# Landscape Maintenance & Habitat Management Plan

## Gateway 36 – Phase 1

Mixed-use Development
(Units 2, 3, 4 & 5)

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**Dearne Valley Parkway**
**Barnsley**

***FOR PLANNING***

Date: 28/04/2015
Job No: V11462
Doc No: R01

**Rev C**: 22/07/2015 – *Updated to incorporate Unit 5 plot landscaping.*

vector design concepts

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## INTRODUCTION

Vector was commissioned to prepare a landscape maintenance and habitat management plan for the proposed Gateway 36 development on land off Dearne Valley Parkway, Barnsley. Vector has prepared landscape proposals for phase 1 of the development site for units 2,3,4 & 5 which formed part of the planning applications to the local authority, Barnsley Metropolitan Borough Council.

This document outlines the objectives, management responsibilities and maintenance schedules for the landscape areas within the Gateway 36 development consisting landscape infrastructure, plot landscaping, boundary treatment and enhancement of the existing pond area. This landscape maintenance plan should be read in conjunction with the landscape plans (Vector drawing references V11462B_L01, V11462_L01, L02 & L03 - Landscape plans and V11432_L04 – Pond area Landscape and ecological enhancement plan), which show the landscape areas covered within this management plan.

For all future development phases of the wider Rockingham site, proposed landscape plans will be prepared and this document reviewed and supplemented to cover the landscape maintenance and management of the later phases of development.

The landscape proposals for the site and this landscape management plan have been prepared in consultation with the projects Ecological Consultants. FPCR Environment and Design Ltd were commissioned to review the landscape proposals and advise on the ecological features and habitat management requirements.

The purpose of this document is to aid the efficient and effective management of the sites landscaping for the first 5 years following construction and provide a framework and the necessary detail to guide operations relating to the maintenance of the existing and proposed landscape and habitats on the site. This report aims to schedule the maintenance activities required to ensure successful establishment and long term success of the proposed landscape following completion of construction.

The management plan relates to the landscape during the operational phase of the site. It is currently proposed that the site will be in operation from January 2016, although this date is provisional and may vary subject to the construction programme.

## DESIGN APPROACH & ASPIRATIONS

The underlying design intent is to create an aesthetically attractive and robust landscape setting to the Rockingham 1 development whilst encouraging biodiversity and wildlife where appropriate. Native and wildlife friendly species are proposed where appropriate to increase the sites biodiversity and ecological value. The proposals aim to enhance the existing landscape whilst providing mitigation measures for the loss of the existing rough grassland necessary to facilitate the development.

### Commercial Development Site - Plots 2, 3, 4 & 5 including associated landscape infrastructure:

*(Landscape Plan Ref: V11462-L03 & V11462_L01B)*

The proposed ornamental tree and shrub planting will create a strong landscape infrastructure, defining the character of the access road and plot boundaries. It is important that the landscape infrastructure is routinely inspected and appropriate maintenance operations are carried out as the trees establish and mature to prevent excessive overhang and shading to the surrounding pathways, access roads and car park areas.

Proposed ornamental planting to the access road and car park areas consists of species selected based on their ornamental qualities and all year round interest to create attractive frontages. These areas will require routine maintenance as the planting establishes to maintain the objective of providing attractive landscape setting whilst retaining views into the plots towards the buildings and entrance areas.

Formal hedgerow planting is proposed between plots and to rear of the proposed units to create a consistent boundary treatment to each plot which will contribute to the connectivity of habitats and provide movement corridors for mobile wildlife such as birds and invertebrates.

Close mown grass areas to the service yards and adjacent the proposed units will require a mowing regime throughout the growing season as set out in the schedule to maintain them as attractive and tidy areas of the site.

Hard landscape areas and footpaths around buildings and within the car parks will facilitate safe pedestrian movement around the site making it an accessible and legible pedestrian environment. The paths will improve links between the development and its context. All hard landscape areas will be subject to routine management and kept free of litter, leaves and other debris to maintain a neat and tidy appearance and ensure the safety of the site users.

## Existing pond area / Ecological enhancement of existing grassland & woodland habitat surrounding pond:

*(Landscape & Ecological Enhancement Plan Ref: V11462-L04*

The proposed works to the existing pond and woodland plantation areas to the east of the commercial development site as outlined on the landscape and ecological enhancement plan involves enhancing the existing pond and woodland habitats. This will create a complex of associated habitats, to enhance biodiversity and will be of value to a range of local fauna. Management will promote biodiversity through a more sensitive and extensive regime to ensure the ecological value of these habitats is maximised in the long term.

It is proposed that the area will provide surface water attenuation for the commercial development site. Earthworks are proposed to remodel the existing ground levels of the rough grassland area around the pond to achieve the required storage volumes. The proposed landscaping to follow the ground remodelling works will consist of reseeding the areas affected by the excavations with a meadow seed mix to create open wet grassland habitat. Areas of native scrub, scattered native tree planting in the north and west of the pond area and the introduction of wetland edge species to the margins of the existing pond area are also proposed to enhance the area and provide mitigation for the loss of some of the existing grassland and vegetation. Care will be taken to ensure scrub does not encroach on the pond margins.

The soil conditions and preparation prior to sowing along with the management of this specific grassland habitat thereafter will be crucial in ensuring successful establishment and long-term benefits for the attraction of biodiversity, particularly invertebrates. A meadow seed mix for clay soil will be sown directly onto a prepared subsoil seedbed which will also allow self-seeding and natural succession of the grassland habitat.

The native scrub habitat and tree planting areas will receive a capping layer of approved imported topsoil prior to planting in accordance with the approved landscape enhancement plan.

The existing woodland planting will require some thinning and remedial tree works to promote the establishment of a healthy and diverse woodland habitat.

The pond area will requires appropriate management to ensure successful establishment with minimal disturbance to the existing habitats.

A Sustainable Drainage Management & Maintenance Plan has been prepared by Harworth Estates and outlines the maintenance requirements specific to the surface water attenuation basin and associated structures within the existing pond area east of the commercial development site.

## LANDSCAPE MANAGEMENT OBJECTIVES

The objectives of the landscape maintenance and management plan are:

- To ensure successful establishment of the proposed landscape and healthy growth of the trees, shrubs and grass areas through to maturity.
- To ensure the success of landscape maintenance and management operations.
- To achieve a clean, tidy condition and appearance of all external areas.
- To encourage biodiversity and successful establishment of the existing and proposed habitats (pond area)
- Enhance the sites ecological value
- To facilitate an efficient and sustainable management and maintenance regime which can be used as a mechanism for monitoring and reviewing the success of the landscape.

## ROLES & RESPONSIBILITIES

Responsibility for the implementation of this landscape management plan shall lie with the estates manager. Generally it is the responsibility of the estates manager to ensure that all landscape maintenance and management operations follow the guidance as set out in this document.

The responsibilities of the estates site manager will include:

- To adhere to the relevant provisions for general landscape and site maintenance made within this document and comply with the advice of the project ecologist where necessary in relation to the management of specific habitats and ecological features.

- To ensure that all contractors working on the site are aware of the Landscape Management Plan and that all work is carried out in strict accordance with it.

- To ensure that all contractors working in proximity to ecological habitats are aware of the potential presence of protected and notable species and need to take suitable precautions.

- To ensure health and safety procedures are followed at all times in accordance with method statements to be submitted to and approved by the Facilities Manager prior to any works on site.

- To monitor the performance of the maintenance strategy and carry out a 5 year review of the site to inform the revision of the management plan for the period onwards.

During the 12 months defects liability period following implementation of the landscape works it will be the responsibility of the landscape contractor under the main contract to maintain and manage the landscape in accordance with the landscape contract and this document.

The sites landscape areas and in particular the pond area is to be managed to maximise biodiversity value on an on-going basis. This plan is a dynamic document, to be reviewed and updated as necessary on a five yearly basis. The landscape should be re-assessed after 5 years post construction and the management plan / maintenance schedule reviewed and revised accordingly to reflect changing management needs over time as the habitats establish.

The management of the landscape after the first year will be the responsibility of a landscape maintenance contractor under a separate maintenance contract for a suggested period of 4 years to cover the remainder of the 5 year management period covered within this document, after which it will be the responsibility of the estates manager to renew or re-appoint as necessary. The on-going landscape and habitat management works will be funded from the service charge applied to the development plots.

## HEALTH & SAFETY

Certain maintenance procedures described within this document involve the use of chemicals, therefore it is important that any safety warnings and all instructions issued by the chemical manufacturers/suppliers should be carefully read and strictly adhered to at all times.

In general the following precautions should be taken:

- Prior to maintenance / cleaning operations being undertaken a site specific risk assessment is to be carried out and method statement prepared by the contractor.
- Prior to any chemical being used a COSHH assessment is to be undertaken.
- When using chemicals, appropriate protective clothing such as gloves, goggles, boots and overalls should be worn.
- Adequate ventilation is required when using chemicals in confined spaces.
- When diluting acids, always add acid to water and not water to acid.
- Any clothing that is contaminated with chemicals should be disposed of safely.
- When using any chemicals, care must be taken not to damage, contaminate or stain any adjoining materials, landscaping or finishes.
- Care must be taken to protect personnel operating in the area of the cleaning from injury or hazard created by cleaning.
- The appropriate First Aid must be available on-site.

Before undertaking any cleaning operation a trial should be carried out on a small, preferably inconspicuous area, to determine the effect of the chemicals before treating a large area.

## LANDSCAPE MANAGEMENT PLAN

**General Notes:**

All landscape maintenance works are to be carried out by experienced operatives holding relevant qualifications and training, or under the supervision of such a person on site. All works detailed in this document shall be carried out in accordance with good horticultural practice, using materials, plant, and machinery appropriate to the task, undertaken in such a manner that avoids damage and/or nuisance to the site and its surroundings.

A copy of a tool box talk on protected species (prepared by FPCR) has been appended to this management plan and will be made available to all contractors. Contractors will familiarise themselves with the content before undertaking any works on site.

Any plant material that dies as a result of contractors operations or omissions shall be replaced by the contractors at their expense during the next planting season.

Landscape workmanship and maintenance operations described within this document should generally adhere to best horticultural practice and the following standards:

- BS 3998 : 2010 Recommendations for tree work
- BS 4428 : 1989 Code of practice for general Landscape Operations
- BS 7370 : 1993 Part 4, Grounds maintenance recommendations
- BS 3882 : 2007 Topsoil

The maintenance and management requirements of the different landscape elements have been broken down and are described below:

## Commercial Development Site - Plots 2, 3 & 4 including associated infrastructure:

*(Landscape Plan Ref: V11462-L03)*

**Site cleanliness:**

**Litter:**

The site shall be kept clean and free of litter and dog fouling in accordance with the Department for Environment, Food & Rural Affairs PART1; Code of Practice on Litter and Refuse issued under section 89 of the Environment Protection Act 1990.

The entire site is to be kept free of litter and other debris through a regular programme of monitoring, collection and disposal, coinciding with visits to maintain grassed areas and planting. Planting beds, grass areas and tree branches should be checked for litter, debris and plastic bags especially after strong winds. All items shall be picked and removed offsite by the contractor and disposed of at an authorised tip / recycling facilities. Care to be taken for the presence of reptiles / amphibians – reference tool box talk.

**Litter Bins:**

Litterbins will not be allowed to overflow at any time and should be emptied at least once per week.

The litterbins should be cleaned out with an appropriate disinfectant at least once per month and kept free from graffiti.

**Leaf Fall:**

Formal and hard landscape areas to entrances, car parks, access road, and service yard areas are to be swept and cleared of fallen leaves all year round with frequency adjusted to reflect leaf fall at different times of the year or in periods of windy or frosty weather. Leaf fall in areas of hard landscape shall be picked and removed offsite immediately by the contractor. Composting and recycling of this organic matter is encouraged.

Care to be taken notably within landscape areas for the presence of reptiles – reference toolbox talk.

**Detritus to hard landscape areas:**

All paving and areas of hard landscape to be swept to remove dust and debris regularly with the procedure coinciding with visits to maintain grassed and planting areas.

All surfaces should be kept free of moss and weeds and the removal of leaves is paramount to all walking areas.

**Gritting:**

During periods of inclement cold weather, all main routes and car parks shall be kept free of slippery frost and snow before working hours begin, this should be carried out daily and more frequently if adverse conditions persist.

**Ornamental shrub planting:**

All shrub planting areas shall be attended to a minimum of three times during the growing season (April – September) and once during the dormant season (October – March).

Before works commence areas are to be inspected, and all litter / debris removed as described under litter removal section above.

All plants to be checked and firmed up in the ground as necessary.

Planting shelters (if fitted) shall be checked during each visit, stakes firmed up as necessary and ties adjusted.

**Pruning:**

Ornamental shrubs should be pruned to encourage healthy and bushy growth and desirable ornamental features such as flowers / fruit / autumn colour / stem colour. Shrubs shall be pruned according to the individual species requirements. Any damaged shoots or branches shall be pruned off plants, cutting back to above a live, outward facing bud or shoot. All suckers should be removed by cutting back level with the source stem or root.

Generally timing for pruning works to be as follows: Winter flowering shrubs to be pruned in Spring. Shrubs flowering between March and July shall be pruned immediately after flowering period. Shrubs flowering between July and October should be cut back to old wood in winter. No pruning or trimming of woody vegetation and climbers is to be carried out during the bird nesting season of March to August inclusive.

All shrubs are to be pruned in accordance with best horticultural practice and British Standard 7370: Part 4, 1993: 3.6 and only by operatives knowledgeable and aware of the varieties of species being pruned and the reasons for pruning. Shrubs shall be maintained in their natural shape and are not to be clipped into box like shapes.

Any plant growth which will obscure windows, signs or sightlines shall be pruned and removed accordingly.

All arisings resulting from pruning operations shall be disposed of off site at an appropriate facility without delay.

**Fertiliser:**

Fertilise with Miracle Professional 'Enmag' or equal approved in March or April by spreading evenly throughout bed at the manufacturers recommended rate per $m^2$. Carefully lift and replace any mulch materials.

**Weed Control:**

Ornamental planting beds are to be kept clear of weeds by hand weeding where appropriate and through the use of a suitable herbicide applied and used strictly in accordance with the manufacturers instructions.

Weed control should be carried out monthly from April to October for ornamental shrub planting through the use of a non-residual herbicide treatment applied to manufacturer's instructions. All dead plant material should be removed from site once herbicide treatment has taken effect without damaging adjacent plants, trees and grass.

**Mulch Levels:**

Whilst weeding and maintaining the ornamental shrub and tree planting areas particular care should be taken to ensure full thickness of mulch as specified on the landscape plans is maintained (75mm depth peat-free amenity bark mulch or equal approved). Finished mulch levels are to be maintained at 25mm below any adjacent kerbs or paved hard landscape areas.

**Watering:**

All planting areas shall be watered after planting and thereafter as required subject to weather conditions and with due regard to any restrictions such as hosepipe bans. When watering the full depth of topsoil should be wet without loosening or damaging plants.

Any compacted soil should be loosened to direct water to the rootzone. Weekly inspections of the soil conditions are to be carried out during the first six months of planting to determine when watering is required and necessary well before it is critical. Water supply should be from potable mains water or an approved alternative.

**Shrub Replacement:**

Planting that has failed to show growth or development of full foliage during the first growing season after planting, should be replaced by the landscape contractor within the following planting season.

Replacement planting is to be planted in accordance with the planting specification stated on the landscape plan and in accordance with British Standard Specification No 3936 1992: Nursery Stock part 1 – Specification for Trees and Shrubs. All shrubs to be true to name, vigorous, well grown specimens of their type, free from disease and insect pest.

Planting of field grown plants should not commence before the 1 October and no later than the 31 March and shall also be suspended during periods of severe frost and where plant locations are waterlogged.

**Tree Planting**

**Pruning:**

Excessive overhang of any growth encroaching onto paths, roads, signs, sightlines and road lighting luminaries should pruned as required. All pruning operations and timing should suit the species. No pruning should take place during the late winter / early spring sap flow period or within the bird breeding period – see below. Young trees up to 4 metres should be crown pruned by removing dead branches and reducing selected side branches by one third to preserve a well balanced head and ensure the development of a single strong leader. Duplicated branches and potentially weak or tight forks should be removed by cutting back to live wood.

All pruning works should be carried out by an approved member of the Arboricultural Association or other approved specialist using approved methods.

**Stakes and Ties:**

All tree stakes, ties and guys shall be inspected and maintained accordingly every 3 months and additionally after strong winds.

Any tree stakes that are loose, broken or decayed should be replaced immediately to original specification. Defective ties or signs of constriction, looseness or abrasion are to be corrected by being adjusted, re-fixed or replaced to prevent chafing and damage to the tree. When the tree is established enough to stand on its own all stakes and ties should be removed and the stake holes filled with lightly compacted soil.

**Re-firming of Trees:**

Ground around newly planted trees should be re-firmed around the base after strong winds, frost heave and other disturbances by treading until they are firmly bedded. Any voids or collars in the soil at the base of the trees stem, created by tree movement should be broken up with a fork, backfilled with topsoil and re-firmed whilst avoiding damage to roots.

**Mulching:**

Mulched areas around trees shall be maintained to an acceptable standard and minimum depth of cover maintained as described in mulch levels section in reference to ornamental shrub planting. Finished mulch levels around trees to be topped up as required and maintained at 25mm below adjacent kerb edges / paved surfaces.

**Tree Replacement:**

Any tree which has died as a result of the contractors operations or omissions shall be replaced by the contractor at his own expense during the next planting season. Where the facilities manager has agreed that the plant deaths have arisen due to circumstances out of the control of the contractor, replacement planting shall be instructed and paid for at an agreed rate.

**Breeding Birds:**

Pruning work must not be carried out between March and August inclusive (the nesting bird breeding season) unless it is appropriately demonstrated by a suitably qualified ecologist after carrying out a pre works survey that no active bird nests are present as detailed within the Site Biodiversity Action Plan (SBAP).

**Amenity Grass Areas (low maintenance grass mix):**

Prior to cutting, amenity grass areas are to be inspected and all litter / debris is to be removed in accordance with the litter picking procedure / tool box talk described in the general site cleanliness section above.

All mowing operations are to be carried out by suitably trained personnel using well maintained machinery appropriate to the task, cylinder, rotary or mulch mowers and only when weather and ground conditions are suitable. Operations shall be suspended where ground conditions prevent the use of machine without damage to the ground surface. Where operations are suspended additional maintenance visits may be required in order to maintain the sward within acceptable growth limits.

The frequency of cutting may vary slightly in response to growth rates and weather conditions and should be assessed with the maintenance schedule adjusted as necessary. As a general rule, cutting is likely to be required every two weeks on high maintenance areas, ensuring that the sward height does not exceed 100mm and that the presence of flowering weed species is avoided.

The height of growth must not exceed 100mm at any time. The first cut of the year should be to a height of 60mm then the grass maintained and cut to a height of 40mm.

All cuttings are to be collected and removed from site by the contractor. Following cutting, all grass clippings shall be swept from adjacent hard landscape areas and removed from site to an authorised disposal facility (preferably recycling).

Edges of amenity grass areas adjacent to fences, walls, kerbs, paths, trees and other boundaries or obstacles shall be cut using equipment suitable to the task. Strimmers shall not be used around the base of trees.

The sward shall be kept substantially free of broad leaved weeds by the use of a suitable selective herbicide applied twice a year in strict accordance with the manufacturer's instructions.

Any hollows which appear within the amenity grass areas due to settlement or other causes, which are hazardous, shall be top dressed in early spring with topsoil and seeded with a grass mix to the original proposed specification. Grass seeding shall be carried out in accordance with British Standard 4428, 1989 – Code of practice for General Landscape Operations; Section 5.3. No seeding shall take place until preparatory work has been undertaken and approved. The finished topsoil level should be 25mm above adjoining paths, kerbs and man hole covers. The sowing of the seed should commence in fine weather conditions and should be sown at the rate per $m^2$ as in the original landscape proposals.

**Note:**
The above mowing and maintenance regime is relevant to the proposed 'amenity grass areas' only and excludes the wet grassland habitat within the pond area.

**Formal Hedgerows:**

Hedgerows will not be clipped / cut throughout the bird breeding season (March – August inclusive). Formal hedgerows should be clipped with a mechanical hedge cutter with reciprocating blades to encourage healthy growth through to establishment and maintain a neat and tidy hedgerow to a maximum height of 1.6m and not exceeding 1m in width.

Any damaged shoots or branches shall be pruned off, cutting back to above a live, outward facing bud or shoot.

Hedges to be pruned in accordance with best horticultural practice and British Standard 7370: Part 4, 1993: 3.6 and only by suitably trained operatives.

All arisings resulting from hedge cutting operations shall be disposed of off site at an appropriate facility.

**Native Hedgerow:**

The existing mixed native hedgerow to the sites northern boundary will require a specific maintenance regime. The maintenance schedule describes the operations required to ensure the long-term success of the hedgerow including frequency and timing for when they should be carried out.

Native hedgerows will be managed on a rotational basis, with either one side of the hedgerow annually or, selected hedgerow lengths cut both sides equating to no more than 1/3rd of the total resource in any one year. This will ensure a continuous supply of foraging for local fauna throughout the year. Hedgerows will be cut during the winter months during frost free periods and outside of the bird nesting season. Care will be taken to avoid damage to potential future mature hedgerow trees during cutting to enable their successful growth. All arisings will be cleared to a designated composting area. Diseased material will be removed from site.

**Native Whip Planting:**

Areas of native whip planting to the Western boundary will require some post-planting maintenance for the first 5 years. This will comprise spot treatment of pernicious weeds as necessary only during this period, using an appropriate non-residual herbicide to maintain a weed free area at the base of each transplant / tree, formative pruning as required and adjustment of stakes, ties, and shelters where present. Following the initial 5 year management period and once established the native planting will require minimal maintenance intervention and only if required to control the spread of any pernicious weeds manual removal will be carried out.

Areas are to be inspected during each maintenance visit and all litter / debris is to be removed in accordance with the litter picking procedure described in the general site cleanliness section above.

It is not envisaged that the new transplants / trees will require any thinning or coppicing within the first five year period of this management plan. The requirement for this management will be assessed as part of the review to determine whether such action is desirable in the period 6-10 years. It is envisaged that some thinning or coppicing will be desirable in the 6-10 year period in order to maintain a continuity of growth stages.

**Maintenance Objectives:**

- Weed control and removal of weeds from the base of each native transplant to avoid smothering and competition for water and nutrients.
- Replacement of any diseased or dying plants annually to create a solid hedge and prevent any gaps appearing.

## Pond / Woodland Habitat Areas:

*(Landscape & Ecological Enhancement Plan Ref: V11462-L04*

**Pond:**

Management prescriptions will seek to ensure that an appropriate balance of wetland habitats is maintained such that open water habitats do not become too choked with vegetation.

The pond will be monitored annually and works carried out as necessary. Clearance operations will be carried out avoiding the egg-laying/breeding season of the amphibian season (works to be carried out between September-November).

Marginal vegetation should be monitored annually to ensure at least 50% open water. If clearance is required only one-third or less of marginal areas should be cleared annually on a rotational basis during autumn. All arisings should be left next to the open water for at least 48 hours to allow invertebrates to return and then removed to a designated composting site.

The colonisation of over-shading trees and scrub should be avoided along southern pond margins, with cutting back of encroaching vegetation as necessary.

**Wet Grassland:**

The wet grassland habitat will require a less intensive maintenance regime than the amenity grass areas described above for the commercial development site.

The wet grassland areas are likely to require more routine maintenance during the first 18month establishment period to prevent their dominance by noxious weeds such as creeping thistle, common dock and ragwort. Areas are to be inspected for noxious weed species early in the growing season and where the monitoring indicates the need for the control of noxious weeds a spot weed treatment procedure should be carried out whilst the plants are still in rosette form. Chemical control shall be undertaken using an appropriate herbicide and application method, as recommended by a BASIS-qualified pesticide advisor. Chemical control will follow the DEFRA 'Code of Practice for the Use of Pesticides'.

No artificial fertilisers are to be used on the wet grassland areas.

Following establishment to develop a grassland sward of varied structure of greater value to wildlife, cutting should be undertaken on a rotational basis, with only a half of the grassland cut in any one year. This would reduce scrub encroachment but ensure that areas of dense tussocky grassland are present in addition to shorter areas suitable that can be utilised by a range of invertebrates.

Grassland to be cut once annually in late August or September, to ensure that adequate cover is afforded to fauna during hot and dry periods. All arisings would be collected and deposited within a designated area. The grass sward will be monitored annually; if species diversity does not appear to be increasing, a second cut will be specified in the spring (April). Cutting blades should be set at a height of 150mm to protect any amphibians which maybe foraging within the grassland.

Grassland within 1m of the pond should be cut on a three-year rotation. One third of any such grassland will be cut each year, each remaining third being left uncut for two successive years to provide variety.

Prior to cutting all areas of grassland shall be inspected and cleared of litter and debris in accordance as with the procedure described in the general site cleanliness section.

**Woodland Habitat:**

Existing woodland trees will be largely unmanaged, they will be inspected regularly and remedial works undertaken as necessary, particularly where there are health and safety considerations. Where tree works are required, removed limbs should be retained as dead wood piles or recumbent logs within suitable locations within the woodland and at edges to provide habitats for herpetofauna, invertebrate and saprocyxlic flora and fungi.

A general inspection of all individual trees and woodland planting shall be carried out during each maintenance visit. Any damaged, diseased or dangerous timber shall be reported to the facilities manager for instruction to carry out remedial tree works. Tree planting areas shall be inspected and cleared of litter during the routine maintenance visits in accordance with the litter picking procedures described in the general site cleanliness section.

Selective thinning of poor quality younger specimens will be undertaken with a small number of better quality individuals identified throughout the woodland area which have the potential to be future mature standards, with selective thinning of the canopy as necessary around to create sufficient growth space.

All tree works are to be carried out in accordance with BS 3998:1989 'Recommendations for tree work', Health & Safety legislation and relevant best practice. Prior to the commencement of tree works the contractor shall provide full working method statement and risk assessments.

Prior to commencement of works all trees are to be inspected for nesting birds and potential for roosting bats by an approved ecologist. If possible works should be undertaken outside of the bird nesting season – (March to August inclusive).

The understory vegetation should remain undisturbed with little proactive management required. Bramble and ivy growth will be monitored and excessive growth removed as necessary to prevent stifling of the ground flora.

**Bird Boxes:**

After the end of each breeding season all nest boxes are to be cleaned out, preferably in October or November. The boxes shall be taken down the lid removed and any material inside the box emptied out. The box will be brushed clean with a stiff brush. Gloves and a face mask will be worn whilst completing the task. The box will be re-instated as soon as it has been cleaned.

**Bat Boxes:**

Any broken or damaged bat boxes identified should be inspected by a licenced bat worker for the prescence of bats and repaired / reinstated as necessary following their advice.

## LANDSCAPE MAINTENANCE SCHEDULE

The maintenance schedule below sets out the maintenance tasks, frequency, timing and year from implementation which they should be carried out. The total amount of work needed may not be finished in these 5 years, but at the end of this time a review of the work should be completed and the management plan and schedule updated accordingly.

The schedule should be used as a guide for maintenance tasks and should be flexible if necessary.

| Item | Action | Year | | | | | Frequency | Timing* |
|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | | |
| Litter & Debris removal | • Pick all litter from areas of hard and soft landscape and remove from site.<br>• Empty litter bins | ■ | ■ | ■ | ■ | ■ | Weekly | All Year round |
| | • Wash and clean bins with disinfectant | ■ | ■ | ■ | ■ | ■ | Once a month | All Year round |
| Leaf Fall | • Sweep up leaf fall under trees and windblown in formal and hard landscape areas. | ■ | ■ | ■ | ■ | ■ | Weekly – Adjust frequency to reflect leaf fall at different times of year or in spells of windy or frosty weather. | All Year round |
| Detritus | • Sweep all hard landscape areas to remove all dust and debris | ■ | ■ | ■ | ■ | ■ | Weekly | All Year round |
| Cleaning paved surfaces | • Attend to spillages and other arisings efficiently, adopting current H&S procedures regarding warning signs etc. Any surface contamination caused by spillage should be removed using a neutral biodegradable detergent and thoroughly rinses afterwards (avoid run off into soft landscape areas). | ■ | ■ | ■ | ■ | ■ | As required | All Year round |
| Damage to paving areas | • Inspect for any movement or deterioration and report defects to the Facilities Manager. | ■ | ■ | ■ | ■ | ■ | Weekly | All Year round |
| De-Icing | • Apply rock salt and or de-icing agents to all areas of pedestrian and vehicular traffic (avoid over spread / run off entering into soft landscape areas). | ■ | ■ | ■ | ■ | ■ | As Required | Nov - Mar |
| Shrub Pruning | • Prune all shrubs as described in the landscape management plan. | | | ■ | ■ | ■ | Annually or as required | Autumn & Spring |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | • Prune to remove any damaged shoots or branches.<br>• Prune to remove all suckers | ■ | ■ | ■ | ■ | ■ | As required | All Year round |
| | • Prune winter flowering shrubs | | | ■ | ■ | ■ | Annually or as required | Spring |
| | • Prune shrubs which flower between period Mar – Jul. | | | ■ | ■ | ■ | Annually or as required | Immediately after flowering |
| Mulch Levels | • Maintain full depth of mulch to planting areas by topping up / renewing mulch material to a depth of 75mm | ■ | ■ | ■ | ■ | ■ | Monthly as required | All Year round |
| Irrigation | • Water ornamental shrub planting areas and trees to full depth of topsoil.<br>• Inspect soil conditions to determine when watering is required. | ■ | ■ | | | | Immediately after planting then as required until planting is established. | All Year round |
| Weed Control to shrub planting beds | • Remove weeds within planting beds by hand weeding where appropriate. | ■ | ■ | ■ | ■ | ■ | Monthly | Apr - Oct |
| | • Supress weeds with the application of a non-residual herbicide. Rate and application as per manufacturer's specification. | ■ | ■ | ■ | ■ | ■ | 3 No. applications per year whilst weeds are actively growing. | Apr, July & Oct |
| Fertiliser to Planting Areas | • Apply slow release fertiliser to planting beds. Rate and application to manufacturer's specification. | | ■ | | ■ | | Annually | Mar - Apr |
| Formal Hedges | • Trim hedges to maintain neat and tidy form with mechanical hedge cutter according to individual species characteristics to maintain height as specified in the landscape proposals. | ■ | ■ | ■ | ■ | ■ | Annually<br><br>*REFER TO NOTE BELOW RE NESTING BIRDS | Autumn |
| Native Hedgerow | • Inspect areas for windblown litter and debris and remove in accordance litter picking procedure. | ■ | ■ | ■ | ■ | ■ | Monthly or as required following strong winds | All Year round |
| | • Carryout an inspection of the hedge<br>• Prune off any broken or damages branches where necessary. | ■ | ■ | ■ | ■ | ■ | Monthly | Mar - Oct |
| | • Control weeds through hand weeding as required to maintain a weed free area at the base hedge. | ■ | ■ | ■ | ■ | ■ | Every 3 months | Mar - Oct |

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| | • Supress weeds with the application of a non-residual herbicide. Rate and application as per manufacturer's specification. | ■ | ■ | ■ | ■ | ■ | 3 No. applications per year whilst weeds are actively growing. | Apr, July & Oct |
| | • Trim hedge on a rotational basis – one side of the hedgerow cut annually or, selected lengths cut both sides equating to no more than 1/3rd of the total resource in any one year. Cut to maintain a 'topped A shape' form to a maximum height of 1.8m and width not exceeding 1.2m where appropriate using a mechanical hedge cutter with reciprocating bar cutter. | ■ | | ■ | | ■ | Annually<br><br>*REFER TO NOTE BELOW RE NESTING BIRDS | Feb |
| | • Inspect hedgerow for dead or damaged plants at the end of the growing season.<br>• Replace all dead / dying / vandalised plants with like for like replacements to the original specification. | ■ | ■ | ■ | ■ | ■ | Annually | Nov |
| | *** It is an offence to take, damage or destroy the nest of any wild bird while that nest is in use or being built (Wildlife and Countryside Act, 1981). Hedge trimming and any other works to the hedge that may affect nesting birds will only be carried out between September and February inclusive (outside of breeding bird season) to avoid any potential destruction of birds' nests (present from March to August).** | | | | | | | |
| Bird nest boxes | • Clean out nest boxes | ■ | ■ | ■ | ■ | ■ | Annually | October / November |
| Shrub Replacements | • Inspect all planting areas for dead or damaged plants.<br>• Replace all dead / dying / vandalised shrubs. | ■ | ■ | ■ | ■ | ■ | Annually or as required | Nov |
| Specimen Trees - Standards | • Carryout inspection for general health<br>• Cut back broken/diseased branches<br>• Prune to remove branches to give a clear stem height of 2.5m above footpaths.<br>• Replace / re-secure loose or missing guy wires if required. Adjust to suit stem | ■ | ■ | ■ | | | Twice a year | Mar & Oct |

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| | growth and provide correct and uniform tension.<br>• Re-firm ground around base if required. | | | | | | | |
| | • Carryout inspection for general health<br>• Cut back broken/diseased branches<br>• Prune to promote highest standard of growth & Form.<br>• Adjust tree tie if required.<br>• Remove tree tie and stakes if no longer required to support the tree. | | | | ■ | ■ | Twice a year | Mar & Oct |
| Tree Replacements | • Inspect for dead or severely damaged trees at the end of the growing season.<br>• Replace all dead / severely damaged / vandalised trees with same size, species and maturity as that originally planted. | ■ | ■ | ■ | ■ | ■ | Annually | Nov |
| Amenity Grass (low maintenance grass mix) | • Cut to maintain a sward height of 40mm | ■ | ■ | ■ | ■ | ■ | As Required - adjust according to growth rate and weather conditions. | Apr - Oct |
| | • Control/Remove Weeds through application of selective herbicide | ■ | ■ | ■ | ■ | ■ | Twice a year | Apr & Aug |
| | • Remedial works - repair worn areas / top dress hollows. | ■ | ■ | ■ | ■ | ■ | Twice a year | Apr & Aug |
| **Pond Area / Wet Grassland Specific Maintenance & Habitat Management:** | | | | | | | | |
| Wet Grassland Establishment | • Inspect areas for presence of noxious weeds.<br>• If present, noxious weeds to be controlled by a spot weed treatment using an appropriate herbicide applied in accordance with manufacturer's specification. | ■ | ■ | | ■ | | Monthly | Apr - Sept |
| Wet Grassland Cutting | • Cut grass once annually with cutting blades set to 150mm height (to protect any amphibians which may be foraging within the grassland). Leave arisings for a week before gathering up and removing from site.<br>• **Note:** above cutting to be carried out on a rotational basis with only half of the | ■ | ■ | ■ | ■ | ■ | Annually | Late Aug / Sept |

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| | grassland cut in any one year.<br>• **Note:** grassland within 1m of the pond should be cut on a three year rotation. 1/3rd of anysuch grassland will be cut each year, each remaining 3rd being left uncut for two successive years to provide variety. | | | | | | | |
| Wet Grassland Monitoring | • Monitor grass sward annually; if species diversity does not appear to be increasing a second cut shall be made in Spring. Leave arisings for a week before gathering up and removing from site. | ■ | ■ | ■ | ■ | ■ | Annually | Apr |
| Native Scrub Planting | • Inspect areas for windblown litter and debris and remove in accordance litter picking procedure.<br>• Prune off any broken or damages branches where necessary. | ■ | ■ | ■ | ■ | ■ | Monthly or as required | All Year round |
| | • Check all transplants for general health. Re-firm ground around each transplant if required and adjust / replace stakes and shelters where necessary. | ■ | ■ | ■ | ■ | ■ | Monthly or as required | Mar - Oct |
| | • Weed control through spot application of an appropriate herbicide to control pernicious weeds and maintain a weed free area at the base of each transplant. Rate and application to manufacturer's specification. | ■ | ■ | ■ | ■ | ■ | Every 3 months | Mar - Oct |
| Native Tree Planting | • Carryout inspection for general health<br>• Cut back broken/diseased branches<br>• Replace / re-secure loose or missing tree ties if required. Adjust to suit stem growth and provide correct and uniform tension.<br>• Re-firm ground around base if required. | ■ | ■ | ■ | | | Twice a year | Mar & Oct |

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| | • Carryout inspection for general health<br>• Cut back broken/diseased branches<br>• Prune to promote highest standard of growth & Form.<br>• Adjust tree tie if required.<br>• Remove tree tie and stakes if no longer required to support the tree. | | | | ■ | ■ | Twice a year | Mar & Oct |
| Bird nest boxes | • Clean out nest boxes | ■ | ■ | ■ | ■ | ■ | Annually | October / November |
| Bat boxes | • Any broken or damaged bat boxes identified should be inspected by a licenced bat worker for the prescence of bats and repaired / reinstated as necessary following their advice. | ■ | ■ | ■ | ■ | ■ | Annually | October / November |

**Note:**
*Any maintenance work that may affect habitats suitable for use by nesting birds will only be carried out between September and February inclusive (outside of breeding bird season) unless it is appropriately demonstrated that no active bird nests are present.*

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**Appendix:**



# Great Crested Newt
## *Triturus cristatus*

Great crested newts are afforded protection under the Wildlife & Countryside Act 1981(as amended) and the Conservation of Habitats and Species Regulations 2010 (as amended)

If any amphibian is noted during the proposed works all operations must cease and FPCR Environment and Design Ltd contacted immediately for further advice


**FPCR (Ecologist) Contact Details**

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Our ref: 6424










# Smooth Newt
## *Lissotriton vulgaris*









# Figure 1 - Newt Identification Sheet

Rockingham

Barnsley

April 2015

**Great Crested Newt (GCN) Training Record for Harworth Estates site at:**

**Rockingham, Barnsley**

*Harworth Estates Site Ref.:*

I confirm that I have received training by a GCN Licence holder and have been provided with a copy of the ôNewt Identification Sheetô

GCN Licence Holder: .....

Signature: é é é é é é é é é .

Date: é é é é é é é é é .

**FPCR (Ecologist) Contact Details**

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Our ref: 6424

| Date | Name | Company | Signature |
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