



**MILLOM LEISURE CENTRE
SALTHOUSE ROAD, MILLOM**

LANDSCAPE MAINTENANCE & MANAGEMENT PLAN

THOMAS ARMSTRONG CONSTRUCTION LTD

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Bruce Walker B Sc Hons M Phil CMLI
Chartered Landscape Architect



64 Newfield Drive, Carlisle,

Cumbria, CA3 0AF

07736 364337

bruce@westwoodlandscape.co.uk

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1.0 Introduction

- 1.1 This report has been prepared to satisfy the Conditions of Planning Permission granted by Cumberland Council for the extension and upgrade of the Leisure Centre and associated infrastructure. Details of the proposal are indicated on Westwood Landscape Plan WW/L01.
- 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 Design LLP, Chartered Landscape Architects have been appointed by Thomas Armstrong Construction Ltd to provide a Landscape Maintenance and Management Plan which fully complies with the Planning and client requirements.
- 1.4 The site of the proposed building is currently sports and recreational land within the grounds of the Leisure Centre. Refer to the location and context plans below.
- 1.5 Revision A of this report responds to Condition 15 of the Planning Consent from Cumberland Council which requests a Management Plan to ensure the establishment and maintenance of the trees for a least 5 years. This information was provided in the first issue of this report but is now highlighted in this revision. Please refer to Appendix 3 Schedule of Landscape Management tasks.

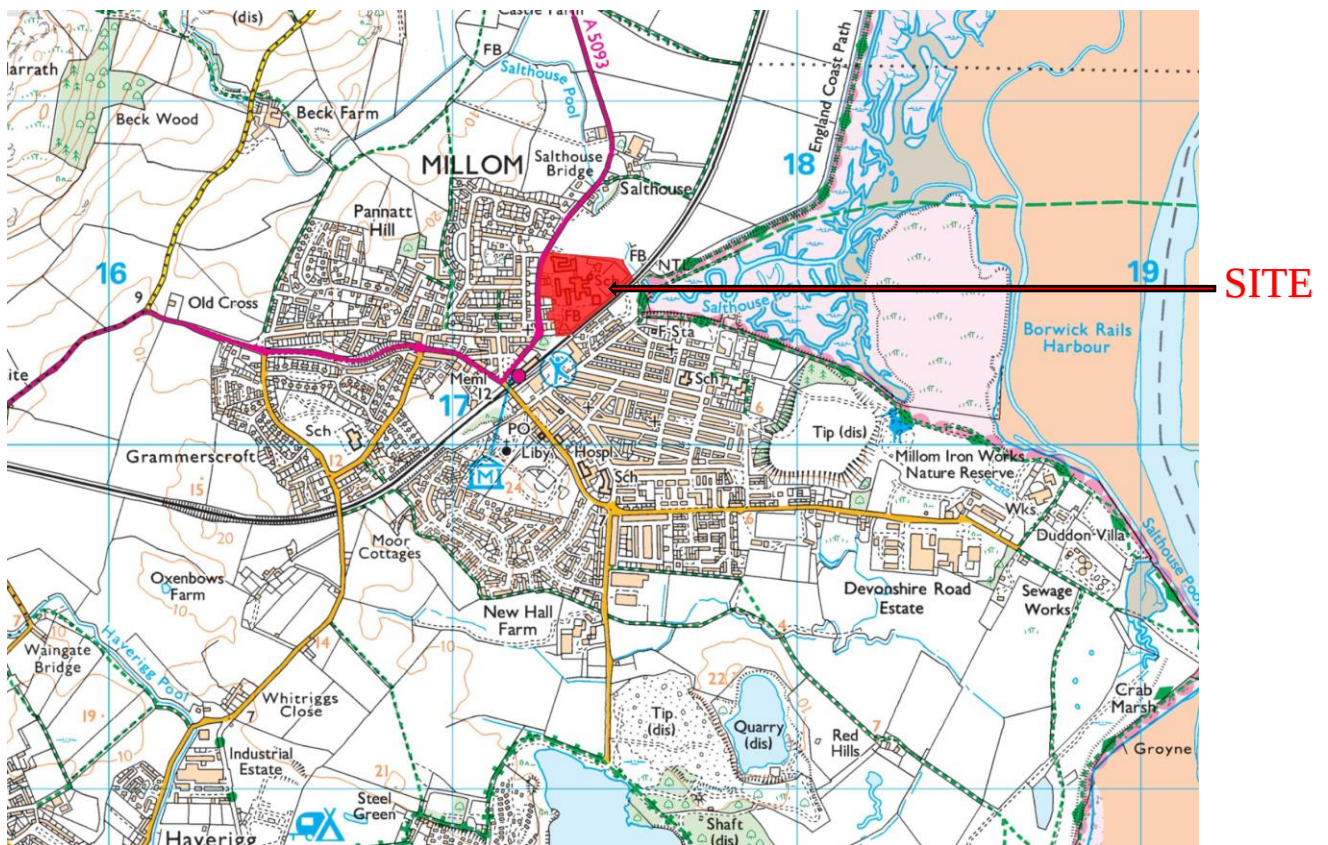


Figure 1 Site location plan showing the context within Millom.

Westwood Landscape Ltd Ordnance Survey Licence Number 100062836

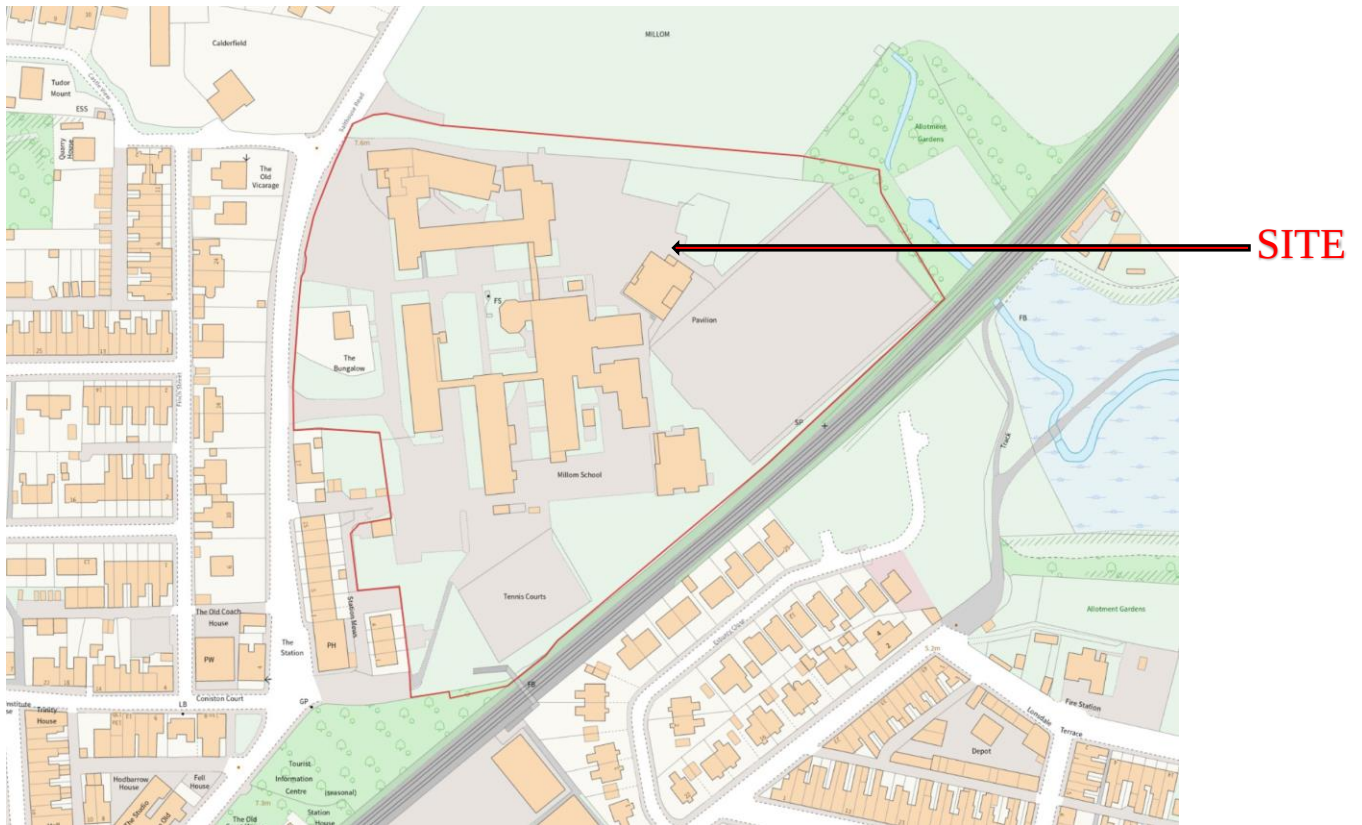


Figure 2 Site location plan showing the context of the adjacent residential areas and landscape. Westwood Landscape Ltd Ordnance Survey Licence Number 100062836



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.
- Retain and protect the trees, shrubs and 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 and native bulbs to the margins of the recreation areas where the pressure from sport and recreation can be minimised.
- Enhance biodiversity by creating new habitats including areas of native trees and shrubs, native hedge, native scrub, native bulbs and species-rich meadow grassland.
- Establish tree and shrub areas which define and enhance the recreational and car park spaces, reinforce boundaries with natural screening, screen the sub-station and service yard, provide shelter and create year-round interest. This will include trees with low shrubs and flowering groundcover in the car park islands to create an attractive entrance feature and setting for the building. Native tree and shrub planting to the north boundary adjacent to the sub-station will provide a natural buffer between the Application Site and the adjacent agricultural land to the north and from the A5093 Salthouse Road. Views southwards from south-bound travellers will be visually softened.
- Integrate the development with the adjacent rural landscape character with tree planting to the north boundary.
- 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 hedge to the proposed sub-station and service yard to create a natural screen and a new linear habitat. The hedge habitat is extended with an area of native trees and shrubs which provide a natural boundary, screening and shelter.
- 3.2 Shrub planting with trees and flowering ground cover to the two island beds in the car park will provide bold colourful displays and enhance the frontage and arrival areas. Taller specimen shrubs and small canopy trees will add immediate height and maturity to the landscape.
- 3.3 Wildflower grass seed is proposed with native species appropriate for the amenity grass margins where the pressure from recreational activity and foot traffic is reduced and regular mowing is not required. Native Spring bulbs extend to the adjacent amenity grass areas.
- 3.4 Rabbit damage is possible 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.
- 3.5 The plant schedule is shown below.

PLANT SCHEDULE					
<u>NATIVE TREES AND SHRUBS</u>	1/ sq.m.	50 plants	50 Sq.m.		
Plant name	Common name	% in mix	Number	Specification	
<i>Crataegus monogyna</i>	Hawthorn	20%	10	40/60cm bare root	
<i>Corylus avellana</i>	Hazel	20%	10	40/60cm bare root	
<i>Prunus spinosa</i>	Blackthorn	10%	5	40/60cm bare root	
<i>Sorbus aucuparia</i>	Rowan	10%	5	40/60cm bare root	
<i>Ilex aquifolium</i>	Holly	10%	5	30/40cm in C2 container	
<i>Acer campestre</i>	Field Maple	10%	5	40/60cm bare root	
<i>Prunus padus</i>	Bird Cherry	5%	3	40/60cm bare root	
<i>Sambucus nigra</i>	Elder	5%	3	40/60cm bare root	
<i>Viburnum opulus</i>	Geulder Rose	5%	2	40/60cm bare root	
<i>Rosa canina</i>	Dog Rose	5%	2	40/60cm bare root	
<u>HEDGE: Species rich native mix</u>	4/ linear metre	NBH	43m	172 plants	
Plant name	Common name	% in mix	Number		
<i>Crataegus monogyna</i>	Hawthorn	58%	100	40/60cm bare root	
<i>Prunus spinosa</i>	Blackthorn	10%	17	40/60cm bare root	
<i>Ilex aquifolium</i>	Holly	10%	17	30/40cm in C2 container	
<i>Corylus avellana</i>	Hazel	5%	8	40/60cm bare root	
<i>Rosa canina</i>	Dog Rose	5%	8	40/60cm bare root	
<i>Lonicera periclymenum</i>	Honeysuckle	2%	4	30/40cm in C2 container	
<i>Sambucus nigra</i>	Elder	2%	4	40/60cm bare root	
<i>Viburnum opulus</i>	Geulder Rose	2%	4	40/60cm bare root	
<i>Prunus padus</i>	Bird Cherry	2%	4	40/60cm bare root	
<i>Acer campestre</i>	Field Maple	2%	3	40/60cm bare root	
<i>Malus sylvestris</i>	Crab Apple	2%	3	40/60cm bare root	
<u>NATIVE BULBS</u>			Number		
<i>Narcissus pseudonarcissus</i>	Daffodil	N	3300		
<u>NATIVE TREES</u>			Number		
<i>Quercus petraea</i>	Sessile Oak	QP	1	10-12cm rootballed	
<i>Betula pendula</i>	Silver Birch	BP	3	10-12cm rootballed	
<i>Sorbus aucuparia</i>	Rowan	SA	1	10-12cm rootballed	
<i>Acer campestre</i>	Field Maple	AC	1	10-12cm rootballed	
<u>ORNAMENTAL TREES</u>					
<i>Prunus Pink Perfection</i>		PP	2	10-12cm rootballed	
TOTAL TREES			8		
<u>ORNAMENTAL SHRUBS</u>	87 sq.m.			No/ sq.m.	Number
Euonymus Emerald Gaiety	Ee	20-35cm	CG 2 litre	3	24
Cistus Silver Pink	Cs	20-35cm	CG 2 litre	3	21
Hebe Blue Gem	Hb	20-35cm	CG 2 litre	4	28
Hebe Autumn Glory	Ha	20-35cm	CG 2 litre	4	48
Hebe Sutherlandii	Hs	20-35cm	CG 2 litre	4	24
Potentilla Lovely Pink	Pp	20-35cm	CG 2 litre	4	68
Lonicera pileata Maigreen	Lm	30-45cm	CG 3 litre	2	22
Vinca minor Atropurpurea	Vm	15-20cm	CG 2 litre	5	95
TOTAL SHRUBS					330
<u>SPECIMEN SHRUBS</u>					
Amelanchier lamarckii	AL	90-100cm	CG 15 litre		3
Eleagnus ebbingei	EE	90-100cm	CG 15 litre		4
TOTAL SPECIMENS					7
Wildflower grass	150 sq.m.				
Turf	858 sq.m.				

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/ TURFING AMENITY GRASS** Following cultivation preparation specified above apply Boston Seeds 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. For turfing in lieu of seeding supply and lay Rolawn Hallmark turf in a staggered joint pattern working from timber boards to ensure that localised hollows are avoided. Top-dress joints with sand and topsoil mix as required and lightly roll with a hand-drawn ballast roller to achieve a uniform smooth flowing profile. Levels to finish 25mm above adjacent paving. Thoroughly soak on completion. Do not turf in waterlogged or frozen conditions.

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

5.0 Protection of existing trees within or close to site boundary

- 5.1 This refers to 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.** Arboricultural monitoring survey at the end of the first year to check for signs of deterioration. 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 and native 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 Westwood drawing WW/L01

TREE PROTECTION FENCE DETAIL

To comply with BS5837



	TREE PROTECTION FENCE	

APPENDIX 3

LANDSCAPE MANAGEMENT SCHEDULED TASKS

APPENDIX 4

LANDSCAPE IMPLEMETATION PROGRAMME