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Ecological Mitigation, Enhancment and Management Plan

Capital Park,
Barnsley

Landscape Architects ■ Urban Designers ■ Ecologists ■ Horticulturists

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1.0 INTRODUCTION

Smeeden Foreman Limited has been commissioned by CDP to produce an Ecological Mitigation and Enhancement Scheme for their site at Capital Park, Dodworth, Barnsley (grid reference SE 3107 0599), hereafter referred to as the 'site'.

The site was subject to assessment by ERAP Ltd in 2016, comprising an Extended Phase 1 habitat survey in April 2016 and invertebrate surveys in June 2016.

The report has been commissioned to allow the discharge of *Condition 11* associated with outline planning permission (application no. 2016/0713) for the development of the site to industrial units.

Condition 11 states the following:

A detailed scheme of ecological mitigation and enhancement and maintenance shall be submitted with the reserved matters application. The scheme shall broadly follow the measures set out in Section 5 of the ERAP Ecological Assessment and shall identify a timetable for implementation and maintenance for 5 years. The scheme shall be accompanied by a plan which clearly identifies what ecological features are proposed to be retained, mitigated and enhanced. Thereafter the development shall be carried out in accordance with the approved measures (In the interests of biodiversity and in accordance with CSP 36).

This report addresses all details of the above condition and will include:

- A brief description of the site and surroundings;
- Pre-construction working methods in relation to protecting biodiversity;
- Working methods in relation to protecting and enhancing biodiversity during construction;
- Details of mitigation measures to be included within the development;
- Details of enhancement measures to be included within the development; and,
- A habitat management plan including a description of the management aims and objectives for the site along with a schedule of operations to achieve these aims for five years post construction, following the initial planting/completion of the development.

2.0 SITE DESCRIPTION

The development site is approximately 4.5 hectares and comprises unmanaged grassland and marshy grassland with scattered self-seeded shrubs, and young planted saplings, a hedgerow and occasional trees present along the boundaries of the site. To the north-east the site is bound by a fence and Capitol Close, beyond which lie industrial units; to the south-east by a fence, Whinby Road and a railway line, beyond which lie residential housing; and, to the west by a hedgerow and Higham Lane, beyond which lie an area of woodland, refer to *Figure 01* below.



Figure 01: Aerial view of site and surrounding area

3.0 PRE-CONSTRUCTION

3.1. Tree and Hedgerow Protection

The existing hedgerow and trees at the site boundaries will be retained (refer to the *Tree Retention & Removals Plan V14120 L01 Rev A*) and will be protected in line with recommendations provided by BS 5837:2012 *Trees in relation to design, demolition and construction*. Protection of these features should extend to the extent of the canopy or calculated Root Protection Area (RPA), to create a Construction Exclusion Zone (CEZ), to ensure there is no accidental damage to the trees/hedgerow or their root zones during the construction phase, and discourage the storage of construction material around the base of the trees or the hedgerow.

3.2. Nesting Bird Check

Nesting birds are afforded protection under the Wildlife and Countryside Act 1981 (as amended). The trees, shrubs and scrub present within the construction zone are considered to provide suitable habitat for breeding birds. As such clearance of this vegetation should be undertaken outside the bird nesting season (March to August inclusive). If any vegetation clearance works are to be undertaken during the nesting season, a check for nesting birds will be carried out by a suitably qualified ecologist, to ensure breeding birds, their nests, eggs or young are not affected. If nesting birds are identified during the check the advising ecologist will issue guidance in relation to the protection of the nesting birds in conjunction with the scheduled works. Measures such as applying a set boundary around the nest may be necessary until the young birds have fledged.

If nesting birds are found during works then works within 10m of the nest should cease immediately and advice from a suitably qualified ecologist sought.

3.3. Vegetation Clearance

As detailed above clearance of trees, shrubs and scrub at the site should avoid the breeding bird season (March to August inclusive), or be subject to a nesting bird check prior to commencement of clearance works, refer to *Section 3.2* above for more details.

3.4. Clearance of Piles of Wood and Stone

Piles of stone and wood present at the site may be used for shelter by a variety of species that could be present at the site. In order to avoid harm to wildlife it is recommended that these are destructively searched by an ecologist, then either removed from site or relocated to form piles in the biodiversity area, refer to *Section 4.7*.

3.5. Removal of Invasive Species.

Rhododendron ponticum was found to be present within the hedgerow on the western boundary of the site. This species is an invasive species as listed on *Schedule 9* of the *Wildlife and Countryside Act 1981* (as amended), as such it is an offence to cause the spread of this species in the wild.

To avoid spread of this species, stands of rhododendron will be grubbed out by the roots and either buried on site or removed from the site by an Environment Agency registered waste carrier and disposed of at a suitably authorised waste disposal/landfill site.

3.6. Toolbox Talk

To ensure that the workforce are made aware of the relevant legislation and protection afforded to protected species associated with site, a toolbox talk will be given by a Suitable Qualified Ecologist (SQE). This will discuss how their activities on site may cause a breach in legislation, detail working methods and precautionary measures to avoid breaches in legislation, explain how to identify such species and what to do if one is found on site.

The toolbox talk will include but not be limited to the following topics:

- Protected species legislation;
- Identification of protected and notable species associated with the site;
- Habitats used by protected and notable species associated with the site;
- Activities that may harm protected and notable species associated with the site;
- Working methods to avoid harm to protected and notable species associated with the site;
- Precautionary measures for protected and notable species associated with the site; and,
- What to do if protected or notable species are found on site.

Note, as recommended in the ERAP Ltd Ecological Survey and Assessment report (June 2016) for the site, common toad, common frog and smooth newt should be included in the above topics.

4.0 DURING-CONSTRUCTION

4.1. Tree and Hedgerow Protection

Retained trees and hedgerow will be protected in line with recommendations provided by BS 5837:2012 *Trees in relation to design, demolition and construction* for the duration of development works to ensure there is no damage to the trees or hedgerow or their root zones during the construction phase.

4.2. Precautionary working methods for Amphibians and Reptiles

The ecological assessment provided by ERAP Ltd considered it unlikely that great crested newt or reptiles will be present at the site. Both species are protected in the UK under the *Wildlife and Countryside Act 1981* (as amended). As a precaution, in order to avoid harm to amphibians or reptiles during construction in the unlikely event of one being present at the site, the following Reasonable Avoidance Measures (RAM's) should be adhered to:

- All site personnel must be made aware of this RAMs Method Statement, and the possible presence of amphibians and the possible (but very unlikely) presence of reptiles;
- A copy of the ERAP Ltd Ecological Survey and Assessment report (June 2016) must be held on site and available for consultation as required;
- Bricks and other similar materials must be stored on hard-standing or stored on pallets to avoid the creation of suitable habitat for amphibians and reptiles;
- Any holes, trenches or other pits which amphibians and other wildlife could fall into must be covered overnight, or have sloped banks or ramps suitable for their escape;
- The use of chemicals (such as fertilisers and herbicides) harmful to amphibians and other wildlife should be avoided wherever possible;
- If a great crested newt or reptile is found while any site clearance or building operations are in progress then all works in the area must cease and professional guidance sought from a suitable qualified ecologist; and,
- If any other amphibian species (such as smooth newt, common toad or common frog) is detected on site, it must be carefully picked up, placed in a clean bucket and moved to an area of suitable habitat beyond the construction working area.

4.3. Directional Lighting

The retained trees and hedgerow on the site boundaries may be used by commuting and foraging bats and other nocturnal species which may be present within the local area.

Given the above, any lighting required during construction should be directional and designed to avoid illumination of the Grand Union Canal and the woodland edge habitat adjacent to the construction zone. It should be of low wattage and used for the minimum period, for additional information refer to the Bat Conservation Trusts *'Bats and lighting in the UK'* (2014).

4.4. Planting of trees, shrubs and hedgerow

To mitigate for habitat lost to the development, trees, shrubs and hedgerows will be planted at the site. A mixture of native species and those known to be of value to wildlife, such as those that produce fruit and will promote invertebrate diversity will be used. Species to be planted will comprise the following: silver birch *Betula pendula*, alder *Alnus* glutinosa, crab apple *Malus silvestris*, field maple *Acer campestre*, hawthorn *Crataegus monogyna*, holly *Ilex aquifolium*, hazel *Corylus avellana*, blackthorn *Prunus* spinosa, gorse *Ulex europaeus*, dog rose *Rosa canina*, Guelder-rose *Viburnum opulus,* rowan *Sorbus aucuparia*, Italian alder *Alnus cordata,* wild privet *Ligustrum vulgare*, weeping birch *Betula pendula 'Tristis'*, double gean *Prunus avium*

'Plena', bird cherry *Prunus padus 'watereri'*, oak Koster *Quercus robur fastigata*, and hornbeam *Carpinus betulus*. elephant ears *Burginia cordifolia 'Purpurea'*, dogwood *Cornus alba 'Ivory Halo'*, yellow barked dogwood *Cornus stolonifera 'Flaviramea'*, Mrs Robb's bonnet *Euphorbia amygdaloides robbiae*, cranesbill *Geranium mac. 'Bevan's Variety'*, *'Ingwersen's Variety'* and *'Album'*, honeysuckle *Lonicera pileata 'Maigrun'*, and shrub rose *Rosa 'Bonica'*.

Refer to landscape proposals plan *SF2651 LL01 Rev C.*

Planting of the above species would aim to provide ecological enhancement of the site by increasing habitat diversity, invertebrate abundance and diversity, habitat for breeding birds, and sheltering and foraging opportunities for wildlife in general.

4.5. Sowing of Wildflower Grassland

In order to enhance the site for invertebrates species-rich wildflower grassland will be sown at the site.

To achieve the above the *Germinal: WFG20 Eco Species Rich Lawn* (80%), *WF3 General Purpose Natural Soils* (15%) and *WF10 Cornfield Annuals* (5%), which include the following species:

- *Festuc rubra litoralis* – Slender Creeping Red Fescue
- *Festuca longifolia* – Hard Fescue
- *Festuca ovina* – Sheeps Fescue
- *Pheleum bertolonii* – Small Leaved Timothy
- *Centaurea nigra* – Common Knapweed
- *Plantago lanceolata* – Ribwort Plantain
- *Prunella vulgaris* – Self Heal
- *Ranunculus acris* – Meadow Buttercup
- *Lotus corniculatus* – Birdsfoot Trefoil
- *Festuca rubra rubra* – Strong Creeping Red Fescue
- *Festuca rubra communtata* – Chewings Fescue
- *Poa pratensis* – Smooth Stalked Meadow Grass
- *Poa trivialis* – Rough Stalked Meadow Grass
- *Agrostis capillaris* – Browntop Bent
- *Agrostis stolonifera* – Creeping Bent
- *Lolium perenne* – Perennial ryegrass
- *Ranunculus repens* – Creeping Buttercup
- *Galium verum* – Lady's Bedstraw
- *Trifolium pratense* – Red Clover
- *Trifolium repens* – White Clover
- *Plantago media* – Hoary Plantain
- *Rumex acetosa* – Common Sorrel
- *Scabiosa columbaria* – Small Scabious
- *Taraxacum officinale* – Dandelion
- *Medicago lupulina* – Black Medick
- *Linum usitatissimum* – Flax
- *Cerastium fontanum* – Common Mouse–ear
- *Primula veris* – Cowslip
- *Hypochaaeris radicata* – Cats–ear
- *Leontodon hispidus* – Rough Hawksbit
- *Leontodon autumnalis* – Autumn Hawkbit
- *Rhinanthus minor* – Yellow Rattle

- *Teucrium scordonia* – Wood Sage
- *Daucus carota* – Wild Carrot
- *Achillea Millefolium* – Yarrow
- *Onobrychis vicifolia* Sainfoin
- *Leuchanthemum vulgare* Oxeye Daisy
- *Ranunculus acris* Meadow Buttercup
- *Sanguisorba minor* Salad Burnet
- *Linum usitatissimum* Flax
- *Vicia sativa* Common Vetch
- *Lychis flos–cuculi* Ragged Robin
- *Fumaria Officinalis* Common Fumitory
- *Geranium Dissectum* Cut Leaved Cranesbill
- *Geranium Molle* Doves Foot Cranesbill
- *Agrostemma Githago* – Corncockle
- *Papaver Rhoeas* – Corn Poppy
- *Centaurea Cyanus* – Cornflower
- *Chrysanthemum Segetum* – Corn Marigold
- *Anthemis Arvensis* – Corn Chamomile

Refer to landscape proposals plan *SF2651 LL01 Rev C.*

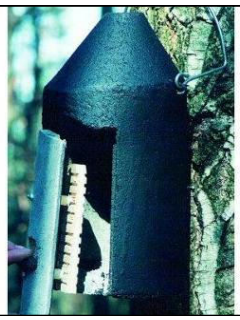
4.6. Installation of bat and bird boxes

Condition 11 requires that 2 bat roosting features and 4 bird nesting features are installed at the site.

4.6.1. *Bat boxes*

The proposed bat boxes with specification details are included in *Table 01* (below). These will be located on a pole within the biodiversity area to the east of the site, refer to *SF2651 LL01 Rev C.*

Table 01: Bat boxes

TYPE 1		
Model	**Schwegler General Purpose Bat Box 2F with double fronted panel**	
Number	**1**	
Description & Installation	This general purpose model is suitable for many situations. The wooden panel on the inside of the box provides inner spaces of different temperatures. Bat boxes should ideally be sited in open sunny positions and in groups facing different directions to provide a variety of micro-habitats. Boxes are best positioned at a minimum height of 4m up to 6 metres. Please note that once bats have inhabited a roost site they may only be disturbed by licensed bat workers.	

	Boxes to be positioned facing south-west, south-east or north, at a minimum height of 4m and positioned to provide a clear flight path and out of strong winds. Can be hung from wall or tree and is supplied with aluminium nail.
Dimensions	Diameter: 16 cm x height: 33 cm. Weight: 3.8 kg
Cleaning	The front panel can be removed. Cleaning should only be conducted by a licensed bat worker.
TYPE 2	
Model	**Schwegler 1FF Bat Box With Built-in Wooden Rear Panel** 
Number	**1**
Description & Installation	The 1FF is manufactured from long-lasting Woodcrete, which is a blend of wood, concrete and clay which will not rot, leak, crack or warp, and will last for at least 20 - 25 years, making it suitable for long-term mitigation projects. Woodcrete is breathable and maintains a stable temperature inside the box and the 1FF is painted black to absorb warmth. It also provides a good rough surface for bats to cling on to and climb. To compensate for fluctuations in temperature in spring and autumn, the 1FF is provided with a roughened rear panel made of hard-wearing wood. Depending on their individual temperature requirements, the bats can choose between the cooler Woodcrete surface or the warmer wooden panel. The 1FF is especially suitable for hanging in inaccessible places such as high in trees, or on steep slopes and house walls and is best positioned at a height of between 4 to 6 metres. Please note that once bats have inhabited a roost or nursery site they may only be disturbed by licensed bat workers
Dimensions	Height 43cm x width 27cm x depth 14cm. Weight: 9.5kg
Cleaning	No cleaning or maintenance required as droppings fall out of the entrance ramp

Timing of bat box installation

Bat boxes can be installed at any time of the year, and should be installed as soon as possible.

Lighting

Bat boxes should be located away from existing/proposed lighting to ensure they are attractive to bats.

4.6.2. *Bird boxes*

The proposed bird boxes with specification details are included in *Table 02* (below). These should be located on the mature trees present on the western boundary of the site at locations deemed suitable by a suitably qualified ecologist.

Table 02: Bird boxes

TYPE 1		
Model	Schwegler General Purpose Nest Box 1B (entrance hole 32mm)	
Number	2	
Description & Installation	Ideal for small hole nesting birds such as great tit, blue tit, coal tit, tree and house sparrow. With trees, fixing height is between 1.5 and 5 metres above the ground. Installed to face between north and east, unless shaded. Can be hung from wall or tree and is supplied with aluminium nail.	
Dimensions	260h x 170w x 180d	

TYPE 2		
Model	Schwegler Robin box 2H	
Number	1	
Description & Installation	Ideally these boxes should be installed 1.5-3m high or more on a wall (at an angle of 90° to the wall) or in an inconspicuous tree to prevent predator access. If possible, place within a creeping plant (such as ivy or rose) with an open outlook.	
Dimensions	20h x 15w x 20d	

TYPE 3		
Model	Schwegler Starling box 3S	
Number	1	
Description & Installation	Designed with a larger entrance hole suitable for starling. May be also be used by great spotted, middle spotted and lesser spotted woodpeckers. Ideally these boxes should be installed at least 2.5m high or more on a wall or tree	
Dimensions	28h x 19w x 20d	

Timing of bird box installation

Bird boxes can be installed at any time of the year, and should be installed as soon as possible.

Lighting

Bird boxes should be located away from existing/proposed lighting to ensure they are attractive to birds.

4.7. Refuge Creation

In order to enhance the site for invertebrates and wildlife in general, piles of stones and wood will be created in the biodiversity area to the west of the site. These will aim to provide sheltering and foraging opportunities for invertebrates, birds, small mammals and wildlife in general. For locations refer to landscape plan *SF2651 LL01 Rev C*.

5.0 POST-CONSTRUCTION HABITAT MANAGEMENT PLAN

5.1. Aims and objectives

There are seven elements to the landscape and ecological mitigation / enhancement measures included within the development (refer to landscape plan *SF2651 LL01 Rev C*):

- Wildflower grassland seeding;
- Planting of native trees and those known to be of value to wildlife;
- Planting of native shrubs;
- Planting of native hedgerows;
- Bat box installation;
- Bird box installation; and,
- Refuge creation.

The management of these elements is intended to fulfil the following aims and objectives:

- integrate the proposal at the site with its surroundings.
- provide a biodiversity area as compensation for lost habitat.
- contribute to the biodiversity/ecological potential of the local area.

5.2. Strategy

The aforementioned aims and objectives will be addressed through the following strategies:

5.2.1. *Wildlflower grassland seeding*

Wildflower grassland comprising a combination of the *Germinal: WFG20 Eco Species Rich Lawn* (80%), *WF3 General Purpose Natural Soils* (15%) and *WF10 Cornfield Annuals* (5%) is proposed to be sown within the biodiversity area to the west of the site. The mix will aim to provide a species rich grassland to help increase the abundance and diversity of invertebrates at the site; which will also help support a variety of species higher up the food chain.

Areas of wildflower grassland will be cut twice a year, once in early spring (to minimise grass competition) and once in late summer (to allow plants to flower and set seed). All cuttings should be removed to avoid a build-up of soil fertility and consequently help prevent competitive grasses such as perennial ryegrass from establishing.

5.2.2. *Tree planting*

A mixture of native species and those known to be of value to wildlife are proposed to be planted at the site. Species listed within the landscape proposals comprise alder, Italian alder, silver birch, weeping birch, crab apple, double gean, bird cherry, oak Koster and rowan.

Trees should generally be allowed to grow to their natural form and size. Any pruning operations required should be undertaken in January or February to avoid disturbance during the bird breeding season and to allow any fruit to be utilised through the early winter.

5.2.3. *Shrub planting*

The proposed development aims to incorporate areas of native shrub planting. This will provide an extended area of vegetation to the adjoining existing areas of shrubs and scrub on and adjacent to the boundaries of the site. Shrub species proposed comprise hazel, hawthorn, holly, wild privet, blackthorn and dog rose.

Shrub planting may be pruned to remove material encroaching over paths and to encourage vegetative renewal. General pruning within shrub beds should be undertaken to preserve the natural form of plants and their propensity to bear flowers, fruits or exhibit winter stem colour.

Any pruning operations required should be undertaken in January or February to avoid disturbance during the bird breeding season and to allow any fruit to be utilised through the early winter.

5.2.4. *Hedgerow planting*

The proposed development will incorporate native hedgerow planting within the site, which once established will aim to enhance connectivity of habitats within the site and beyond the site boundary. Species proposed to be planted to form hedgerows comprise hornbeam, field maple, hawthorn, hazel and holly.

Native hedgerow planting will be managed to form dense bushy growth to an eventual height of 2-3m through annual cutting. The hedge may be laid in the long term should it become thin or gappy. A dense hedge provides more favourable habitat for birds and small mammals.

Any pruning/cutting operations required should be undertaken in January or February to avoid disturbance during the bird breeding season and to allow any fruit to be utilised through the early winter.

5.2.5. *Bird and bat boxes*

Recommended boxes were selected for their durability and because they require limited/no maintenance; 'wood-crete' (a wood sawdust, concrete and clay mixture) boxes have been recommended as these are more durable and long-lasting, as opposed to the more temporary traditional wooden boxes. Any maintenance of bat boxes to be done by a licenced ecologist (Natural England Class 2 bat licence or accredited agent).

5.3. Management operations

5.3.1. *General*

The Contractor shall carry out maintenance work at suitable intervals and in suitable weather conditions, with a minimum of one visit per month (a visit being of such duration as to enable all works required at that time to be completed).

The Contractor is required to produce a detailed programme of maintenance work for approval at the beginning of each year of the contract.

The Contractor shall notify the Contract Supervisor before his intention to carry out any of the maintenance operations in order that the work can be checked and approved if necessary.

An annual site walkover by a suitably qualified ecologist will be undertaken to monitor the site to assess the establishment of proposed habitats and suggest remediation works or alterations to the programme where required to take into consideration unforeseen changes as the habitats develop.

5.3.2. *Plant Replacement*

Plant material shall be inspected, in late Summer or Autumn each year, and a schedule of replacements, for plants which have died or failed to thrive, should be prepared and agreed with the Contract Supervisor.

The replacement planting shall be carried out by the Contractor during the planting season immediately following the inspection. The Contractor shall notify the Contract Supervisor when this work is complete and ready for inspection.

The procedure specified for the initial planting shall be followed by the Contractor when re-planting.

5.3.3. *Wildflower Grassland*

Cutting

Wildflower grassland should be cut twice per year, once in March/April and once in September/October, depending on when seeds have set, which may vary dependant on the weather. For the long term development of the wildflower species all cuttings MUST be collected up and taken to the compost area or tip.

Non-woody weeds and bramble

To avoid bramble and non-woody weeds such as common nettle and dock becoming established, selective/spot weeding should be undertaken, by hand or herbicide weed-wipe or similar spot applicator to remove aggressive/invading weed species as necessary.

5.3.4. *Trees*

Pruning

Trees should be inspected yearly by an operative with arboricultural knowledge for any crossed branches, breaks and epicormic growth. Professional help should be called in when all but the lightest tree surgery is required. British Standard 3998:2010 'Recommendations for Tree Work' is recommended.

Trees should be pruned outside of the bird breeding season (March to August inclusive).

Fertiliser

Fertiliser shall be applied annually around each tree plant, at the end of spring prior to the main vegetative growth stage. Refer to landscape plan *SF2651 LL01 Rev C* for more details.

Checking Stakes and Ties

Once a year the tree stakes should be checked to see whether they require loosening, retying or removal if no longer required. If a tree has outgrown its staking, the stake and ties may be removed carefully, and disposed of appropriately. It is anticipated by year 5 all remaining stakes and ties should be able to be removed and disposed off site.

Replacement Tree Planting (Provisional)

Where replacement tree planting is required to replace trees that are dead, dying, vandalised or in poor physiological condition (beyond the Defects Liability Period), the species should be replaced with the same (see planting plans for species and size). Investigation into the failed growth of trees may be necessary with a Landscape Architect or Arboriculturalist and a use of different tree species may be recommended.

If so native species should be used if possible. If any trees are recommended for replacement they shall be replaced with larger stock commensurate with the replaced tree to make up for lost growth. Refer to landscape plan *SF2651 LL01 Rev C* for more details.

Watering

During the first two years all trees should be watered during the period of April to September inclusive. For years 3-5 it should only be required if there has been no precipitation for two weeks or more.

5.3.5. *Shrubs*

Pruning

In general, the pruning method applied to shrubs should be divided between evergreen and deciduous. The evergreen type needs little or no attention other than a yearly inspection and removal of any dead or decaying branches. The deciduous shrubs should be pruned to promote healthy vigorous and dense growth and maximise flower cover where appropriate. The pruning technique and timing of pruning varies slightly depending on species; details of which should be sought from a suitably qualified professional.

Fertiliser

Fertiliser shall be applied annually around each shrub plant, at the end of Spring prior to the main vegetative growth stage. Refer to landscape plan *SF2651 LL01 Rev C* for more details.

Replacement Shrub Planting (Provisional)

Where planting is required to replace dead, dying or vandalised plants (beyond the Defects Liability Period), or gaps in general, the species should be replaced with the same species (refer to landscape plan *SF2651 LL01 Rev C* for species and size). Investigation into the failed growth of the shrubs may be necessary with a Landscape Architect or Arboriculturalist and a use of different species may be recommended. Refer to landscape plan *SF2651 LL01 Rev C* for more details.

5.3.6. *Hedgerows*

Checking Spiral Guards and Canes

Once a year the spiral guards and canes should be checked to make sure they are still required for the hedge plant and if so, that they are securely in place and not rubbing the plant. If a hedge plant has outgrown its spiral guard, the guard and cane shall be removed carefully, and disposed of appropriately. This is likely to be in three to five years after planting.

Fertiliser

Fertiliser shall be applied annually around each hedge plant, at the end of Spring prior to the main vegetative growth stage. Refer to landscape plan *SF2651 LL01 Rev C* for more details.

Pruning

Hedge plants should be maintained at a height of 1m (for health and safety reasons) and pruned to promote a dense, bushy growth. Pruning should occur outside of the bird breeding season during the month of January and February.

Replacement Hedge Planting (Provisional)

Where replacement hedge planting is required to replace dead, dying or vandalised trees (beyond the Defects Liability Period), the species should be replaced with the same, (refer to landscape plan *SF2651*

LL01 Rev C for species and size). Investigation into the failed growth of trees may be necessary with a Landscape Architect or Arboriculturalist and a use of different species may be recommended. Refer to landscape plan *SF2651 LL01 Rev C* for more details.

5.3.7. *Bat Boxes*

No maintenance is required within the first five years of installation. The *Schwegler General Purpose 2F* boxes should be checked periodically (minimum of every 5 years) by a licensed bat worker, to assess usage of the boxes. Cleaning of the boxes may be carried out during this time. The *Schwegler 1FF* boxes do not require cleaning or maintenance as its design means that droppings fall out of the entrance.

Check for broken/missing boxes once per year. Broken/missing boxes should be replaced following advice from a Suitable Qualified Ecologist (SQE).

5.3.8. *Bird Boxes*

Clean out nest boxes annually in November/December. Remove old nesting materials and dispose of any un-hatched eggs as necessary. Broken/missing boxes should be replaced where necessary.

Table 04: Management operations – years 1 to 3

	Jan	Feb	March	April	May	June	July	Aug	Sep	Oct	Nov	Dec
Tree planting	Formative pruning only if required.							Check for dead plants and adjust ties / stakes as required.			Replacement planting as required.	
Shrub planting	Formative pruning only if required.							Check for dead plants.			Replacement planting as required.	
Hedgerow planting	Formative pruning only if required.							Check for dead plants and adjust ties / stakes as required.			Replacement planting as required.	
Wildflower grassland			Cuttings to be removed from site.						Cuttings to be removed from site.			
Ecologist's checking survey						Walkover survey to monitor and assess the site						
Bat boxes											Check for broken/missing boxes, replace as required.	
Bird boxes											Clean out old nest material if required. Check for broken/missing boxes, replace as required.	

Table 05: Management operations – years 4 to 5

	Jan	Feb	March	April	May	June	July	Aug	Sep	Oct	Nov	Dec
Tree planting	Formative pruning only if required.							Check dead trees and **remove** ties / stakes as trees become established.			Replacement planting as required.	
Shrub planting	Formative pruning only if required.							Check dead plants.			Replacement planting as required.	
Hedgerow planting	Formative pruning only if required.							Check dead plants and **remove** ties / stakes as hedge becomes established.			Replacement planting as required.	
Wildflower grassland			Directionally strim from the centre of the site outwards to a height of 150mm. Cuttings to be removed from site.						Directionally strim from the centre of the site outwards to a height of 150mm. Cuttings to be removed from site.			
Ecologist's checking survey						Walkover survey to monitor and assess the site						
Bat boxes (year 3and 4)											Check for broken/missing boxes, replace as required.	
Bat boxes (year 5)											Ecologist to assess usage of boxes and clean out if required. Check for broken/missing boxes, replace as required	
Bird boxes											Clean out old nest material if required. Check for broken/missing boxes, replace as required.	

APPENDIX 01: LEGISLATION: PROTECTED SPECIES

Bats

All British bats are afforded full protection under both UK and European legislation.

The Conservation (Natural Habitats & c.) Regulations 2007 transpose the Habitats Directive into UK law, making it an offence to:

- deliberately disturb a bat;
- deliberately kill or capture a bat; and
- damage, destroy or obstruct access to a breeding site or resting place (note this applies to both deliberate and reckless actions).

The Wildlife and Countryside Act 1981 (as amended) (Schedule 5) made it an offence to:

- intentionally kill, injure or take a bat
- damage, destroy or obstruct a resting place *,
- disturb the species in a resting place *
- possess or control a bat or any part thereof
- sell, offer for sale, possess or transport for sale any bat or part thereof
- set traps for catching, killing or injuring bats
- possess articles for the purposes of committing offences against bats

[*= intentional and reckless offences covered]

Legal protection under the Habitats Directive applies to their breeding sites and resting places. This means that bat roosts are fully protected, whether they are in use at the time or not. Where roosts or resting/breeding sites are identified, any works which may contravene the protection afforded to them require derogation from the provisions of the legislation in the form of a licence from Natural England.

Breeding birds

The Wildlife and Countryside Act 1981 gives protection to all bird's nests (whilst being built or in use) and eggs from intentional damage or destruction. Additional protection against disturbance on the nest or of dependant young is provided for birds included on Schedule 1.