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Biodiversity Management Plan (Offsite Habitats)

Client

Harworth Group

Project

Gateway 36, Rockingham, Barnsley – Unit 7

Date

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Rev	Issue Status	Prepared/Date	Approved/Date
-	Final	JDH / 06.11.24	PH / 08.11.24

1.0 INTRODUCTION

- 1.1 The following Habitat Creation and Management Plan (HCMP) report has been prepared by FPCR Environment and Design Ltd on behalf of the Harworth Group in support of requirements under the Section 106 Schedule 4 agreement, and condition 39 of the outline planning consent (10 Aug 2020, APPLICATION NO. 2019/1573).
- 1.2 The Section 106 Agreement requires that for each phase of development a 'Biodiversity Impact Assessment Report and a Biodiversity Offsetting Scheme' is to be submitted to and approved by the Council. The Biodiversity Offsetting Scheme is 'to provide a minimum 10% net gain in Biodiversity Units for habitats based on the Biodiversity Impact Score in the Biodiversity Impact Assessment for that Phase'.
- 1.3 The Section 106 Agreement specifies that the 'Biodiversity Offsetting Scheme for each Phase shall include:
- The identity of an appropriate receptor site or sites upon which any biodiversity enhancements will be provided;
 - A management plan for the provision and maintenance of such offsetting measures for not less than 32 years from the date of implementation of the Approved Biodiversity Offsetting Scheme;
 - The provision of contractual terms to secure the delivery of the offsetting measures.
- 1.4 The Biodiversity Offsetting Scheme (FPCR 2024) has informed this document and details the specifics of the Biodiversity Net Gain Assessment.
- 1.5 Separate Landscape and Ecological Management Plans (LEMP) (Urban Wilderness) provide details of on-site habitat management for the development.
- 1.6 This document aims to:
- Provide a management plan for the provision and maintenance of offsite habitat creation and enhancement as specified within the Biodiversity Offsetting Scheme (FPCR 2022);
 - Cover a period of 32 years from the date of implementation of the approved Biodiversity Offsetting Scheme.
- 1.7 This plan includes:
- Description and evaluation of the habitat features to be enhanced;
 - Description and location of habitat features to be created;
 - Aims and objectives of habitat creation;
 - Mechanisms and timescales for habitat creation including soil levels and types, seed mixes, tree and shrub specifications and planting specifications;
 - Procedures to deal with failures;
 - Personnel responsible for implementation of the plan;
 - Monitoring and remedial/contingency measures;
 - Appropriate management options for achieving aims and objectives;
 - Identification of the parties responsible for all elements of management;

- Preparation of an ongoing works schedule, detailed for the first 5 years with review and agreement of ongoing work planning with the LPA at least every 5 years.

Scope

- 1.8 An area of woodland within Barrow Hill Colliery is the focus of this management plan (Figure 1).
- 1.9 In brief the objective for this area is to enhance existing woodland from moderate to good condition
- 1.10 This management plan provides detail for an initial five-year period and provides information on the management of enhanced and newly created habitats, in order to ensure their establishment and safeguard their long-term biodiversity value
- 1.11 Long-term objectives for the full 32-year period are set out within this document. To achieve these objectives, the management plan will be reviewed and updated at least every five years.

2.0 FACTORS INFLUENCING MANAGEMENT PROPOSALS

Dearne Valley Wetlands Site of Special Scientific Interest (SSSI)

- 2.1 Natural England confirmed Dearne Valley Wetlands SSSI under section 28 of the Wildlife and Countryside Act 1981 on 4 February 2022. The notified SSSI consists of 22 site units, with differing interest features¹. Site unit 21 is made up of Barrow Hill Colliery and a section of Short Wood.
- 2.2 The notification for this site unit reports the features of interest to be breeding willow tit and breeding bird assemblage of lowland scrub. Both features of interest in this unit are reported in the notification documentation to be in favourable condition as of March 2020.
- 2.3 From the notification documentation, the SSSI management obligations for site unit 21 are to maintain the scrub habitat in its current condition, preventing succession. Wider management of the Barrow Hill Colliery site which does not interfere with these objectives, or impact upon the favourable status of the features of interest would therefore be additional, going beyond that required under the SSSI designation.
- 2.4 Most operations within the SSSI boundary require written consent from Natural England. This includes, but is not limited to:
- Application of pesticides, including herbicides (weed killers).
 - Planting or seeding.
 - Destruction, displacement, removal or cutting of any plant or plant remains, including tree, shrub, herb, hedge, dead or decaying wood, moss, lichen, fungus, leaf-mould or turf.
 - Tree and/or woodland management and alterations to tree and/or woodland management (including, planting, felling, pruning and tree surgery, thinning, coppicing, changes in species composition, removal of fallen timber).
 - Destruction, construction, removal, rerouting, or regrading of roads, tracks, walls and fences.
 - Storage of materials.
 - Use of vehicles.
- 2.5 Where an operation has been granted a consent, licence or permission from another authority separate consent will not be required from Natural England. However, other authorities are required to consult Natural England before such consents, licences or permissions are issued.

Baseline Habitats

- 2.6 Habitat surveys were carried out by FPCR in 2019. A summary of habitat to be managed is detailed below, as well as faunal species which require consideration during ongoing management.

Other woodland-mixed, mainly broadleaved

- 2.7 The woodland is Plantation/Secondary semi-natural broadleaved woodland, located within the Dearne Valley Wetlands SSSI. It is bordered by areas of established lowland mixed deciduous

¹ Dearne Valley Wetlands SSSI South Yorkshire – Supporting Information. 2021. Natural England

woodland, mixed scrub, neutral grassland, and agricultural land. Although there was clear evidence (tree tubes) of plantation, there was a substantial natural regeneration amongst the planting so has the 'feel' of secondary semi-natural woodland. Birch *Betula pendula* was the main canopy species and most of the natural regeneration comprised this species, but with some pedunculate oak *Quercus robur* and ash *Fraxinus excelsior*. Areas of the understorey were dense and largely impenetrable due to the regeneration and a field layer formed mainly by abundant bramble. Amongst the regeneration there was some hawthorn *Crataegus monogyna*, hazel *Corylus avellana*, dog-rose *Rosa canina*, field maple *Acer campestre* (also occasionally present as a planted tree) and wild cherry *Prunus avium* which has also been planted. The field layer was only viewable from the edges but appeared to be sparse with very few forbs and no woodland species were noted. A lot of bare ground and some common bryophytes such as common feather-moss *Kindbergia praelonga* occurred. Tree age was difficult to assess, possibly 10 years, and there was a very limited deadwood resource but with reasonable structure due to the regeneration, which has given rise to a varied age class.

- 2.8 The woodlands were classed as 'moderate' condition, failing on Criteria 3 and 6 (lack of age diversity and height structure and poor deadwood resource) which reflects their relatively young age and planting origin.
- 2.9 The 6.81ha of woodland at Barrow Hill Colliery targeted within this management plan, forms part of a larger woodland area earmarked to be adopted to offset future phases of the Gateway 36 development as they are brought forward. Earlier phases of the Gateway 36 development have so far secured management for 8.25ha of the woodland. The management prescriptions across the woodland parcels align, and it is considered that the optimal approach will be to manage the cumulative areas concurrently.

Legislative Considerations

- 2.10 All relevant EU and UK nature conservation law will be adhered to concerning the protection of ecological features and ecological enhancement.
- 2.11 Great crested newts, reptiles, roosting bats, badgers and nesting birds will be considered as part of future management to ensure these species are not harmed by management practices but instead benefit from the enhancement of the habitats.

Great Crested Newts (GCN)

- 2.12 GCN are afforded protection under the Wildlife & Countryside Act 1981 (as amended) and the Conservation of Habitats and Species Regulations 2017.
- 2.13 Under Regulation 43 of the Conservation of Habitats and Species Regulations 2017 it is illegal to:
- Deliberately capture, injure or kill any wild animal of a European Protected Species (EPS) such as a GCN,
 - Deliberately disturb wild animals of an EPS (affecting ability to survive, breed or rear young) – disturbance of animals includes in particular any disturbance which is likely to impair their ability to survive, to breed or reproduce, or to rear or nurture their young,

- Deliberately disturb wild animals of an EPS (impairing ability to migrate or hibernate) – disturbance of animals includes in particular any disturbance which is likely to impair their ability in the case of hibernating or migratory species to hibernate or migrate,
 - Deliberately disturb wild animals of an EPS (affecting local distribution and abundance) – disturbance of animals includes in particular any disturbance which is likely to affect significantly the local distribution or abundance of the species to which they belong,
 - Damage or destroy a breeding site or resting place of a wild animal an EPS.
- 2.14 Under the Wildlife and Countryside Act 1981 (as amended) it is illegal to:
- Recklessly or intentionally obstruct access to any structure or place which any GCN uses for shelter or protection,
 - Recklessly or intentionally disturb any GCN while it is occupying a structure or place which it uses for shelter or protection.
- 2.15 If GCN or their breeding sites or resting places are considered reasonably likely to be on-site and impacts upon the species cannot be avoided such that one or more of the Conservation of Habitats and Species Regulations 2017 offences is reasonably likely to be committed a European Protected Species Licence from Natural England is required in order to allow the proposals to proceed (the licence allows derogation from the offences). Licences cannot be obtained to provide protection against offences under the Wildlife & Countryside Act 1981 (as amended).
- 2.16 It is possible to avoid offences under the above-mentioned legislation through the provision of mitigation, which minimises the potential for offences to be committed. Such mitigation may include undertaking works at an appropriate time of the year and completing works following methods that will minimise or avoid potential disturbance or destruction of habitats. In such circumstance, it is sensible for works to be completed under a working method statement.
- Badgers**
- 2.17 Badgers are protected under the Protection of Badgers Act 1992. This act is based on the need to protect badgers from baiting and deliberate harm or injury. The act makes it an offence to:
- Wilfully kill, injure, take possess or cruelly ill-treat a badger, or attempt to do so;
 - To intentionally or recklessly interfere with a sett. Sett interference includes disturbing badgers whilst they are occupying a sett, as well as damaging or destroying a sett or obstructing access routes.
- 2.18 A sett is defined as, '*Any structure or place that displays signs indicating current use by a badger*'.
- 2.19 Work that disturbs badgers whilst occupying a sett is illegal without a Natural England licence. Badgers may be disturbed by work near the sett even if there is no direct interference or damage to the sett.
- 2.20 However, guidance from Natural England² recommends that the potential for such disturbance might not be as great as originally assumed due to the relatively high tolerance levels of badgers. Whether disturbance will be caused should consider the sett characteristics, current

² http://webarchive.nationalarchives.gov.uk/20140605090108/http://www.naturalengland.org.uk/Images/WMLG16_tcm6-11814.pdf

usage and proposed extent of works with the need for a licence being assessed on a site-by-site basis.

- 2.21 Licences only allow works to be carried out between July and November, inclusive.

Reptiles

- 2.22 All common reptile species are partially protected under Sections 9(1) and 9(5) of Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). This legislation protects these animals from:

- intentional killing and injury;
- selling, offering for sale, possessing or transporting for the purpose of sale or publishing advertisements to buy or sell a protected species.

- 2.23 This partial protection does not directly protect the habitat of these reptile species. Where these animals are present on land that is to be affected by development, the implications of legislation are that providing that killing can reasonably be avoided then an operation is legal. Guidance provided by Natural England³ and the Amphibian and Reptile Groups of the UK⁴ recommends that this should be achieved by ensuring that:

- the animals are protected from injury or killing;
- mitigation is provided to maintain the conservation status of the species;
- population monitoring is carried out after operations.

Bats

- 2.24 All UK bat species are afforded full protection under the Wildlife & Countryside Act 1981 (as amended) and the Conservation of Habitats and Species Regulations 2017 (as amended).

- 2.25 Under Regulation 43 of the Conservation of Habitats and Species Regulations 2017 (as amended) it is illegal to:

- Deliberately capture, injure or kill any wild animal of a European Protected Species (EPS),
- Deliberately disturb wild animals of an EPS (affecting ability to survive, breed or rear young) – disturbance of animals includes in particular any disturbance which is likely to impair their ability to survive, to breed or reproduce, or to rear or nurture their young,
- Deliberately disturb wild animals of an EPS (impairing ability to migrate or hibernate) – disturbance of animals includes in particular any disturbance which is likely to impair their ability in the case of hibernating or migratory species to hibernate or migrate,
- Deliberately disturb wild animals of an EPS (affecting local distribution and abundance) – disturbance of animals includes in particular any disturbance, which is likely to affect significantly the local distribution or abundance of the species to which they belong,
- Deliberately disturb wild animals of an EPS (whilst occupying a structure of place used for shelter or protection) – intentionally or recklessly disturb any wild animal while it is occupying a structure or place which it uses for shelter or protection,

³ Reptiles: guidelines for developers, English Nature (2004). <http://publications.naturalengland.org.uk/publication/76006?category=31018>

⁴ Maintaining best practise in reptile mitigation/translocation programmes: Herpetofauna Groups of Britain and Ireland. http://www.arguk.org/index.php?option=com_docman&task=cat_view&gid=13&Itemid=17

- Damage or destroy a breeding site or resting place of a wild animal an EPS.

2.26 Under the Wildlife and Countryside Act 1981 (as amended) it is illegal to:

- Recklessly or intentionally kill, injure or take any wild animals included in Schedule 5.
- Recklessly or intentionally damage or destroy, or obstruct access to any structure or place which any wild animal included in Schedule 5 uses for shelter or protection,
- Recklessly or intentionally disturb any such animal while it is occupying a structure or place, which it uses for shelter or protection.

Nesting Birds

2.27 The Wildlife and Countryside Act 1981 (as amended) is the principal legislation affording protection to UK wild birds. Under this legislation all birds, their nests and eggs are protected by law and it is an offence, with certain exceptions to recklessly or intentionally:

- Kill, injure or take any wild bird;
- Take, damage or destroy the nest of any wild bird while in use or being built;
- Take or destroy the egg of any wild bird.

2.28 Species listed on Schedule 1 of the Wildlife and Countryside Act 1981 (as amended) are specially protected at all times. This protection extends whereby they are protected against intentional disturbance whilst building or occupying a nest, and against disturbance of dependent young.

3.0 MANAGEMENT TARGETS

Other woodland-mixed, mainly broadleaved

3.1 The woodland will be enhanced from moderate to good condition. This requires attainment of the following criteria:

1. Woodland will comprise an area of trees with complete canopy cover.
2. Native species are dominant. Non-native and invasive species account for less than 10% of the vegetation cover.
3. A diverse age and height structure of the trees.
4. Free from damage [Bark stripping; Browse line; Damage shoot tips] (in the last five years) from stock or wild mammals with less than 20% of vegetation being browsed.
5. There should be evidence of successful (i.e. not browsed off before it gets well established) tree regeneration such as seedlings, saplings and young trees.
6. Standing and fallen deadwood of over 20 cm diameter are present including fallen large dead branches/stems and stumps.
7. Wetland habitats if they exist within the wood have little sign of drainage or channel straightening.
8. The area is protected from damage by agricultural and other adjacent operations.
9. There should be no evidence of inappropriate management (e.g. deep ruts, animal poaching or compaction).
10. Invasive non-native plants are below 5%.
11. No signs of significant nutrient enrichment present.
12. More than 3 different native trees and 3 shrub species in an average 10 m radius

3.2 The woodland currently fails condition criteria 3 and 6 and passes the remaining condition criteria.

3.3 Management objectives will initially target creating diversity of structure. Specifically-

- creating glades and rides
- coppicing selected trees
- providing additional deadwood resources

3.4 The biodiversity calculations as detailed in the Biodiversity Offsetting Scheme (FPCR 2024), assume an average time to target condition of 15 years for this woodland enhancement. While many management actions can be implemented within this timeframe, management will extend to the full 32-year period.

Additional Biodiversity Enhancements

Log piles

3.5 Log piles will also be created using material on site where trees have been felled. The logs used will, where possible, have a minimum diameter of 100mm with the bark retained. Twigs and

scrub off-cuttings can also be added with stakes used to prevent the pile from collapsing. Log piles will provide further shelter and hibernation habitat for reptiles and amphibians as well as other wildlife.

Willow Tits

- 3.6 Provision to enhance opportunities for willow tits will be included within the woodland. This provision goes beyond the minimum SSSI requirements to maintain the favourable conservation status and is provided in addition to habitat enhancements in-line with net gain requirements.
- 3.7 Willow tit will not use traditional bird nest boxes so tailored solutions are required. Standing deadwood can be initially created by strapping lengths of deadwood to the trunks of living trees. The deadwood should measure between 10 and 20cm diameter and can range between 1 and 2 m in length. Cable ties or other strapping options can be used to attach the deadwood to living trees and can easily be adjusted or replaced as required in subsequent years.

4.0 PLAN CONTENT

- 4.1 The management plan identifies the features that sympathetic management will retain and enhance.
- 4.2 Every management plan should have an over-arching vision and, for this site, this is to enhance retained habitats of value for nature conservation.
- 4.3 Management prescriptions have been provided which are considered necessary to achieve the objective for each feature and follow the requirements for attaining the targeted condition for the retained and created habitats.
- 4.4 Monitoring is an essential part of any management plan, to:
- ensure that the proposed management is being implemented;
 - respond to unexpected outcomes from management
 - detail remedial/contingency measures where applicable; and
 - determine if objectives are being achieved.
- 4.5 The management plan has been presented in tabular format (Table 1) for conciseness and ease of use. Figure 1 provides the location of the management features which are the subject of this plan. The plan covers a period of five years, with the programme of works required over this period summarised in Table 2. After this initial period ongoing management should be reviewed and updated every 5 years, for the remainder of the 32-year management period.

5.0 RESPONSIBILITY FOR IMPLEMENTATION

- 5.1 Harworth will be responsible for the implementation of the ecological management plan. There will be appropriate legal and funding mechanisms in place as part of this to secure the long-term maintenance of greenspaces, including the requirements set out in this plan.

Monitoring

- 5.2 During the first five years the work undertaken will be recorded at the end of each year. Quality control will be undertaken by a field inspection with any necessary minor changes to the program.
- 5.3 After Year 5 the review would be every fifth year.
- 5.4 If it is found that there are major discrepancies between the stated management operations and those required by the site conditions, the Management Plan will be updated and submitted to the LPA and Natural England for approval.
- 5.5 The Management Plan should be completely reviewed at Year 15.

Faunal Considerations

- 5.6 Prior to management works it may be necessary for working areas to be checked by an ecologist.

Bats

- 5.7 If any trees require removal or Arboricultural work in the future, then an ecologist should check the tree for bat potential before works are conducted.

Birds

- 5.8 Removal of trees or coppicing activities should be done outside the nesting season (works to be undertaken between September/October and February).

Badger

- 5.9 An ecologist should assess for the presence/absence of badger setts within 30m of working areas, including tree felling or stump removal.

Table 1: Management Plan

FEATURE	OBJECTIVE	CONDITION ASSESSMENT CRITERIA	MANAGEMENT ACTION TO ACHIEVE OBJECTIVE AND CRITERIA – HABITAT CREATION	MANAGEMENT ACTION TO ACHIEVE OBJECTIVE – ONGOING HABITAT MANAGEMENT	INDICATOR THAT OBJECTIVE HAS BEEN ACHIEVED AND REMEDIAL ACTION IF REQUIRED														
Woodland	<p>To enhance the woodland to create a layered woodland structure and provide a diverse range of habitats for wildlife.</p> <p>Aim for enhancement to 'Good' condition – for full details see BNG report.</p> <p>Average time predicted to meet conditions is 15 years with management to extend for the full 32-year period.</p>	<p>Age distribution: Two or three age classes present</p> <p>Invasive plant species: Rhododendron or laurel not present, other invasive species < 10% cover</p> <p>Number of native tree species: Five or more native tree or shrub species found across woodland parcel</p> <p>Cover of native tree and shrub species: >80% of canopy trees and >80% of understory shrubs are native</p> <p>Open space within woodland: 10 – 20% of woodland has areas of temporary open space, unless woodland is <10ha in which case lower threshold of 10% does not apply</p> <p>Woodland regeneration: All three classes present in woodland; trees 4-7cm dbh, saplings and seedlings or advanced coppice regrowth</p> <p>Tree health: Tree mortality less than 10%, no pests or diseases and no crown dieback</p> <p>Vegetation and ground flora: – recognisable NVC community</p> <p>Woodland vertical structure: Three or more storeys across all survey plots or a complex woodland</p> <p>Amount of deadwood: 50% of all survey plots within the woodland parcel have standing deadwood, large dead branches/stems and stumps</p> <p>Woodland disturbance: No nutrient enrichment or damaged ground evident</p>	<p>1.1 Coppicing Coppice established young trees to diversify woodland age structure and open up canopy to allow natural development of an additional scrub layer.</p> <p>Suitable species for this treatment include hazel, sweet chestnut and hornbeam. To coppice:</p> <ul style="list-style-type: none"> • Clear out all leaves and other debris around the base of the stool. • Cut and clear away any dead or dying stems. • Progressively cut each stem starting with the most accessible sections and working in towards the centre of the stool. • Cut should be made about 1-2 inches above where the branch grows out of the stool at 15 to 20 degrees from horizontal with the lowest point facing outwards from the centre of the stool. • Cut branches and twigs should be used to create log piles <p>1.2 Thinning and Clear-felling In conjunction with 1.1, glades and rides to be created through clear-felling to create internal edge structure where regeneration can occur, and understory vegetation can establish.</p> <p>Dense areas of canopy where understory layers are restricted to be selectively thinned allowing light penetration to the woodland floor enabling colonisation by native ground flora.</p> <p>Total open space across coppiced and clear-felled areas targeted to reach between 10 and 20% of total woodland area (No more than 5% created in any one year)</p>	<p>1.3 Coppicing Coppicing on rotation annually choosing a small section of woodland to coppice each year with repeat coppicing of trees occurring every 15-20yrs for chestnut and about every 7 years for hazel.</p> <p>Cut branches and twigs should be used to replenish log piles</p> <p>Cutting will take place September- February to avoid the breeding bird season, and ideally undertaken in late January or February, avoiding any periods of heavy frost.</p> <p>1.4 Thinning and Clear-felling Clear-felling sections protruding from coppiced areas to create linear rides, or glade creation, annually following the same timings as described in 1.3.</p> <p>All felled standards and other deadwood to remain in situ or be used for deadwood provisioning.</p> <p>Total open space across coppiced and clear-felled areas to be kept between 10 and 20% of total woodland area. (No more than 5% created in any one year)</p> <p>1.5 Arboricultural works Any felling works required outside of nesting bird season and after checks on semi-mature and mature trees for bats</p> <p>Staggered annual ringbarking of selected standards of >20cm diameter to provide further standing deadwood</p> <p>Deadwood to be left standing and fallen logs and branches used in log piles</p> <p>1.6 Invasive species management Removal of rhododendron and laurel and any other invasive species so cover is less than 10%</p> <p>Arisings to be removed from site to appropriate disposal facility</p>	<p>Indicators Diverse woodland present with a canopy layer, understory of scrub and young trees and ground flora evident</p> <p>Woodland maintains complex and varied internal edge structure</p> <p>Criteria of condition assessment met</p> <p>Remedial actions If woodland layers not present, appropriate areas should be seeded or planted with appropriate seed/plants as prescribed below</p> <p>Any supplementary planting is recommended to include the following native species:</p> <table border="0"> <tr> <td>Field maple</td> <td><i>Acer campestre</i></td> </tr> <tr> <td>Common alder</td> <td><i>Alnus glutinosa</i></td> </tr> <tr> <td>Wild cherry</td> <td><i>Prunus avium</i></td> </tr> <tr> <td>Dogwood</td> <td><i>Cornus sanguinea</i></td> </tr> <tr> <td>Hazel</td> <td><i>Corylus avellana</i></td> </tr> <tr> <td>Goat willow</td> <td><i>Salix caprea</i></td> </tr> <tr> <td>Blackcurrant</td> <td><i>Ribes nigrum</i></td> </tr> </table> <p>If woodland shows evidence of mismanagement (not fulfilling condition criteria) management actions 1.1-1.6 will be followed. Additional management prescriptions may be implemented with the agreement of a suitably qualified ecologist.</p>	Field maple	<i>Acer campestre</i>	Common alder	<i>Alnus glutinosa</i>	Wild cherry	<i>Prunus avium</i>	Dogwood	<i>Cornus sanguinea</i>	Hazel	<i>Corylus avellana</i>	Goat willow	<i>Salix caprea</i>	Blackcurrant	<i>Ribes nigrum</i>
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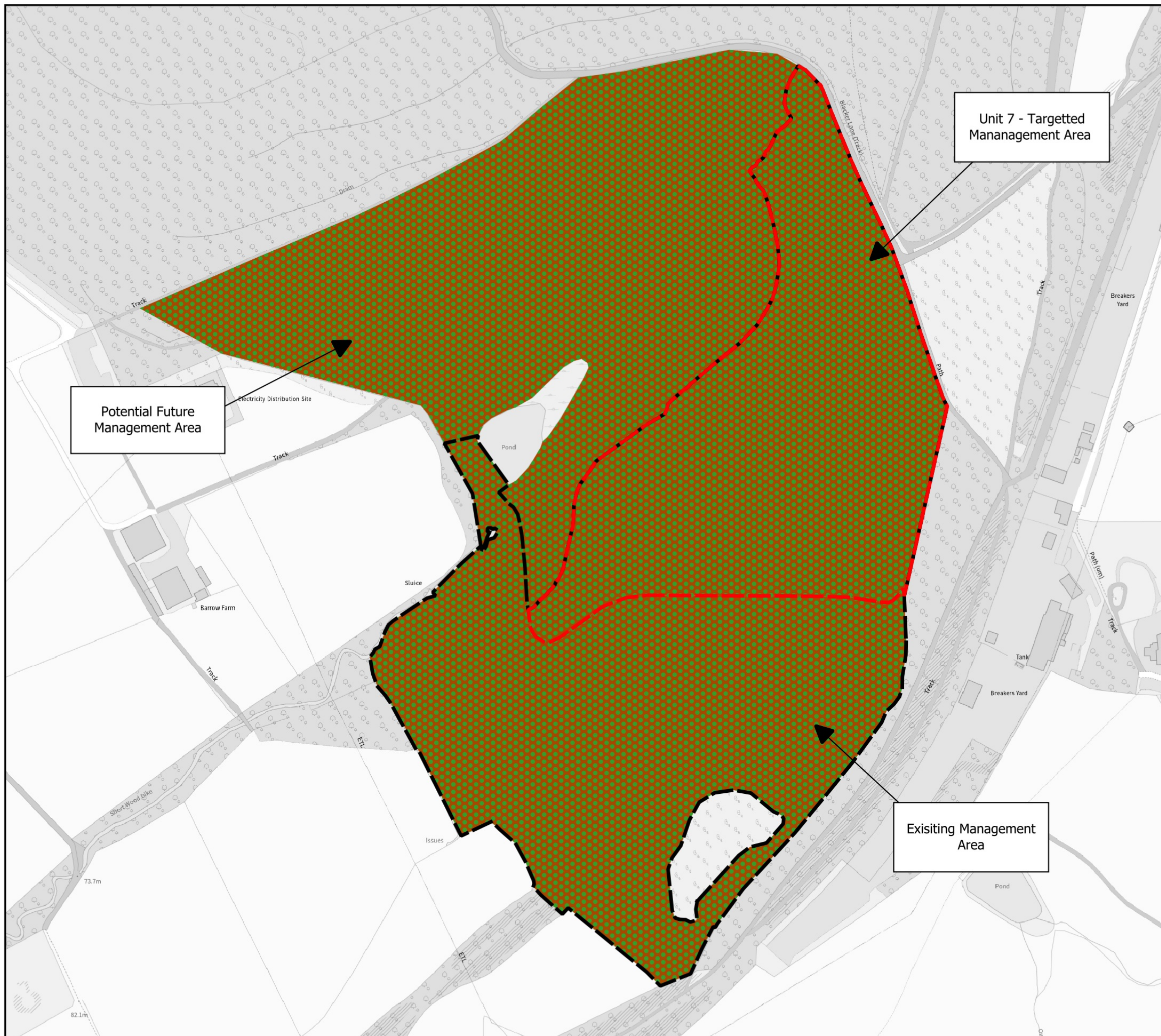
FEATURE	OBJECTIVE	CONDITION ASSESSMENT CRITERIA	MANAGEMENT ACTION TO ACHIEVE OBJECTIVE AND CRITERIA – HABITAT CREATION	MANAGEMENT ACTION TO ACHIEVE OBJECTIVE – ONGOING HABITAT MANAGEMENT	INDICATOR THAT OBJECTIVE HAS BEEN ACHIEVED AND REMEDIAL ACTION IF REQUIRED
Log Piles	To provide additional shelter and hibernation habitat for reptile and amphibian species	N/A	<p><u>2.1 Construction of log piles</u> To be constructed in association with coppicing and thinning works (1.2)</p> <p>Created using material on site where trees have been felled or coppiced (Figure 2)</p> <p>The logs will have a minimum diameter of 100mm with the bark retained.</p> <p>Twigs and scrub off-cuttings can be added with stakes used to prevent the pile from collapsing.</p>	<p><u>2.2 Maintenance of log piles</u> When coppicing occurs or other management requiring the removal of trees the resulting logs and branches will be used to replenish the existing log piles.</p> <p>New log piles can be created if other piles have already been replenished, these should be located near created ponds or within woodlands</p>	<p><u>Indicators</u> Log piles present and in good condition with signs of replenishment</p> <p><u>Remedial actions</u> If log piles are not present, then reconstruct as prescribed in management action 2.1 and 2.2</p> <p>Log piles in poor condition then management as prescribed in action 2.2</p>
Supplementary Dead Wood	To provide additional breeding and sheltering opportunities for SSSI designated willow tit <i>Poecile montanus</i> .	N/A	<p><u>3.1 Construction</u> Willow tit will not use traditional bird boxes instead typically excavating a nest cavity in rotting standing deadwood.</p> <p>Provisions for this should be constructed from coppiced birch cut to approximately 50cm lengths and preferably in the early stages of rot.</p> <p><u>3.2 Placement</u> Provision should be attached to select healthy standards between 1 and 5m above the ground using wire, rope, or similar and not nailed to allow for easy replacement.</p> <p>Position which offers a clear line of sight to the entrance and is near some lower branches or scrub.</p> <p>Aspect is not particularly important though where possible southern aspects should be avoided near boundaries.</p>	<p><u>3.3 Maintenance of deadwood</u> When coppicing or other forestry operations resulting in birch removal occurs, relatively straight, rotting sections will be taken for replacement of damaged/decayed deadwood or further provisioning as needed.</p>	<p><u>Indicators</u> Supplementary deadwood is suitably placed and in good condition i.e. suitably rotten as to be excavated.</p> <p><u>Remedial actions</u> Replace where necessary. If lost, replace as required. If replacement is needed, this needs to be done between October and February inclusive</p>
General Measures	To limit damaging influences from human activity and environmental influences.	N/A	<p><u>4.1 Public Access</u> Record any locations where excessive public access is causing detrimental impacts for biodiversity.</p> <p><u>4.2 Fly Tipping</u> Record any locations where fly tipping has occurred.</p> <p><u>4.3 Extreme Weather</u> Planting should be monitored for signs of drought stress every two weeks during dry periods for the first five years of planting.</p>	<p><u>4.4 Monitor problem areas</u> Monitor any locations where human activity has been recorded as causing damage or disturbance.</p>	<p><u>Indicators</u> Damage or disturbance is apparent Fly tipped material present Specimen trees showing signs of drought stress</p> <p><u>Remedial actions</u> Arrange for offsite disposal of tipped material.</p> <p>Install appropriate barriers (fencing/hedging/bollards/etc) where the need arises to restrict public access.</p> <p>Water drought affected areas until signs of drought stress are no longer visible.</p>

Table 2: Five Year Work Programme

FEATURE	MANAGEMENT/ MONITORING WORKS	YEAR AND TIMING				
		YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
Retained Woodland	Coppicing	✓ Sept – Feb, ideally Jan-Feb	✓ Sept – Feb, ideally Jan-Feb	✓ Sept – Feb, ideally Jan-Feb	✓ Sept – Feb, ideally Jan-Feb	✓ Sept – Feb, ideally Jan-Feb
	Thinning and Clear-felling	✓ Sept – Feb, ideally Jan-Feb			✓ Sept – Feb, ideally Jan-Feb	
	Monitoring / Remedial Works	✓	✓	✓	✓	✓
	Arboricultural works	✓ Sept – Feb, ideally Jan-Feb	✓ Sept – Feb, ideally Jan-Feb	✓ Sept – Feb, ideally Jan-Feb	✓ Sept – Feb, ideally Jan-Feb	✓ Sept – Feb, ideally Jan-Feb
	Invasive species removal	✓	✓	✓	✓	✓
Log Piles	Construction of log piles	✓ In association with thinning works			✓ In association with thinning works	
Supplementary Deadwood	Installing vertical deadwood	✓ In association with thinning works			✓ In association with thinning works	
Additional Measures	Monitoring/ Remedial Works	✓	✓	✓	✓	✓



Figure 2. Log Pile construction. (Indicative design)






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Key

-  Application Redlines
-  Cumulative woodland management area
-  Other Woodland - mixed, mainly broadleaved

date 06/11/24 drwn/chkd JDH

client **Harworth Group PLC**

project **Unit 7 Gateway 36**

title **Habitat Location Plan** scale 1:3,000 @ A3

number **FIGURE 1** rev -

FPCR Environment and Design Ltd

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