PROPOSED RESIDENTIAL DEVELOPMEMT

LAND NORTH OF FLOSH MEADOWS, CLEATOR CA233DS

LANDSCAPE MAINTENANCE & MANAGEMENT PLAN

Rev B 13.12.24

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1.0 Introduction

1.1 This report has been prepared to satisfy the Condition 6 of Planning Permission granted by Cumberland Council for the construction of houses and associated infrastructure at land north of Flosh Meadows (Application 4/22/2092/0O1).

1.2 The proposed landscape work is limited to mitigation for BNG enhancement and the proposals are shown on the plan WW/L01 'BNG Project Implementation Plan'. These proposals follow the advice from the Ecological Consultant Envirotech on BNG Report reference 9200 Version 2 and implements their recommendations in full. This Plan fulfils the requirements of the Biodiversity Net Gain Project Implementation Plan (BNGPIP).

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

1.4 Westwood Landscape, Chartered Landscape Architects have been appointed by Mr Richard Mulholland to provide a Landscape Maintenance and Management Plan which fully complies with the Planning requirements.

1.5 The site is currently agricultural land on the north-western edge of Cleator, Cumbria. Refer to the location and context plans below.

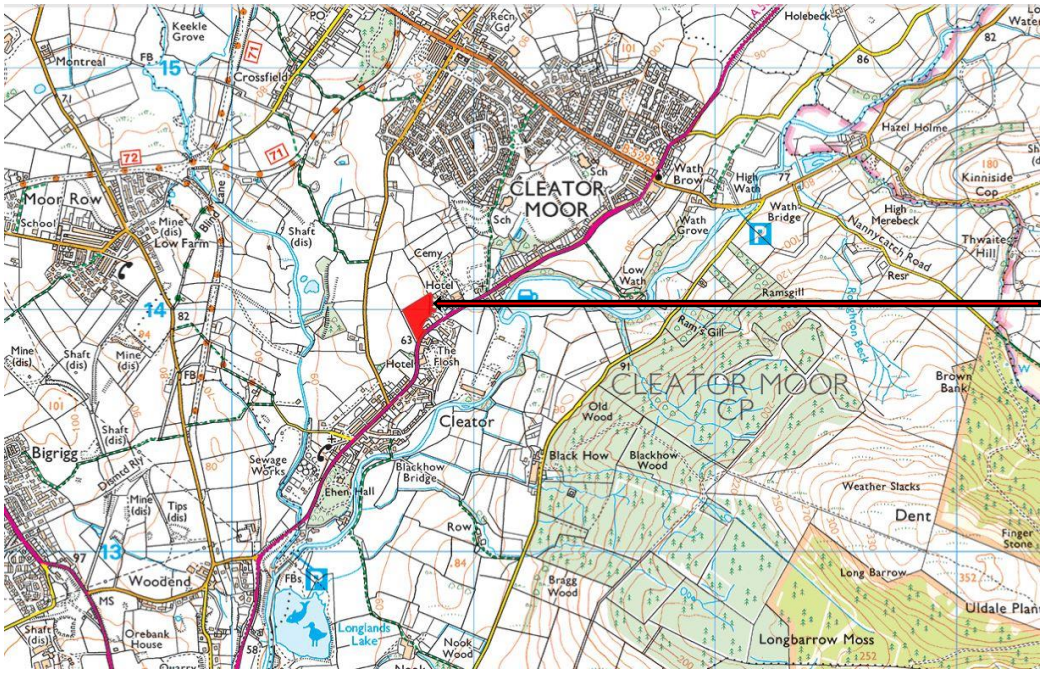


Figure 1 Site location plan showing the context with Cleator and Cleator Moor.

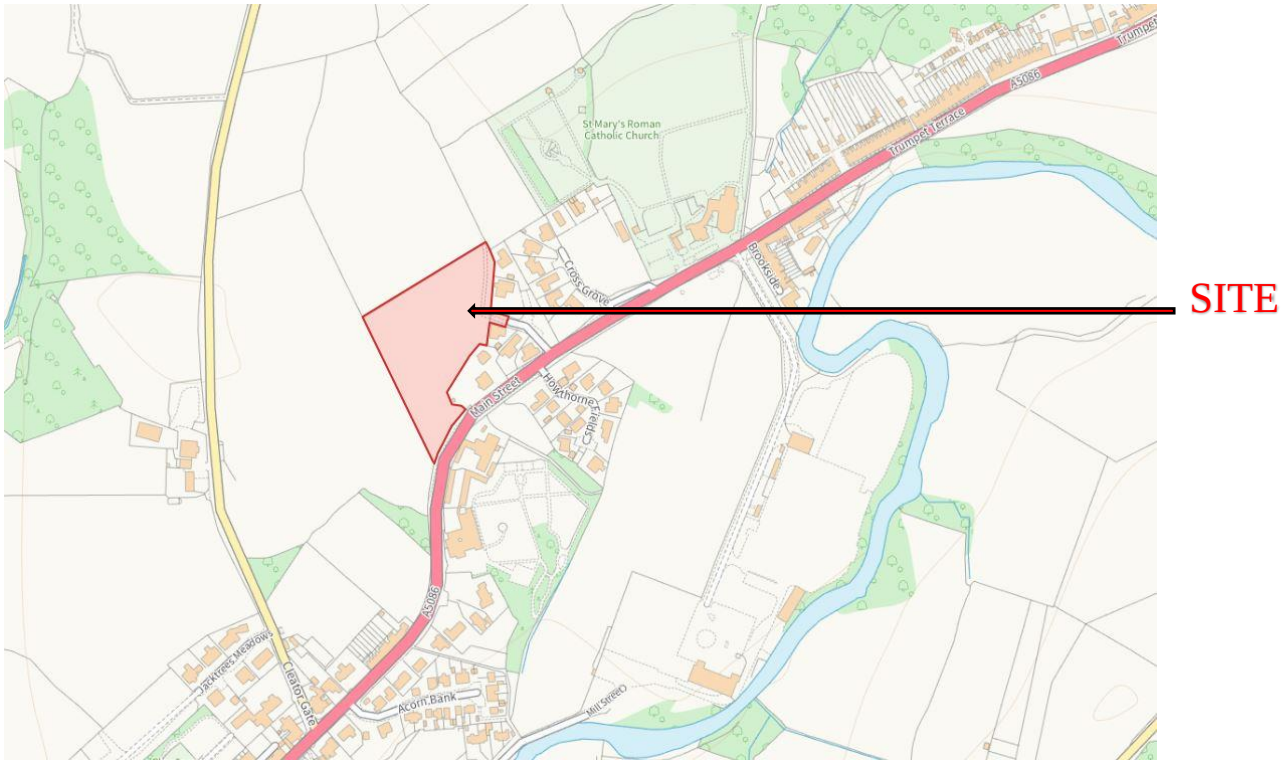


Figure 2 Site location plan showing the context of the adjacent residential areas and roads.

Westwood Landscape Ltd Ordnance Survey Licence Number 100062836

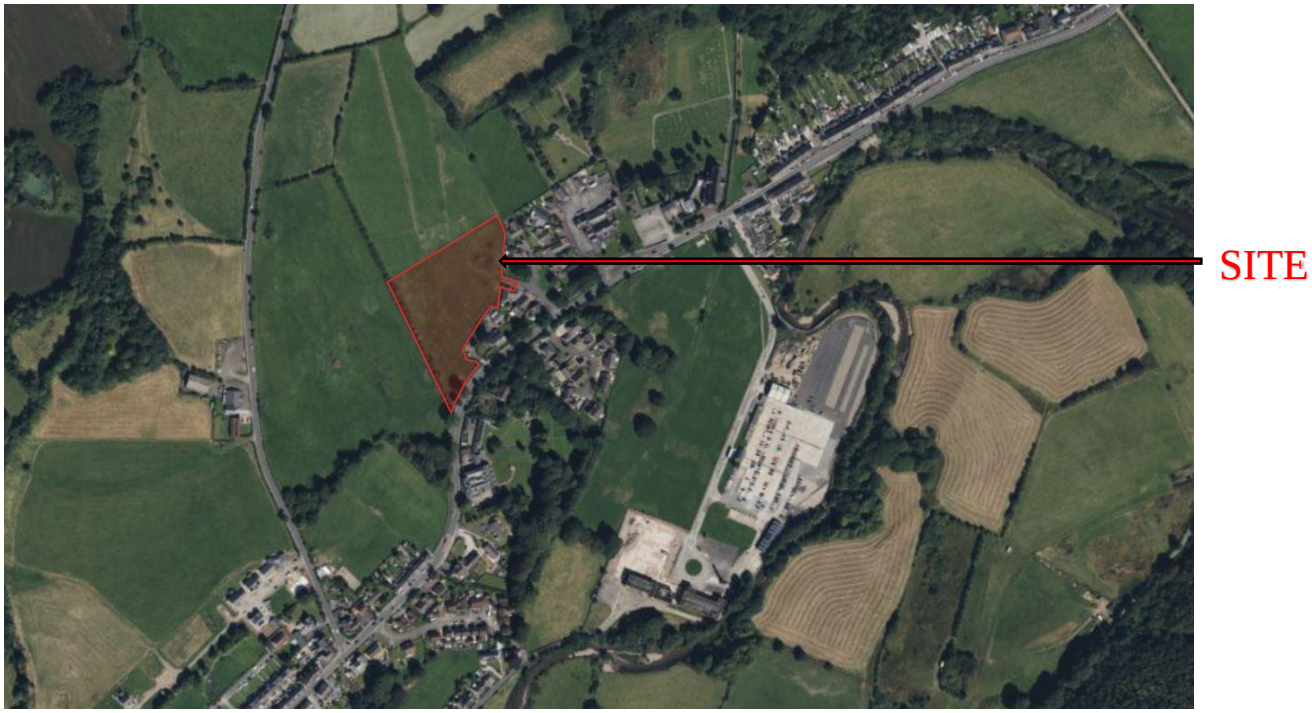


Figure 3 Site aerial plan showing the context of the adjacent agricultural land and residential areas. Westwood Landscape Ltd Ordnance Survey Licence Number 100062836

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:

- Retain and protect the hedges and trees 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 through gap infill and new sections of hedgerows with occasional trees.
- Enhance biodiversity by creating new habitats including areas of species-rich meadow grassland to existing grass areas and new areas of wet ditch grass habitat to the proposed swale.
- Integrate the development with the adjacent rural landscape character with native tree and hedge planting to the boundaries including a hedge to the Main Street frontage to strengthen the rural lane character.
- 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 native species-rich boundary hedges to connect existing hedges to achieve linear habitat continuity. Occasional native trees to the hedgerows replicate the surrounding landscape pattern.

3.2 Habitat diversification includes native meadow and wetland marginal wildflower grass with species mixes designed to be appropriate to each micro-habitat conditions.

3.3 Rabbit damage is likely in this setting therefore guards have been specified for native hedge plants and trees. Rabbit damage should be monitored by the Management Company.

3.4 The plant schedule is shown below. Species have been selected which are appropriate to the site conditions, topsoil and situation.

	PLANT SCHEDULE					
	NATIVE HEDGE	**NBH**	145m	580 plants	4/ lin.m.	
	Crataegus monogyna	Hawthorn	55%	319	40/60cm bare root	
	Corylus avellana	Hazel (note extra 130 shrub layer)	10%	58	40/60cm bare root	
	Ilex aquifolium	Holly	10%	58	30/40cm in C2 container	
	Prunus spinosa	Blackthorn	5%	29	40/60cm bare root	
	Acer campestre	Field Maple	5%	29	40/60cm bare root	
	Sambucus nigra	Elder	5%	29	40/60cm bare root	
	Viburnum opulus	Geulder Rose	5%	29	40/60cm bare root	
	Rosa canina	Dog Rose	3%	17	40/60cm bare root	
	Lonicera periclymenum	Holly	2%	12	30/40cm in C2 container	
	NATIVE HEDGEROW TREES					
	Acer campestre	Field Maple	AC	1	1.8-2m bare-root	
	Quercus petraea	Oak	QP	2	1.8-2m bare-root	
	Sorbus aucuparia	Rowan	SA	1	1.8-2m bare-root	
	Enhanced Wildflower grass			660 sq.m.		
	Wildflower grass to swale			24 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 900mm above G.L. with 50 x 100mm crossbar screwed to stakes. Rubber tree cushion nailed to crossbar and rubber tree belting nailed to secure tree. Single 75mm diameter stake for 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.

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 hedge lines 80cm wide.

4.6 **SEEDING WILDFLOWER GRASS** Prepare as for amenity grass and sow 3-5 g/ sq.m. of mix BS1m and BS6M 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 Tree and Hedge Survey Report and Arboricultural Method Statement 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. Refer to AIA for fencing layout.

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 and AMS recommendations in the Tree and Hedge Survey Report. 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.

6.0 Management Tasks

The following tasks should apply and can be summarised as:

YEAR 1

- **Existing trees** and shrubs adjacent to boundaries. 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.

- **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.

- **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 – 30 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

Mr Richard Mulholland will be responsible for implementing the Landscape Management tasks including replacement of defective planting during the Defect Liability Period which is 30 years due to the BNG mitigation requirements, until such time that the Management Company is formed at which point it will become their responsibility.

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 the Management Company 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

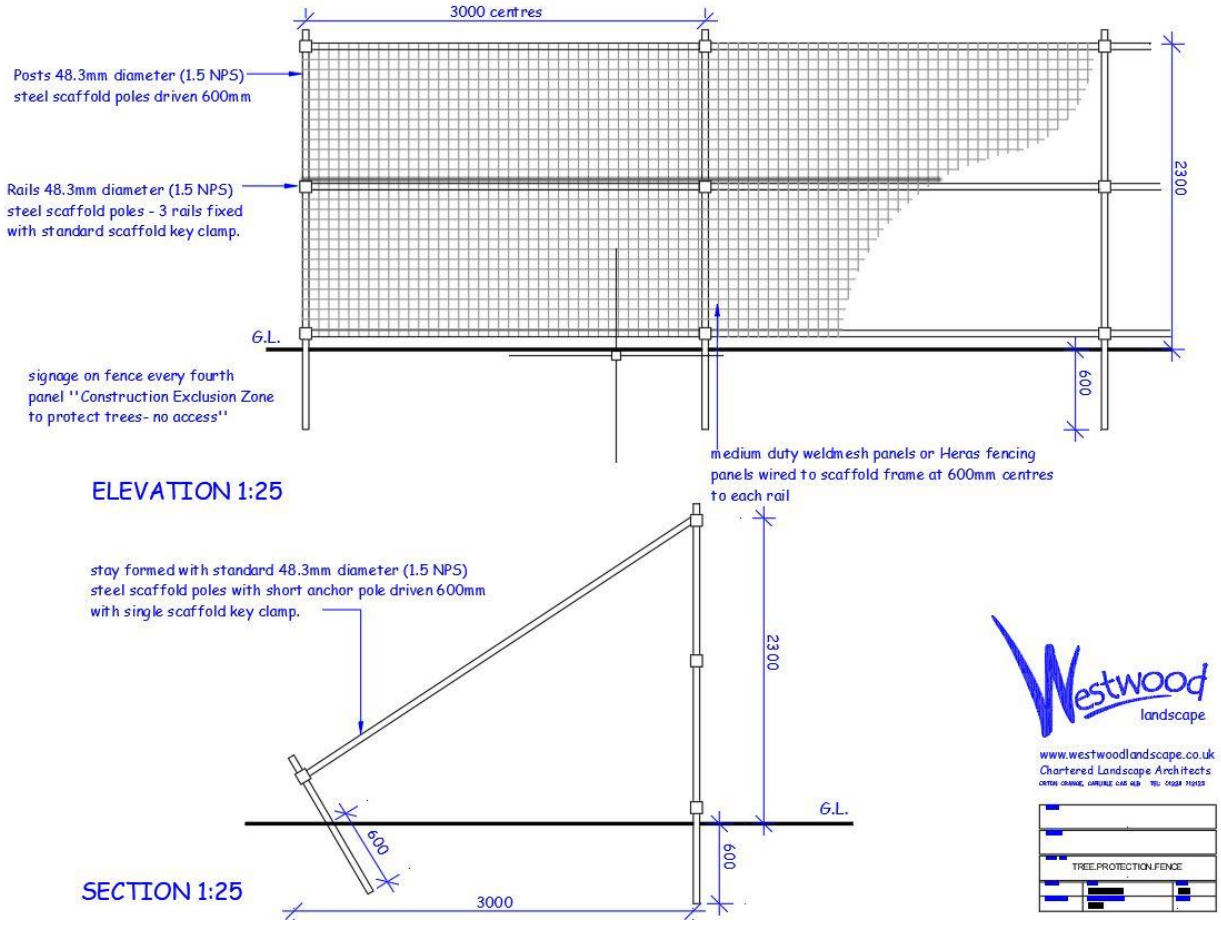
APPENDIX 1

BNG Mitigation Landscape Plan WW/L01

APPENDIX 2

TREE PROTECTION FENCE DETAIL

Variations of this fence detail may be acceptable provided they comply with BS5837 (2012)



APPENDIX 3

LANDSCAPE MANAGEMENT SCHEDULED TASKS

APPENDIX 4

LANDSCAPE IMPLEMETATION PROGRAMME