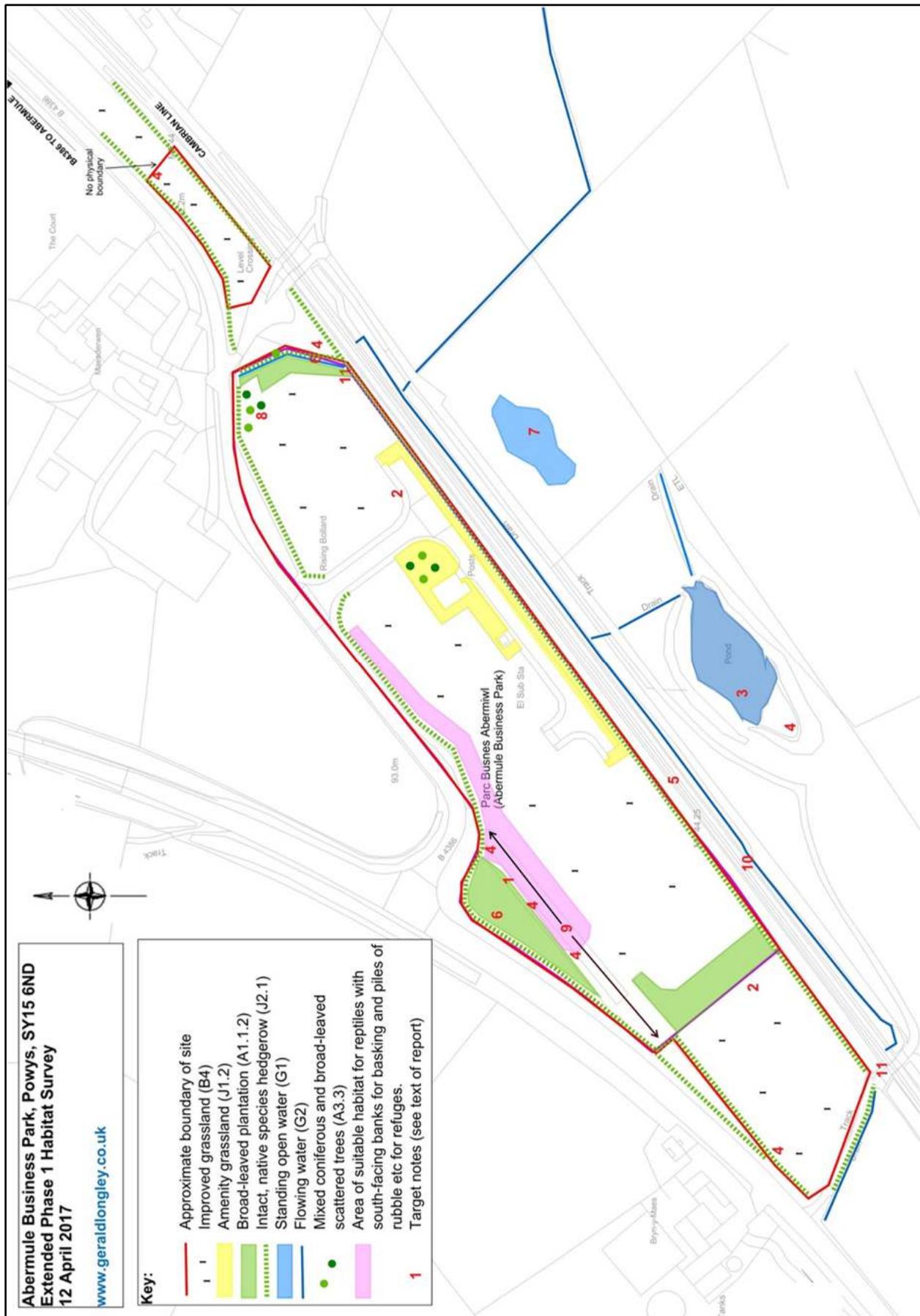
- Intentionally kill, injure or take (capture) a water vole;
- Possess or control a live or dead water vole, or any part of a water vole;
- Intentionally or recklessly damage, destroy or obstruct access to any structure or place which water voles use for shelter or protection or disturb water voles while they are using such a place; and
- Sell, offer for sale or advertise for live or dead water voles.

Badger – Legislation

The Protection of Badgers Act 1992 is based primarily on the need to protect badgers from baiting and deliberate harm or injury. It also contains restrictions that apply more widely and all the following are criminal offences:

- to wilfully kill, injure, take, possess or cruelly ill-treat a badger;
- to attempt to do so; or
- to intentionally or recklessly interfere with a sett. Sett interference includes damaging or destroying a sett, obstructing access to a sett, and disturbing a badger whilst it is occupying a sett. It is not illegal, and therefore a licence is not required, to carry out disturbing activities in the vicinity of a sett if no badger is disturbed and the sett is not damaged or obstructed.
- to deliberately introduce a dog into a sett
- to bait or dog for badgers
- to possess, sell or offer for sale a live badger
- to possess or control a dead badger or parts of a badger (if unlawfully obtained)
- to mark or attach a device to a badger

7.2 Extended Phase 1 Survey



Target notes

See phase 1 habitat map for locations

1	Juvenile great crested newt found under piece of dumped wood (hibernacula/refuge)
2	Stores of nibbled nuts and pips. Most likely by voles and/or mice.
3	Pond scoring HIS of 'good' for great crested newt. Range of aquatic plants including floating sweet grass, branched burr-reed, water plantain, brooklime, water forget-me-not, water mint and water parsnip. Small areas of blanket weed also present.
4	Potential newt and reptile refuges including piles of rubble, logs, tyres, wood and other materials. Some rubble piles with well-established vegetation cover.
5	Rookery with approximately five nests. Rooks active around nests at time of survey.
6	Groups of 4-5 twiggly nests. No signs of bird activity at time of survey.
7	Shallow wet area with small amount of floating sweet grass. Contaminated with slurry. Aerial photographs suggested this area dries out during dry periods.
8	Stump of mature tree felled in past.
9	Raised area along line of old road creating south –facing banks suitable for reptiles.
10	Pipes (for cables?) under railway track. Good potential, covered access across track between pond and site for amphibians, particularly great crested newts.
11	Culvert with flowing water (northeast end of site) and underpass (southwest end of site). Possible accesses under railway track between pond and site for amphibians.

7.3 Ecological principles to follow in this development

By adhering to the following principles, the disturbance, either short-term or long term to species should be significantly reduced. However, it is still possible that during works, protected or other, not protected but vulnerable, species could be encountered. A prepared plan of action in this situation should be followed and should include:

- Construction workers and staff should be aware of the potential for protected species and should be fully briefed about their legal responsibilities towards them and how to proceed if discovered, as below.
- In the event that protected species are encountered during the construction phase then a suitably qualified ecologist should be contacted and all work cease until an assessment has been made.
- If common reptiles/amphibians (e.g. common frogs, common toads, slow worm, grass snake) are discovered they should be translocated to a close and safe area by an ecologist.
- If great crested newts are discovered then Natural England (NE) or a suitably qualified ecologist should be contacted for advice. Works should cease and an EPS licence may be required to allow work to continue.
- If active nests of common breeding birds are discovered during the works a suitably qualified ecologist must be contacted for advice, with probably a 25 metre stand-off/exclusion zone put in place (further for some species) until breeding has ended/birds fledged.
- All works to cut, prune or fell trees, hedges etc. and other vegetation should be carried out in the dormant season, October to February. If vegetation/tree work must be carried out in the bird breeding season, a comprehensive assessment of the area must be made by a suitably qualified ecologist immediately prior to the works, to ensure active nests are not present or disturbed.
- All final developed landscaped site and internal boundary structures (fences/walls etc.) should be designed and constructed so that they do not seal to the ground continuously and stop the movement and dispersal of wildlife, notably hedgehogs. Boundaries should have 130mm by 130mm square holes at ground level at least every 10m running length or should not seal to the ground at all between posts and have a 130mm gap from fence base to ground.
- A post-construction ecological survey is recommended to assess any potential effects or issues the development has had or is having.

8.0 SITE PICTURES













