



PINE LODGE, HOOD GREEN.

OS REF: SE 31751 02753.

**BIODIVERSITY ENHANCEMENT
MANAGEMENT PLAN.**

Ref No: 220640/BEMP/1.

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1. INTRODUCTION.

1.1. Pine Lodge has been empty and vacant for some years. A planning application has been submitted to Barnsley Council to demolish the existing buildings and to replace with a new dwelling and an EcIA was submitted in support of that application.

1.2. Planning consent has now been granted and Condition 13 of that consent states:-

Condition 13

A Biodiversity Enhancement Management Plan (BEMP), completed by a suitably qualified ecologist will be provided within three months of the commencement of works on site. The BEMP will include the following:

- A recent landscape plan detailing the location of mitigation works;*
 - A plan of the areas to be maintained, enhanced and/or created;*
 - A schedule of actions to create or enhance and maintain each habitat at the required quality for a period of 30 years;*
 - A schedule of ecological monitoring for the 30 year period, identifying when key indicators of habitat maturity should be achieved. Monitoring would be required within years 1, 2, 5, 10, 20 and 30 and monitoring reports should be submitted to the Local Planning Authority on the specified years;*
 - A schedule of actions to be undertaken in case signs of failing are identified;*
- and*

The schedules must include details of technique(s) to be used, equipment to be used, roles and relevant expertise of personnel and organisations involved and timing of actions including submission of monitoring report to the Council.

1.3. This document is designed to satisfy that condition.

2. BIODIVERSITY ENHANCEMENT MANAGEMENT PLAN.

2.1. A recent landscape plan detailing the location of mitigation works;

The plan accompanying this document, as prepared by DRAW UK Ltd, reference number DRW_132_01_03 Proposed Planting_v03, outlines full details of the proposed planting schemes for the site.

2.2. A plan of the areas to be maintained, enhanced and/or created;

2.2.1. The areas shaded in solid blue/green on DRW_132_01_03 Proposed Planting_v03 are the pine trees on site that are to be retained.

2.2.2. The areas shaded in solid green on DRW_132_01_03 Proposed Planting_v03 are the broadleaved trees to be retained.

2.2.3. The hedgerow down the eastern site boundary, shown as a green dotted line DRW_132_01_03 Proposed Planting_v03 is to be retained and enhanced with additional native species.

2.2.4. All other areas on DRW_132_01_03 Proposed Planting_v03 are to be created. This includes additional tree planting, grassland planting of which there are three separate qualities each shaded with green hatching and additional shrub planting.

2.3. A schedule of actions to create or enhance and maintain each habitat at the required quality for a period of 30 years;

2.3.1. All planting and habitat creation will be undertaken as outlined on the landscape plan DRW_132_01_03 Proposed Planting_v03. The notes and instructions on the landscape plan are reproduced here for clarity.

PLANTING ESTABLISHMENT NOTES

General

- These outline specification notes are for guidance only. All works to be undertaken by a competent and qualified landscape contractor and in accordance with guidance given in BS4428:1989 *Code of Practice for General Landscape Operations (Excluding Hard Surfaces)*.
- The contractor must verify the locations of all below ground services prior to commencing any works.
- All operations to be carried out during suitably dry and non-frozen soil conditions.
- Ensure that landscape operations do not cause undue compaction of soils and remediate as necessary if compaction occurs.
- Existing trees and shrubs to be retained to be fenced in accordance with the provisions of BS5837:2012 (*Trees in Relation to Design, Demolition and Construction*) prior to commencement of works. Trees, hedges and shrubs to be retained are to be protected and clearly marked on site. No spoil heaps, rubbish, machinery, plant or fuel to be stored in proximity to existing plants - in the case of trees this restriction extends to the spread of the tree canopy. Protective fencing to be maintained during site works.
- A full assessment of detailed, arboricultural advice on vegetation present, retention and removal is given in the supporting document: *Arboricultural Report & Impact Assessment to BS5837:2012 at: Pine Lodge, Stainborough Lane. Reference: AWA3852, June 2021*

SOILS, CULTIVATION & MULCH

Imported Subsoil

- Used as a free draining subbase to topsoiled areas and a rooting substrate for deeper rooting plants.
- Subsoil to be in accordance with BS 8801:2013 – *Specification for Subsoil* or otherwise as approved by the CA.
- Subsoil to be friable, free draining, free from weeds and stone greater than 75mm in any dimension, free from phytotoxic compounds, waste, rubble, hazardous or other deleterious material.
- Base of planting beds to be existing approved subsoil broken up and thoroughly decompacted to minimum 300mm depth (or otherwise as necessary to ensure a free draining rooting medium) prior to placing topsoil. Where existing substrates are unsuitable as a subsoil, excavate and remove substrates and replace with an imported subsoil spread to 700mm settled depth.
- Subsoil to proposed mown lawn areas to be minimum 300mm settled depth.

Imported Topsoil

- Used as a planting medium for trees, shrubs, turf and other plants
- Imported topsoil to be an approved quality multipurpose purpose topsoil to BS 3882: 2015 - *Specification for Topsoil*, free of weeds, stones, contamination and all deleterious material.
- Topsoil to be placed on friable, free draining subsoil.
- Topsoil to tree and groundcover planting beds to be 300mm settled depth.
- Topsoil to mown grass areas to be 150mm settled depth.

Topsoil Preparation & Cultivation

- Topsoil in planting beds to be rotovated to 200mm depth (hand dig only in areas within existing tree canopies) to produce a medium tilth, incorporating 50mm depth Green-Tech Soil Improver (available from Green-tech Ltd, 01423 332100) and ICL Enmag CRF slow release fertiliser at 60gms/m², or as manufacturers recommended rates for amenity planting (fertiliser available from ALS: 01952 641949).
- Planting beds to be cleared of weed/grass growth prior to planting.
- All planting areas / hedgerow strips to receive approved quality Amenity Bark Mulch to 75mm settled depth after planting. (Bark mulch available from Melcourt Industries Limited Tel: 01686 502711)

PLANT MATERIAL & HANDLING

- All plant stock to comply with the National Plant Specification and be obtained from suppliers listed in the Horticultural Trades Association Nursery Certification Scheme.
- Plant handling and planting to be in accordance with the CPSE document 'Handling and Establishing Landscape Plants'.

TREE & SHRUB PLANTING, PLANTING PITS & STAKING

Times of Year for Planting

- Deciduous trees and shrubs: Late October to late March.
- Conifers and evergreens: September/ October or April/ May.
- Herbaceous plants (including marginal): September/ October or March/ April.
- Container grown plants: At any time if ground and weather conditions are favourable.

General

- All to be in accordance with the drawings.
- For planting areas - finished settled soil levels to be set flush or slightly above adjoining paved surfaces, with soil cut away at edges to ensure mulch surface is flush with top of paving level.
- Excavate tree planting pits in previously prepared soiled / cultivated planting areas. Cultivate and loosen base of pit to 150mm depth. Sides of pit to be broken up. Ensure pits are free draining prior to backfilling.
- Standard Tree Pits to be excavated 800x800x800mm. Thoroughly and evenly incorporated 50L Green-Tech Soil Improver and 150gms ICL Enmag CRF slow release fertiliser into backfill.
- Backfill mixture to be returned around tree roots evenly in layers not exceeding 200mm deep and gently firmed.
- Hedgerows planted into existing soils, avoiding damage to existing retained vegetation.

Mown Lawn Areas

- Spray off and eradicate existing vegetation. Where lawn is established on existing, undisturbed ground, scarify and remove surface vegetation.
- Where lawn is established on re-graded or disturbed ground ensure soils are suitable for seeding. Where imported topsoil is required spread to a depth of 150mm.
- Finished profiles to be evenly graded with flowing profiles, with no abrupt level changes or hollows. All subject to the approval of the CA.
- Incorporate an approved pre-seeding fertiliser into topsoil 3-5 days before seeding and cultivate soil to a fine tilth. Remove all stones and debris.
- Finished settled soil levels 25mm above adjacent surfaces/manholes etc.
- Ensure soils are lightly firmed and at settled depth prior to seeding.
- Sowings densities all as the suppliers recommendations.

Wildflower Meadow Areas

- Spray off and eradicate existing vegetation. Where meadow is established on existing, undisturbed ground, scarify and remove surface vegetation.
- Where lawn is established on re-graded or disturbed ground ensure soils are suitable for seeding. Where soils are required use imported neutral pH subsoil spread to 150mm depth.
- Cultivate soil to a fine tilth. Remove all stones and debris.
- Finished settled soil levels 25mm above adjacent surfaces/manholes etc.
- Ensure soils are lightly firmed and at settled depth prior to seeding.
- Seed mix to be Emorsgate, EM1 *Basic General Purpose Meadow Mixture*, or similar approved wildflower mix. Follow the suppliers recommended sowing rates (4g/m²) and aftercare recommendations:

<https://wildseed.co.uk/product/mixtures/complete-mixtures/general-purpose-meadow-mixtures>

ESTABLISHMENT MAINTENANCE & PLANT GUARANTEE

- All planting to be subject to a 5 year defects replacement guarantee period whereby all failed material is to be replaced to original specification. Seeded areas to be subject to a 12 month defects replacement guarantee period.
- All planting areas / tree pits / hedgerows to be kept in a weed free condition.
- Cut back and remove dead heads of herbaceous plant material at the end of each growing season.
- Watering to be undertaken as necessary to ensure good establishment and growth of plants and lawn areas.
- Stakes and ties to be checked and adjusted regularly.
- Litter to be removed from planting beds.
- Pruning to be undertaken as necessary to ensure development of correct form and habit.
- Mown lawn areas to be maintained at approximately 25mm height.
- Groundcover planting to be cut back regularly along kerb lines and path edges.
- Long term maintenance to include removal of tree stakes (circa year 3 after planting), crown pruning as necessary to maintain shape, removal of damaged or diseased branches and addition of slow release fertiliser in Year 2-3 after planting to all planting areas.

2.4. A schedule of ecological monitoring for the 30 year period, identifying when key indicators of habitat maturity should be achieved. Monitoring would be required within years 1, 2, 5, 10, 20 and 30 and monitoring reports should be submitted to the Local Planning Authority on the specified years;

2.4.1. The following tables outline the condition assessment criteria for the post development habitats present on the site.

2.4.2. During each of years 1, 2, 5, 10, 20 and 30 following the completion of the development and the completion of the planting schemes, a competent ecologist will be appointed to carry out a repeat survey and to assess the existing and new habitats against the criteria in the tables below. The ecologist will prepare a report outlining the habitat conditions for the property owner to submit to the Local Authority.

2.4.3. The monitoring reports will make recommendations to remedy any apparent shortfall in the development of each habitat.

Target for Urban trees – All existing and retained trees are to be kept in Moderate Condition, three or four criteria to be satisfied in the table below.

Urban Trees Assessment Criteria

Condition Assessment Criteria	
1	The tree is a native species(or more than 70% within the block are native species).
2	The tree canopy is predominantly continuous, with gaps in canopy cover making up <10% of total area and no individual gap being >5 m wide (individual trees automatically pass this criterion).
3	The tree is mature ² or veteran ³ (or more than 50% within the block are mature ² or veteran ³).
4	There is little or no evidence of an adverse impact on tree health by anthropogenic activities such as vandalism or herbicide use. There is no current regular pruning regime so the trees retain >75% of expected canopy for their age range and height.
5	Micro-habitats for birds, mammals and insects are present e.g. presence of deadwood, cavities, ivy or loose bark
6	More than 20% of the tree canopy area is oversailing vegetation beneath.

Target for Modified Grassland – The lawned areas around the new dwelling and to be maintained in a Low Condition, three criteria to be satisfied in the table below.

Condition Assessment Criteria	
1	There must be 6-8 species per m2. If a grassland has 9 or more species per m2 it should be classified as a medium distinctiveness grassland habitat type. NB - this criterion is essential for achieving moderate condition.
2	Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20% is more than 7 cm) creating microclimates which provide opportunities for insects, birds and small mammals to live and breed.
3	Some scattered scrub (including bramble) may be present, but scrub accounts for less than 20% of total grassland area. Note - patches of shrubs with continuous (more than 90%) cover should be classified as the relevant scrub habitat type.
4	Physical damage is evident in less than 5% of total grassland area. Examples of physical damage include excessive poaching, damage from machinery use or storage, erosion caused by high levels of access, or any other damaging management activities.
5	Cover of bare ground is between 1% and 10%, including localised areas (for example, a concentration of rabbit warrens).
6	Cover of bracken less than 20%.
7	There is an absence of invasive non-native species (as listed on Schedule 9 of WCA, 1981).

Target for Modified Grassland to the east of the drive will be Moderate Condition, four or five criteria to be satisfied in the table below.

Target for Modified Grassland to the west of the drive will be Good Condition, six criteria to be satisfied in the table below.

Condition Assessment Criteria	
1	The appearance and composition of the vegetation closely matches characteristics of the specific grassland habitat type (see UKHab definition). Wildflowers, sedges and indicator species for the specific grassland habitat type are very clearly and easily visible throughout the sward. NB - This criterion is essential for achieving moderate condition for non-acid grassland types only.
2	Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20 per cent is more than 7 cm) creating microclimates which provide opportunities for insects, birds and small mammals to live and breed.
3	Cover of bare ground between 1% and 5%, including localised areas, for example, rabbit warrens.
4	Cover of bracken less than 20% and cover of scrub (including bramble) less than 5%.
5	There is an absence of invasive non-native species (as listed on Schedule 9 of WCA, 1981). Combined cover of species indicative of sub-optimal condition ¹ and physical damage (such as excessive poaching, damage from machinery use or storage, damaging levels of access, or any other damaging management activities) accounts for less than 5% of total area.
Additional Group (non-acid types only)	
6	There are greater than 9 species per metre squared. NB - This criterion is essential for achieving good condition (non-acid grassland types only).

Target for Hedgerow will be to enhance it from Low Condition to Good condition, no more than two criteria to be failed in the table below.

Attributes and functional groupings	Criteria	Description
A1. Height	>1.5 m average along length	The average height of woody growth estimated from base of stem to the top of shoots, excluding any bank beneath the hedgerow, any gaps or isolated trees. Newly laid or coppiced hedgerows are indicative of good management and pass this criterion for up to a maximum of four years (if undertaken according to good practice). A newly planted hedgerow does not pass this criterion (unless it is > 1.5 m height).
A2. Width	>1.5 m average along length	The average width of woody growth estimated at the widest point of the canopy, excluding gaps and isolated trees. Outgrowths (e.g. blackthorn suckers) are only included in the width estimate when they >0.5 m in height. Laid, coppiced, cut and newly planted hedgerows are indicative of good management and pass this criterion for up to a maximum of four years (if undertaken according to good practice⁴).
B1. Gap - hedge base	Gap between ground and base of canopy <0.5 m for >90% of length (unless 'line of trees')	This is the vertical gappiness of the woody component of the hedgerow, and its distance from the ground to the lowest leafy growth. Certain exceptions to this criterion are acceptable (see page 65 of the Hedgerow Survey Handbook).
B2. Gap - hedge canopy continuity	Gaps make up <10% of total length and No canopy gaps >5 m	This is the horizontal gappiness of the woody component of the hedgerow. Gaps are complete breaks in the woody canopy (no matter how small).

		Access points and gates contribute to the overall gappiness, but are not subject to the >5 m criterion (as this is the typical size of a gate).
C1. Undisturbed ground and perennial vegetation	>1 m width of undisturbed ground with perennial herbaceous vegetation for >90% of length: - measured from outer edge of hedgerow, and - is present on one side of the hedge (at least)	This is the level of disturbance (excluding wildlife disturbance) at the base of the hedge. Undisturbed ground should be present for at least 90% of the hedgerow length, greater than 1m in width and must be present along at least one side of the hedge. This criterion recognises the value of the hedge base as a boundary habitat with the capacity to support a wide range of species. Cultivation, heavily trodden footpaths, poached ground etc. can limit available habitat niches.
C2. Undesirable perennial vegetation	Plant species indicative of nutrient enrichment of soils dominate <20% cover of the area of undisturbed ground	The indicator species used are nettles (<i>Urtica</i> spp.), cleavers (<i>Galium aparine</i>) and docks (<i>Rumex</i> spp.). Their presence, either singly or together, should not exceed the 20% cover threshold.
D1. Invasive and neophyte species	>90% of the hedgerow and undisturbed ground is free of invasive non-native and neophyte species	Neophytes are plants that have naturalised in the UK since AD 1500. For information on neophytes see the JNCC website and for information on invasive non-native species see the GB Non-Native Secretariat website.
D2. Current damage	>90% of the hedgerow or undisturbed ground is free of damage caused by human activities	This criterion addresses damaging activities that may have led to or lead to deterioration in other attributes. This could include evidence of pollution, piles of manure or rubble, or inappropriate management practices (e.g. excessive hedge cutting).

Target for new Line of Trees will be Moderate Condition, three, four or five criteria to be satisfied in the table below.

Condition Assessment Criteria	
1	More than 70% of trees are native species.
2	Tree canopy is predominantly continuous with gaps in canopy cover making up <10% of total area and no individual gap being >5 m wide.
3	Includes one or more mature ¹ or veteran ² tree.
4	There is an undisturbed naturally vegetated strip of at least 6 m on both sides to protect the line of trees from farming and other anthropogenic operations.
5	At least 95% of the trees are in a healthy condition (excluding veteran features valuable for wildlife). There is little or no evidence of an adverse impact on tree health by damage from livestock or wild animals, pests or diseases, or human activity.

2.5. A schedule of actions to be undertaken in case signs of failing are identified with any specific habitat. This outlines initial actions for each habitat for the first five years. In subsequent years the monitoring survey results will highlight progress made to date and will provide a revised list of actions for subsequent years as appropriate.

2.5.1. Urban Trees.

2.5.1.1. The following list will be complied with to ensure the targeted levels of condition are achieved.

- Ensure that good horticultural practice is employed to encourage long term health and vigour of all trees;
- Check tree stakes, cross members, ties and rabbit spirals during each inspection, especially after severe winds (at least 2 inspections per year). Replace /fix or adjust as necessary to ensure the tree is adequately supported and to avoid chaffing and other damage;
- Undertake 3 year irrigation programme for the trees (in accordance with BS 8545-2014 Trees from Nursery to Independence). Where necessary semi-mature and extra heavy standard trees shall be watered once a week with 40 litres of water and feathered trees shall be watered once a week with 20 litres of water during the growing season (01 April to 01 October). (NB: the site is often wet. Do not water the trees if the ground is waterlogged, frozen, or if there is standing water);
- Maintain a 1m radius weed/vegetation free zone around each tree by mechanical means. (Do not strim within 200mm of the tree);
- Maintain a 1m radius bark mulch around each tree to a depth of 75mm;
- Carry out formative pruning in accordance with British Standard: BS 8545:2014, maintain natural habit of the tree. Trees to maintain a well-balanced natural appearance; remove any suckers or basal growth. Cut back level with source stem or root;
- Monitor and review the establishment of the ornamental trees, including identification of defects and recommendations for changes to the maintenance regime; and

- Replace any dead or defective trees between 1 November and 31 March to the original specification.

2.5.1.2. The following table outlines the appropriate timings for each task.

	Month	J	F	M	A	M	J	J	A	S	O	N	D
1	Re-firm, fix stakes and ties		X		X		X		X		X		X
2	Water trees once a week (Years 1 to 3)				X	X	X	X	X	X	X		
3	Weeding and topping up bark mulch				X	X	X	X	X	X	X		
4	Pruning												X
5	Review and monitoring trees										X		
6	Replacement planting												X

2.5.2. Grassland.

2.5.2.1. The following list will be complied with to ensure the targeted levels of condition are achieved.

- Water turf and seeded areas if required to maintain healthy growth. When watering, water to field capacity (minimum 20L/m²) per day.
- Once established (after 4 weeks) mow the lawn turf once a week during the growing season. Maintain a sward height of 30 mm and dispose of arisings off-site;
- Once established (after 12 weeks) mow the seeded areas twice during the growing season. Moderate condition grassland to the east of the drive will be mown no lower than 50mm and that to the west of the drive to no lower than 75mm. Arisings to be removed.
- Monitor and identification of defects, with recommendations for changes to the maintenance regime for the subsequent year;
- Reinstate any dead or damaged areas of grass in accordance with the supplier's recommendations.

2.5.2.2. The following table outlines the appropriate timings for each task.

	Month	J	F	M	A	M	J	J	A	S	O	N	D
1	Water lawn during establishment (Year 1)				X	X	X	X	X	X	X		
2	Water seeded areas (Each year)												
3	Mow lawn turf				X	X	X	X	X	X	X		
4	Mow seeded areas			X						X			
5	Replace defective turf/ grass ward											X	

2.5.3. Hedgerow

2.5.3.1. The following list will be complied with to ensure the targeted levels of condition are achieved.

- Water the hedges as necessary to maintain the health and vigour of the plants, during the first three years after planting;
- All hedges will be kept clear of weed growth by hand-weeding/hoeing. Ensure that the methods used will cause a minimum of damage to the hedge;
- Do not allow nylon filament rotary cutters or other mechanical tools closer than 200mm to the stem of any tree or shrub; and
- Trim the hedges once a year until the desired height is achieved. Buds on the ends of new growth will be cut off. Once the hedge has reached a height of 1200 mm trim twice per year to maintain a neat 'A' section profile 900 mm wide at the base and x 500 mm wide at the top.
- Monitor and review the establishment of the hedges, including identification of defects and recommendations for changes to the maintenance regime; and
- Replace any dead or defective trees between 1 November and 31 March to the original specification.

2.5.3.2. The following table outlines the appropriate timings for each task.

	Month	J	F	M	A	M	J	J	A	S	O	N	D
1	Watering				X	X	X	X	X	X	X		
2	Weed control				X	X	X	X	X	X	X		
3	Trim hedges (Year 1)										X		
4	Trim hedges (Subsequent Years)			X							X		
5	Review and monitoring									X			
6	Replacement of defective planting												X

2.5.4. *Line of trees.*

2.5.4.1. The following list will be complied with to ensure the targeted levels of condition are achieved.

- Ensure that good horticultural practice is employed to encourage long term health and vigour of all trees;
- Check tree stakes, cross members, ties and rabbit spirals during each inspection, especially after severe winds (at least 2 inspections per year). Replace /fix or adjust as necessary to ensure the tree is adequately supported and to avoid chaffing and other damage;
- Undertake 3 year irrigation programme for the trees (in accordance with BS 8545-2014 Trees from Nursery to Independence). Where necessary semi-mature and extra heavy standard trees shall be watered once a week with 40 litres of water and feathered trees shall be watered once a week with 20 litres of water during the growing season (01 April to 01 October). (NB: the site is often wet. Do not water the trees if the ground is waterlogged, frozen, or if there is standing water);
- Maintain a 1m radius weed/vegetation free zone around each tree by mechanical means. (Do not strim within 200mm of the tree);
- Maintain a 1m radius bark mulch around each tree to a depth of 75mm;
- Carry out formative pruning in accordance with British Standard: BS 8545:2014, maintain natural habit of the tree. Trees to maintain a well-balanced natural

appearance; remove any suckers or basal growth. Cut back level with source stem or root;

- Monitor and review the establishment of the ornamental trees, including identification of defects and recommendations for changes to the maintenance regime; and
- Replace any dead or defective trees between 1 November and 31 March to the original specification.

2.5.4.2. The following table outlines the appropriate timings for each task.

	Month	J	F	M	A	M	J	J	A	S	O	N	D
1	Re-firm, fix stakes and ties		X		X		X		X		X		X
2	Water trees once a week (Years 1 to 3)				X	X	X	X	X	X	X		
3	Weeding and topping up bark mulch				X	X	X	X	X	X	X		
4	Pruning												X
5	Review and monitoring trees										X		
6	Replacement planting												X

2.5.5. Further remedial actions will be guided by the results of the monitoring reports.

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