DISUSED RAILWAY CUTTING, HECKMONDWIKE, WEST YORKSHIRE

ECOLOGICAL IMPACT ASSESSMENT

A Report to: Vida-Architects

Report No: RT-MME-129025

Date: September 2018

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REPORT VERIFICATION AND DECLARATION OF COMPLIANCE

This study has been undertaken in accordance with British Standard 42020:2013 "Biodiversity, Code of practice for planning and development". It is compliant with the best practice guidelines for Ecological Impact Assessment in the UK and Ireland, as defined by CIEEM (2016).

Report Version	Date	Completed by:	Checked by:	Approved by:
Final	28/09/2018	Anna Evans MSc (Ecological Consultant)	Colin Bundy MCIEEM (Associate Director)	Dr Philip Fermor CEnv MCIEEM (Managing Director)

The information which we have prepared is true, and has been prepared and provided in accordance with the Chartered Institute of Ecology and Environmental Management's Code of Professional Conduct. We confirm that the opinions expressed are our true and professional bona fide opinions.

DISCLAIMER

The contents of this report are the responsibility of Middlemarch Environmental Ltd. It should be noted that, whilst every effort is made to meet the client's brief, no site investigation can ensure complete assessment or prediction of the natural environment.

Middlemarch Environmental Ltd accepts no responsibility or liability for any use that is made of this document other than by the client for the purposes for which it was originally commissioned and prepared.

VALIDITY OF DATA

The findings of this study are valid for a period of 24 months from the date of survey. If works have not commenced by this date, an updated site visit should be carried out by a suitably qualified ecologist to assess any changes in the habitats present on site, and to inform a review of the conclusions and recommendations made.

NON-TECHNICAL SUMMARY

This Ecological Impact Assessment (EcIA) has been prepared by Middlemarch Environmental Ltd to provide an overview of any significant effects, both beneficial and adverse, on ecological features, which may result during the construction and operational phases of the proposed development.

The report has been produced based on current best practice guidance for assessing ecological impacts for EIA projects, as defined by the Chartered Institute for Ecology and Environmental Management (CIEEM, 2016). The ecological baseline conditions have been informed by survey work completed by Middlemarch Environmental Ltd at the site to date.

The most notable ecological feature in relation to the proposed development is considered to be the mosaic of habitats that has developed on site (in particular the grassland, scrub and scattered trees which are considered to be significant at the site level or above). In the absence of significant disturbance this has created a site capable of supporting a range of wildlife which links into further semi-natural habitat to the immediate east, north and south of the site.

In terms of species, survey work has determined that badgers and reptiles are not currently utilising the site. Furthermore, the site does not support any potential bat roosting features; however the linear, undisturbed nature of the site suggests it holds potential value as a bat commuting and foraging feature which could facilitate movement between local roost sites and foraging grounds. The site is also considered to offer suitable habitat for nesting birds, while foraging terrestrial mammals such as hedgehog and fox may occasionally pass through the site.

Although detailed designs have not yet been developed, the main predicted construction phase effects of the development are envisaged to be associated with impacts to significant on-site habitats (habitat loss, temporary habitat disturbance and spread of invasive species) and associated usage of the habitats by species. Potential impacts to species on site include displacement or disturbance of existing species on site, along with potential injury, entrapment and/or fatality.

To mitigate for these impacts a number of design mitigations have currently been built into the scheme, comprising retention of existing habitats with a proposed green corridor and retention of scattered trees. A number of control measures have also been recommended, including protection measures for retained habitats, reinstatement of temporarily disturbed habitats, lighting restrictions for bats, restrictions on the timing of vegetation removal for nesting birds and precautions to prevent the spread of invasive species and the entrapment of terrestrial mammals.

Predicted operational phase effects include degradation of habitat value and risk of disturbance/injury to species as a result of inappropriate management; and disturbance to species from lighting, noise and movement.

It is recommended that the operational phase of the development should be controlled by a Landscape Ecological Management Plan (LEMP) focused on guiding site management operations to maintain and enhance the biodiversity value of the site, ensuring appropriate post-development monitoring of habitats and species. Production of a sensitively designed lighting strategy, with ecological input, is also recommended to minimise disturbance caused by lighting.

Additional compensation and enhancement measures are also recommended to help offset the residual effects of the development after mitigation and include enhancement of retained grassland and scrub, creation of new areas of grassland and scrub, tree planting, installation of bird and bat boxes, incorporating nesting and roosting opportunities into the new residential buildings, incorporating wildlife-friendly design features into the hard landscaping of the built development and ensuring opportunities are available for the free movement of wildlife between the residential gardens.

Provided that all the recommended avoidance, mitigation, compensation and enhancement measures are implemented the predicted ecological effects can either be avoided entirely or reduced to negligible significance.

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1. INTRODUCTION

1.1 PROJECT BACKGROUND

In September 2018 Vida-Architects commissioned Middlemarch Environmental Ltd to undertake an Ecological Impact Assessment (EcIA) associated with a proposed development on a Disused Railway Cutting accessible off Horton Street in Heckmondwike, South Yorkshire. This assessment is required to support an outline planning application associated with the development of 68 residential dwellings (including 14 affordable housing units) with an associated access road, car parking and gardens, and a communal play area to the south. A 20 metre-wide green corridor will be retained along the western boundary of the site, with areas of public open space at the northern and southern ends of the site. In total approximately 40% of the site will currently remain undeveloped as part of the proposed plans.

The report outlines the legislative and policy context for the development in respect of ecology; the Ecological Impact Assessment methodology; the baseline ecological conditions at the site, the likely significant ecological effects of the proposed development; the avoidance and mitigation measures required to offset significant ecological effects and the residual effects after avoidance and mitigation has been employed.

1.2 SITE DESCRIPTION AND CONTEXT

The site is situated in an urban fringe location at the southern edge of Heckmondwike in West Yorkshire, at OS Grid Reference SE 2195 2313. The site is linear in nature, measures approximately 2.5 ha and comprises a largely overgrown railway cutting with steep embankments to the east and west. At the time of the survey, much of the land comprised mosaics of rough semi-improved grassland, scattered scrub and tall ruderal vegetation, with areas of dense scrub, ephemeral/short perennial vegetation, non-ruderal vegetation and bare ground also recorded. Bridges were present at the northern and southern ends of the site, and a stone retaining wall ran the length of the site at the base of the cutting. The base of the cutting (Spen Valley Ringway) was dominated by a variety of habitats, including ephemeral/short perennial vegetation, scattered scrub, semi-improved grassland and a tall ruderal/semi-improved grassland mosaic.

The site was bounded by a bridge/Brunswick Street to the north-west, with a further small section of the railway cutting beyond this and by a bridge/Walkley Lane to the south, beyond which there was a small industrial estate and an area of greenspace extending towards open countryside to the south. Residential and commercial properties were present to the west, north-east and south-east whilst to the east there was a small wooded area linking to areas of greenspace and further residential housing. The local landscape comprised the built-up areas of Heckmondwike and Dewsbury to the north, east and west and open countryside to the south, with the Spen River flowing just under 300 metres to the south.

1.3 BASELINE ECOLOGICAL DATA

This assessment is informed by a series of ecological survey reports that were undertaken by Middlemarch Environmental Ltd to describe the ecological conditions at the site. These surveys are listed in Table 1.1.

Document Name / Drawing Number	Author
Preliminary Ecological Appraisal / RT-MME-128015-01 Rev A	Middlemarch Environmental Ltd (2018)
Badger Survey / RT-MME-128015-02 Rev A	Middlemarch Environmental Ltd (2018)
Reptile Survey / RT-MME-128015-03	Middlemarch Environmental Ltd (2018)

Table 1.1: Ecological Documentation Used to Inform the Ecological Impact Assessment

1.4 DESCRIPTION OF PROPOSALS

The Ecological Impact Assessment is based on the proposed development as detailed on Drawing PL202 – Proposed Site Plan, Vida Architects, dated 26.04.2018. The current proposals indicate that a housing development comprising 74 residential properties with car parking and individual gardens (including 18 Affordable Housing Units and 56 Dwellings) will be constructed on site, with an associated access road entering the site from Horton Street to the north. In addition, a children's play area is to be constructed at the

southern end of the site, public open space will be included to the north and south and a 20 metre-wide green corridor will be retained along the western boundary where no works are planned. The green corridor, open space and children's play area are anticipated to occupy approximately 40% of the entire development plot.

This document currently supports an outline planning application and as such, full details of the development are not known. It should therefore be considered to be a live document, to be updated as the application proceeds and further details are known

Documentation made available by the client is listed in Table 1.2.

Document Name / Drawing Number	Author
Outline Residential Use at Disused Railway Cutting, Heckmondwike – Proposed Site Plan (Drawing No: PL202).	Vida-Architects

Table 1.2: Documentation Provided by Client

For reference, this drawing is included in Chapter 10.

2. LEGISLATION AND POLICY

This chapter provides an overview of the framework of legislation and policy which underpins nature conservation and is a material consideration in the planning process in England. The reader should refer to the original legislation for the definitive interpretation.

2.1 GENERAL BIODIVERSITY LEGISLATION AND POLICY

Conservation of Habitats and Species Regulations 2017 (The Habitats Regulations 2017)
The Habitats Regulations 2017 consolidate and update the Habitats Regulations 2010 (as amended). The Habitat Regulations 2017 are the principal means by which the EEC Council Directive 92/43 (The Habitats Directive) as amended is transposed into English and Welsh law.

The Habitats Regulations 2017 place duty upon the relevant authority of government to identify sites which are of importance to the habitats and species listed in Annexes I and II of the Habitats Directive. Those sites which meet the criteria are, in conjunction with the European Commission, designated as Sites of Community Importance, which are subsequently identified as Special Areas of Conservation (SAC) by the European Union member states. The regulations also place a duty upon the government to maintain a register of European protected sites designated as a result of EC Directive 79/409/EEC on the Conservation of Wild Birds (The Birds Directive). These sites are termed Special Protection Areas (SPA) and, in conjunction with SACs, form a network of sites known as Natura 2000. The Habitats Directive introduces for the first time for protected areas, the precautionary principle; that is that projects can only be permitted having ascertained no adverse effect on the integrity of the site. Projects may still be permitted if there are no alternatives, and there are imperative reasons of overriding public interest.

The Habitats Regulations 2017 also provide for the protection of individual species of fauna and flora of European conservation concern listed in Schedules 2 and 5 respectively. Schedule 2 includes species such as otter and great crested newt for which the UK population represents a significant proportion of the total European population. It is an offence to deliberately kill, injure, disturb or trade these species. Schedule 5 plant species are protected from unlawful destruction, uprooting or trade under the regulations.

The Wildlife and Countryside Act (WCA) 1981 (as amended)
The WCA, as amended, consolidates and amends pre-existing national wildlife legislation in order to implement the Bern Convention and the Birds Directive. It complements the Habitat Regulations 2017, offering protection to a wider range of species. The Act also provides for the designation and protection of national conservation sites of value for their floral, faunal or geological features, termed Sites of Special Scientific Interest (SSSIs).

Schedules of the act provide lists of protected species, both flora and fauna, and detail the possible offences that apply to these species.

The Countryside and Rights of Way (CRoW) Act 2000
The CROW Act, introduced in England and Wales in 2000, amends and strengthens existing wildlife legislation detailed in the WCA. It places a duty on government departments and the National Assembly for Wales to have regard for biodiversity, and provides increased powers for the protection and maintenance of SSSIs. The Act also contains lists of habitats and species (Section 74) for which conservation measures should be promoted, in accordance with the recommendations of the Convention on Biological Diversity (Rio Earth Summit) 1992.

The Natural Environment and Rural Communities (NERC) Act 2006
Section 40 of the NERC Act places a duty upon all local authorities and public bodies in England and Wales to promote and enhance biodiversity in all of their functions. Sections 41 (England) and 42 (Wales) list habitats and species of principal importance to the conservation of biodiversity. These lists superseded Section 74 of the CRoW Act 2000.

The Hedgerow Regulations 1997
The Hedgerow Regulations make provision for the identification of important hedgerows which may not be removed without permission from the Local Planning Authority.

UK Post-2010 Biodiversity Framework

The UK Biodiversity Action Plan (BAP), published in 1994, was the UK Government's response to signing the Convention on Biological Diversity (CBD) at the 1992 Rio Earth Summit. The new UK Post-2010 Biodiversity Framework replaces the previous UK level BAP. The UK Post-2010 Biodiversity Framework covers the period 2011-2020 and forms the UK Government's response to the new strategic plan of the United Nations Convention on Biological Diversity (CBD), published in 2010 at the CBD meeting in Nagoya, Japan. This includes five internationally agreed strategic goals and supporting targets to be achieved by 2020. The five strategic goals agreed were:

- Address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society;
- Reduce the direct pressures on biodiversity and promote sustainable use;
- To improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity;
- Enhance the benefits to all from biodiversity and ecosystem services; and,
- Enhance implementation through participatory planning, knowledge management and capacity building.

The Framework recognises that most work which was previously carried out under the UK BAP is now focused on the four individual countries of the United Kingdom and Northern Ireland, and delivered through the countries' own strategies. Following the publication of the new Framework the UK BAP partnership no longer operates but many of the tools and resources originally developed under the UK BAP still remain of use and form the basis of much biodiversity work at country level. In England the focus is on delivering the outcomes set out in the Government's 'Biodiversity 2020: a Strategy for England's Wildlife and Ecosystem Services' (DEFRA, 2011). This sets out how the quality of our environment on land and at sea will be improved over the next ten years and follows on from policies contained in the Natural Environment White Paper.

Species and Habitats of Material Consideration for Planning in England

Previous planning policy (and some supporting guidance which is still current, e.g. ODPM Circular 06/2005, now under revision), refers to UK BAP habitats and species as being a material consideration in the planning process. Equally many local plans refer to BAP priority habitats and species. Both remain as material considerations in the planning process but such habitats and species are now described as Species and Habitats of Principal Importance for Conservation in England, or simply priority habitats and priority species under the UK Post-2010 Biodiversity Framework. The list of habitats and species remains unchanged and is still derived from Section 41 list of the Natural Environmental and Rural Communities (NERC) Act 2006. As was previously the case when it was a BAP priority species hen harrier continues to be regarded as a priority species although it does not appear on the Section 41 list.

2.2 NATIONAL PLANNING POLICY FRAMEWORK AND PRACTICE GUIDANCE

In July 2018, the National Planning Policy Framework (NPPF) was updated, replacing the previous framework published in 2012. The government circular 06/05: Biodiversity and Geological Conservation - Statutory Obligations and Their Impact within the Planning System, which accompanied PPS9, still remains valid. A presumption towards sustainable development is at the heart of the NPPF. This presumption does not apply however where developments require appropriate assessment under the Birds or Habitats Directives.

Chapter 15, on conserving and enhancing the natural environment, sets out how the planning system should contribute to and enhance the natural and local environment by:

- protecting and enhancing existing sites of biodiversity value;
- minimising impacts on and providing net gains for biodiversity; and,
- establishing coherent ecological networks.

If a proposed development would result in significant harm to the natural environment which cannot be avoided (through the use of an alternative site with less harmful impacts), mitigated or compensated for (as a last resort) then planning permission should be refused. With respect to development on land within or outside of a Site of Special Scientific Interest (SSSI) which is likely to have an adverse effect (either alone or in-combination with other developments) would only be permitted where the benefits of the proposed development clearly outweigh the impacts on the SSSI itself, and the wider network of SSSIs. Development resulting in the loss of deterioration of irreplaceable habitats (such as ancient woodland and ancient or

veteran trees) should be refused unless there are wholly exceptional reasons for the development, and a suitable compensation strategy is provided.

Chapter 15 identifies that development whose primary objective is to conserve or enhance biodiversity should be supported and opportunities to incorporate biodiversity improvements in and around development should be encouraged, especially where this can secure measurable net gains for biodiversity.

Chapter 11, making effective use of the land, sets out how the planning system should promote use of land in meeting the need for homes and other uses, while safeguarding and improving the environment and ensuring safe and healthy living conditions. Substantial weight should be given to the value of using suitable brownfield land within settlements for homes and other identified needs. Opportunities for achieving net environmental gains, including new habitat creation, are encouraged.

In March 2014 the Department for Communities and Local Government released guidance to support the National Planning Policy Framework (NPPF), known as the National Planning Practice Guidance (NPPG).

This has been produced to provide guidance for planners and communities which will help deliver high quality development and sustainable growth in England. The guidance includes a section entitled 'Natural Environment: Biodiversity, ecosystems and green infrastructure' which sets out information with respect to the following:

- the statutory basis for minimising impacts on biodiversity and providing net gains where possible;
- the local planning authority's requirements for planning for biodiversity;
- what local ecological networks are and how to identify and map them;
- the sources of ecological evidence;
- the legal obligations on local planning authorities and developers regarding statutory designated sites and protected species;
- the considerations for local (non-statutory) designated sites;
- definition of green infrastructure;
- where biodiversity should be taken into account in preparing a planning application;
- how development can enhance biodiversity;
- how policy is applied to avoid, mitigate or compensate for significant harm to biodiversity and how mitigation and compensation measures can be ensured; and,
- the consideration of ancient woodlands and veteran trees in planning decisions.

2.3 LOCAL PLANNING POLICY

KIRKLEES COUNCIL

http://www.kirklees.gov.uk/beta/planning-and-development.aspx#planning-policy

Unitary Development Plan
The Unitary Development Plan (UDP) sets out the council's policies and proposals for the use and development of land and buildings. The plan constitutes the statutory development plan for Kirklees. It was adopted on 1st March 1999.

As a result of a direction issued by the Secretary of State for Communities and Local Government, from 28 September 2007 some of the policies in the UDP continue to have effect. These are called saved policies. Saved policies continue to be used to determine planning applications. Those of relevance to ecology are as follows:

NE3
Development proposals within or in the vicinity of a Site of Scientific Interest will not normally be permitted unless there is an exceptional requirement for the development and measures will be taken to minimise any detriment to the site.

NE4
Development proposals which would affect a Site of Wildlife Significance will not normally be permitted unless provision can be made to maintain the site's role for nature conservation.

NE5
Development proposals involving land identified on the proposals map as part of a wildlife corridor should make provision for the retention of the corridor and the protection of the wildlife value of the land.

EP11
Applications for planning permission should incorporate an integral landscaping scheme which protects or enhances the ecology of the site.

Local Plan
A Kirklees Local Plan is currently in preparation. The local plan will establish the vision and strategic objectives for the development of Kirklees up to 2031 and a spatial strategy setting out how development will be accommodated across the district.

3. METHODOLOGIES

3.1 INTRODUCTION

The methodology for this assessment described in the Ecology Chapter is derived from the criteria set out in The Chartered Institute of Ecology and Environmental Management (CIEEM) '*Guidelines for Ecological Impact Assessment in the UK and Ireland'* (2016) (herein referred to as the 'CIEEM Guidelines'). The methodology comprises:

- Determination of the ecological baseline including a desk study, an Extended Phase 1 Habitat Survey and, where relevant, further surveys for legally protected species and Species of Principal Importance in England;
- Identification of important ecological receptors within the zone of influence;
- An assessment of the significant effects on important ecological receptors from the construction and operational phases of the Proposed Development;
- A review of the mitigation and assessment of residual effects; and,
- A cumulative assessment with other development proposals in the surrounding area.

Further information regarding the assessment methodology for each phase of the Ecological Impact Assessment is provided in Sections 3.2 and 3.3.

3.2 SCOPE OF THE ASSESSMENT

The assessment considers all activities associated with the construction and operational phases of the proposed development that are likely to have direct, indirect or cumulative impacts on the ecological feature.

The zone of influence for the Ecological Impact Assessment has been defined in accordance with the CIEEM Guidelines (2016). These guidelines state that the 'Zone of Influence' with respect to ecology does not simply relate to the red line boundary of an application site. Activities and effects described above that occur outside of the Application Site can still have a negative or positive impact as a result of the construction, operation and potentially decommissioning of a project. The Zone of Influence in this assessment will therefore consider direct and indirect effects on ecological receptors both within and adjacent to the application site, and potentially associated with other areas that could be affected e.g. through transportation or excavation.

3.3 DESK STUDY

An ecological desk study was undertaken to determine the presence of any designated nature conservation sites and protected species in proximity to the site. This involved contacting appropriate statutory and non-statutory organisations which hold ecological data relating to the survey area. Middlemarch Environmental Ltd then assimilated and reviewed the desk study data provided by these organisations.

The consultees for the desk study were:

- Natural England - *MAGIC* website for statutory conservation sites; and
- West Yorkshire Ecology Service (WYES).

The desk study included a search for European statutory nature conservation sites within a 5 km radius of the site (extended to 10 km for any statutory site designated for bats), UK statutory sites within a 2 km radius and non-statutory sites and protected/notable species records within a 2 km radius.

The data collected from the consultees is discussed in Chapter 4. Selected raw data are provided in Appendix 1. In compliance with the terms and conditions relating to its commercial use, the full desk study data is not provided within this report.

3.4 FIELD SURVEYS

A summary of the methodology for each of the ecological baseline surveys undertaken by Middlemarch Environmental Ltd to date is provided in Table 3.1.

Survey	Date Completed	Brief Description
Phase 1 Habitat Survey	May 2018	A walkover survey was undertaken following the Extended Phase 1 Habitat Survey methodology of the Joint Nature Conservation Committee (2010) and the Institute of Environmental Assessment (1995). Phase 1 Habitat Survey is a standard technique for classifying and mapping British habitats. The method provides information on habitats present within the Site and assesses the potential for legally protected and notable species to occur in and adjacent to the Site.
Badger Survey	May 2018	A habitat assessment was undertaken to identify the suitability of the site for use by foraging and sett building badgers. This takes the nature of the surrounding landscape and connectivity with other areas of suitable habitat into account. The survey site was also subject to a comprehensive walkover assessment for the presence of badger field signs. Such signs include badger setts, footprints, pathways, hairs, snuffle holes and latrine sites. Where possible, the survey included a 30 m radius around the proposed development site.
Reptile Survey	June 2018	An assessment of the suitability of the site to support reptile species was undertaken, based on a review of habitat characteristics and other parameters known to influence reptile distribution. A presence/absence survey for reptiles was also undertaken in accordance with the best practice methodology detailed in the Herpetofauna Workers Manual (Gent and Gibson, 2003).

Table 3.1: Summary of Ecological Field Surveys Undertaken to Inform Impact Assessment

3.5 IMPACT ASSESSMENT

3.5.1 Features of Ecological Importance

The assessment considers all ecological features within the zone of influence that are capable of being a material consideration in the planning process. This includes the following:

- Statutory and Non-Statutory Nature Conservation Sites;
- Statutory Protected Species;
- Habitats and Species of Principal Importance to Nature Conservation in England (as identified in Section 41 of the NERC Act);
- Priority habitats and species identified in the Kirklees Biodiversity Action Plan; and,
- Features of importance by virtue of their location, role or function within the ecological landscape.

3.5.2 Determining Importance

The CIEEM guidelines (2016) state that ecological features should be considered within a 'defined geographical context'. The geographical frame of reference used to determine ecological importance in this assessment is detailed in Table 3.3. Assigning importance to ecological features is based on professional judgement informed by available guidance and information and expert advice.

Importance	Examples
International	High importance and rarity on an international scale and limited potential for substitution. e.g. Special Areas of Conservation, Special Protection Areas, Ramsar Sites, or an area which meets the published selection criteria for such designation. A regularly occurring, nationally significant population or number of any internationally important species.
National	High importance, quality and rarity on a national or regional scale, with limited potential for substitution. e.g. Sites of Special Scientific Interest, National Nature Reserves and sites which meets the published selection criteria for national designation. A regularly occurring, regionally or county significant population or number of any nationally important species.
Regional	High importance, quality or rarity on a metropolitan scale, or medium quality or rarity on a regional scale, with limited potential for substitution e.g. large-scale metropolitan Wildlife Sites or other sites that exceed the metropolitan-level designations but fall short of SSSI selection criteria, or areas of regionally rare or valuable habitat. A regularly occurring, locally significant number of a regionally important species during a critical phase of its life cycle.
County / Metropolitan	Medium importance, quality and rarity on a metropolitan scale and (limited) potential for substitution. e.g. Local Nature Reserves, metropolitan Wildlife Sites and features such as diverse and/or ecologically valuable hedgerow networks, high quality woodlands and high quality ponds. A regularly occurring, locally significant number of an important species at the metropolitan level during a critical phase of its life cycle.
Local	Borough Medium to high importance, quality and rarity on a local scale, with (limited) potential for substitution e.g. semi-natural vegetation that due to its size, quality or the wide distribution of such habitats within the local area are not considered for the above classifications, medium-sized areas of habitat that could be re-created, such as wildflower meadows, medium to low quality ponds, and low quality woodlands. A regularly occurring, locally significant number of a borough important species during a critical phase of its life cycle. Site Low or very low importance, quality and rarity on a local scale with potential for substitution. e.g. low quality grasslands and intensive agricultural land. Any regularly occurring population of a locally common species.
Negligible	Areas of no ecological value e.g. hardstanding, areas of built development not supporting assemblages of species.

Table 3.3: Geographical Context of Ecological Importance

3.5.3 Characterising Impacts

Impacts arising as a result of development activities on site are described for all features of ecological importance. When describing impacts the assessment refers to characteristics such as the extent; magnitude; duration; frequency; and, reversibility of the impact in order to provide justification for any conclusions about the nature and likelihood of the impact described.

3.5.4 Determining Significant Effects

The CIEEM guidelines (2016) define a significant effect in the context of an Ecological Impact Assessment as '*an effect that either supports or undermines biodiversity conservation objectives for important ecological features or for biodiversity in general*'. A significant effect is therefore an effect that is '*sufficiently important to require assessment and reporting so that the decision maker is adequately informed of the environmental consequences of a project*'.

Significant effects are determined by assessing any deviation in the baseline conditions of a feature of ecological importance that may occur as a result of individual and cumulative impacts during the construction and operational phases of the proposed development. These effects are expressed in terms of a geographical scale, corresponding to that in Table 4.2, however the geographical scale at which an effect is significant can vary from the geographical importance of the ecological feature being assessed. This assessment uses the above methodology to describe all significant effects on features of ecological importance within the zone of influence.

3.5.5 Cumulative Effects

In addition to the cumulative impacts of the proposed development (intra-development effects), the assessment also includes a consideration of cumulative effects of the development. This involved a search

for planning applications within the vicinity of the development site that may be likely to impact upon the on-site or off-site receptors identified within this report.

3.5.6 Confidence in Predictions

The CIEEM Guidelines (2016) also recommends that it is important to consider the likelihood that a change / activity will occur and also the degree of confidence in the assessment of the effect on ecological structure and function. This confidence is described within the summary tables for each feature of ecological importance.

4. BASELINE ECOLOGICAL CONDITIONS AND EVALUATION

4.1 DESIGNATED SITES

A desk study data search carried out on 25th May 2017 by West Yorkshire Ecology identified no European statutory sites within 5 km of the survey area, no UK statutory sites within 2 km and no non-statutory nature conservation sites within 1 km. Furthermore, the site is not located within 10 km of a statutory site designated for bats.

However, the survey area does fall within a SSSI Impact Risk Zone for Denby Grange Colliery Ponds SSSI, which lies 8.7 km to the south-east. In addition, areas of land within the search area, though not the survey area itself, form part of the Kirklees Wildlife Habitat Network.

4.2 HABITATS

4.2.1 Phase 1 Habitat Survey

The following habitats were identified on site during the updated Phase 1 Habitat Survey, (listed alphabetically and not in order of importance). The location of each habitat is shown in Drawing C129025-01 in Chapter 10).

- Bare Ground;
- Boundary Features (Retaining Wall);
- Ephemeral/Short-perennial Vegetation;
- Habitat Mosaic (Grassland and Tall Ruderal Vegetation);
- Non-Ruderal Herbaceous Vegetation;
- Other Habitat: Heather
- Rough Semi-Improved Grassland;
- Scattered Trees;
- Scrub;
- Structures; and
- Tall Ruderal Vegetation.

These habitats are described below.

Bare Ground

A small area of bare ground was noted towards the south-east of the site, and this comprised loose hardcore with occasional rubble. Overall, it was largely compacted with only a small amount of emerging grass recorded. This habitat was concluded to hold negligible ecological value and is therefore not considered to be significant. As such it is not discussed further within this assessment.

Boundary Features (Retaining Wall)

A stone retaining wall between 1.5 and 2.5 m high ran the length of the site and retained the semi-improved grassland and scrub on the steep embankment to the north-east of the old track bed. Some sections were noted to have collapsing stonework. Garden and palisade fencing was also noted along the south-western site boundary. The boundary features recorded on site were concluded to hold negligible ecological value and are therefore not considered to be significant. As such they are not discussed further within this assessment.

Ephemeral/Short Perennial Vegetation

This habitat was found in two locations along the base of the railway cutting, and a patch was also recorded on the eastern embankment. The ephemeral/short perennial towards the base of the cutting was over a stone base, which was thought to comprise the old track bed. Species recorded included red clover *Trifolium pratense*, willowherb *Epilobium sp.*, false oat-grass *Arrhenatherum elatius*, hawkbit *Leontodon sp.* and Yorkshire fog *Holcus lanatus*. Small rubble piles and loose stone were recorded within these areas (Target Notes 5 and 6 on Drawing 129025-01 in Chapter 10).

This area had been subject to past burning, making identification of species difficult; however, moss and knapweed *Centaurea sp.* along with field woodrush *Luzula campestris* and redshank *Persicaria maculosa* were recorded, and these were interspersed with sparse hawthorn scrub. Remnants of burnt heather

Calluna sp. were also recorded in parts. Due to the small size and low species diversity of these areas, the habitat is not considered to be significant and it is not discussed further within this assessment.

Habitat Mosaic (Grassland With Tall Ruderal Vegetation)
Areas containing a mosaic of grassland, with some tall ruderal vegetation, were present along the eastern boundary of the site and at the base of the cutting towards the south of the site. The sward ranged between 20 cm and 1 metre in height and showed no signs of recent management. Species recorded included creeping bent *Agrostis stolonifera*, Yorkshire fog, meadow foxtail *Alopecurus pratensis*, cock's-foot, false oat-grass, hawkbit, cleavers *Galium aparine*, willowherb, creeping thistle *Cirsium arvense* and foxglove *Digitalis purpurea,* buttercup *Ranunculus sp.*, white clover, and occasional bramble, teasel *Dipsacus fullonum*, white campion and dock. Due to its undisturbed nature, the habitat has developed into one capable of supporting a range of wildlife. It is therefore considered to be significant at the site level and is included within this assessment.

Non-Ruderal Herbaceous Vegetation
Three small clusters of fern species *Dryopteris sp.* were recorded along the western boundary of the site, towards the southern end. These areas were situated within the semi-improved grassland and scrub habitats. Due to the small size and low species diversity of these areas, the habitat is not considered to be significant and it is not discussed further within this assessment.

Other Habitat: Heather
An area of heather *Calluna vulgaris*, occupying a length of approximately 20 m, was recorded towards the central portion of the eastern boundary. It was sparsely scattered and measured up to 0.5 m in height. Due to its small extent, it was not classified as a heathland, and as such it is not a UK BAP Priority Habitat or a UK Habitat of Principal Importance. As a result, the habitat is not considered to be significant and it is not discussed further within this assessment.

Rough Semi-Improved Grassland
Much of the site was covered by rough semi-improved grassland with scattered scrub throughout. The grassland had a sward height of between 20 and 45 cm, showed no signs of recent management and was dominated by cock's-foot *Dactylis glomerata* and Yorkshire fog, with, red clover, hawkbit and bramble also present. Along the footpath boundary to the east, the grassland had a longer sward of up to 1 m and additional species including willowherb, broad-leaved dock *Rumex obtusifolius*, white clover *Trifolium repens* and comfrey *Symphytum officinale* were recorded. Due to its undisturbed nature, the habitat has developed into one capable of supporting a range of wildlife. It is therefore considered significant at the site level and is included within this assessment.

Scattered Trees
A small number of scattered trees were recorded on site, the most notable being a semi-mature ash within the north-eastern corner and two semi-mature sycamores within the southern corner. The trees are considered to be significant at the site level and are therefore included within this assessment.

Scrub
Both dense and scattered scrub was recorded on site during the field survey. The dense scrub was of varied composition across the site, with the scrub in the north-eastern corner being dominated by dense bramble, whereas the scrub along the western boundary was dominated by immature trees including rowan *Sorbus aucuparia*, oak *Quercus sp.*, cherry *Prunus sp*., alder *Alnus glutinosa*, hawthorn *Crataegus monogyna*, elder *Sambucus nigra*, silver birch *Betula pendula*, ash *Fraxinus excelsior* and goat willow *Salix caprea.* Occasional scatterings of broom *Cytisus scoparius* and rose *Rosa sp*. were also recorded. Scattered scrub was interspersed within the other habitats on site and largely comprised immature tree and shrub specimens of the same species composition listed above. The scrub is considered to be a significant habitat and is therefore included within this assessment.

Structures
Bridges were present at the northern and southern ends of the site (Target Note 1 on Drawing 129025-01 in Chapter 10). The bridge at the northern end was 7 to 8 m high and was constructed from brick and stone, with the walls of the bridge continuing around the north-western-most side of the site. Both the bridge and walls were noted to be in good condition and displayed no bat roost potential. Dense ivy growth was present on the wall (Target Note 2 on Drawing 129025-01 in Chapter 10).

The bridge at the southern end of the site was 6 to 7 m high and again constructed from brick and stone, with a metal walkway adjacent immediately to the north which was largely intact. The underside of the bridge was curved brick with metal dividers. The southern bridge was concluded to hold negligible bat roost potential.

Both of the bridges were concluded to hold negligible ecological value and are therefore not considered to be significant. As such they are not discussed further within this assessment.

Tall Ruderal Vegetation
Areas of tall ruderal vegetation were present towards the base of the cutting and towards the south of the site on the eastern embankment. These had a sward height of approximately 1 m and were dominated by nettle *Urtica dioica,* and willowherb, with occasional bramble, broad-leaved dock, cleavers, common fumitory *Fumaria officinalis*, curled dock *Rumex crispus*, false oat-grass, forget-me-not *Myosotis sp.*, herb Robert *Geranium robertianum*, redshank, ribwort plantain *Plantago lanceolata*, teasel and Yorkshire fog. The ground beneath the vegetation became wetter at the base of the railway cutting and horsetails *Equisetum sp.* were recorded in this area, along with small areas of collected water containing duckweed *Lemna sp.* (Target Note 4 on Drawing 129025-01 in Chapter 10). Due to the small size and low species diversity of these areas, the habitat is not considered to be significant and it is not discussed further within this assessment.

4.3 SPECIES

4.3.1 Amphibians
The desk study identified one record of great crested newt within the search area, along with records of palmate and smooth newt, however all of the records were from 1.8 km away from the survey site. No evidence of great crested newt or any other amphibians was recorded on site and apart from ephemeral areas of water, which were considered to be of negligible value to newts, no waterbodies were present on site. However, some suitable terrestrial habitat was present within the habitat mosaics, with potential refuge present within the collapsed stone walls.

Reference to Ordnance Survey Maps and aerial photos indicate the presence of one standing waterbody within 500 m of the survey area, this being located approximately 235 m to the south of the survey area. However, aerial photos indicated the presence of fishing platforms around the outside of the pond, making the pond much less suitable for great crested newts, whilst the intervening land was dominated by an industrial unit set within an area of hardstanding which is of negligible value to newts. As a result and given the lack of desk study records in close proximity to the site, it is considered highly unlikely that any amphibian species would be present on site and they are not discussed further within this assessment.

4.3.2 Bats
The desk study identified forty-nine records of Daubenton's, noctule, pipistrelle and unidentified bats within the search area. The scattered trees and bridges on site held negligible bat roost potential and no other potential roosting features were identified; however the linear undisturbed nature of the site suggests that it has some potential value for commuting and foraging bats and this links to further potential roosting and foraging habitat within the adjacent residential housing, gardens, woodland and greenspaces. Therefore it is considered likely that commuting and foraging bats may utilise the site. Foraging and commuting bats are therefore considered to be significant and are included within this assessment.

4.3.3 Badgers and Other Terrestrial Mammals
No records of badger, or any other terrestrial mammals, were identified within the search area through the desk study. A badger survey was undertaken on the site on 4th May 2018 and although the site was considered suitable for sett building badgers and mammal trails were recorded on site, no field signs suggesting the presence of badger (such as badger setts, latrines or hairs) were recorded either on site or within the immediately surrounding landscape. Therefore, it was concluded that badgers were not present on site at the time of the survey and they are not discussed further within this assessment.

The site was considered to provide suitable foraging habitat for other terrestrial mammals, including hedgehog and fox. As mammal trails and suitable foraging habitat are present across the site, it is likely that terrestrial mammals utilise the site for foraging purposes. Foraging terrestrial mammals are therefore considered to be significant at the site level and are included within this assessment.

4.3.4 Birds

Records of a number of notable bird species were identified within the search area through the desk study, including four species listed on Schedule 1 of the Wildlife and Countryside Act 1981 (as amended) and five Species of Principal Importance, as well as species listed on the RSPB Amber and Red lists. In addition, a small number of common birds were recorded on site during the field survey. The site contained good nesting potential, particularly within the scattered trees and scrub; and it is therefore likely that a range of bird species could nest on site. As such nesting birds are concluded to be significant at the site level and are included within this assessment.

Although areas of potential nesting habitat will be lost to the proposed development, the proposed site plan indicates that trees and scrub will be maintained on site post-development, within the proposed public open space to the north, south and west. As potential nesting habitat is to be incorporated within the development and as larger areas of potential nesting habitat are present in the local area, it is not anticipated that local bird populations will be adversely impacted by the proposed works.

4.3.5 Reptiles

No reptile records were identified within the search area through the desk study, however the tall ruderal/grassland mosaic on the embankments and the areas of scrub provided potentially suitable foraging habitat; whilst the collapsed stone walls and debris on site offered potential refuge. A reptile survey was undertaken on site between 4th May and 11th June 2018 however no reptiles were recorded on site during these surveys. It was therefore concluded that reptiles were not present on site and they are not discussed further within this assessment.

4.3.6 Terrestrial Invertebrates

The desk study identified no invertebrate records within the search area however ashy mining bee, red-tailed bumblebee, orange tip and red admiral were all recorded onsite during the field survey. Considering the habitats present, it is considered likely that the site supports a range of common invertebrates. However, although any invertebrate species present within the site may be displaced during the construction phase of the proposed development, it is considered likely that they will recolonise following completion of the development, particularly as proposals include enhancements such as the retention of a green corridor along the western boundary of the site, as well as the creation of further public open space and residential gardens associated with the new dwellings. No long-term adverse effects on invertebrates are predicted as a result of the proposed development and invertebrates are therefore not discussed further within this assessment.

4.3.7 Water Vole

The desk study identified six records of water vole within the search area; however no evidence of any water voles, or any suitable habitat, is present within, or in the vicinity of, the survey area. Therefore, water voles are not discussed further within this assessment.

4.3.8 Other Species

The following protected species are not considered to be material considerations due to the lack of desk study records and absence of suitable habitats within the development site and its surroundings: brown hare *Lepus europaeus,* dormouse *Muscardinus avellanarius*, harvest mouse *Micromys minutus*, otter *Lutra lutra*, pine martin *Martes martes*, polecat *Mustela putorius*, red squirrel *Sciurus vulgaris*, and white-clawed crayfish *Austropotamobius pallipes*.

4.3.9 Plants

No protected or notable plants were identified within the search area through the desk study or recorded on site during the field survey.

The desk study did, however, identify records of a number of invasive plant species giant hogweed, Himalayan balsam and New Zealand pigmyweed within the search area through the desk study. None of these species were recorded on site during the field survey however an unidentified cotoneaster species was identified within the scrub along the eastern embankment of the site.

4.4 Evaluation of Importance of Ecological Features

Table 4.1 identifies the important ecological features on site and the geographical frame of reference for which they are important. Only receptors important at the local (site) level or above are included in the table

and are therefore considered further in the impact assessment. Receptors deemed to be of negligible importance at the site level by virtue of their absence from site or limited value to biodiversity are not included within the table and are scoped out of further assessment.

Receptor	Nature Conservation Value	Justification
Designated Sites		
SSSI Impact Risk Zones	National	SSSI Impact Zones are utilised by Local Planning Authorities to assess planning applications for likely impacts on SSSIs.
Habitats		
Scrub	Local (Borough)	Scrub is a priority habitat in the Kirklees Biodiversity Action Plan and is capable of supporting a range of species including nesting birds.
Scattered Trees	Local (Site)	The scattered trees contribute to habitat, structural and species diversity and also provide nesting opportunities for birds.
Semi-improved Grassland (including in mosaic with tall ruderal vegetation)	Local (Site)	Adds to the habitat, structural and species diversity of the site and is generally undisturbed, making it capable of supporting a range of wildlife including invertebrates and foraging mammals.
Species		
Bats	Local (Borough)	Noctule and pipistrelle bats (depending on species) are Species of Principal Importance in England and priorities in the Kirklees Biodiversity Action Plan. These species were identified within the search area through the desk study, along with a range of other bat species (Daubenton's and unidentified bats). Although no potential roost features were recorded, the site offers value to commuting and foraging bats.
Birds	Local (Site)	The site supports a low number of common and widespread bird species some of which may potentially nest in the habitats on site. All wild birds receive protection under the Wildlife and Countryside Act 1981 (as amended) whilst nesting.
Terrestrial Mammals	Local (Site)	Although no records of mammals were identified within the search area through the desk study, the site offers suitable habitat for mammals designated as Species of Principal Importance such as hedgehog, along with other mammals such as fox. In addition, mammal trails were recorded on site during the field survey, indicating that mammals utilise the site for commuting and foraging purposes.
Invasive Species	Local (Site)	A cotoneaster species *Cotoneaster sp.* was recorded within the scrub along the eastern embankment of the cutting. This species is considered invasive and is listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended).

Table 4.1: Summary of Nature Conservation Value of Ecological Receptors

Due to the small area of each habitat present on site and/or their low or negligible contribution to the overall ecological value of the site, the following habitats are scoped out of this assessment: bare ground, boundary features, ephemeral/short-perennial vegetation, non-ruderal vegetation, structures and tall ruderal vegetation.

With regard to species, badgers and reptiles were scoped out of this assessment as dedicated surveys did not find any evidence of their presence on site. In addition, the following other protected species are not considered to be material considerations due to the lack of desk study records and absence of suitable habitats within the development site and its surroundings: brown hare *Lepus europaeus*, dormouse *Muscardinus avellanarius*, harvest mouse *Micromys minutus*, otter *Lutra lutra,* pine martin *Martes martes*, polecat *Mustela putorius*, red squirrel *Sciurus vulgaris* and white-clawed crayfish *Austropotamobius pallipes*. These species were therefore also scoped out of this assessment.

5. ASSESSMENT OF POTENTIAL IMPACTS AND MITIGATION MEASURES

5.1 INTRODUCTION

The following section describes predicted impacts upon the ecological receptors during construction and on completion of the proposed development. Effects are evaluated in terms of their significance in the absence of mitigation. The impact assessment has been based on Drawing PL202 – Proposed Site Plan, Vida Architects.

The activities likely to have an impact on habitats and species can be split into construction impacts and operational impacts. During the construction phase of the scheme, the main activities on the site will include vegetation clearance, construction activities including ground works, the use of operational plant and machinery and associated vehicle movements. Impacts likely to arise from these activities could include loss, fragmentation and physical damage of habitat, including compaction, hydrological changes and pollution, direct mortality of species and disturbance (physical disturbance, lighting and air pollution) of sites, habitats and species.

During the operational phase of the scheme there will be an increase in people and vehicle movements within the application site, increases in street lighting and illumination and site maintenance activities. Potential impacts from these activities include disturbance (recreational, lighting and noise), habitat degradation through inappropriate management activities and potentially the direct mortality of species.

The mitigation provided has been designed in accordance with the mitigation hierarchy outlined in paragraph 118 of the National Planning Policy Framework and BS42402:2013 and so has aimed to avoid effects in the first instance, provide mitigation to reduce and abate adverse effects and finally provide compensation for any residual effects.

5.2 MITIGATION BY DESIGN

As described in Section 5.1, any avoidance or mitigation that has been built into the design of the development is taken into account during the initial assessment of potential impacts and effects. This approach works to avoid or 'design out' adverse ecological effects in the first instance.

Although detailed site plans have not yet been developed, a small number of proposed design mitigations have already been built into the scheme, comprising:

- Retention of scattered trees.
- Retention of existing areas of scrub and grassland within proposed green corridor, where no works are planned.
- Retention of nesting habitat for birds, foraging/commuting route for bats and foraging habitat for terrestrial mammals and invertebrates within proposed green corridor.

Additional mitigation should be built into the construction and operational phases of the development to further reduce adverse ecological effects and this is detailed in Sections 5.3 and 5.4 below.

Following on from the mitigation proposals, a range of compensation and enhancement measures should also be built into the detailed design proposals to further reduce any residual effects and these are detailed in Chapter 7.

A summary of recommended habitat retention, enhancement and creation proposals which could be built into the detailed site plans when they are developed are included in Table 5.1 below for reference and detailed further in Sections 5.3 and 5.4 and in Chapter 7.

Habitat	Retention/Enhancement/Creation Proposals
Scattered Trees	Retention of existing scattered trees Planting of new native trees or fruit/seed-bearing trees of value to wildlife
Scrub	Retention and enhancement of existing areas of scrub with proposed green corridor and public open space, using appropriate native species or fruit/seed bearing species of value to wildlife. Creation of new areas of scrub, using appropriate native species or fruit/seed bearing species of value to wildlife.
Grassland	Retention and enhancement of existing areas of grassland with proposed green corridor and public open space, using appropriate native species mix. Creation of new areas of wildflower-rich grassland within built development and public open spaces, using appropriate native species mix.
Proposed Residential Area	Incorporating wildlife-friendly hard landscaping into development, including dropped kerbs and offset gullies. Installation of nesting and roosting opportunities built into the new buildings. Creation of features allowing wildlife to commute between gardens. Planting of fruit trees or seed-bearing trees. Creation of wildflower verges.

Table 5.1: Summary of Recommended Habitat Retention, Enhancement and Creation Proposals Which Could be Incorporated into the Design of the Proposed Development

5.3 POTENTIAL FOR CONSTRUCTION PHASE IMPACTS

5.3.1 Statutory and Non-statutory Sites

Impact Risk Zone for Denby Grange Colliery Ponds SSSI

Potential Impacts:
The site lies within a SSSI Impact Risk Zone for Denby Grange Colliery Ponds SSSI, which is located 8.7 km to the south-east. However, the proposed works do not fall within one of the highlighted risk categories and are therefore unlikely to adversely impact the associated SSSI either directly or indirectly during the construction phase.

Mitigation Measures:
None required.

Significant Residual Effects:
None anticipated.

5.3.2 Habitats

Scrub

Potential Impacts:
The scrub on site varied from dense to scattered in nature and ranged in composition from dense bramble in the north-east to immature trees along the western boundary, with scattered immature trees elsewhere on site. Some areas of dense and particularly scattered scrub in the centre and east of the site will be cleared and permanently lost in order to facilitate the construction of the access road, residential properties and gardens. In the absence of mitigation, this would be an adverse effect, significant at the Local (Site) level.

Other areas of scrub will be retained within the proposed green corridor as part of the plans, whilst further areas of scrub may also be retained within the proposed public open spaces. However, in the absence of mitigation, construction activities associated with the proposed development, such as the creation of access routes, grounds works, use of operational machinery and the storage of materials, could result in the physical damage or temporary disturbance of retained scrub, through compaction of soils and damage to the root stock. In the absence of mitigation, this would be an adverse effect, significant at the Local (Site) level.

Mitigation Measures:
Adequate protection measures should be utilised to ensure that damage to retained scrub is avoided. Works should therefore be undertaken in accordance with British Standard 5837: 2012 "Trees in relation to design, demolition and construction - recommendations". It is anticipated that, through the use of such measures, construction works could be effectively managed to avoid impacts on retained scrub, and therefore no adverse significant effect would be anticipated on this habitat as a result of physical damage or disturbance during the construction phase of the proposed development.

Significant Residual Effects:
No significant residual effects are anticipated on the retained scrub. A small overall decrease in the total area of scrub on site is anticipated as a result of the development, but this should be offset through enhancements to increase the ecological value of retained scrub and through the creation of new areas of scrub, as discussed further in Chapter 7 below.

Scattered Trees

Potential Impacts:
It is anticipated that the semi-mature ash and semi-mature sycamore trees on site will be retained throughout the works, so that they can be incorporated into the proposed green corridor and public open space. In the absence of mitigation, construction activities associated with the proposed development, such as grounds works and use of operational machinery, could result in the physical damage or disturbance of these retained trees, through compaction of soils and damage to the root stock. In the absence of mitigation, this would be an adverse effect, significant at the Local (Site) level.

Mitigation Measures:
Adequate protection measures should be utilised to ensure that damage to retained trees is avoided. Works should therefore be undertaken in accordance with British Standard 5837: 2012 "Trees in relation to design, demolition and construction - recommendations". It is anticipated that, through the use of such measures, construction works could be effectively managed to avoid impacts on retained scattered trees, and therefore no adverse significant effect would be anticipated on this habitat as a result of physical damage or disturbance during the construction phase of the proposed development.

Significant Residual Effects:
None anticipated.

Semi-improved Grassland

Potential Impacts:
Much of the site comprised rough semi-improved grassland. This does not qualify as a Habitat of Principal Importance or a Local BAP habitat however, as it is largely undisturbed, it has developed into a habitat capable of supporting a range of wildlife.

Large areas of the grassland in the centre and east of the site will be cleared and permanently lost in order to facilitate construction of the access road and residential properties. In the absence of mitigation, this would be an adverse effect, significant at the Local (Site) level.

Other areas of grassland will be retained within the proposed green corridor whilst further areas of grassland may also be retained within the proposed public open spaces. However, in the absence of mitigation, construction activities associated with the proposed development, such as the creation of access routes, grounds works, use of operational machinery and the storage of materials, could result in the physical damage or temporary disturbance of retained grassland, for example through compaction. In the absence of mitigation, this would be an adverse effect, significant at the Local (Site) level.

Mitigation Measures:
Any areas of grassland temporarily impacted should be restored at the end of the construction phase.

Significant Residual Effects:
No significant residual effects are anticipated on the retained grassland. A potential overall decrease in the total area of grassland on site is anticipated as a result of the development, but this should be offset through

enhancements to increase the ecological value of retained grassland and through the creation of new areas of grassland, as discussed further in Chapter 7 below.

5.3.3 Species

Bats

Potential Impacts:
No potential roost features were identified on site during the Preliminary Ecological Appraisal undertaken in 2018 therefore there will be no adverse significant effect on roosting bats and no contravention of the Habitats Regulations 2017 or the Wildlife and Countryside Act 1981 (as amended) during the construction phase of the proposed development.

The linear undisturbed nature of the site suggests that it has some potential value for commuting and foraging bats and this links to further potential roosting and foraging habitat within the adjacent residential housing, gardens, woodland and greenspaces. Any physical fragmentation of linear habitat features through vegetation removal during the construction phase could disrupt commuting routes; however the retention of a green corridor along the western boundary of the site will ensure that physical connectivity through the site is maintained.

Bats can also be disturbed by significant increases in noise, vibration and lighting during construction if undertaken at night. Of the bat species recorded within a 2 km radius of the site, the majority (i.e. noctule and pipistrelle sp.) can tolerate low levels of lighting. It is not known if any construction is to be undertaken at night however any night lighting which illuminates the retained green corridor may disrupt any flight lines present along it and could impact on the ability of local bats to move around the landscape. In the absence of mitigation, this would be an adverse effect, significant at the Local (Borough) level.

Mitigation Measures:
If night lighting is needed, this should be directed away from the retained green corridor on the western boundary, in order to maintain a dark corridor.

Significant Residual Effects:
None anticipated.

Birds

Potential Impacts:
Site clearance works during the construction phase will result in the clearance of some of the areas of dense and scattered scrub, which provide potential nesting opportunities for common and notable breeding birds. However, other areas of potential nesting habitat, including other areas of scrub as well as all of the scattered trees, will be retained within the green corridor and potentially within the public open space.

Due to the retention of nesting habitat on site through the construction period and the presence of large areas of suitable habitat offering alternative nesting opportunities immediately adjacent to the site, it is considered unlikely that the development would affect the status of nesting birds on site or within the local area during the construction period. This is therefore considered to be an adverse effect which is not significant.

It is possible that vegetation clearance or construction activities may result in the disturbance, damage or destruction of an active bird's nest if undertaken during the bird nesting season (March to August inclusive). Any such damage and disturbance of an active nest would constitute an offence under the Wildlife and Countryside Act 1981 and so will be a legislative consideration during the construction phase. As such it would create an adverse effect, significant at the Local (Site) level.

Mitigation Measures:
In order to ensure legislative compliance with regard to nesting birds during the construction phase of the proposed development, where possible vegetation clearance works should be undertaken outside of the nesting bird season (March to August inclusive). If this is not possible, then any vegetation to be removed or disturbed should be checked by an experienced ecologist for nesting birds immediately prior to works commencing. If birds are found to be nesting, any works which may affect them would have to be delayed

until the young have fledged and the nest has been abandoned naturally, for example through the implementation of an appropriate buffer zone (species dependent) around the nest, in which no disturbance is permitted until the nest is no longer in use. Subject to the implementation of these measures, it is considered that there would be no adverse significant effect on the favourable conservation status of breeding birds on site and no contravention of the Wildlife and Countryside Act 1981 (as amended) during the construction phase of the proposed development.

Significant Residual Effects:
None anticipated.

Terrestrial Mammals

Potential Impacts:
The recording of trails on site during the field survey, along with areas of suitable foraging habitat, indicates use of the site by terrestrial mammals, which could include hedgehog (a Species of Principal Importance) and fox amongst others. General construction activities within the proposed development are likely to include ground works, excavations and storage of materials including pipes which, if left uncovered, could trap, injure or kill individual terrestrial mammals moving through the site. These effects could increase mammal mortality within the site, leading to reduced breeding success and recruitment into the local population. This would constitute an adverse effect which is significant at the Local (Site) level.

Mitigation Measures:
Safeguards should be implemented to ensure that terrestrial mammals are not killed or injured during the construction phase of the proposed development. These should include measures such as covering up excavations and pipe work at the end of each work day and the provision of mammal ramps in all excavations that cannot be covered overnight. Subject to the implementation of these measures, it is considered that the entrapment/mortality/injury risk to terrestrial mammals will not be significant.

Significant Residual Effects:
None anticipated.

Invasive Plant Species

Potential Impacts:
A species of cotoneaster was recorded on site during the Preliminary Ecological Appraisal, growing within the scrub on the eastern embankment. In the absence of appropriate mitigation, there is potential for it to be spread if it is disturbed during clearance and construction works. Any such spread of this species in the wild would constitute an offence under the Wildlife and Countryside Act 1981 and so will be a legislative consideration during the construction phases.

Mitigation Measures:
In order to ensure legislative compliance with regard to invasive plant species during the construction phase of the proposed development, if it is required to be removed, this will be done with care and the removed vegetation disposed of appropriately, following appropriate guidance.

Significant Residual Effects:
None anticipated.

5.4 POTENTIAL FOR OPERATIONAL PHASE IMPACTS

5.4.1 Statutory and Non-statutory Sites

Impact Risk Zone for Denby Grange Colliery Ponds SSSI

Potential Impacts:
The site lies within a SSSI Impact Risk Zone for Denby Grange Colliery Ponds SSSI, which is located 8.7 km to the south-east. However, the proposed works do not fall within one of the highlighted risk categories and

are therefore unlikely to adversely impact the associated SSSI either directly or indirectly during the operational phase of the development.

Mitigation Measures:
None required

Significant Residual Effects:
None anticipated

5.4.2 Habitats

Scattered Trees, Scrub, Semi-improved Grassland (Including in Mosaic with Tall Ruderal Vegetation)

Potential Impacts:
The completed development would potentially be associated with an increase in litter generation and disturbance of habitats, which could lead to minor losses or degradation of the habitats on site. However, these effects are generally considered to be localised and reversible and so are not considered to significantly alter the conservation status of the habitats on site. It is possible that management associated with the completed development may alter the habitat structure and result in a decline in habitat value, which would constitute an adverse effect, significant at the Local (Site) level.

Mitigation Measures:
Degradation of these habitats during the operational phase of the development can be avoided through the implementation of appropriate habitat management measures, aimed at maintaining all retained and created habitats at their intended biodiversity value. Such measures can be implemented through the production and implementation of a Landscape and Ecological Management Plan (LEMP), which can be secured by a suitably worded planning condition. It is anticipated that such an approach would reduce any adverse effects to a negligible level.

Significant Residual Effects:
None anticipated

5.4.3 Species

Bats

Potential Impacts:
The development may result in some light spill onto potential bat foraging and commuting features and retained and created habitats around the site peripheries, notably the green corridor along the western boundary. Whilst a lighting strategy has not been prepared for the site at the time of writing, it is likely that lighting is proposed around the main building footprint. This is likely to create light spill on previously unilluminated habitats potentially used by foraging/commuting bats.

Of the bat species recorded within a 2 km radius of the site, the majority (i.e. noctule and pipistrelle sp.) can tolerate low levels of lighting. However, insensitively designed or located lighting could reduce or fragment suitable areas of habitat, thereby disrupting potential foraging habitat or commuting routes between local roost sites.

In the absence of mitigation, an increase in lighting on bat foraging and commuting habitat during the operational phase is therefore considered to be an adverse effect that it significant at the local (borough) level.

Mitigation Measures:
It is anticipated that adverse impacts on commuting and foraging bats during the operational phase can be minimised, reducing the effect to negligible, through the design and implementation of a lighting strategy with ecological input. This should include measures such as the maintenance of a dark corridor along the proposed green corridor on the western boundary of the site, and the use of lighting in critical areas only within the residential areas, with the provision of directional LED lighting, lighting barriers and baffles on lighting columns to minimise light spill. The lighting design should be developed using guidance from ‘Bats and Artificial Lighting in the UK – Bats and the Built Environment Series Guidance Note 08/18’ (Bat Conservation Trust, 2018).

Significant Residual Effects:
None anticipated.

Birds

Potential Impacts:
The operational use of the proposed development may lead to the disturbance of habitats used by nesting birds, arising from increased movement and noise from vehicles and people and the provision of lighting. This disturbance is likely to be intermittent throughout the nesting period, and will vary in extent depending on the proximity of the nest to the areas exposed to disturbance, but could result in a reduction of suitable opportunities for nesting birds. However, nesting opportunities would be available in the retained trees on site and within the retained green corridor along the western boundary of the site. As such, increased disturbance is therefore considered to have no significant adverse effects on the availability of suitable habitat for breeding birds.

It is possible that management activities undertaken during the operational phases of the proposed development may result in the damage or destruction of an active bird's nest if undertaken during the bird nesting season (March to August inclusive). Any such damage or destruction of an active nest could have an adverse effect on populations of breeding birds, which would be significant at the Local (Site) level. It would also constitute an offence under the Wildlife and Countryside Act 1981 and so will be a legislative consideration during the operational phase of the proposed development. In addition, a change in habitat management associated within the completed development may alter habitat structure and diversity which could limit the number of nesting and food sources available for breeding birds, which would constitute an adverse effect, significant at the Local (Site) level.

Mitigation Measures:
It is anticipated that damage or disturb nesting birds, destruction of bird nests or killing or injury of birds can be avoided through the production and implementation of a LEMP, which should set out appropriate timings for all proposed habitat management activities likely to impact upon breeding birds. In addition, the LEMP should outline measures to ensure that key features for breeding birds are maintained on site. Subject to the implementation of such a LEMP, it is considered that there will be no adverse significant effect on populations of breeding birds in the area and no breach of the Wildlife and Countryside Act 1981 (as amended) resulting from the inappropriate timing of habitat management activities.

Significant Residual Effects:
None anticipated.

Terrestrial Mammals

Potential Impacts:
Terrestrial mammals are likely to cross the site for foraging and commuting purposes. Although the operational use of the proposed development will lead to an increase in vehicle movements within the site, as the road is a cul-de-sac, these will be limited to a low number of movements, which are mostly likely to be undertaken during the day. As such, the risk of road related mortality of terrestrial mammals on site is considered to be low as the species most likely to utilise the site, such as hedgehog and fox, are nocturnal species. In addition, the proposed green corridor and areas of public open space offer commuting and foraging habitat across and around the site, away from the proposed road. This also links into further suitable habitat off-site in the local area, particularly to the east, north and south, and thus ensures the maintenance of foraging and commuting routes across the local area.

It is not anticipated that the operational phase of the development would cause a reduction in the survival rate and viability of local mammal populations and no significant adverse effects on the favourable conservation status of mammal species are therefore predicted.

Mitigation Measures:
None required.

Significant Residual Effects:
None anticipated.

Invasive Plant Species

Potential Impacts:
Subject to the implementation of appropriate removal methodologies during the construction phase, it is considered that the risk of Invasive Plant Species spreading during the operational phase of the development will be diminished through removal of the species from the site. However, should invasive species re-colonise the site, it is possible that management associated with the operational phase of the development may result in the spread of invasive species. This would constitute an adverse effect, significant at the Local (Site) level. It would also constitute an offence under the Wildlife and Countryside Act 1981 and so will be a legislative consideration during the operational phase of the proposed development.

Mitigation Measures:
Any adverse effects with regard to invasive plant species could be minimised, and any breaches of the Wildlife and Countryside Act 1981 (as amended) be avoided, through the production and implementation of a LEMP, which should be inclusive of a method statement setting out the safeguards required to ensure that invasive species do not spread during the operational phase of the proposed development. It is anticipated that such an approach would reduce any adverse effects to a negligible level.

Significant Residual Effects:
None anticipated.

6. CUMULATIVE EFFECTS

Reference to the Kirklees Planning Portal does not highlight any significant nearby development that is likely to impact upon the on-site or off-site receptors identified within this report. No significant cumulative impacts are therefore anticipated as a result of the proposed development.

7. COMPENSATION AND ENHANCEMENT

7.1 COMPENSATION

The CIEEM (2016) guidelines describe compensation as:

> *'…measures taken to make up for residual effects resulting in the loss of, or permanent damage to, ecological features despite mitigation. For example, it may take the form of replacement habitat or improvements to existing habitats. Compensation can be provided either within or outside the project site (defined by the red line of a planning application).'*

The guidelines go on to state that:

> *'Where ecological equivalence can be delivered within the project site this is sometimes incorrectly considered mitigation rather than compensation. However, the correct distinction between mitigation and compensation is that mitigation reduces the extent of effects occurring and compensation addresses effects which are residual, after avoidance and mitigation have been considered. Measures to address impacts and effects that will occur should therefore be referred to as compensation whether the compensation is located within or outside of the project site.'*

It is therefore recommended that a series of habitat creation proposals be incorporated into the design of the proposed development, in order to compensate for habitats lost. These could include:

- Planting of trees and areas of scrub, using native species and/or fruit/seed bearing species of value to wildlife, within the green corridor, public open space and the built development. These could include fruit trees within the residential gardens.
- Creation of areas of species-rich grassland across the site, for example as wildflower meadows within the public open space and as verges within the built development, using appropriate native species mixes.

The recommended LEMP should then be used as a mechanism to guide ongoing appropriate management of the newly created habitats within green corridor, public open spaces and communal areas of the built development to ensure their ecological value is maintained.

7.2 ENHANCEMENT

Enhancement measures could also be used to offset any residual effects of the development after mitigation, for example any residual losses in habitat area, through enhancing the ecological value of retained habitats and through maximising the ecological value of the built development.

Recommended enhancements include:

- Enhancement of retained areas of scrub through the instigation of appropriate management practices via a LEMP and the planting of additional native species and/or fruit/seed bearing species of value to wildlife.
- Enhancement of retained areas of grassland; for example through instigating appropriate management practices via a LEMP and through over-seeding if necessary with appropriate native species mixes.
- Installation of bat and bird boxes on retained trees across the site.
- Incorporating nesting and roosting opportunities into the new buildings; for example, bat boxes or bat bricks and bird boxes such as house sparrow *Passer domesticus* terraces, starling *Sturnus vulgaris* boxes, swift *Apus apus* boxes/bricks or house martin *Delichon urbicum* cups.
- Incorporating wildlife-friendly features into the hard landscaping of the built development, for example dropped kerbs which allow amphibians to escape from roads and offset gullies to minimise the risk entrapment within drains.
- Ensuring that wildlife is able to pass between gardens, for example through leaving gaps under fences at ground level or through the creation of hedgehog holes within boundary fencing.

8. MONITORING

8.1 HABITATS

Monitoring will be required to check whether habitats are establishing correctly and to provide input into future amendments to site management. Table 8.1 outlines the recommended monitoring, which should be carried out for the ten years following the completion of the development.

			Year post-development									
Feature	**Monitoring**	**Timing**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
All Habitats	Check on the establishment and management of retained and created habitats. Compilation of a report with remedial recommendations as required.	May			x			x			x	
Trees	To be monitored on an annual basis to check tree establishment (planted) and health (retained) and address any issues.	Carry out remedial works over winter.	x	x	x	x	x	x	x	x	x	x

Table 8.1: Proposed Ecological Monitoring

A LEMP is recommended to be produced that details the extent of ecological monitoring that should continue annually for at least 5 years post development to inform future recommendations.

8.2 SPECIES

Bat roosting boxes and bird nesting boxes in the public open space and in communal areas should be checked annually by a suitably qualified ecologist, to ensure that they remain fit-for purpose, and to assess any requirements for remedial action.

9. CONCLUSIONS

The tables in Sections 9.1 and 9.2 provide a summary of the Ecological Impact Assessment that has been undertaken for the construction and operational phases of the proposed development, respectively.

9.1 CONSTRUCTION PHASE

Ecological Receptor	Description of Impact/s and Effect in Absence of any Mitigation	Mitigation by Design and Means of Implementation	Effect on Ecological Receptor	Additional Mitigation Recommended	Outcome / Residual Effect [Confidence in Prediction]
Nature Conservation Sites					
Impact Risk Zone for Denby Grange Colliery Ponds SSSI	No impacts anticipated as works do not fall within one of the highlighted risk categories.	n/a	n/a	n/a	Not significant [Certain]
Habitats					
Scattered Trees	Root compaction and damage. Indirect temporary impacts from air pollution. Adverse effect, significant at Local (Site) level.	Retention by design of scattered trees.	n/a	Control measures - Appropriate protection measures should be put in place to protect retained trees during construction, in accordance with British Standard 5837: 2012.	Not significant [Certain]
Scrub	Habitat loss. Root compaction and damage. Indirect temporary impacts from air pollution. Adverse effect, significant at Local (Borough) level.	Retention by design of existing areas of scrub within proposed green corridor.	n/a	Control measures - Appropriate protection measures should be put in place to protect retained scrub during construction, in accordance with British Standard 5837: 2012.	Minor habitat loss, to be offset through enhancement and compensation [Certain]
Grassland	Habitat loss. Temporary physical damage of retained areas Adverse effect, significant at Local (Site) level.	Retention by design of existing areas of grassland within proposed green corridor.	n/a	Control measures – Any grassland temporarily impacted during construction phase should be reinstated.	Minor habitat loss, to be partially offset through enhancement and compensation [Certain]

Species					
Mammals – Bats	Disturbance/fragmentation of foraging / commuting habitat through habitat fragmentation and lighting. Adverse effect, significant at Local (borough) level.	Retention by design of green corridor and public open space to preserve a bat foraging/ commuting route across the site.	n/a	Control measures – If required, night lighting should be directed away from the retained green corridor, to maintain a dark commuting/foraging corridor	Not significant [Certain]
Birds	Killing, injury or disturbance to nesting birds during site clearance. Adverse effect, significant at Local (Site) level and breach of wildlife legislation.	Retention by design of scattered trees and some scrub.	n/a	Control measures – Vegetation disturbance/removal should be undertaken outside nesting bird season or nesting bird survey undertaken prior to removal/disturbance if in nesting season.	Not significant [Certain] No breach of wildlife legislation.
Foraging Terrestrial Mammals (e.g. hedgehog, fox)	If present, potential for a temporary increase in mortality and reduced breeding success (open excavations / pipework leading to trapping / injury). Adverse effect, significant at Local (Site) level.	n/a	n/a	Control measures – Precautions should be used to prevent entrapment/injury.	Not significant [Certain]
Invasive Plant Species	Spread of cotoneaster during site clearance. Adverse effect, significant at Local (Site) level and breach of wildlife legislation.	n/a	n/a	Control measures - Appropriate removal and disposal of species should be undertaken to avoid spread	Not significant [Certain] No breach of wildlife legislation.

Table 9.1: Summary of Potential Impacts of the Proposed Development, Mitigation by Design and Subsequent Effect on the Ecological Receptor, Recommended Additional Mitigation and Residual Effects during the Construction Phase of the Proposed Development

9.2 OPERATIONAL PHASE

Ecological Receptor	Description of Impact/s and Effect in Absence of any Mitigation	Mitigation by Design and Means of Implementation	Effect on Ecological Receptor	Additional Mitigation Recommended	Outcome / Residual Effect [Confidence in Prediction]
Nature Conservation Sites					
Impact Risk Zone for Denby Grange Colliery Ponds SSSI	No impacts anticipated as works do not fall within one of the highlighted risk categories.	n/a	n/a	n/a	Not significant [Certain]
Habitats					
Scattered Trees	Effect of increased disturbance and resulting minor loss and/or degradation of habitats. Loss of biodiversity value due to a lack of, or inappropriate, management. Adverse effect, significant up to Local (site) level.	n/a	n/a	Production and implementation of LEMP to guide ongoing habitat management.	Not significant [Certain)
Scrub	Effect of increased disturbance and resulting minor loss and/or degradation of habitats. Loss of biodiversity value due to a lack of, or inappropriate, management. Adverse effect, significant at Local (Borough) level.	n/a	n/a	Production and implementation of LEMP to guide ongoing habitat management.	Not significant [Certain]
Grassland	Effect of increased disturbance and resulting minor loss and/or degradation of habitats. Loss of biodiversity value due to a lack of, or inappropriate, management. Adverse effect, significant up to Local (site) level.	n/a	n/a	Production and implementation of LEMP to guide ongoing habitat management.	Not significant [Certain)
Species					
Mammals – Bats	Disturbance of foraging / commuting habitat. Adverse effect, significant at Local (borough) level.	n/a	n/a	Production of Lighting Strategy with ecological input to mitigate for impacts associated with operational phase lighting.	Not significant [Certain)

Birds	Killing, injury or disturbance to nesting birds during site management activities. Adverse effect, significant at Local (Site) level and breach of wildlife legislation.	n/a	n/a	Production and implementation of LEMP to guide appropriate ongoing management of nesting habitat, including timing of management to avoid bird nesting season.	Not significant [Certain] No breach of wildlife legislation.
Foraging Terrestrial Mammals (e.g. hedgehog, fox)	Low risk of road-related mortality. Alternative foraging habitat, with links to off-site habitat, available away from roads Not significant.	n/a	n/a	n/a	Not significant [Certain)
Invasive Plant Species	Management associated with the operational phase of the development may result in the spread of invasive species.	n/a	n/a	Production and implementation of LEMP to provide appropriate guidance for managing and removing invasive species.	Not significant [Certain] No breach of wildlife legislation.

Table 9.2: Summary of Potential Impacts of the Proposed Development, Mitigation by Design and Subsequent Effect on the Ecological Receptor, Recommended Additional Mitigation and Residual Effects during the Operational Phase of the Proposed Development

10. DRAWINGS

- Nature Conservation Sites.
- Drawing C129025-01 – Phase 1 Habitat Map.
- Vida-Architects Drawing No: PL202 - Outline Residential Use at Disused Railway Cutting, Heckmondwike – Proposed Site Plan

MAGIC
UK Statutory Sites Within 2km
Legend
Local Nature Reserves (England)
National Nature Reserves (England)
Sites of Special Scientific Interest (England)
SSSI Impact Risk Zones - to assess planning applications for likely impacts on SSSIs/SACs/SPAs & Ramsar sites (England)
Ancient Woodland (England)
Ancient and Semi-Natural Woodland
Ancient Replanted Woodland
Projection = OSGB36
xmin = 416400
ymin = 420400
xmax = 427400
ymax = 425600
Map produced by MAGIC on 16 June, 2017.
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BATLEY
HECKMONDWIKE
LIVERSEDGE
MIRFIELD
Spen
Popeley Fields
Wilton Park
White Lee
Westfield
Bollace Trees Fm
Little Thorpe
Norristhorpe
Dewsbury Moor
Lower Spen Wildlife Area (LNR)
Spen River
Crossley
Park Fm
Sunny Bank Ponds (LNR)
Mirfield Moor
Sparrow Hall Wood (LNR)
Weir
Northorpe
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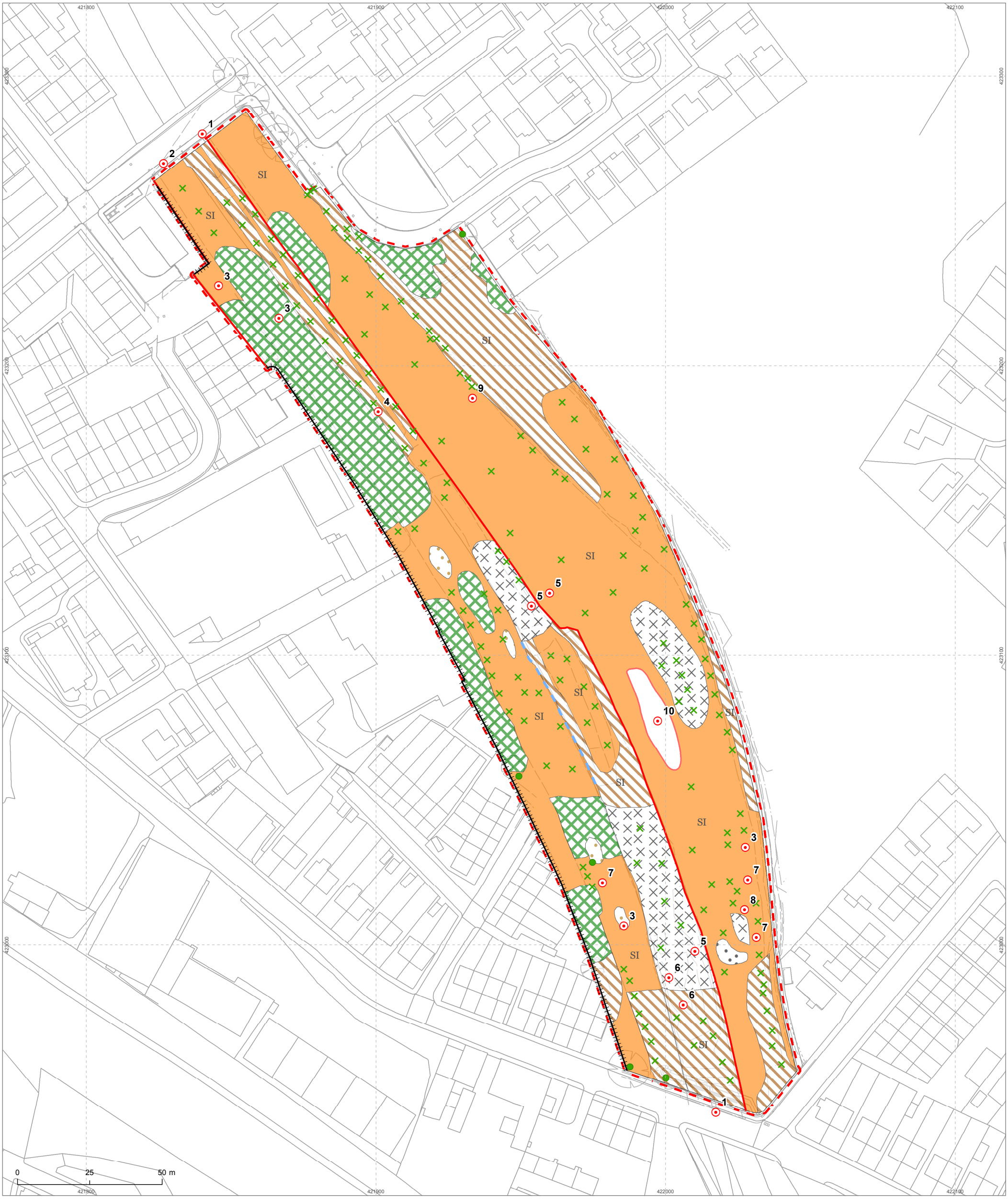

Legend

- Site boundary
- Scattered broad-leaved tree
- Scattered scrub
- Wall
- Fence
- Dry ditch
- Bare ground
- Building
- Dense scrub
- Ephemeral/short perennial
- Hardstanding
- SI — Neutral semi-improved grassland
- Non-ruderal
- Introduced shrub
- Other habitat
- Tall ruderal
- SI — Tall ruderal and semi-improved grassland
- Target note

1. Railway bridge
2. Dense ivy growing on north-western bridge
3. Debris
4. Shallow collection of water with duckweed
5. Small rubble pile
6. Loose stone piles
7. Spanish bluebell
8. Cotoneaster species
9. Disused rabbit burrow
10. Heather

N

Project: Disused Railway Cutting, Heckmondwike

Drawing: Phase 1 Habitat Map

Client: Vida-Development

Drawing Number	Revision
C129025-01	00
Scale @ A3	Date
1:1250	May 2018
Approved By	Drawn By
CR	CD

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E:admin@middlemarch-environmental.com

C129025-01

NORTH

0m 10m 20m 30m 40m 50m 60m 70m 80m 90m 100m

Key

Affordable Housing Units	18
Dwellings	56
Total Dwellings	74

Off Road Visitor Parking 1 space per 5 dwellings.

Min 2 Off Road Parking spaces per dwelling.

Undeveloped Site Area = 11010m², Which is made up of Public Open Space, The Green Wildlife Area and Childrens Play Area. Representing 40.6% of the Site Area.

Potential route for links to the Urban Greenway, to be provided by others and in agreement with the landowner.

Extent of New Pedestrian Pavement off site to be dependant upon future planning consent.

Site Plan 1:500 @ A1

Rev	Description	Date	By	App'd
-	-	-	-	-
"	"	"	"	"

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Client: Ernest Gordon Ltd

Project: Outline Residential Use at Disused Railway Cutting, Heckmondwike.

Drawing Title: Proposed Site Plan

Project No.	Dwg No.	Rev.	Scale @ A1	Date.	By.
2014-034	PL202	-	1:500	26.04.18	AR

Issue Status: PLANNING

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