CLEATOR MOOR ACTIVITY CENTRE

LANDSCAPE MAINTENANCE & MANAGEMENT PLAN

THOMAS ARMSTRONG CONSTRUCTION LTD

07.05.24

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REGISTERED IN ENGLAND NO. 10582018
PART OF THE LINTON GROUP

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APPENDICES

1.0 Introduction

1.1 This report has been prepared to satisfy the Conditions of Planning Permission granted by Cumberland Council subject for the extension and upgrade of the Activity Centre and associated infrastructure.

1.2 The report will detail the Landscape Management requirements and incorporate measures to protect the existing trees and shrubs during the construction and maintenance phases.

1.3 Westwood Landscape, Chartered Landscape Architects have been appointed by Thmoas Armstrong Construction Ltd to provide a Landscape Maintenance and Management Plan which fully complies with the Planning requirements.

1.4 The site is currently informal recreational land on the north-eastern edge of Cleator Moor. Refer to the location and context plans below.

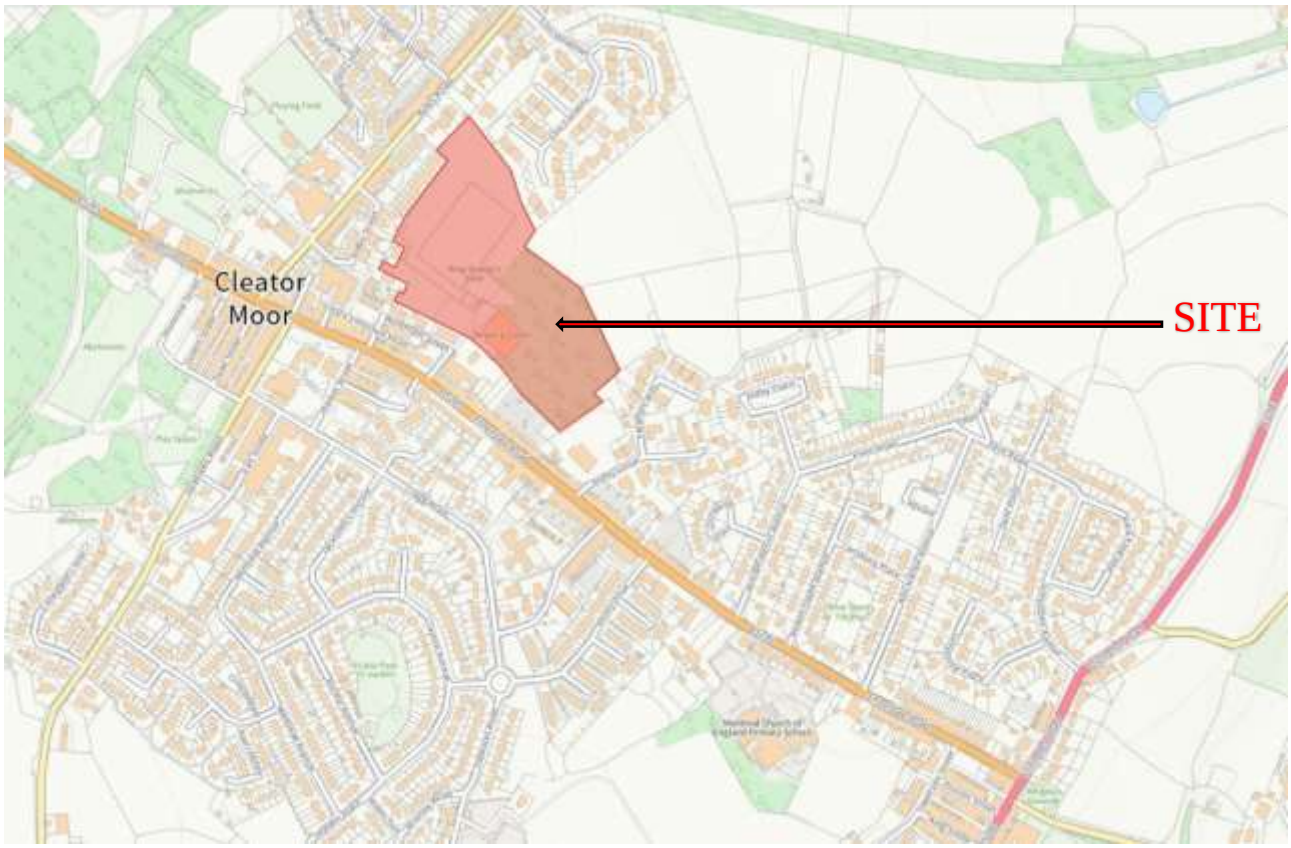


Figure 1 Site location plan showing the context with Cleator Moor.

Figure 2 Site location plan showing the context of the adjacent residential areas and roads.

Figure 3 Site aerial plan showing the context of the adjacent agricultural land and residential areas. Westwood Landscape Ltd Ordnance Survey Licence Number 100062836

2.0 Management Plan Objectives

The landscape management strategy will ensure that the design objectives are realised and sustained in the long term. The landscape and ecological design objectives can be summarised as:

- Create an attractive landscape setting and environment for staff and visitors which integrates well with the adjacent landscape character and considers views into and within the site.
- Retain and protect the trees, scrub and meadow grassland on and adjacent to the site and reinforce these with additional planting of native species to enhance the ecological diversity and wildlife value of the area including wildflower grass seeding to the SuDS margins and proposed POS areas.
- Enhance biodiversity by creating new habitats including areas of native trees and shrubs to the POS with adjacent species-rich meadow grassland, marginal and pond marginal planting.

- Establish tree and shrub areas which define and enhance public recreational spaces and walking routes, reinforce boundaries with natural screening, provide shelter and create year-round colour displays. This will include trees with low shrubs and flowering groundcover adjacent to the car park area to create an attractive entrance feature and setting for the building. Native tree and shrub planting to the north boundary will provide a natural buffer between the Application Site and the adjacent elevated housing at Ellis Gardens. A native hedge to the north of the car park adjacent to the retaining wall will create a natural boundary and protect the level change.

- Integrate the development with the adjacent rural landscape character with tree planting to the boundaries and throughout the development.

- To accommodate pedestrian circulation through the development with existing links to the adjacent housing retained and the informal recreational walking routes defined with bound gravel or tarmac surfacing.

- Implement the recommendations of the Tree Survey Report by Bowland Tree Consultants Ltd April 2023 including clearance of the Category ‘U’ trees identified as unsafe or in poor condition.

- Implement the requirements of the Ecology Report by Erap Ltd November 2023 including the provision of Bird and Bat boxes, the specification of shrub species to encourage bees and insects and the sowing of Yellow Rattle seed to the existing grass sward.

- Accommodate the requirements of the service statutory authorities keeping access and easements clear.

- Ensure that the maintenance requirements for the landscape areas are minimised through design and specification of high quality, robust materials from sustainable, energy efficient sources and appropriate plant species.

- To develop a landscape management strategy to ensure that the design objectives are realised and sustained in the long term.

3.0 Proposed planting

3.1 The planting design includes a native species-rich Hawthorn dominant boundary hedge to the car park which creates a new linear habitat. Bold shrub planting with trees and flowering ground cover concentrated at the high-profile entrance and car park margins creates bold colourful displays.

3.2 Woodland blocks of native trees and shrubs and native tree groups to the north boundary will create a natural landscape buffer between the sports pitch and adjacent elevated residential areas.

3.3 Habitat diversification includes native pond and wetland marginal species to the SUDS area which will add colour and wildlife interest.

3.4 Clearance of some bramble and trees will create the space required for additional tree and shrubs planting and grass seeding. A 50% clearance of Bramble and 10% thinning of trees has been specified to ensure that a suitable proportion of the existing habitats is retained.

3.5 For the existing tree group to the north of the Activity Centre building where the proposed footpath is aligned through the trees there are shade tolerant shrub layer plants specified which include Hazel, Holly, Elder and Guelder Rose. This shrub layer will improve the structure of the woodland and diversify the species.

3.6 Wildflower seed mixes proposed will all be native species appropriate for the different habitats with the SuDS basin having a wetland mix suitable to withstand periods of waterlogging, shade tolerant mix for the woodland and tree margins and a mix for the open meadow areas. The objective is to retain and protect the existing grassland and meadow areas as far as possible and enhance these with additional seeding to selected areas including all areas disturbed by the construction activities.

3.7 The proposed area of Yellow Rattle seed to the west area of the existing meadow will reduce the vigour of the grass sward, reducing the maintenance requirements whilst adding flowering interest. The grass sward will be ripped with rigid tines on an ATV Quad mounted tine weighted down to ensure some bare earth is exposed whilst retaining most of the sward. The preparation and seeding should be implemented in late September / early October.

3.8 Rabbit damage is likely in this setting therefore guards have been specified for native hedge plants and trees. Further protection may be required if rabbit activity is significant in the ornamental shrub beds which should be monitored by the Management Company.

3.9 The plant schedule is shown below.

MIX 1 (Woodland)						
Plant name	**Common name**	**% in mix**			**Specification**	
			1250 stems/ Ha			**0.125/ sq.m.**
Quercus petraea	**Sessile Oak**	**10%**			**40/60cm bare root**	
Corylus avellana	**Hazel**	**20%**			**40/60cm bare root**	
Betula pubescens	**Downy Birch**	**10%**			**40/60cm bare root**	
Betula pendula	**Silver Birch**	**10%**			**40/60cm bare root**	
Sorbus aucuparia	**Rowan**	**10%**			**40/60cm bare root**	
Ilex aquifolium	**Holly**	**5%**			**30/40cm in C2 container**	
Salix caprea	**Goat Willow**	**4%**			**40/60cm bare root**	
Salix cinerea	**Grey Willow**	**3%**			**40/60cm bare root**	
Pinus sylvestris	**Scots Pine**	**3%**			**30/40cm in C2 container**	

Crataegus monogyna	**Hawthorn**	**3%**			**40/60cm bare root**	
Acer platanoides	**Norway Maple**	**3%**			**40/60cm bare root**	
Populus tremula	**Aspen**	**3%**			**40/60cm bare root**	
Prunus padus	**Bird Cherry**	**3%**			**40/60cm bare root**	
Prunus avium	**Gean**	**3%**			**40/60cm bare root**	
Fagus sylvatica	**Beech**	**2%**			**40/60cm bare root**	
Sorbus aria	**Whitebeam**	**2%**			**40/60cm bare root**	
Tilia cordata	**Small Leaved Lime**	**2%**			**40/60cm bare root**	
Ulmus glabra	**Whych Elm**	**2%**			**40/60cm bare root**	
Viburnum opulus	**Geulder Rose**	**2%**			**40/60cm bare root**	
<u>MIX 2 (Woodland Edge)</u>			**2500 stems/ Ha**			**0.25/ sq.m.**
Note for areas beneath exisitng trees select shade area mix only						
Plant name	**Common name**	**% in mix**	**Shady areas**			
Crataegus monogyna	**Hawthorn**	**10%**			**40/60cm bare root**	
Corylus avellana	**Hazel**	**30%**	**(S) 60%**		**40/60cm bare root**	
Prunus spinosa	**Blackthorn**	**10%**			**40/60cm bare root**	
Sorbus aucuparia	**Rowan**	**5%**			**40/60cm bare root**	
Ilex aquifolium	**Holly**	**10%**	**(S) 10%**		**30/40cm in C2 container**	
Acer campestre	**Field Maple**	**8%**			**40/60cm bare root**	
Prunus padus	**Bird Cherry**	**5%**			**40/60cm bare root**	
Sambucus nigra	**Elder**	**3%**	**(S) 10%**		**40/60cm bare root**	
Ulmus glabra	**Whych Elm**	**3%**			**40/60cm bare root**	
Viburnum opulus	**Geulder Rose**	**8%**	**(S) 10%**		**40/60cm bare root**	
Malus sylvestris	**Crab Apple**	**2%**			**40/60cm bare root**	
Rosa canina	**Dog Rose**	**2%**			**40/60cm bare root**	
Taxus baccata	**Yew**	**2%**	**(S) 10%**		**30/40cm in C2 container**	
Cytisus scoparius	**Broom**	**2%**			**30/40cm in C2 container**	
Rosa arvensis	**Field Rose**	**2%**			**40/60cm bare root**	
<u>HEDGE: Species rich native mix</u>	**4/ linear metre**	**NBH**				
Plant name	**Common name**	**% in mix**				
Crataegus monogyna	**Hawthorn**	**60%**			**40/60cm bare root**	
Prunus spinosa	**Blackthorn**	**10%**			**40/60cm bare root**	
Ilex aquifolium	**Holly**	**8%**			**30/40cm in C2 container**	
Corylus avellana	**Hazel**	**5%**			**40/60cm bare root**	
Rosa canina	**Dog Rose**	**5%**			**40/60cm bare root**	
Lonicera periclymenum	**Honeysuckle**	**2%**			**30/40cm in C2 container**	
Sambucus nigra	**Elder**	**2%**			**40/60cm bare root**	

Viburnum opulus	**Geulder Rose**	**2%**			**40/60cm bare root**	
Prunus padus	**Bird Cherry**	**2%**			**40/60cm bare root**	
Acer campestre	**Field Maple**	**2%**			**40/60cm bare root**	
Malus sylvestris	**Crab Apple**	**2%**			**40/60cm bare root**	
BULBS						
Hyacinthoides non-scripta	**Blue Bells**	**BB**			**6/8 bulb**	**10/ sq.m.**
Galanthus nivalis	**Snow Drops**	**SD**			**5/6 bulb**	**10/ sq.m.**
Narcissus pseudonarcissus	**Daffodil**	**N**			**10/12 bulb**	**7/ sq.m.**
WOODLAND FLOOR PERENNIALS						
Anemone nemorosa		**AN**			**9 cm plugs**	**4/ sq.m.**
POND MARGINALS						
Filipendula ulmaria	**Meadowsweet**	**20%**			**9 cm plugs**	**4/ sq.m.**
Iris pseudacorus	**Yellow Flag Iris**	**60%**			**9 cm plugs**	**4/ sq.m.**
Caltha palustris	**Marsh Marigold**	**20%**			**9 cm plugs**	**4/ sq.m.**
TREES			**8-10cm RB**	**BR**		
Alnus glutinosa	**Alder**	**AG/ ag**	**1**	**4**	**8-10cm rootballed/ 2-2.5m bare root**	
Quercus petraea	**Sessile Oak**	**QP/ qp**	**6**	**5**	**8-10cm rootballed/ 2-2.5m bare root**	
Betula pendula	**Silver Birch**	**BP/ bp**	**1**	**6**	**8-10cm rootballed/ 2-2.5m bare root**	
Sorbus aucuparia	**Rowan**	**SA/ sa**	**3**	**3**	**8-10cm rootballed/ 2-2.5m bare root**	
Pinus sylvestris	**Scots Pine**	**PS**	**2**	**0**	**40-60cm C5**	
Crataegus monogyna	**Hawthorn**	**CM/ cm**	**2**	**2**	**8-10cm rootballed/ 2-2.5m bare root**	
Prunus padus	**Bird Cherry**	**PP/ pp**	**11**	**2**	**8-10cm rootballed/ 2-2.5m bare root**	
Prunus avium	**Gean**	**PA/ pa**	**4**	**1**	**8-10cm rootballed/ 2-2.5m bare root**	
Fagus sylvatica	**Beech**	**FS/ fs**	**2**	**1**	**8-10cm rootballed/ 2-2.5m bare root**	
Acer campestre	**Field Maple**	**AC/ ac**	**2**	**3**	**8-10cm rootballed/ 2-2.5m bare root**	
TOTAL			**34**	**27**		
SPECIMEN SHRUBS					**Specification**	
Amelanchier lamarckii		**AL**			**C15 1-1.2m**	
Chamaecyparis Pembury Blue		**CP**			**C15 1-1.2m**	

Photinia Red Robin		**PR**			**C15 1-1.2m**	
ORNAMENTAL SHRUBS			**No./ sq.m.**		**Specification**	
Cornus alba Elegantissima		**Ca**	**2**		**C2/3 40-60cm**	
Ceanothus repens		**Cr**	**3**		**C2/3 20-30cm**	
Cistus Silver Pink		**Cs**	**3**		**C2/3 20-30cm**	
Cotoneaster lacteus		**Cl**	**2**		**C2/3 40-60cm**	
Hebe Blue Gem		**Hb**	**3**		**C2/3 20-30cm**	
Hebe Sutherlandii		**Hs**	**3**		**C2/3 20-30cm**	
Hebe Autumn Glory		**Ha**	**3**		**C2/3 20-30cm**	
Lonicera Maigreen		**Lm**	**3**		**C2/3 20-30cm**	
Potentilla Elizabeth		**Pe**	**3**		**C2/3 20-30cm**	
Rosmarinus Miss Jessups Upright		**Rm**	**3**		**C2/3 20-30cm**	
Viburnum tnus		**Vt**	**2**		**C2/3 20-30cm**	
Vinca minor Atropurpurea		**Vm**	**4**		**C2/3 20-30cm**	

4.0 Specification for landscape Maintenance and Management works

4.1 **TOPSOIL CULTIVATION** In accordance with BS 3882. Apply glyphosate herbicide prior cultivation and allow the recommended period before further action. Ensure ground is free draining by breaking up subsoil and installation of land drainage as required. Do not work the soil in frozen or waterlogged condition. Remove any debris and stones greater than 50mm from surface and cultivate to suitable tilth for planting. Rake surface to achieve required level flush with adjacent paving for turf and 50mm below for planting to allow for mulch layer and smooth flowing contours for open space areas without hollows or soft areas. Topsoil depths to be minimum 150mm for grass and 450mm for planting.
Site topsoil to be supplemented with imported topsoil in accordance with BS 3882. Shrub beds in grass areas to be neatly cut to layout shown.

4.2 **PLANTING** Plant material shall conform to the National Plant Specification and be healthy, vigorous specimens, well rooted but not pot bound, free from pests and disease, hardy and undamaged by transport operations in accordance with HTA 'handling and establishing landscape plants'. Planting and turfing to be in accordance with BS 3936 and 4428. Plant species substitutes will be permitted to accommodate availability and to include stock of particular good quality in nursery provided these are of a similar habit, size, colour, value etc and that they are approved by the Landscape Architect. Native species to be local provenance. Bare root and rootballed plants to be planted between November and March. Backfill of planting holes and tree pits to be excavated topsoil with 25% by volume tree and shrub planting compost. Shrub pits to be generally 300 x 300 x 300mm or 75mm wider and deeper than the root spread. Tree pits to be 900 x 900 x 600mm or 150mm wider than the root spread. Stakes to be two 75mm diameter pointed stakes driven until firm and trimmed to m,bare-rooted trees with rubber tree belting with spacer. Apply slow release fertiliser (16:10:10) at rate of 100g/ sq.m. to planting areas and 250g per tree. Thoroughly water planting.

Refer also to Westwood Landscape Plan L01.

4.3 **TREE ROOT BARRIER** At locations where root restriction is required adjacent to service positions as directed by the Landscape Architect Greentech Ltd root barrier 600mm to be installed in accordance with manufacturers guidelines.

4.4 **TREE RABBIT GUARDS** If rabbit activity is noted in the area and guarding is authorised each bare-rooted native plant hedge plant to receive a 12/14 weight 900mm cane and 60cm clear spiral guard. Trees to receive 90cm spiral guard. If extensive rabbit activity is observed rabbit fencing to ornamental areas will be required as directed by the Landscape Architect.

4.5 **MULCH** Spread 50mm layer of general purpose bark mulch free from large sticks, and debris over all shrub areas, 800mm wide strips for hedging and 800mm diameter circles for tree pits in grass with neatly trimmed edge.

4.6 **SEEDING AMENITY GRASS** Following cultivation preparation specified above apply Cropwise Low maintenance amenity mix or similar approved at a rate of 35gms/ sq.m. and roll with quad or hand drawn ballast grass roller. Apply water with sprinkler hose in dry conditions to ensure germination. Levels to be flush with adjacent paving following firming and settlement of topsoil. Further stone-picking, top-dressing and re-seeding of bare patches to ensure uniform, level grass is established. Re-roll as required at first cut stage.

4.7 **SEEDING WILDFLOWER GRASS** Prepare as for amenity grass and sow 3-5 g/ sq.m. of mixes BS1M, BS6M, BS8M and Yellow Rattle supplied by Boston Seeds and applied in accordance with their recommendations.

5.0 Protection of existing trees and hedges within or close to site boundary

5.1 Refer to the Bowland Tree report for details of tree protection fence requirements during the Construction Phase. Fencing measures during the ongoing maintenance phase are only required if maintenance operations may affect the Root Protection Area (RPA) of retained trees. The RPA can be measured as a radius from the trunk of 12 times the trunk diameter at 1.5m above ground level. Trees to be protected in accordance with British Standard 5837:2012 Trees in Relation to Construction. Signs should be erected on the fencing to say 'TREE PROTECTION AREA KEEP OUT. The fencing shall be retained for the duration of any approved works.

5.2 Protective fencing must remain intact and in place, and protection procedures must be adhered to throughout the construction period. Removal of protective fencing should be the last job carried out on completion of the project.

5.3 No mechanical traffic should be allowed within the tree RPA, since this could cause compaction and damage roots. No excavations of any kind to take place within the root zone area of protected trees. No materials should be stored within the RPA or any ground level increase. No fires to be lit within the RPA.

5.4 In certain circumstances it is possible to accommodate construction activities within the distances recommended by the B.S. 5837:2012 calculation. This may be unavoidable for the viability of the project but will not necessarily lead to tree damage. Such intrusive work within the RPA should be restricted to one side of the tree and the protection zone extended on the other sides to compensate. In these circumstances sympathetic construction methods must be implemented in accordance with the AIA recommendations. Any unavoidable alterations required to the surface above the root zones within the fenced off Root Protection Area should only be carried out after having first produced specific method statements for these activities without the use of mechanical excavators i.e. all works within this zone should be carried out by hand. These should be submitted by the contractor to the Chartered Landscape Architect or Arboriculture Consultant for approval.

5.5 Seven days written notice shall be given to the Local Planning Authority that the protection measures are in place prior to commencement of the approved works, to allow inspection and approval of the protection fencing and signage.

6.0 Management Tasks

The following tasks should apply and can be summarised as:

YEAR 1

- **Existing trees** and shrubs. Clear the Category 'U' trees identified in the Tree Report by Bowland Consultants. Arboricultural monitoring survey at the end of the first year to check for signs of deterioration, Action the recommendations of the Tree Survey Report and any additional requirement arising from subsequent surveys. Pruning to trees should include removal of any storm damage or deadwood and to maintain a balanced crown with suitable ground clearance in public areas to maintain safety. Pruning to proceed in September to mid-February to avoid bird nesting season and wildlife disturbance.

- **Proposed Trees**. Check stakes and ties 12 times, prune once, fertilise once, water as required. Replace failed plants. Existing trees to be monitored for health and appropriate pruning and pest & disease control adopted. Pruning to remove dead, diseased, crossed or dangerous branches including trees growing outside the site boundary with branches overhanging the site. Treat for pest and disease emergence as required to maintain healthy growth.

- **Ornamental shrubs**. Apply herbicide 6 times, selective hand weed 6 times, re-firm plants 12 times, check canes and guards 12 times, prune once, fertilise once, water as required. Treat for pest and disease emergence as required to maintain healthy growth. Replace failed plants. Top up mulch to maintain uniform cover. For new hedges pruning will be to control overhanging branches and maintain healthy growth for the first year until the target hedge height is exceeded when a uniform height and width cut will be required.

- **Wild flower grassland** species rich grassland areas will be maintained in order to prevent ecological succession and to maintain a healthy structural diversity. A cut should be undertaken twice in year 1 in the winter months to ensure that all the species have seeded. The sward should be cut down to a minimum of 8 cm to maximise the value of the retained sward for invertebrates. Varied sward heights should be incorporated (20% less than 7cm and 20% more than 7cm). In addition, 10% of the area should be retained as a refuge each year to provide habitat for invertebrates, however these areas should be rotated so that each refuge area is cut at every second rotation. All arisings should be left in situ for a week to allow invertebrates to move into the retained areas and then removed. Spot herbicide to control invasive species and prevent establishment of seeded tree species such as *Salix spp, Prunus spinosa* and *Acer spp* which will quickly establish and change the habitat and character of the area. Monitor the spread of Dock, Nettle and check for signs of Himalayan Balsam and Japanese Knotweed. Apply Glyphosate herbicide repeatedly to control spread. Monitor species diversity and percentage cover of each species. Mow grass at paved edges 6 times (90cm width) to prevent obstruction to walkers and untidy edge. Replace failed areas.

- **Amenity grass**. Remove debris, mow grass 16 times minimum with additional cuts if required, trim edges as required. Water as required. Apply Spring fertiliser and weed/ moss killer as required. Top dress, aerate and re-seed patches as required to maintain a uniform healthy sward. Replace failed areas.

- **Invasive Weeds**. Monitor regularly at each herbicide inspection for noxious invasive weeds registered in Schedule 9 of the Wildlife and Countryside Act updated 2013 including in particular Japanese Knotweed *Fallopia japonica,* Himalayan Balsam *Impatiens glandulifera* or Giant Hogweed *Heracleum mantegazzianum.* Government guidance states that it is an offence to allow such weeds to spread to other areas and therefore prompt treatment to eradicate them is advised. If Bracken is present it should be no more than 20% of the wildflower grass area.

YEARS 2 – 10 and on-going annual maintenance

- As for year 1 with reduction in herbicide and hand weeding as ground cover foliage extends. Anticipated 30% reduction in year 2 and further 30% in year 3. Application of fertiliser as required.
- Remove tree guards where applicable at end of year 3 and stakes from year 3 onwards when trees are showing evidence of adequate support. Replace any failed plants within the defects period specified by the Planning Authority.
- Pruning to maintain healthy growth appropriate target habit for each species and maintain co-dominance of species in mix to prevent one species taking over. Also to maintain adequate foliage cover at lower level to prevent bare patches and loss of screening effect. Dead wood and suckers to be removed.
- Monitoring of pests and diseases and application of appropriate pesticides, fungicides and herbicides as required. DEFRA to be contacted if pests observed which have been identified as significant risk of spreading. Planting maintenance standards in accordance with BS4043 BS 7370-4 (pruning) and BS 3998 (tree work).
- The wild flower grassland will continue to require an annual cut in September to selective areas as required with approximately 50% areas being left undisturbed and spot application of Glyphosate herbicide to prevent the spread of invasive species or the succession to scrub and woodland. All as described for Year 1. The annual cut will prevent the establishment of new trees and shrubs but spot application of some herbicide may also be required to prevent new tree seedlings becoming established.
- For new hedges pruning will be to control the width and maintain healthy growth for the first 2-3 years until the target hedge height is exceeded when a uniform height and width cut will be required. For established hedges cut back to the previous years' pruning line to maintain a uniform height and width. Remove all arisings.

7.0 Responsibility and Programme for Management Tasks

Cumberland Council will be responsible for implementing the Landscape Management tasks including replacement of defective planting during the Defect Liability Period which is 5 years.

The programme for the Management Company maintenance tasks is indicated on the Landscape Management Scheduled Tasks in Appendix 4 and should commence on completion of the Contract Phase Works to the satisfaction of the LPA.

The nominated landscape management contractor appointed by Cumberland Council must set up a system which identifies the precise areas to be maintained and the particular specifications which are appropriate for the landscape type. Clear instructions and guidance for an operative should be included on a pro- forma for each area which records the date the operation is carried out and by which operative and include evidence that the operations were undertaken satisfactorily (photographs). This facilitates verification of the work by representatives from Management Company or from the LPA.

APPENDICES

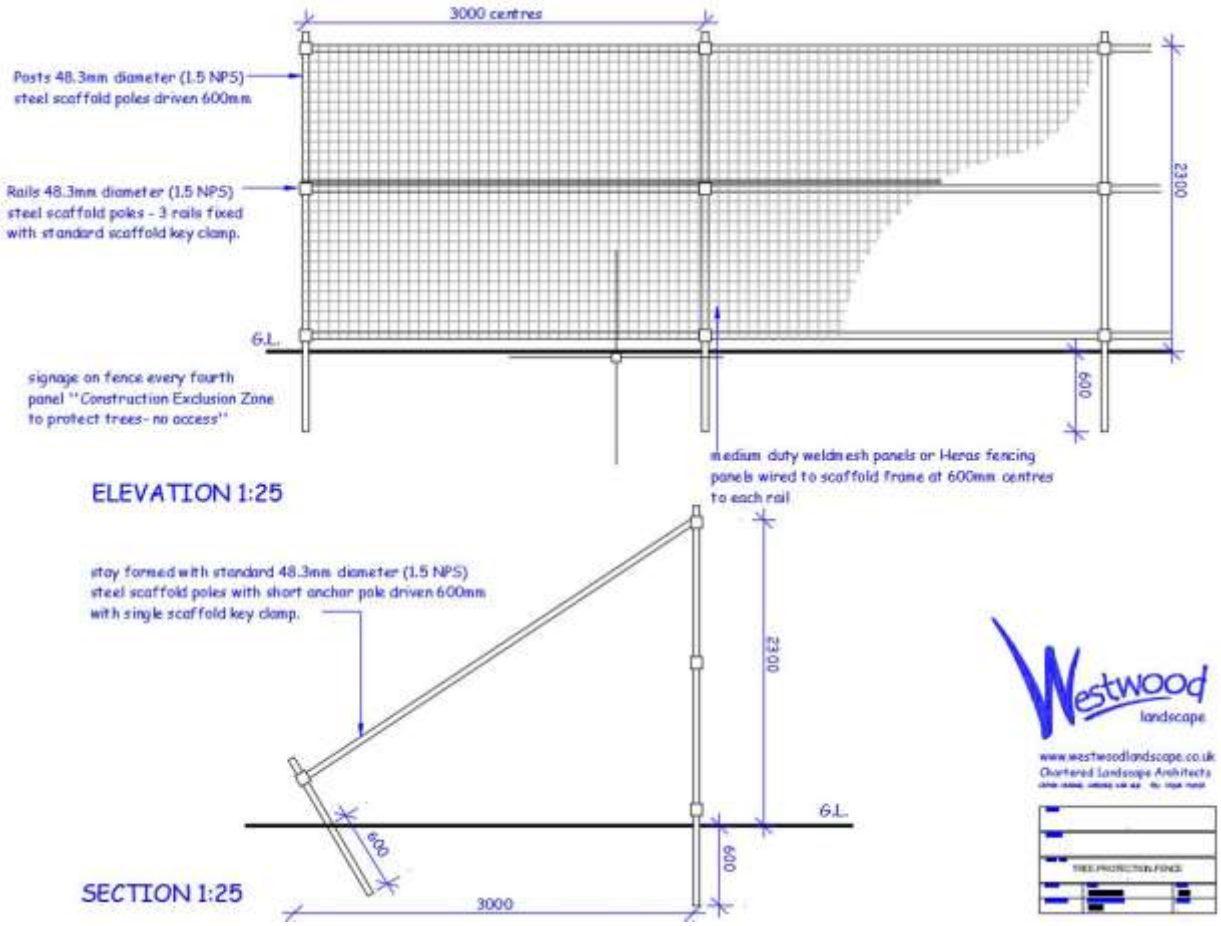
APPENDIX 1

Landscape Plan

APPENDIX 2

TREE PROTECTION FENCE DETAIL

Refer also to the fence detail within the Tree Survey Report. Both fence options are appropriate as the comply with BS5837 (2012)



APPENDIX 3

LANDSCAPE MANAGEMENT SCHEDULED TASKS

APPENDIX 4

LANDSCAPE IMPLEMETATION PROGRAMME