



Redevelopment for Residential Housing

Report Title: Preliminary Ecological Appraisal

Address: Former Whitegate Nurseries, 66 Chapel Road, Hesketh Bank, PR4 6RT

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Former Whitegate Nurseries, 66 Chapel Road, Hesketh Bank, PR4 6RT
Preliminary Ecological Appraisal

Document Title	Preliminary Ecological Appraisal
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Former Whitegate Nurseries, 66 Chapel Road, Hesketh Bank, PR4 6RT

Preliminary Ecological Appraisal

Executive Summary

As part of a planning application regarding the former Whitegate Nurseries, 66 Chapel Road, Hesketh Bank (Figure 1), a Preliminary Ecological Appraisal was undertaken by Tyrer Ecological Consultants Ltd during September 2019. It is understood that proposals involve the clearance of the site, followed by redevelopment of the area to accommodate a number of new residential dwellings.

In accordance with paragraph 175 of the National Planning Policy Framework (NPPF), local planning policy and *Biodiversity Net Gain: Good practice principles for development* (CIEEM *et al*, 2019), a series of measures have been recommended within section 9.0 to ensure that the proposed development for the land at the former Whitegate Nurseries does not result in biodiversity net loss, and that a net gain is achieved.

Vegetation: Whilst no species of conservation importance were identified at the time of the survey, a Ramping-fumitory (*Fumaria* sp.) was noted to the west of the southerly-most greenhouse (non-flowering) (see Figure 6). *Purple Ramping-fumitory which grows in the area is an internationally notable plant and so a further visit to determine the identity of the Fumitory is recommended.*

No invasive plant species were located across the extent of the survey area. *It is recommended that enhancement relative to the floristic diversity of the area is incorporated into the proposals, as per Appendix III.*

Bats: All surveyed trees and buildings are absent of Potential Roost Features (PRFs) and have consequently been assessed as pertaining to a 'negligible' categorisation with regards to existing bat roost suitability. *Enhancement for bats is recommended to be incorporated into the proposed development as per Appendix III.*

Other Terrestrial mammals: A number of suitable habitats that meet the refuge/breeding habits of hedgehog (*Erinaceus europaeus*) are noted across the extent of the survey area in the form of general piled debris. Furthermore, evidence my way of droppings were noted immediately outside a piling of debris to the north-east. *It is therefore recommended that pilings of debris are removed under the supervision of a suitably qualified ecologist. Furthermore, compensation/enhancement for this species is recommended within Appendix III.*

Birds: No suitability for / evidence of Schedule 1 bird species was identified at the site. A limited diversity of nesting platforms exists across the site in the form of debris, scrub and trees which favour a variety of common bird species' nesting habits. *It is recommended that any clearance works are timed outside the breeding season unless it can be established by a suitably qualified Ecological Clerk of Works (ECoW) that nesting birds are absent.*

Enhancement for nesting birds has also been recommended within Appendix III.

Herptiles: No suitable habitat for any indigenous reptile / protected amphibian species exists across the application boundary. *Therefore, no recommendations with respect to herptiles are applicable.*

Former Whitegate Nurseries, 66 Chapel Road, Hesketh Bank, PR4 6RT
Preliminary Ecological Appraisal

Table of Contents

1.0 Introduction and Reasons for Survey

2.0 UK Biodiversity Plans

3.0 Local Biodiversity Plans

4.0 Site-relevant Legislation

5.0 Survey Methodology

6.0 Limitations

7.0 Desk Study Results

8.0 Field Study Results

8.1. Vegetation

8.2. Bats

8.3. Other Terrestrial Mammals

8.4. Breeding Birds

8.5. Herptiles

8.6. Phase 1 Habitat Survey

9.0 Conclusions & Recommendations

10.0 Bibliography

Appendix I: Site Photographs

Appendix II: Site-specific Botanical Species List

Appendix III: Biodiversity Enhancement / Compensation

Appendix IV: Phase 1 Habitat Map

Former Whitegate Nurseries, 66 Chapel Road, Hesketh Bank, PR4 6RT Preliminary Ecological Appraisal

1.0 Introduction & Reason for Survey

- 1.1 As part of a planning application regarding the former Whitegate Nurseries, 66 Chapel Road, Hesketh Bank (Figure 1), a Preliminary Ecological Appraisal was undertaken by Tyrer Ecological Consultants Ltd during September 2019 in accordance with the *Guidelines for Preliminary Ecological Appraisal* (CIEEM, 2017). It is understood that proposals involve the clearance of the site, followed by redevelopment of the area to accommodate a number of new residential dwellings.
- 1.2 Ecological surveys, particularly where a specially protected species is or may be present, are generally required as part of the Local Authority's Planning Policies; Whitegate Property Developers commissioned the survey and report.

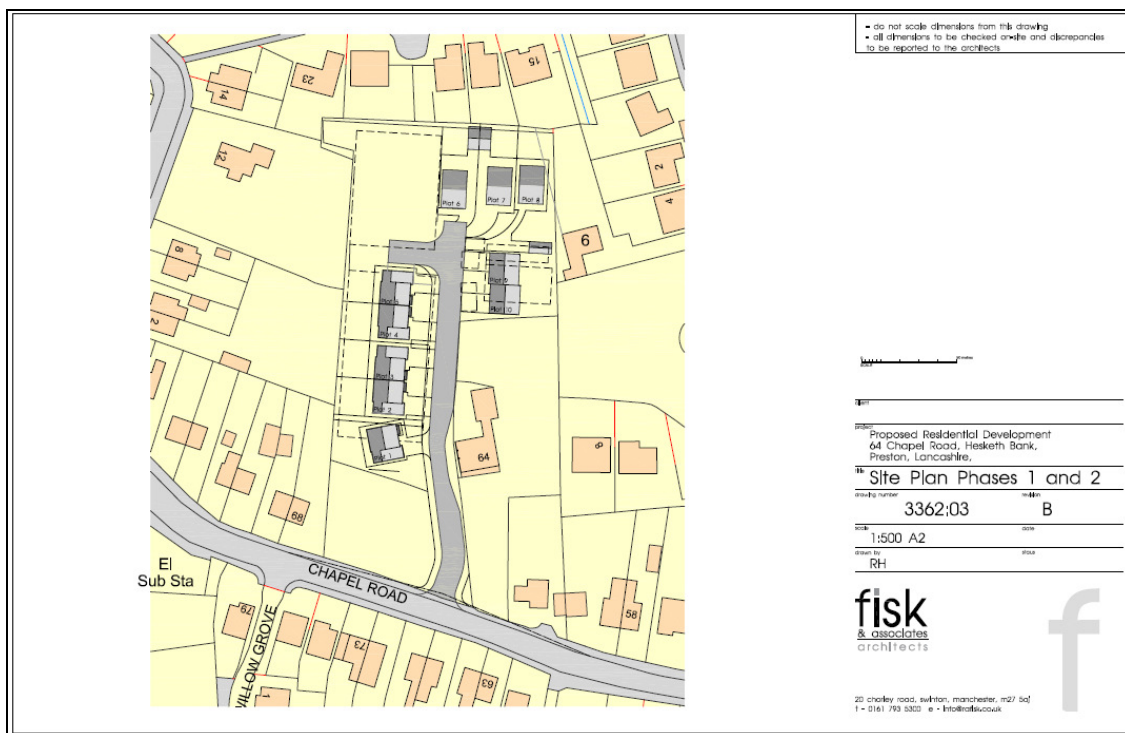


Figure 1: Proposed site plan

- 1.3 The basic objective of this survey was to ascertain the nature of the land and buildings, and where possible obtain information on any sensitive wildlife habitats or species that may be present and if so if they will be affected by future development. To achieve this objective the survey aimed to identify/assess any of the following:
- The presence of species with non-statutory conservation designations.
 - The presence / potential presence of species protected under the Wildlife and Countryside Act (1981) (as amended) or the Conservation of Habitats and Species Regulations (2017).
 - Identify any species or habitats that require special consideration during future development.

Former Whitegate Nurseries, 66 Chapel Road, Hesketh Bank, PR4 6RT
Preliminary Ecological Appraisal

- Identify the presence of statutory or non-statutory designated sites in close proximity.
- If the above are present assess any impacts that may occur as a result of development.

- 1.4 If the habitat was found to be suitable for the aforementioned species, or signs of use were found then more detailed surveys would be recommended. If any European Protected Species was subsequently found during those detailed surveys and may be affected by the development proposals then a European Protected Species Licence would be required to proceed with the development.
- 1.5 In accordance with paragraph 175 of the National Planning Policy Framework (NPPF), Biodiversity Net Gain: Good practice principles for development (CIEEM *et al*, 2019) have been adopted whereby appropriate enhancement opportunities have been recommended within the report to ensure that a “biodiversity net gain” is obtained as a key component of the development scheme (Appendix III).
- 1.6 Protected species not included within this ecological assessment were omitted due to factors including: the absence of suitable habitats and/or distributional aspects negating the necessity to survey for them and/or the proposed works were not considered to negatively impact the species or encroach on areas where the species may be present. This includes Killarney Fern (*Trichomanes speciosum*) for example.

2.0 UK Biodiversity Plans

- 2.1 The UK Biodiversity Action Plan (BAP) provided a baseline for lists of habitats and species of national conservation importance, now transposed under section 41 of the Natural Environment and Rural Communities (NERC) Act 2006. Based upon the site visit, there is the potential for a number of priority species to be present / using the site (see Table 1).
- 2.2 One priority habitat is present within the confines of the survey area in the form of ‘hedgerow’.

Table 1: s.41 species likely to be in the immediate locality

Vegetation	
Purple Rampion-fumitory	<i>Fumaria purpurea</i>
Invertebrates	
Garden Tiger	<i>Arctia caja</i>
Garden Dart	<i>Euxoa nigricans</i>
Ghost Moth	<i>Hepialus humuli</i>
Dot Moth	<i>Melanchra persicariae</i>
White Ermine	<i>Spilosoma lubricipeda</i>
Buff Ermine	<i>Spilosoma luteum</i>
Cinnabar	<i>Tyria jacobaeae</i>
Terrestrial Mammals	
West European Hedgehog	<i>Erinaceus europaeus</i>
Herpetiles	
Common Toad	<i>Bufo bufo</i>

Former Whitegate Nurseries, 66 Chapel Road, Hesketh Bank, PR4 6RT
Preliminary Ecological Appraisal

Birds	
House Sparrow	<i>Passer domesticus</i>
Hedge Accentor	<i>Prunella modularis</i>
Common Starling	<i>Sturnus vulgaris</i>
Song Thrush	<i>Turdus philomelos</i>

3.0 Local Biodiversity Action Plan

3.1 Local Biodiversity Action Plans (LBAP's) are simply a way of encouraging people to work together and deliver a programme of continuing action for biodiversity at a local level. They set out practical steps that aim to:-

- Help protect biodiversity
- Enhance and improve biodiversity where possible, and
- Promote biodiversity at a local level

Sites of Local Biological Interest

3.2 Whilst there is no legal protection for Sites of Local Biological Interest (SLBI) per se, the presence of a protected species within them would attract the usual protection afforded to it / them.

3.3 The local Biodiversity Action Plan (LBAP) serving Lancashire lists key local species / habitats considered to be rare or declining in the area. Some may be of national concern, while others may only be locally rare. Some are statutorily protected, although the great majority are not. There is potential for a number of LBAP priority species across the areas to be affected by the development, as detailed below (Table 2).

3.4 No LBAP priority habitats have been identified within the application boundary.

Table 2: LBAP species likely to be in the locality

Vegetation	
Purple Ramping Fumitory	<i>Fumaria purpurea</i>
Bristly Oxtongue	<i>Helminthotheca echiodes</i>
Dotted Thyme-Moss	<i>Rhizomnium punctatum</i>
Invertebrates	
Garden Tiger Moth	<i>Arctia caja</i>
Golden Spangle Moth	<i>Autographa bractea</i>
Ghost Moth	<i>Hepialus humuli</i>
Cinnabar	<i>Tyria jacobaea</i>
Herptiles	
Common Toad	<i>Bufo bufo</i>
Common Frog	<i>Rana temporaria</i>
Birds	
House Martin	<i>Delichon urbicum</i>
Kestrel	<i>Falco tinnunculus</i>
Swallow	<i>Hirundo rustica</i>
House Sparrow	<i>Passer domesticus</i>
Dunnock	<i>Prunella modularis</i>
Starling	<i>Sturnus vulgaris</i>
Song Thrush	<i>Turdus philomelos</i>

Former Whitegate Nurseries, 66 Chapel Road, Hesketh Bank, PR4 6RT

Preliminary Ecological Appraisal

4.0 Site-relevant Legislation

4.1 Relevant legislation considered for the purposes of this report includes the following:

- Protection of Badgers Act (1992)
- Natural Environment and Rural Communities (NERC) Act (2006)
- The Conservation of Habitats and Species Regulations (2017)
- The Countryside Rights of Way (CRoW) Act (2000)
- The Wildlife and Countryside Act (1981) (as amended)

These acts entail relevance to both protected and invasive species. The degree of protection offered to taxa provided within existing UK and EU legislature often varies depending on species/species group, for example, some species may purely be protected during one of its life stages (e.g. common species of breeding bird whilst nesting/with eggs/young); some species may receive full protection within the EU (e.g. Otter), whereas others may be protected solely on a national basis (e.g. Grass Snake).

See Table 3 below entailing legislature appropriate to each species/species group/s respective to the former Whitegate Nurseries, and the relevance of said legislation.

Table 3: Site-relevant legislation

Species/Species Group	Relevant Legislation	Level of Protection
Birds	CRoW Act (2000) Wildlife and Countryside Act (1981) (as amended)	All wild birds (with only minor exceptions) and their nests whilst being built or containing eggs or dependant young are protected. Birds listed on Schedule 1 Wildlife & Countryside Act (1981) (as amended) e.g. Barn owl (<i>Tyto alba</i>).

Additional Species Information

4.2 Barn owl (*Tyto alba*) are locally frequent in parts of rural Lancashire and use tussocky grassland habitats for hunting purposes, whilst they typically may use both barns/old buildings and tree hollows for nesting or roosting purposes.

4.3 Guidance for Local Authorities: Extract from Office of the Deputy Prime Minister: Circular 06/2005

"It is essential that the presence or otherwise of protected species, and the extent that they may be affected by the proposed development, is established before the planning permission is granted, otherwise all relevant material considerations may not have been addressed in making the decision."

5.0 Survey Methodology

5.1 Paragraph 175 of the National Policy Planning Framework stipulates that *"if significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused"*.

Former Whitegate Nurseries, 66 Chapel Road, Hesketh Bank, PR4 6RT
Preliminary Ecological Appraisal

- 5.2 Policy EN2 of West Lancashire's Local Plan 2012-2027 mirrors this and gives that: *"b)iii. Where development is considered necessary, adequate mitigation measures and compensatory habitat creation will required through planning conditions and / or obligations, with the aim of providing an overall improvement in the site's biodiversity value. Where compensatory habitat is provided it should of at least equal area and diversity, if not larger and more diverse, than what is being replaced..."* Measures have accordingly been recommended to avoid / mitigate / compensate for biodiversity loss within section 9.0, based upon the findings of the survey.

Desk study

- 5.3 Prior to the site visit, a desktop study was conducted using online resources to obtain information pertaining to any sites afforded statutory (e.g. SSSI) and non-statutory (e.g. LWS) designations within 2km of the site boundary. To do so, the Multi Agency Geographic Information for the Countryside (MAGIC – provided by Defra) was accessed to gather such information; this particular interactive mapping service was also used to locate any locally granted European Protected Species Mitigation Licenses (EPSML) to further inform conclusions concerning such species in the context of the study site and its proposed development.
- 5.4 Satellite imagery was reviewed using sources such as Google Earth (© 2019) to determine the nature of the adjoining and extending habitats; such information aids in the understanding of how the site might interact with its surroundings ecologically and its value in that context, and how the development may impact at a wider scale.
- 5.5 Given the nature of the proposed development and outcomes of the appraisal, it has been deemed unnecessary to conduct a data search for protected species or designated sites in the vicinity. Species/habitat information relevant to the land at the former Whitegate Nurseries and its immediate environs was obtained at the time of the survey from habitat information.

Furthermore, the UK Guidelines for Assessing and Using Biodiversity Data (CIEEM, 2016) state that data searches may not be required in certain circumstances including *"Low impact or small-scale development (e.g. by size, extent, duration of works, magnitude or locality)"*

Field Survey

- 5.6 The site appraisal was conducted on 8th October 2019 by the following surveyor/s:

Table 4: Surveyor credentials

Name	Description
Joshua Styles BSc. ACIEEM AMRSB	Ecologist and botanical specialist with a FISC Level 6. Mr Styles is also an accredited agent on the Class 2 Natural England bat license of Mrs. K. Wildling.

- 5.7 The survey followed UK industry standard Joint Nature Conservation Committee (JNCC) Phase 1 Habitat Methodology standards (JNCC, 2010) with reference to the Chartered Institute of Ecology and Environmental Management (CIEEM) Technical Guidance Series "Guidelines for Preliminary Ecological Appraisal 2nd Edition (CIEEM, 2017); habitats were mapped using QGIS software (see Appendix IV).

Former Whitegate Nurseries, 66 Chapel Road, Hesketh Bank, PR4 6RT

Preliminary Ecological Appraisal

- 5.8 During the survey walkover, botanical assemblages were assessed and the land was inspected for the presence of red-listed (Stroh *et al*, 2014), s.41 and LBAP species alongside specially protected species as listed under Schedule 8 of the Wildlife and Countryside Act (WCA) (1981) (as amended) and / or Schedule 5 Conservation of Habitats and Species Regulations (2017).
- 5.9 Additional to attributing ecological value to red-listed / BAP species, in accordance with existing CIEEM guidance, a geographic frame of reference is also adopted. Plant species may be recognised for their ecological notoriety on a geographical scale which is adopted on a site-to-site basis (see Figure 2 below). For a site-relevant species list, see Appendix II.

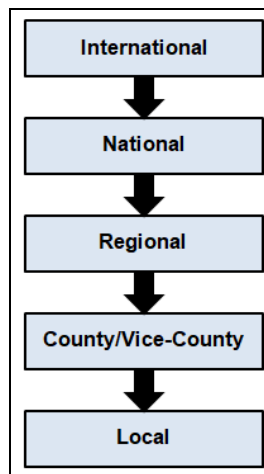


Figure 2: Geographic Frame of Reference entailing degrees of conservation importance

- 5.10 In combination with assessing the area in relation to flora of conservation importance, the land was also assessed in relation to the presence of invasive species as listed under Schedule 9 (Part II) of the Wildlife and Countryside Act (1981) (as amended).
- 5.11 No loft spaces exist in the extant outbuildings / greenhouses on site; the full interiors were inspected with use of high-powered torch for suitable places that certain bat species may utilise as a roost. The interior of the structure was also inspected for evidence of use such as droppings or prey remains.

Trees were assessed from ground level with the aid of close-focusing binoculars and high powered torch [where possible] to appraise trees for their capacity to support roosting bats. Features favoured by roosting bats include extensive holes, crevices and fissures.

Criteria for roost assessment are based upon the following determinant which is based upon the Bat Conservation Trust 'Bat Surveys: Good Practice Guidelines' (2016) (Figure 3):

Former Whitegate Nurseries, 66 Chapel Road, Hesketh Bank, PR4 6RT
Preliminary Ecological Appraisal

Table 4.1 Guidelines for assessing the potential suitability of proposed development sites for bats, based on the presence of habitat features within the landscape, to be applied using professional judgement.		
Suitability	Description Roosting habitats	Commuting and foraging habitats
Negligible	Negligible habitat features on site likely to be used by roosting bats.	Negligible habitat features on site likely to be used by commuting or foraging bats.
Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions ^a and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity or hibernation ^b). A tree of sufficient size and age to contain PRFs but with none seen from the ground or features seen with only very limited roosting potential. ^c	Habitat that could be used by small numbers of commuting bats such as a gappy hedgerow or unvegetated 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 numbers of foraging bats such as a lone tree (not in a parkland situation) or a patch of scrub.
Moderate	A structure or tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions ^a and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only – the assessments in this table are made irrespective of species conservation status, which is established after presence is confirmed).	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.
High	A structure or 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 potentially for longer periods of time due to their size, shelter, protection, conditions ^a and surrounding habitat.	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.

^a For example, in terms of temperature, humidity, height above ground level, light levels or levels of disturbance.

^b Evidence from the Netherlands shows mass swarming events of common pipistrelle bats in the autumn followed by mass hibernation in a diverse range of building types in urban environments (Korsten *et al.*, 2015). This phenomenon requires some research in the UK but ecologists should be aware of the potential for larger numbers of this species to be present during the autumn and winter in large buildings in highly urbanised environments.

^c This system of categorisation aligns with BS 8596:2015 Surveying for bats in trees and woodland (BSI, 2015).

Figure 3: BCT guidelines extract

5.12 A number of factors are used for the bat survey methodology, which include:-

- Knowledge of bat species relevant to the site location and geographical range
- Nature of the immediate /surrounding habitat in relation to foraging opportunities
- Presence/absence of roost potential
- Value of roost potential – if present

Following the survey, the results, conclusions and recommendations are based upon surveyor experience and knowledge of bat ecology.

5.13 A 'walkover' of the site was conducted which included a search for typical signs of badger activity which includes digging, occupied setts, 'runs' leading to and from a sett or the existence of latrines or 'snuffle' holes where badgers have foraged in the ground. At the same time, identification of any actual fauna species and any physical evidence signifying the presence of fauna species would also be documented.

5.14 All aspects of the site were assessed for the capacity to support Schedule 1 WCA – listed birds for breeding purposes.

Historical / active bird's nests of any species were also identified as well as an assessment for general suitability for any nesting birds. All wild birds (with only minor exceptions) and their nests whilst being built or containing eggs or dependant young are protected and so appropriate recommendations for nesting birds have been provided within the contents of this report.

Former Whitegate Nurseries, 66 Chapel Road, Hesketh Bank, PR4 6RT
Preliminary Ecological Appraisal

- 5.15 A map and field search was undertaken in relation to the presence of ponds or waterways that may support Great Crested Newts (GCN). This search was extended to identify habitats of value to reptiles that may occur within the vicinity of the application area. The information gathered would then be used to establish if more detailed surveys are required.
- 5.16 No ponds were identified within a 250-metre radius of the survey area. English Nature's (now Natural England) Great Crested Newt Mitigation Guidelines (2001) states ponds within 500m of a proposed development site should be considered for their respective potential to support GCN; however, in some instances this distance may be reduced to 250m due to the presence of physical barriers and obstructions, or based on the likely magnitude of impacts arising from the proposed development.
- 5.17 The results, conclusions, and recommendations of the survey have been assessed by Mrs K Wilding, director of Tyrer Ecological Consultants Ltd, and her assessment concurs with that of Mr Styles.

6.0 Limitations

- 6.1 This report does not contain a comprehensive list entailing the totality of botanical taxa on site. Species listed within Appendix II were noted from incidental observation at the time of the inspection; many plant species are only evident at certain times of the year and so some plant species may have gone undetected.
- 6.2 Trees were assessed, in relation to bat roost potential at a time when foliage is present, however on this occasion it did not significantly impede the investigation.
- 6.3 Having considered the constraints in the context of the site, it is considered that on balance, there were no significant constraints would otherwise hinder the gathering of ecological information on site.

7.0 Desk study results

- 7.1 The survey area sited off Chapel Road and comprises a reasonably sized plot, equating to an approximate area of 0.49ha. The site is dominated by areas of amenity lawn with stands of tall ruderal vegetation intermixed with ephemeral/short-perennial vegetation. Immediate habitats comprise of extensive areas of residential development and roads, with limited tree/shrub cover.
- 7.2 The contiguous landscape continues to the same nature as the immediate with the addition of further favourable environs including arable and pasture land bordered by hedgerows and ditches, with areas of estuarine and intertidal habitats sited at 1.25 kilometres north-east. The previously identified immediate habitats can be considered as being of low-high value for many of the species for which the survey was undertaken, subject to them being present in the locality (see Figure 4).

Former Whitegate Nurseries, 66 Chapel Road, Hesketh Bank, PR4 6RT
Preliminary Ecological Appraisal



Figure 4: Location of the application site within the contiguous landscape

- 7.3 The desktop study found two results for EPSML's within a 3.0km radius of the study site; one of these are noted to all be in relation to GCN set at approximately 900 metres south-east, whilst the remaining EPSML is relative to the non-breeding roost of common pipistrelle bats at approximately 1.5 kilometres south. From the Magic Mapping results, it is noted that the land is located within the impact zone for the Ribble & Alt Estuaries (SSSI, NNR, SPA, Ramsar) (Figure 5).
- 7.4 Notwithstanding the area's proximity to the aforementioned statutory designated site, the proposed works are highly unlikely to have an effect on neither it nor the qualifying species, features or habitats for which they have been designated for.

Former Whitegate Nurseries, 66 Chapel Road, Hesketh Bank, PR4 6RT Preliminary Ecological Appraisal

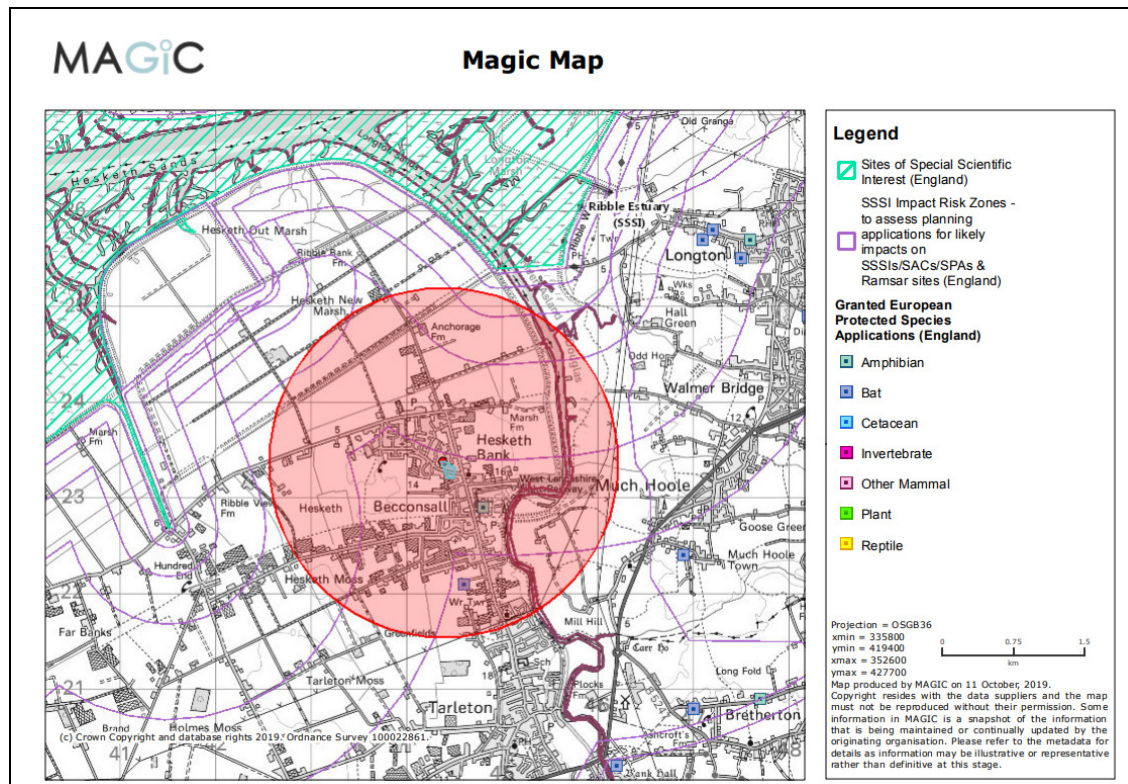


Figure 5: Site location and EPSMLs indicative

8.0 Field survey results

8.1 Vegetation

- 8.1.1 Whilst no notable plant species of conservation importance upon appraisal of the site, a Ramping-fumitory (*Fumaria* sp.) is present to the east of the southerly-most greenhouse complex (see Figure 6 below). Purple Ramping-fumitory is an internationally notable species that may only conclusively be identified with the presence of flowers. As flowers were absent on all identified plants, the ID could not be conclusively ascertained at the time of the survey.

Former Whitegate Nurseries, 66 Chapel Road, Hesketh Bank, PR4 6RT
Preliminary Ecological Appraisal




Figure 6: Distribution of *Fumaria* sp. at the former Whitegate Nurseries

8.1.2 No invasive plant species were identified across the range of the survey area.



8.2 Bats

8.2.1 A total of four buildings are noted across the extent of the survey area, two of which are greenhouses, the remaining two being dilapidated outbuildings (see Figure 7). No building was host to a loft space of any description. An assessment for each structure is presented within Table 5 below.

Table 5: Bat roost assessment

Building	Description	Potential
B1 	<p>A single storey deteriorating greenhouse structure, the building is of metal/glass construct, full illuminated internally and provided no viable ingress/egress opportunities that may be utilised as a roost by any bat species.</p> <p>No evidence of bats was identified at the time of the survey.</p> <p>Dimensions (approximate): 32 metres x 24 metres x 8 metres height</p>	<p>Negligible for loft and crevice-dwelling bats.</p>

Former Whitegate Nurseries, 66 Chapel Road, Hesketh Bank, PR4 6RT
Preliminary Ecological Appraisal

<p>B2 & B3</p> 	<p>Both B2 and B3 are similar, dilapidated outbuildings. Internal inspection found both are entirely illuminated and open to the ridge.</p> <p>Underfelt is absent beneath roofing material. Where present, underfelt may otherwise improve the probability of occupancy by crevice-dwelling species of bat whereby bats are able to roost between roofing material and underfelt, provided external access exists.</p> <p>External assessment of the structures found that both B2 and B3 are entirely absent of potential roost features.</p> <p>Dimensions (approximate): 5-8 metres x 5-6 metres x 5 metres height</p>	<p>Negligible for loft and crevice - dwelling bats.</p>
<p>B4</p> 	<p>A single storey deteriorating greenhouse structure, the building is of metal/glass construct, fully illuminated internally and provided no viable ingress/egress opportunities that may be utilised as a roost by any bat species.</p> <p>No evidence of bats was identified at the time of the survey.</p> <p>Dimensions (approximate): 45 metres x 23 metres x 8 metres</p>	<p>Negligible for loft-dwelling bats.</p>

Former Whitegate Nurseries, 66 Chapel Road, Hesketh Bank, PR4 6RT
Preliminary Ecological Appraisal

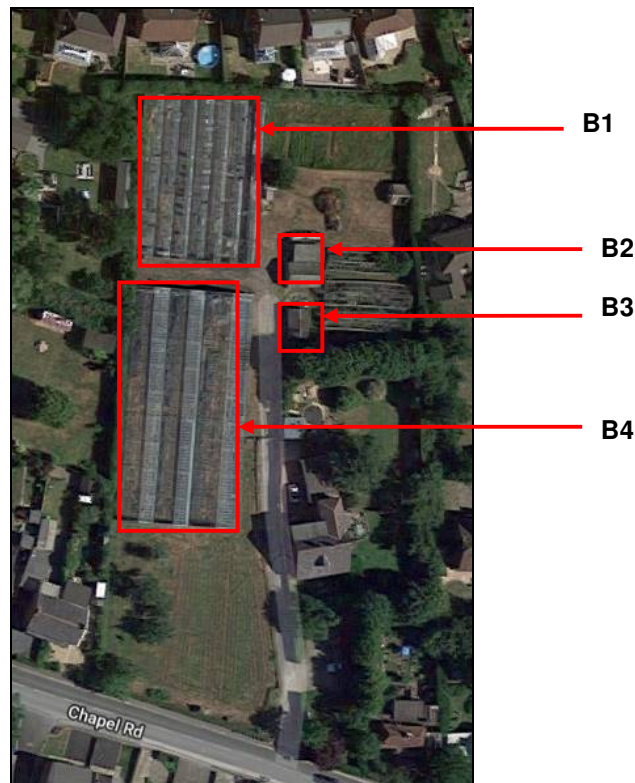


Figure 7: Positions of buildings B1-4

8.2.2 **Trees:** All trees located within the confines of the application boundary are determined to be absent of potential roost features such as extensive cracks, crevices / fissures. Trees are therefore concluded to possess 'negligible' bat roost suitability, in line with up-to-date BCT guidelines.

8.2.3 Notwithstanding the absence of roost suitability, the value of trees / scrub as a commuting / foraging feature should not be undermined. Recommendations relative to lighting have been made within section 9.4.

8.3 Other Terrestrial Mammals

Badger

8.3.1 No evidence for badger (*Meles meles*) occurs across the extent of the site or within the immediately extending area; their presence is considered to be unlikely.

Hedgehog

8.3.2 Areas that constitute suitable habitat for hedgehog (*Erinaceus europaeus*) breeding / refuge exist at the site in the form of debris pilings exist across the site, notably to the north-east; furthermore, evidence in the form of droppings were located immediately outside a large debris piling. The presence of this species at the former Whitegate Nurseries is considered to be likely.

Former Whitegate Nurseries, 66 Chapel Road, Hesketh Bank, PR4 6RT
Preliminary Ecological Appraisal

8.4 Breeding Birds

- 8.4.1 Viable nesting platforms for a variety of nesting bird species are available through parts of the site including debris pilings, scrub and trees. The presence of any nesting bird within the breeding season (March-August) on this basis is therefore considered to be likely.
- 8.4.2 In relation to Schedule 1 birds, it is highly unlikely that the site is used for breeding purposes by Schedule 1 species such as Barn owl (*Tyto alba*) and no evidence of use or nesting opportunities were located within the survey boundary.
- 8.4.3 For a list of bird species identified during the visit, see Table 5 below.

Table 6: Species identified during the inspection of the former Whitegate Nurseries

Common name	Scientific name	Conservation designations
Blackbird	<i>Turdus merula</i>	
Blue Tit	<i>Cyanistes caeruleus</i>	
Carrion Crow	<i>Corvus corone</i>	
Chaffinch	<i>Fringilla coelebs</i>	
Collared Dove	<i>Streptopelia decaocto</i>	
Feral Pigeon	<i>Columba livia domestica</i>	
Goldfinch	<i>Carduelis carduelis</i>	
Great Tit	<i>Parus major</i>	
Long Tailed Tit	<i>Aegithalos caudatus</i>	
Magpie	<i>Pica pica</i>	
Wood Pigeon	<i>Columba palumbus</i>	
Wren	<i>Troglodytes troglodytes</i>	
Yellowhammer	<i>Emberiza citrinella</i>	

8.6 Herptiles

Great Crested Newt (GCN)

- 8.6.1 No ponds are situated within a 250 metre radius of the survey area which could support breeding populations of great crested newts (*Triturus cristatus*). Furthermore, areas contained within the confines of the survey area are without habitat connectivity to areas of extending suitable habitat available within the contiguous landscape; the application site is surrounded by extensive residential development.

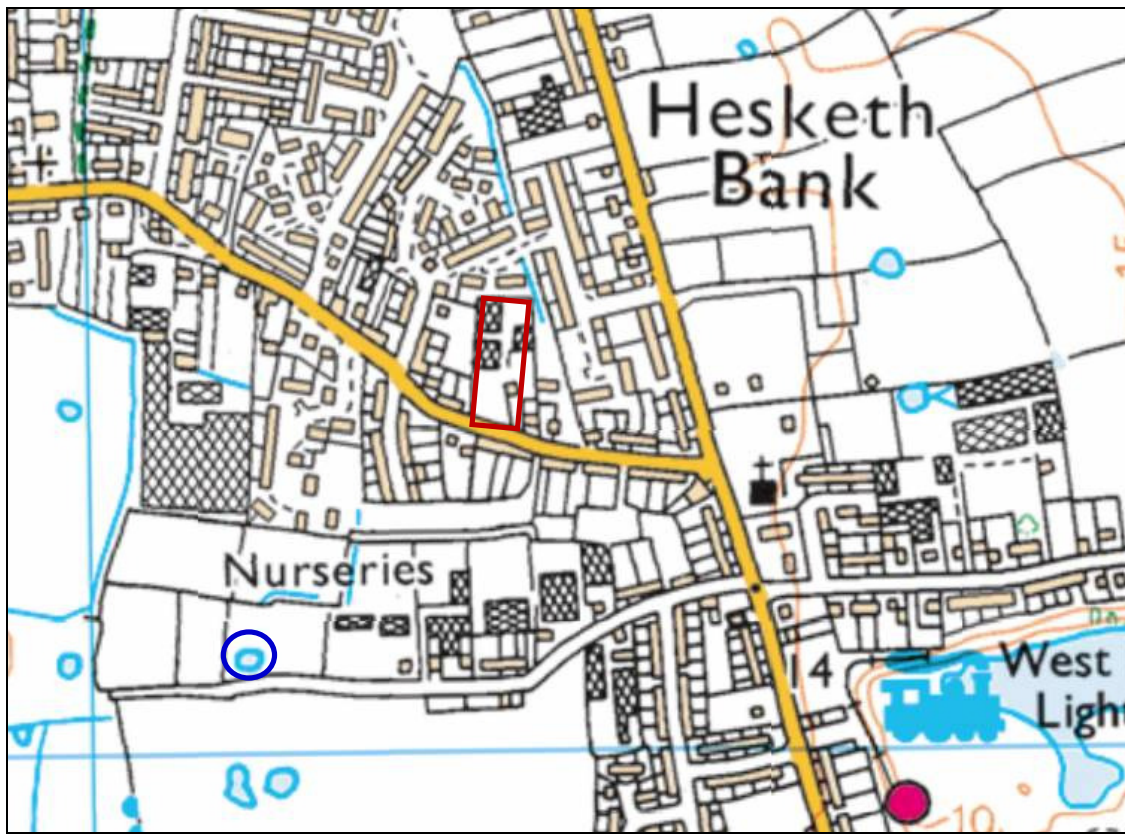


Figure 8: Approximate site location
 Nearest pond at 380 metres south-west

8.6.2 **Risk to GCN:**

In order to assess risk to the species, a number of factors need to be considered. These include:

- Site proximity to potential breeding pond and to any additional ponds
- Habitat linkage / barriers between potential breeding ponds and the site
- Nature and extent of available terrestrial habitat around the pond
- Area of site habitat loss
- Nature of habitat to be lost and its potential value to GCN as refuge/ overwintering habitat.

Research by Natural England has shown that where favourable habitat exists around GCN ponds, the vast majority of the population is likely to be contained within 100m of the breeding pond, creating a 'terrestrial sponge' effect. Natural England's Rapid Risk Assessment has been conducted below (Table 7).

Former Whitegate Nurseries, 66 Chapel Road, Hesketh Bank, PR4 6RT
Preliminary Ecological Appraisal

Table 7: NE Rapid Risk Assessment

Component	Likely effect (select one for each component; select the most harmful option if more than one is likely; lists are in order of harm, top to bottom)	Notional offence probability score
Great crested newt breeding pond(s)	No effect	0
Land within 100m of any breeding pond(s)	No effect	0
Land 100-250m from any breeding pond(s)	No effect	0
Land >250m from any breeding pond(s)	0.5 - 1 ha lost or damaged	0.03
Individual great crested newts	No effect	0
Maximum:		0.03
Rapid risk assessment result:	GREEN: OFFENCE HIGHLY UNLIKELY	

- 8.6.3 Given the disconnected nature of affected habitats and distance from potential breeding pools, it is considered that the presence of GCN within the survey boundary is highly unlikely.

Other Amphibians

- 8.6.4 Given the quality of on-site habitats, the continual presence of other, more generalist amphibian species such as the common frog (*Rana temporaria*) or common toad (*Bufo bufo*) is considered to be unlikely.

Reptiles

- 8.6.5 No suitable habitats / connectivity for reptiles exist across the site.

8.7 PHASE 1 HABITAT SURVEY:

All species nomenclature for vascular plants follows Stace, C. (2019) – definitive English names

(Refer to Appendix IV for the location of all described habitats)

Table 8: Phase 1 habitat types within the survey area

Habitat Code	Broad Habitat	Description
A3.1	Scattered trees - broadleaved	Scattered trees exist occasionally through the site including Pedunculate Oak (<i>Quercus robur</i>), Sycamore (<i>Acer pseudoplatanus</i>) and Apple (<i>Malus pumila</i>).
C3.1	Tall ruderal	Areas of tall ruderal vegetation dominated by a limited variety of graminaceous plants and forbs including Cock's-foot (<i>Dactylis glomerata</i>) and Creeping Thistle (<i>Cirsium arvense</i>) exist to the north-east, intermixed with ephemeral/short-perennial vegetation.
J1.2	Amenity grassland	Areas of amenity grassland to the south of the survey area were dominated by a limited suite of plants, primarily including grasses such as Perennial Rye-grass (<i>Lolium perenne</i>) and Creeping Bent (<i>Agrostis stolonifera</i>). Occasional forbs exist within amenity grassland, including Cuckooflower (<i>Cardamine</i>

Former Whitegate Nurseries, 66 Chapel Road, Hesketh Bank, PR4 6RT
Preliminary Ecological Appraisal

		<i>pratensis</i>), White Clover (<i>Trifolium repens</i>) and Dandelion (<i>Taraxacum officinale</i> agg.).
J1.3	Ephemeral/short-perennial	Areas of early successional vegetation exist on site, primary to the north-east and are dominated by a suite of both vascular and non-vascular species including Annual Meadow-grass (<i>Poa annua</i>), Broad-leaved Dock (<i>Rumex obtusifolius</i>), Field Forget-me-not (<i>Myosotis arvensis</i>) and the mosses <i>Didymodon insulanus</i> and <i>Kindbergia praelonga</i> .
J2.1.2	Intact species-poor hedge	Areas of hedgerow exist to the north and south are dominated by Hawthorn (<i>Crataegus monogyna</i>) and Garden Privet (<i>Ligustrum ovalifolium</i>).
J3.6	Building	N/A

Target Notes

TN1 – Location of Ramping-fumitory

9.0 Conclusions & Recommendations

Vegetation

- 9.1 Whilst no species of conservation importance were conclusively identified at the former Whitegate Nurseries, a Ramping-fumitory (*Fumaria* sp.) (non-flowering) was found across the eastern length of a greenhouse (B4). Purple Ramping-fumitory (*Fumaria purpurea*) occurs around the Hesketh Bank area (BSBI Maps, 2019) and is a species of international conservation importance, which may only conclusively be identified with the presence of flowers. It is therefore recommended that a further site visit is undertaken to ascertain the identity of this Ramping-fumitory when in flower.

No invasive plants were located across the full extent of the survey area.

Enhancement relative to the floristic diversity of the site is recommended within Appendix III.

- 9.2 It is recommended that any landscaping incorporates native woody plants as opposed to alien species which are of substantially less wildlife value and may, in turn, achieve biodiversity net-loss. Landscaping should incorporate plants appropriate for the area including the following species:

Table 9: Appropriate woody species for the land at the former Whitegate Nurseries

Trees	Woody Shrubs
English Oak (<i>Quercus robur</i>)	Hawthorn (<i>Crataegus monogyna</i>)
Rowan (<i>Sorbus aucuparia</i>)	Honeysuckle (<i>Lonicera periclymenum</i>)
Wild Service Tree (<i>Sorbus torminalis</i>)	Guelder Rose (<i>Viburnum opulus</i>)
Silver Birch (<i>Betula pendula</i>)	Elder (<i>Sambucus nigra</i>)
Ash (<i>Fraxinus excelsior</i>)	Wild Privet (<i>Ligustrum vulgare</i>)
Goat Willow (<i>Salix caprea</i>)	Blackthorn (<i>Prunus spinosa</i>)
Beech (<i>Fagus sylvatica</i>)	
Wild Cherry (<i>Prunus avium</i>)	

Former Whitegate Nurseries, 66 Chapel Road, Hesketh Bank, PR4 6RT
Preliminary Ecological Appraisal

Bats

- 9.3 From the survey results it can be concluded that all outbuildings and trees contained within the survey boundary pertain to a 'negligible' categorisation with regards to bat roost suitability. As an enhancement, it is recommended that bat roost provisions are incorporated into the new dwellings, as per Appendix III.
- 9.4 Installation of lighting as part of any development that exceeds current levels may have a negative impact upon foraging/commuting bats. At the land at the former Whitegate Nurseries, lighting must not illuminate boundary features. Increased light spillage should be avoided in areas likely to be used by bats as a foraging resource such as the parameters of the site boundary.

If inappropriate and ill designed lighting is implemented across the site, then there is likely to be an adverse impact upon bats. There are many measures that can be used, where lighting is unavoidable to reduce potential impacts. These include, however are not limited to, the light source used and luminaire design and accessories to direct light at its intended target. Numerous software programmes are currently available which can be used inform lighting plans, demonstrating how lighting decisions will illuminate a site. Refer to the Bat Conservation Lighting Guidelines for further information.

Other Terrestrial Mammals

- 9.5 Hedgehog may use the site for breeding/refuge purposes at site boundaries. It is therefore recommended that pilings of debris are supervised by a suitably qualified ecological clerk of works (EcOW). If hedgehog is/are found during deconstruction, they are to be left in situ or alternatively moved to a like-for-like habitat nearby.

A precautionary approach is to be adopted during clearance works; in the event that any hedgehogs are encountered, they are to be left in place unless they're at an immediate risk of harm – in which case, they are to be moved to an area of like-for-like habitat.

Furthermore, enhancement for hedgehog is recommended to be incorporated into the proposed development as per Appendix III.

- 9.6 No evidence of badger use was identified at the time of the survey and the possible presence of this species within the confines of the survey area at the time of proposed works is considered unlikely.

Breeding Birds

- 9.7 There are no implications in relation to Schedule 1 specially protected bird species e.g. Barn owl and no evidence of use was located upon inspection of the site.
- 9.8 The presence of other common bird species within the application site and within the application boundary for nesting purposes within areas of debris, scrub and trees is considered to be likely, though no historic/active nests were identified at the time of the survey. It is therefore recommended that works commence outside the breeding season for birds (broadly March-August inclusive), unless it can conclusively be demonstrated by a suitably qualified ecologist that nesting birds are absent.

Former Whitegate Nurseries, 66 Chapel Road, Hesketh Bank, PR4 6RT

Preliminary Ecological Appraisal

- 9.9 It is recommended that enhancement for birds are incorporated into the proposed development as per Appendix III.

Herptiles

- 9.10 No water bodies are located within a 250 metre radius of the site, whilst the site itself is highly isolated from extending areas of favourable habitat set within the contiguous landscape via extensive areas of residential development. The presence of GCN or notable amphibians to be impacted upon by the development is therefore considered to be highly unlikely.
- 9.11 The potential presence of reptiles within the application site is considered to be highly unlikely.

10.0 Bibliography

- **BSBI**, 2019. *BSBI Maps*. Available from: www.bsbi.org/maps
- **DEFRA**, 2018. Net gain: Consultation Proposals. Available from: https://consult.defra.gov.uk/land-use/net-gain/supporting_documents/netgainconsultationdocument.pdf
- **CIEEM**, 2019. *Biodiversity Net Gain: Good practice principles for development*. Available from: www.cieem.net/data/files/Publications/Biodiversity_Net_Gain_Principles.pdf
- **CIEEM**, 2016. *Guidelines for Ecological Impact Assessment in the UK and Ireland*, 2nd edition. Available from: www.cieem.net/data/files/Publications/EcIA_Guidelines_Terrestrial_Freshwater_and_Coastal_Jan_2016.pdf
- **CIEEM**, 2016. *UK Guidelines for Accessing and Using Biodiversity Data*. Available from: www.cieem.net/data/files/Publications/Guidelines_for_Accessing_and_Using_Biodiversity_Data.pdf
- **CIEEM**, 2017. *Guidelines for Preliminary Ecological Appraisal*, 2nd edition. Available from: www.cieem.net/data/files/Publications/Guidelines_for_Preliminary_Ecological_Appraisal_Jan2018_1.pdf
- **Collins, J** (ed.), 2016. *Bat Surveys for Professional Ecologists: Good Practice Guidelines*, 3rd edition. The Bat Conservation Trust, London.
- **Communities & Local Government (C&LG)**, 2019. *National Planning Policy Framework*. Available from: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/6077/2116950.pdf
- **English Nature**, 2001. *Great Crested Newt Guidelines*. Version Aug 2001.
- **Froglife**, 2015. Surveying for reptiles. Available from: <https://www.froglife.org/wp-content/uploads/2013/06/Reptile-survey-booklet-3mm-bleed.pdf>
- **Joint Nature Conservancy Council (JNCC)**, 2010. *Handbook for Phase 1 habitat survey*. Available from: http://jncc.defra.gov.uk/PDF/pub10_handbookforphase1habitatsurvey.pdf

Former Whitegate Nurseries, 66 Chapel Road, Hesketh Bank, PR4 6RT
Preliminary Ecological Appraisal

- **Magic Maps Application**, 2018. Available from:
www.natureonthemap.naturalengland.org.uk/MagicMap.aspx
- **Natural England**, 2015. *Great Crested Newts: Surveys and mitigation for developments and projects*. Available from: <https://www.gov.uk/guidance/great-crested-newts-surveys-and-mitigation-for-development-projects>
- **North West Biodiversity Audit Group (NWBAG)**, 1999. *A biodiversity audit of north-west England*.
- **Oldham R.S.; Keeble J.; Swan M.J.S.; Jeffcote M.**, 2000. *Evaluating the suitability of habitat for the Great Crested Newt (Triturus cristatus)*. Herpetological Journal 10 (4), 143-155
- **Sewell, D; Griffiths, R.A; Beebee, T.J; Foster, J; Wilkinson, J. W.**, 2013. Survey protocols for the British herpetofauna. Available from:
http://www.narrs.org.uk/documents/Survey_protocols_for_the_British_herpetofauna.pdf
- **Stace. C**, 2019. *New Flora of the British Isles*, 4th edition. Cambridge University Press, The Edinburgh Building, Cambridge, CB2 2RU.
- **Stroh. P. A; Leach. S. J; August. T. A; Walker. T. J; Pearman. D. A; Rumsey. F. J; Harrower. C. A; Fay. M. F; Martin. J. P; Pankhurst. T; Preston. C. D; Taylor. I.**, 2014. *A Vascular Plant Red-List for England*, 2nd edition. Trollius Publications.

Former Whitegate Nurseries, 66 Chapel Road, Hesketh Bank, PR4 6RT
Preliminary Ecological Appraisal

Appendix I: Site Photographs



Plate 1: A view of the site (south)



Plate 2: A view of the site (north)

Former Whitegate Nurseries, 66 Chapel Road, Hesketh Bank, PR4 6RT
Preliminary Ecological Appraisal



Plate 3: B1



Plate 4: B2-B3

Former Whitegate Nurseries, 66 Chapel Road, Hesketh Bank, PR4 6RT
Preliminary Ecological Appraisal



Plate 5: Debris pilings



Plate 6: Hedgehog dropping

Former Whitegate Nurseries, 66 Chapel Road, Hesketh Bank, PR4 6RT
Preliminary Ecological Appraisal



Plate 7: Interior of greenhouse indicative



Plate 8: Scattered trees indicative

Former Whitegate Nurseries, 66 Chapel Road, Hesketh Bank, PR4 6RT
Preliminary Ecological Appraisal

Appendix II: Site-Specific Botanical Species List

Each species recorded was given an abundance value according to the standard DAFOR scale, where:

D	=	Dominant
A	=	Abundant
F	=	Frequent
O	=	Occasional
R	=	Rare

*These values can be prefixed by the letter L (locally), to provide more subtle biogeographical data.

<u>Class</u>	<u>Common Name</u>	<u>Scientific Name</u>	<u>DAFOR</u>
Bryopsida (Mosses & Liverworts)		<i>Brachythecium rutabulum</i>	O
		<i>Grimmia pulvinata</i>	R
		<i>Kindbergia praelonga</i>	O
		<i>Polytricum juniperinum</i>	R
		<i>Rhytidiadelphus squarrosus</i>	LF
Equisetopsida (Horsetails)	Field Horsetail	<i>Equisetum arvense</i>	O
Pteridopsida (Ferns)	Hart's-tongue Fern	<i>Asplenium scolopendrium</i>	R
	Lady Fern	<i>Athyrium filix-femina</i>	R
	Male Fern	<i>Dryopteris filix-mas</i>	R
Magnoliopsida (Flowering Plants)	a Bramble	<i>Rubus fruticosus</i> agg.	O
	a Dandelion	<i>Taraxacum officinale</i> agg.	R
	Amphibious Bistort	<i>Persicaria amphibia</i>	R
	Apple	<i>Malus pumila</i>	R
	Ash	<i>Fraxinus excelsior</i>	R
	Black Current	<i>Ribes nigrum</i>	R
	Black Nightshade	<i>Solanum nigrum</i>	R
	Bridewort	<i>Spiraea x billardii</i>	R
	Broad-leaved Dock	<i>Rumex obtusifolius</i>	LF
	Bush Vetch	<i>Vicia sepium</i>	R
	Cock's-foot	<i>Dactylis glomerata</i>	R
	Common Mouse-ear	<i>Cerastium fontanum</i>	O
	Common Sorrel	<i>Rumex acetosa</i> subsp. <i>acetosa</i>	R
	Cow Parsley	<i>Anthriscus sylvestris</i>	O
	Creeping Bent	<i>Agrostis stolonifera</i>	LF
	Creeping Buttercup	<i>Ranunculus repens</i>	F
	Creeping Thistle	<i>Cirsium arvense</i>	O
	Cuckooflower	<i>Cardamine pratensis</i>	R
	Curled Dock	<i>Rumex crispus</i>	R
	Daisy	<i>Bellis perennis</i>	R

Former Whitegate Nurseries, 66 Chapel Road, Hesketh Bank, PR4 6RT
Preliminary Ecological Appraisal

	Dove's-foot Crane's-bill	<i>Geranium molle</i>	O
	Equal-leaved Knotgrass	<i>Polygonum arenastrum</i>	R
	False Oat-grass	<i>Arrhenatherum elatius</i>	LF
	Fat-hen	<i>Chenopodium album</i>	R
	Field Forget-me-not	<i>Myosotis arvensis</i>	O
	Fleabane	<i>Pulicaria dysenterica</i>	R
	Foxglove	<i>Digitalis purpurea</i>	R
	Garden Lady's-mantle	<i>Alchemilla mollis</i>	R
	Garden Privet	<i>Ligustrum ovalifolium</i>	R
	Garlic Mustard	<i>Alliaria petiolata</i>	O
	Giant Blackberry	<i>Rubus armeniacus</i>	R
	Great Willowherb	<i>Epilobium hirsutum</i>	O
	Ground Elder	<i>Aegopodium podagraria</i>	R
	Groundsel	<i>Senecio vulgaris</i> subsp. <i>vulgaris</i>	O
	Hairy Bittercress	<i>Cardamine hirsuta</i>	R
	Hawthorn	<i>Crataegus monogyna</i>	O
	Herb-Robert	<i>Geranium robertianum</i>	O
	Holly	<i>Ilex aquifolium</i>	R
	Honeysuckle	<i>Lonicera periclymenum</i>	R
	Italian Rye-grass	<i>Lolium multiflorum</i>	R
	Itanium Lords-and-Ladies	<i>Arum italicum</i> subsp. <i>italicum</i>	R
	Ivy-leaved Speedwell	<i>Veronica hederifolia</i>	R
	Large Bindweed	<i>Calystegia silvatica</i>	O
	Mind-your-own-business	<i>Soleirolia soleirolii</i>	R
	Pedunculate Oak	<i>Quercus robur</i>	R
	Pendulous Sedge	<i>Carex pendula</i>	R
	Perennial Rye-grass	<i>Lolium perenne</i>	LA
	Petty Spurge	<i>Euphorbia peplus</i>	LF
	Prickly Sow-thistle	<i>Sonchus asper</i>	O
	Ramping-fumitory sp. (non-flowering)	<i>Fumaria</i> sp.	O
	Red Dead-nettle	<i>Lamium purpureum</i>	O
	Red Fescue	<i>Festuca rubra</i>	O
	Redshank	<i>Persicaria maculosa</i>	O
	Ribwort Plantain	<i>Plantago lanceolata</i>	R
	Rose sp.	<i>Rosa</i> sp.	R
	Selfheal	<i>Prunella vulgaris</i>	F
	Shepherd's-purse	<i>Capsella bursa-pastoris</i>	R
	Silverweed	<i>Potentilla anserina</i>	O
	Smooth Sow-thistle	<i>Sonchus oleraceus</i>	R
	Snowberry	<i>Symphoricarpos albus</i>	R
	Sticky Mouse-ear	<i>Cerastium glomeratum</i>	R
	Sycamore	<i>Acer pseudoplatanus</i>	R

Former Whitegate Nurseries, 66 Chapel Road, Hesketh Bank, PR4 6RT
Preliminary Ecological Appraisal

	Tutsan	<i>Hypericum androsaemum</i>	R
	Water Bent	<i>Polypogon viridis</i>	R
	White Clover	<i>Trifolium repens</i>	LF
	Willowherb sp.	<i>Epilobium</i> sp.	O
	Wood Forget-me-not	<i>Myosotis sylvatica</i>	O
	Yorkshire-fog	<i>Holcus lanatus</i>	O

Appendix III: Biodiversity Enhancement / Compensation

Flora

WildflowerShop offers a range of specialised seed mixes available for the creation of wildflower areas. The most site appropriate mix for Ferndale Garden Centre would be the 'Butterfly Mix' as labelled below and can be purchased here:

<http://www.wildflowerShop.co.uk/WF%20Seed%20Collections/wf%20butterfly%20seeds.htm>

All wild plant seeds are of British native origin and seeds should be sown onto bare soil from 1.5 grams per square metre depending on the density of flower required. Species within the mix include:

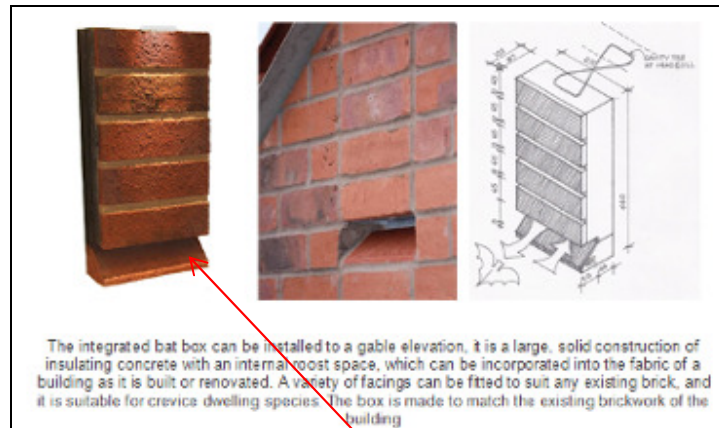
- Lady's Bedstraw (*Galium verum*)
- Common Bird's Foot Trefoil (*Lotus corniculatus*)
- Salad Burnet (*Sanguisorba minor*)
- White Campion (*Silene latifolia*)
- Wild Carrot (*Daucus carota*)
- Common Catsear (*Hypochaeris radicata*)
- Meadow Cranesbill (*Geranium pratense*)
- Rough Hawkbit (*Leontodon hispidus*)
- Common Knapweed (*Centaurea nigra*)
- Greater Knapweed (*Centaurea scabiosa*)
- Musk Mallow (*Malva moschata*)
- Dark Mullein (*Verbascum nigrum*)
- Oxeye Daisy (*Leucanthemum vulgare*)
- Ribwort Plantain (*Plantago lanceolata*)
- Field Scabious (*Knautia arvensis*)
- Selfheal (*Prunella vulgaris*)
- Perforate St.Johns Wort (*Hypericum perforatum*)
- Kidney Vetch (*Anthyllis vulneraria*)
- Tufted Vetch (*Vicia cracca*)
- Yarrow (*Achillea millefolium*)
- Yellow Rattle (*Rhinanthus minor*)

Bats

There are a number of options when enhancing a building for crevice-dwelling bats; such forms of enhancement replicate crevice situations that are used by species including Pipistrelle bats; three are shown below. The roost(s) would be permanent and dedicated for bats.

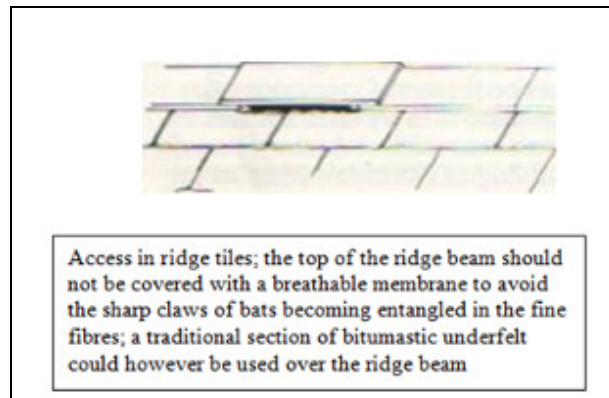
Former Whitegate Nurseries, 66 Chapel Road, Hesketh Bank, PR4 6RT
Preliminary Ecological Appraisal

1.



When ordering it is important to ensure that the landing platform surface is coarse to allow bat to alight before entering the bat box

2.



3.



1FQ Bat Roost - designed specifically to be fitted on the external wall of a house, barn or other building. The shape and design make it equally attractive to bats as a roost or a nursery. It is also pleasing to the human eye, an important consideration. Easy to attach to most types of walls, it features a special porous coating to help maintain the ideal temperature inside. It requires no maintenance or cleaning.

Nesting Birds

House Sparrow

The Sparrow Terrace has been designed to help redress the balance of falling house sparrow numbers. The current UK population is half what it was in 1980 and this is thought to be due to habitat destruction and lack of suitable nesting spaces. Sparrows are social birds and like to nest in company, therefore, this terrace provides ideal nesting opportunities for three families.

The terrace can be fixed on to the surface of a suitable wall or incorporated into the wall. It is suitable for all types of agricultural buildings such as barns.

<http://www.nhbs.com/title/174850/1sp-schwegler-sparrow-terrace>



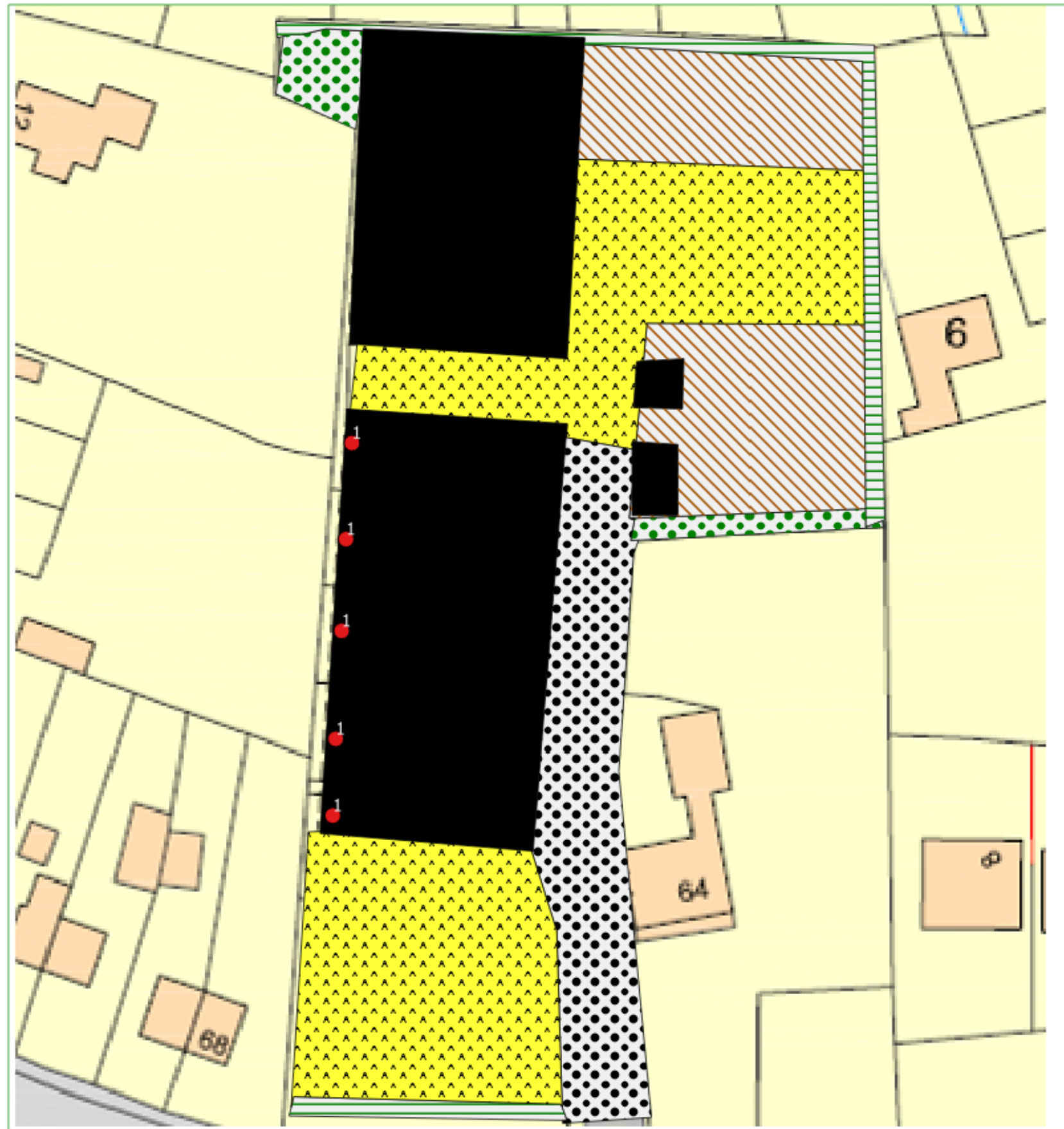
Hedgehog

Further enhancement measures is recommended to be incorporated into garden fences that would be of benefit for Hedgehog (*Erinaceus europaeus*); Hedgehog highways allow connectivity between gardens and extend valuable foraging habitat for this declining mammal (see below).



Figure 9: Indicative Hedgehog Highway positions within boundary fences on indicative plan

Appendix IV: Phase 1 Habitat Map



Site Name: Former Whitegate Nurseries

Legend

- Target note
- A3.1 - Broadleaved Parkland/scattered trees
- C3.1 - Other tall herb and fern - ruderal
- J1.2 - Cultivated/disturbed land - amenity grassland
- J2.1.2 - Intact hedge - species-poor
- J3.6 - Buildings
- J4 - Bare ground

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Drawn: JS
Checked & Approved: KW



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