ECOLOGICAL DESIGN STRATEGY REPORT

at

81 Town End
Woodale
Holmfirth
HD9 1QD

Client:
AK Planning

JCA Ref:
23081/RPS

Date of Report:
18/09/2025

JCA Limited
Arboricultural & Ecological Consultants

Quality Assurance

Version	Desktop Survey Completed:		Site Surveyed:		Report Completed:		Reviewed:	
	Date	Name	Date	Name	Date	Name	Date	Name
001	N/A	N/A	11/08/25	Rebecca Petch-Smith	18/08/25	Rebecca Petch-Smith	11/09/25	Adam West

This report has been prepared and provided in accordance with the *British Standard 42020: Biodiversity – Code of practice for planning and development* and the *CIEEM's Code of Professional Conduct.*

Contents

1. Introduction

1.1 Purpose of the Report

1.1.1 An Ecological Design Strategy has been requested for **81 Town End, Woodale, Holmfirth** by Kirklees Council.

1.1.2 This report will aim to fulfil the planning conditions set by Kirklees Council, with the ultimate aim of enhancing the site's value to wildlife, through the retention of any existing features of value to wildlife, the creation of new habitats and the provision of new roosting/nesting opportunities within the proposed development.

1.2 Terms of Reference

1.2.1 JCA Ltd. have been instructed by **AK Planning** to produce an Ecological Design Strategy (EDS).

1.2.2 For this purpose, the following reports, documents and plans were used:

- Planning Properties Architectural Design Services – Landscaping Plan (Drawing number: 22/021/07 A).

1.3 Scope of the Report

1.3.1 This report is compiled in accordance with guidance outlined in the *National Planning Policy Framework* (NPPF) so that the development takes into account the value of ecosystem services and enhance ecological networks.

1.4 Details of Proposed Development

1.4.1 The development proposed at this site is for the construction of two residential dwellings with associated gardens, parking areas and a landscape area for offsetting any biodiversity losses within the development.

1.5 Site Description

1.5.1 The site is located at Ordnance Survey (OS) National Grid Reference **SE 15156 09193**, with nearby postcode **HD9 1QD**. The site is situated ~6.9km south of Huddersfield. The site is surrounded by residential housing.

1.5.2 The site was previously vegetated garden for the house to the east of the boundary. This contained small to medium trees and grassland.

1.6 Roles and Responsibilities

1.6.1 **Ecological Responsibility**

JCA Ltd. are the organisation responsible for the production of this EDS. JCA Ltd. report on both ecological and arboricultural issues throughout the UK. All surveys and reports are undertaken and compiled in accordance with CIEEM's Professional Code of Conduct and the relevant survey guidance.

1.6.2 **Landowner and Land Manager**

The landowner and manager responsible for the site is AK Planning.

1.6.3 **Management Organisation(s)**

AK Planning is responsible for the implementation of the EDS.

1.6.4 **Local Planning Authority (LPA)**

Kirklees Council are the LPA responsible for reviewing the EDS.

2. Local Biodiversity Action Plan

2.1.1 JCA Ltd aim to incorporate the Local Biodiversity Action Plan (LBAP) habitats within our enhancement plans. JCA Ltd also aim to attract and support LBAP species, through either directly planting LBAP floral species, or creating habitats that will attract these species. The LBAP that covers the site is the Kirklees BAP (KBAP).

2.1.2 The habitats listed within the KBAP can be seen below in **Table 1.**

Table 1: Habitats listed under Kirklees BAP.

Habitat	Key geographical areas in Kirklees
Arable field margins	Pennine foothills
Blanket bog	Uplands
Hedgerows	Pennine foothills
Inland rock outcrop and scree habitats	Valley slopes and quarries in any area
Lowland dry acid grassland	Valley slopes
Lowland heathland	Valley slopes
Hay meadows	Pennine foothills and mid-altitudinal grasslands
Lowland mixed deciduous woodland	Vally slopes and Pennine foothills
Open mosaic habitats on previously developed land	Urban areas
Ponds	Relevant to occurrence of protected species (white-clawed crayfish, great crested newt, water vole *L. natans*)
Reedbeds	Floodplain
Rivers	Floodplain
Traditional orchards	Pennine foothills
Upland flushes, fens and swamps	Uplands
Upland heathland	Uplands
Upland mixed Ashwood	Valley slopes (upland): component of upland oak woodland
Upland oak woodland	Uplands
Wet woodland	Floodplain: also, component of lowland mixed deciduous woodland and upland oak woodland
Wood-pasture & parkland	Pennine foothills and valley slopes
Scrub	Primarily valley slopes and Pennine foothills but can occur elsewhere. Includes open mosaic habitats on previously developed land (mostly in urban areas)
Other semi-natural grassland (wet/rush pasture and rough grassland)	Mid-altitudinal grasslands and Pennine foothills
Riverine	Floodplain: corridors include reedbeds and rivers

2.1.3 The species listed within the KBAP can be seen below in **Table 2.**

Table 2: Species listed under Kirklees BAP.

Group	Common name	Scientific name
Birds	Common bullfinch	*Pyrrhula pyrrhula*
Birds	Common grasshopper warbler	*Locustella naevia*
Birds	Common linnet	*Linaria cannabina*
Birds	Common starling	*Sturnus vulgaris*
Birds	Eurasian curlew	*Numenius arquata*
Birds	Eurasian tree sparrow	*Passer montanus*
Birds	Grey partridge	*Perdix perdix*
Birds	Hawfinch	*Coccothraustes coccothraustes*
Birds	Hedge accentor (dunnock)	*Prunella modularis*
Birds	House sparrow	*Passer domesticus*
Birds	Northern lapwing	*Vanellus vanellus*
Birds	Red grouse	*Lagopus lagopus Scotica*
Birds	Reed bunting	*Emberiza schoeniclus*
Birds	Ring ouzel	*Turdus torquatus*
Birds	Sky lark	*Alauda arvensis*
Birds	Song thrush	*Turdus philomelos*
Birds	Spotted flycatcher	*Muscicapa striata*
Birds	Tree pipit	*Anthus trivialis*
Birds	Twite	*Linaria flavirostris*
Birds	Willow tit	*Poecile montanus*
Birds	Wood warbler	*Phylloscopus sibilatrix*
Birds	Yellow wagtail	*Motacilla flava*
Birds	Yellowhammer	*Emberiza citrinella*
Invertebrates	Northern wood ant	*Formica lugubris*
Invertebrates	Small heath butterfly	*Coenonympha pamphilus*
Invertebrates	Wall brown butterfly	*Lasiommata megera*
Invertebrates	White-letter hairstreak butterfly	*Satyrium w-album*
Fish	Atlantic salmon	*Salmo salar*
Fish	Brook lamprey	*Lampetra planeri*
Fish	Brown trout	*Salmo trutta*
Fish	European eel	*Anguilla anguilla*
Fish	River lamprey	*Lampetra fluviatilis*
Amphibians	Common toad	*Bufo bufo*
Amphibians	Great crested newt	*Triturus cristatus*
Reptiles	Adder	*Vipera berus*
Reptiles	Common lizard	*Zootoca vivipara*
Reptiles	Grass snake	*Natrix natrix*
Reptiles	Slow worm	*Anguis fragilis*
Terrestrial mammals	Brown hare	*Lepus europaeus*
Terrestrial mammals	Brown long-eared bat	*Plecotus auritus*
Terrestrial mammals	Mountain hare	*Lepus timidus*
Terrestrial mammals	Noctule bat	*Nyctalus noctula*
Terrestrial mammals	Otter	*Lutra lutra*
Terrestrial mammals	Polecat	*Mustela putorius*
Terrestrial mammals	Soprano pipistrelle	*Pipistrellus pygmaeus*
Terrestrial mammals	Water vole	*Arvicola terrestris*
Terrestrial mammals	West European hedgehog	*Erinaceus europaeus*

3. Retention of Ecologically Valuable Features

3.1 Pre-development

3.1.1 A summary of the habitats and features present in this report can be seen below. Due to the site being in development, the habitat on site was degraded. Therefore, past imaging from Google Earth Pro and photos supplied by the developer were used to determine the habitat present on site prior to development.

3.1.2 As listed below, the site consists of two different habitats.

- Vegetated gardens – with areas of tall forbs and scattered scrub.
- Urban trees

3.1.3 All habitats on site were species poor, consisting of only common species typical of their habitat type.

3.1.4 None of the habitats or features on site were deemed suitable for supporting rare or protected mammals (except hedgehogs), birds (except breeding birds), amphibians, reptiles, plants, or invertebrates, nor will the site impact on any designated conservation sites.

3.1.5 The vegetation on-site has the potential to support nesting birds and foraging, commuting and resting hedgehogs.

3.2 Features to be Retained and Protected

3.2.1 The site was already being developed when the site was visited. Therefore, past images and photographs were used to determine the habitat present on site prior to development. The image supplied by Google Earth Pro in 2020, showed the site to be vegetated garden with small to medium urban trees scattered throughout. The vegetated garden included small areas of tall forbs and scattered scrub in the centre of the site. Two individual trees are due to be retained in the development.

3.3 Features to be Enhanced

3.3.1 The scheme will not see the enhancement of any of the existing habitats on-site.

4. Habitat Creation

4.1 Summary

4.1.1 As the site contains habitats of low to medium conservation value, there is some scope to enhance the site's wildlife value post development.

4.1.2 The proposed development will see the creation of the following habits:

- G3c – other neutral grassland (proposed species rich grass seed mix and proposed wildflower grass seed mix)
- H2a – native hedgerow
- U1b – developed land, sealed surface
- U1b5 - buildings
- Secondary code 32 – scattered trees (proposed trees)
- Secondary code 828 – vegetated gardens

4.1.3 The planting of 13 small urban trees and 0.00715ha of other neutral grassland, both assessed as moderate condition will offset any loss of habitat to site.

4.1.4 The proposed development will see the site's value to wildlife and biodiversity increased through a combination of the following:

- Creation of a nectar and pollen rich grassland habitat
- Native species shrub planting
- Native species tree planting
- Inclusion of faunal boxes and hedgehog provisions

4.2 Grassland Planting

4.2.1 Setting aside areas of grassland for wildflower planting would be beneficial to local invertebrate populations, particularly pollinators such as bees, butterflies, and moths. Increased invertebrate abundance would then benefit species that feed on invertebrates, such as birds and bats.

4.2.2 <u>Species Selection and Specification</u>

It is important that the correct plant species are selected that are adapted to the local site conditions and resemble the semi-natural plant communities of the local area. The plant species must be matched to soil type (pH), fertility, hydrology and

topography. A wildflower and grass mix of 15:85 is normally recommended but this should not include vigorous grasses as these will compete with wildflowers for resources.

Providing a good tilth can be prepared, the optimal time for seed sowing is in late summer/early autumn, which means the seeds are not exposed to rising soil temperatures but will be exposed to cold moist temperatures over winter, which can help break dormancy of some species. If sown too late in autumn, seedlings may be killed off by frosts. The months of March/April can also be suitable for sowing in areas of land that are prone to winter flooding.

Approximately **0.00715 ha** (71.5m^2) of land will be enhanced to improve the floral species richness. The recommended seed mix is EM2 Standard General-Purpose Meadow Mixture. Sown at **40kg per hectare**, this will require between approximately **0.286kg** of seed mix.

A list of the species included within EM2 Standard General-Purpose Meadow Mixture can be seen below in **Table 3**. This mix includes species that are visually attractive, and many are the host plant for butterfly species. An increase in the abundance of insects on-site will benefit fauna higher up the trophic chain such as bats and birds who forage upon invertebrates.

The seed mix contains red fescue and common bent. Fescues and bents are included in the food plants that are foraged on by the caterpillars of small heath and wall butterflies, which are nationally, and locally important species listed on NERC S41 and the KBAP.

Table 3: List of species in EL2 Flowering Lawn Mixture from Emorsgate Seeds.

Flowering Plants			Grasses		
Botanical Name	**Common Name**	**%**	**Botanical Name**	**Common Name**	**%**
Achillea millefolium	Yarrow	0.75	*Agrostis capillaris*	Common Bent	8.50
Centaurea nigra	Common knapweed	1.50	*Cynosurus cristatus*	Crested Dog's-tail	29.75
Rumex acetosa	Common sorrel	0.30	*Festuca rubra*	Red fescue	25.50
Galium verum	Lady's bedstraw	1.50	*Phleum bertolonii*	Smaller Cat's-tail (w)	4.25
Knautia arvensis	Field scabious	0.45	*Poa pratensis*	Smooth-stalked meadow-grass	17.00
Leucanthemum vulgare	Oxeye daisy	1.27		**Total**	**85**
Malva Moschetti	Musk mallow	1.80			
Poterium sanguisorba ssp sanguisorba	Salad burnet	0.90			
Primula veris	Cowslip	0.30			
Ranunculus acris	Meadow buttercup	0.75			
Silene dioica	Red campion	1.50			
Rhinanthus minor	Yellow rattle	0.98			
	Total	**15**			

4.2.3 Implementation of Species-rich Grassland

The key to creating sustainable, species-rich grasslands is to begin with a nutrient-poor base and then manage the land correctly. Species-rich grasslands require much less management than amenity grassland. As they only require mowing twice a year, they will save a considerable amount of money in the long term.

It is recommended that enhancement of existing grassland is implemented after the completion of the development. In the grasslands' current state, it is likely that the soil fertility is too high to allow for a habitat of ecological value to establish.

For example, low soil fertility is important for meadow establishment. The level of available phosphorous is the most important nutrient that influences grassland diversity. It is recommended that a soil test is carried out to establish levels of available nutrients nitrogen, phosphorous, potassium, in addition to soil pH prior to this grassland habitat being enhanced.

It may take several years for the soil's fertility to be appropriate for enhancement. Therefore, it may be necessary to remove the topsoil as high fertility soil tends to promote the growth of more vigorous grasses and weeds. This removed topsoil can be sold for profit.

On completion of construction, if the area of ground to be converted into grassland is bare, then the following instructions should be implemented:

- At most sites, it is likely that the soil will have at one point been fertilised. To reduce fertility, remove the top 15 to 20 cm of topsoil to reveal the nutrient-poor subsoil. The nutrient rich topsoil should then be relocated elsewhere on site.

- Alternatively, a layer of the unearthed subsoil can be excavated and placed over the topsoil. This method will inhibit the growth of any weeds present in the topsoil. Another option is to dilute the topsoil by mixing in poor quality material such as crushed builders' rubble or spoil. Then, using a fork, break up the soil and rake the proposed seedbed to produce a fine, firm tilth. Remove any large stones and any root fragments.

- Weed species such as docks *Rumex* sp., thistles *Cirsium* sp., nettles *Urtica dioica*, and vigorous growing grasses, should be pulled up by hand prior to seed bed cultivation.

A summary of ground preparation for fertile sites is listed below:

- Remove existing weed species, including grasses.

- Shallow cultivate site with a rotovator and roll to consolidate ground to keep in moisture.

- Repeat removal of weed species, including grasses.

- Power harrow to create fine surface tilth.

- Final spray if required.

- Surface sow the seed and roll.

4.2.4 First Year of Management

The grassland should remain nutrient poor, therefore, do **not** add fertilisers at any point. The majority of species included within the seed mix are perennial and are slow to establish. There will be an abundance of annual weeds which offer protection to sown seedlings. Mow the grassland mid to late summer (early August) to a height no shorter than 5cm and remove the arisings. Remove any residual weeds present in the grassland.

4.2.5 Management Once Established

Once the grassland is fully established it should only be cut twice per year; once in Spring (early March to early April) and once in mid to late summer (August). The grassland should be cut to a height no shorter than 5cm and arisings are to be removed to prevent nutrients returning to the soil.

Following sowing, remove any annual and perennial weeds that appear. The grassland should remain nutrient poor, therefore, do not add fertilisers at any point. The grassland should be cut once in the spring (between early March and early April) and all arisings should be immediately removed to prevent the nutrients returning to the soil. A second cut should take place in late summer (between late June and the end of August). The arising should be left in-situ for one to seven days before being removed to allow the seeds to re-enter the soil. The grassland should be cut no shorter than 5cm.

This cutting regime will prevent the grassland from succeeding into scrub and woodland, whilst allowing the flowers to set seed for the following year, thus producing a sustainable and viable habitat.

4.2.6 Monitoring

Monitor annually from years one to five and then every five years after. Monitoring is to take place between May and September. It is recommended to monitor the parcel using a quadrat to identify the habitats type and establish the number of species present.

4.3 Native Species Shrub Planting

4.3.1 Incorporating planting of native shrub species will allow the establishment of mixed scrub and native hedgerow habitats, which will benefit a range of species by providing for invertebrates, nesting opportunities for birds, and resting/commuting opportunities for hedgehogs.

4.3.2 Hedgerows are listed on the KBAP, therefore, creation of new areas of these habitats will increase the coverage of priority habitats.

4.3.3 Species Selection and Specification

The species have been selected for their hardiness, amenity value and their value to local wildlife, either in the form of flowers, berries, seeds or shelter. Species that are poisonous such as Spindle have been avoided. **Table 4** gives examples of native species that would be suitable for creating an area of mixed scrub and native hedgerows.

Approximately **0.053km** (53m) of native hedgerow is to be planted. Shrubs will be planted every 30cm in a double staggered row, this will require approximately **180** shrubs.

Table 4: Recommended native species for inclusion in native hedgerow.

Botanical Name	Common Name	Size at Purchase
Buxus sempervirens	Common box	40-60cm
Cornus sanguinea	Dogwood	40-60cm
Corylus avellana	Hazel	40-60cm
Crataegus monogyna	Hawthorn	40-60cm
Fagus sylvatica	Beech	40-60cm
Ilex aquifolium	Holly	40-60cm
Prunus spinosa	Blackthorn	40-60cm
Rosa canina	Dog Rose	40-60cm
Viburnum opulus	Guelder Rose	40-60cm

4.3.4 Implementation of Hedgerows

It is recommended that scrub planting is implemented after the completion of the development. This will avoid damage to scrub from construction hazards such as re-grading of soils near roots and mechanical damage to tree crowns. Care should be taken during development to ensure that soils surrounding the scrub are not contaminated with cement or any other building materials.

Shrub planting should take place between November and March. Before planting, loosen the soil to eliminate compaction and improve drainage. If the existing topsoil is of poor quality, a fertile, freely draining soil with neutral or slightly acidic pH should be imported.

The shrubs should be planted at 2m x 2m spacing for mixed scrub and every 30cm in a double staggered row for hedgerows. A planting hole will be excavated by hand and will be twice the diameter of the root ball and of equal depth. The sides and bottom of the hole should be roughened with the spade or fork. The new tree should be offered into the hole and backfilled using the original soil material. Before planting, loosen the soil to eliminate compaction and improve drainage. Soil amendments such as compost should not be added as this has been shown to be detrimental to successful establishment. All newly planted trees and shrub are to be thoroughly watered immediately after planting.

Staking will be required to secure the tree and prevent losses within the first years of establishment. It may be necessary to angle the stakes to avoid damaging the root ball. All trees are to be staked at a height of no more than 1 metre. Spiral type guards are to be incorporated around the base of each stem to reduce pest

damage throughout the winter months and to prevent mechanical damage from strimmers and mowers. Adjustable and flexible tree ties will be used. These are to be attached at a point no more than one third of the way up the stem.

Woodchip mulch should be applied around the base of each shrub to a depth of no more than 75mm. This will conserve water close to the soil surface and inhibit weed growth.

4.3.5 First Year of Management

Newly planted shrubs are to receive 50 litres of water per week between the months of April and August for the first three years.

New bark mulch should be applied around the base of each tree to a depth of no more than 75mm, each year for at least the first three years. This will conserve water close to the soil surface and inhibit weed growth.

Any weeds found growing around the newly planted trees and shrubs should be removed annually in subsequent years after planting. This will ensure the uptake of valuable resources such as water, nutrients, and light. This should be done by manually without the use of herbicides.

4.3.6 Management Once Established

Remove tree stakes, guards, and ties when they are no longer needed.

The scrub is to be split into coups and coppiced on rotation every 7 to 15 years depending on growth rate of shrubs. The best time to cut scrub is during late winter.

After completing any future tree works such as pruning or felling, all deadwood should be retained on Site and created into log piles in suitable and sheltered positions. This will then provide habitat for flora and fauna such as fungus, invertebrates, and amphibians.

4.3.7 Monitoring

Monitor annually from years one to five and then every five years after. Monitoring is to take place between May and September. It is recommended to monitor the establishment of newly planting shrub and trees and to replace dead shrubs as necessary.

4.4 Native Species Tree Planting

4.4.1 13 new individual trees are to be planted across the site.

4.4.2 Species Selection and Specification

The chosen species are all native to Britain. These species have attractive

autumnal colours, berries, flowers, interesting bark, and leaves and as such, the site should be attractive throughout the seasons for both residents and wildlife. The species selected have a range of life expectancies to provide the site with long term tree cover. Poisonous species have been avoided, as have species which commonly drop branches. Where appropriate trees have been planted to provide useful screening.

Trees must be positioned where they will provide the highest amenity possible, and are unlikely to conflict with other trees or structures as they attain their mature height and spread.

Trees should be container-grown and selected according to guidelines BS: 3936: Part 1: 1992 - Nursery Stock. This will ensure that they are of good form and in healthy condition. **Table 5** details the specification for the individual trees. Consideration is given to availability, immediate impact, ease of installation and likelihood of successful establishment.

Table 5: Recommended native deciduous trees.

Botanical Name	Common Name	Size at Purchase
Acer campestre	Field Maple	Standard
Betula pendula	Silver Birch	Heavy Standard
Quercus robur	English oak	Extra-Heavy Standard
Sorbus aucuparia	Rowan	Heavy Standard
Malus sp.	Apple sp.	Standard
Prunus sp.	Plum sp.	Standard
Pyrus sp.	Pear sp.	Standard
Prunus damascenum	Damson sp.	Standard

4.4.3 Implementation of Trees

It is recommended that the tree planting scheme is implemented after the completion of the development. This will avoid damage to new trees from construction hazards such as re-grading of soils near roots and mechanical damage to tree crowns.

Tree planting should take place between November and March. Before planting, loosen the soil to eliminate compaction and improve drainage. If the existing topsoil is of poor quality, a fertile, freely draining soil with neutral or slightly acidic pH should be imported.

A planting hole will be excavated by hand and will be twice the diameter of the rootball and of equal depth. The sides and bottom of the hole should be roughened with the spade or fork. The new tree should be offered into the hole and backfilled using the original soil material. Before planting, loosen the soil to eliminate compaction and improve drainage. Soil amendments such as compost should not be added as this has been shown to be detrimental to successful establishment. All

newly planted trees and shrub are to be thoroughly watered immediately after planting.

Staking will be required to secure the tree and prevent losses within the first years of establishment. It may be necessary to angle the stakes to avoid damaging the rootball. All trees are to be staked at a height of no more than 1 metre. Spiral type guards are to be incorporated around the base of each stem to reduce pest damage throughout the winter months and to prevent mechanical damage from strimmers and mowers. Adjustable and flexible tree ties will be used. These are to be attached at a point no more than one third of the way up the stem.

Woodchip mulch should be applied around the base of each shrub to a depth of no more than 75mm. This will conserve water close to the soil surface and inhibit weed growth.

4.4.4 First Year of Management

Newly planted trees are to receive 50 litres of water per week between the months of April and August for the first three years.

New bark mulch should be applied around the base of each tree to a depth of no more than 75mm, each year for at least the first three years. This will conserve water close to the soil surface and inhibit weed growth.

Any weeds found growing around the newly planted trees should be removed annually in subsequent years after planting. This will ensure the uptake of valuable resources such as water, nutrients, and light. This should be done manually without the use of herbicides.

4.4.5 Management Once Established

Remove trees stakes, guards and ties when they are no longer needed.

Any future tree works, such as pruning or felling, should be completed outside of the breeding bird period (February to August). All deadwood should be retained on site and created into log piles in suitable and sheltered positions. This will then provide habitat for flora and fauna such as fungus, invertebrates, and amphibians.

4.4.6 Monitoring

Monitor annually from years one to five and then every five years after. Monitoring is to take place between May and September. It is recommended to monitor the establishment of newly planting shrub and trees and to replace dead trees as necessary. If saplings continue to die off, consult a landscaping specialist to determine the reason for the repeated failures.

5. Faunal Boxes

5.1 Summary

5.1.1 In total **2** bat bricks (on building), **6** bird boxes (4 on buildings, 2 on trees), **1** hedgehog shelters and **1** insect tower have been recommended. The location of each faunal provision to be installed can be seen in **Appendix 3**.

5.2 Bat Roosting Provisions

5.2.1 All UK bat species are protected by UK legislation. This is in response to the declines experienced by many bat species over the past century. The cause of the decline can be linked to a number of factors, including habitat loss, pesticide over-use, habitat fragmentation, loss of roost sites and roost disturbance.

5.2.2 Soprano pipistrelles, noctules, and brown long-eared bats are locally important species, listed within the KBAP, as well as being nationally important, listed on NERC S41. The boxes incorporated into this enhancement plan are therefore aimed at attracting these species.

5.2.3 Box Selection & Positioning: The number and specification of the recommended bat bricks and boxes are detailed in **Table 6** below, and their locations shown in **Appendix 3**.

5.2.4 Should the bat roosting provisions included within this report not be suitable, there is a wide range of options available to pursue. For example, other roost opportunities include cutting slots into soffit boxes, using bat bricks that lead into cavity walls and using lifted tiles to allow bats access into the loft. Should this be the case, an ecologist should be contacted as soon as possible in the planning process to ensure provisions for roosting bats remain as part of the proposed development.

Table 6: Bat roosting opportunities to be installed as part of the proposed development.

Bat Brick/Box	Number to be installed and location	Description	Details
Ibstock Enclosed Bat Box 'C' (or a comparable design) 	2 Incorporated into buildings	The Enclosed Bat Box 'C' from Ibstock is designed for the pipistrelle bat. It is ideal for new builds as it can be integrated directly into the brickwork to produce a discrete but attractive home for bats. The inside of the box is designed to create several roosting zones which are ideal for crevice dwelling bats. The bottom entrance means that no maintenance is required as droppings will simply fall out the bottom. This Ibstock Bat Box C is available in two sizes and three colours (red, blue or cream). The box is both durable and fully frost resistant.	Dimensions <u>Small Box</u> Height: 215mm Width: 215mm Depth: 105mm Weight: 6.7kg <u>Large Box</u> Height: 290mm Width: 215mm Depth: 105mm Weight: 9.2kg

5.2.5 **Bat bricks** have been selected to be incorporated into the buildings. The bricks should be positioned high on the walls of the building, and the gap within the brick only a few centimetres wide. These gaps are often overlooked by residents and so should not cause conflict with occupants. Bat bricks should be placed under the eaves at the apex of the south facing gable end walls. These bricks will then allow bats to access the cavity wall spaces (as shown in **Appendix 3**).

5.3 Bird Nesting Provisions

5.3.1 In the UK there are approximately 600 species of birds. Many birds regularly visit gardens and will quickly adopt to new nest boxes, but only when the right box design is selected and situated correctly. Each species prefers a specific nest box design, with different dimensions and hole sizes.

5.3.2 Starlings, house sparrows, tree sparrow, dunnocks, and song thrushes are species that can be found in urban gardens and are locally important (KBAP) and nationally important (NERC S41) species. The boxes incorporated into this

enhancement plan are therefore aimed at attracting these species. A total of 10 bird boxes comprising of 1 bird box on a building and 9 bird boxes installed in clusters of 3 on mature trees on site must be installed as part of the proposed development.

5.3.3 The specifications of all bird boxes to be installed on site post-development are detailed below in **Table 7** below, and locations shown in **Appendix 3**.

Table 7: Bird nesting opportunities to be installed as part of the proposed development.

Bird Box	Number to be Installed	Description	Details
Vivara Pro WoodStone Swift Nest Box (or comparable design) 	4 on buildings	Swifts in the UK have been declining rapidly over the past decades and it is thought that the destruction of suitable nesting habitat is a core reason for this decline. Installing a swift box is a great way to help these birds and to ensure their continued presence in our surroundings. The FSC certified woodstone swift nest box is constructed entirely out of woodstone meaning it is long lasting and won't rot away like a traditional wooden nest box. There is an opening at the back of the box for easy cleaning with the nest entrance on the underside of the box. This type of entrance is preferred by swifts but discourages house sparrows and starlings from occupying the box. This box should be installed at least 5m above the ground, ensuring that there is unobstructed access for birds entering and leaving. If possible, boxes should be sited under the shelter of eaves or overhanging roofs.	Dimensions Length: 245mm Width: 380mm Depth: 265mm Weight: 600g
Vivara Pro Seville 32mm WoodStone Nest Box (or comparable design)	2 (on trees)	Unlike a traditional wooden nest box, these boxes will not rot away or deteriorate and are guaranteed for 10 years. This robust material safeguards against attacks from predators such as woodpeckers, cats and squirrels, whilst also providing a well-insulated interior with a consistent internal temperature (important for breeding). These 32mm hole nest boxes are suitable for blue tits, tree sparrows, house sparrows, great tits, blue tits, nuthatches, coal tits	Dimensions Height: 310mm Width: 200mm Length: 200mm Weight: 6.9kg Entrance hole

		and pied flycatchers and they are available in brown, green or grey to complement both natural woodland and garden settings.	diameter: 32mm
* The bird boxes proposed should be installed onto buildings (of the same box type) in clusters of 3 (as shown in **Appendix 3**).			

5.3.4 Bird boxes on buildings should be securely fastened below the eaves, at least 4m above ground level (to prevent predation by cats). Boxes should be positioned so that the front is facing in an easterly direction, as to avoid direct heat of the sun and prevailing wind and rain.

5.3.5 Bird boxes on trees should be installed in clusters facing in a northerly to easterly direction, thus avoiding strong sunlight and wet winds. Boxes should be installed as to ensure birds have a clear flight path to the bird box without any clutter directly in front of the entrance.

5.4 Invertebrate Provisions

5.4.1 Insects are the primary food source for many rare and/or protected animals that regularly visit gardens, such as locally and nationally important bird and bat species. Therefore, encouraging insects into a site will then attract their rare and/or protected predators.

5.4.2 Many insect species will hibernate over winter, including butterflies, ladybirds and lacewings; of which hibernate in leaf litter or other plant debris. However, residents tend to over-maintain their gardens, often tidying these features away in the autumn. Therefore, these species can be encouraged to stay at the site all year round by erecting suitably designed towers, boxes and/or log piles (Kirby, 2013).

5.4.3 To ensure the site maintains its' value for invertebrates**, 1** insect tower should be placed on site. An example of an insect tower is shown below in **Figure 1**, and its proposed locations on site shown in **Appendix 3**.

Figure 1: Example of an Insect Tower by CJ Wildlife.

5.5 Hedgehog Provisions

Hedgehog Access Holes

5.5.1 Hedgehog numbers have declined by 90% over the past 50 years due to several factors including habitat loss, fragmentation and parasites.

5.5.2 Access to gardens has become increasingly limited for hedgehogs, as fences and walls block their dispersal. A simple solution is to create a 13x13cm access hole at ground level into fences to allow hedgehogs to freely move between green spaces (Bunnell, 2014).

Hedgehog Shelters

5.5.3 Providing shelter for hedgehogs within green spaces will encourage this species to visit the site and utilise the natural space. Therefore, **1** hedgehog shelter must be included post-construction (locations shown in **Appendix 3**).

5.5.4 Hedgehog shelters are simple to construct and should be situated in a sheltered, undisturbed area preferably under vegetation with dried leaves or hay placed inside for bedding (Bunnell, 2014). An example of a hedgehog shelter is shown below in **Figures 2 & 3**.

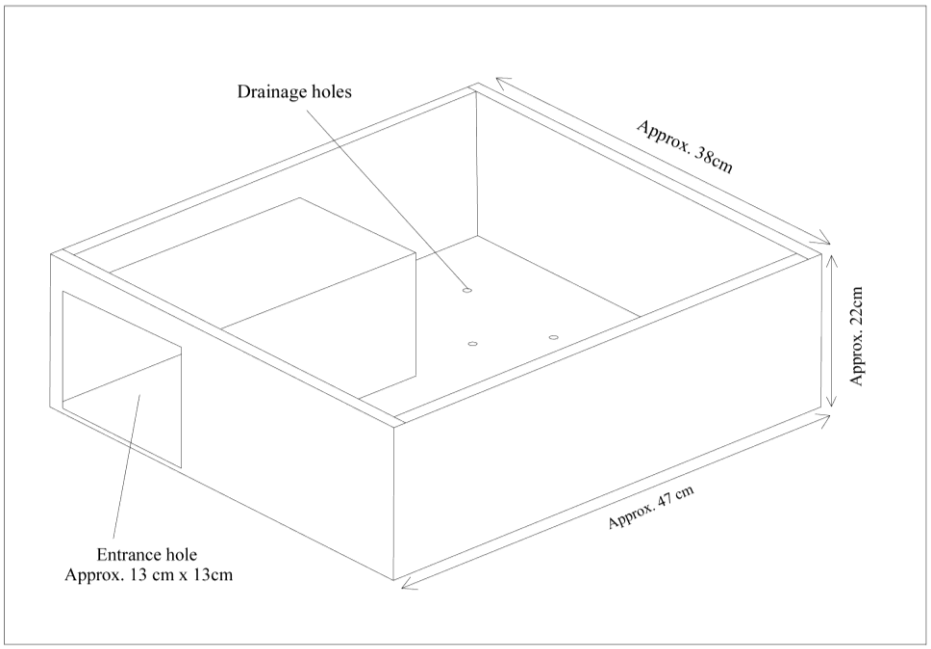

Figure 2: Hedgehog shelter construction and measurements.

Figure 3: Example of hedgehog shelter *in-situ.*

5.6 Management and monitoring

5.6.1 Monitoring of faunal boxes and wildlife features over a 5-year period is recommended. Monitoring is key to understanding how habitat and wildlife features are being used by wildlife on site after the development. Without monitoring, and effective and adaptive management scheme cannot be maintained and revised.

6. Ecological Recommendations

6.1 Lighting

6.1.1 The site is suitable for bats which are nocturnal species sensitive to lighting. This highlighted as the site sits within the Kirklees Bat Alert Zone.

6.1.2 As such, the following lighting guidance measures have been provided in line with recommendations provided by the Institute of lighting Professionals (ILP) and the Bat Conservation Trust (BCT) (ILP & BCT, 2023). The proposed development should seek to:

- Use lighting which is functional and directional only.
- Ensure lighting will not illuminate features of ecological interest such as retained hedgerows, trees or woodlands.
- Prohibit the use of floodlight style lighting on-site. Any lights present must be on timers/motion sensors and not permanently turned on during hours of darkness (from sunset to sunrise).
- Plant natural shrub buffers to minimise light spill onto the site's adjacent habitats.
- Maintain dark zones on site to preserve wildlife areas of low light pollution.
- Use the minimum light levels necessary for the relevant task/function, this may equate to reducing light intensity, and/or using the minimum number of light sources or minimum column height.
- Use hoods, louvres or other luminaire design features to avoid light spill onto retained and newly created areas of vegetation likely to be used by foraging and commuting bats.
- Use light sources that emit minimal ultra-violet light to avoid attracting night-flying invertebrate species which in turn may attract bats to the light (BCT, 2009).
- Use recessed internal light fixtures.

6.1.3 **Note:** Special attention should be made to ensure that no light spill falls upon any of the trees within Ings Grove Park that is directly adjacent to the site, either pre- or post-development.

7. Conclusion

7.1.1 JCA Limited (Ltd.) have been instructed by **West End Joiners & Builders Ltd** to produce an Ecological Design Strategy (EDS) in association with the planning application proposed for **St Pauls Road, Mirfield**.

7.1.2 The development proposed at this site is for the construction of an extra care residential development with associated garden and parking areas.

7.1.3 The site is predominantly hard standing, meaning the site has high potential to increase its biodiversity value through planting of new wildflowers, shrubs and trees. New habitat creation will deliver a biodiversity net gain of **+34.27%** whilst also satisfying the metric Trading Rules.

7.1.4 In accordance with Chapter 15 of the NPPF and the BS 42020 (BSI, 2013) developments should follow the mitigation hierarchy, thereby retaining habitats as the first option, minimising impact as the second and, if these options are not available, providing compensatory measures.

7.1.5 The site has potential to support bats, birds, invertebrates, and hedgehogs. As a result, **2** integral bat bricks (within the building), **7** bat boxes (on trees), **10** bird boxes (1 on a building, 9 on trees), **1** hedgehog shelters, and **1** insect log pile have been recommended. The location of each faunal provision to be installed can be seen in **Appendix 3.**

7.1.6 Monitoring of faunal boxes and wildlife features over a 5-year period is recommended to ensure they are being effective. Should it be identified that the ecological provisions are no longer fit for purpose, revisions should be made to the management plan of the site.

7.1.7 The site is suitable for bats, which are nocturnal species sensitive to lighting. As such, guidance relating to appropriate lighting on site has been provided in **Section 6.1**.

8. References

External References

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JCA Ltd. – Bat Emergence Survey Report, Aug 2024 (22040b/ADo).

JCA Ltd. - 22040a Statutory Biodiversity Metric Calculation Tool.

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Technical References

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Bat Conservation Trust (BCT). http://www.bats.org.uk

Multiple-Agency Geographic Information for the Countryside (MAGIC). http://www.magic.gov.uk

Natural England. http://www.naturalengland.org.uk/

Relevant Legislation:

Wildlife and Countryside Act (WCA) 1981 (as amended)

- http://jncc.defra.gov.uk/page-3614
- https://www.legislation.gov.uk/ukpga/1981/69/contents

The Conservation of Habitats and Regulations (CHSR) 2017.

- https://www.legislation.gov.uk/uksi/2017/1012/contents/made

The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019.

- https://www.legislation.gov.uk/uksi/2019/579/contents/made

Natural Environment and Rural Communities (NERC) Act 2006

- https://www.legislation.gov.uk/ukpga/2006/16/contents

Environment Act 2011

- https://www.legislation.gov.uk/ukpga/2021/30/contents/enacted

Protection of Badgers Act 1992

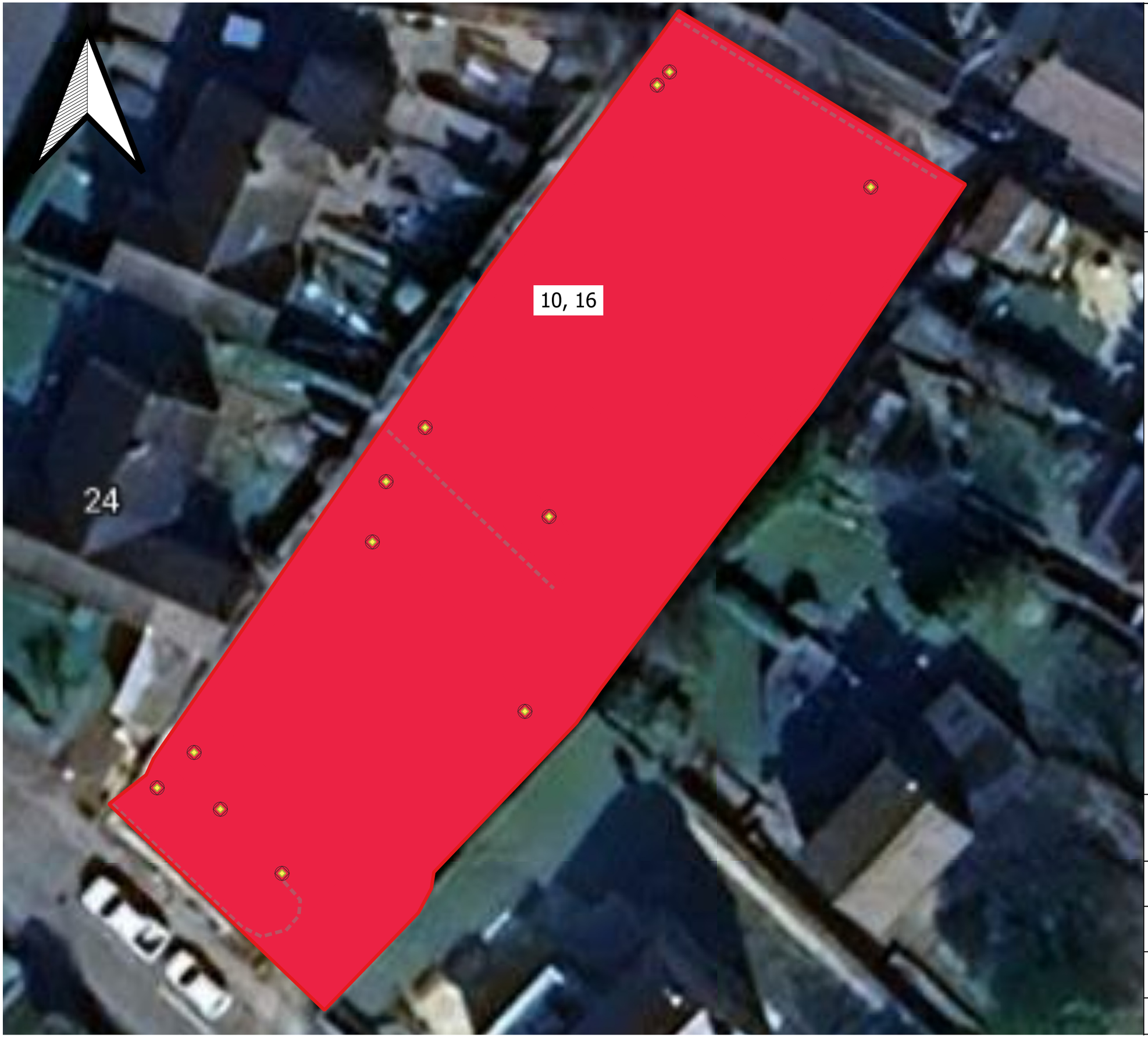
- https://www.legislation.gov.uk/ukpga/1992/51/contents

Countryside and Rights of Way Act 2000

- https://www.legislation.gov.uk/ukpga/2000/37/contents

Appendices

Appendix 1: Baseline Habitat Map



Site name & address
81 Town End
Woodale
Holmfirth
HD9 1QD

Key

Red Line Boundary

Baseline Individual tree -
- Existing Medium Urban Tree
- Existing Small Urban Tree

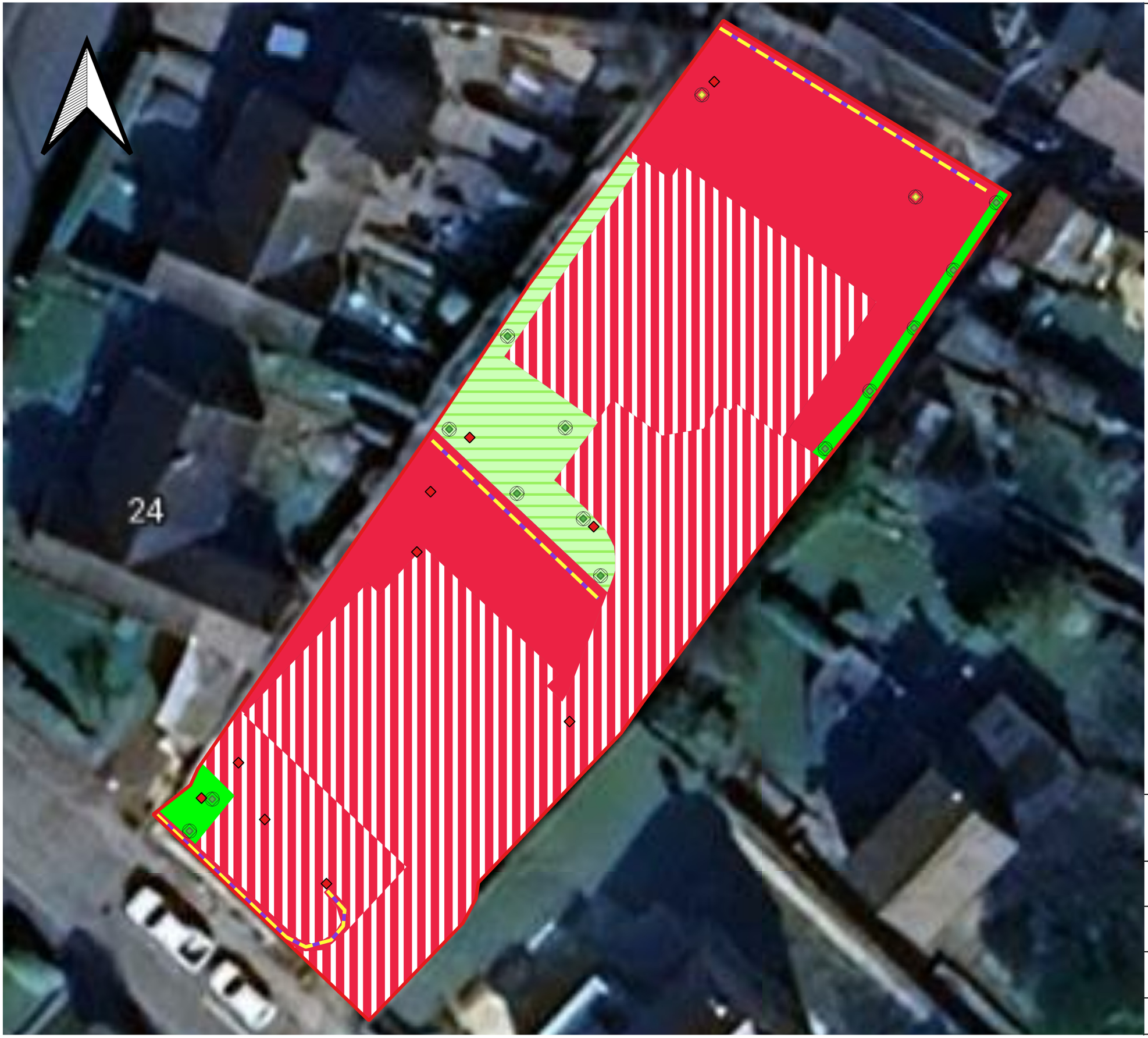
Baseline Hedgerow -
- To be created

Baseline UKHab Habitat -
- Vegetated garden
- 10 - Scattered scrub
- 16 - Tall forbs

Scale
0 5 10 m

Site	Client
81 Town End	AK Planning
Project	**Author**
23081 EDS	Rebecca Petch-Smith
Plan ref	**Revision**
23081/RPS	1

Appendix 2: Proposed Habitat Map



JCA LIMITED

Site name & address
81 Town End
Woodale
Holmfirth
HD9 1QD

Key

Red Line Boundary

Proposed Individual tree -
- Proposed Small Urban Tree
- Retained Medium Urban Tree
- Retained Small Urban Tree
- Lost Urban Tree

Proposed Hedgerows -
- Native hedgerow

Proposed UKHab Habitat -
- Developed land; sealed surface
- Modified grassland
- Other neutral grassland
- Vegetated garden

Scale
0 5 10 m

Site	Client
81 Town End	AK Planning
Project	**Author**
23081 EDS	Rebecca Petch-Smith
Plan ref	**Revision**
23081/RPS	1

Appendix 3: Faunal Box Plan

Drawing Title
Planning Drawing - plot 1

Scale.	Drawing Number	Rev.	Date Drawn
1/100	22/021/07	A	July 2022

JCA LIMITED

Site name & address
81 Town End
Woodale
Holmfirth
HD9 1QD

Key

Faunal Boxes -

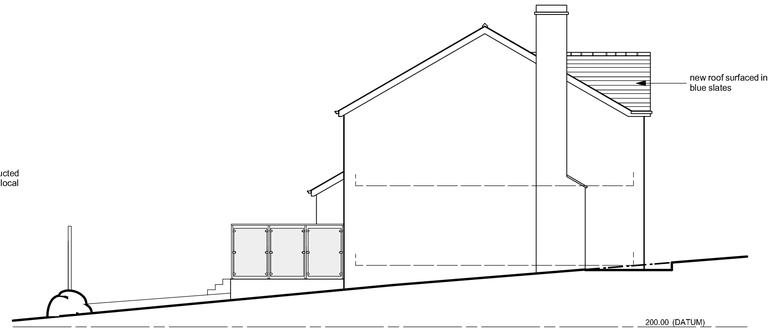
- Bird Boxes
- Bat Boxes
- Hedgehog Shelter
- Insect Tower

Scale 0 5 10 m

Site	Client
81 Town End	AK Planning
Project	**Author**
23081 EDS	Rebecca Petch-Smith
Plan ref	**Revision**
23081/RPS	1

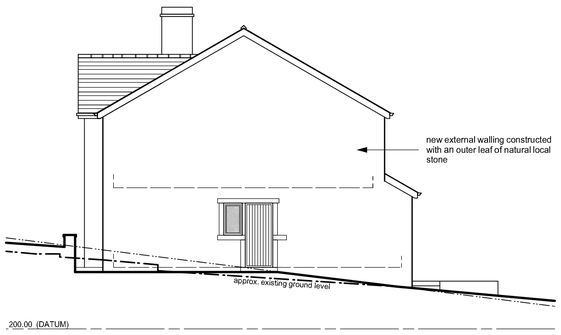
Appendix 4: Proposed Development Plan

south west elevation - plot 1

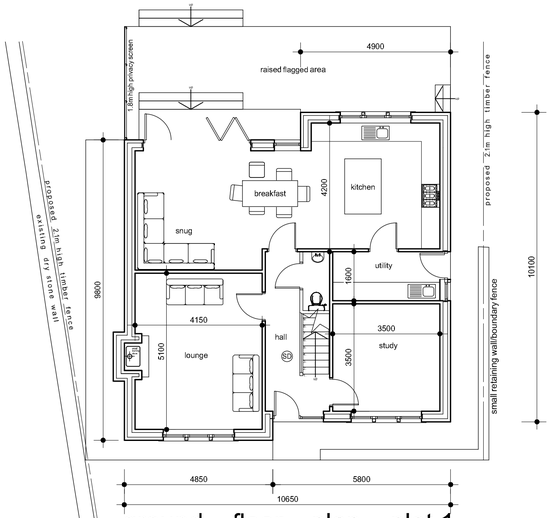


north west elevation - plot 1

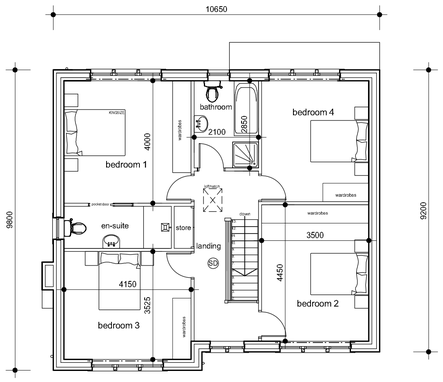
north east elevation - plot 1



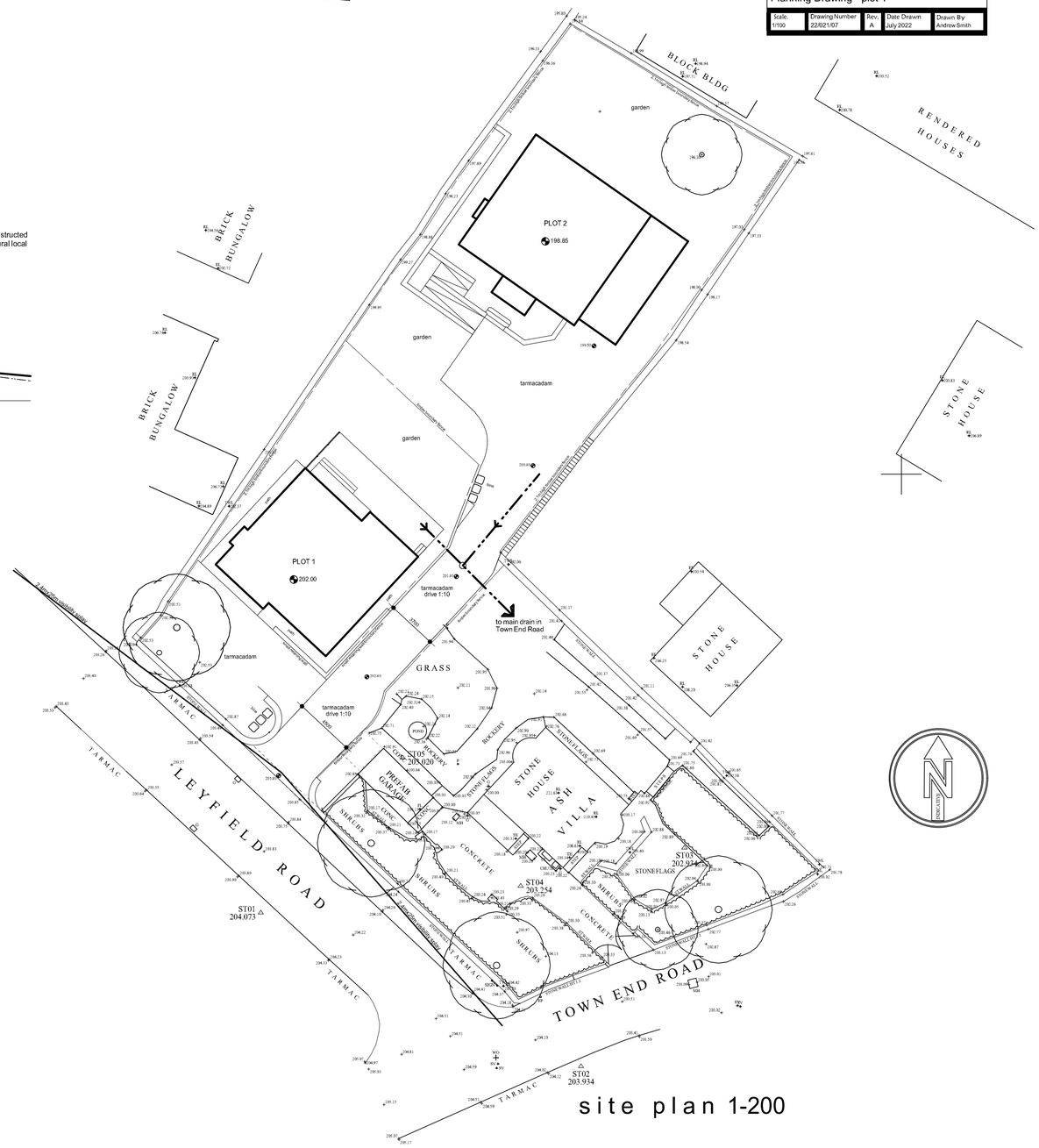
south east elevation - plot 1



ground floor plan - plot 1



first floor plan - plot 1



site plan 1-200

Notes:
This drawing has been prepared specifically for the purpose of Planning Permision (where appropriate) & Building Regulation Approval. Valley Properties accept no liability for errors or omissions. The drawing may be used for estimating purposes, but the Principal Contractor must cost fully from a site investigation. The Contractor is responible for checking site dimensions, materials etc., and all building work, such work being checked by Building Control on site, as may be appropriate. Valley Properties disclaim any liability for works carried out.

Revisions:
Rev.A (08-12-2022) - House type - Plot 2 amended. Highways comments added.
Rev.B
Rev.C
Rev.D

VALLEY PROPERTIES
ARCHITECTURAL DESIGN SERVICES
5 Holmfirth Road
Meltham
Holmfirth HD9 4AA
Tel: 01484 854100 Mob: 07769736142
E-mail: vproperties@supanet.com

Client Details
S&M Proud

Project Title
Proposed erection of 2 detached houses on land to rear of 81 Town End Road Holmfirth

Drawing Title
Planning Drawing - plot 1

Scale.	Drawing Number	Rev.	Date Drawn	Drawn By
1/100	22/021/07	A	July 2022	Andrew Smith

Appendix 5: Author Qualifications

Adam West, Principal Ecologist

BSc (Hons) Animal and Wildlife Management.

Adam joined JCA to lead the expanding ecology department. Having returned to education as a mature student, Adam studied Countryside Management for two years before undertaking a Batchelor's degree, for which he was awarded First Class Honours. Adam has many years' experience in ecological consultancy, working on projects ranging from individual planning applications to national infrastructure projects. Adam holds a Natural England Level 1 great crested newt survey class licence, a Natural England Level 2 bat survey class licence (and the Scottish and Welsh equivalents) and a CSCS card.

Rebecca Petch-Smith, Graduate Ecologist

MBiol (Hons) Zoology

Rebecca joined JCA in 2025 after spending 18 months in the teaching industry. Prior to this she graduated from the University of Leeds with a 2:1 Honours Integrated Master's degree in Zoology. As part of her degree programme, Rebecca spent time in Kenya conducting surveys on African ungulates. Rebecca began assisting on bat emergence surveys in 2024, after which, she gained employment as a Graduate Ecologist at JCA Ltd. She is currently conducting Preliminary Ecological Appraisals, Bat Scope Surveys and Biodiversity Net Gain Assessments and working towards her protected species licence.

The Information and advice which we have prepared and provided is true and has been prepared and provided in accordance with the CIEEM's Code of Professional Conduct. We confirm that the opinions expressed are our true and bona fide opinions.

Signed

..

Rebecca Petch-Smith *MBIOL BSc (Hons)*

18/08/2025

Approved by

.....

Adam West *ACIEEM, BSc (Hons)*

11/09/2025

For and on behalf of ***JCA Ltd***

Registered Office:

Unit 80
Bowers Mill
Branch Road
Barkisland
Halifax
HX4 OAD

Tel. 01422 376335
Fax. 01422 376232
Email : info@jcaac.com
Web : www.jcaac.com

ECOLOGICAL SERVICES

Ecological Pre-Planning Services

- Phase 1 Habitat Surveys
- Great Crested Newt eDNA Sampling
- Protected species: Bat, Wintering and Nesting Bird, Badger, Amphibian, Otter, Water Vole, White-Clawed Crayfish, Dormice and Reptile Surveys.
- Preparation for Environmental Impact Assessment (EIA)
- Invasive Species Surveys
- Code for Sustainable Homes
- Butterfly & Insect Surveys

Ecological Post-Planning Services

- Biodiversity Enhancement Plans
- Protected Species Mitigation
- Ecological Management (Bat and Bird box installation and inspection)
- Planting Schemes
- Monitoring of bird or bat boxes.

ARBORICULTURAL SERVICES

Guidance for Architects & Developers

- British Standard 5837 Surveys
- Arboricultural Implications Assessments (AIA)
- Arboricultural Method Statements (AMS)

Advice for Engineers, Loss Adjusters and Insurers

- Tree Surveys for Subsidence
- Heave Assessment
- Tree Root Identification

Advice for Local Authorities and Social Housing

- Tree Safety Surveys
- Specialist Decay Detection
- Landscape and Orchard Design

Tree Advice for the Legal Profession

- Subsidence Litigation
- Personal Injury and Accident Investigation
- Expert Witness, Planning Inquiries and Appeals

Veteran Tree Management

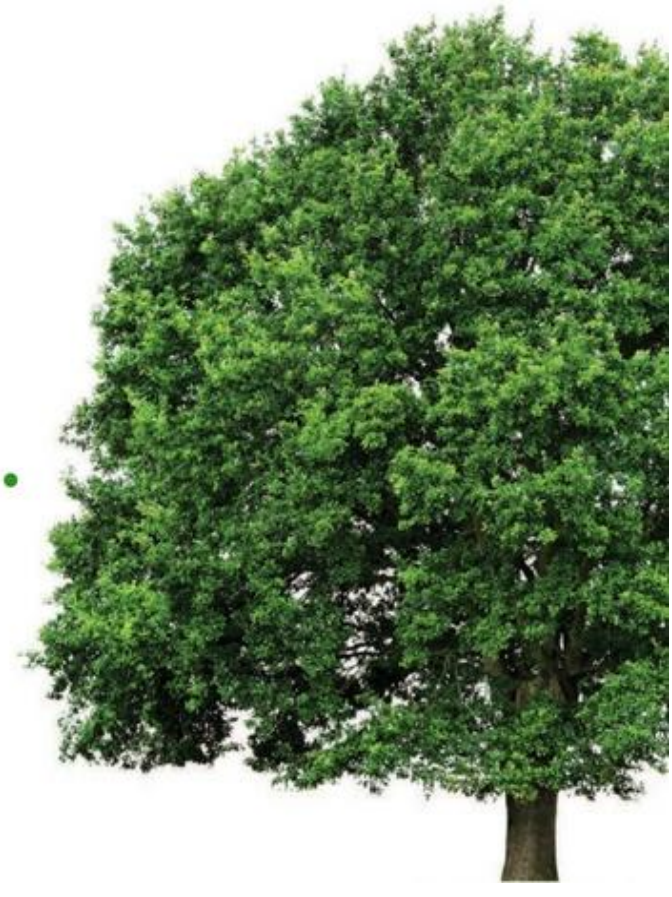
- Ancient Woodland Management
- Veteran Tree Management

Tree Health and Pest and Disease Management

- Pest and Disease Surveys
- Tree Health Checks
- Disease Mitigation and Control

JCA Limited

Arboricultural & Ecological Consultants



HEAD QUARTERS

Unit 80 Bowers Mill,
Branch Road,
Barkisland
Halifax, HX4 0AD

Company Reg No: 05005041
VAT No: 686 4674 78