

Ecological Design Strategy
at
Forget Me Not Childrens Hospice
Russell House
Huddersfield
West Yorkshire
HD2 1NH

Client:
Brightline Design

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JCA Ref:
21560/EIC

Date of Report:
11/01/2024



Quality Assurance

JCA ref.	Version	Desktop Survey Completed:		Site Surveyed:		Report Completed:		Checked:	
		Date	Name	Date	Name	Date	Name	Date	Name
21560/EIC	Planning	N/A	N/A	N/A	N/A	10/01/24	Eleanor Clark	10/01/24	James Foster
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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 An Ecological Design Strategy (EDS) has been requested for **Forget Me Not Children's Hospice, Russell House** by Kirklees Council. This is described within Condition 4 of the Decision Notice:

"4. No development shall take place until an ecological design strategy (EDS) addressing mitigation and enhancement has been submitted to and approved in writing by the local planning authority.

The EDS shall include the following.

- a. Purpose and conservation objectives for the proposed ecological works.*
- b. Location (shown on appropriate scale plans) of specific make and model, or design, of habitat boxes, such as bat boxes, bird boxes and hedgehog refuges. Habitat boxes to be integral to new structures where appropriate.*
- c. Details of how the design of boundary treatments will not obstruct the movement of hedgehogs.*
- d. Planting schedule and planting plan showing the inclusion of native species of tree and shrub to be included within/at the boundary of the application area, and how this achieves the stated purpose.*
- e. Details of maintenance.*

The EDS shall be implemented in accordance with the approved details and all features shall be retained in that manner thereafter.

Reason: *To ensure the development hereby permitted provides ecological enhancement measures sufficient to provide a biodiversity net gain in accordance with Policy LP30 of the Kirklees Local Plan and Chapter 15 of the National Planning Policy Framework. This is pre-commencement to ensure detailed designs are available to enable implementation as part of the construction program."*

1.1.2 This report will aim to fulfil the planning condition set by Kirklees Council, with the 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 We have been instructed by **Brightline Design** to produce an EDS in support of the planning application (Application number: 2019/62/90633/W) for the construction of car parking areas, formation of footpath link and replacement of fence to part of the boundary.

1.2.2 For this purpose, JCA Limited have been supplied with the following documents and plans:

- Proposed Site Plan Revision 05 (Plan reference: P994-03).

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 considers 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 car parking area, formation of footpath link and replacement fence to part of the boundary.

1.5 Site Description

1.1.1 **Forget Me Not Children's Hospice, Russell House** is located at Ordnance Survey (OS) National Grid Reference SE 15002 20040, with nearby postcode HD2 1NH. The site is bordered to the north by Fell Greave Road, hedgerows, and a school. Forget Me Not Children's Hospice borders the site to the east and south. Upper Fell Greave Woods, an ancient, replanted woodland, is located on the western boundary of the site.



2 Local Biodiversity Action Plan

2.1.1 If possible, JCA Ltd aim to incorporate Local Biodiversity Action Plan (LBAP) habitats within our enhancement plans. We 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 **Forget Me Not Children's Hospice** is the Kirklees BAP.

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

Table 1: Habitats listed under Kirklees Council BAP.

LBAP Habitats	
Ancient woodland	Scrubland
Blanket bog	Semi natural grasslands
Cereal field margins	Species-rich grassland (hay meadows)
Lowland acid grassland	Species rich hedgerow
Lowland heath	Upland heath
Reedbed	Upland oak Woodland
Riverine habitats	Upland mixed ash woodland

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

Table 2: Species listed under Kirklees Council BAP.

LBAP Habitats	
Brown long-eared bat	Great bittern
Noctule bat	Grey partridge
Soprano pipistrelle bat	Hawfinch
Brown hare	Hedge accentor
Otter	House sparrow
Polecat	Lesser redpoll
Water vole	Northern lapwing
Western European hedgehog	Red grouse
Black grouse	Reed bunting



Common bullfinch	Ring ouzel
Common cuckoo	Skylark
Common grasshopper warbler	Song thrush
Common linnet	Spotted flycatcher
Common starling	Tree pipit
Corn bunting	Twite
Corn crake	Willow tit
Eurasian curlew	Wood warbler
Eurasian tree sparrow	Yellow wagtail
European nightjar	Yellowhammer
European turtle dove	



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 Limited in January 2024 (Plan ref: 21560a/EIC). A summary of the habitats and features present in this report can be seen below.

3.1.2 The site consists predominantly of the following habitats:

- g3c – other neutral grassland.
- g4 – modified grassland.
- h3d – bramble scrub.
- h3h – mixed scrub.
- u1e – built linear feature.

3.1.3 The grassland habitats on site were species poor, consisting of only common floral species typical of modified grassland. The scrub was of moderate ecological value as scrubland is listed in the Kirklees BAP.

3.1.4 The other neutral grassland and scrub habitats have the potential to support reptiles, amphibians, and hedgehogs. The scrub habitats have the potential to support nesting and foraging birds and the grassland habitats have the potential to support commuting and foraging badgers.

3.1.5 The ancient woodland edge on the western boundary of the site has the potential to support foraging and commuting bats. The site is also located within the Kirklees Bat Alert Zone.

3.2 Features to be Retained and Protected

3.2.1 Most trees on site are young with a single semi-mature goat willow. It is recommended that the semi-mature goat willow is retained as it will provide nesting and foraging opportunities for bird species. The BS5837 should be adhered to throughout the development to ensure the protection of trees on site.

3.2.2 The bramble scrub created a soft woodland edge, these are a key feature for woodland ecosystems and allow woodlands to support great diversity of bird populations. It is recommended that the woodland edge habitats are enhanced to create a more gradual edge habitat where modified grassland is currently present.



3.2.3 The adjacent woodland provides a wildlife corridor for bat and bird species in the local area, for which is limited in its habitat connectivity. Additionally, the woodland is likely to support roosting/nesting bat and bird species along with offering foraging opportunities. As such, the proposed development must ensure that it does not have a detrimental impact upon the woodland's ability to act within these ecosystem roles.



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 Giant Hogweed, Giant Kelp, Japanese Knotweed, Japanese Seaweed, Himalayan Balsam, Horsetail and Floating Pennywort. 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 The PEA (21560a/EIC) did not identify invasive plant species on site at the time of the survey. If any invasive species are identified during any stage of development, an Invasive Species Method Statement for the safe management and removal of invasive species will be required.



5 Habitat Creation

5.1 Summary

- 5.1.1 As the site is dominated by habitats of low conservation value, such as modified grassland, there is scope to greatly enhance the sites wildlife value post development.
- 5.1.2 The proposed development will compensate for the loss of habitats through a combination of the following:
- The creation and enhancement of other neutral grassland.
 - The planting of mixed scrub along the woodland to create a soft edge and act as protection for the ancient woodland.
- 5.1.3 The positions of the proposed habitats, along with faunal provisions, can be seen in **Appendix 1**. **Appendix 6** details the implementation of habitats and their future monitoring and management for 5 years.

5.2 Grassland Planting

- 5.2.1 The creation of other neutral grassland post development will increase the sites ecological value through creating habitats with greater species diversity that the modified grassland it is replacing. It will also provide habitat for protected species, including invertebrates, reptiles, and hedgehogs.
- 5.2.2 Species Selection: The species chosen for this grassland are all 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 hoped 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.
- 5.2.3 Quantity: Roughly 411m² of land will be converted to species rich grassland. Sown at 40kg per hectare, this will require approximately 1.6kg of seed mix.
- 5.2.4 Species Specifications: A list of the recommended species can be seen below in **Table 3**. The recommended seed mix is EM2 Standard General Purpose Meadow Mixture from Emorsgate Seeds.



Table 3: List of the EM2 Standard General Purpose Meadow Mixture.

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

5.2.5 Planting Implementation: 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 the grassland planting is implemented after the completion of the development.

- **Ground Preparation:**

Bare soil: If the area of ground to be converted into species-rich 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, i.e. in the modified grassland. 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.

Existing Grassland: If the area of ground to be converted into species-rich grassland is an existing area of grassland, then the following instructions should be implemented: During the autumn (September / October) cut the grass very short and rake the land over vigorously to create patches of bare ground. When the lawn is cut, the cuttings must be removed from the site to



prevent the nutrients being returned.

- **Sowing:** The seed mix should be sown during early autumn (late August/September). The seeds should be sown sparsely, at a rate of 2 to 5 grams per square metre. Mix the seed with damp sand or sawdust in a ratio of 1 to 3 in order to ensure the seeds are evenly distributed across the seedbed. Scatter the seed by hand, gently rake over and then lightly roll or tread the ground to settle the seeds in the soil.
- **Management:** 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 only twice a year; once in the spring (between early March and early April) and once in the autumn (between late June and the end of August). Always remove the cuttings to prevent nutrients returning to the soil. **Never** cut the meadow shorter than 5cm. This cutting regime will prevent the grassland from succeeding in to scrub and woodland, whilst allowing the flowers to set seed for the following year, thus producing a sustainable and viable habitat. If after 2 years the grassland remains species poor, the land should be prepared in the method described above in *Existing Grassland* and the seed mix re-sown.

5.3 Shrub Planting

5.3.1 To create an ecotone between the woodland and the proposed car park, scrub planting is recommended in the buffer zone between the woodland and the development. This will create a soft woodland edge which will act as protection for the woodland and will support woodland species. Soft woodland edges provide habitat for birds adapted to both woodland and scrub habitats for example, common bullfinch, wood warbler and yellowhammer, all of which are listed in the Kirklees BAP. Improving the woodland edge habitat will also create more foraging and commuting habitat for bat species.

5.3.2 Species Selection: 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.

5.3.3 Shrub Specifications: The following table details the specification for the newly planted shrubs:

Table 4: Woodland mixed shrub planting at 2 m spacing.

Botanical Name	Common Name	Size at purchase	No's Required (approx.)
<i>Cornus sanguinea</i>	Dogwood	Whips	(20%)
<i>Corylus avellana</i>	Hazel	Whips	(20%)



<i>Ilex aquifolium</i>	Holly	Whips	(20%)
<i>Lonicera periclymenum</i>	Honeysuckle	Whips	(20%)
<i>Rhamnus cathartica</i>	Buckthorn	Whips	(20%)
Total			(100%)

5.3.4 Shrub Planting Implementation: Recommendations for good shrub planting practice are given below:

- **Site Preparation:** It is recommended that the shrub planting scheme is implemented after the completion of the development. The shrub beds must be installed before the shrubs are planted, care should be taken during development to ensure that soils within these beds are not contaminated with cement or other building materials.

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.

- **Planting Hole:** A planting hole will be excavated to around two and three times the diameter of the rootball and no deeper than the roots. The sides and bottom of the hole should be roughened with the spade or fork. Soil amendments such as compost should not be added as this has been shown to be detrimental to successful establishment.
- **Planting:** The top layers of compost should be scraped away when planting container grown plants, with the point where the roots flare out being near the soil surface. Place the shrub in the centre of the hole and carefully refill ensuring soil is positioned between and around all of the roots in order to eliminate any and all air pockets. Firm the soil around the shrub gently, avoiding compacting the soil.
- **Mulching:** 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.
- **Timing:** Planting should be carried out during the dormancy period for deciduous species (November to February).
- **Positioning:** Shrubs within the amenity bed should be planted **1m** apart, ideally with at least 1 example of each species planted within each bed. In larger shrub beds, shrubs should be planted in small groups (3-4) of the same species. Shrubs within the woodland shrub bed should be planted **2m** apart. Whips within the hedgerow scheme should be planted in two staggered lines, **30cm** apart, and distributed evenly.

5.4 Aftercare



- 5.4.1 All newly planted trees and shrub beds are to be thoroughly watered immediately after planting and during any prolonged periods of dry weather.
- 5.4.2 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 with trees or shrubs of the same species and size.
- 5.4.3 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 (March to August).
- 5.4.4 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.
- 5.4.5 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.
- 5.4.6 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.



6 Faunal Provisions

6.1 Summary

6.1.1 In total **3** bird boxes, **1** hedgehog shelters and **3** hibernacula have been recommended. The location of each faunal box to be erected can be seen in **Appendix 2**.

6.2 Bird Boxes

6.2.1 Standard bird boxes: Birds such as most tit species, tree sparrows and nuthatches prefer standard nest boxes with a small hole opening and a perch at the entrance. The size of hole can vary depending on the bird species. Tree sparrows are a species listed in the Kirklees Biodiversity Action Plan. Records of tree sparrow were also received from West Yorkshire Ecology Service as part of the desk study for the PEA (21560a/EIC). Details of the nest box can be found in **Table 5**.

Table 5: Bird nesting opportunities to be installed as part of the Proposed Development.

Bird Box	Number to be Installed	Description	Details
Vivara Pro Seville 32mm WoodStone Nest Box (or comparable design) 	3 (in a cluster to be installed on the goat willow)	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 and pied flycatchers and they are available in brown, green or grey to complement both natural woodland settings.	Dimensions Height: 310mm Width: 200mm Length: 200mm Weight: 6.9kg Entrance hole diameter: 32mm

6.3 Hibernacula

6.3.1 Hibernacula for amphibians and reptiles are to be created in the grassland and scrub habitats on site. Piles of rubble, rock, log piles and earth banks make good hibernacula and refuge areas. Hibernacula should be in a sheltered area that are not too dry but also in areas that are not prone to flooding. The dead



wood present within hibernacula and refuge areas will attract insects on which reptiles and amphibians will feed.

6.3.2 The design and construction of hibernacula should follow that of the design in Figure 1 which has been taken from the *Great Crested Newt Mitigation Guidelines* (English Nature, 2001).

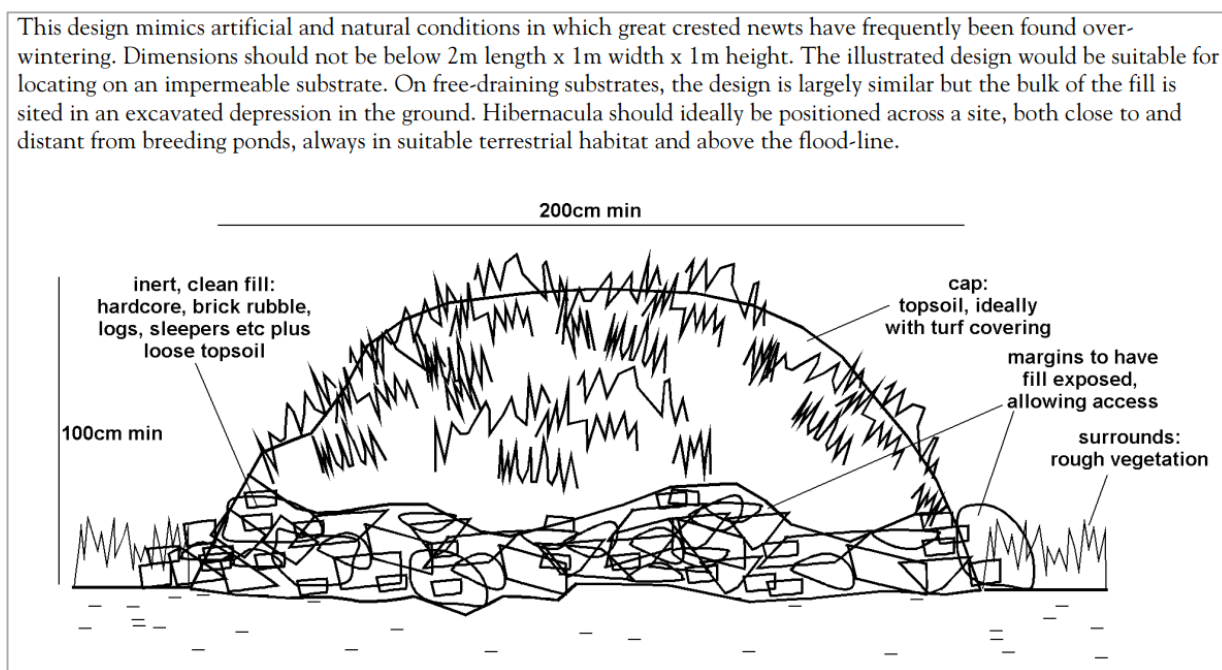


Figure 1: Example of hibernacula for amphibians and reptiles.

6.4 Hedgehog shelter

6.4.1 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 across landscapes will encourage hedgehogs to visit the site and utilise the natural space. Hedgehogs are also a species listed in the Kirklees Biodiversity Action Plan.

6.4.2 Hedgehog shelters are simple to construct. Situate in a quiet corner of the site, preferably under vegetation. Dried leaves or hay are placed inside for bedding (Bunnell, 2014). **One** hedgehog shelter should be placed in within the scrub in a sheltered position (see **Appendix 2**).

6.4.3 Access to habitat 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 boundary fences to allow hedgehogs to freely move between green spaces (Bunnell 2014).





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

6.5 Management and monitoring

6.5.1 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, an effective and adaptive management scheme cannot be maintained and revised. Should it be identified that the ecological provisions are no longer fit for purpose, revisions should be made to the management plan on site.

6.5.2 **Appendix 6** details the implementation for faunal provisions and their future monitoring and management for Years 1-5 of the proposed development.



7 Conclusion

7.1 Retention of Ecologically Valuable Features

- 7.1.1 Most trees on site are young with a single semi-mature goat willow. It is recommended that the semi-mature goat willow is retained as it will provide nesting and foraging opportunities for bird species.
- 7.1.2 The bramble scrub created a soft woodland edge, these are a key feature for woodland ecosystems and allow woodlands to support great diversity of bird populations. It is recommended that the woodland edge habitats are enhanced to create a more gradual edge habitat where scrub is not present.
- 7.1.3 To reduce the impacts of the development on the remaining habitats and the adjacent ancient woodland, a Construction and Environment Management Plan (**CEMP**) and BS58367 should be adhered to through the construction phase of the development.

7.2 Habitat Creation

- 7.2.1 It is proposed to create roughly **411m²** of other neutral grassland, and **51m²** of native mixed scrub. These are described in Section 5 and their planting positions shown in **Appendix 1**.

7.3 Faunal Boxes

- 7.3.1 **Three** bird boxes including designs aimed at supporting tit species, tree sparrows and nuthatches will be erected on the remaining goat willow. **Three** hibernacula for reptiles and amphibians are to be created in the grassland and scrub habitats. Finally, **one** hedgehog shelter has been recommended. The recommended location of each faunal box can be seen in **Appendix 1**.

7.4 Management and monitoring

- 7.4.1 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 a scheme can't be maintained and revised. **Appendix 6** details the implementation of faunal boxes and their future monitoring and management.
- 7.4.2 An implementation, Management and Monitoring plan detailing how soft landscaping will be implemented and managed can be seen in **Appendix 6**.



8 References

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Websites:

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

Google Maps. <<http://maps.google.co.uk/>>

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

National Biodiversity Network (NBN) Gateway. <data.nbn.org.uk>

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

Nature on the Map. Natural England. <www.natureonthemap.org.uk>

Relevant Legislation:

Wildlife and Countryside Act 1981 <<http://jncc.defra.gov.uk/page-3614>>

Conservation (Natural Habitats, &c.) Regulations 1994 (The Habitats Directive) (Amended 2010) <<http://www.legislation.gov.uk/ukxi/2010/490/contents/made>>

Countryside and Rights of Way Act 2000
<http://www.legislation.gov.uk/ukpga/2000/37/pdfs/ukpga_20000037_en.pdf?view=interweave>



Appendices

Appendix 1: Planting and Faunal Provisions Plan

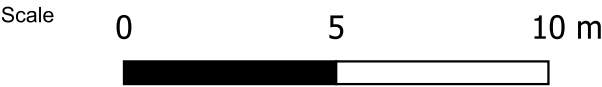




Site name & address
Forget Me Not Children's Hospice
Russel House
Fell Greave Road
Huddersfield
HD2 1NH

Key

- Site boundary
- Site Proposals
 - g3c - other neutral grassland
 - h3d - bramble scrub
 - h3h - mixed scrub
 - u1b6 - other developed land
 - u1e - built linear features
- Faunal Provisions
 - Vivara Pro Seville 32mm WoodStone Nest Box
 - Hedgehog shelter
 - Amphibian & reptile hibernacula



Site Forget Me Not Children's Hospice	Client Brightline Design
Project 21560 Ecological Design Strategy	Author EIC
Plan ref 21560/EIC	Revision Planning

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Appendix 2: Photographic Evidence



Photo 1: Other neutral grassland with mixed scrub.



Photo 2: Modified grassland with playground equipment.



Photo 3: Modified grassland with scattered rushes.



Photo 4: Piles of wood and scattered oak trees within modified grassland.



Photo 5: Goat willow present on western edge of modified grassland.



Photo 6: Modified grassland sharing boundary with ancient woodland to the west.

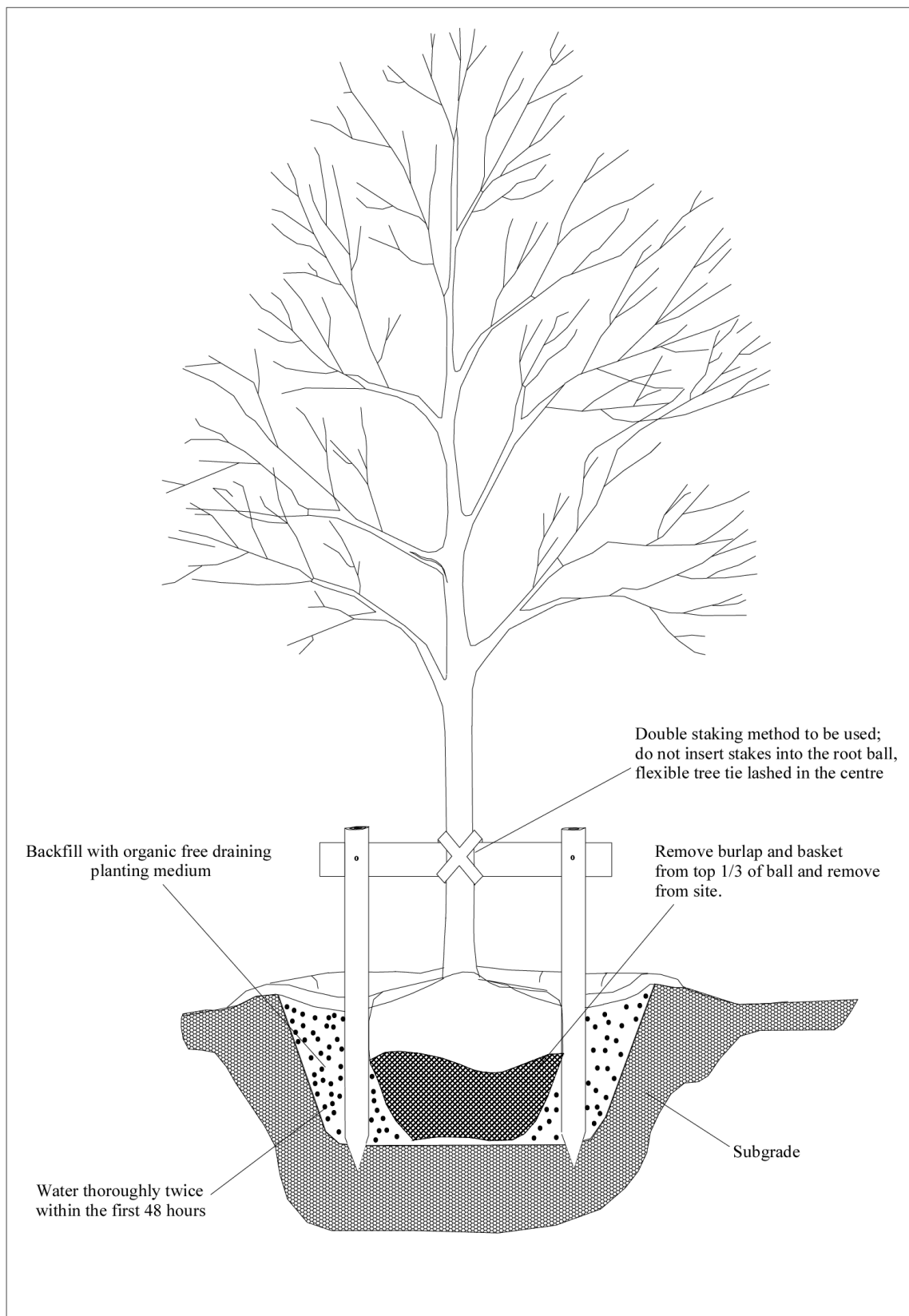




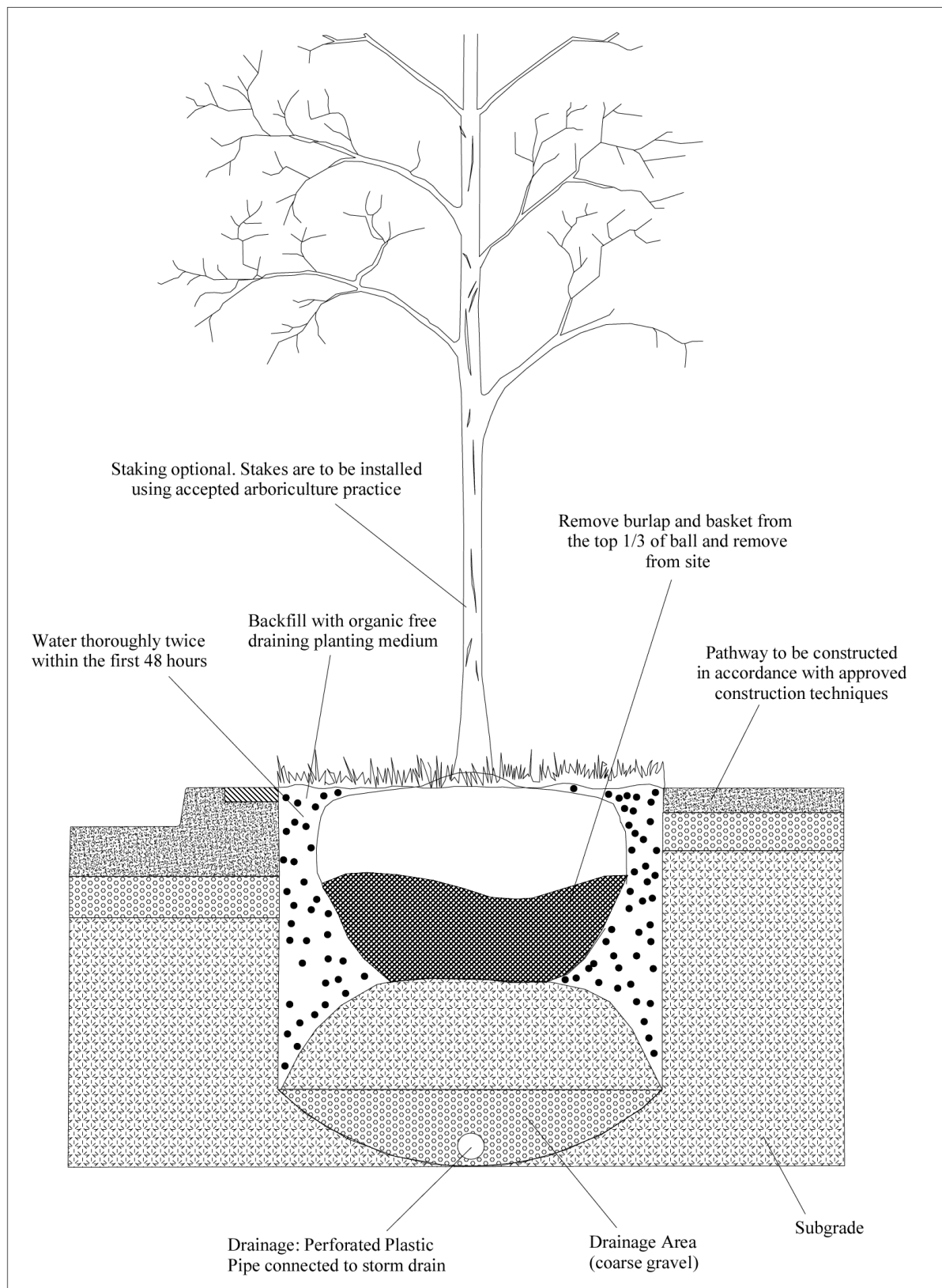
Photo 7: Bramble scrub and footpath on western boundary.



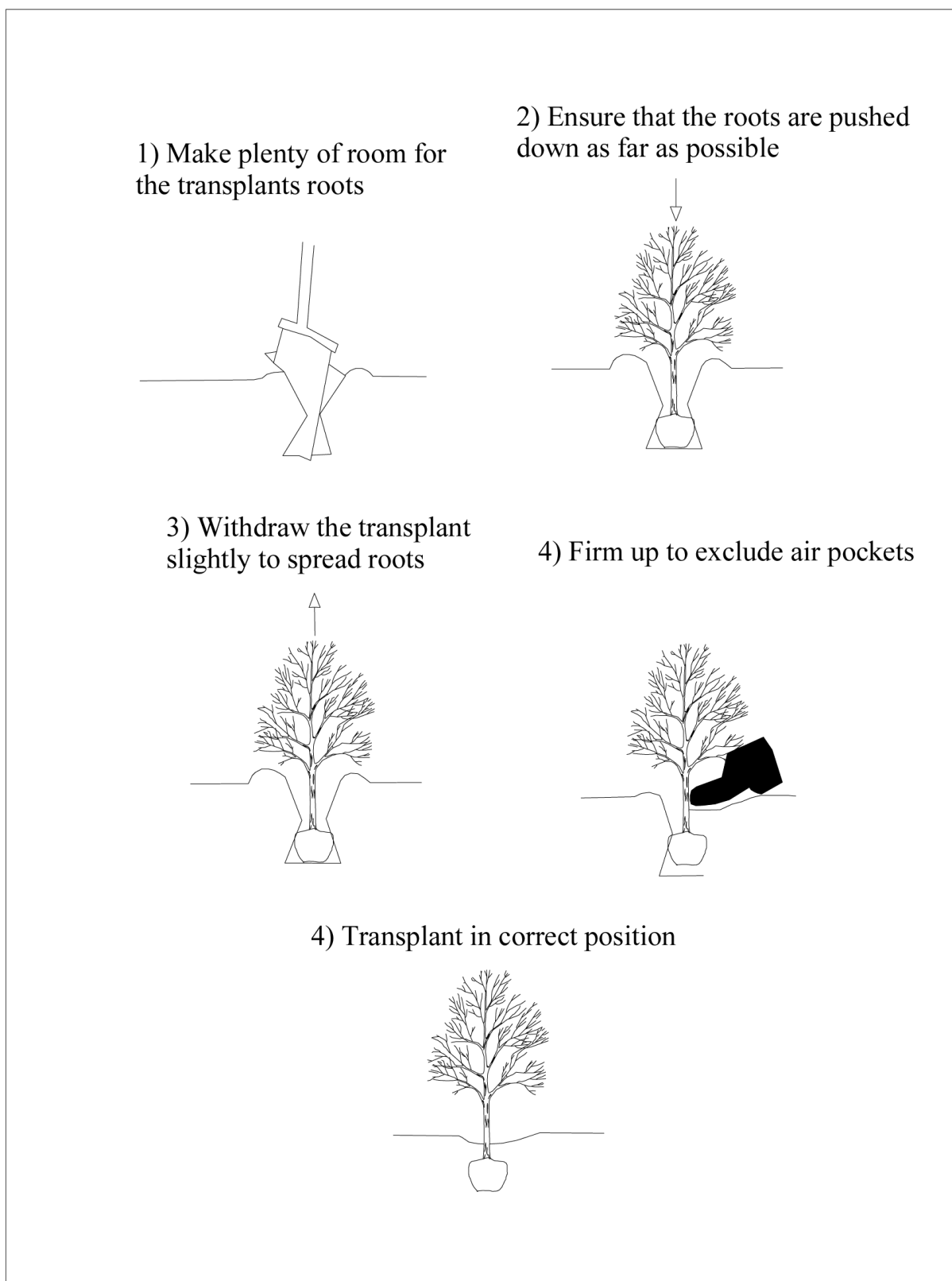
Appendix 3: Example of planting a tree in an open grass strip



Appendix 4: Example of planting a tree within a street



Appendix 5: Example of planting a tree



Appendix 6: Implementation Management, and Monitoring Plan

Table 6: Schedule of the implementation, management and monitoring of the habitats on site over the next 5 years.

Key:

	Appropriate time to conduct deliverable
	Unadvised time to conduct deliverable

Table 6.1 Schedule of ecological implementation – Year -1

[illegible]

Table 6.2 Schedule of ecological implementation – Year 0

[illegible]

Table 6.3 Schedule of ecological implementation – Year 1

Deliverable		Time of Year											
		Jan	Feb	Mar	April	May	June	July	Aug	Sep	Oct	Nov	Dec
Grassland Creation	<u>Other neutral grassland:</u> Mow grassland twice per year no shorter than 50mm			Early March	Early April		Late June						
	<u>Monitoring:</u> Undertake condition assessment of newly established other neutral grassland												
Shrub planting	<u>Monitoring:</u> Undertake condition assessment of newly planted scrub												
	<u>Monitoring:</u> Inspect newly planted shrubs												
	<u>Management:</u> Shrubs to receive 50 litres of water per week												
	<u>Management:</u> Replacement of dead shrubs												
	<u>Management:</u> Removal by hand of weeds surrounding newly planted shrubs & trees												
	<u>Management:</u> Addition of new bark mulch around base of all shrubs & trees												
Faunal boxes & hibernacula	Installation of bird boxes on trees												
	Install hedgehog shelters, & hibernacula												



Table 6.3 Schedule of ecological implementation – Year 2

Deliverable		Time of Year											
		Jan	Feb	Mar	April	May	June	July	Aug	Sep	Oct	Nov	Dec
Grassland Creation	<u>Other neutral grassland:</u> Mow grassland twice per year no shorter than 50mm			Early March	Early April		Late June						
	<u>Monitoring:</u> Undertake condition assessment of newly established other neutral grassland												
	<u>Other neutral grassland</u> If grassland remains species poor, cut short, rake & re-sow seed								Late August				
Shrub planting	<u>Monitoring:</u> Undertake condition assessment of newly planted scrub												
	<u>Monitoring:</u> Inspect newly planted shrubs												
	<u>Management:</u> Shrubs to receive 50 litres of water per week												
	<u>Management:</u> Replacement of dead shrubs												
	<u>Management:</u> Removal by hand of weeds surrounding newly planted shrubs												
	<u>Management:</u> Addition of new bark mulch around base of all shrubs												
Faunal boxes & hibernacula	Installation of bird boxes on buildings & trees, if not installed previous year												



	Install hedgehog shelters, & hibernacula, if not installed previous year												
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Table 6.4 Schedule of ecological implementation – Year 3

Deliverable		Time of Year											
		Jan	Feb	Mar	April	May	June	July	Aug	Sep	Oct	Nov	Dec
Grassland Creation	Other neutral grassland: Mow grassland twice per year no shorter than 50mm			Early March	Early April		Late June						
Shrub & tree planting	<u>Monitoring:</u> Inspect newly planted shrubs												
	<u>Management:</u> Shrubs to receive 50 litres of water per week												
	<u>Management:</u> Replacement of dead shrubs												
	<u>Management:</u> Removal by hand weeds surrounding newly planted shrubs												
	<u>Management:</u> Addition of new bark mulch around base of all shrubs												
Faunal boxes & hibernacula	Installation of bird boxes on buildings & trees, if not installed previous year												
	Install hedgehog shelters, invertebrate boxes & log piles, if not installed previous year												



Table 6.5 Schedule of ecological implementation – Year 4

Deliverable		Time of Year											
		Jan	Feb	Mar	April	May	June	July	Aug	Sep	Oct	Nov	Dec
Grassland Creation	<u>Other neutral grassland:</u> Mow grassland twice per year no shorter than 50mm			Early March	Early April		Late June						
Shrub & tree planting	<u>Monitoring:</u> Inspect newly planted												
	<u>Management:</u> Replacement of dead shrubs												
	<u>Management:</u> Removal by hand of weeds surrounding newly planted shrubs												
	<u>Management:</u> Addition of new bark mulch around base of all shrubs												
	<u>Management:</u> Newly planted shrubs to receive 50 litres of water per week for first 3 years												
Faunal boxes & hibernacula	Installation of bird boxes on trees, if not installed previous year												
	Install hedgehog shelters, & hibernacula, if not installed previous year												



Table 6.6 Schedule of ecological implementation – Year 5

Deliverable		Time of Year											
		Jan	Feb	Mar	April	May	June	July	Aug	Sep	Oct	Nov	Dec
Grassland Creation	<u>Other neutral grassland:</u> Mow grassland twice per year no shorter than 50mm			Early March	Early April		Late June						
	<u>Monitoring:</u> Undertake condition assessment of newly established other neutral grassland												
Shrub & tree planting	<u>Monitoring:</u> Undertake condition assessment of newly planted scrub												
	<u>Monitoring:</u> Inspect newly planted shrubs												
	<u>Management:</u> Replacement of dead shrubs												
	<u>Management:</u> Removal by hand weeds surrounding newly planted shrubs												
	<u>Management:</u> Addition of new bark mulch around base of all shrubs												
	<u>Management:</u> Newly planted shrubs to receive 50 litres of water per week for first 3 years												
Faunal boxes & hibernacula	Installation of bird boxes on trees, if not installed previous year												
	Install hedgehog shelters, & hibernacula, if not installed previous year												



Appendix 7: 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 Bachelor'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.

Eleanor Clark, Assistant Ecologist

BSc (Hons) Biology, MSc Biodiversity, Ecology & Ecosystems, MRSB.

Eleanor gained her undergraduate degree in biology in 2017 from the University of Portsmouth before going on to complete an MSc in Biodiversity, Ecology & Ecosystems at the University of York in 2019. Eleanor has 3 years of experience in ecological consultancy with experience surveying for a range of protected species. Eleanor holds a Natural England Level 1 great crested newt licence and is working towards her bat 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 9 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.

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

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Eleanor Clark *BSc (Hons) MSc, MRSB.*

10/01/2024

Reviewed by

.....

James Foster *BSc (Hons)*

10/01/2024

Reviewed and approved by

.....

Adam West *BSc (Hons), ACIEEM.*

11/01/2024



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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