BIODIVERSITY ENHANCEMENT PLAN SURVEY & REPORT

at

Land adj 40 Manchester Road
Huddersfield
West Yorkshire
HD7 5HZ

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JCA Ref:
22904a/RPS

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JCA Limited
Arboricultural & Ecological Consultants

Quality Assurance

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22904a/RPS	001	N/A	N/A	N/A	N/A	23/06/25	Rebecca Petch-Smith	23/06/25	James Foster

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*

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1 Introduction

1.1 Purpose of the Report

1.1.1 In April 2025, JCA Ltd were commissioned by Gleeson Homes to produce a **Biodiversity Enhancement Plan** (**BEP**) for a site located at **Land at Manchester Road, Huddersfield, HD7 5HZ,** hereafter referred to as 'the site'.

1.1.2 This report will aim to enhance 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 The following reports and plans have been used in the production of the BEP and should be read in conjunction with this report:

- JCA Ltd. – Preliminary Ecological Appraisal, June 2025 (JCA Ref: 22904/RPS)

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 on this site is the construction of a pair of semi-detached dwellings.

1.5 Site Description

1.5.1 The site is situated to the southwest of Huddersfield, at grid reference: SE073135.

1.5.2 The site is comprised of predominantly woodland and tall forbs, there is a patch of introduced shrub and grassland to the north of the site with 4 hardstanding sheds. The site is bordered to east, south and west by residential dwellings and gardens. The site is bordered to the north by Manchester Road, grassland and trees.

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2 Local Biodiversity Action Plan

2.1.1 The Local Biodiversity Action Plan that covers the site is the **Kirklees BAP** (**KBAP**). This BEP aims to incorporate KBAP habitats and to attract and support NBAP species, through either directly planting KBAP floral species, or creating habitats that will attract these species.

2.1.2 The habitats listed within the Kirklees BAP are;

Table 1: List of Kirklees BAP priority habitats.

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 Kirklees BAP are;

Table 2: List of Kirklees BAP priority species.

Group	Common name	Scientific name
Birds	Common bullfinch	*Pyrrhula pyrrhula*
Birds	Common cuckoo	*Cuculus canorus*
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*

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Birds	Grey partridge	*Perdix perdix*
Birds	Hawfinch	*Coccothraustes coccothraustes*
Birds	Hedge accentor (dunnock)	*Prunella modularis*
Birds	House sparrow	*Passer domesticus*
Birds	Lesser redpoll	*Acanthis cabaret*
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*

2.1.4 Measures to attract and support LBAP species, through either directly planting LBAP floral species, or creating habitats that will attract these species, will be included within this report.

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3 Retention of Ecologically Valuable Features

3.1 Pre-development

3.1.1 For a comprehensive description of the site's current ecological value please see the accompanying Preliminary Ecological Appraisal (PEA) produced by JCA Ltd (Ref: 22904/RPS). A summary of the habitats and features present in this report can be seen below.

3.1.2 The following habitats were identified on site:

- Modified grassland *(UKHab code: g4)*
- Bramble scrub *(UKHab code: h3d)*
- Introduced shrub *(UKHab code: u, 847)*
- Bare ground *(UKHab code: u, 510)*
- Buildings *(UKHab code: u1b5)*
- Ruderal/Ephemeral *(UKHab code: u1f)*
- Other broadleaved woodland *(UKHab code: w1g)*

3.1.3 All habitats on site were species poor, consisting of only common floral species typical of improved land.

3.1.4 The PEA by JCA Ltd. noted the sites potential to support nesting birds, hedgehogs and invertebrates.

3.1.5 JCA Ltd. recommended the following additional survey work (PEA Section 4)

- *'Vegetation clearance should be conducted outside of the nesting bird season to avoid disturbing the birds (the nesting season is considered to run between 1st March and 31st August). Where this is not possible a suitably qualified ecologist should check potential nesting habitat immediately prior to clearance. Where nesting birds are encountered works must be postponed until the nestlings have fledged.'*

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4 Invasive Weed Eradication

4.1.1 Invasive plant species are those plants listed under Schedule 9, Part II of the Wildlife and Countryside Act 1981 (as amended) or described on the Non-Native Species Secretariat (NNSS) website. Invasive species include, but are not limited to; giant hogweed, Japanese knotweed, Himalayan balsam, rhododendron, and montbretia. Under the Wildlife and Countryside Act 1981 (as amended) it is an offence to plant or cause the spread of Invasive Plant Species in the wild and therefore it is a legal obligation to remove them.

4.1.2 Rhododendron (*Rhododendron ponticum)*: Occurs in the woodland on site. Before development starts this needs to be removed.

Rhododendron is an evergreen shrub often reaching 4-5m height at maturity, or even higher in the right conditions (PCA 2018). The leaves are dark green and lathery, elliptical in shape, are up to 22cm in length, and grow in whorls around the stem. When in flower, flowers vary in colour form pink to purple. This species primarily spreads through seed dispersal, each flower head can produce 3000-7000 seeds, which can be spread via wind, water, animals, and in the topsoil. Regeneration is also possible through suckering from the existing root network or through the movement of large roots or stumps. Flowering generally occurs May-June, and seed dispersal occurs around February-March, with seeds viable up to 1 year after dispersal.

Rhododendron negatively impacts native plant communities by out-competing and shading out other species, obliterating ground vegetation and preventing regeneration and regrowth of trees in woodland areas. It can also be a host to *Phytophora ramorum* and *P. kernoviae*, water moulds that can cause diseases and death in oaks, beeches, and other trees and woody shrubs.

Further information can be found on the NNSS website and factsheet:

https://www.nonnativespecies.org/non-native-species/information-portal/view/3004

https://www.nonnativespecies.org/assets/Uploads/ID_Rhododendron_ponticum_Rhododendron.pdf

Management advice – https://www.nonnativespecies.org/non-native-species/management-guidance/terrestrial-plants-2/#Rhododendronponticum

Chemical and Physical Eradication: Being a deep-rooted species complete removal by physical excavation is not the preferred strategy. Instead, a combination of physically removing above ground vegetative matter and the application of an herbicide is considered best practice. Once the plant has been trimmed and cut back to the stump, ammonium sulphate or glyphosate should be applied to holes drilled into the plant's exposed stump.

Disposal: Green vegetation, seeds, and rhizomes can be stockpiled, desiccated, and burnt, or disposed of by a suitably licensed waste-disposal facility. Woody material can be chipped and retained onsite (PCA 2018).

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Monitoring: Survey annually until 2 full seasons have passed without regrowth, with further visits every 2 years for 6 years (PCA 2018).

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5 Habitat Creation

5.1 Summary

5.1.1 As the site contains only habitats of low and medium conservation value, there is scope to enhance the sites wildlife value post development.

5.1.2 Area habitats:

- Buildings - approximately 124 m^2 will be created
- Developed land, sealed surface - approximately 349 m^2 will be created
- Vegetated gardens - approximately 137 m^2 will be created

5.1.3 Gardens can support a surprising and diverse array of wildlife (Owen 1991). There are number of practices that can maximise biodiversity in back gardens and are particularly relevant to this proposed development. This can be achieved by minimizing practices such as pesticides, planting flowers and trees, creating wildlife features such as ponds piles of logs and providing artificial nesting and roosting sites.

5.1.4 There are number of practices that can maximise biodiversity in back gardens and are particularly relevant to this proposed development. This can be achieved by minimising practices such as pesticides, by planting native flowers, shrubs/hedges, and trees, and creating wildlife features such as piles of logs and providing artificial nesting and roosting sites.

5.1.5 The site can be of benefit to local wildlife through incorporating one or more of the following:

- Planting of patches of wildflower-rich grassland,
- Planting of native shrubs/hedgerows,
- Planting of individual trees,
- Inclusion of faunal boxes to target priority species of local importance, namely, bat, bird, hedgehogs, and invertebrate species.

5.1.6 It is recommended that consultation with a landscape architect is conducted to prepare a planting plan to improve the habitats present and create new habitats, including incorporating plant species beneficial to biodiversity.

5.1.7 It is recommended that a planting plan should include night-scented flowers that will attract night-flying insects, particularly moths, which in turn are likely to attract bats. Such plants include honeysuckles *Lonicera* spp, jasmines *Jasminum* spp, evening primrose *Oenothera biennis*, and sweet rocket *Hesperis matronalis*. Further advice on bat-friendly plants and gardening can found in Encouraging Bats from the Bat Conservation Trust (BCT).

5.2 Grassland Planting

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5.2.1 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.

5.2.2 The species chosen include those that are shade tolerant as they will be subject to a degree of shading by the surrounding trees. Other species are those more typical of wildflower grassland planting, such as those that are nectar and pollen rich, and so will attract insects such as bees and butterflies. The grasses are visually attractive, and many are the host plant of butterfly species. It is anticipated that the insects that are attracted to the Site will then provide a food source for larger animals, thus encouraging species such as bats and birds to the site. The recommended seed mix is EM1 Basic General Purpose Meadow Mixture from Emorsgate Seed, sown at 40kg per hectare. A list of the species included within the seed mix can be seen below in **Table 3**.

Table 3: List of species in EM1 Basic General Purpose Meadow Mixture from Emorsgate Seeds.

Flowering Plants			Grasses		
Botanical Name	**Common Name**	**%**	**Botanical Name**	**Common Name**	**%**
Achillea millefolium	Yarrow	1.00	*Agrostis capillaris*	Common Bent	8.00
Anthyllis vulneraria	Kidney vetch	1.00	*Cynosurus cristatus*	Crested Dog's-tail	28.00
Betonica officinalis	Betony	0.40	*Festuca rubra*	Red fescue	24.00
Centaurea nigra	Common Knapweed	1.50	*Phleum bertolonii*	Smaller Cat's-tail	4.00
Galium album	Hedge bedstraw	0.40	*Poa pratensis*	Smooth-stalked meadow grass	16.00
Galium verum	Lady's Bedstraw	1.50		**Total**	**80**
Knautia arvensis	Field Scabious	0.40			
Leontodon hispidus	Rough hawkbit	0.40			
Leucanthemum vulgare	Oxeye Daisy	1.00			
Lotus corniculatus	Birds-foot trefoil	0.60			
Medicago lupulina	Black medick	1.00			
Plantago lanceolata	Ribwort plantain	0.40			
Plantago media	Hoary plantain	2.00			
Primula veris	Cowslip	2.00			
Prunella vulgaris	Selfheal	0.40			
Ranunculus acris	Meadow Buttercup	0.40			
Ranunculus bulbosus	Bulbous buttercup	1.60			
Trifolium repens	White clover	4.00			
	Total	**20**			

5.3 Hedgerow Planting

5.3.1 Full details can be found in Section 5.3 of the HMMP.

5.3.2 Incorporating an area of shrubs or by planting border hedges, rather than a fence of wall, will benefit a range of species by providing additional habitats for invertebrates,

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nesting opportunities for birds, and resting/commuting opportunities for hedgehogs.

5.3.3 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. For a hedgerow, shrubs should be planted every 30cm in a double staggered row. The following table gives examples of native species that would be suitable for creating a shrub patch or hedgerow.

Table 8: Recommended species for native shrub/hedgerows.

Botanical Name	Common Name	Size at purchase
Acer campestre	Field Maple	80-100cm
Corylus avellana	Hazel	80-100cm
Crataegus monogyna	Hawthorn	80-100cm
Fagus sylvativa	Beech	80-100cm
Ilex aquafolium	Holly	80-100cm
Prunus avium	Wild Cherry	80-100cm
Prunus spinosa	Blackthorn	80-100cm
Salix caprea	Goat willow	80-100cm
Viburnum opulus	Guelder Rose	80-100cm

5.4 Tree Planting

5.4.1 Tree planting will benefit a range of species by providing additional habitats for invertebrates, nesting opportunities for birds, and providing forage in the form of berries and fruit (dependant on tree species).

5.4.2 The recommended species are all UK natives with 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 in order 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 in order to provide useful screening.

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. Trees have been 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.

The following table lists recommended native tree species that would be suitable for a garden. Consideration is given to availability, immediate impact, ease of installation and likelihood of successful establishment.

Table 9: Recommended species of native deciduous trees.

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Botanical Name	Common Name	Size at Purchase
Acer campestre	Field maple	Standard
Betula pendula	Silver birch	Light standard
Crataegus monogyna	Hawthorn	Standard
Prunus avium	Wild cherry	Standard
Prunus padus	Bird cherry	Standard
Sorbus aria	Common whitebeam	Standard
Sorbus aucuparia	Rowan	Standard

5.5 Aftercare

5.5.1 All newly planted trees and shrub beds are to be thoroughly watered immediately after planting and during any prolonged periods of dry weather.

5.5.2 Once planted, trees and shrubs should be inspected on an annual basis for signs of poor condition or damage. Any trees or shrubs that die within the first 5 years after planting will be replaced.

5.5.3 Trees and shrubs in public open spaces will be the responsibility of the managing agent for the site whether it is a private company contracted to do the work or the Local Authority. All tree and shrub works should be completed outside of the breeding bird period (1st Mar-31st Aug).

5.5.4 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 manually without the use of herbicides.

5.5.5 Tree ties should be inspected annually and adjusted if required. Tree ties and stakes should be removed within three years of planting unless establishment is deemed to be unusually slow.

5.5.6 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.

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6 Faunal Boxes

6.1 Summary

6.1.1 In total **1** bat bricks/boxes, **3** bird boxes, **1** hedgehog shelters and **3** insect boxes/bee bricks have been recommended.

6.2 Bat Roosting Opportunities

6.2.1 All British 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 could be linked to a number of factors, including habitat loss, pesticide over-use, habitat fragmentation, loss of roost sites and roost disturbance.

6.2.2 All bat species are European Protected Species (EPS) under **Schedule 2** of the **Conservation of Habitats and Species Regulations (CHSR) 2017** (retained in UK law by **CHSR (Amendment) (EU Exit) 2019**), with additional protections under **Schedules 5 and 6** of the **Wildlife & Countryside Act (WCA) 1981 (as amended)**. Additionally, six species (including soprano pipistrelles and noctules) are priority species under **Section 41** (**S41**) of the **Natural Environment & Rural Communities (NERC) Act 2006**, designating them as species of principal importance for the purpose of conserving biodiversity.

6.2.3 The desktop study conducted as part of the PEA by JCA Ltd. identified at least **four** bat species within 2km of the site, as well as unidentified species:

- Common pipistrelle *Pipistrellus pipistrellus*
- Noctule *Nyctalus noctula*
- Unidentified myotis *Myotis sp.*
- Unidentified bat species

6.2.4 Pipistrelles typically roost within structures, but also use tree holes and crevices, whereas noctules are primarily tree roosting species. Therefore, the types of bat boxes recommended for the Proposed Development will provide roosting opportunities for a range of bat species.

6.2.5 Box Selection & Positioning: There is a wide range of different bat boxes available, including both internal and external designs. External designs include the traditional wooden and woodcrete boxes. Internal designs include boxes that can be built into the walls, with a front that mimics the brickwork of the building, essentially becoming invisible. Other roost opportunities include cutting slots into soffit boxes, using bat bricks that lead into cavity walls and using lifted tiles to allow access into the loft.

6.2.6 **Bat bricks** (on buildings) have been selected to incorporate into the new building. The bricks are positioned high on the walls of the building, and the gap within the brick is only a few centimetres wide. These gaps are often overlooked by residents and so

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should not cause conflict with buyers. Bat bricks should be placed under the eaves at the apex of the **south** facing walls. These bricks will then allow bats to access the cavity wall spaces.

6.2.7 **Bat Boxes** (on trees) should be positioned at least 5m high, with their front facing **south**. The selected boxes should be constructed of woodcrete or similar in order increase their life expectancy. A range of different designs should be selected in order to increase the likelihood of bats roosting within the site.

6.2.8 The specifications of all bat bricks/boxes recommended to be installed onsite post-development are detailed below in the table below.

Table 10: Bat roosting opportunities to be installed as part of the Proposed Development.

Bat Brick/Box	Number to be Installed	Description	Details
Ibstock Enclosed Bat Box 'C' (or a comparable design) 	1 (on the proposed 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 Large Box Height: 290mm Width: 215mm Depth: 105mm Weight: 9.2kg

6.3 Bird Boxes

6.3.1 In the UK there are approximately 600 species of bird, each occupying a different habitat and present in a different region of the country. 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.

6.3.2 The specifications of all bird boxes recommended to be installed onsite post-development are detailed below in the table below.

Table 9: Bird nesting opportunities to be installed as part of the Proposed Development.

Bird Box	Number to be Installed	Description	Details

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Vivara Pro WoodStone Swift Nest Box (or comparable design) 	3 (on the proposed 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

6.3.3 Bird boxes on **buildings** should be securely fastened below the eaves, at least 5m above ground level (to prevent predation by cats). Boxes should be positioned so that the front is facing in a **northerly** to **easterly** direction, as to avoid direct heat of the sun and prevailing wind and rain.

6.3.4 The installation of all bird boxes is to be undertaken immediately after the completion of the Proposed Development.

6.4 Insect Boxes

6.4.1 Insects are the primary food source for many of the rare or protected animals that regularly visit gardens. Thus, encouraging insects into a site will then attract rare and/or predators, such as birds and bats.

6.4.2 Many insect species will hibernate over winter in their adult state, such as butterflies, ladybirds and lacewings. In nature, these insects would hibernate within features such as leaf litter or other plant debris. However, gardeners 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 boxes (Kirby 2003).

6.4.3 To ensure the Site maintains its' value for invertebrates**, three** insect towers should be placed attached to a suitable fence, post, or other structure. A suitable Insect Tower design by CJ Wildlife can be seen below in **Figure 1**. This particular model provides a variety of habitats for various insects, including butterflies, solitary bees, lacewings, and ladybirds

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

6.5 Hedgehog Shelters

6.5.1 Hedgehog numbers have declined by 90% over the past 50 years due to a number of factors including habitat loss, fragmentation and parasites. Providing shelter and a means of dispersal in gardens will encourage hedgehogs to visit the site and utilise the natural space.

6.5.2 Hedgehog shelters are simple to construct. Situate in a quiet corner of a garden, preferably under vegetation. Dried leaves or hay are placed inside for bedding (Bunnell, 2014).

6.5.3 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 in each garden to allow hedgehogs to freely move between green spaces (Bunnell 2014). These 'hedgehog highways' (PTES, 2018) should have appropriate signage installed to indicate their purpose and stipulate that they should remain open.

6.5.4 Providing shelter for hedgehogs within green spaces will encourage this species to visit the Site and utilise the natural space. Therefore, **four** hedgehog shelters should be placed in a sheltered position.

6.5.5 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 **Figure 2.**

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Figure 2: Example of hedgehog shelter *in-situ.*

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7 Ecological Recommendations

7.1 Lighting

Lighting Scheme: The development will likely increase lighting levels. All lighting must consider wildlife and be in accordance with the Institution of Lighting Professionals (ILP) Guidance Notice GN01 (2021) and GN08 (2023). A key point is the avoidance of internal and external light spill. Where possible, lighting should be timed, or on sensors and avoid the hours between sunset and sunrise, when bats are out foraging.

All lighting installed as part of the development will be in line with Guidance Note 08/23 Bats and Artificial Lighting at night. The following will be required:

- LED lighting will be used and light levels will be kept as low as possible. Metal halide, fluorescent sources will not be used.
- Lighting will be directed to where it is required.
- Only luminaires with no light output above 90 degrees and/or an upward light ratio of 0% and with good optical control will be used, luminaires will always be mounted on the horizontal, i.e. no upward tilt.
- Any external security lighting will be set on motion-sensors and short (1min) timers.
- Internal lighting within the new rooms will be recessed where installed in proximity to windows to reduce glare and light spill.
- Light sources will emit minimal ultra-violet light, peak higher than 550nm and be of a warm white spectrum (ideally <2700 Kelvin).
- The use of bollard or low-level downward directional luminaires is strongly discouraged.

Providing the Lighting Strategy is adhered to, there will be an insignificant effect on the bat assemblage from lighting during the operational phase.

7.2 Vegetation removal and excavations

Any vegetation removal should ideally take place outside of the bird nesting season (1st Mar-31st Aug). If works occur within this time, a preconstruction site walkover by a suitably competent ecologist should occur no more than **24 hours** prior to any vegetation removal and works is required. The ecologist will inspect any trees/vegetation to be removed or adjacent to any construction for evidence of nesting birds.

The site has the potential to support nesting birds and hedgehogs. All native reptiles are protected under WCA Schedule 5. Hedgehogs are protected under WCA Schedule 6, with additional protection during hibernation and while raising their young. Clearance of the site must take place under the supervision of an **Ecological Clerk of Works (ECoW)**. The **ECoW** will conduct a fingertip search of the areas to be cleared and, should any hedgehogs or reptiles be found, they will move the animal to a safe place containing suitable habitat for the species.

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To permit the migration and safe passage of these species through the site, any excavations created during the development stage must be covered at night or appropriate escape routes implemented. A plank of wood (or similar) is to be placed at a 45-degree angle to prevent an animal getting trapped. Any pipes left open overnight must also be capped.

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8 Conclusion

8.1.1 As per the BS 42020 (BSI, 2013) developments should following 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.

8.1.2 It is recommended to create areas of wildflower grassland, planting of shrubs/hedgerows, and planting of native trees. The habitats should contain plant species to encourage biodiversity, particularly those that will attract food insects for bats (as advised in Encouraging Bats).

8.1.3 The site has the potential to support protected or notable species: bats, nesting birds, and hedgehogs, as well as a range of invertebrate species that will act as a food source and provide pollination services. As a result, it is recommended that **1** bat bricks/boxes should be positioned around the site, within the new building and on suitably sized trees. **3** bird boxes, are to be installed onto the building. **3** mixed insect boxes aimed at attracting invertebrates are to be installed around the site. **1** hedgehog shelter is to be installed, and multiple hedgehog highways in new walls/fences to allow access across the site.

8.1.4 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 a scheme can't be maintained and revised.

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9 References

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<http://www.legislation.gov.uk/ukpga/2000/37/pdfs/ukpga_20000037_en.pdf?view=interweave>

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Appendices

Appendix 1: Proposed Development and Placement of Faunal Boxes

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Site name & address

Land adj 40 Manchester Rd
Huddersfield
HD7 5HZ

Key

Faunal Boxes

- Bat Box
- Bird Box
- Insect Box
- Hedgehog Box

Proposed UKHab Habitat:

- vegetated garden
- u1b - developed land. sealed surface
- u1b5 - buildings
- Red Line Boundary

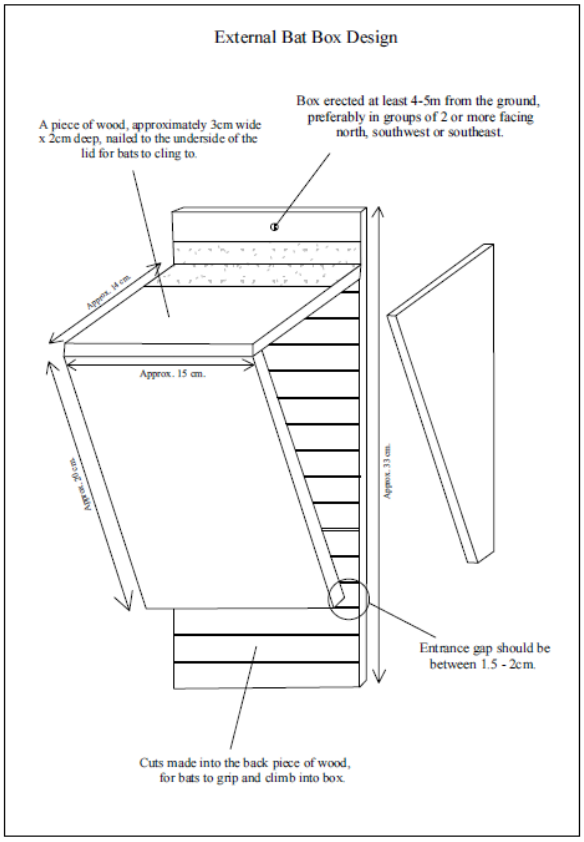
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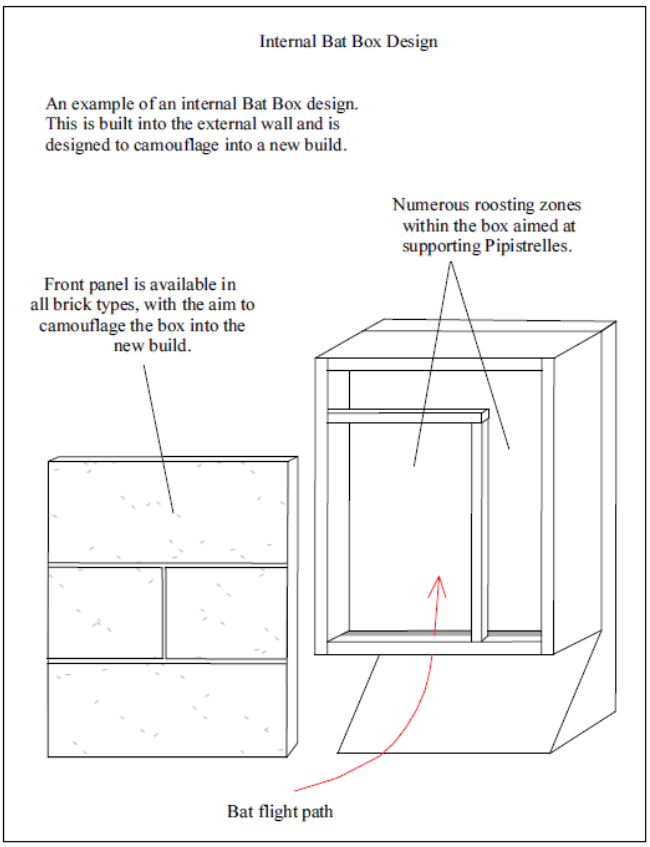
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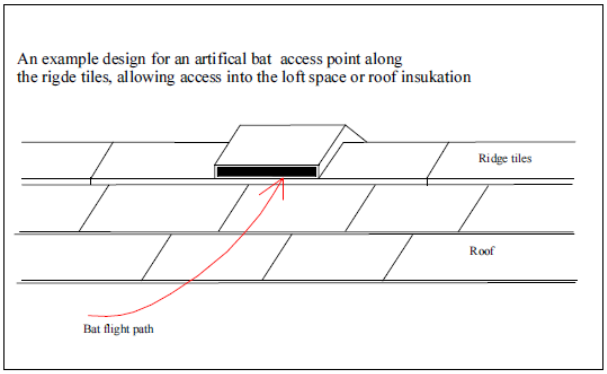
Site	Client
Land adj 40 Manchester Road	SB Homes Limited
Project	**Author**
I22904a BEP	Rebecca Petch-Smith
Plan ref	**Revision**
22909a/RPS	001

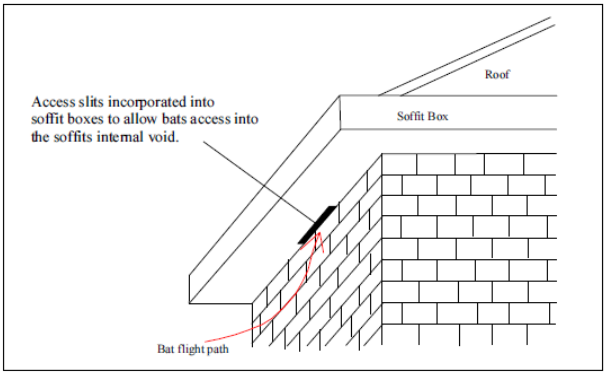
Contains Ordanance Survey data © Crown copyright and database right 2025

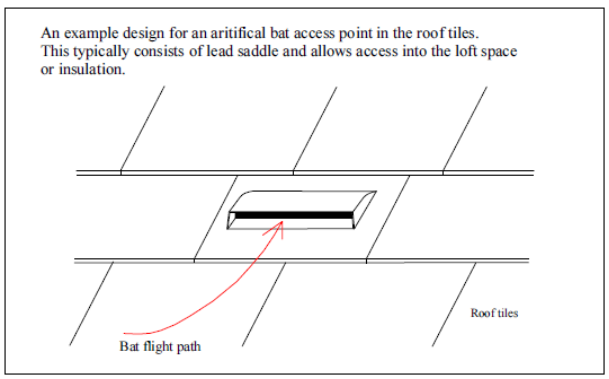
Appendix 2: Examples Artificial Bat Box Designs

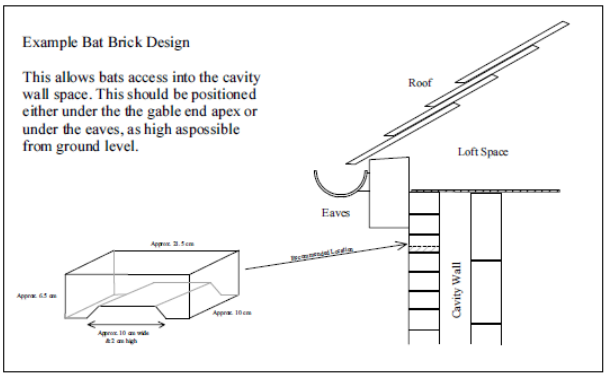








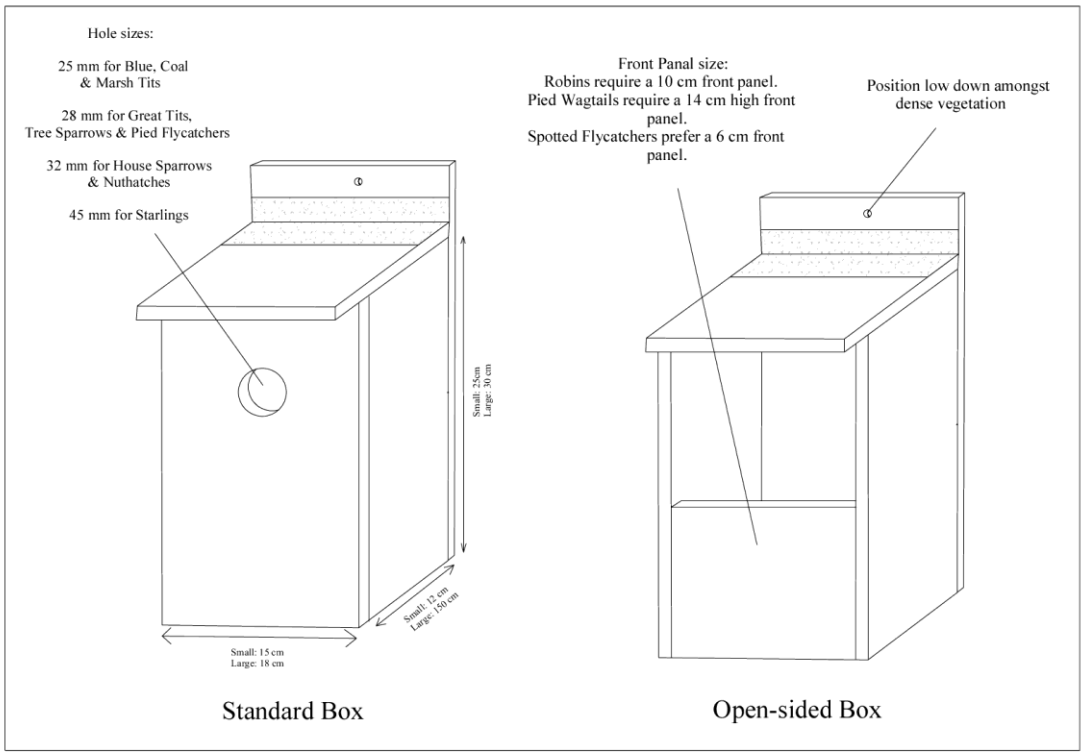




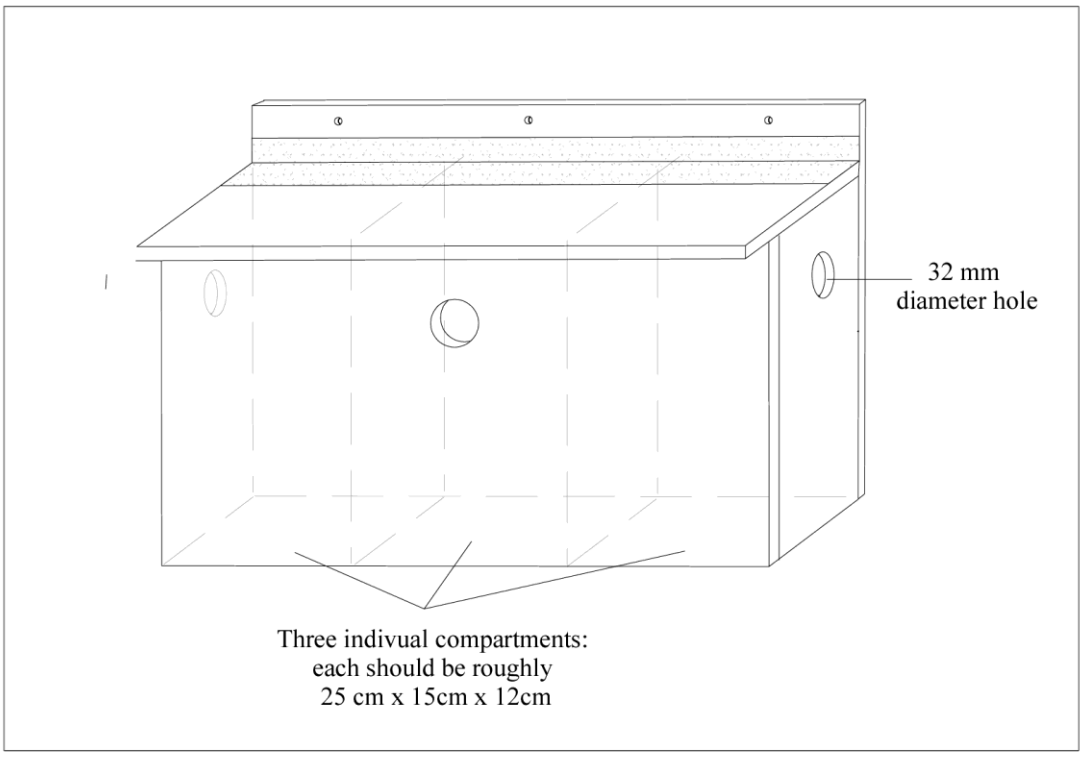
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Appendix 3: Examples Artificial Bird Box Designs

An example of two different bird box designs



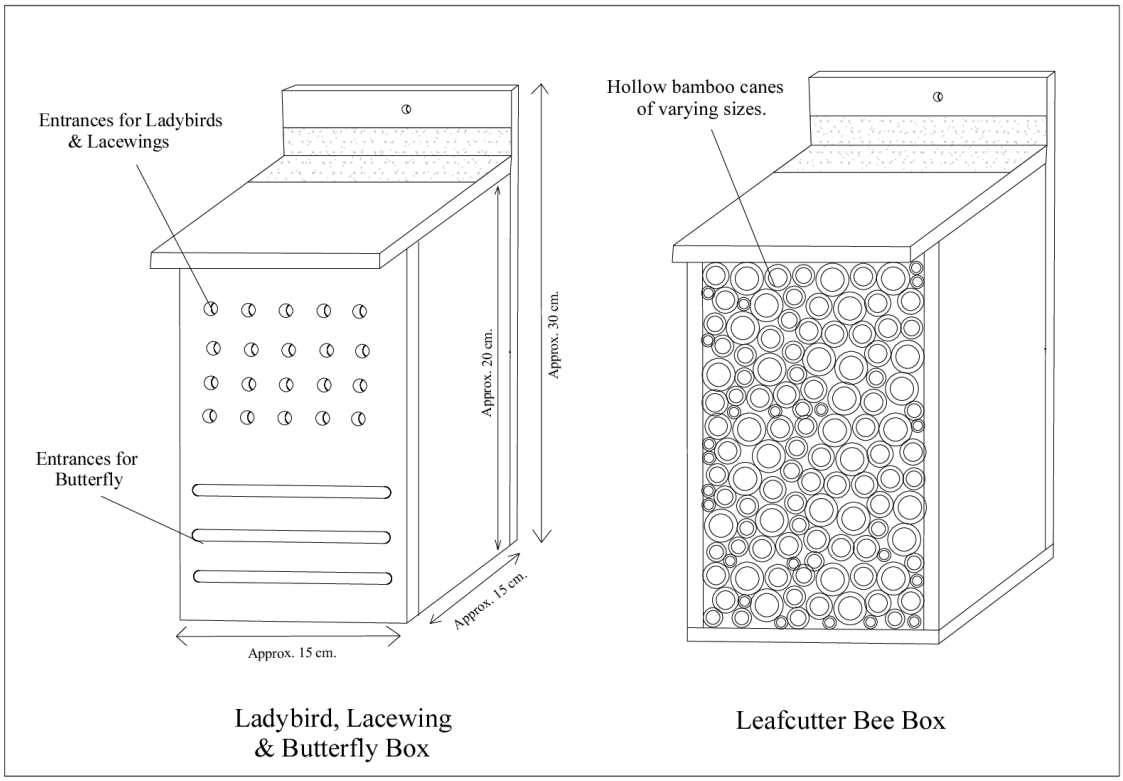
An example of a House sparrow box design



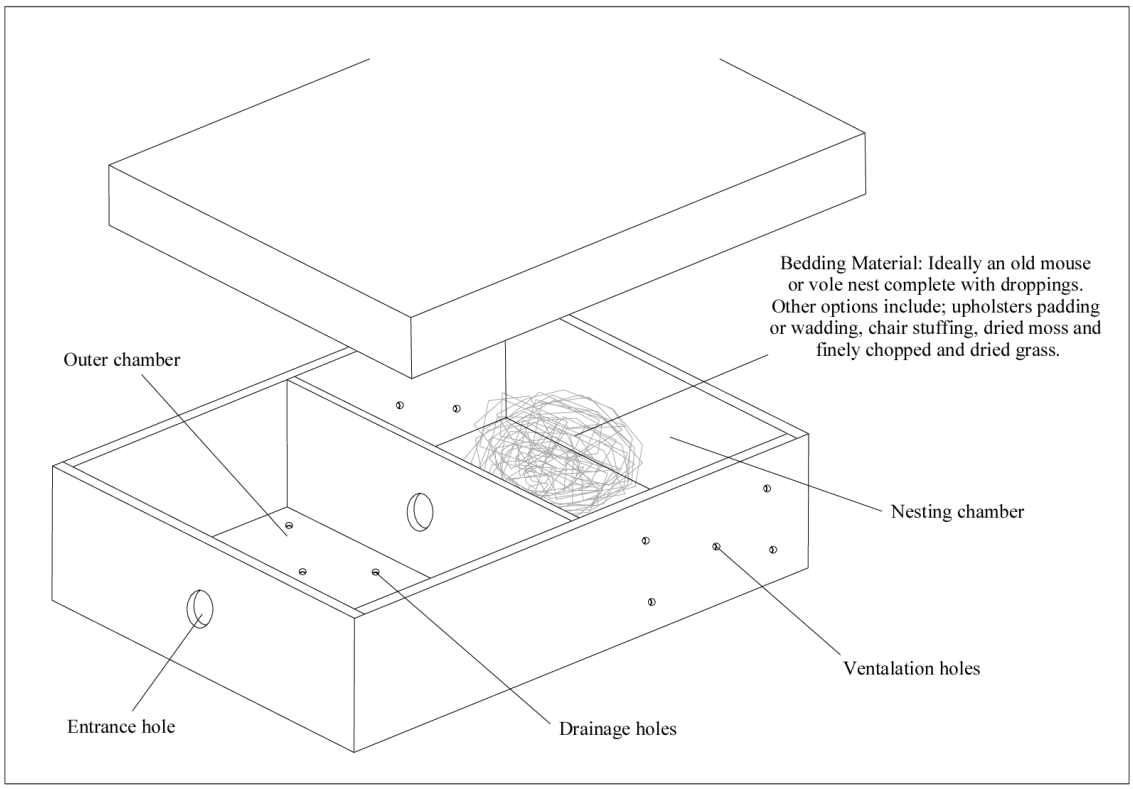
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Appendix 4: Examples of Insect Shelter Designs

An example of two different insect box designs

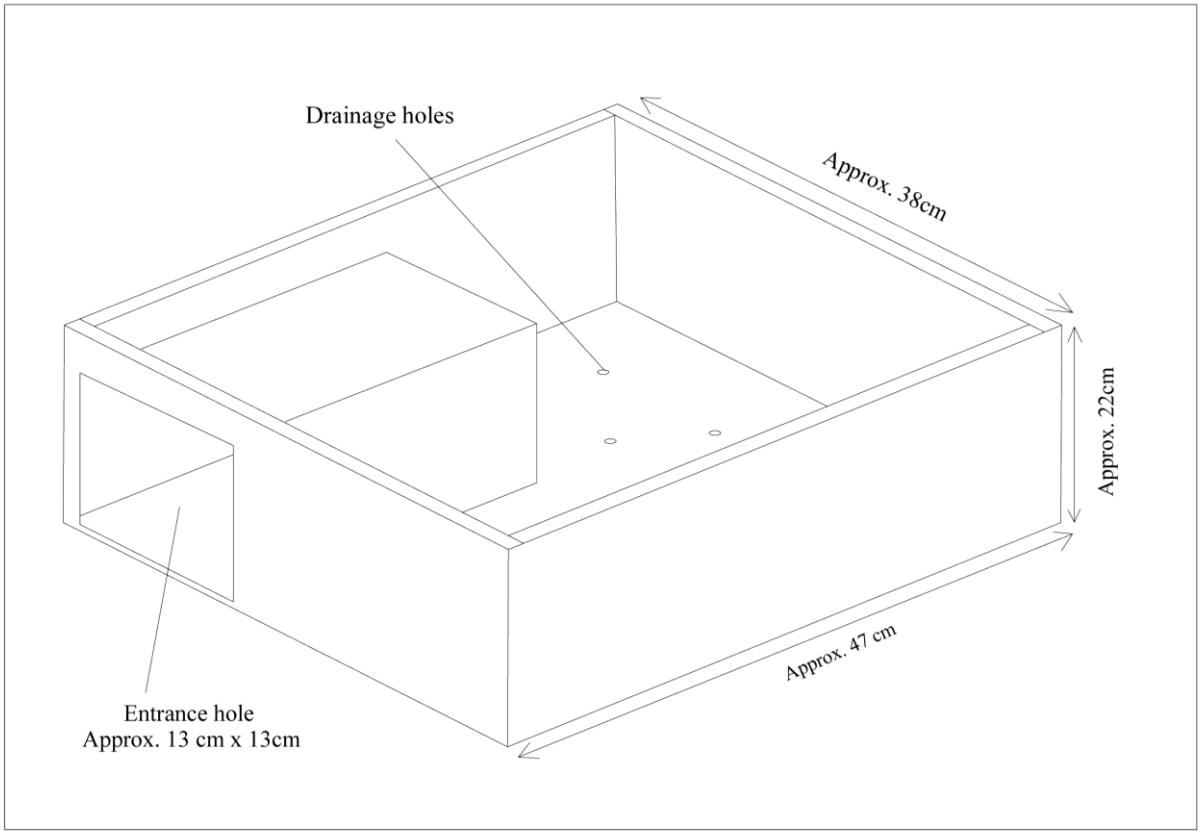


An example of a Bumblebee box design



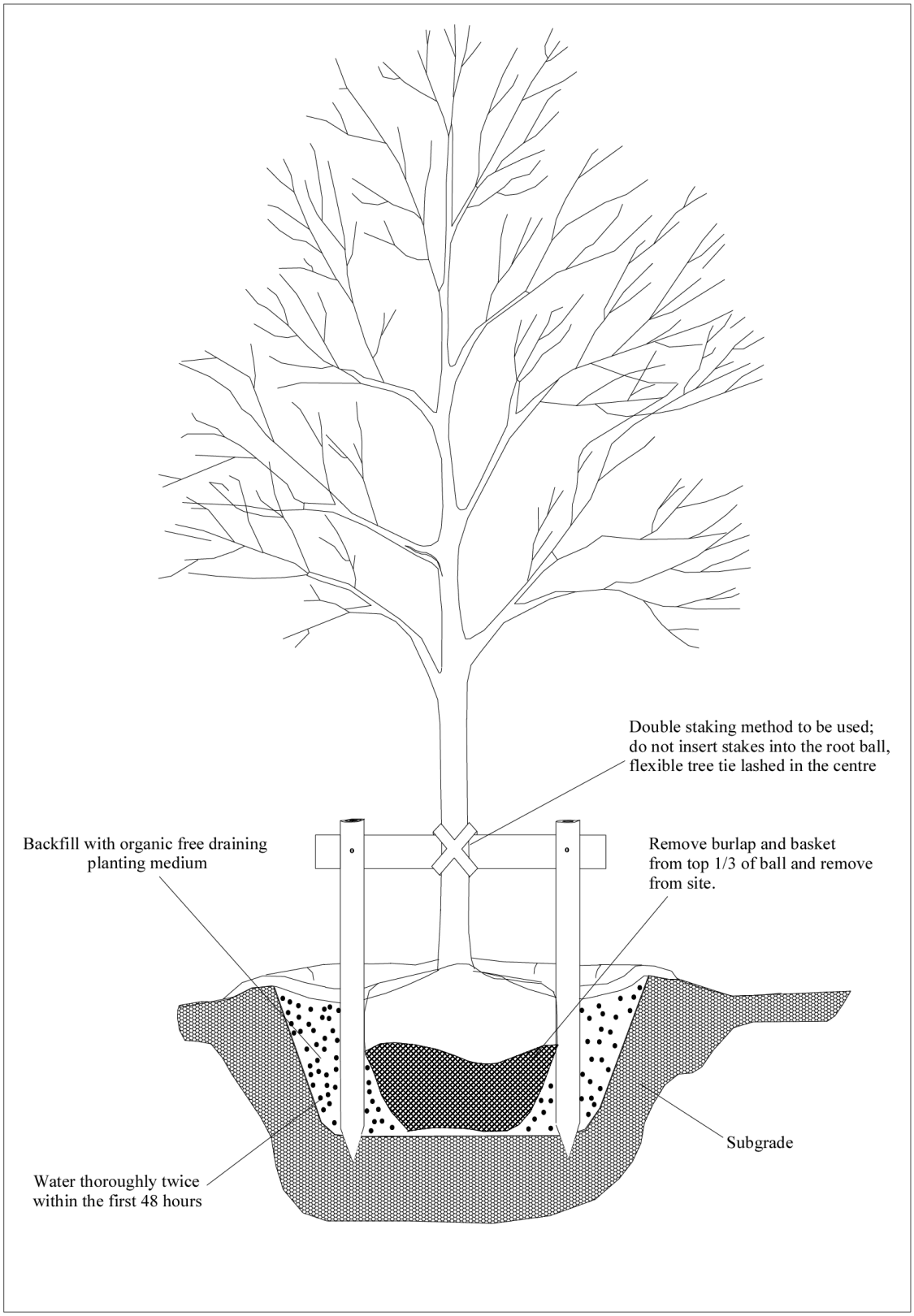
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Appendix 5: Example of Hedgehog Shelter Design



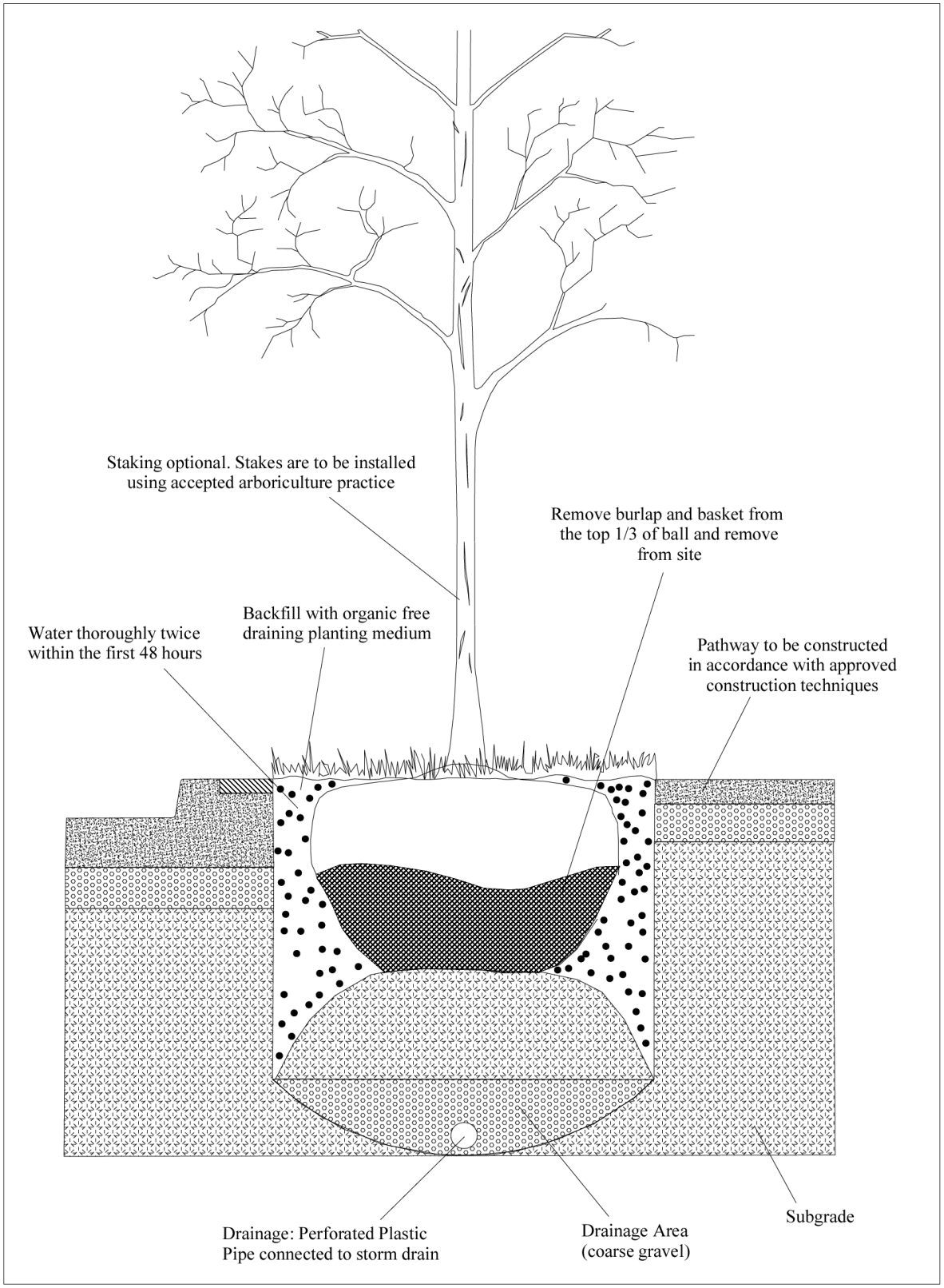
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Appendix 6: Example of planting a tree in an open grass strip



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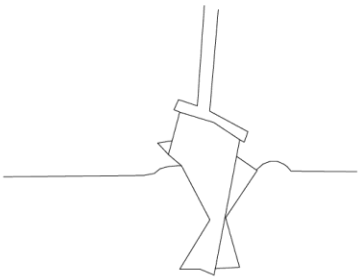
Appendix 7: Example of planting a tree within a street



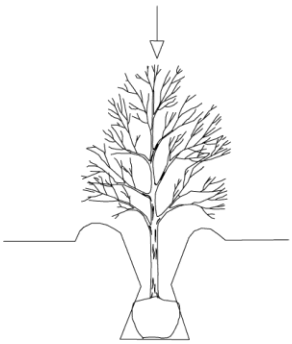
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Appendix 8: Example of planting a tree

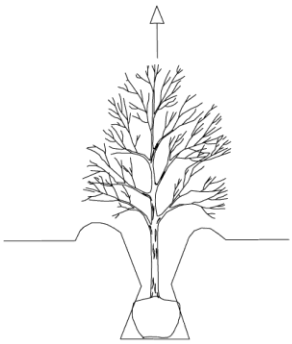
1) Make plenty of room for the transplants roots



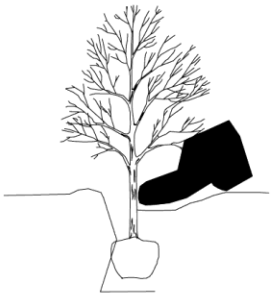
2) Ensure that the roots are pushed down as far as possible



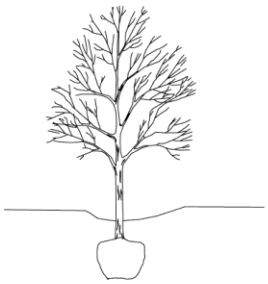
3) Withdraw the transplant slightly to spread roots



4) Firm up to exclude air pockets



4) Transplant in correct position



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Appendix 9: Author Qualifications

Adam West, Principal Ecologist

BSc (Hons) Animal and Wildlife Management, ACIEEM.

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 in Animal and Wildlife Management, 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 and a Natural England Level 2 bat survey class licence.

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.

James Foster, Assistant Ecologist

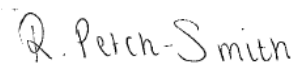
BSc (Hons) Biology

James gained his undergraduate degree in biology in 2012 from University of Leeds. James has plenty of experience in ecology, having worked countless projects of different scales all over the north and midlands. James has over 11 years of experience surveying anything from reptiles to hedgerows and holds a Great crested newt licence level 1 and is working towards his bat licence and barn owl licence.

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I hope that this scheme and methodology provides all the necessary information, but should any further advice be needed please do not hesitate to contact the author.

Signed



.....

Rebecca Petch-Smith *MBIOL BSc (Hons)*

23/06/2025

Approved by



.....

James Foster *BSc (Hons)*

23/06/2025

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

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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

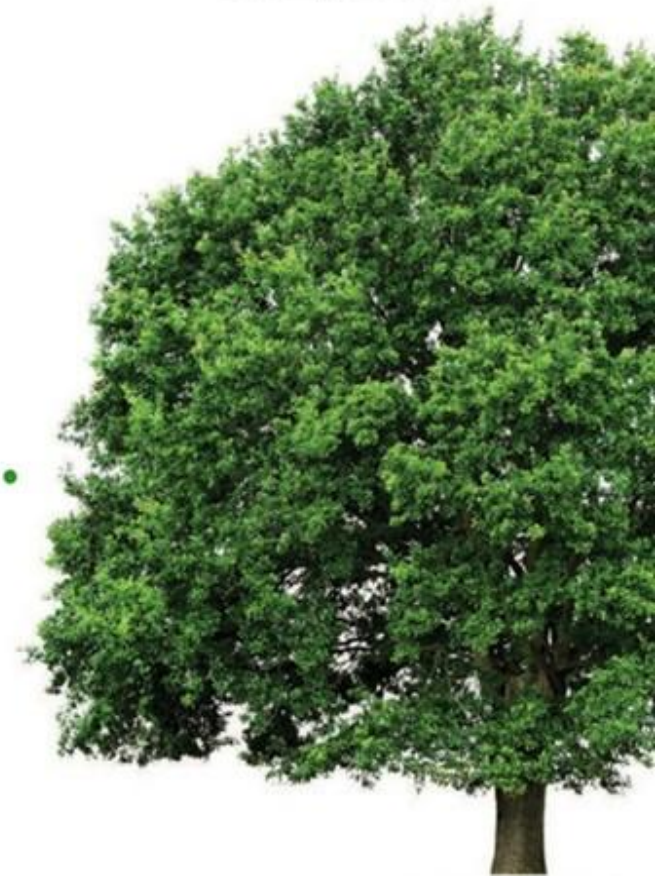
- Subsidence Litigation
- Personal Injury and Accident Investigation
- Expert Witness, Planning Inquiries and Appeals

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



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Arboricultural & Ecological Consultants

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