

**BIODIVERSITY ENHANCEMENT
AND MANAGEMENT PLAN
REPORT**

at

**Leeds City Academy
Bedford Field
Leeds
West Yorkshire
LS6 2LG**

Client:

Faithful+Gould

Client Address:

**3100 Century Way
Thorpe Park
Leeds
LS15 8ZB**

JCA Ref:

19638d/EIC Rev 1

Date of Report:

14/03/2024



Quality Assurance

Version	Desktop Survey Completed:		Report Completed:		Checked:	
	Date	Name	Date	Name	Date	Name
001	13/03/24	Eleanor Clark	14/03/24	Eleanor Clark	14/03/24	Rick Westwood
					15/03/24	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

Quality Assurance	2
Contents	3
1 Introduction	5
1.1 Purpose of the Report.....	5
1.2 Terms of Reference	5
1.3 Scope of the Report	5
1.4 Details of Proposed Development.....	5
1.5 Site Description	5
2 Local Biodiversity Action Plan	7
3 Retention of Ecologically Valuable Features	8
3.1 Pre-development	8
3.2 Features to be Retained and Protected	8
4 Habitat Creation.....	10
4.1 Summary.....	10
4.2 Grassland Planting.....	10
4.3 Other Neutral Grassland Planting	12
4.4 Tree Planting	15
4.5 Aftercare	16
5 Faunal Boxes	18
5.1 Summary.....	18
5.2 Bat Roosting Opportunities.....	18
5.3 Bird Boxes	20
5.4 Hedgehog shelter	22
6 Conclusion	24
6.1 Retention of Ecologically Valuable Features.....	24
6.2 Habitat Creation.....	24
6.3 Faunal Boxes	24
6.4 Management and monitoring.....	24
7 References	25
Appendix 1: Planting Plan	27
Appendix 2: Faunal Boxes Plan	29
Appendix 3: Example of planting a tree in an open grass strip	33
Appendix 4: Example of planting a tree within a street.....	34
Appendix 5: Example of planting a tree.....	35



Appendix 6: Implementation, Management, and Monitoring Plan.....36
Appendix 7: Author Qualifications.....47



1 Introduction

1.1 Purpose of the Report

- 1.1.1 A Biodiversity Enhancement and Management Plan (BEMP) has been requested for **Leeds City Academy, Bedford Field** by Leeds City Council.
- 1.1.2 This report will aim to fulfil the planning conditions set by Leeds City 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, hereafter referred to as 'the Site.'

1.2 Terms of Reference

- 1.2.1 JCA Ltd. have been supplied with the following documents and plans:
- Ecological Impact Assessment, 19638/AuB REV 2 (JCA Ltd., 2023)
 - Biodiversity Metric 3.1 REV 2 (JCA Ltd., 2023)
 - 11225-FPCR-XX-XX-SP-L-0002 Leeds City Academy Landscape Implementation and Management Plan P02 (FPCR Environment and Design Ltd., 2024)
 - 11225-FPCR-XX-XX-SP-L-0001 Leeds City Academy NBS Landscape Specification P03 (FPCR Environment and Design Ltd., 2024)
 - 11225-FPCR-XX-XX-DR-L-0002 & 0004 P09 Detailed Softworks Plan (FPCR Environment and Design Ltd., 2024)

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 enhances ecological networks.

1.4 Details of Proposed Development

- 1.4.1 The development proposed at this site is for the construction of a two-storey rear extension to provide additional teaching facilities, the construction of a single-storey extension to the existing dining hall, improvements to car parking and associated works.

1.5 Site Description

- 1.5.1 The Site is situated at Ordnance Survey (OS) National Grid Reference SE



29160 35691, with nearby postcode LD6 2LG. The Site is bordered by woodland to the north with allotments and Meanwood Brook in the wider landscape to the north. A thin stretch of woodland lies west of the Site with residential properties beyond. Residential properties are located to the east and south 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 **Leeds City Academy** is the Leeds Cit Council BAP.

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

Table 1: Habitats listed under Leeds City Council BAP.

LBAP Habitats	
Magnesium limestone grassland	Lowland wet grassland
Reedbed	Hedgerow and field margin

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

Table 2: Species listed under Leeds City Council BAP.

LBAP Species	
Pasqueflower	Thistle broomrape <i>Orobanche reticulata</i>
Harvest mouse <i>Micromys minutu</i>	Pipistrelle bat species <i>Pipistrellus</i> sp.
White-clawed crayfish <i>Austropotamobius pallipes</i>	Great crested newts <i>Triturus cristatus</i>

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.



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 EclA (JCA Ltd, 2023). **Table 3** summarises the baseline habitats and the existing biodiversity value for each habitat, their condition, and cumulative value of habitats present on Site.

Table 3: Baseline habitats on Site and their ecological value as categorised by the Biodiversity Metric 3.1 calculator.

Biodiversity Metric 3.1 Habitat Type	Total Area (ha)	Distinctiveness	Condition	Ecological Baseline Habitat Unit
Developed land; sealed surface	1.722	V.Low	N/A - Other	0.00
Introduced shrub	0.006	Low	Condition Assessment N/A	0.01
Vegetated garden	0.176	Low	Condition Assessment N/A	0.35
Modified grassland	1.455	Low	Poor	3.20
Other woodland; mixed	0.225	Low	Poor	0.99
Urban tree*	0.077	Medium	Poor	0.34
Urban tree*	0.073	Medium	Moderate	0.64
Total (area excl. trees)	3.73	-	-	5.54

3.1.2 The modified grassland, introduced shrub, and vegetated garden on the Site are species poor, consisting of only common floral species typical of improved land. The woodland on Site represents the habitat of greatest ecological value on Site, however, consists predominantly of common species.

3.1.3 The habitats on Site were considered suitable for nesting birds, hedgehogs and foraging and commuting bats. The building on Site was classified as having low potential for roosting bats. A single bat activity survey was conducted in June 2023. No bats were observed emerging from the building and the number of foraging and commuting bats recorded during the survey indicated low activity levels.

3.2 Features to be Retained and Protected

3.2.1 As detailed within the EclA (JCA Ltd., 2023). The loss, retention and



enhancement of on-Site habitats are quantified in **Table 4**. The proposed development will see the retention of introduced shrub, other woodland; mixed, and urban trees. There will be the partial retention of modified grassland and developed land; sealed surface.

3.2.2 To reduce the impacts of the development on the remaining habitats, the Construction and Environment Management Plan (CEMP) should be adhered to through the construction phase of the development.

Table 4: Summary of baseline habitat biodiversity value through retention, creation, and enhancement.

Biodiversity Metric 3.1 Habitat	Retained		Enhanced		Lost	
	Area (ha)	Unit	Area (ha)	Unit	Area (ha)	Unit
Developed land; sealed surface	1.322	0.00	0.00	0.00	0.40	0.00
Introduced shrub	0.006	0.01	0.00	0.00	0.00	0.00
Vegetated garden	0.166	0.33	0.00	0.00	0.01	0.02
Modified grassland	0.944	2.08	0.00	0.00	0.51	1.12
Other woodland; mixed	0.225	0.99	0.00	0.00	0.00	0.00
Urban tree*	0.077	0.00	0.00	0.00	0.00	0.00
Urban tree*	0.069	0.61	0.00	0.00	0.01	0.04
Total	2.81	4.36	0.00	0.00	0.93	1.18

3.2.3 The result of the Biodiversity Metric 3.1 calculation indicates that a total of **1.18 Habitat Units** are to be lost due to the proposed development, with **4.36 Habitat Units** being retained and **0.00 Habitat Units** generated through habitat enhancement.

3.2.4 There are no on-Site habitat enhancements within the proposed scheme, therefore, habitat creation will compensate for the losses on Site. The Habitat Units to be generated through the created of habitats on Site are detailed in **Section 4**.



4 Habitat Creation

4.1 Summary

4.1.1 The Site contains habitats of low and moderate conservation value. Habitat creation is important in compensating for the removal of habitats to facilitate the development.

4.1.2 The Proposed Development will compensate for the loss of habitats through a combination of the following:

Creation of other neutral grassland.

Creation of modified grassland amenity areas.

Tree planting.

4.1.3 **Table 5** summarises the value of all habitats that are to be created as part of the Proposed Development. In total, **+2.31 Habitat Units** are proposed under the current Detailed Softworks Plan (Dwg No: 11225-FPCR-XX-XX-DR-L-0002 & 0004 P09) for the Site (**Table 5**).

Table 5: Summary value of on-Site habitat proposals.

Target Habitat	Area (ha)	Target Distinctiveness	Score	Target Condition	Score	Biodiversity value
Developed land; sealed surface	0.61	V.Low	0	N/A - Other	0	0.00
Modified grassland	0.04	Low	2	Poor	1	0.08
Other neutral grassland	0.27	Medium	4	Moderate	2	1.99
Urban tree*	0.07	Medium	4	Moderate	2	0.24
Total	0.92	-	-	-	-	2.31

*Urban tree area is excluded from total Site area.

4.1.4 The positions of the proposed new planting and faunal provisions can be seen in **Appendix 2**. **Appendix 6** details the implementation of habitats and their future monitoring and management for Years 1 – 30 of the proposed development.

4.2 Grassland Planting

4.2.1 Biodiversity Metric Condition: For the modified grassland to reach poor condition, the following condition assessment criteria should be met through the prescribed management practices.

Criteria D – Physical damage is evident in less than 5% of total grassland



area.

Criteria E – Cover of bare ground is between 1% and 10%, including localised areas.

Criteria G – There is an absence of invasive non-native plant species.

4.2.2 Species Selection: The seed mix specified in the Detailed Softworks Plan (Dwg No: 11225-FPCR-XX-XX-DR-L-0002 & 0004 P09) is the A19 All Purpose Landscaping seed mixture from Germinal.

4.2.3 Quantity: Approximately 0.04ha (400m²) of land will be converted to species rich grassland. Sown at 50 grams per meter squared, this will require 20kg of seed mix.

4.2.4 Species Specifications: A list of the species included in the A19 All Purpose Landscaping seed mix can be seen below in **Table 6**.

Table 6: List of A19 All Purpose Landscaping seed mixture from Germinal.

Botanical Name	Common Name	%
<i>Festuca rubra rubra</i>	Corail strong creeping red fescue	20
<i>Lolium perenne</i>	Zurich creeping perennial ryegrass	15
<i>Festuca rubra litoralis</i>	Borluna slender creeping red fescue	25
<i>Lolium perenne</i>	Agreement perennial ryegrass	35
<i>Agrostis castellana</i>	Highland browntop bentgrass	5
	Total	100

4.2.5 Planting Implementation: 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 modified 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 garden spaces and shrub beds. 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.

Sowing: The seed mix should be sown during s(ate March to early June) or early autumn (late September to early October). The seeds should be sown sparsely, at a rate of 50 grams per square metre. Mix the seed with damp sand or sawdust in a ratio of 1 to 3 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. Mow newly sowing modified grassland regularly (every 7-10 days) during first year of establishment. Cut to a height of 40-60mm and remove the cuttings to prevent nutrients returning to the soil.

If after 2 years the grassland remains species poor, 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.

Once established, mow regularly as a lawn between 25mm to 40mm. To permit flowering, reduce mowing regime from late June and cut every 4-6 weeks. Cuttings should be collected and removed from the Site.

4.3 Other Neutral Grassland Planting

4.3.1 **Biodiversity Metric Condition:** For the other neutral grassland to reach moderate condition, the following condition assessment criteria should be met through the prescribed management practices:

Criteria A – The grassland is a good representation of other neutral grassland with the appearance and composition of vegetation closely matching the characteristics of the grassland habitat type. **This criterion is essential for achieving moderate or good condition.**

Criteria B – Sward height is varied (at least 20% of the sward is less than 7cm and at least 20% is greater than 7cm).

Criteria C - Cover of bare ground is between 1% and 10%, including localised areas.



Criteria D – Cover of bracken is less than 20% and cover of scrub (including bramble) is less than 5%.

Criteria E – Combined cover of species indicative of sub-optimal condition and physical damage accounts for less than 5% of the total area. If any invasive non-native plant species are present, this criterion is automatically failed.

4.3.2 Species Selection: The seed mix specified in the Detailed Softworks Plan (Dwg No: 11225-FPCR-XX-XX-DR-L-0002 & 0004 P09) is the WF3 General Purpose Neutral Soils seed mixture from Germinal.

4.3.3 Quantity: Roughly 0.27ha (2700m²) of land will be converted to species rich grassland. Sown at 1 gram per meter squared, this will require 2.7kg of seed mix.

4.3.4 Species Specifications: A list of the species included in the WF3 General Purpose Neutral Soils can be seen below in **Table 7**.

Table 7: List of WF3 General Purpose Neutral Soils seed mixture from Germinal.

Botanical Name	Common Name	%
<i>Sanguisorba minor</i>	Salad Burnet	8.0
<i>Galium verum</i>	Lady's Bedstraw	1.0
<i>Leucanthemum Vulgare</i>	Oxeye Daisy	10.0
<i>Malva moschata</i>	Musk Mallow	3.0
<i>Rudbeckia Hirta</i>	Rudbeckia	5.0
<i>Plantago lanceolata</i>	Ribwort Plantain	7.0
<i>Lychnis flos cuculi</i>	Ragged Robin	0.1
<i>Onobrychis vicifolia</i>	Sainfoin	10.0
<i>Hyssopus officinalis</i>	Hyssop	2.8
<i>Achillea millefolium</i>	Yarrow	5.0
<i>Linum usitatissimum</i>	Flax	7.0
<i>Heliopsis helianthoides</i>	Oxeye Sunflower	10.0
<i>Echinacea</i>	Purple Coneflower	10.0
<i>Liatris punctata</i>	Dotted Gayfeather	2.0
<i>Lotus corniculatus</i>	Leo (Birdsfoot Trefoil)	5.0
<i>Geranium dissectum</i>	Cut Leaved Cranesbill	0.5
<i>Geranium molle</i>	Doves Foot Cranesbill	0.5
<i>Digitalis purpurea</i>	Foxglove	2.5
<i>Symphotrichum laeve</i>	Smooth Blue Aster	5.0
<i>Oenothera biennis</i>	Evening Primrose	1.0
<i>Lathyrus Sylvestris</i>	Narrow-Leaved Everlasting Pea	0.1
<i>Centaurea nigra</i>	Common Knapweed	2.0
<i>Anthriscus sylvestris</i>	Cow Parsley	2.0



<i>Filipendula ulmaria</i>	Meadow Sweet	0.5
	Total	100

4.3.5 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 garden spaces and shrub beds. 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.

Sowing: The seed mix should be sown during spring (Late March to early June) or early autumn (late September to early October). The seeds should be sown sparsely, at a rate of 1 gram per square metre. Mix the seed with damp sand or sawdust in a ratio of 1 to 3 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 into 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, 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.

4.4 Tree Planting

4.4.1 Species Selection: The chosen species are all native to Britain and are already found on site. 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 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 (see **Appendix 7-9**).

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.

4.4.2 Tree Specifications: The following table details the specification for all the replacement trees. Consideration is given to availability, immediate impact, ease of installation and likelihood of successful establishment.

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 good condition.

Table 8: Native deciduous trees.

Botanical Name	Common Name	Form	No. Required
<i>Acer campestre</i>	Field maple	Selected standard	1
<i>Betula pendula</i>	Silver birch	Standard	2
<i>Carpinus betulus</i>	Hornbeam	Standard	2
<i>Prunus avium</i>	Wild cherry	Selected standard	1
<i>Quercus robur</i>	English oak	Selected standard	3
<i>Sorbus aria</i>	Whitebeam	Selected standard	2
<i>Sorbus aucuparia</i>	Rowan	Selected standard	1
Total			12

4.4.3 Tree Planting Implementation: Recommendations for good tree planting practice are given below:

Site Preparation: 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.

Planting Hole: A planting hole will be excavated by hand and will be twice the diameter of the root ball and of equal depth. The sides of the hole should be roughened with the spade. The new tree should be offered into the hole and backfilled using the original soil material. Soil amendments such as compost should not be added as this has been shown to be detrimental to successful establishment.

Staking: Staking will be required in order to secure the tree and prevent losses within the first years of establishment. It may be necessary to angle the stakes in order to avoid damaging the root ball. All trees are to be staked at a height of no more than 1 metre.

Tree Ties: 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. Ties should be inspected after one year and adjusted as required. Only if establishment is particularly slow should stakes remain in place longer than three growing seasons.

Mulching: Woodchip mulch should be applied around the base of each tree 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).

Tree Guards: Spiral type guards are to be incorporated around the base of each stem in order to reduce pest damage throughout the winter months and to prevent mechanical damage from strimmers and mowers.

Future work: 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.

4.5 Aftercare

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

4.5.2 Once planted, trees 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.

4.5.3 All tree and shrub works should be completed outside of the breeding bird



period (March to August).

- 4.5.4 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 by manually without the use of herbicides.
- 4.5.5 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.
- 4.5.6 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.



5 Faunal Boxes

5.1 Summary

5.1.1 In total **12** bat boxes, **two** enclosed bat boxes, **ten** bird boxes, and **two** hedgehog shelters have been recommended. The location of each faunal box to be erected can be seen in **Appendix 2**.

5.2 Bat Roosting Opportunities

5.2.1 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.

5.2.2 The pipistrelle bat *Pipistrellus* sp. species is listed within the Leeds City Council BAP and is the most abundant species in the UK. All three species of pipistrelle bats were included in the desk study of the EclA (JCA Ltd., 2023). Other species include noctules *Nyctalus noctule* and myotis species *Myotis* sp. Pipistrelles are the group of species most likely to roost within modern buildings. The boxes incorporated into this enhancement plan are therefore aimed at attracting pipistrelle bats.

5.2.3 **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.



5.2.4 **Enclosed bat box** have been selected to incorporate into each new building. The boxes are positioned high on the walls of the building, and the gap within the box is only a few centimetres wide. These gaps are often overlooked by residents and so should not cause conflict with buyers. Enclosed bat boxes should be placed under the eaves at the apex of the south facing gable end walls. These boxes will then allow bats to access the cavity wall spaces (See **Table 9**).

5.2.5 **Bat Boxes** should be positioned at least 5m high, in groups of three, with their front facing north, southwest or southeast (as recommended by the BCT). This will allow each box to gain a different amount of warmth from the sun, creating a range of different environmental conditions for bats to choose from. The selected boxes should be constructed of woodcrete or similar in order increase




their life expectancy. A range of different designs should be selected to increase the likelihood of bats roosting within the site (See **Appendix 2**).

Table 9: Bat roosting opportunities to be installed as part of the Proposed Development.

Bat Brick/Box	Number to be Installed	Description	Details
<p>Ibstock Enclosed Bat Box 'C' (or a comparable design)</p> 	<p>2 (on the proposed buildings)</p>	<p>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.</p> <p>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.</p> <p>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.</p>	<p>Dimensions</p> <p><u>Large Box</u></p> <p>Height: 290mm</p> <p>Width: 215mm</p> <p>Depth: 105mm</p> <p>Weight: 9.2kg</p>
<p>1FD Schwegler Bat Box (or a comparable design)</p> 	<p>6*</p>	<p>The Schwegler 1FD has been developed specifically for smaller bats as both the interior and the type and size of the entrance hole match the requirements of smaller species.</p> <p>It features a special layout inside, such as a domed roof, an increased interior height and two grooved internal wooden front panels with precise spacing between them. This model has proved highly effective as a nursing area. The front panel can be removed for cleaning and inspection.</p> <p>This box is designed to be sited on trees using the galvanised steel hanger and aluminium nail provided.</p> <p>Schwegler bat boxes are backed by conservation organisations, government agencies and forestry experts and have the highest occupation rates of all nest boxes. They are carefully designed to mimic natural roost sites and to provide a stable environment.</p>	<p>Dimensions</p> <p>Height: 360mm</p> <p>Diameter: 160mm</p> <p>Weight: 4.8kg</p>
<p>Schwegler 2FN Bat Box (or a comparable design)</p>	<p>6*</p>	<p>The 2FN bat box has two entrances - one at the front and one at the rear against the tree. It has a domed roof to allow the bats to form roosting</p>	<p>Dimensions</p> <p>Height: 360mm</p>



	<p>clusters for warmth, and an increased internal height. This design has proved highly successful with larger bat species including noctule and Bechstein's bats <i>Myotis bechsteinii</i>. This bat box is also designed to be effective against small predators and excludes draughts and light. Due to the opening on the bottom, this bat box does not require cleaning.</p>	<p>Diameter: 160mm Weight: 4.9kg</p>
<p>* The 12 bat boxes proposed should be installed onto trees within the Site boundary in clusters of 3. These clusters should compromise of a mix of both the Schwegler 1FD and 2FN.</p>		

5.2.6 Where lighting is required, conditions should be imposed to ensure the impact of the lighting on the bats is kept to a minimum. Lighting will be situated away from areas of both retained and new trees and shrubs. Any lighting should be of a low level of luminance. The use of low pressure sodium lamps or high pressure sodium lamps is recommended instead of mercury or metal halide lamps. Overall levels on site should be as low as planning permits. Lighting column height near hedgerows or trees should be kept to a minimum as this reduces the ecological impact. Where lighting can be directed downwards at a more acute angle, taller columns can be used. Please refer to the Bat Conservation Trust’s Bats and Lighting in the UK (2023).

5.3 Bird Boxes

5.3.1 In the UK there are approximately 600 species of bird, each occupying a different habitat and present in a different region of the country. A small number of these regularly visit gardens and will quickly adopt 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. It is recommended that a breeding bird survey is carried out on site to inform and produce a robust and tailored Biodiversity Enhancement Report for this site.



5.3.2 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.

5.3.3 Open-sided boxes: Birds such as Robins, Wrens and Blackbirds will only nest in boxes with an open front design. These should be positioned within dense vegetation, below 2m high. Robins and wrens prefer smaller boxes (25 x 15 x 12 cm) and Blackbirds larger boxes (30 x 18 x 15 cm). Therefore, a mix of box sizes should be selected.




5.3.4 **Four** standard bird boxes and **four** open-sided boxes should be placed on suitable trees, in a sheltered position and **two** swift boxes on the building (see **Appendix 2**).

Table 10: Bird nesting opportunities to be installed as part of the Proposed Development.

Bird Box	Number to be Installed	Description	Details
<p>WoodStone Build-in Swift Nest Box (or comparable design)</p> 	2	<p>Swifts in the UK have been declining rapidly over the past decades. It is thought that the destruction of suitable nesting habitat is a core reason for this decline, and many councils are now advising swift bricks be used in new-builds and renovations.</p> <p>This build-in nest box is designed to be integrated into the cavity of a building. It is constructed from long lasting FSC certified WoodStone with a plywood backing. This nest box should be sited at least 5m high, with a clear flight path and avoid south facing sites.</p>	<p>Dimensions:</p> <p>Height: 18cm</p> <p>Width: 42cm</p> <p>Depth: 15.5cm</p>
<p>Vivara Pro Barcelona WoodStone Open Nest Box (or comparable design)</p> 	4 (in a cluster to be installed on 2 mature trees or within dense vegetation)	<p>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).</p> <p>These open nest boxes are suitable for wrens, robins, spotted flycatchers, pied and grey wagtails, song thrushes and blackbirds.</p>	<p>Dimensions</p> <p>Height: 240mm</p> <p>Width: 190mm</p> <p>Length: 175mm</p>
<p>Vivara Pro Seville 32mm WoodStone Nest Box (or comparable design)</p>	4 (in a cluster to be installed on one mature tree)	<p>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</p>	<p>Dimensions</p> <p>Height: 310mm</p> <p>Width: 200mm</p> <p>Length: 200mm</p>



		<p>internal temperature (important for breeding).</p> <p>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 and garden settings.</p>	<p>Weight: 6.9kg</p> <p>Entrance hole diameter: 32mm</p>
---	--	--	--

5.4 Hedgehog shelter

- 5.4.1 Hedgehog numbers have declined by 90% over the past 50 years due to several 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.
- 5.4.2 Hedgehog access holes: Access to gardens and natural habitats has become increasingly limited for hedgehogs, as fences and walls block their dispersal. It is recommended 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).
- 5.4.3 Hedgehog shelters: providing shelters for hedgehogs within green spaces will encourage hedgehogs to visit the site. Therefore, **two** hedgehog shelters must be included in post-construction (see **Appendix 2**).
- 5.4.4 Hedgehog shelters are simple to construct and should be situated in a sheltered, undisturbed area preferably under vegetation. Dried leaves or hay are placed inside for bedding (Bunnell, 2014). An example of a hedgehog shelter is shown below in **Figure 1**.





Figure 1: Example of hedgehog shelter *in-situ*.



6 Conclusion

6.1 Retention of Ecologically Valuable Features

- 6.1.1 The proposed development will see the retention of introduced shrub, other woodland; mixed, and urban trees. There will be the partial retention of modified grassland and developed land; sealed surface.
- 6.1.2 To reduce the impacts of the development on the remaining habitats, the Construction and Environment Management Plan (CEMP) should be adhered to through the construction phase of the development.

6.2 Habitat Creation

- 6.2.1 It is proposed to create roughly **0.04ha** of modified grassland, **0.27ha** of other neutral grassland, and the planting of **12** native broad-leaved trees. These are described in Section 5 and their planting positions shown in **Appendix 1**.

6.3 Faunal Boxes

- 6.3.1 **Two** enclosed bat boxes and **12** bat boxes will be positioned around the site, within the new buildings and on several suitably sized existing trees. **10** bird boxes including designs aimed at supporting swifts, robins, blackbirds, and wrens will be erected onto the proposed building, fences and mature trees. Finally, **two** hedgehog shelters have been recommended. The recommended location of each faunal box can be seen in **Appendix 2**.

6.4 Management and monitoring

- 6.4.1 Monitoring of faunal boxes and wildlife features over a 30-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 cannot be maintained and revised. **Appendix 6** details the implementation of faunal provisions and their future monitoring and management for Years 1 – 30 of the proposed development.
- 6.4.2 An Implementation, Management, and Monitoring Plan detailing how the soft landscaping will be implemented in the first instance and managed for the benefit of biodiversity for a minimum of 30 years. Please see **Appendix 6**.



7 References

Ausden, M. (2007) *Habitat management for conservation: A handbook of techniques*. Oxford, United Kingdom: Oxford University Press, USA.

Bat Mitigation Guidelines (Jan. 2004). A. J. Mitchell-Jones. English Nature.

Bat Survey Guidelines: Good Practice Guidelines (2023). Bat Conservation Trust (BCT).

Bat Workers Manual (3rd Edition 2004). A. J. Mitchell-Jones & A. P. McLeish. Joint Nature Conservation Committee (JNCC).

Bunnell, T. (2014) *The disappearing Hedgehog*. United Kingdom: Independent Publishing Network.

Kirby, P. (2013) *Habitat management for invertebrates: A practical handbook*. Exeter: Pelagic Publishing.

Perrow, M.R. (2008) *Handbook of ecological restoration: Volume 1, principles of restoration: V. 1: Principles of restoration*. Edited by Martin R. Perrow and Anthony J. Davy. Cambridge, United Kingdom: Cambridge University Press.

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/uksi/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 Plan



Planting Schedule

Qty	Latin Name	Common Name	Height	Form	Root Condition	Clear Stem	Girth
1	Acer campestre	Field maple	250-300cm	Selected Standard	RB	Min. 200cm	10-12cm
2	Betula pendula	Silver birch	250-300cm	Standard	RB	Min 150cm	10-12cm
2	Carpinus betulus	Hornbeam	300-350cm	Standard	RB	Min 200cm	10-12cm
1	Prunus avium	Gean, Wild cherry	300-350cm	Selected Standard	RB	Min 200cm	10-12cm
3	Quercus robur	Common, English oak	300-350cm	Selected Standard	RB	Min 200cm	10-12cm
2	Sorbus aria	Whitebeam	300-350cm	Selected Standard	RB	175-200cm	10-12cm
1	Sorbus aucuparia	Mountain ash or Rowan	300-350cm	Selected Standard	RB	175-200cm	10-12cm
12							

Note

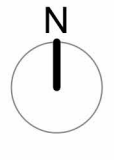
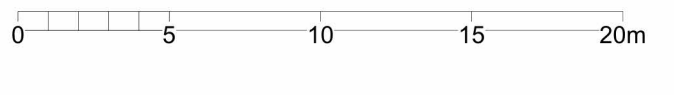
Meadow Grassland
 Supplier: Germinall
 Product: WF3 General Purpose Neutral Soils
 Sowing Rate: 1g/m²
 Area coverage: 1188m²
 Install as per FPCR NBS Landscape Specification 11225-FPCR-XX-XX-SP-L-0001

Amenity Grassland
 Supplier: Germinall
 Product: A19 All Purpose Landscaping
 Sowing Rate: 50g/m²
 Area coverage: 148m²
 Install as per FPCR NBS Landscape Specification 11225-FPCR-XX-XX-SP-L-0001

Trees
 Standard trees to have single stakes, refer to 11225-FPCR-XX-XX-DR-L-0008
 Construction Details Tree Pit for further details

NOTES

This drawing is the property of FPCR Environment and Design Ltd and is issued on the condition it is not reproduced, retained or disclosed to any unauthorised person, either wholly or in part without written consent of FPCR Environment and Design Ltd.



KEY

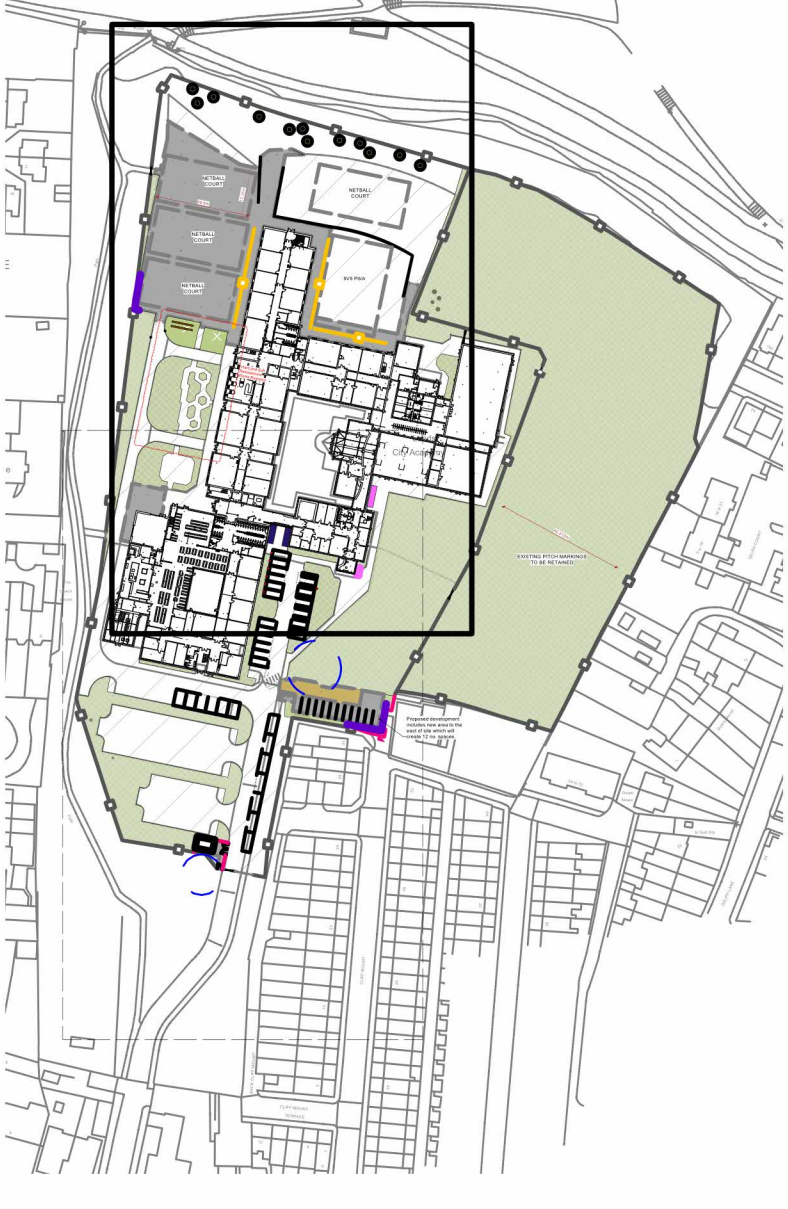
- Application Redline Boundary
- Adjacent Land in Leeds City Council Ownership
- Architecture
See Watson Batty dwg. LCAMS-WBA-SI-XX-GR-A-90_100 for detail
- Proposed substation

SOFT LANDSCAPING

- Existing tree
Refer to JCA Tree Constraints Plan (ref: 18073/AJB.)
- Root Protection Area (RPA)
Refer to JCA Tree Constraints Plan (ref: 18073/AJB.)
- Tree removed
Refer to Tree Retention Plan (ref: JCA Tree Constraints Plan)
- Existing soft landscaping
- Trees
- Meadow grassland
WF3 General Purpose Neutral Soils (Germinall), 1g/m²
- Amenity grassland
A19 All Purpose Landscaping (Germinall), 50g/m²



Key Plan (NTS)



P09	15/01/2024	Ret. wall updates	AJK
P08	10/01/2024	3G Pitch Removed	AJK
rev	date	description	dm chk

fpcr

client: Leeds City Academy
 project: Leeds City Academy Expansion

environmental assessment: FPCR Environment and Design Ltd
 landscape design: Lockington Hall
 urban design: Lockington
 ecology: Derby
 architecture: Derby
 arboriculture: DE74 2RH

drawing title: Detailed Softworks Plan
 Sheet 1 of 2

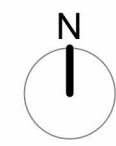
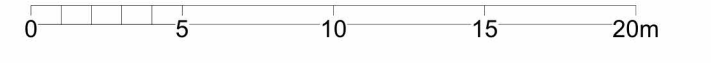
scale: 1:250 @ A1
 dm: OFD
 chk: DH
 date created: 11 JULY 2023

project number: 11225
 status: S3
 issue: P09

document number: 11225-FPCR-XX-XX-DR-L-0002

File: \\FPCR-FS-01\Projects\211200\11225\BASES\XREF\11225 Landscape Rev V 3G PITCH REMOVED v2023.vwx

NOTES
 This drawing is the property of FPCR Environment and Design Ltd and is issued on the condition it is not reproduced, retained or disclosed to any unauthorised person, either wholly or in part without written consent of FPCR Environment and Design Ltd.

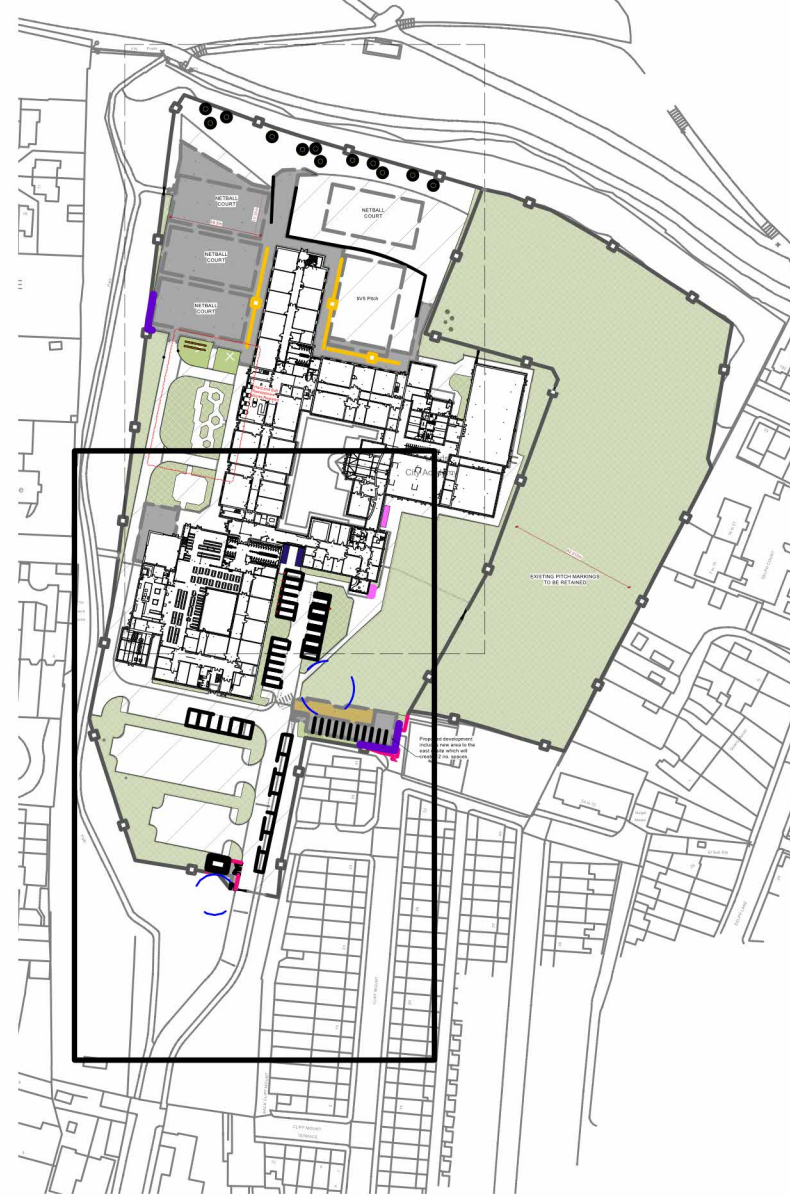


- KEY**
- Application Redline Boundary
 - Adjacent Land in Leeds City Council Ownership
 - Architecture
See Watson Batty dwg. LCAMS-WBA-SI-XX-DR-A-00_100 for detail
 - Proposed substation
- SOFT LANDSCAPING**
- Existing tree
Refer to JCA Tree Constraints Plan (ref: 18073/AJB.)
 - Root Protection Area (RPA)
Refer to JCA Tree Constraints Plan (ref: 18073/AJB.)
 - Tree removed
Refer to Tree Retention Plan (ref: JCA Tree Constraints Plan)
 - Existing soft landscaping
 - Trees
 - Meadow grassland
WF3 General Purpose Neutral Soils (Germinat), 1g/m2
 - Amenity grassland
A19 All Purpose Landscaping (Germinat), 50g/m2



Note: Refer to Detailed Softworks Plan Sheet 1 of 2
 11225-FPCR-XX-XX-DR-L-0002 for planting schedule

Key Plan (NTS)



P09	15/01/2024	Ret. wall updates	AJK
P08	10/01/2024	3G Pitch Removed	AJK
rev	date	description	dm chk

- masterplanning
- environmental assessment
- landscape design
- urban design
- ecology
- architecture
- arboriculture



client
Leeds City Academy

project
Leeds City Academy Expansion

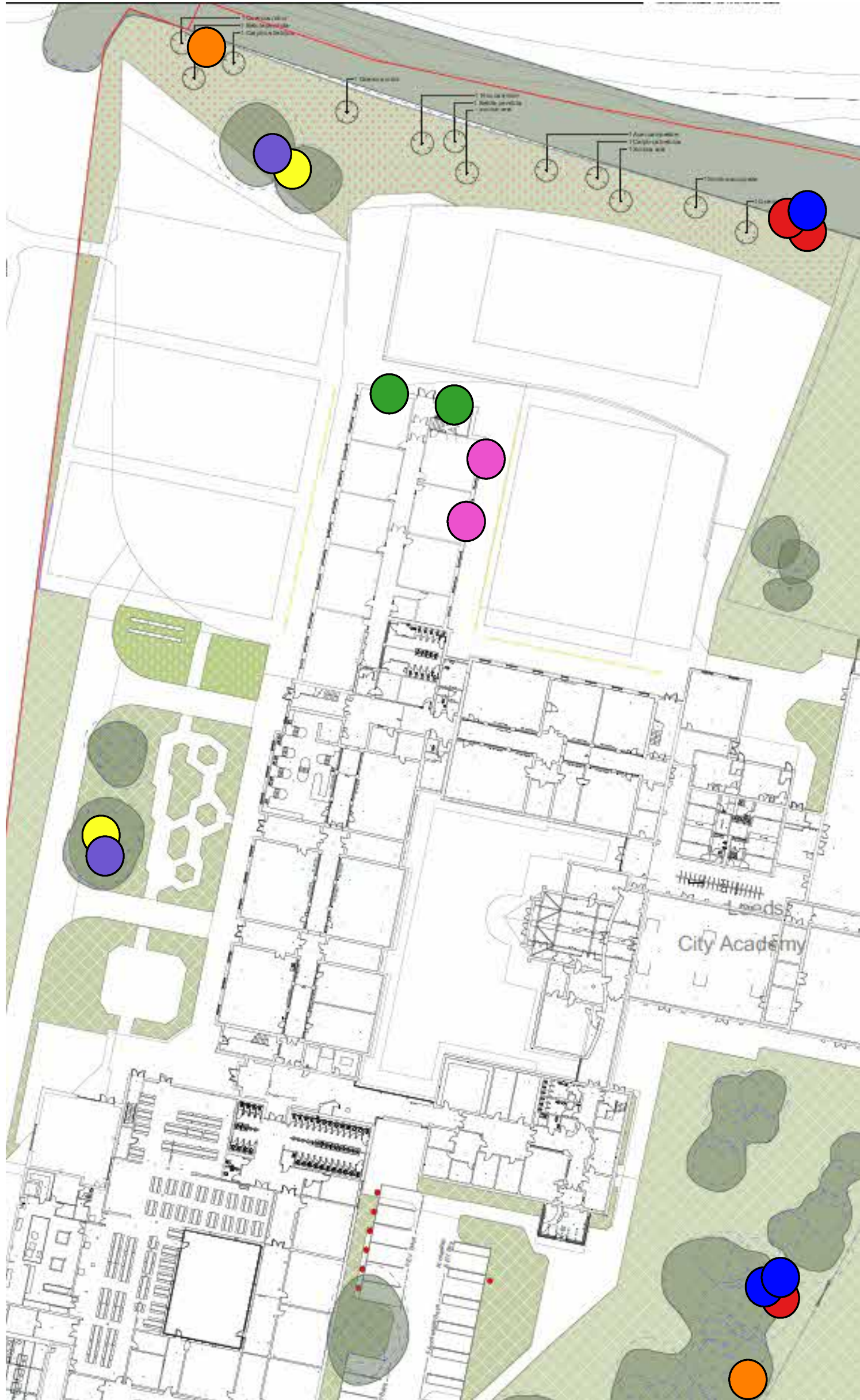
drawing title
**Detailed Softworks Plan
 Sheet 2 of 2**

scale	1:250 @ A1	dm	OFD	chk	DH	date created	11 JULY 2023
project number	11225	status	S3	issue	P09		

document number
11225-FPCR-XX-XX-DR-L-0004

Appendix 2: Faunal Boxes Plan





**Leeds City Academy
Bedford Field
Leeds
LS6 2LG**

Key

- 1FD Schwegler Bat Box
- Schwegler 2FN Bat Box
- Ibstock Enclosed Bat Box 'C'

- Vivara Pro Barcelona WoodStone Open Nest Box
- Vivara Pro Seville 32mm WoodStone Nest Box
- WoodStone Swift Nest Box
- Hedgehog Shelter

Site Leeds City Academy	Client Faithful+Gould
Project 19638d BEMP	Author EIC
Plan ref 19638d/EIC	Revision 001
Contains Ordnance Survey data ©Crown copyright and database right 2024	



**Leeds City Academy
Bedford Field
Leeds
LS6 2LG**

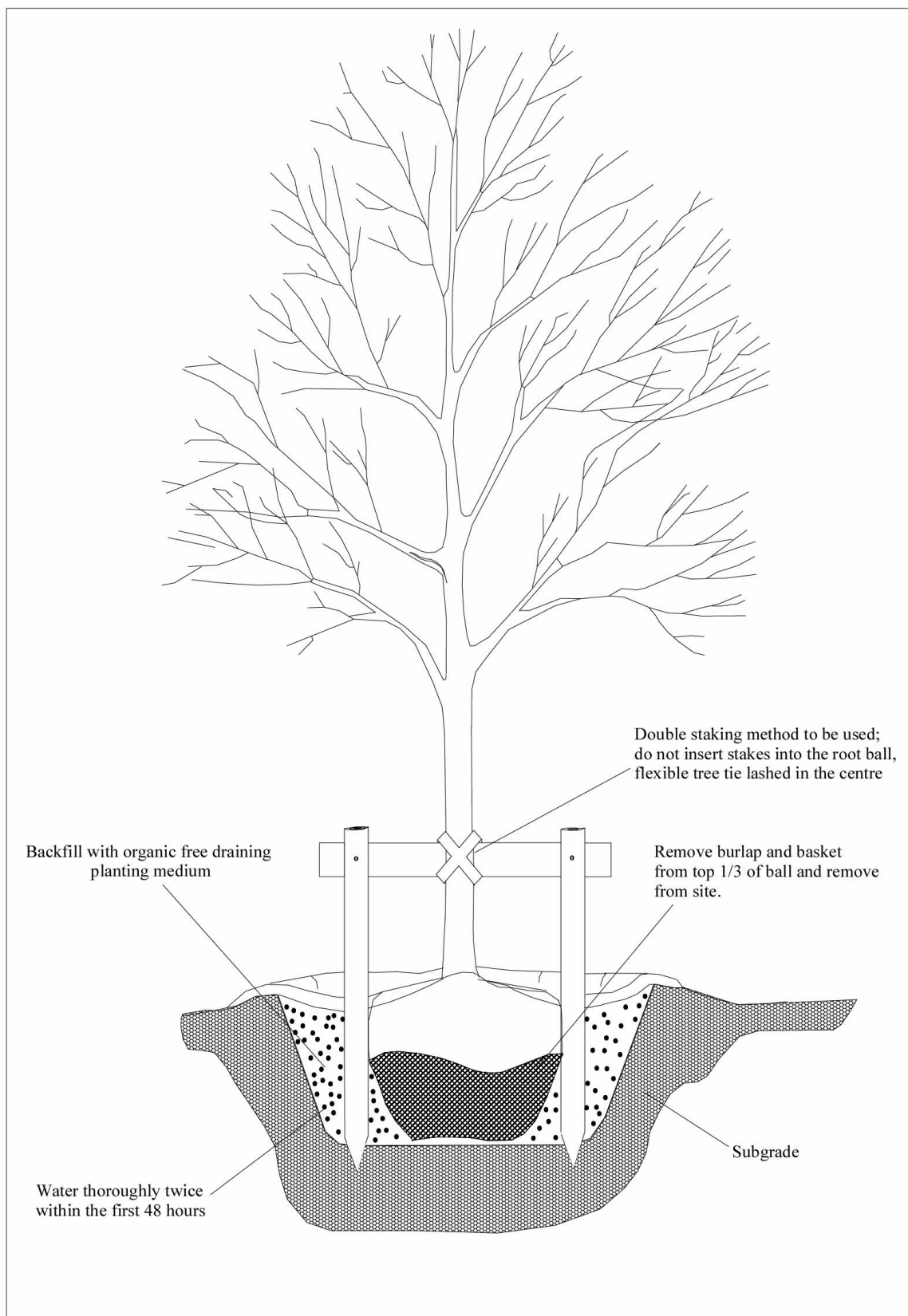
Key

- 1FD Schwegler Bat Box
- Schwegler 2FN Bat Box
- Vivara Pro Barcelona WoodStone Open Nest Box

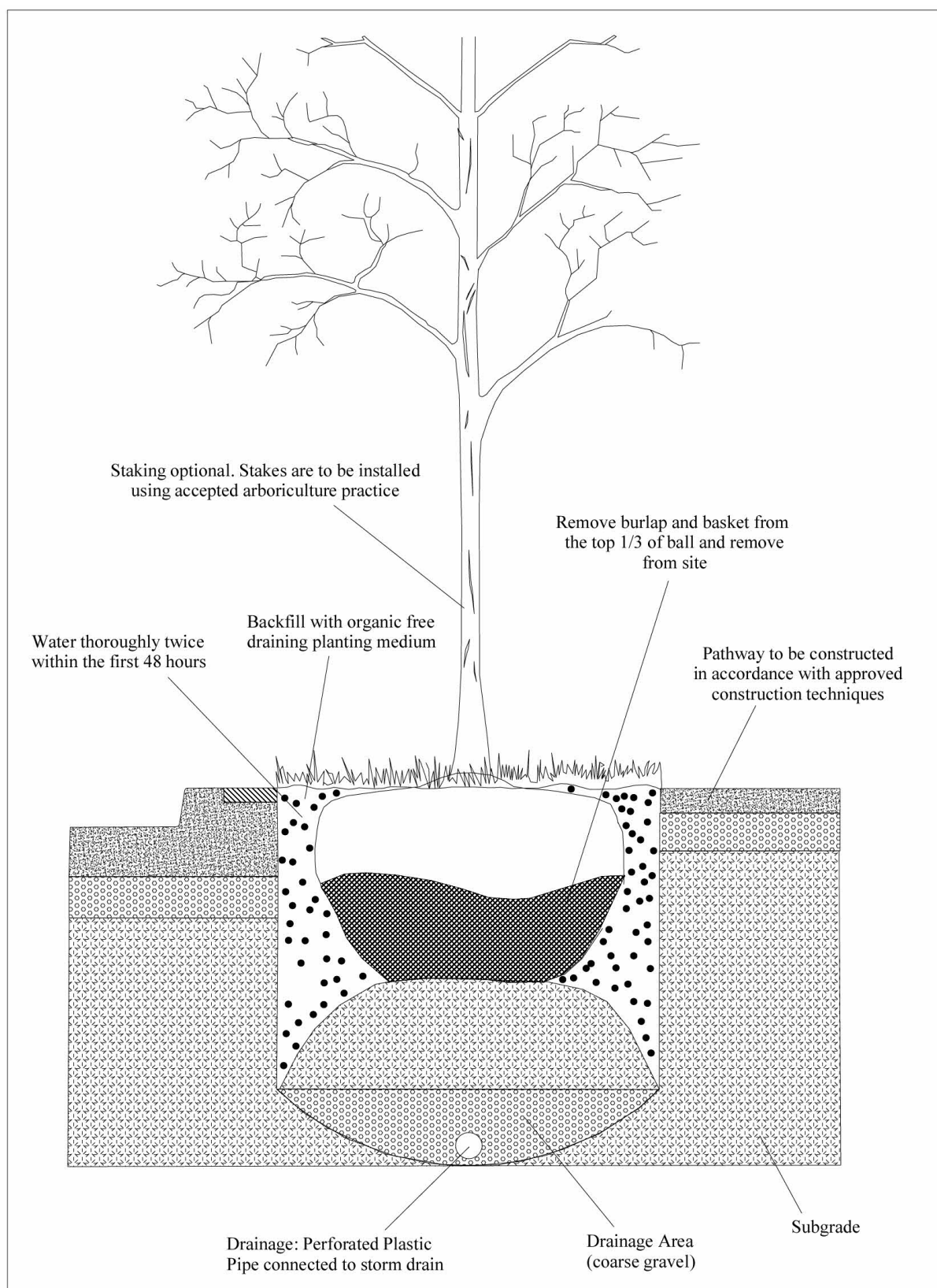
- Vivara Pro Seville 32mm WoodStone Nest Box

Site Leeds City Academy	Client Faithful+Gould
Project 19638d BEMP	Author EIC
Plan ref 19638d/EIC	Revision 001
Contains Ordnance Survey data © Crown copyright and database right 2024	

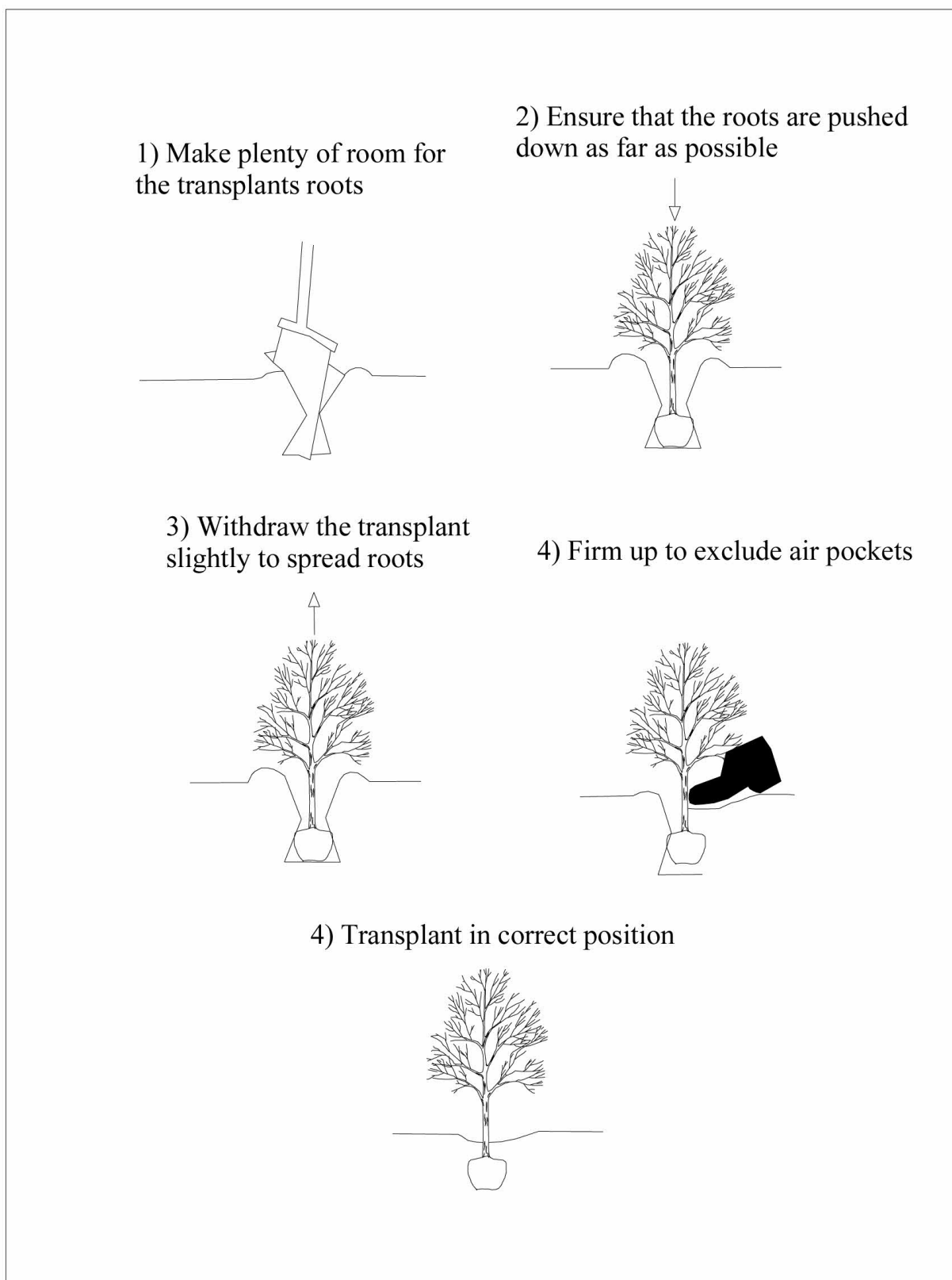
Appendix 3: Example of planting a tree in an open grass strip



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 11: Schedule of the implementation, management, and monitoring of the habitats on site at Prospect Road over the next 30 years.

Key:

	Appropriate time to conduct deliverable
	Unadvised time to conduct deliverable

Table 11.1 Schedule of ecological implementation – Year 0

Deliverable		Time of Year											
		Jan	Feb	Mar	April	May	June	July	Aug	Sep	Oct	Nov	Dec
Grassland	Other neutral grassland & modified grassland: Preparation of ground for seed												
	Other neutral grassland: Sow general purpose meadow mixture								Late August				
	Modified grassland: Sow flowering lawn mixture								Late August				
Tree planting	Planting of new trees and put mulch at base of trees												
Faunal boxes	Installation of bat boxes on trees & buildings												
	Installation of bird boxes on trees & buildings												



Table 11.2 Schedule of ecological implementation – Year 1

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						
	Modified grassland: Mow regularly (7-10 days) to height of 40mm – 60mm												
	Monitoring: Undertake condition assessment of newly established other neutral grassland & modified grassland												
Tree planting	Monitoring: Undertake condition assessment of newly planted trees, scrub & woodland												
	Monitoring: Inspect newly planted trees												
	Management: Trees to receive 50 litres of water per week												
	Management: Replacement of dead trees												
	Management: Removal by hand of weeds surrounding newly planted trees												
	Management: Addition of new bark mulch around base of all trees												
Faunal boxes	Installation of bat boxes on trees & buildings												
	Installation of bird boxes on trees & buildings												
	Install hedgehog shelters												



Table 11.3 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>Modified grassland:</u> Once established regularly mow to 25mm – 40mm. Reduce mowing regime from late June and cut every 4 – 6 weeks												
	<u>Other neutral grassland & modified grassland:</u> If grassland remains species poor, cut short, rake & re-sow seed								Late August				
	<u>Monitoring:</u> Inspect newly planted trees												
	<u>Management:</u> Trees to receive 50 litres of water per week												
	<u>Management:</u> Replacement of dead trees												
	<u>Management:</u> Removal by hand of weeds surrounding newly planted trees												
	<u>Management:</u> Addition of new bark mulch around base of all trees												
	Faunal boxes	Installation of bat boxes on trees & buildings, if not installed previous year											
Installation of bird boxes on trees & buildings, if not installed previous year													



Install hedgehog shelters, if not installed previous year													
---	--	--	--	--	--	--	--	--	--	--	--	--	--

Table 11.4 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						
	Modified grassland: Once established regularly mow to 25mm – 40mm. Reduce mowing regime from late June and cut every 4 – 6 weeks												
Tree planting	Monitoring: Inspect newly planted trees												
	Management: Trees to receive 50 litres of water per week												
	Management: Replacement of dead trees												
	Management: Removal by hand of weeds surrounding newly planted trees												
	Management: Addition of new bark mulch around base of all trees												
Faunal boxes	Installation of bat boxes on buildings & trees, if not installed previous year												
	Installation of bird boxes on buildings & trees, if not installed previous year												
	Install hedgehog shelters, if not installed the previous year												



Table 11.5 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						
	<u>Modified grassland:</u> Once established regularly mow to 25mm – 40mm. Reduce mowing regime from late June and cut every 4 – 6 weeks												
Tree planting	<u>Monitoring:</u> Inspect newly planted trees												
	<u>Management:</u> Replacement of dead trees												
	<u>Management:</u> Removal by hand of weeds surrounding newly planted trees												
	<u>Management:</u> Addition of new bark mulch around base of all trees												
	<u>Management:</u> Newly planted trees to receive 50 litres of water per week for first 3 years												
Faunal boxes	Installation of bat boxes on trees & buildings, if not installed previous year												
	Installation of bird boxes on trees & buildings, if not installed previous year												
	Install hedgehog shelters, if not installed previous year												



Table 11.6 Schedule of ecological implementation – Year 5

Deliverable		Time of Year											
		Jan	Feb	Mar	April	May	June	July	Aug	Sep	Oct	Nov	Dec
Grassland Creation	Other neutral grassland: Mow grassland twice per year no shorter than 50mm			Early March	Early April		Late June						
	Modified grassland: Once established regularly mow to 25mm – 40mm. Reduce mowing regime from late June and cut every 4 – 6 weeks												
	Monitoring: Undertake condition assessment of newly established other neutral grassland & modified grassland												
Tree planting	Monitoring: Undertake condition assessment of newly planted trees & scrub												
	Monitoring: Inspect newly planted trees												
	Management: Replacement of dead trees												
	Management: Removal by hand of weeds surrounding newly planted trees												
	Management: Addition of new bark mulch around base of all trees												
	Management: Newly planted trees to receive 50 litres of water per week for first 3 years												
Faunal boxes	Installation of bat boxes on trees & buildings, if not installed previous year												



	Installation of bird boxes on trees & buildings, if not installed previous year												
	Install hedgehog shelters, if not installed previous year												



Table 11.7 Schedule of ecological implementation – Year 6 - 10

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						
	Modified grassland: Once established regularly mow to 25mm – 40mm. Reduce mowing regime from late June and cut every 4 – 6 weeks												
	Monitoring: Undertake condition assessment of newly established other neutral grassland & modified grassland in year 10 . If necessary, update management plan												
Tree planting	Monitoring: Undertake condition assessment trees and scrub, in year 10 . If necessary, update management plan												
	Management: If necessary, newly planted trees to receive 50 litres of water per week for first 3 years												
Faunal boxes	Monitoring of bat boxes (including repairs and cleaning, where necessary)												



	Monitoring of bird boxes (including repairs and cleaning, where necessary) This must be conducted outside of bird nesting season (i.e. September to January)												
--	--	--	--	--	--	--	--	--	--	--	--	--	--



Table 11.8 Schedule of ecological implementation – Year 11 - 30

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						
	Modified grassland: Once established regularly mow to 25mm – 40mm. Reduce mowing regime from late June and cut every 4 – 6 weeks												
	Monitoring: Undertake condition assessment of newly established other neutral grassland & modified grassland in year 20 & 30 . If necessary, update management plan												
Tree planting	Monitoring: Undertake condition assessment trees, scrub & woodland in year 20 & 30 . If necessary, update management plan and identify trees that need to be pruned or coppiced and areas to be thinned												
Faunal boxes	Monitoring of bat boxes (including repairs and cleaning, where necessary)												



	Monitoring of bird boxes (including repairs and cleaning, where necessary) This must be conducted outside of bird nesting season (i.e. September to January)												
--	--	--	--	--	--	--	--	--	--	--	--	--	--



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, Consultant 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 working with experience surveying for a range of protected species. Eleanor has completed training courses in designing for Biodiversity Net Gain and UK Hab training courses in the UK Hab classification system and the use of UK Hab within the Biodiversity Metric.

Rick Westwood, Graduate Ecologist

BA (Hons) History and Politics

Rick gained his undergraduate degree in History and Politics in 2001 from Leeds Metropolitan University before going on to complete a PGCE in History at the University of Leeds in 2003. After 18 years in secondary education and the NHS, Rick began assisting on bat emergence surveys in 2023, after which, he gained employment as a Graduate Ecologist at JCA Ltd



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



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

14/03/2024

Reviewed by



.....
Rick Westwood *BA (Hons)*

14/03/2024

Reviewed by



.....
Adam West *BSc (Hons) ACIEEM*

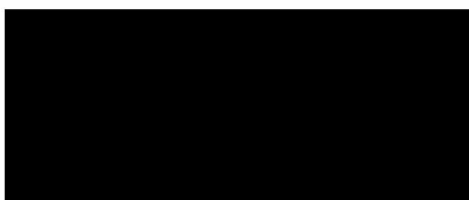
15/03/2024



For and on behalf of **JCA Ltd**

Registered Office:

**Unit 80
Bowers Mill
Branch Road
Barkisland
Halifax
HX4 OAD**





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



HEAD QUARTERS

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

Company Reg No: 05005041
VAT No: 686 4674 78

