Ecological Impact Assessment

BE-889.1a

Station Road, Meltham HD9 4AS

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Site address	Station Road, Meltham HD9 4AS
Grid reference	SE 10666 11079
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Executive Summary

Bagshaw Ecology Ltd have been requested by Adam Howarth (H3 Property Consultants) to undertake an Ecological Impact Assessment of the land at Station Road, Meltham HD9 4AS, in relation to an application for planning. The development proposals are to construct seven residential dwellings.

The survey found the habitats on site to be of low ecological value, consisting of species poor grazed grassland. The development proposals require the removal of a portion of this habitat; it is not anticipated that this will have any significant ecological impacts on the surrounding landscape. The woodland corridors to the north and south of the development and the mill pond to the east of the development are included within the Kirklees Wildlife Habitat Network, however as the development will not require the removal of any of these habitats it is not anticipated that the connectivity of the network will be impacted.

None of the trees on the site have potential for roosting bats however the woodland corridors to the north and south of the development provide suitable habitat for foraging and commuting bats. In addition to this Meltham Dike within the corridor to the south and the mill pond to the east provide suitable commuting and foraging habitat for otter *Lutra lutra.* To prevent any impacts to these species due to the development, it is recommended that wildlife friendly lighting is used which follows guidelines published by the Bat Conservation Trust (BCT, 2018). Recommendations for lighting specifications are outlined within this report.

To prevent fragmentation of terrestrial habitat for hedgehogs *Erinaceous europaeus*, it is recommended that boundaries of properties are divided by hedgerows, or if fences are to be used, holes should be cut into the bottom of fence panels to facilitate access.

The mill pond to the east of the site was assessed for its suitability for great crested newts *Triturus cristatus* and was found to provide poor habitat, largely due to a major population of fish (the pond is used by a local fishing club). Therefore, it is not anticipated that great crested newts will be impacted by the developments.

The scrub and trees on the site provide suitable habitat for nesting birds. It is recommended that no works are carried out to the trees or scrub within bird nesting season (1st March – 31st August), unless a further survey can confirm that the nests are no longer occupied.

As Meltham Dike provides potential habitat for otter, it is recommended that no works are carried out within a 5m buffer zone of the dike. In addition to this it is recommended that no materials harmful to aquatic life, such as cement, are stored or mixed within 5m of Meltham Dike.

To mitigate for the loss of nesting bird opportunities within the scrub on site and in accordance with the NPPF to enhance the ecological value of the site, it is recommended that nesting bird habitat is incorporated into the development proposals.

1. Introduction

1.1. Background

Bagshaw Ecology Ltd have been requested by Adam Howarth (H3 Property Consultants) to undertake an Ecological Impact Assessment of the land at Station Road, Meltham HD9 4AS, hereafter referred to as 'the site'.

The purpose of the report is to identify the habitat types on the site, along with the presence or absence of any protected or notable species. The ecological impact of any proposed development is assessed, and mitigation, management and aftercare proposals are suggested when appropriate.

1.2. Site Details

The site located at grid reference SE 10666 11079 and is accessed off the north of Station Road. The site bordered by a wooded footpath to the north, a mill pond to the east, woodland to the west and Station Road to the south.

The site comprises a grazed agricultural field.



Figure 1.1 Aerial imagery of site and surrounding area (Google Earth Pro, 2018)

1.3. Development Proposals

The development proposals are to construct seven dwellings on the site and widen Station Road to provide access.

2. Legislative Context

2.1. Legislation

The Wildlife and Countryside Act 1981 (As Amended), makes it an offence to:

- Deliberately or recklessly injure, kill or capture any animal protected under Schedule 5 of the act.
- Deliberately or recklessly kill, injure or take any wild bird; to take, damage or destroy the nest of any wild bird while occupied or being built, or to take or destroy the egg of a wild bird. Additional protection is afforded to bird species listed under Schedule 1 of the Act.
- Intentionally pick, uproot or destroy any wild plant included in Schedule 8 of the Act.

The Conservation of Habitats and Species Regulation 2017 makes it an offence to deliberately capture, kill or disturb any animal protected under Schedule 2 of the regulations. It is also an offence to damage or destroy a breeding site or resting place of an animal, even if the animal is not present at the time.

2.2. Policy

The UK Biodiversity Action Plan (UKBAP) includes a list of 943 national priority species and 56 habitats of principal importance, with all species and habitats having specific action plans defining the measures required to ensure their conservation. Although the UKBAP has since been superseded by the UK-Post 2010 Biodiversity Framework and a focus on County Biodiversity Plans, it remains a useful point of reference.

Section 41 of the Natural Environment and Rural Communities Act (NERC) 2006 required that any public bodies take into consideration any species and habitats listed in the UKBAP when implementing their duty and exercising any normal functions.

The National Planning Policy Framework (NPPF) states that planning decisions should aim to protect or enhance biodiversity and conservation interests, and where possible any development should aim to increase net gains in biodiversity.

The Kirklees Biodiversity Action plan identifies species and habitats of importance, including

- Nine species of mammal, including brown hare *Lepus europaeus*, mountain hare *Lepus timidus*, brown long-eared bat *Plecotus auritus*, noctule *Nycatlus noctula*, otter *Lutra lutra*, soprano pipistrelle *Pipistrellus pygmaeus*, water vole *Arvicola terrestris* and hedgehog *Erinaceous europaeus*.
- Three species of reptile and amphibian, including common lizard Lacerta vivipara, common toad, *Bufo bufo*, and crested newt *Triturus cristatus*.
- Twenty-three bird species.
- One species of invertebrate, northern wood ant *Formica lugubris*, which occurs at one site in the area.
- Two species of fish

The Kirklees Biodiversity Action Plan identifies 19 UKBAP habitats which occur in the area, in addition to three local BAP habitats: scrub; wet rush pasture and rough grassland; and riverine habitats.

3. Methods

3.1. Ecological Data Search

The local biological record centre, West Yorkshire Joint Services (WYJS), was consulted as to any protected/notable species within a 2km radius of the site.

The Department for Environment, Food and Rural Affairs' (DEFRA) Magic Maps website was consulted as to any land-based designations and priority habitats within a 1km radius of the site.

Aerial imagery was assessed using OS maps and Google Earth Pro to give an appraisal of the surrounding land use.

3.2. Phase 1 Habitat Survey

The habitat survey and mapping exercise was carried out in suitable weather conditions on the 18th of December 2018.

The survey was undertaken by Amy Reddick BSc (Hons) MSc GradCIEEM, an ecologist and licensed bat surveyor (2018-37680-CLS-CLS) with experience in carrying out phase 1 habitat surveys.

The study area was surveyed in accordance with UK Habitat Classification (UKHab) (2018) guidelines. Habitat types were assigned a primary code to a hierarchical level of at least two, and secondary codes to further clarify the habitat. Notes were made identifying important species, along with the presence of potential habitats for any protected or notable species.

Habitats and species present on or adjacent to the site were assessed using CIEEM's (2018) guidelines. Ecological features were classed as being of either international, national, regional, district, local, low or of negligible importance (see table 3.1).

Table 3.1 Importance of ecological features

Value of feature	Key examples
International	Internationally designated sites (SPA, pSPA, SAC, cSAC, Ramsar site, Biogenetic Reserve), or an area which meets designation for such sites. Internationally significant and viable areas of a habitat listed in Annexe 1 of the Habitats Directive. Any regularly occurring, globally threatened species. A regularly occurring population of an internationally important species, which is threatened or rare in the UK.
National	A nationally designated site (SSSI, NNR, LNR), or an area which meets designation for such sites. A regularly occurring significant number/population of a nationally important species (e.g. listed on the Wildlife and Countryside Act 1981 (as amended)). A feature identified as being of critical.
Regional/County	Viable areas of key habitat identified in the regional or county BAP. A regularly occurring significant population/number of any species important at regional/county level. Sites of conservation importance which exceed the district selection, but which fall short of SSSI selection guidelines.
District	Areas of habitat identified in District/City/Borough BAP. Sites that the designating authority has determined meet the published ecological selection criteria for designation.

Value of feature	Key examples
	Sites/features which are scarce within the District/City/Borough. A regularly occurring significant population/number of any species important at District/City/Borough level.
Local	Areas identified in a Local BAP. Sites/features which are scarce in the locality or which are considered to appreciably enrich the habitat resource within the local context (e.g. species-rich hedgerows). Any populations, species or habitats of local importance.
Low/Site	Habitats of moderate to low diversity which support a range of locally and nationally common species, the loss of which can be easily mitigated.
Negligible	Habitats of no ecological value, the removal of which requires no mitigation.

3.3. Bat survey

The trees on site were assessed for bats from the ground using binoculars to identify any potential roost features (PRFs). PRFs were assessed for their potential for roosting bats using methods prescribed by Collins (2016) and BRHK (2018).

The potential of trees for roosting bats was summarised using the criteria shown in Table 3.2, below.

Table 3.2 Bat roosting potential in trees

Roosting potential	Criteria
Confirmed presence	Presence confirmed by the survey.
High	A tree with one or more potential roost features that is obviously suitable for large numbers of bats.
Moderate	A tree with one or more potential roost features but which is unlikely to support roosts of high conservation status.
Low	A tree of sufficient size and age to contain potential roost features but with none seen from the ground, or features with very limited roost potential.
Negligible	Negligible habitat features unlikely to be used by roosting bats.

4. Results

4.1. Constraints

The site survey was conducted outside the optimum period for Phase 1 Habitat Surveys. Some species are only visible at certain times of the year and may not have been present during the survey.

4.2. Designated Sites

A search on Magic Maps (DEFRA, 2018) found several notable habitats within 1km of the site including:

- Two Ancient Woodland Habitats, Hall Heys Wood and Honley Old Woods which is the closest at 430m to the southeast of the site.
- Twenty-Four Deciduous Woodland habitats, the closest of which is located adjacent to the north of the site.

WYJS hold records of four designated sites within 1km of the site including:

- Bank Wood, a Local Wildlife Site (LWS) consisting of species rich acid woodland. It is located 1.2km to the northeast of the site.
- Hall Heys Wood, an LWS consisting of semi-natural ancient woodland. It is located 780m to the northeast of the site.
- Honley Wood, an LWS and Site of Scientific Interest (SSI) consisting of a large ancient woodland. It was located approximately 430m to the southeast of the site.
- Blackmoor Foot Reservoir, a SSI consisting of a reservoir which supports a large array of bird species and has historical records of water vole. It is located 1.5km to the north of the site.
- The woodland corridors to the north and south of the site and the mill pond to the east of the site are included within the Kirklees Wildlife Habitat Network.

4.3. Habitats

The surrounding land use was predominantly rural agricultural land with some suburban areas. Connectivity to the site is good and tree cover in the immediate surrounding area is intermediate, with several large woodlands and linear tree features providing suitable habitat for commuting and foraging bats.

The site comprises an area of grazed grassland approximately 1.7ha in size. The development area encompasses approximately 0.55ha of the central south section of the site. A woodland corridor is located adjacent to the north of the site with wooded areas also adjacent to the south of the site around Meltham Dike. Table 4.1, below, summarises the habitat types found on the site. A map of the habitats can be viewed in the appendices.

Table 4.1 Habitats as defined by UKHAB (2018)

UK Habitat	Description	Ecological Value
W1g6 Line of trees	Woodland corridors adjacent to the north and south of the site consisting of sessile oak *Quercus petraea*, ash *Fraxinus excelsior*, sycamore *Acer pseudoplatanus*, silver birch *Betula pendula*, beech *Fagus sylvatica* and holly *Ilex aquifolium*.	District
g4 Poor semi-improved grassland	The majority of the site was steeply sloped south facing grassland. This was intensively grazed by sheep with a short uniform sward and poor species diversity. Species observed included creeping bent *Agrostis stolonifera*, Yorkshire fog *Holcus lanatus*, cock's foot *Dactylis glomerata*, sheep's sorrel *Rumex acetosella*, common nettle *Urtica dioica,* creeping buttercup *Ranunculus repens*, creeping thistle *Cirsium arvense*, burdock *Arctium minus*, common daisy *Bellis perennis* and foxglove *Digitalis purpurea* with a thick sphagnum moss layer to the south. Several hawthorn *Crataegus monogyna* shrubs were located to the east of the site adjacent to the mill pond. Recent excavations had been made to the south of the site which were fenced off with palisade fencing. Extensive mole activity was observed on the site.	Low
h3 Scrub	A small area of scrub was located outside the development area to the west of the site. Species included common bramble *Rubus fruticosus*, common bracken *Pteridium aquilinum*, common nettle and cleavers *Galium aparine*.	Low
R2 rivers	Meltham Dike located adjacent to Station Road to the south of the site.	District

4.4. Bats

Desk based study

Ten species of bat have been recorded in West Yorkshire, including Brandt's bat *Myotis brandtii*, Daubenton's bat *Myotis daubentoni*¸ whiskered bat *Myotis mystacinus*, Natterer's bat *Myotis nattereri*, Leisler's Bat *Nyctalus leisleri*, noctule *Nyctalus noctula*, Nathusius' pipistrelle *Pipistrellus nathusii*, common pipistrelle *Pipistrellus pipistrellus*, soprano pipistrelle *Pipistrellus pygmaeus* and brown long-eared bat *Plecotus auritus* (Harris and Yalden, 2008).

Seven of the 10 species recorded in West Yorkshire, including whiskered bat, Brandt's bat, Natterer's bat, Leisler's bat, common pipistrelle, soprano pipistrelle and brown long-eared bat are known to roost in buildings at some point throughout the seasonal year (Harris and Yalden, 2008; Dietz *et al,* 2011; Collins, 2016).

WYJS holds records of bat species within 1km of the site, including Daubenton's bat, Natterer's Bat, noctule and common pipistrelle.

The closest held record to the site is a field record of a common pipistrelle located 581m from the site.

DEFRA (2018) holds no records of granted European Protected Species Licenses within 1km of the site.

Bat scoping survey

None of the trees on the site had potential for roosting bats.

The woodland corridor to the north of the site and the trees lining Meltham Dike to the south provide suitable habitat for commuting and foraging bats.

4.5. Other Mammals

WYJS holds records of several mammal species within 2km of the site including: water vole *Arvicola amphibius*, otter *Lutra lutra,* brown hare *Lepus europaeus* and badger *Meles meles.*

The closest field record was of an otter located 100m from the site near to the mill pond and Meltham Dike.

Evidence of otter has been recorded near to the adjacent mill pond which is used by a local fishing club. Meltham Dike, adjacent to Station Road, provides suitable foraging and commuting habitat to and from the mill pond. No signs of otter were recorded on the site and the habitats on site are not considered to provide habitat for otter, consisting of well grazed grassland.

There are historic records of water vole within 2km of the site utilising Blackmoor Foot Reservoir and drain, with the most recent record dated 1999. There are no records of water voles utilising other water courses within 2km of the site. It is considered highly unlikely water voles are present on Meltham Dike due to this, the age of the records and the lack of suitable habitat.

No signs of any other notable mammals were observed on the site.

4.6. Reptiles and Amphibians

WYJS holds records of several amphibian species within 1km of the site including: common toad *Bufo bufo,* common frog *Rana temporaria* and smooth newt *Lissotriton vulgaris.*

The closest field record was of a common frog located 1.2km from the site.

DEFRA (2018) holds no records of granted European Protected Species Licences for great crested newts *Triturus cristatus* within 1km of the site.

A mill pond was located adjacent to the east of the site. The pond was deep and stocked with fish for use by a local fishing club. Using the great crested newt Habitat Suitability Index (see Table 4.2, below), the pond was determined to have poor potential for great crested newts, indicating a 3% chance of presence. A search on aerial imagery (Google Earth Pro, 2018) revealed no other ponds within 250m of the site. There may be ponds within residential gardens which could not be viewed on aerial imagery.

Table 4.2 The HIS results for the pond

SI No	SI Description	Mill pond
1	Geographic location	1
2	Pond area	0.8
3	Pond permanence	0.9
4	Water quality	0.67
5	Shade	1
6	Water fowl effect	0.67
7	Fish presence	0.01
8	Pond Density	0.3
9	Terrestrial habitat	0.67
10	Macropyhyte cover	0.3
HIS Score		0.43 (Poor)

The habitats on the site were considered suboptimal for reptiles and amphibians due to a short uniform grazed sward.

4.7. Bird Species

WYJS holds records of several bird species within 2km of the site including: Goshawk *Accipiter gentilis,* kingfisher *Alcedo atthis,* pintail *Anas acuta,* garganey *Anas platyrhynchos,* greylag goose *Anser anser,* goldeneye *Bucephala clangula,* stone curlew *Burhinus oedicnemus,* purple sandpiper *Calidris maritima,* little ringed plover *Charadrius dubius,* black tern *Chlidonias niger,* long tailed duck *Clangula hyemalis,* quail *Coturnic coturnix,* Bewick's swan *Cygnus columbianus,* whooper swan *Cygnus cygnus,* merlin *Falco comumbarius,* peregrine *Falco peregrinus,* brambling *Fringilla montifringilla,* redwing *Turdus iliacus* and barn owl *Tyto alba* all of which are afforded protection under Schedule 1 of the Wildlife and Countryside Act 1981.

The trees to the east and south of the site and the scrub to the west of the site provided suitable habitat for nesting birds. No habitats suitable for any schedule 1 birds were observed on the site.

A grey heron *Ardea cinerea* was observed utilising the mill pond at the time of the survey.

4.8. Invertebrates

The site provided suboptimal pollination opportunities for invertebrates. The adjacent Meltham Dike provides suitable habitat for aquatic invertebrates.

5. Impact Assessment

5.1. Habitats

The habitats on site are all of low ecological value, consisting predominantly of short grazed grassland. The development proposals will result in approximately 0.55ha of the grassland being removed which will retain approximately 1.15ha of grassland on the remainder of the site. It is not anticipated that there will be any significant ecological impacts to the surrounding area due to the removal of this habitat.

The Kirklees Wildlife Habitat Network is located approximately 50m to the north of the development area and adjacent to the south of the development area. None of the habitats within these areas are due to be affected by the development and it is not anticipated that the habitat connectivity of the adjacent Wildlife Habitat Networks will be limited by the development.

5.2. Bats

None of the trees on the site provided suitable roosting opportunities for bats.

The woodland corridors to the north and south of the site provide suitable commuting and foraging habitat for bats. Although not directly affected by the development proposals, if any lighting used on the site is directed onto these habitats, this could have negative impacts on bats.

5.3. Other Mammals

Otters have been recorded utilising the Mill pond adjacent to the east of the site and Meltham Dike also provides suitable commuting and foraging habitat. These habitats are not directly affected by the development; however, as otters are predominantly nocturnal, any lighting used in the development directed towards the mill pond and Meltham Dike could have negative impacts on otters.

Without further mitigation the development proposals have the potential to impact upon terrestrial connectivity required by hedgehogs *Erinaceus europaeus*. Hedgehogs are particularly sensitive to fragmentation caused by the construction of impermeable boundaries, such as fences and walls at garden boundaries.

5.4. Reptiles and Amphibians

There are no foreseeable impacts of the development proposals upon reptiles or amphibians.

5.5. Birds

Tree or scrub removals and trimming have the potential to impact upon nesting birds, if undertaken during bird nesting season (1st March – 31st August inclusive).

5.6. Invertebrates

There are no foreseeable impacts of the development proposals upon any notable invertebrate species on the site. As Meltham Dike provides suitable habitat for aquatic invertebrates any pollution resulting from the development could impact aquatic invertebrate communities.

6. Conclusion and Recommendations

6.1. Avoidance of Ecological Impacts

To prevent negative impacts to bat and otter commuting and foraging habitats adjacent to the site it is recommended that no lighting is directed towards the woodland corridor to the north, Meltham Dike to the south or the Mill Pond to the east. Where exterior lighting is considered necessary, the following recommendations prescribed by the Bat Conservation Trust (2018) should be followed:

- All luminaires should lack UV elements,
- LED luminaires should be used where possible,
- A warm white spectrum (<2700 kelvin) should be adopted to reduce blue light,
- External security lighting should be set to a short timer or motion sensor
- The spread of light should be at, or near horizonal level,
- The times that lights are used should be limited to provide some dark periods.

As no other impacts to bats within the woodland corridors are anticipated due to the developments, further bat activity transects are not considered necessary.

As Meltham Dike provides potential habitat for otter, it is recommended that no works are carried out within a 5m buffer zone of the dike. In addition to this it is recommended that no materials harmful to aquatic life, such as cement, are stored or mixed within 5m of Meltham Dike.

It is recommended that any tree or scrub removals or pruning avoid the bird nesting season (1st March – 31st August inclusive). If this is not possible, a nesting bird check should be carried out within 48 hours prior to the commencement of works, and works should only commence if it has been established that nesting birds are not present.

There are no foreseeable impacts of the development proposals upon any other protected or notable species. In the unlikely event that any protected species such as bats, other notable mammals, reptiles or amphibians are identified during works, all works should cease, and a suitable qualified ecologist should be consulted.

6.2. Mitigation and Ecological Enhancement

To avoid impact to the terrestrial connectivity of the site for species such as hedgehogs it is recommended that the boundaries of properties are divided by hedgerows. Alternatively, if fences are to be used, a hole approximately 15x15cm should be cut into each fence to facilitate access.

In accordance with the NPPF, to enhance the ecological value of the site, it is recommended that nesting bird habitat is incorporated into the development proposals. This should consist of two 1B Schwegler Nest Boxes with 26mm holes (or suitable alternative) and one 1B Schwegler Nest Boxes with 32 mm holes (or suitable alternative). These should be situated on trees at height of 1.5m or higher with clear flight paths to the entrances.

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8. Appendices

Appendix 1: Photographs



Plate 1 Poor semi-improved grassland



Plate 2 Poor semi-improved grassland



Plate 3 Woodland corridor to north



Plate 4 Poor semi-improved grassland



Plate 5 Development area



Plate 6 Excavations within development area



Plate 7 Scrub to west of site



Plate 8 Station Road and trees around dike



Plate 9 Area of development from Station Road



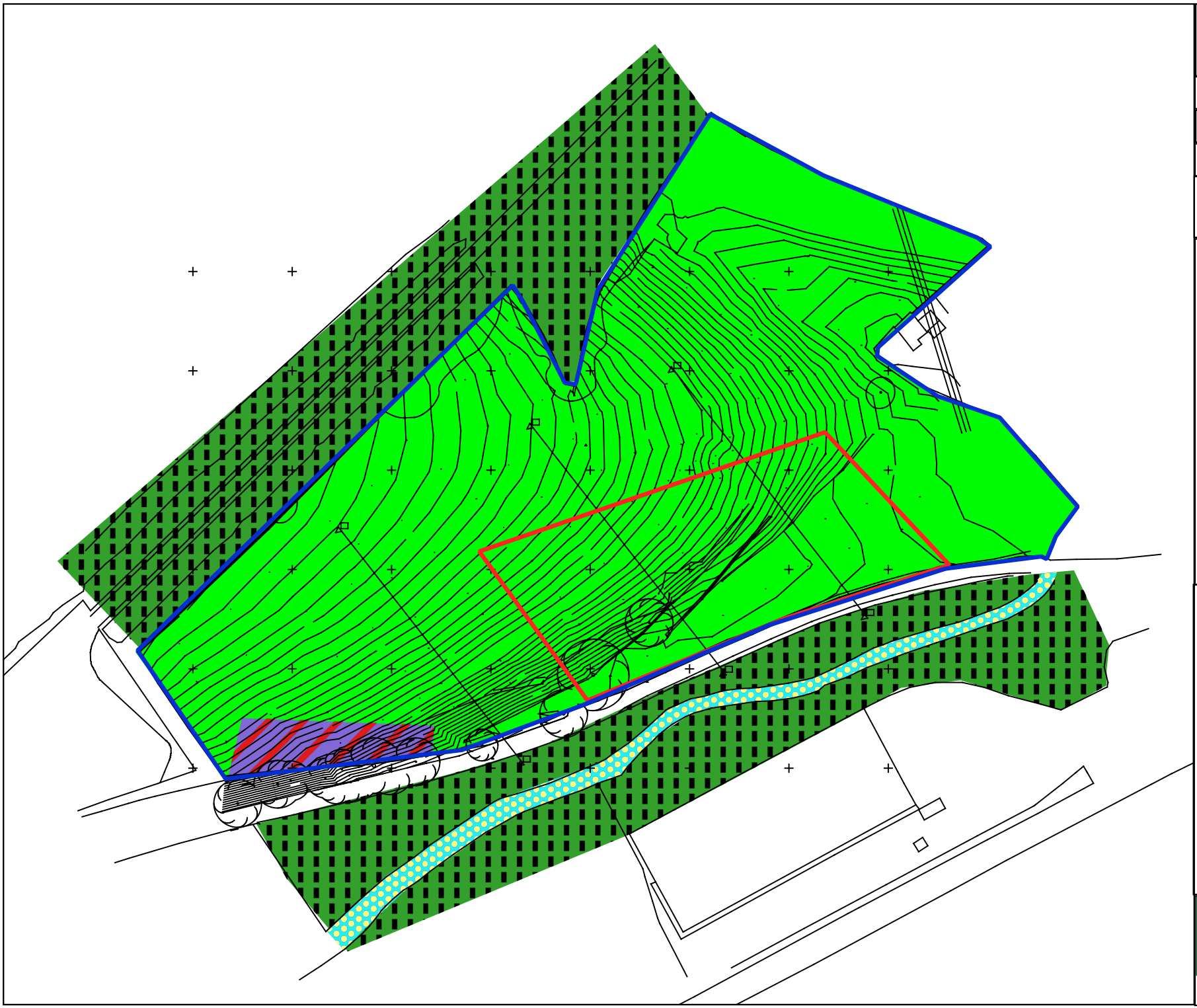
Plate 10 Meltham Dike



Plate 11 The mill pond to east



Plate 12 The mill pond to east



Appendix 2: Phase 1 Habitat Map

Project:	Station Road
Drawn by:	Amy Reddick
Date:	20/12/2018

0 25 50 m

Key

Boundaries:

- Site area
- Development area

UK Habitats:

- g4 - Poor semi-improved grassland
- w1g6 - Line of trees
- h3 - Dense scrub
- r2 - River

Bagshaw Ecology