



Ecological Assessment

Proposed New Residential Development

Chippings, Holmfirth

31 March 2022

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ENVIRONMENTAL AND
SUSTAINABILITY CONSULTANTS

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Executive Summary

This report details the provides and ecological assessment of a proposed residential development at land at Scholes, Holmfirth, West Yorkshire. The site comprises a disused quarry and contains a mosaic of scrub, grassland and woodland habitats. The site is considered unlikely to support legally protected species, although vegetation on the site is suitable for nesting birds. The assemblage of habitats on the site is considered to be of local ecological value.

The proposals will result in a loss of habitats of local ecological value and will risk the of disturbance to nesting birds.

In order to mitigate or compensate for the potential ecological impacts a number of on-site measures are proposed. These include the retention and enhancement of higher value heather grassland on the site, the creation of new grassland, woodland and hedgerows. However, this would not be sufficient to compensate for loss of habitat and the proposals will result in a net loss of biodiversity (-53.19%). Mitigation measures to avoid disturbance of nesting birds and avoid harm to reptiles are proposed.

Other compensation measures proposed include native hedgerow planting; provision of bird and bat boxes; the use of wildlife-friendly planting throughout the development; and, the creation of log piles.

Even if the on-site mitigation and compensation measures recommended in this report are implemented in full, this would not be sufficient to fully mitigate the potential ecological effects of the proposals and therefore they would not comply with local planning policy. Off-site habitat creation measure will be required ensure no net loss of biodiversity.

Potential off-site habitat creation scheme for the proposals to reach a net gain of biodiversity (+10%) are included within the report. Such a scheme, using land adjacent to the site is shown on the Landscaping and Biodiversity Enhancement Plan drawing (ref A5478-01D), with the biodiversity enhancement measure marked as optional.

1.0 Introduction

1.1 *Background*

This document details the ecological effects the proposed development of a new residential at a site known as Chippings, in Scholes, Holmfirth, West Yorkshire (see Figure 1.1 for the site location). The site has been subject to two Ecological Appraisal surveys in 2015 (1) and 2021 (2). In February 2022, Encon Associates were instructed by GWP Architects to undertake an Ecological Assessment of proposals for a small housing development on the site, based in the previous ecological surveys, and an update survey carried out in March 2022.

This report presents the findings of these surveys along with an assessment of the likely impacts of the proposed development on the ecology of the site. It includes all the information contained within the ecological appraisal and therefore provides a complete assessment of the ecological effects of the development.

1.2 *Brief Description of the Proposed Works*

The proposals consist of clearing the site followed by the construction of a residential development comprising ten houses in two terraces of five, with associated gardens, parking and access. It also includes a public open space area incorporating a play area and an ecology which will be managed to provide ecological enhancements for the site.

1.3 *Scope*

This document aims to fully assess the likely ecological effects of the proposed development. The scope of this Ecological Assessment is to:

- Identify any potential biophysical changes as a result of the proposed development.

- Identify and provide a valuation of features of ecological interest on a site (such as habitats and protected species).
- Assess the likely ecological effects of the development against relevant legislation and policy.
- Propose avoidance and/or mitigation measures that are likely to be required to reduce the ecological impact of the proposals.

1.4 *Legislation and Policy Context*

1.4.1 *Relevant Legislation*

The Wildlife & Countryside Act 1981 (as amended) (3) is the primary piece of legislation by which biodiversity in the UK is protected. The most relevant areas of the Act to development related activities are:

- The identification and subsequent protection of Sites of Special Scientific Interest (SSSIs), which prohibits damaging activities
- The protection of certain species listed in Schedule 5, which prohibits killing, injury, disturbance, damage and/or destruction of breeding sites and/or resting places and sale (it should be noted that all parts of this protection do not apply to all Scheduled species)
- The protection of wild birds and their nests, which prohibits damage or destruction of nests whilst in use. Species listed in Schedule 1 of the act receive additional protection from disturbance whilst they are building a nest or are near a nest containing eggs or young. It also prohibits the disturbance of dependent young.
- Measures to prevent the spread of invasive plant species.

The Conservation of Habitats and Species Regulations 2017 (known as the ‘Habitats Regulations’) (4), pass two EEC Directives into UK law. The Regulations protect sites and

species deemed to be of conservation importance across Europe. The most relevant parts of the Regulations to development related activities are:

- The protection of Special Protection Areas (SPAs) and Special Areas of Conservation (SACs)
- The protection of species listed within Schedule 2 of the Regulations, which prohibits killing, injury, disturbance, damage and/or destruction of breeding sites and/or resting places and sale, this confers some level of habitat protection.

In order for activities that would be likely to result in a breach of species protection under the regulations to legally take place, a European Protected Species (EPS) mitigation licence must first be obtained from Natural England.

The Protection of Badgers Act 1992 (5), deals solely with the protection of badgers *Meles meles* in the UK. It prohibits killing, injuring or taking badgers, damaging, destroying or otherwise interfering with a badger sett, disturbing an occupied badger sett and sale of badgers.

The Natural Environment and Rural Communities (NERC) Act 2006 (6) requires that public bodies to have regard to the conservation of biodiversity. This means that Planning Authorities must consider biodiversity when reaching planning decisions. Section 41 of the act lists habitats and species that are conservation priorities in England.

1.4.2 *Planning Policy*

Government policy with respect to the protection of biodiversity is laid out in the National Planning Policy Framework (NPPF) (7). This places an onus on development to minimise impacts to biodiversity and where possible to provide net biodiversity gain. The NPPF

provides guidance to Local Authorities in how to conserve and enhance biodiversity through local Planning Policies and when assessing planning applications.

At a local level, planning policy within the Kirklees Borough is contained within the *Kirklees Local Plan Strategies and Policies* document (8). Policy LP30 *Biodiversity & Geodiversity* is the primary policy through which the council protects biodiversity. It states:

Biodiversity & Geodiversity

The council will seek to protect and enhance the biodiversity and geodiversity of Kirklees, including the range of international, national and locally designated wildlife and geological sites, Habitats and Species of Principal Importance and the Kirklees Wildlife Habitat Network.

South Pennine Moors

Proposals which may directly or indirectly compromise achieving the conservation objectives of a designated or candidate European protected site will not be permitted unless the proposal meets the conditions specified in Article 6 (3) - (4) of the Habitats Directive.

Statutory Designated Sites

Statutory designated sites, including the South Pennine Moors Special Protection Area (SPA) and Special Area for Conservation (SAC) and Sites of Special Scientific Interest, are already highly protected through existing laws and legislation. In accordance with legislation, the Council will seek to ensure that harmful impacts to these areas as a result of development proposals are avoided. Development proposed within or outside a designated Site of Special Scientific Interest, likely to have an adverse effect on the site's special nature conservation features, will not normally be permitted. Exceptionally development will be allowed where the benefits of the development clearly outweigh the impacts on the site's special conservation features and measures are provided to mitigate harmful impacts.

The Dark Peak Nature Improvement Area

Proposals that contribute to the aims and objectives of the Dark Peak Nature Improvement Area will in principle be supported, subject to other policies in this plan. Development likely to have an adverse impact on the aims and objectives of the NIA will not be permitted.

Local Designated Sites & Important Local Ecological Features

Proposals having a direct or indirect adverse effect on a Local Wildlife Site or Local Geological Site, Ancient Woodland, Veteran Tree or other important tree, will not be permitted unless the benefits of the development can be clearly shown to outweigh the need to safeguard the local conservation value of the site or feature and there is no alternative means to deliver the proposal. In all cases, full compensatory measures would be required and secured in the long term.

Habitats and Species of Principal Importance

Proposals will be required to protect Habitats and Species of Principal Importance unless the benefits of the development clearly outweigh the importance of the biodiversity interest, in which case long term compensatory measures will need to be secured.

Biodiversity and Development

Development proposals will be required to

- (i) result in no significant loss or harm to biodiversity in Kirklees through avoidance, adequate mitigation or, as a last resort, compensatory measures secured through the establishment of a legally binding agreement;*
- (ii) minimise impact on biodiversity and provide net biodiversity gains through good design by incorporating biodiversity enhancements and habitat creation where opportunities exist;*
- (iii) safeguard and enhance the function and connectivity of the Kirklees Wildlife Habitat Network at a local and wider landscape-scale unless the loss of the site and its functional role within the network can be fully maintained or compensated for in the long term;*
- (iv) establish additional ecological links to the Kirklees Wildlife Habitat Network where opportunities exist; and*

- (v) *incorporate biodiversity enhancement measures to reflect the priority habitats and species identified for the relevant Kirklees Biodiversity Opportunity Zone.*

Policy LP31 *Strategic Green Infrastructure Network* is also of relevant to the protection and enhancement of biodiversity. However, the proposed site is not within or adjacent to any of the Strategic Green Infrastructure Network and therefore this policy is not relevant to this proposed development.

1.4.3 *Other Nature Conservation Policy*

Biodiversity Action Plans (BAPs) were the UK's response to the 1992 Convention on Biological Diversity. The UKBAP (9) described the biodiversity of the UK and contains Action Plans for the most threatened habitats and species. It was implemented at a local level through regional and local BAPs. It should be noted that the *UK Post 2010 Biodiversity Framework* has now superseded the UKBAP, however BAPs are still used at a more local level. Species and habitats which were previously priorities within the UKBAP are now listed within section 41 of the NERC Act 2006 (6). This proposed development falls within the area covered by the *Kirklees Biodiversity Action Plan* (KBAP, 10).

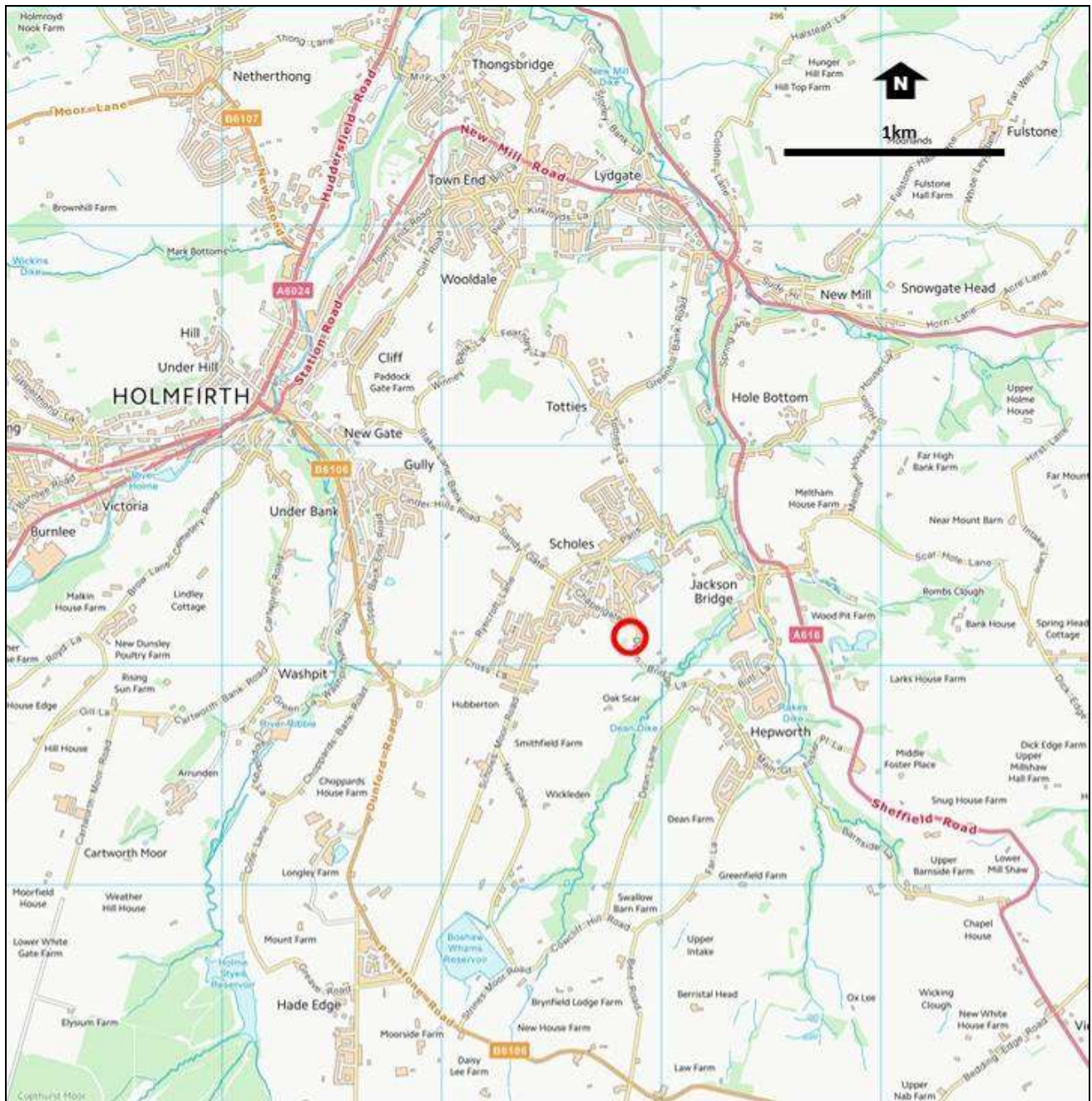


Figure 1.1: Site location. Contains Ordnance Survey data © Crown copyright and database right 2018.

2.0 Methodology

2.1 *Desk Study Methodology*

Primary sources of existing data consulted were the two previous ecological surveys of the site (1, 2). Available online resources such as the MAGIC (Multi-Agency Geographical Information for the Countryside) and NBN (National Biodiversity Network) websites were interrogated for relevant information, including statutory designated sites within 5km of the site. Records of protected and/or notable species, and protected sites within 1km of the proposed development were obtained from West Yorkshire Ecology (WYE) as part of the previous ecological surveys and therefore new records were not obtained for this report.

2.2 *Field Survey Methodology*

2.2.1 *Habitats*

A habitat survey was carried out by Dr Liam Russell CEcol MCIEEM for and on behalf of Encon Associates Ltd on 28 March 2021. The survey consisted of a site walkover (loosely based on the “Phase 1” methodology (11), modified to suit the situation) with all accessible areas of the site and adjacent land (where relevant) covered. The habitats present were generally described, with attention paid to their potential to support protected species. A general search for evidence of protected species was also undertaken. Due to the relatively early timing of the survey, habitat information from the two previous surveys were also used to inform the subsequent assessment.

2.3 *Assessment Methodology*

2.3.1 *Introduction*

The methodology for the assessment of the likely ecological effects of the proposed development is based on the principles of CIEEM's *Guidelines for Ecological Assessment in the UK, 2nd Edition* (12). Although this assessment does not constitute a formal Ecological/ Environmental Impact Assessment as defined by the Town & Country Planning Act, the CIEEM guidelines provide a useful framework for assessing ecological impacts at any level.

2.3.2 *Valuation*

Features of ecological interest are valued on a geographic scale. Value is assigned on the basis of legal protection, national and local biodiversity policy and cultural and/or social significance.

2.3.3 *Identification of Potential Ecological Impacts in Absence of Mitigation*

A development may have ecological effects beyond its site boundaries, therefore the CIEEM guidelines require that the 'zone of influence' be identified. Due to the relatively small size of this development, for the majority of ecological features, the zone of influence is considered unlikely to extend beyond the footprint of the works and immediately adjacent habitat.

Without mitigation, the proposed development may result in the following biophysical changes during construction and/or operation:

- Loss of and damage to habitats within or adjacent to the footprint of the development and construction zone.
- Any loss or damage of habitats could result in death and/or injury to protected species should they be present.

- Disturbance of immediately adjacent habitats and any wildlife using them during construction.
- Disturbance of wildlife in adjacent habitat due to lighting changes once the site is operational.

2.4 *Limitations*

The ecology of a site can change quickly over time. Therefore, this survey is considered valid for two years from the date of the report.

3.0 Ecological Baseline

3.1 *Site Context*

The site is located at edge of the small village of Scholes, near Holmfirth (see Figure 1.1 for location), which lies within the Yorkshire Southern Pennine Fringe National Character Area (NCA). This is a transitional landscape from the upland areas of the Southern Pennines in the west through to the low-lying land of the Nottinghamshire, Derbyshire and Yorkshire Coalfield to the east. The NCA is characterised by steep slopes that are cut through by narrow rivers, notably the Don, the Calder, the Hebble Brook and the Colne in the north and the Sheaf, the Rivelin and the Loxley in the south near Sheffield, which open up into valleys on lower land. (13).

The site is located on the western side of a steep valley, on the southern edge of Scholes, approximately 2km southeast of Holmfirth. Although some residential development is present to the northwest of the site and a sports pitch lies adjacent to the west, the surrounding area is predominantly rural with small fields to the south and west. The majority of the surrounding agricultural land is either pasture or arable grassland. However, a small plot of native deciduous woodland is present to the south, adjacent to an area of rough grassland on an east-facing slope. Other areas of woodland are present further down the valley to the south.

3.2 *Protected Sites*

3.2.1 *Statutory Sites*

There are no national designated statutory sites within 2km of the development site. The nearest is Dark Peak SSSI and South Pennine Moors SAC, a large area of upland moorland which lies approximately 3.5km to the southwest. The proposed development site is within

one of the SSSI Risk Zones, however the development does not fit into any of the categories likely to have an impact on the SSSI/SAC and therefore it is not considered to be within the zone of influence.

3.2.2 *Non-statutory Sites*

One locally designated Local Wildlife Site (LWS) is present approximately 300m to the south. Morton Wood is designated for its native deciduous woodland.

It is possible for ecologically sensitive sites to be affected by development within their vicinity. However, Morton Wood is considered to be outside of the zone of influence. It does not fall within the site or directly adjacent to it and therefore, no direct impacts in terms of habitat loss, damage or disturbance will occur. As it is considered to be outside of the zone of influence of the proposed development, it is not considered further within this report.

3.2.3 *Policy protected areas*

Kirklees Local Plan Policy LP30 protects the Dark Peak Nature Improvement area and the Strategic Green Infrastructure Network. The site does not lie within or adjacent to these areas. The site lies within the *Mid-altitudinal grassland* Biodiversity Opportunity Zone.

3.3 *Description of Habitats Within the Zone of Influence*

A survey map of the site with target notes is provided at Figure 3.1.

The site itself is a small, long-disused quarry which has been cut into the western slope of the valley (photo 1). At some point it has been used for the storage/disposal of road planings and concrete (photo 2), and these make up the majority of the substrate on the

quarry floor. However, like the remaining areas of the site, most of this aggregate has been colonised by vegetation. Most of the habitats present are a result of the recolonisation of the quarry (including by a number of non-native species), however, remnants of the original vegetation appear to be present at the original ground level on the western edge of the site. The site appears to be frequently used by local residents for dog walking and disposing of garden waste.

The dominant feature of the site is the former quarry face present around the southwest edge of the site (target note 1, photo 3). This has largely been revegetated, some sections of exposed rock remain (photo 4). Where vegetation has developed, the species present are typical of moorland and other acidic rocky habitats within the area and include broom *Cytisus scoparius*, common gorse *Ulex europaeus*, common heather *Calluna vulgaris*, male fern and *Dryopteris filix-mas* (photo 5). Dense cherry laurel *Prunus laurocerasus* is present at the northern end of the rock face (target note 2). Much of the lower section and base of the rock face is covered with mosses. Ruderal species are common along the base of the rock face including cleavers *Galium aparine*, nettle *Urtica dioica*, rosebay willowherb *Chamaenerion angustifolium*, cow parsley *Anthriscus sylvestris*, hogweed *Heracleum sphonylium*, common comfrey *Symphytum officianale*, and hairy bittercress *Cardamine hirsuta*.

The majority of the site is covered with a mixture of dense ruderal and scrub habitat (target note 3, photos 6 and 7). Rosebay willowherb is the most common species in some areas, whilst bramble *Rubus fruticosus* agg. dominates in others. Cock's-foot *Dactylis glomerata*, nettle, common comfrey, cleavers, hogweed, cow parsley, greater willowherb *Epilobium hirsutum*, traveller's joy *Clematis vitalba*, hairy bittercress and common heather were also recorded, as were garden escapes including ornamental varieties of

daffodil *Narcissus* sp. and snowdrop *Galanthus* sp. Scattered trees and shrubs are present throughout the scrub including silver birch *Betula pendula*, dog rose *Rosa canina*, hawthorn *Crateagus monogyna*, sycamore *Acer pseudoplatanus*, elder *Sambucus nigra*, ash *Fraxinus excelsior*, broom, common gorse and rowan *Sorbus aucuparia* (photo 6). A particularly large goat willow *Salix caprea* is also present (target note 4). Invasive non-native species including buddleia *Buddleia davidii*, Japanese rose *Rosa rugosa* (target note 5, photo 8) and a *Cotoneaster* species (target note 6, photo 9).

The centre of the site is more open and is dominated by grassland (target note 7, photos 1 and 10), which is kept short by grazing rabbits *Oryctolagus cuniculus*, which have numerous burrows on the site. Previous reports have described this as “improved”, however whilst it does contain similar species to some improved grassland, it has developed by the natural colonisation of the road planings which cover the quarry floor. Yorkshire fog *Holcus lanatus*, perennial rye-grass *Lolium perenne*, creeping bent *Agrostis stolonifera* and cock’s-foot are present. A number of common herb and ruderal species were also recorded including dandelion *Taraxacum officianale* agg., creeping buttercup *Ranunculus repens*, nettle, spear thistle *Cirsium vulgare*, creeping thistle *Cirsium arvense*, broad-leaved dock *Rumex obtusifolius*, ragwort *Jacobaea vulgaris*, hairy bittercress, ribwort plantain *Plantago lanceolata*, greater plantain *Plantago major* and white clover *Trifolium repens*.

Two small areas of woodland are present in the northwest and southwest corners. In the northwest corner (target note 8, photo 11) some of the trees at the edge of the site are more mature, and may date from when the quarry was active. The trees here have developed over a scrub and ruderal habitat similar to that found over most of the rest of the site. Several garden escapes are present including daffodils and snowdrops. Most of

the trees in the southwest corner are relatively young (target note 9, photo 12) and the understorey here comprises relatively short grass. Tree species present include oak *Quercus rober*, wild cherry *Prunus avium* and silver birch.

The only piece of original habitat predating the quarry on the site is a narrow strip at the original ground level along the western boundary (target note 10, photo 13). Previous reports have described this a “semi-improved” grassland dominated by Yorkshire fog. However heather grassland is a more accurate description as common heather was common in the area. However, this habitat is in poor condition and ruderal and scrub species have colonised it (photo 14). Fine-leaved fescue *Festuca* sp., cock’s-foot, common sorrel *Rumex acetosa*, bramble, rosebay willowherb and ribwort plantain were all recorded, as were ornamental daffodils and snowdrops. Broom is present at the northern end of the area.

The southeast corner of the site is demarcated by a dry-stone wall (target note 11).

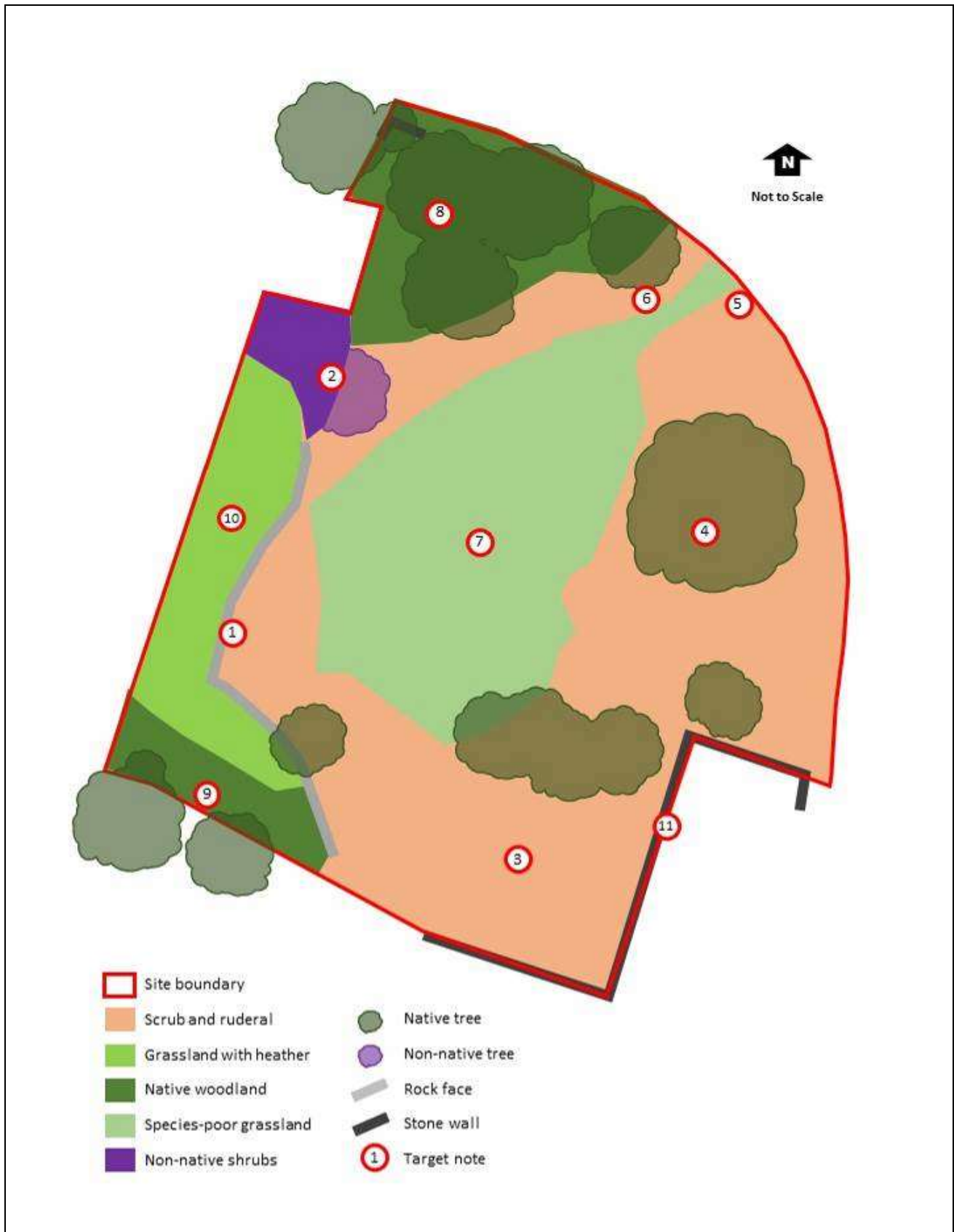


Figure 3.1: Habitats present on the site. See main text for target note descriptions.



Photo 1: *The site is a long-disused quarry.*



Photo 2: *The quarry has been used for disposal of road planings, which have been colonised by vegetation.*



Photo 3: *The quarry face is present along the western and southern sides of the quarry and is mostly vegetated.*



Photo 4: *Some areas of bare rock are still present.*



Photo 5: *Vegetation on the rock face is dominated by heather.*



Photo 6: *Much of the site is covered with mixed scrub and ruderal habitat with scattered trees*



Photo 7: *The scrub and ruderal habitat is dominated by brambles and rosebay willowherb.*



Photo 8: *Invasive non-native Japanese rose is present on the site.*



Photo 9: *Invasive non-native Cotoneaster is present on the site*



Photo 10: *The centre of the site contains an area of short rabbit-grazed grassland.*



Photo 11: *Woodland in the northwest corner has developed over a scrub/ruderal understorey. Several garden escape species are also present.*



Photo 12: *Deciduous woodland in the southwest corner has a grassy understorey.*



Photo 13: Heather grassland in the southwest corner is the only original vegetation type remaining on the site



Photo 14: The heather grassland is in poor condition and has been colonised by scrub and ruderal species.

3.4 Protected and Notable Species

3.4.1 Introduction

WYE returned a number of records of protected or notable species from within the search area, although none were from the site, or from within 500m of the site. Some of the species recorded only occur in particular habitats, not found on the site. Species which are likely to be found within the zone of influence are considered in greater detail below.

3.4.2 Bats

WYE and the NBN Atlas returned a number of bat records from within the search area, mostly common pipistrelle *Pipistrellus pipistrellus*, but also soprano pipistrelle *Pipistrellus pygmaeus*, brown long-eared bat *Plecotus auratus* and Daubenton's bat *Myotis daubentonii*. MAGIC had records of bat EPS licences issued for common pipistrelle and Leisler's bat *Nyctalus leisleri*.

The site does not contain any features suitable for roosting bats. Whilst some cracks and crevices are present in the exposed areas of the former quarry face, these were of

insufficient depth to be suitable for roosting. Most of the trees on the site are only semi-mature and therefore have not developed features that could be exploited by roosting bats. All of the larger trees were checked for the presence of suitable features, but none were found.

Habitats on the site are suitable for foraging bats, and the trees and quarry face may provide a sheltered foraging area. The site is connected to other suitable areas of bat habitat, including the village of Scholes to the north, which contains many buildings which may be suitable for roosting, and areas of woodland in the valley to the south.

3.4.3 *Reptiles*

There were no records of reptiles from within the search area and the nearest reptile record found on the NBN Atlas was of a viviparous lizard *Zootoca vivipara*, almost 5km away on moorland habitat within the Peak District.

Habitat on the site is suitable for some of the widespread reptiles (viviparous lizard, slow worm *Anguis fragilis*, grass snake *Natrix helvetica*). However, the prevalence of reptiles within the surrounding area is evidently very low. Whilst their presence is unlikely it cannot be conclusively ruled out.

3.4.4 *Great crested newt*

There were no records of great crested newts *Triturus cristatus* from within the search area, although smooth newt *Lissotriton vulgaris*, palmate newt *Lissotriton helveticus*, common frog *Rana temporaria* and common toad *Bufo bufo* have been recorded. The nearest great crested newt record on the NBN Atlas is from approximately 4km to the south.

Only one pond was identified within 250m of the site during the survey and using Ordnance Survey maps and online aerial imagery. This is a small garden pond approximately 120m to the southeast. A large fishing lake is also present approximately 260m to the north. As this is on private property it was not accessed during this survey. Habitat on the site is suitable for great crested newts (and other amphibians) during their terrestrial phase. However, both previous ecological reports ruled out the presence of great crested newts due to the unsuitability of the ponds (1, 2).

3.4.5 *Badgers and other terrestrial mammals*

There were no records of badgers *Meles meles* from within the search area. The site is suitable for use by badgers. No badger setts or other evidence of badger activity was found on the site during 2022 survey, or either of the previous surveys (1, 2). Several mammal burrows were found on the site, but these were all rabbit.

Hedgehogs *Erinaceus europaeus* have been recorded several times within the search area. Habitat on the site is suitable for foraging and resting hedgehogs.

3.4.6 *Nesting birds*

Vegetation on the site could be used by a variety of bird species to nest, including some Species of Principal importance. Blackbird *Turdus merula*, robin *Erithacus rubecula*, house sparrow *Passer domesticus*, dunnock *Prunella vulgaris* and blue tit were all recorded during the 2022 survey, and some appeared to be in the process of collecting nesting material. The 2021 survey also recorded blackcap *Sylvia undata*, great tit *Parus major*, chaffinch *Fringilla coelebs* and goldfinch *Carduelis carduelis* (2).

3.5 *Ecological Valuation*

Whilst the habitats on the site itself are artificial, essentially the result of recolonisation of previously worked land, they do have some ecological value. Most of the habitat would be characterised as scrub, a Priority Species in the KBAP (10), which also incorporates habitat mosaics on previously developed land. The most interesting habitat present on the site is the small area of heather grassland in the southwest corner of the site. This is difficult to categorise, but it has some characteristics of moorland and inland open rock habitats. However, it is a very small area, is isolated and in poor condition with colonisation by ruderal species and garden escapes. The site has limited potential so support legally protected species, although it is suitable for some Species of Principal Importance (6), particularly nesting birds.

Overall, the habitat assemblage on the site is considered to be of local ecological value.

4.0 Assessment of Likely Impacts in Absence of Mitigation

4.1 *Introduction*

The CIEEM guidelines (12) require that the potential impacts of the proposals should be considered in absence of mitigation. In order for a significant adverse effect to occur, the feature being affected must be at least of local value. However in some cases, features of less than local value may be protected by legislation and/or policy and these are also considered within the assessment. Although significant effects may be identified at this stage of the assessment, it is often possible to provide appropriate mitigation.

4.2 *Site Preparation and Construction Activities*

The habitat assemblage on the site are considered of local value. The development will result in the loss or damage of most of the habitats on the site and therefore the proposals will have an adverse effect at a local level. The most valuable single habitat on the site, the heather grassland, will be retained.

Based on the conclusions of the previous ecological surveys (1, 2), the site is not considered of value for reptiles outside of the zone of influence and therefore any impacts to reptiles would not be ecologically significant. However, the presence of reptiles on the site cannot be conclusively ruled out, and as reptiles are protected from killing and injuring under the Wildlife & Countryside Act and the likelihood of the proposals causing an offence under this legislation should be considered.

Vegetation on the site are suitable for a variety bird species to nest. The nests, eggs and nestlings of all wild birds are protected from disturbance, damage and destruction under the Wildlife & Countryside Act and therefore this could result in a legal offence.

Two invasive non-native plant species are present on the site: Japanese rose and *Cotoneaster*. These are listed within Schedule 9 of the Wildlife & Countryside Act, which makes it an offence to cause them to grow in the wild. There is a risk that construction activities could result in the spread of this plant into adjacent areas, or further afield if plant material is taken off site.

4.3 *Site Operation*

Habitats within and adjacent to the site are suitable for nocturnal wildlife such as foraging bats and hedgehogs. Additional lighting as a result of the proposals could disrupt the behaviour of bats and other nocturnal wildlife and lower the value of the habitat for them

5.0 Mitigation, Compensation and Enhancements

5.1 *Introduction*

This chapter details the on-site measures to be implemented to ensure the proposals do not have a significant adverse effect on ecology and nature conservation and also the options for off-site measures. Local and national planning policies require that mitigation and/or compensation is required where any significant impacts are likely to occur. Therefore mitigation measures are proposed for any feature where a likely impact was identified in Chapter 4. In addition, where the potential for legally protected species to be affected, mitigation is proposed regardless of whether a significant effect is considered likely. The proposed mitigation and compensation has been designed in accordance with the mitigation hierarchy of avoid > reduce > mitigate > compensate.

5.2 *Avoidance and Mitigation Measures*

5.2.1 *Habitats*

The development will result in the loss of most of the scrub mosaic habitat on the site. This loss is unavoidable without making the development of the site non-viable. However, the most valuable habitat on the site, the heather grassland, will be retained. This is currently in poor condition due to colonisation by ruderal species of lower ecological value, and garden escapes. This habitat will be managed to improve its condition and therefore increase its ecological value. Management will primarily consist of the removal and/or spot treatment of ruderal and scrub species, whilst heather and grasses will be retained.

5.2.2 *Lighting design*

New lighting associated with the proposals must be designed to ensure it does not affect the behaviour of nocturnal wildlife, particularly bats and hedgehogs, and should follow best practice guidance (14). The following principles will minimise the impact of lighting on nocturnal wildlife and should be applied to the lighting design across the site:

- Use of low-level lighting to minimise light spill
- Directing lights away from the edges of the site and the use of hoods or similar measures to direct light away from important habitats
- Restriction of UV light frequencies through selection of suitable lighting elements or the use of filters
- Use of warm white spectrum lighting elements.

5.2.3 *Nesting birds*

Clearance of trees or dense vegetation) should take place outside of the bird nesting season (typically March to August). If this is not possible, any building or vegetation affected should be thoroughly checked for the presence of active nests before works start. If any active nests are found, they should be retained *in situ* until the nestlings have fledged.

5.2.4 *Reptiles*

As the presence of reptiles is considered unlikely, the chance of a reptile being killed or injured as a result is low. However, as a precautionary measure, the site should be cleared following Reasonable Avoidance Measures (RAMs). The site should be cleared when reptiles are active (March to September), and should entail a two-phased clearance of the area. This entails cutting the vegetation to a height of 10-15cm and removing the arisings. The height of the cut ensures reptiles are not harmed and the cut deprives them of cover,

causing them to leave the area of their own accord. Please note that this approach is only appropriate for very small areas of habitat and where the likelihood of reptiles being present is low.

5.2.5 *Preventing the spread of invasive plants*

In order to prevent the spread of Japanese rose and *Cotoneaster*, existing plants should be carefully removed from the site and disposed of safely and in accordance with regulations surrounding the transfer of waste, prior to any construction work starting. This should include the excavation and careful disposal of any root material.

5.5 *Compensation and Enhancement Measures*

5.5.1 *Habitat creation*

In order to compensate for the loss of habitats, a number of ecologically valuable habitats will be created in small areas of the site, these include:

- Grassland wildflower verges (303m²), seeding with an appropriate wildflower grassland mix.
- Native species shelter belt with shade-tolerant wildflower planting (100m²). Species to be planted include field maple *Acer campestre*, alder *Alnus glutinosa*, silver birch, hawthorn, white poplar *Populus alba*, wild cherry, oak, rowan and elder. This will be undersown with an appropriate shade-tolerant wildflower seed mix.
- Native species specimen tree planted throughout the development with a similar species composition to the shelter belt.
- Native hedge planting (124m²) along the southern and eastern edges of the site. Species to be planted include hawthorn, field maple *Acer campestre*, hazel *Corylus avellana*, goat willow, wild cherry and dog rose.

- Green roofs on communal storage shed (26m²). Communal cycle and tool sheds will have green roofs utilising wildflower turf.

Optional off-site enhancement measures to achieve a biodiversity gain include:

- The enhancement of a strip of existing amenity grassland, adjacent to the site on the sports field to the west. This could be enhanced to create a species-rich mid-altitudinal grassland in line with Kirklees Council's biodiversity targets.
- The management and enhancement of an area of woodland and scrub to the south of the site to improve its habitat quality.

5.5.2 *Bat boxes*

Five bat boxes will be erected on the site as an ecological enhancement. A variety of suitable designs are available, and boxes that are suitable for crevice-roosting species, particularly pipistrelles will be selected. Both common and soprano pipistrelle have been recorded within the search area. Soprano pipistrelle is listed as a Species of Principal Importance in Section 41 of the NERC Act.

5.5.3 *Bird boxes*

Five bird nesting boxes will be erected on the new buildings on the site to compensate for the loss of existing nesting locations.

5.5.4 *Log piles*

Five log pile will be created on the site using logs from the trees cleared to facilitate the development, they will be partially buried to prevent their subsequent removal. These will provide a shelter for hedgehogs and increase the value of the site for invertebrates.

5.6 *Ensuring Mitigation and Compensation Measures are Implemented*

In order to ensure all the proposed mitigation, compensation and enhancement measures are implemented, the following documents should be produced, and subsequently approved by the LPA:

- Landscape Environmental Management Plan (LEMP): this would detail all the habitat creation and enhancement measures, including subsequent management for when the site is operational.

Management of the wildlife areas after the site is occupied will need to be guaranteed and funded. This could be via a Section 106 agreement, or a contract with a management company. The objectives of any subsequent management should be clearly identified and agreed.

6.0 Biodiversity Net Gain

6.1 *Introduction*

A Biodiversity Net Gain (BNG, 15) calculation has been undertaken for the proposed on-site works, using Natural England's Biodiversity Metric (16).

6.2 *Calculation*

The Biodiversity Net Gain calculation has been undertaken based on the results of this survey and the proposed landscaping for the development (produced by Encon Associates, Job no. A5478, drawing no. 01A). The calculation assumes that all the habitat creation measures recommended in Chapter 5 will be implemented.

The existing biodiversity value is 1.26 units.

Provided all the proposed habitat creation is implemented, and the heather grassland is enhanced as described, the post-development biodiversity value would be 0.58, a decrease on biodiversity value of -53.91%.

Given the existing habitats present, and the small size of the site. It is unlikely to be possible to deliver no net loss of biodiversity, or a net gain, without using off-site habitat creation or enhancement.

7.0 Summary and Conclusions

7.1 Summary

The proposed development site contains a mosaic of scrub, grassland and woodland habitats, as well as a rock face. The assemblage of habitats present is considered to be of local ecological value due to the inclusion of some within the Kirklees Biodiversity Action Plan (10). A small area of higher value heather grassland is present in the southwest corner. In general the site is considered unlikely to support legally protected species, although it could be used by nesting birds.

The proposals will result in the loss of most of the existing habitats on the site, although the heather grassland will be retained and enhanced. Some habitat creation measures are proposed, although these will not be sufficient to compensate for the habitats lost, and the Biodiversity Net Gain calculation gives a decline in biodiversity value of -53.91%.

For a net 10% gain in biodiversity for the proposals, this will require off-site habitat creation measures

Mitigation measures are proposed on-site to prevent the disturbance of nesting birds, and avoid harming reptiles during site clearance.

Several other ecological enhancement measures are proposed including the erection of bird nesting boxes and bat boxes, creation of log piles and planting native species hedges.

7.2 *Residual Impacts*

Based on current proposals, the construction of the proposed would result in a loss of a habitat assemblage of local biodiversity value. Although habitat creation is proposed, this would not be sufficient to compensate for this loss, as calculated using the Biodiversity Net Gain methodology. Consequently, there would be significant residual impacts and therefore the proposals would not comply with national and local planning policy. Off-site habitat creation measures would be required to deliver a Biodiversity Net Gain.

7.3 Off-site biodiversity enhancement measures

Potential options for habitat creation on off-site land to deliver a net gain in Biodiversity of 10% are as outlined as follows:

(1) Enhancement of land adjacent to the Chippings site. These measures, shown as options on the Landscaping & Biodiversity Enhancement Scheme plan (reference A5478/01D), include:

- The enhancement of a 5.5m wide strip of existing amenity grassland, adjacent to the site on the playing field to the west. This should be enhanced to create a species-rich mid-altitudinal grassland in line with Kirklees Borough Council's biodiversity targets.
- The management and enhancement of an area of woodland and scrub to the south of the site to improve its habitat quality.

These measures would be subject to consent from the owners, Kirklees Council and possibly from the Government for a change of use to plant and maintain grassland, wildflowers and new trees.

- (2) Obtain permission to enhance the land to the south east of the site, currently in private ownership and consisting of a grassed field and wooded area.
- (3) Identify land within the locality that can be enhanced for bio-diversity eg.to provide 0.25ha of species rich grassland.
- (4) Explore with the Holme Valley Land Charity and with Kirklees Council, the use of their land or biodiversity schemes already in operation, suitable for enhancement.

As an example, the Biodiversity Net Gain calculation has been undertaken based on the results of this survey and also the potential off-site measures on the land in Option 1 above (ref Encon Associates drawing A5478/01D).

The existing biodiversity value of the site including the off-site land is 1.80 habitat units and 0 hedgerow units.

Provided all the proposed habitat creation and enhancement is implemented (including that in off-site land in Option 1 above), the post-development biodiversity value would be 1.99 habitat units, a net increase of 10.75%. which delivers the 10% BNG target.

8.0 References

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9.0 Landscaping & Biodiversity Enhancement Drawing

KEY TO SOFT LANDSCAPE PROPOSALS

Existing Vegetation

- Existing Trees Retained**
Existing trees to be retained and protected
- Existing Grass & Vegetation**
Existing areas of grass and vegetation to be retained and re-instated where necessary if damaged during construction

Proposed Planting Details & Specification

All areas of new landscaping to have the existing topsoil and subsoil decompacted by hand digging or rotorvator. If any imported topsoil is required it should be placed to a depth of 200mm minimum in grass areas and 450mm minimum in tree and shrub planting areas. Planting should take place during the dormant planting season ie October to March and seeding between late summer to mid-autumn.

Areas of New Grass & Wildflower Meadow

Grass to be established to provide ground cover, to the following specification:

- Private Garden Lawns**
Areas to be turfed with Rowlawn (or similar approved) ryegrass/fescue turf for a hardwearing lawn to be managed by the residents
- Public Lawns**
Areas to be turfed with Rowlawn (or similar approved) ryegrass/fescue turf for a hardwearing lawn to be managed by a contractor
- Grassland Wildflower Verges**
Areas to be seeded with species rich grassland/ wildflower mix (WFG2 Flowering Meadow Mix by Germinal or similar approved) contains a diverse range of wildflower species from April - September in an 80:20 mix of grasses and native wildflowers including Foxglove, Cornflower and Poppy.
- Wildlife Understorey Flora Mix**
Species selected to encourage butterflies, moths and insects including nectar rich species. HE1 (Hedgerow Mixture) by Emorsgate Seeds (or similar approved) to be sown within the scrubland tree and shrub planting. Mix contains 18 wildflower species including yarrow, agrimony, garlic mustard, etc

Hedge Planting

Plants to be pit planted at densities indicated, to provide a dense, compact hedge buffer along the site boundary as follows:

Cultivate and grade hedging bed, bring top 300mm of soil to a fine tilth, including Enmag fertilizer applied and worked into to 100m, rake and bring to given levels, remove all stones and debris over 50mm, dig planting holes (average 300 x 300 x 300 deep), supply and plant specified shrubs and plants in densities specified, backfill with excavated material as above, water in and mulch with 75mm bark chippings 20-40mm size. Water and weed regularly for 12 months.

Native Hedge Planting

Trees and shrubs to be pit planted at 3-4 plants per metre in a double staggered row. Plants to be 125-150cm bareroot nursery stock reduced by 30-50% immediately after planting.

- 30% *Crateagus monogyna* (Hawthorn)
- 20% *Prunus spinosa* (Blackthorn)
- 10% *Acer campestre* (Field Maple)
- 10% *Corylus avellana* (Hazel)
- 10% *Salix caprea* (Goat Willow)
- 10% *Prunus avium* (Wild Cherry)
- 10% *Rosa canina* (Dog Rose)

Shrub Planting

Areas of shrub planting for ecological enhancement to be planted in groups around the perimeter of the site. Cultivate and grade soil, bring top 150mm to a fine tilth prior to planting the following species with 75mm depth of bark mulch spread between plants:

- Ornamental Shrubs**
Shrubs to be pit planted 4 per m². Planted to provide low maintenance, colourful, groundcover to attract bees and other invertebrates. All plants to be 5 litre pot grown stock, planted in random groups of 5, 7 or 9 plants of same species throughout the planting bed.
Euonymus fortunei 'Emerald and Gold'
Hebe 'Red Edge'
Hebe pinguifolia 'Sutherlandii'
Spirea japonica 'Goldflame'
Pachysandra terminalis
Viburnum davidii
Brachyglottis 'Sunshine'
Ceanothus 'Blue Mound'
Hypericum 'Hidcote'
Lavendula angustifolia
Common comfrey

Tree Planting

Standard specimen trees of local provenance planted in locations indicated as per the following specification:

Excavate tree pit (300mm larger than root ball all round), fork over bottom of pit, plant tree with roots well spread out, backfill with excavated material incorporating compost at 1m² per 3m² of soil excavated and secured with timber stake and rubber tie and spacer.

New Specimen Tree Planting (28 no.)

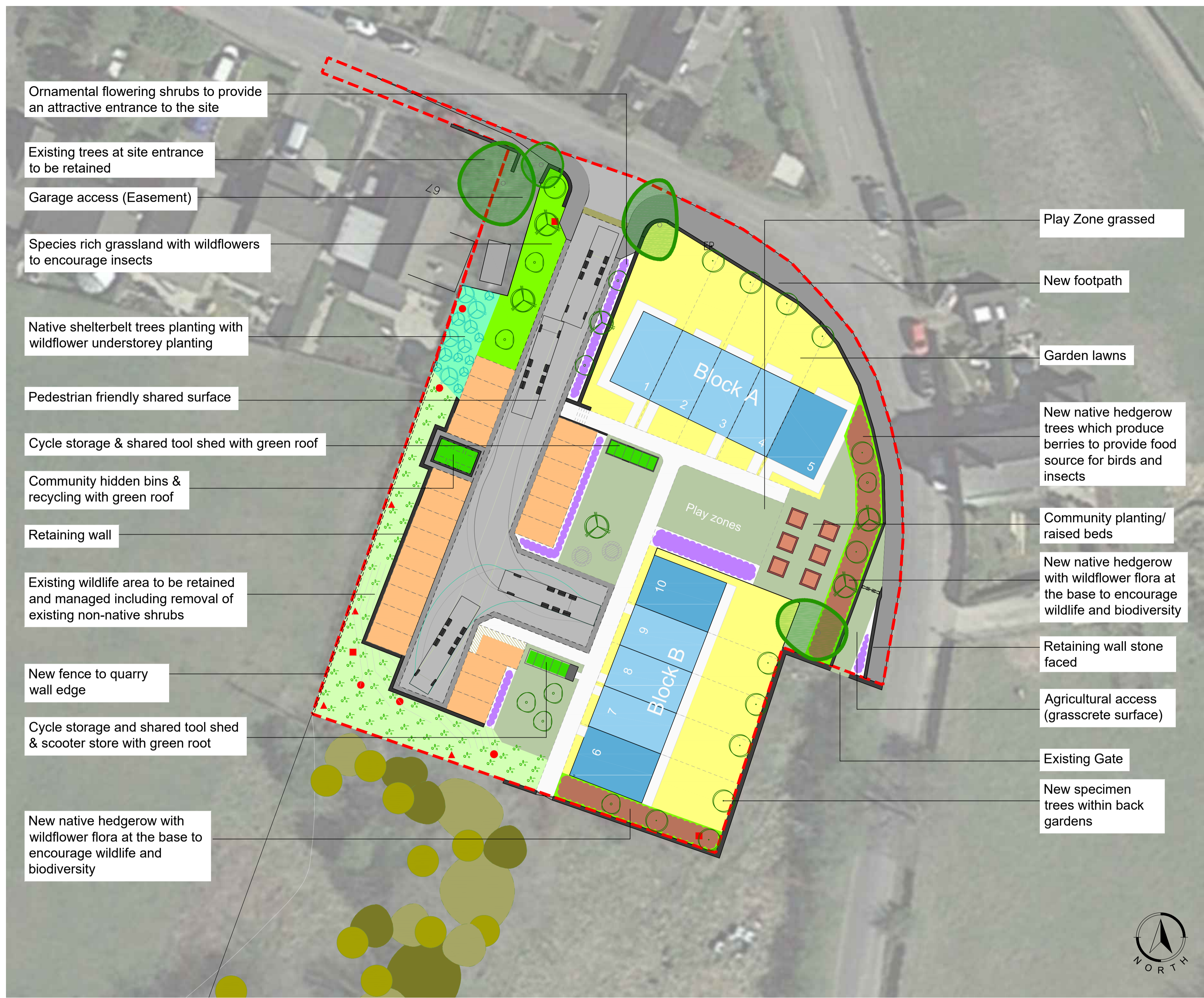
4.5m high, 16-18 cm girth Extra Heavy Standard root balled trees (supplied by Majestic Trees or similar approved) to be pit planted including timber stake and rubber spacer to secure the tree in an upright position and bulky organic compost backfill planted in locations shown

- Acer campestre* (Field Maple)
- Acer pseudoplatanus* (Sycamore)
- Alnus glutinosa* (Alder)
- Carpinus betulus* (Hornbeam) - Cb
- Pyrus 'Charitidier'* (Ornamental Pear) - Pc
- Prunus avium* (Wild Cherry) - Pa
- Prunus padus* (Bird Cherry) - Pp
- Sorbus aucuparia* (Rowan) - SaS
- Sorbus aria* (Whitebeam) - SaL
- Tilia cordata* (Lime) - Tc
- Quercus robur* (English Oak) - Qr

Shelterbelt Tree & Shrub Planting (15 no.)

Planted in a mix of heights. 30% to be 2.5-3.0m high, 8-10cm girth Standards, 35% to be 1.75-2.0m Feathered and 35% to be 1.25-1.5m Whips to be pit planted randomly in locations indicated on the plan.

- Acer campestre* (Field Maple)
- Alnus glutinosa* (Alder)
- Betula pendula* (Silver Birch)
- Crateagus monogyna* (Hawthorn)
- Populus alba* (White Poplar)
- Prunus avium* (Wild Cherry)
- Quercus robur* (English Oak)
- Sorbus aucuparia* (Rowan)
- Sambucus nigra* (Elder)



KEY TO HARD LANDSCAPE PROPOSALS

Surfacing

- Access Road & Shared Surfacing**
Access road and pedestrian friendly circulation to be surfaced in accordance with Engineers specifications
- Car Parking**
Parking bays to be surfaced in accordance with Engineers specifications
- Footways**
Footways and pedestrian circulation routes to be surfaced in accordance with Engineers specifications
- Play Zone**
Play Zone to be surfaced in accordance with Engineers specifications

KEY TO ECOLOGICAL ENHANCEMENT

The following enhancement features have been included within the landscape proposals:

- Green Roofs**
To be covered with wildflower turf to encourage insects and wildlife by providing nectar and food source
- Bird Boxes (5 no.)**
Indicative location of a selection of bird boxes as per ecologist recommendations. To be mounted on poles where located in newly created scrub/tree planting areas
- Bat Boxes (5 no.)**
Indicative location of a selection of bat boxes as per ecologist recommendations. To be mounted on poles where located in newly created scrub/tree planting areas
- Log Piles (5 no.)**
Indicative location of log piles utilising logs from the felled trees as per ecologist recommendations.
- Green roofs to bin store, bike store and community meeting area**
- Native hedgerow with ground flora**
- Grassland wildflower verges**
- Wildlife flora understorey**
- Native specimen tree planting**
- Shelterbelt trees and shrubs**
- Nectar-rich flowering shrub planting**
- Bird nesting boxes**
- Bat roosting boxes**
- Log piles for insects and invertebrates**

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Notes:

This drawing is based on:
 • 2112-GWP-01-01-DR-A-(PA)-0003_Proposed Site Plan-P03 by GWP Architects

Maintenance & Management Plan

All new planting areas are to be subject to a 12 month defects liability period with a further 4 year maintenance regime, in accordance with the Landscape Management Plan (see separate document for full details)

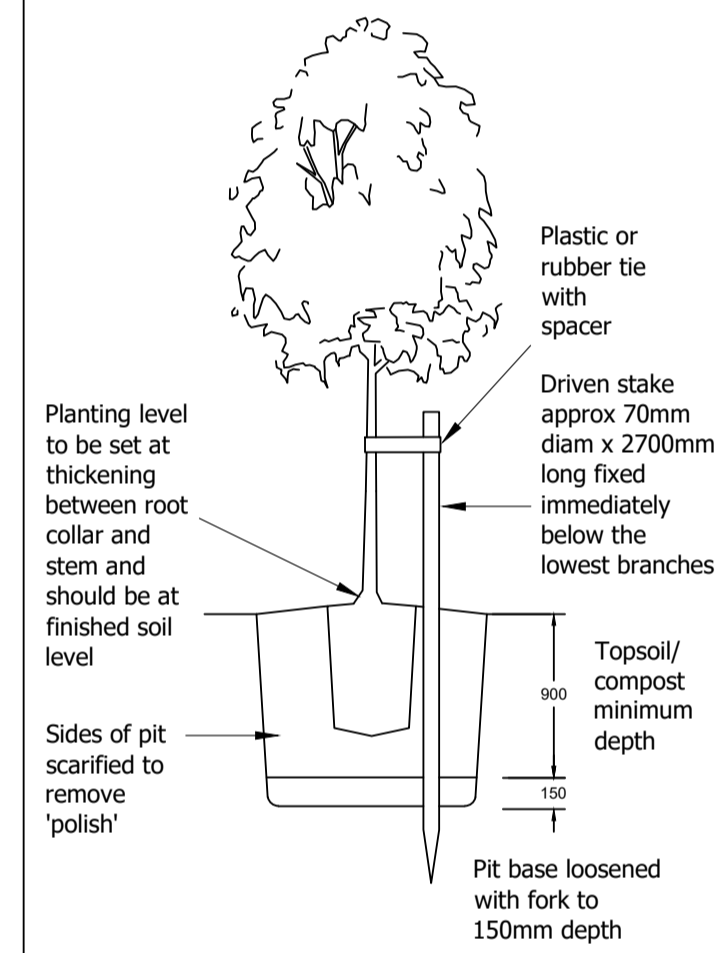
The general maintenance management will include 12 visits per year in order to provide the following:

- Comprehensive weed control
- Checking the condition of tree stakes, ties, guards and protective fencing and making repairs or replacing where necessary
- Ensuring that all plants remain firmly in the ground in an upright position
- Watering during periods of dry weather
- Pruning back of damaged/diseased growth
- Topping up of mulches re-apply fertiliser as necessary
- Replacing dead and dying plants on a yearly basis to achieve a minimum 90% establishment rate

Implementation Programme

All new planting should take place during the dormant planting season ie October to March unless otherwise specified by plant suppliers.

Tree Pit & Stake Specifications



E	19.12.22	Revised in line with architects new layout	MJB	GM
D	08.07.22	Revised in line with client comments	MJB	GM
C	16.06.22	Revised in line with client comments	MJB	GM
B	15.06.22	Revised in line with increased boundary	MJB	GM
A	01.04.22	Revised in line with latest site plan	MJB	GM

Rev	Date	Description	Drawn	Checked
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Client
EcoHolmes
Community Land Trust

Project
Chippings
Chapelgate
Holmeirth

Title
Landscaping & Biodiversity
Enhancement Scheme

Drawing Status
FOR PLANNING APPROVAL

Drawn	MJB	Checked	GM
Date	11.03.22	Scale (A1)	1:250

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Environmental Consultants to the Construction Industry

BREEAM - Code for Sustainable Homes Assessors - Landscape Architecture - Transportation
 Life Cycle Costing - Energy Assessment - SAP - EPC - SBEM - Daylight Calculations

Job Number	Drawing Number	Rev
A5478	01	E