

Landscape Management Plan

Rabbit Ings Regeneration Scheme near
Royston, Barnsley

On behalf of the City of Wakefield Metropolitan
District Council and Yorkshire Forward

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WYG Planning and Design

October 2008

CONTENTS

1.0	Introduction	Page No. 2
2.0	Management Aims & Objectives	Page No. 4
3.0	Tree & Shrub Planting	Page No. 5
4.0	Watercourses & Water Bodies	Page No. 8
5.0	Grassed Areas	Page No. 10
6.0	Control/Removal of Invasive Non-Native Species from Site	Page No. 13
7.0	Hard Landscape Areas, Boundaries & Structures	Page No. 14
8.0	Other Items	Page No. 15
9.0	Management Plan Review	Page No. 16

LANDSCAPE MANAGEMENT PLAN

1.0 Introduction

- 1.1 The application site is located on the eastern edge of Royston, a former mining town, which lies approximately 4.5 km to the north of Barnsley town centre. Several similar sized former mining towns are located to the south and east of Royston, including Cudworth, Shafton, Brierly and Ryhill. The M1 motorway extends in a north-south direction approximately 5.5 km to the west of Royston.
- 1.2 The site itself has been significantly disturbed by the previous mining and tipping activities, and is dominated by a large colliery spoil tip which extends to an elevation approximately 40m above the surrounding landscape. Much of the site is sparsely vegetated, however, patches of predominantly self seeded birch woodland have established on parts of the southern slopes and along parts of the northern site boundary. Acid/neutral grassland has established, covering most of the tip and much of the remaining site area. This is interspersed with occasional areas of regenerating scrub and trees.

Approach

- 1.3 The overall aim of the regeneration proposals is to transform the existing industrial landscape of the former colliery tip into a new public leisure and recreational destination which will offer a range of new facilities and areas of open space to the local community. These new facilities and habitats will be linked through a new footpath and cycleway network, which will be seen to enhance the existing network of footpaths within the area. Significant areas of new woodland planting will establish to create a robust landscape framework to the new facilities whilst helping to 'absorb' the partly remodelled colliery tip into the surrounding landscape context. Following completion of the regeneration works and as the new planting establishes, the site will be seen as a valuable landscape resource which sits comfortably within the existing landscape.

Proposed Final Landform

- 1.4 The proposed restoration contours are shown on Drawing No. A039273-307–Earthworks Plan. The existing landform will be largely retained, however re profiling of the colliery tip slopes, particularly on the southern flanks, will soften the existing landform whilst creating a much safer and manageable slope profile upon which the new habitats and pathway networks can be established.
- 1.5 The upper slopes of the tip will be carefully reprofiled to retain the existing 'dome', with a series of drainage channels and ditches designed to control runoff into the proposed detention ponds and reed beds. Drainage ditches will also be located along the upper edges of the new multi-use path network.

Landscape Design

- 1.6 The restoration proposals for the site comprise of a range of facilities which will include: a new multi use path network; sports pitches with changing facilities and a community meeting room; visitor car parking; a mountain bike track; and, a range of differing habitats and areas of amenity open space all set within a new framework of 'native' species based woodland planting. The management proposals are described in detail in the following paragraphs, which should be read in conjunction with the Hard & Soft Landscape Proposals drawing (A039273 L(92)0016 Rev F). The design of the site has been based on the following principles/objectives:

- To create a new landscape and woodland resource which will be seen to 'fit' into the local landscape context;
 - To incorporate measures for maintaining and enhancing the existing ecological interest in the site;
 - To create a range of habitat types which will individually and collectively offer a significantly enhanced ecological resource;
 - To create an enhanced Rights of Way network.
- 1.7 During the development of the restoration proposals careful consideration was given to the integration of the site with the surrounding area. Planting within the site has been designed to complement both the existing landscape structure and the character of the wider landscape context.
- 1.8 A breakdown of the approximate area of each proposed habitat type is provided in Table 1.

Table 1 - Approximate area of each proposed habitat type

Habitat type	Hectares
General Woodland Mix	9.54 ha
Low Woodland Mix	2.38 ha
Wet Woodland Mix	0.94 ha
Woodland Edge Mix	2.90 ha
Wetland Area (incorporating existing wetland habitats)	2.59 ha
Amenity Grassland	7.03 ha
Species Rich Grassland	5.73 ha
Neutral Grassland	22.79 ha

Preparatory works

- 1.9 Sampling of the spoil to be used within the final prepared depth of mixed spoil and Treated Conditioned Sewage Sludge (TCSS) will be undertaken to ascertain its chemical status. This will enable the rates of ameliorants (soil conditioner) required for incorporation into the spoil to be calculated.
- 1.10 Within the areas to be planted, the required growing medium will be created using a combination of spoil material (subject to condition) and imported bio-solids with liming agents (or similar) at rates to suit the type of after-use on those particular areas. Areas to be planted will be ameliorated and treated to a maximum depth of 1.0 metre in accordance with Forestry Commission Bulletin 110.
- 1.11 Imported soils will be used where grassland is to be established (seeded or through green waste / litter transfer). This soil will be approved as appropriate to ensure its viability for use as a growing medium.

- 1.11 Any drainage outfalls from the site will be identified and protected for the duration of site operations. De-silting or other maintenance works will be carried out as required.

Planning

- 1.12 The Contractor will be required to work within the conditions of the Planning Permission pertinent to the management of the site.

- 1.13 The site is predominantly located within the Green Belt, which is identified within Policy RO5 of the Barnsley Unitary Development Plan and the Royston Community Area Proposals Map, whilst the sports pitch area, within the south western sector of the site, is designated as an area of Urban Greenspace within Policy RO9 of the Barnsley Unitary Development Plan. In addition, the area directly north of the Pallet Works (within the site boundary) is also designated as an Employment proposal site, whilst the Trans Pennine Trail (TPT) is designated a Multi-user Recreational Routeway.

Advance Health and Safety Works

- 1.14 Health and safety Works will commence on site in May 2009. These works include: the removal of structures; essential drainage; and, earthworks, which are necessary to achieve safe and stable slopes.

2.0 Management Aims & Objectives

- 2.1 The following aims and objectives set out a framework for the management and development of the site, addressing environmental, social and economic issues. These aims and objectives will provide the basis for the development of specific management operations throughout the site and reflect the multi use benefits that could be achieved.

Aim 1 – A welcoming site

Objectives

- Improve the visual quality of site entrances and perimeters
- Enhance access to and within the site, and signage, for all
- Establish a high level of cleanliness and maintenance

Aim 2 – A healthy, safe and secure site

Objectives

- Improve the security of site entrances and perimeters
- Manage the site's landscape to reduce perception of threats
- Control abuse of the site
- Put in place and maintain health and safety procedures

Aim 3 – Enhance the site's conservation value

Objectives

- Interpret the site's history, especially as a former colliery
- Protect and enhance local biodiversity and ecological value in accordance with the Ecological Management Plan
- Enhance the site's value as a major feature in the local landscape

Aim 4 – Manage the site on a sustainable basis

Objectives

- Increase the sustainability of site maintenance operations
- Ensure that the site is developed and managed within financial constraints
- Secure additional funding to enhance site management long-term

Aim 5 – Increase community usage and involvement in the site

Objectives

- Ensure that the site provides an increasingly valuable educational resource
- Increase the recreational value of the site
- Establish an increased range of activities and events to encourage community use of the site
- Increase community participation in the site's practical management
- Establish means of engaging local people in understanding the site potential and in management decisions

Aim 6 – Ensure that the site contributes to local skills and employment

Objectives

- Develop opportunities for the site to be used for training
- Develop opportunities to employ local contractors and social enterprise to undertake work on the site

3.0 Tree & Shrub Planting

Establishment

- 3.1 Tree planting will be carried out in accordance with the Hard & Soft Landscape Proposals drawing (A039273 L(92)0016 Rev F) & Planting Schedules and Specification (A039273 L(92)0015 Rev C).

Management Aims & Objectives

Trees & woodland maintenance

- 3.2 A specialist Tree Survey was commissioned by White Young Green, detailing the location and current condition of trees on site, as well as a Management Plan and Arboricultural Impact Statement. This detailed work has been undertaken by JCA Arboricultural Consultants and the findings of their survey, including an Arboricultural Impact Statement and Management Plan are submitted separately to this document.
- 3.3 Planted areas will be checked annually for plant condition and dead or damaged plants will be replaced within the aftercare period to ensure an 85% establishment at the end of the five-year aftercare period. Annual fertiliser and weed control will be applied to each planting area on an as required basis throughout the aftercare period to promote good establishment and early growth.
- 3.4 This will ensure that regression (gradual deterioration in vigour and appearance) of the newly established vegetation is arrested at an early stage and appropriate after care techniques applied. Regression of reclaimed colliery sites is commonly the result of a decline in pH, decline in fertility and increase in soluble salt content of the spoil. These effects are the result of spoil weathering, and may be controlled by correct lime and fertiliser applications, and drainage.

- 3.5 The nature conservation value and ecological development will be monitored throughout the phased reclamation process so that any modifications necessary to improve success of habitat creation can be incorporated into later phases.
- 3.6 Where specified, the Contractor will ensure that woodland areas are maintained completely free of weed growth. This will normally be achieved by the application of appropriate contact or residual herbicides, although it remains the responsibility of the Contractor to adopt other methods where herbicide application is unsuccessful or impractical.
- 3.7 All footpaths or structural woodland areas will have a 3 – 5 metre wide grassed strip either side strimmed monthly or as appropriate in order to prevent encroachment of vegetation onto the path. Additionally, all fence lines and railings will have a 2 metre wide strip of vegetation controlled, either by strimming or by the application of herbicide, as appropriate to the location, in order to maintain growth below 200mm in height.
- 3.8 The new woodland areas will be kept free of litter and other debris through a regular programme of monitoring, collection and disposal. Particular care will be taken to remove all broken bottles, glass, tins, sharp objects and other items likely to constitute a hazard to the public. All litter and debris will be removed off site to an authorised tip.
- 3.9 All tree compartments will be protected using rabbit-proof fencing, with rabbit-proof access hurdles to each compartment. Fencing will be checked regularly for damage and repaired as necessary. Access gates will be installed where appropriate to allow maintenance operations to be carried out as required.
- 3.10 Contour ditches will be installed as necessary to minimise surface erosion of the restored areas and to prevent surface water runoff from the site.

Dead wood provision

- 3.11 Dead wood will be retained in situ if possible. Standing dead wood offers a productive habitat for invertebrates and fungi, however if this is unacceptable in the interests of public safety, felled trees will be moved and left elsewhere in the woodland to degrade naturally. In particular, informal footpaths and tracks leading into the ecologically sensitive areas of the site will be targeted with dead wood, making it awkward to climb over, thereby encouraging access along established and appropriate access routes as highlighted in the Landscape Master Plan. Dead wood will be kept in large pieces as it takes longer to breakdown and fully decompose, extending the time of its value for biodiversity and as a access management tool.

Shrub bed maintenance

- 3.12 All shrubs will be pruned annually, usually in late winter/early spring, except where sound horticultural practice determines that species should be pruned at other times of year. All arisings will be removed to an authorised tip. Pruning will be carried out using tools which are appropriate to the task and which are in a well maintained condition. All pruning operations should remove all suckers, dead, dying and diseased wood, and be performed to retain the natural form of the plant as far as is practicable. Pruning should also ensure that footpaths and the like are kept free from obstruction.
- 3.13 All shrub beds will be maintained free of weed growth. This will normally be achieved by the application of appropriate contact or residual herbicides, although other methods where herbicide application is unsuccessful or impractical may be used.

- 3.14 Any dead, dying or diseased plants that are evident during any maintenance visit will be removed and replaced with like species in the next planting season. Bark-mulched shrub beds will be top-dressed with bark mulch once during spring to maintain thickness of 50mm. Where deficiency symptoms indicate a suitable compound granular fertiliser will be applied.
- 3.15 All hard standings, gullies, gratings, and grassed areas will be cleaned of soil spillage, bark mulch, leaves, etc. which emanates from adjacent shrub beds.

Selective Thinning

- 3.16 Where appropriate, or specified, young planting will be respaced by the selective removal of secondary or nurse species. Trees to be removed will be cut to ground level and all debris removed off site. Where necessary, cut stumps will be treated with a translocated herbicide to prevent regrowth. All chemicals will be applied in accordance with manufacturers' recommendations and the user should be fully conversant with the requirements of the foregoing legislation and other relevant Codes of Practice, British Standards, rules, guidelines or directives which relate to the use of hazardous materials.

Maintenance of fencing

- 3.17 During each maintenance visit all fencing will be inspected briefly. Minor repairs, such as the replacement of staples and nails, tensioning of line wires, or the firming of posts will be carried out then.

Detailed Management Actions

- 3.18 The detailed management actions which have been identified are scheduled below, however, as with any management plan, the objectives and specific management regimes should be continually updated and amended to ensure the site is maintained at a high level.

TABLE 2 – Tree & Shrub Planting Management Actions

Management Item	Construction & Establishment Period	Post Construction / Permanent Maintenance Operations	Notes
Check for falling wood or dangerous trees and remove.	Check monthly.	Check monthly. Any deadwood suitable for retention for ecological interest / access restriction to be retained. Placement locations to be agreed with ecologist	
Protection of existing planting	Erect temporary chespale fencing as per BS 5837-2005	Maintain post and wire rabbit proof fencing through weekly condition checks. Check tree ties, staking etc	
Protection of new planting areas	Erect and maintain rabbit proof fencing as per specification prior to planting works	Maintain post and wire rabbit proof fencing through weekly condition checks.	

		Check tree ties, staking etc	
Thinning of established trees		Thinning assessment of established trees every 10 years	
Tree inspection inc. pruning out dead or damaged wood		Annually	
Slow release fertiliser		Annual application as necessary (April – June)	
Weed Control		Monthly (March – October) or as necessary	
Deadwood habitat management	Maintain downed wood for habitat creation	Maintain downed wood for habitat creation	
Plant replacement		Annually (August / September)	
Plant Replacement		Annually (Oct – Mar)	
Re-firming		As required	
Watering		As necessary to ensure healthy growth and prevention of drought conditions	
Removal of litter		Monthly	As required
Pest & disease control		As required	
General pruning		Annually (Oct – Mar)	Exact timing dependent on species
Grass cut and strimming to grass within planted areas		Every 4 th month (Apr, June, Oct)	

4.0 Watercourses & Water Bodies

Establishment

- 4.1 Within the Landscape Master Plan, the three standing water bodies which exist within the site area will all be retained and incorporated into an extended network of wetland areas. In addition, the Sandybridge Dike, which extends along the southern boundary of the site, will be enhanced with new areas of wetland planting. A new pond will be introduced within the southern sector of the site to accommodate and detain drainage runoff from the upper tip slopes. The embankments to the three existing ponds will be carefully regraded where possible, subject to structural condition and make-up, to encourage ecological diversity and colonisation by a wider range of flora and fauna.

Management Aims & Objectives

- 4.2 The objectives for management are as follows:

- To ensure satisfactory operation of wetlands used as a flood attenuation area.
- To manage and improve the diversity of the wetland by maintaining new landscaping, where appropriate, bearing in mind some areas will require little or no management. This will include grass cutting, litter picking, shrub maintenance and periodic inspection and management of tree species, including coppicing if required prior to any pond dredging operations.

- To encourage the development of ecological interest in the wetlands.
- 4.3 It is well understood that bodies of water, whilst they can represent very attractive features which have ecological value and play an essential role in flood attenuation, represent a potential safety hazard, particularly to small children. Whilst vegetation around water bodies is of benefit both ecologically, and visually, such planting will be carried out and subsequently managed such that a dense screen of vegetation will not be allowed to form as this would prevent overlooking. This will also reduce shading tree or scrub cover developing around margins and increase the value of ponds to species such as great crested newts and water voles.
- 4.4 It is common practice to dredge ponds every 10-15 years. Prior to the dredging being carried out, it may be necessary to coppice trees that would prevent machine access. This would be carried out in accordance with traditional coppicing and pollarding practice in order to encourage the re-growth of vegetation after the cleaning work has been carried out. If necessary, shrub areas will also be cut back in order to encourage re-growth after the necessary works. If required, inter-planting will be carried out during the next planting season in order to re-instate permanent damage that may occur. A suitably qualified ecologist will be consulted prior to any vegetation removal or dredging work to avoid any potential impact on protected/notable species or destruction of key habitats.
- 4.5 Although silt must be periodically removed, this in itself represents a potential habitat. Silt removal will, however, always allow some of the upper layers to remain as a reservoir for suitable species to re-colonise after cleaning. Water birds will also become established in time. De-silting will be timed to avoid the nesting season, and to allow birds to return quickly. A suitably experienced ecologist will be consulted before any desilting work is undertaken.
- 4.6 Particular regard is paid to the Royal Society for the Prevention of Accidents publication WS71 Safety at Inland Water Sites, and to best practice guidance published by Construction Industry Research Information Association. Views are constantly developing as the number of surface water attenuation features increase and a flexible approach will be taken as to the most appropriate regime in order to comply with current best practice.
- 4.7 Water bodies will be the subject to a routine monitoring and maintenance schedule which will be carried out twice weekly over the spring and summer period and 4-weekly over autumn and winter. This will comprise the following:
- collection and removal of litter from the pond surface, inlet, outflow, and water margins;
 - inspection of the pond to check the following, and repair as necessary:
 - any failure in the operation of the inlet and outflow;
 - any damage or erosion to the perimeter edges and slopes of the pond;
 - damage to, or weed build-up within, the perimeter aquatic vegetation;
 - the integrity of all fences and the condition of all safety equipment, as appropriate;
 - all necessary steps to ensure that oil film, algae or blanket weed growth is not allowed to build up on the water surface or margins of the pond;
 - adjustment of the inlet and outflow structures as required in order to control the normal water level throughout the year and maintain the effectiveness of the pond;
- 4.8 Annual checks will be carried out by a suitably qualified person, to assess the operation of the inlet and outflow, and the accumulation of silt/sediment. Where sediment build-up exceeds 200mm average across the pond structure it shall be carefully removed, tested for levels of contamination, and disposed of in an

appropriate manner. All damage to the banks and associated structures shall be repaired as necessary following disturbance caused by the removal of sediment.

- 4.9 In addition to the above, warning signs will be erected as appropriate where the presence of ice cover presents a potential risk.
- 4.10 An annual population size class assessment survey of ponds for great crested newts will be undertaken by suitably experienced ecologists for at least four years after regeneration work is complete to determine the success of the mitigation and enhancement measures. This will also allow appropriate changes to the management of the site.

Detailed Management Actions

- 4.11 The detailed management actions which have been identified are scheduled below, however, as with any management plan, the objectives and specific management regimes should be continually updated and amended to ensure the site is maintained at a high level.

TABLE 3 – Watercourses and water Bodies Planting Management Actions

Management Item	Construction & Establishment Period	Post Construction / Permanent Maintenance Operations	Notes
Maintenance of ponds	De-silt back to original profile every 5 years		
Reed Beds			
Ditches & swales	Check and clear any debris as required	Check and clear any debris as required	
Culverts, inlets / outlets & cascades	Check and clear any debris as required. Ensure any safety grilles / guards are properly fixed.	Check and clear any debris as required. Ensure any safety grilles / guards are properly fixed.	
Pond scrapes / ecological wetland areas			
Cascades	Check and clear any debris as required	Check and clear any debris as required	

5.0 Grassed Areas

Establishment

Neutral Grassland

- 5.1 It is proposed that areas of Neutral Grassland will be established through the application of appropriate 'green waste' / hay strewing from appropriate / local donor sites (to be agreed with Barnsley MBC).

- 5.2 Hay from the donor site will be cut in early July to ensure presence of seeds and this will be spread as soon as possible after its collection to minimise seed loss during storage through composting or rot.

Species Rich Grassland

- 5.3 It is proposed that areas of dry species rich grassland will be created using, wherever possible, wildflower seed sourced locally. Where this is not available UK provenance seed will be used.

- 5.4 This mix will be applied at a rate of 25kg/ha to provide a good cover of vegetation and therefore moderate weed growth, but leaving room for development of species naturally occurring in the soil.

- 5.5 The seeded areas will be picked to remove all stone and debris prior to seeding.

- 5.6 Areas of species rich grassland will be seeded with a mix as detailed in DWG A039273 L(92)0015.

Amenity Grassland (Including Sports Pitch Area)

- 5.7 It is proposed that areas of amenity grassland (including sports pitch areas) will be established through seeding of local provenance seed at a rate sufficient to establish a full and healthy sward.

Management Aims & Objectives

- 5.8 Areas of open grasslands are incorporated throughout the development and have been designed to offer a range of differing habitats across the site. Species rich grassland and areas of mown amenity grassland will complement the planted areas of the site and provide opportunities for informal recreation.

Grass cutting

- 5.9 Prior to cutting, all areas will be cleared of litter and debris. All operations will be carried out using machinery appropriate to the task, and when weather and ground conditions are suitable. Operations will be suspended where ground conditions prevent the use of machinery without damage to the ground surface. Where operations are suspended due to unsuitable conditions additional maintenance visits may be required in order to maintain the sward within acceptable growth limits.

During each maintenance visit grass will be cut adjacent to fences, paths, trees, and other boundaries or obstacles using equipment suitable to the task. Strimmers will not be used around the base of trees.

- 5.10 The frequency of cuts will remain flexible in order to accommodate growth rates and weather conditions. As a general guide, cutting is likely to be required every two weeks on high maintenance areas to provide a more formal appearance in areas designated as amenity grassland on the Landscape Masterplan. The grass within these areas will be maintained at a maximum height of 30mm. For low maintenance areas, a varied cutting regime will be introduced to promote biodiversity whilst there will be an assessment of growing conditions and adjustment of maintenance will be introduced as necessary for biodiversity benefit.

- 5.11 Following cutting, all grass clippings and other debris will be swept from adjacent hard-standing areas and removed from site to an authorised tip.

- 5.12 From time to time the application of selective herbicides, fertilisers, or other remedial treatment may be required should deficiency symptoms indicate.
- 5.13 Any vegetation other than grass (see above) on visibility splays or road sight lines will be kept to below 600mm above channel lines on road. In addition, the visibility splay will be kept free of all structures or vegetation other than that approved in the planning consent.

Maintenance of species rich grassland

- 514 Wild flower areas will be cut annually after the majority of flowering species have set seed. Cutting will be carried out by strimmer or other appropriate method, to a height of 100mm. All cuttings will be lifted and removed from site. A second cut will occur either in spring or summer to reduce competition from grasses, again maintaining a height of 100mm. In the longer term, a varied mowing regime should be put in place, which will allow different areas of the grassland to exhibit different characteristics and create different habitats for wildlife / insects

Detailed Management Actions

- 5.15 The detailed management actions which have been identified are scheduled below, however, as with any management plan, the objectives and specific management regimes should be continually updated and amended to ensure the site is maintained at a high level.

TABLE 4 – Grassland Management Actions

Management Item	Construction & Establishment Period	Post Construction / Permanent Maintenance Operations	Notes
Amenity grassland areas including football pitch areas	Mowing height 50mm first cut, 25mm thereafter. Cuts to be carried out fortnightly between March & November (or as necessary depending on seasonal conditions)	Mowing height 25mm. Cuts to be carried out fortnightly between March & November (or as necessary depending on seasonal conditions)	On embankments exceeding 1:4 slope, carry out monthly cuts rather than fortnightly cuts
Species rich grassland	Initial mowing following sowing to prevent vigorous species from becoming too dominant. Cut once during Mar or Apr, then again during Sept or Oct. Cut to be 40 -70mm.	Cut once during Mar or Apr, then again during Sept or Oct. Cut to be 40 -70mm.	Management in the longer term to include a varied mowing regime, which will allow different areas of the grassland to exhibit different characteristics.
Neutral grassland	Cut once during Mar or Apr, then again during Sept or Oct. Cut to be 40 - 70mm.	Cut once during Mar or Apr, then again during Sept or Oct. Cut to be 40 -70mm. Remove any encroaching scrub within grassland areas.	

Mowing strip to multi-use access track	Mowing height 50mm first cut, 25mm thereafter. Cuts to be carried out monthly between March & November (or as necessary depending on seasonal conditions)	Mowing height 25mm. Cuts to be carried out monthly between March & November (or as necessary depending on seasonal conditions)	
Re-establishment of failed grassed areas	Re-sow grassed areas with local provenance seed to original species mix	Re-sow grassed areas with local provenance seed to original species mix	
Weed removal within grassland	Carry out as necessary		
Woodland grassland (within planted areas)	Mowing height 50mm. Cuts to be carried out monthly between March & November (or as necessary depending on seasonal conditions)	Mowing height 50mm. Cuts to be carried out monthly between March & November (or as necessary depending on seasonal conditions)	
Site signage, distance markers etc within grass verges	Objects to be strimmed as necessary to ensure object remains visible and tidy in appearance.	Objects to be strimmed as necessary to ensure object remains visible and tidy in appearance.	
Reinforced grass areas	Reinforced grass areas to be topped up with approved topsoil as necessary to ensure level, consistent surface. Grass to be mown once per month during Apr to Sept.	Reinforced grass areas to be topped up with approved topsoil as necessary to ensure level, consistent surface. Grass to be mown once per month during Apr to Sept.	

6.0 Control/Removal of Invasive Non-Native Species from Site

- 6.1 Many non-native species do not become problematical invasives, but provide considerable benefits to society, particularly in relation to agriculture, horticulture and forestry. Therefore, management of non-native species requires sensitive handling and consideration of the threats/benefits on native biodiversity and habitats. When non-native species become invasive they can transform ecosystems and threaten native and endangered species.
- 6.2 Main factors affecting the achievement of objective:
- A thorough understanding of the location of invasive species present at Rabbit Ings;
 - A understanding of the vectors and pathways by which invasive species could become established at Rabbit Ings;
 - An assessment of the benefits/threats each species pose; and

- Evaluation and implementation of effective targeted control/removal methods.

7.0 Hard Landscape Areas, Boundaries & Structures

Management Aims & Objectives

Maintenance of footpaths

- 7.1 All formed footpaths will be regularly inspected to ensure that they are substantially free from obstruction or other hazard. Any remedial work necessary (for example, filling of potholes or drainage works) will be carried out. Footpath edges and verges will be strimmed as required to prevent the encroachment of vegetation onto the wearing surface.

Rights of Way

- 7.2 The contractor will take into account their legal responsibilities with regard to upholding the public rights of way within and adjacent to the site. Please refer to Hard & Soft Landscape Proposals DWG A039273 L(92)0016 Rev F.

Maintenance of fencing

- 7.3 During each maintenance visit all fencing will be inspected briefly. Minor repairs, such as the replacement of staples and nails, tensioning of line wires, or the firming of posts will be carried out then.

Other Structures

- 7.4 The site will contain other structures such as boundary walls, pedestrian and vehicular access barriers (including stepovers, kissing gates, 'K' barriers), and fences, or un-adopted drains, culverts, filter trenches, footbridges or other such site features. Where these are unadopted they will be maintained in accordance with current best management practices and British Standards as may be appropriate, in order to ensure their safe and efficient functioning, and to ensure that they are maintained in a good state of repair.

Detailed Management Actions

- 7.5 The detailed management actions which have been identified are scheduled below, however, as with any management plan, the objectives and specific management regimes should be continually updated and amended to ensure the site is maintained at a high level.

TABLE 5 – Hard Landscaped Areas, Boundaries & Structures Management Actions

Management Item	Construction & Establishment Period	Post Construction / Permanent Maintenance Operations	Notes
Surfaced, gravelled and paved areas inc. tarmac areas, kerbs, drop-kerbs, edgings and multi-use access track	Maintain / upgrade / replace as necessary to ensure footpaths and surfaces are kept in the condition originally specified and safe for public use.		
Lighting columns & lighting to southern car	Maintain / upgrade / replace as necessary to ensure lighting facilities are kept in the		

parking area	condition originally specified and safe for public use.	
Mountain bike track	Maintain / upgrade / replace as necessary to ensure surfaces are kept in the condition originally specified and safe for public use. Ensure safety signage is maintained and visible at all times.	
Timber post and wire rabbit proof fencing inc. stepover maintenance access	Maintain / upgrade / replace as necessary to ensure fencing is kept in the condition originally specified.	
Steel palisade security fencing	Maintain / upgrade / replace as necessary to ensure fencing is kept in the condition originally specified and that access into the site is strictly restricted to the designed access barriers and gateways.	
Pedestrian and vehicular barriers and gates including K barriers, kissing gates, and vehicle barriers	Maintain / upgrade / replace as necessary to ensure barriers and gates are kept in the condition originally specified.	
Culverts, ditches (grass and stone lined), cascades,	Maintain / upgrade / replace as necessary to ensure culverts and ditches etc are kept free from obstruction and in the condition originally specified.	
Maintenance of sports pitch area changing room facility	Maintain / upgrade / replace as necessary to ensure facility is kept in the condition originally specified.	
Stone viewpoint including stone cairn, vandal proof encapsulated signage and fixings	Maintain / upgrade / replace as necessary to ensure feature is kept in the condition originally specified.	
Timber information boards & site safety signage	Maintain / upgrade / replace as necessary to ensure signage is kept in the condition originally specified.	
Timber distance markers along lower level multi-use access track	Maintain / upgrade / replace as necessary to ensure distance markers are kept in the condition originally specified.	
Any additional public art works introduced following practical completion	Maintain / upgrade / replace as necessary to ensure art works and any associated fixings / base structures are kept in a safe condition and/or as originally specified..	
Lifebuoy in post mounted housing cabinet	Maintain / upgrade / replace as necessary to ensure site safety features are kept in the condition originally specified. Ensure that safety features remain visible and free from encroaching vegetation which may restrict access.	

8.0 Other Items

- 8.1 On occasion other items of a non-routine nature may be required. Such items shall normally be dealt with during the next scheduled maintenance visit, except where matters of health and safety are involved, in which case arrangements shall be made to deal with the situation as a matter of priority.

9.0 Management Plan Review

- 9.1 It is an essential part of any management plan that it is subject to review on a regular basis. As part of the ongoing management of the site, a review of the management plan will be carried out on a five-year basis. The review will take into account all information gathered during the preceding five-year period. The revised plan will adopt best management practices, guidelines and other material factors prevailing at the time of review.