






Pennylands, Skelmersdale
Ecological Impact Assessment

July 2021

Control sheet

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Contents

Executive Summary	1
1. Introduction	2
2. Methodology	3
3. Results	5
4. Evaluation and Assessment of Potential Impacts	8
5. Recommendations	10
References.....	13
Appendix A - Legal Information	14
Appendix B - Bat Roost Potential and Habitat Suitability Categories	16
Appendix C - Target notes.....	17
Appendix D - Phase 1 Habitat Plan	20
Appendix E - Proposed Site Plan	21
Appendix F - Information Sheet for Contractors on Bats.....	22
Appendix G - Suitable Species for use in Planting Scheme.....	23

Executive Summary

Following initial ecological surveys undertaken in 2018 and 2019, an updated extended Phase 1 survey was completed in July 2021 at the former Co-op Bank site, off Westgate, Pennylands, Skelmersdale (NGR: SD 46886 05909). Since the original surveys were carried out, the main building within the site has been demolished, with limited impacts to surrounding habitats. The updated survey and Ecological Impact Assessment inform the proposed construction of a new Aldi store, with associated parking and landscaping.

Key ecological features, potential impacts, further survey requirements and outline mitigation measures are summarised in the following table.

Ecological Feature	Potential Impact	Further surveys if affected	Outline Mitigation
Habitats of Principal Importance (HPI)	Indirect impacts through pollution	N	Adherence to pollution prevention measures.
Scattered trees	Direct impact	N	Retention of trees where possible and/or the replacement of trees at a ratio of 2:1.
Invasive species (cotoneaster)	Direct impact	N	Clearance of the plant to minimise its spread in the wild.
Roosting bats	Loss of potential roosting opportunities	N	Implementation of careful working methods during works to small substation building.
Foraging and commuting bats	Habitat loss and increased disturbance	N	Retention of scattered trees and/or replacement at a ratio of 1:2. Sensitive lighting schemes to be developed.
Nesting birds	Direct impacts and loss of nesting habitat	Y*	Vegetation clearance outside of nesting season (March – August inclusive) or pre-clearance nesting bird check to be undertaken*. Retain/replace lost habitats within landscaping areas.
Other mammals including Species of Principal Importance hedgehog	Direct impacts and loss of habitat	N	Contractors to be made aware of the presence of small mammals; implement anti-disturbance and entrapment measures and the creation of suitable hedgehog habitats.

1. Introduction

- 1.1 Bowland Ecology was commissioned by Avison Young, on behalf of Aldi Stores Ltd, to complete an updated extended Phase 1 Habitat survey and ecological impact assessment of a site located off Westgate, Pennylands, Skelmersdale (NGR: SD 46886 05909). This update follows an initial suite of surveys (extended Phase 1 Habitat survey, daytime building inspection, and bat emergence survey) undertaken by Bowland Ecology in 2018 and 2019. Following the initial surveys, the large derelict building was demolished in 2020 after suffering significant fire damage. The site is subject to proposals for the construction of a new Aldi store with associated car parking and landscaping.
- 1.2 The site lies to the western edge of Skelmersdale and comprises the former Co-op Bank site, bordered by Westgate to the west, High Street to the north, and residential properties to the south and east. Surrounding habitats are dominated by residential dwellings with associated gardens, industrial and retail units to the south alongside occasional parks, woodlands and treelines. In the wider area, pasture and agricultural land is present to the west, and wetland habitats and woodlands to the south and east respectively.
- 1.3 The purpose of the updated survey was to: 1) identify and map all habitats occurring within the survey area, 2) identify the presence of (or potential for) wildlife interests with particular reference to the need for further surveys and legal requirements (Appendix A), and 3) provide an ecological assessment, identify potential impacts and provide recommendations pertaining to the proposal.
- 1.4 This report includes a description of survey methods, habitats and fauna and outlines recommendations to provide protection and enhancements for biodiversity and protected species.

2. Methodology

- 2.1 The desk study, extended Phase 1 habitat survey, building inspection survey and ecological appraisal followed the Guidelines for Preliminary Ecological Appraisal and the Guidelines for Ecological Report Writing (CIEEM, 2017 a, b), and are in line with the British Standard BS42020:2013 'Biodiversity – Code of practice for planning and development'.

Desk Study

- 2.2 The aim of the desk study was to identify the presence of statutory and non-statutory wildlife sites within the area and any legally protected species or Habitats and Species of Principal Importance for the conservation of biodiversity (Section 41 NERC Act, 2006).
- 2.3 The Multi-Agency Geographic Information for the Countryside (MAGIC) website (www.magic.gov.uk) was reviewed for information on locally, nationally and internationally designated sites of nature conservation importance (statutory sites only) on or within 1 km of the site boundary.
- 2.4 Local records on and within 1 km of the site were obtained following a data search with the Lancashire Environment Record Network (LERN), carried out in 2018.
- 2.5 Ordnance Survey maps and aerial photographs (<http://maps.google.co.uk/maps>) were reviewed to help identify any continuous habitat and any other notable habitats within the surrounding area.
- 2.6 Natural England's great crested newt (*Triturus cristatus*) licensing method statement template (Form WML-A14-2 (version December 2015¹) advises that, for developments resulting in permanent or temporary habitat loss at distances over 0.25 km from the nearest pond, careful consideration should be given to whether a survey is appropriate. Although the species may use suitable terrestrial habitat up to 0.5 km from a breeding pond, in this instance a 0.25 km search radius was considered appropriate due to the relatively small scale of works and the urban nature of the proposed development site.

Field survey

- 2.7 The extended Phase 1 habitat survey followed standard methodology (JNCC, 2010 and CIEEM, 2017). All features of ecological significance were target noted and a colour coded map of the habitats on site has been produced.
- 2.8 This survey methodology records information on the habitats together with any evidence of and potential for legally protected and notable fauna, in particular:
- potential roosting sites for bats within trees (identification of suitable cracks and crevices – survey undertaken from ground level only). An assessment of suitability was undertaken according to the Bat Conservation Trust' Good Practice Guidelines 3rd Edition (Collins, 2016) (Appendix B);
 - assessing the suitability of habitats for other notable and protected species such as nesting birds (including any active or disused nests), reptiles, water vole, otter, badger and invertebrates; and
 - checking for the most common invasive plant species subject to strict legal control including Japanese knotweed (*Fallopia japonica*), giant knotweed (*F. sachalinensis*), hybrid knotweed (*F. x bohemica*), giant hogweed (*Heracleum*

¹ <https://www.gov.uk/government/publications/great-crested-newts-apply-for-a-mitigation-licence>

mantegazzianum), rhododendron (*R. ponticum*, *R. ponticum* x *R. maximum* and *R. luteum*) and Indian balsam (*Impatiens glandulifera*);

- 2.9 The updated survey was carried out by Sarah Birtley MBiolSci, BSc (Hons), on the 8th July 2021. The weather was warm with a slight breeze (Beaufort Scale 1) and scattered clouds. The temperature was approximately 18°C.

Limitations

- 2.10 Ecological surveys are limited by factors which affect the presence of plants and animals such as the time of year, migration patterns and behaviour. Therefore, the survey of the study area has not produced a complete list of plants and animals.
- 2.11 The list of invasive plant species included on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) is extensive and these plants are found in a range of different habitats, including aquatic habitats. The extended Phase 1 habitat survey checked for the presence of Japanese knotweed, giant knotweed, hybrid knotweed, giant hogweed, rhododendron and Himalayan balsam. There may be other invasive plant species present on the site which were not recorded, but it is considered that this survey is sufficient to identify any significant constraints posed by invasive plants.

3. Results

Designated sites and Habitats of Principal Importance

- 3.1 There are no statutory or non-statutory designated wildlife sites within 1 km of the site.
- 3.2 The site falls within the Ravenhead Brickworks Site of Special Scientific Interest (SSSI) Impact Risk Zone. However, the proposed development does not fall into any of the categories that require consultation with Natural England. Therefore, no further consideration regarding the Impact Risk Zone is required.
- 3.3 The search of the Multi Agency Geographical Information Centre (www.magic.gov.uk) identified several areas of lowland raised bog and deciduous woodland Habitats of Principal Importance (HPI) within 1 km of the site. The closest areas of the aforementioned habitats are located approximately 0.4 km south of the site.
- 3.4 A review of the Ordnance Survey maps and aerial photographs indicates that there are no ponds on or within 0.25 km of the site. Surrounding habitats are dominated by residential dwellings with associated gardens and industrial and retail units.

Habitats

- 3.5 Target notes summarising key interest features for wildlife recorded during the extended Phase 1 habitat survey are included in Appendix C. The Phase 1 habitat plan of the site presented in Appendix D includes the locations of the target notes. Plant species nomenclature follows Stace (2010). Following the update survey in 2021 it is concluded that, other than buildings, the habitats are largely unchanged.

Hardstanding

- 3.6 The majority of the site is dominated by hardstanding, comprising former car parking areas, walkways and an expanse of bare concrete where the Co-op Bank building once stood.

Amenity grassland

- 3.7 Amenity grassland extends along the western boundary of the site, interspersed with walkways and scattered semi-mature trees. This area of grassland is mown to maintain a short sward. Dominant species present comprise Yorkshire fog (*Holcus lanatus*), white clover (*Trifolium repens*), meadow grass (*Poa* spp.), ribwort plantain (*Plantago lanceolata*), creeping buttercup (*Ranunculus repens*) and common ragwort (*Senecio jacobaea*).
- 3.8 Two further areas of unmanaged amenity grassland remain along the northern boundary of the site and centrally within the fenced area. Dominant species here include false oat grass (*Arrhenatherum elatius*), Yorkshire fog and red fescue (*Festuca rubra*), alongside sweet vernal (*Anthoxanthum odoratum*), yarrow (*Achillea millefolium*), meadow buttercup (*Ranunculus acris*), creeping buttercup, cow parsley (*Anthriscus sylvestris*), dandelion (*Taraxacum* sp.), ribwort plantain, creeping bent (*Agrostis stolonifera*), common ragwort, common mouse ear (*Cerastium fontanum*) and creeping thistle.

Introduced shrubs

- 3.9 Abundant ornamental introduced shrubs are located around the site including at the entrance (TN1); at the exposed courtyard area (TN3); along the western (TN5) and southern (TN6) perimeter of the central fenced area; and at the south-eastern corner of the site (TN8). Buddleia (*Buddleia davidii*) also occurs within areas of hardstanding.

Ephemeral

- 3.10 Ephemeral vegetation occurs scattered throughout areas of hardstanding in the northern section of the site and the former car parking area to the south. Species include dandelion, willowherbs (*Epilobium* spp.), chickweed (*Stellaria media*), common mouse ear, shepherd's purse (*Capsella bursa-pastoris*), annual meadow grass (*Poa annua*), perennial rye grass (*Lolium perenne*), Italian rye grass (*Lolium multiflorum*), cock's-foot (*Dactylis glomerata*), false oat grass and Yorkshire fog.

Scattered scrub

- 3.11 Scattered native scrub is present amongst borders dominated by introduced shrubs and along the south-eastern boundary of the site. Species comprise silver birch (*Betula pendula*), willow (*Salix* sp.) and ash (*Fraxinus excelsior*) saplings, alongside bramble (*Rubus fruticosus*).

Scattered trees

- 3.12 There are several scattered mature and semi-mature trees around the site. Trees are scattered throughout amenity grassland along the western boundary, including semi-mature sycamore (*Acer pseudoplatanus*), rowan (*Sorbus aucuparia*), ornamental maple (*Acer* sp.) and copper beech (*Fagus sylvatica* f. *purpurea*). Ornamental cherry trees (*Prunus* sp.) are present at TN6.
- 3.13 A line of ivy-clad, mature Scots pine trees (*Pinus sylvestris*) is situated to the south of the former building at TN7. Along the south-eastern site boundary (TN8) is a line of trees with introduced ornamental species such as red oak (*Quercus rubra*) and sycamore. Dogwood (*Cornus sanguinea*), birch (*Betula* sp.) and holly (*Ilex aquifolium*) are also present.

Buildings

- 3.14 Following demolition of the Co-op Bank, the only remaining building on site is a small substation (TN4), retained to provide electricity to surrounding properties. The substation is a single storey brick-built structure with a flat felt roof and one metal door on the western elevation. Well-sealed narrow timber soffit boarding is present around roof verge. Where the once adjoining building has been demolished, there are new overlapping layers of roofing felt hanging below the verge on the eastern elevation.

Species

Plants (incl. invasive species)

- 3.15 Cotoneaster (*Cotoneaster* sp.) is present amongst areas of introduced shrub, most notably below Scots pine trees at TN7.

Bats

- 3.16 The data search returned a small number of bat records within the search area:
- A bat roost of unknown species located 0.45 km east of the site.
 - A pipistrelle (*Pipistrellus* sp.) bat located 0.6 km north-west of the site.
 - A common pipistrelle (*Pipistrellus pipistrellus*) bat located 0.75 km east of the site.
- 3.17 A mature rowan at TN9 has a wound on main stem facing west at 2.5 m high. Whilst this feature may have an associated cavity, twigs and debris is blocking the entrance. The tree is considered to have **very low** potential to support roosting bats.
- 3.18 The only building currently present on site is the substation building at TN4. This building was noted to have several overlapping layers of roofing felt hanging below the

verge on the eastern elevation. This material has **very low** potential to be used by individual roosting bats.

- 3.19 The habitats on site provide **low to moderate** value foraging and commuting habitat for bats. The site has connectivity to treelines and mature gardens of residential properties in the area, providing links to the wider environment.

Birds

- 3.20 The data search returned numerous bird records within search area, including starling (*Sturnus vulgaris*), dunnoek (*Prunella modularis*), skylark (*Alauda arvensis*) and lesser redpoll (*Acanthus cabaret*). The introduced shrubs and scattered trees on site are considered to be suitable for a range of common tree and scrub nesting birds.

Other mammals

- 3.21 Records of mammals within 1 km of the site include brown hare (*Lepus europaeus*) and hedgehog (*Erinaceus europaeus*), both SPI. The habitats on site are considered unsuitable for brown hare and the nearest record is approximately 1 km to the west of the site.
- 3.22 During the survey a deceased hedgehog (traffic collision) was observed at the south-western corner of the site. The amenity grassland and scrub/shrub cover provide suitable cover and foraging opportunities for hedgehog.

Reptiles and amphibians

- 3.23 Records of amphibians returned by the desk study comprise common frog (*Rana temporaria*) and common toad (*Bufo bufo*). No records of reptiles were returned within the search area and the site supports no suitable habitat for reptiles. Therefore, reptiles are not considered further within this report.
- 3.24 There are no ponds on or within 0.25 km of the site. Whilst habitats on site could provide suitable cover, the urban setting surrounded by residential and commercial properties is suboptimal for amphibians. Furthermore, busy roads are considered to be barriers to the movement of amphibians. As such, amphibians are not considered further within this report.

Invertebrates

- 3.25 Records of invertebrates returned by the desk study comprise garden tiger moth (*Arctia caja*), cinnabar moth (*Tyria jacobaeae*), dark barred twin-spot carpet moth (*Xanthorhoe ferrugata*) and speckled wood butterfly (*Pararge aegeria*).
- 3.26 The habitats on site are limited in extent and botanically species poor providing limited food sources for invertebrates. However, small numbers of cinnabar moth caterpillars were noted on stands of ragwort within areas of unmanaged amenity grassland.

4. Evaluation and Assessment of Potential Impacts

- 4.1 An assessment of effects on ecological features has been made using the available design and survey information and the professional judgement of the ecologist. This includes a consideration of the relevant legislation (see Legal Information below) and planning guidance. If there are changes to the proposals, such as a change to the proposed development design or to the construction method and programme, the assessment would need to be reviewed. Proposed works include redevelopment of the site into a new Aldi store.
- 4.2 Following completion of the update survey in 2021 it is evident that the majority of buildings, with the exception of the substation at TN4, have been demolished. With regards to other habitat and species interests the site remain largely unchanged since the original surveys conducted in 2018 and 2019.

Habitats (including HPI)

- 4.3 It is anticipated that there will be no direct impacts to the lowland raised bog and broadleaved woodland HPI from development of the site due to their distance from the site and the relatively small footprint of works. However, development of the site has the potential to indirectly impact the HPI during the construction period through an increase in dust pollution. This can result in reducing the availability of light for photosynthesis through smothering effects on leaves, and also alter the pH of soils which may affect the long term success of the HPIs.
- 4.4 The development will require the removal of scattered mature and semi-mature trees. The trees provide structure in the landscape and offer habitat for a variety of species (see below) therefore their loss will result in a negative ecological impact.
- 4.5 The development will also result in the loss of amenity grassland, hardstanding, ephemeral vegetation and introduced shrubs. These habitats are of little intrinsic ecological value, as such mitigation for their loss is not currently required.

Species

Plants (incl. invasive species)

- 4.6 Cotoneaster is present on site amongst areas of introduced shrub marked on the Phase 1 Habitat Plan. Certain species of cotoneaster are listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended). Identifying cotoneaster to species level is difficult, therefore as a precaution, it is advised that the species is treated as being listed on Schedule 9. The development may therefore cause the spread of Schedule 9 cotoneaster in the wild.

Bats

- 4.7 The single rowan tree at TN9 and the small substation building at TN4 both offer limited features which have **very low** suitability for roosting bats. If works to these features occur during the bat active season, there is a very low risk of causing disturbance and/or injury to bats, if present.
- 4.8 Removal of the scattered trees and introduced shrubs has the potential to negatively impact foraging and commuting bats though loss of habitats providing foraging resources in the form of invertebrates. The development may also result in disturbance of foraging and commuting bats through increased external lighting.

Birds

- 4.9 Where scattered trees, scrub and introduced shrubs are removed/affected, impacts to nesting birds could occur if works are undertaken within the nesting bird season (March to August inclusive) and/or without due care and attention, which would constitute an offence (see Appendix A).
- 4.10 The removal of the aforementioned habitats will also result in the loss of suitable bird nesting and foraging habitat.

Other mammals

- 4.11 The clearance of introduced shrubs, scrub and scattered trees has the potential to impact small mammals including hedgehog, which are potentially hibernating/sheltering in the aforementioned habitats on site. Therefore, removal of the habitats may cause disturbance and/or direct harm to the species if works are undertaken in the absence of due care and attention.

Invertebrates

- 4.12 Loss of shrubs and trees within the site will cause a reduction in suitable invertebrate habitat, including cinnabar moth which was recorded during the survey.

5. Recommendations

- 5.1 This section provides the required measures to mitigate the impacts of the proposed development. A key element of the National Planning Policy Framework is to minimise impacts to biodiversity and provide enhancements. Paragraph 109 states that “*The planning system should contribute to and enhance the natural and local environment by minimising impacts on biodiversity and providing net gains in biodiversity where possible*”. It also states in Paragraph 118 that “*when determining planning applications, local planning authorities should aim to conserve and enhance biodiversity by encouraging opportunities to incorporate biodiversity in and around developments*”. This section also therefore includes suggested enhancement measures. The following recommendations are designed to comply with legal requirements and national and local planning policy.
- 5.2 Following the update survey in 2021, the following recommendations apply. These remain largely unchanged from the previous survey other than considerations for buildings that have been demolished in the intervening period.

Habitats

- 5.3 Appropriate dust control and prevention measures will be adhered to throughout the construction period to ensure that the lowland raised bog and broadleaved woodland HPI are not negatively affected during works. Currently there is no published guidance available in England, however the Scottish Environmental Protection Agency (SEPA) and Northern Ireland Environment Agency (NIEA) have published updated guidance (NetRegs, 2018). Therefore, all works on site will follow recognised good practice and updated guidance, which includes (but is not limited to);
- Maintaining high standards of housekeeping;
 - Dampening down working areas and haul roads in dry periods;
 - Using covered wagons and skips; and
 - Keeping roads clean with the use of road sweepers.
- 5.4 It is recommended that where possible scattered trees are retained as part of the development. Where this is not possible, suitable mitigation for their loss will be implemented within the proposed landscaping plans for the development, including the planting of two replacement trees for every one lost. Species used for planting should be native, appropriate to the locality and should be sourced locally where possible. Planting should be undertaken at an appropriate time of year (usually in winter/early spring when there is no ground frost) and specimens protected from grazing by rabbits (see Appendix G for suitable species).

Species

Invasive species

- 5.5 It is likely that the cotoneaster will be impacted by the works. This species should be controlled appropriately prior to and during the construction period in order to avoid causing it to spread in the wild. No cotoneaster will be planted as part of the soft landscaping proposals.

Bats

- 5.6 The development is likely to result in the demolition and/or modification of the substation at TN4 and the rowan tree at TN9, which both offer very low suitability for roosting bats. As such, Reasonable Avoidance Measures (RAMs) described below will be adhered to during any works to the substation and tree:

- Before any works proceed all contractors should be made aware of the possible presence of bats, bat field signs to look for and procedure if bats are found or discovered (see Appendix F);
- Works should be scheduled to occur between October and March (inclusive), when bats are highly unlikely to be present within the building/tree due to the lack of suitable hibernation features; and
- If careful timing of works is not possible and demolition/tree felling must proceed during the bat active season (April to September inclusive), features providing potential bat roosting habitat will be carefully removed and/or inspected by a suitably qualified ecologist immediately prior to works. Features comprise the area of overlapping felt at the substation roof and the potential cavity in the main stem of the rowan tree.

5.7 Impacts to foraging and commuting bats will be addressed through replacement planting of trees and scrub within the site. Furthermore, the completed development will implement a sensitive lighting scheme. Key considerations include the use of LED lights with a warm colour temperature (<2700 Kelvin) and careful direction of lighting to avoid light spillage onto adjacent bat foraging habitats, notably the scrub and tree lines along the eastern boundary.

Birds

5.8 It is recommended that nesting bird habitat on site is retained where possible. Where this is not possible, mitigation for the loss of breeding bird habitat should include the planting of native species (as described above in Paragraph 5.3). In addition, the provision of alternative nesting habitat in the form of six open fronted nest boxes, with variable entrance hole sizes to accommodate a variety of bird species, will be located on mature trees that are retained as part of the development proposals. It is advised that the following nest boxes are incorporated into the new development:

- Two Schwegler Nest Box 1B 26 mm;
- Two Schwegler Nest Box 2M 32 mm; and
- Two Schwegler Open Front Nest Box 2H.

5.9 Tree and shrub clearance will be undertaken outside of the breeding bird season (March to August inclusive). Where this is not possible, clearance that must be carried out within the nesting bird season will be subject to a pre-clearance bird survey carried out by a suitably experienced ornithologist. However, it should be noted that areas of dense shrub and scrub carry a high risk of supporting nests, therefore removal in winter is strongly advised.

5.10 No works will be carried out within 5 m (or a suitable buffer decided by the supervising ornithologist) of an identified nest until the young have fledged and are no longer returning to the nest site. Works will only be undertaken once the ornithologist has declared the nest to be no longer in use.

Other mammals

5.11 It is recommended that contractors are made aware of the likely potential presence of small mammals, including hedgehog, on site. Shrub clearance should be undertaken with care to avoid disturbance to sheltering/hibernating mammals. Areas should be checked before the use of any machinery, including handheld strimmers, which can result in injury to sheltering hedgehogs.

5.12 During the construction period, any debris from works should not be left on site and any holes, trenches or trial pits associated with works should be covered overnight or fitted with egress boards to prevent animals becoming trapped. Any small mammals found within the works area during construction should be carefully relocated to a sheltered location with plenty of vegetation cover, in an area off site which will remain undisturbed.

5.13 In addition to the above, the following mitigation, in respect of hedgehog will also be undertaken:

- Provision of three artificial or natural hedgehog boxes located within the existing mature landscaping to be retained along the eastern boundary. For example, three or four logs may be arranged to leave an appropriately sized hole for a hedgehog to nest in (big enough for the hedgehog and its nest) and covered with masses of twigs and leaves. Artificial hedgehog boxes are also available.
- The creation of 'hedgehog highways' by leaving 20 cm holes in boundary fencing to allow the movement of hedgehogs throughout the site.
- Retaining wood piles from felled trees to attract invertebrates and fungi, providing a good local food source for hedgehogs and possible nesting sites (materials from site works could be used for this purpose).

Enhancement measures

5.14 As designs for the site develop, an ecologist can provide site specific advice on ways to enhance the wildlife value of the final development and contribute towards a net gain in biodiversity. Simple examples of enhancement measures which could be considered and designed into the proposals include (but are not limited to):

- The installation of additional bat and bird boxes on suitable mature trees within the newly developed site.
- The creation of wildflower areas as opposed to low value amenity grasslands. Wildflower areas can be sown with a native seed mix of local provenance and mown (and arising removed) once per year in August/September after flowers have set seed.

Re-survey of the Site

5.15 If no works are undertaken on site within 12 months of this survey or if any changes to the proposals are made, a further ecological survey may be necessary (because of the mobility of animals and the potential for colonisation of the site).

References

British Standards Institution (2013) *BS 42020:2013 Biodiversity – Code of practice for planning and development*. British Standards Institution, London.

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Institute of Lighting Professionals (2018) *Bats and artificial lighting in the UK*. The Bat Conservation Trust, London.

JNCC (1993 revised 2010) *Handbook for Phase 1 Habitat Survey: A technique for environmental audit (reprint)*. Joint Nature Conservation Committee, Peterborough.

Stace, C. (2010) *New Flora of the British Isles*. Third Edition. Cambridge University Press, Cambridge.

Appendix A - Legal Information

This report provides guidance of potential offences as part of the impact assessment. This report does not provide detailed legal advice and for full details of potential offences against protected species the relevant acts should be consulted in their original forms i.e. The Wildlife and Countryside Act, 1981, as amended, The Countryside and Rights of Way Act 2000, The Natural Environment and Rural Communities Act, 2006 and The Conservation of Habitats and Species Regulations 2017.

Species	Legislation	Offences	Notes on licensing procedures and further advice
Species that are protected by European and national legislation			
Bats <i>European protected species</i>	Conservation of Habitats and Species Regulations 2017 Reg 41	Deliberately ¹ capture, injure or kill a bat; Deliberate disturbance ² of bats; Damage or destroy a breeding site or resting place used by a bat. The protection of bat roosts is considered to apply regardless of whether bats are present.	An NE licence in respect of development is required in England. <i>European Protected Species: Mitigation Licensing- How to get a licence</i> (NE 2010) <i>Bat Mitigation Guidelines</i> (English Nature 2004) <i>Bat Workers Manual</i> (JNCC 2004)
	Wildlife and Countryside Act 1981 (as amended) ⁴ S.9	Intentionally or recklessly ³ obstruct access to any structure or place used for shelter or protection or disturb a bat in such a place.	Licence from NE is required for surveys (scientific purposes) that would involve disturbance of bats or entering a known or suspected roost site.
Birds	Conservation of Habitats and Species (Amendment) Regulations 2017	• N/A	Authorities are required to take steps to ensure the preservation, maintenance and re-establishment of a sufficient diversity and area of habitat for wild birds in the United Kingdom, including by means of the upkeep, management and creation of such habitat. This includes activities in relation to town and country planning functions.
	Wildlife and Countryside Act 1981 (as amended) ⁴ S.1	Intentionally kill, injure or take any wild bird; Intentionally take, damage or destroy the nest of any wild bird while that nest is in use or being built; Intentionally take or destroy the nest or eggs of any wild bird. Schedule 1 species: Special penalties are liable for these offences involving birds on Schedule 1.	No licences are available to disturb any birds in regard to development. Licences are available in certain circumstances to damage or destroy nests, but these only apply to the list of licensable activities in the Act and do not cover development. General licences are available in respect of 'pest species' but only for certain very specific purposes e.g. public health, public safety, air safety.
	Wildlife and Countryside Act 1981 (as amended) ⁴ S.9	Intentionally or recklessly ³ obstruct access to any structure or place used for shelter or protection or disturb a great crested newt in such a place.	Licences issued for science (survey), education and conservation by NE.

Habitats & Species	Legislation (England & Wales)	Guidance
Species and Habitats of Principal Importance for the Conservation of Biodiversity - Hedgehog	Natural Environment & Rural Communities Act 2006 S.40 (which superseded S.74 of the Countryside & Rights of Way Act 2000).	<p>S.40 of the NERC Act 2006 sets out the duty for public authorities to conserve biodiversity in England.</p> <p>Habitats and species of principal importance for the conservation of biodiversity are identified by the Secretaries of State for England and Wales, in consultation with NE, are referred to in S.41 of the NERC Act for England. The list of habitats and species was updated in 2008:</p> <p>England: http://www.ukbap-reporting.org.uk/news/details.asp?x=45</p> <p>The habitats and species listed are not necessarily of higher biodiversity value, but they may be in decline. Habitat Action Plans and Species Action Plans are written for them or are in preparation, to guide their conservation.</p> <p>Ecological impact assessments should include an assessment of the likely impacts to these habitats and species.</p>
Cotoneaster	Wildlife and Countryside Act 1981 (as amended) S.14	It is illegal to plant or otherwise cause to grow or spread in the wild these species.

¹Deliberate capture or killing is taken to include “accepting the possibility” of such capture or killing

²Deliberate disturbance of animals includes in particular any disturbance which is likely a) to impair their ability (i) to survive, to breed or reproduce, or to rear or nurture their young, or (ii) in the case of animals of hibernating or migratory species, to hibernate or migrate; or b) to affect significantly the local distribution or abundance of the species to which they belong.

Lower levels of disturbance not covered by the Conservation of Habitats and Species Regulations 2017 remain an offence under the Wildlife and Countryside Act 1981 although a defence is available where such actions are the incidental result of a lawful activity that could not reasonably be avoided. Thus deliberate disturbance that does not result in either (a) or (b) above would be classed as a lower level of disturbance.

³The term ‘reckless’ is defined by the case of Regina versus Caldwell 1982. The prosecution has to show that a person deliberately took an unacceptable risk, or failed to notice or consider an obvious risk.




⁴The Wildlife and Countryside Act (1981) has been updated by various amendments, including the Countryside and Rights of Way Act 2000 and the Natural Environment and Rural Communities Act 2006. A full list of amendments can be found at <http://jncc.defra.gov.uk/page-1377>.





Appendix B - Bat Roost Potential and Habitat Suitability Categories




Guidelines for assessing the potential suitability of proposed development sites for bats, based on the presence of habitat features within the landscape (Collins, 2016).

Suitability	Description of Roosting Habitat	Commuting & 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	<p>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 and/or suitable surrounding habitats to be used on a regular basis or by a larger number of bats (i.e. unlikely to be suitable maternity or hibernation).</p> <p>A tree of sufficient size and age to contain potential roosting features but with none seen from the ground, or feature seen with only very limited roosting potential.</p>	<p>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.</p> <p>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.</p>
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, and surrounding habitat but unlikely to support a roost of high conservation status.	<p>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.</p> <p>Habitat that is connected to the wider landscape that could be used by bats for foraging, such as trees, scrub, grassland or water.</p>
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 and surrounding habitat.	<p>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.</p> <p>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.</p> <p>Site is close and connected to known roosts.</p>

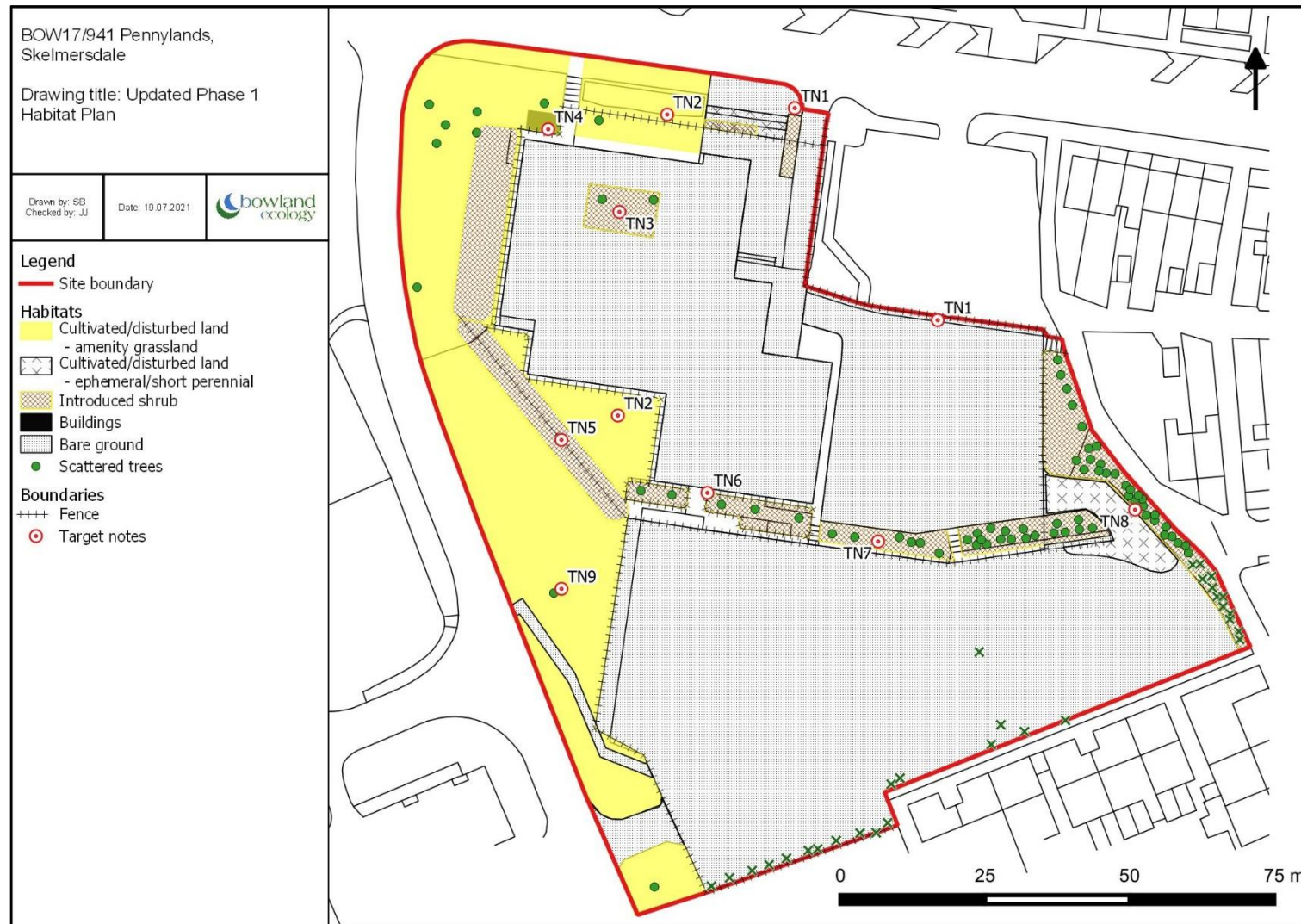
Appendix C - Target notes

Target Note	Description	Photograph
TN1	<p>An area of introduced shrub and ornamental planting in raised beds in the north-western corner of the site. Species include buddleia, honeysuckle, sycamore and ivy; no cotoneaster was noted at this location. The area connects with scrub and tree lines marking the north-western site boundary. These habitats provide nesting bird and bat foraging opportunities.</p>	
TN2	<p>Two areas of unmanaged amenity grassland remain along the northern boundary of the site and centrally within the fenced area. Dominant species present within the sward comprise false oat grass, Yorkshire fog and red fescue, alongside sweet vernal, yarrow, meadow buttercup, creeping buttercup, cow parsley, dandelion, ribwort plantain, creeping bent, common ragwort, common mouse ear and creeping thistle.</p> <p>The grassland provides cover and foraging opportunities for small mammals, including hedgehog. Cinnabar moth caterpillars were noted on ragwort stands.</p>	
TN3	<p>A former courtyard or garden area is now exposed following demolition of the building. The area includes ephemeral vegetation dominated by willowherb, as well as two trees and introduced shrub. The area provides nesting bird and small mammal habitat.</p>	

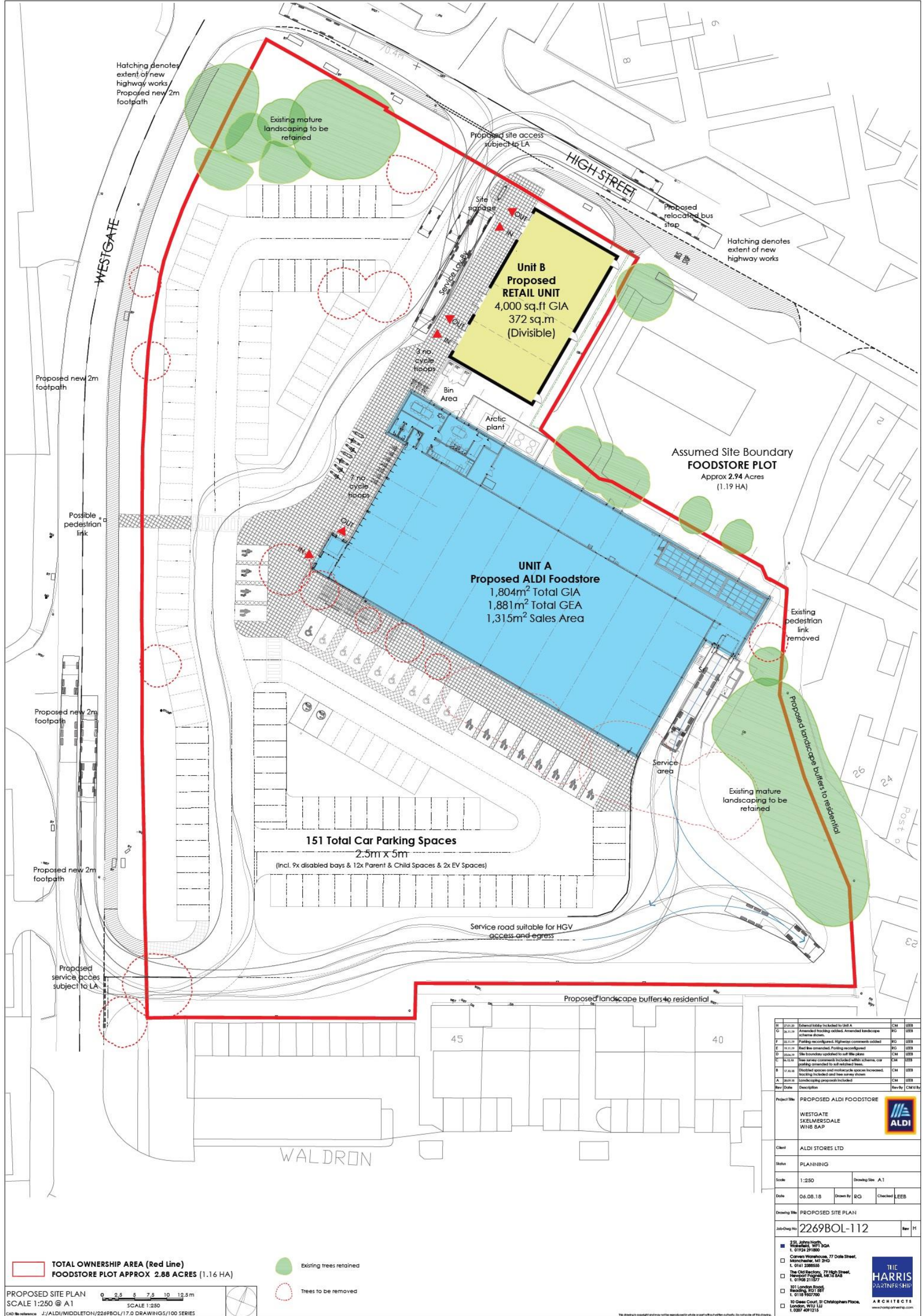
<p>TN4</p>	<p>The only remaining building on site is a small substation, retained as it provides electricity to surrounding properties. The substation is brick built, single storey with a flat felt roof. Well-sealed narrow timber soffit boarding is present around roof verge. Where the once adjoining building has been demolished, there are new overlapping layers of roofing felt hanging below the verge on the eastern elevation. This material has very low potential to be used by individual roosting bats.</p>	
<p>TN5</p>	<p>Extending down the western site boundary is a wide band of managed amenity grassland with scattered trees, adjacent to a linear strip of dense introduced scrub. Scattered tree species include sycamore, copper beech, rowan and ornamental maple. Trees and shrubs offer suitable habitat for nesting birds, and bat foraging and commuting habitat.</p>	 
<p>TN6</p>	<p>Area of no longer managed introduced shrub and ornamental planting running east to west across the centre of the site. Species include copper beech, cherry, ivy, ash, sycamore, holly, elder, rowan, cotoneaster, sweet chestnut, sea buckthorn and introduced, ornamental species. The area provides habitat for nesting birds and small mammals and bat foraging and commuting habitat.</p>	

<p>TN7</p>	<p>A line of mature Scots pine with light ivy cladding and introduced/ornamental shrub and ground flora. The area provides habitat for nesting birds and small mammals and bat foraging and commuting habitat.</p>	
<p>TN8</p>	<p>Dogwood, red oak, holly, sycamore, birch, holly and introduced shrub is present along the southern section of the eastern site boundary. The area provides nesting bird habitat and bat foraging and commuting habitat. Ground flora includes herb robert, willowherb, ivy, annual meadow grass and false oat grass.</p>	
<p>TN9</p>	<p>A semi-mature rowan surrounded by amenity grassland has a wound on main stem facing west at 2.5 m high. The feature has a potential cavity though twigs and debris is blocking entrance. The tree has very low potential to support roosting bats.</p>	

Appendix D - Phase 1 Habitat Plan



Appendix E - Proposed Site Plan



Appendix F - Information Sheet for Contractors on Bats

BATS



Information, legal responsibilities and best practice for the construction industry

Legal Protection

All UK Bat species are protected by European and UK law, in practical terms this means it is an offence to:

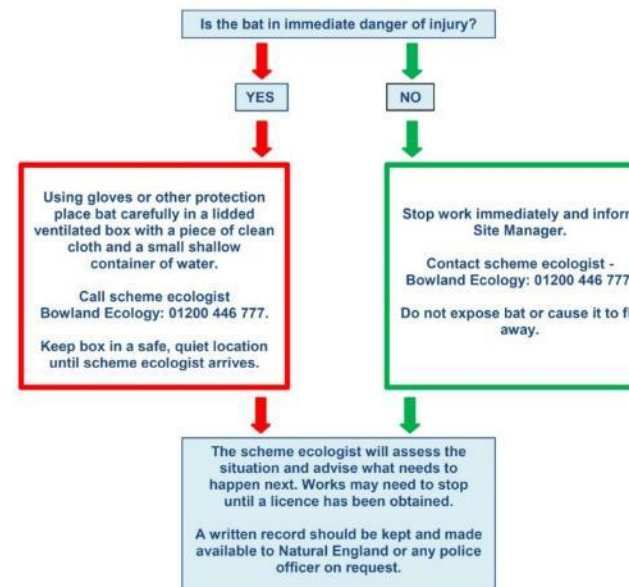
- Deliberately capture, injure or kill a bat;
- Deliberately disturb bats;
- Damage or destroy a breeding site or resting place (even if bats are not occupying the roost at the time);
- Intentionally or recklessly obstruct access to any structure or place used for shelter or protection or disturb a bat in such a place;
- Possess or advertise/sell/exchange a bat (dead or alive) or any part of a bat.

Penalties on conviction: the maximum fine is £5,000 per incident or per bat (some roosts contain several hundred bats), up to six months in prison, and forfeiture of items used to commit the offence, e.g. vehicles, plant, machinery.

Defences include:

1. Tending/caring for a bat solely for the purpose of restoring it to health and subsequent release.
2. Mercy killing where there is no reasonable hope of recovery (provided that person did not cause the injury in the first place – in which case the illegal act has already taken place).

Found a bat during unsupervised works?



Field signs of bat presence:

- Live or dead bats: the smallest UK bat species, the pipistrelle is only 3.5-4.5cm long.
- Droppings: bat droppings look like mouse droppings but will crumble between your fingers (they are dry and made entirely of insects).
- Feeding remains: piles of butterfly/moth wings are often left below bat feeding perches.



Places that bats may use in buildings



Schematic from www.bats.org.uk

Bats can roost in the following places:

- The top of gable end or dividing wall;
- The top of chimney breasts;
- Ridge and hip beams and other roof beams;
- Mortise and tension joints;
- All beams/ceilings/pipework (free hanging bats);
- The junction of roof timbers, especially where ridge and hip beams meet;
- Behind purlins;
- Between tiles and the roof lining;
- Under flat felt roofs;
- Under barge boards;
- In cavity walls;
- In cracks in stone or concrete;
- Behind peeling paint/wall coverings;
- Gaps behind window and door frames;
- Between window panes and timber boarding.
- In trees (cracks/holes/ivy cladding).

Why wear gloves?

There is a small risk that some bats carry a rabies virus – European Bat Lyssavirus. The purpose of wearing gloves is to reduce the chance of being bitten, as the virus is transmitted via bat saliva. Thick leather gloves are appropriate for removing a bat from imminent danger but these should be clean.

In the event that you are bitten, wash the wound, gently but thoroughly, with soap and water. Speak to a health professional immediately, advising them that you have been bitten by a bat.



References:

Bat Conservation Trust. August 2016. Why wear gloves when handling bats?
BCT Bat Surveys for Professional Ecologists, Good Practice Guidelines, 3rd Edition, 2016

version 1 August 2017

Appendix G - Suitable Species for use in Planting Scheme

Tree and shrub planting mix							
Scientific name	Common name	Location / Landscape Type		Local Conditions			
				Soil		Hydrology	
		County Wide	Lowlands Below 75m	Neutral	Alkaline	Damp	Dry
<i>Alnus glutinosa</i>	Alder		*	*		*	
<i>Betula pendula</i>	Silver Birch		*	*	*		*
<i>Betula pubescens</i>	Downy Birch		*	*	*	*	
<i>Calluna vulgaris</i>	Heather						*
<i>Corylus avellana</i>	Hazel		*	*	*		*
<i>Crataegus monogyna</i>	Hawthorn	*	*	*	*		*
<i>Cytisus scoparius</i>	Broom		*				*
<i>Fraxinus excelsior</i>	Ash		*	*	*		*
<i>Ilex aquifolium</i>	Holly	*	*	*			*
<i>Ligustrum vulgare</i>	Wild Privet		*	*	*		*
<i>Lonicera periclymenum</i>	Honeysuckle		*	*	*		*
<i>Malus sylvestris</i>	Crab Apple		*	*	*		*
<i>Populus tremula</i>	Aspen		*	*		*	
<i>Prunus avium</i>	Wild Cherry		*	*	*		*
<i>Prunus padus</i>	Bird Cherry			*			*
<i>Prunus spinosa</i>	Blackthorn		*	*	*		*
<i>Quercus petraea</i>	Sessile Oak						*
<i>Quercus robur</i>	Pedunculate Oak		*	*	*		*
<i>Rosa arvensis</i>	Field Rose		*	*	*		*
<i>Rosa canina agg.</i>	Dog Rose		*	*	*		*
<i>Salix caprea</i>	Goat Willow		*	*	*	*	
<i>Salix cinerea</i>	Grey Willow		*	*	*	*	
<i>Salix fragilis</i>	Crack Willow		*	*		*	
<i>Salix repens</i>	Creeping Willow			*	*	*	

Tree and shrub planting mix							
Scientific name	Common name	Location / Landscape Type		Local Conditions			
				Soil		Hydrology	
		County Wide	Lowlands Below 75m	Neutral	Alkaline	Damp	Dry
<i>Salix viminalis</i>	Osier					*	
<i>Sambucus nigra</i>	Elder		*	*	*		*
<i>Sorbus aucuparia</i>	Rowan	*	*	*	*		*
<i>Ulex europaeus</i>	Gorse			*			*
<i>Ulmus glabra</i>	Wych Elm		*		*		*
<i>Vaccinium myrtillus</i>	Bilberry	*					*
<i>Viburnum opulus</i>	Guelder-rose		*	*		*	