Ref. M3570-MP-2408-V01



# Dalzell Street Cockermouth

# PUBLIC OPEN SPACE LANDSCAPE MANAGEMENT PLAN

# **YEARS 1 – 5**

For: Nigel Kay Homes Ltd

DOCUMENT NO. M3570-MP-2408-V01

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## **Barnes Walker Limited**

Unit 6 Longley Lane Northenden M22 4WT Tel: 0161 946 0808 Fax: 0161 946 0713

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## 1.0 Introduction

## 1.1 The Structure of the Plan

This document provides details of the 5 year Landscape Management Plan for the Public Open Space at the Dalzell Street residential development, Cockermouth. The development site is approximately 4.3 ha in size and comprises of approximately 60 homes set within a substantial landscape infrastructure framework with a considerable quota of public open space. This document sets out how the Public Open Space within the site is to be managed and maintained to achieve the overall aim of developing and enhancing the landscape within the development curtilage.

The key objective of the Plan is to organise the management of the landscape into landscape elements by providing a framework of routine operations for each item. This will then be used to guide and instruct the landscape maintenance operations carried out by contractors on site.

The Plan forms a working document and refers to drawing M3570-PP-01 Landscape Layout prepared by Barnes Walker Ltd, to facilitate the long-term management of the proposed landscape elements comprising trees (including woodland planting), hedgerows, ornamental planting, wildflower & grasslands, hard surfacing and open space therein.

## 1.2 The Landscape Areas

The areas of public open space to be managed comprises of the following:

- Trees newly planted and mature
- Hedges structural and native species
- Ornamental Planting
- Lawn & Amenity Grassland
- Native Woodland Wild Flowers & Grasses
- Hard Surfacing, Boundary Treatments and Elements

## 1.3 Delivery & Long-term Management

The delivery of the Management Plan will be facilitated by Nigel Kay Homes Ltd, working with landscape contractors and ecologists. Defined tasks are outlined below, and reference should be made to the Public Open Space Landscape Management Schedules for the annual maintenance of each of the landscape elements identified in Section 2.0, refer to document M3570-MS-2408-V01 Public Open Space Landscape Management Schedules for details.

The Site Manager of the construction phase appointed by the developer has the responsibility of maintaining a secure and safe site as well as ensuring all activities on site remain lawful during the construction phase. Once the development is operational, this responsibility for long term management shall be passed to a management company.

To ensure the Management Plan is implemented properly and that management aims are being achieved, progress will be reviewed on a regular basis by an appropriately qualified consultant. A site visit will be carried out in years 1, 3, and 5 of the plan to evaluate management actions and habitat quality. This will allow direct measures to be made against the objectives set out within the Management Plan. At the end of the 5 years the Plan should be updated accordingly to ensure the long-term health of the Management Plan.

The Management Plan shall be implemented in accordance with the details contained therein.

## 2.0 The Landscape Elements & Their Maintenance Regimes

## 2.1 Introduction

This section describes the design objectives for each of the landscape elements and then the landscape management operations, which are necessary so that these objectives are achieved.

## 2.2 Newly Planted Trees

The trees on site have been chosen to provide a strong green infrastructure and compliment the many existing semi-mature and mature trees that will be retained and protected, particularly within the adjacent area of Open Space. The site includes a range of native species trees selected to promote biodiversity and ornamental trees to be in-keeping with the residential character of the local area. The trees will give physical presence, provide spatial definition, positive aesthetic and emphasise the character of the site.

The following schedule lists the trees as proposed at the planning stage of the project. There may be some variation to those actually planted depending on nursery availability: Acer campestre Alnus cordata Betula pendula Betula utilis jacqmontii multistem (2.5m high rootballed) Carpinus betulus Liriodendron tulipfera Pyrus calleryana 'Chanticleer' Pinus nigra Pinus sylvestris Prunus serrulata Kanzan Sorbus aria Sorbus aucuparia Quercus robur

#### Watering

- In the first 3 years newly planted trees are still establishing. Trees should be watered once per week, or as necessary in dry weather, during the growing season (June to October). Apply approximately 50-75 litres/sqm per tree per week. Once they have become well established, most trees only need to be watered during spells of drought.
- A provision of at least 12 waterings per year should be included.
- Trees within areas of hardstanding should be provided with an appropriate watering system installed, i.e. a suitable proprietary root irrigation system.

#### Fertiliser

- All new trees will benefit from feeding during the first 2-3 years after planting. Once established they will only require feeding once every 5-10 years.
- Trees grown for their foliage will benefit from a fertiliser rich in nitrogen.
- In autumn, an organic fertiliser such as well rotted manure or compost can be applied as mulch. Spread the material in layers 5-8cm deep around the tree keeping a clear area immediately around the trunk.
- A contact herbicide should be applied as necessary, once annually in June to maintain a 500mm radius weed free area until year 5;
- A translocated herbicide can be applied as required 4 times per year, once a month from May to August;

## Mulch

- Mulch levels will be topped up where necessary.
- Mulches are best applied during the spring, but provided that the soil is moist they can be spread any time of the year except at times of drought or frost. The mulch is to be spread and maintained at an even depth of 50cm.
- Top up the mulch every year or two under young trees. The mulch will help to suppress weed and retain moisture.

### Weeding

- Hand weed throughout where necessary. Mulching will help to suppress the weeds.
- Where trees are located in areas of grass or planting, they are likely to be subject to competition from the grass sward, adjacent plants and from weeds respectively. A circle of bare or mulched ground should therefore be maintained within a radius of between 250mm and 500mm around each of the trees.
- Trees within areas of hardstanding i.e. gravel covered tree pits or within tree grills should be maintained in a weed free condition. This can be undertaken by hand weeding or if necessary an application of an appropriate herbicide.
- Over-vigorous weeds such as brambles and nettles are to be removed using a glyphosate based herbicide such as Roundup or similar.
- Long grass growing between the trees and shrubs should be strimmed twice yearly until plants are established.
- Appropriate precautionary measures must be undertaken to protect trees against damage from mowing equipment.

### Pruning

- Pruning of young trees should not generally be required unless they have dead, damaged, vandalised or diseases branches. In such cases the tree branch should be pruned back (using a sharp clean knife) to an outward facing bud whilst maintaining the natural shape of the tree.
- As the trees become established, some selective pruning works may be required. This should be undertaken once annually in November.
- Any diseased or rotten wood will be pruned back to sound wood, including the removal of main stems and limbs. A suitably skilled and qualified arboriculturalist shall carry out such pruning.
- All cut material will be removed from the site, unless used within designated log pile habitat creation. No burning on site will occur.

### Replacements

• For the first five years all dead and dying specimens (including existing trees) are to be replaced in the following planting season with a tree of either the same species or similar species as those existing. This is to allow some flexibility and to avoid problems encountered with 'Same Tree Disease'.

#### **Tree Ties**

- Tree ties and spacers should be fitted 50mm below the top of the stakes irrespective of the overall height of the stakes (i.e. short or long stakes) to avoid chafing.
- Long-term tree management will include the regular checking and tightening of tree supports (recommended every three months or after severe storms). Any stakes, which show movement or instability, shall be secured or repositioned.
- Damaged ties and stakes should be replaced.
- To prevent the ties chafing the trees, they should be inspected and adjusted at least once per year in April, prior to an increase in the tree girth. This should then be done again in October, after growth has occurred.
- Tree stakes/ties/guards will be removed once trees have established well, between year 3-5 and before the end of the 5 years replacement planting period. Surfaces disturbed will be made good, with any resulting holes filled with suitable topsoil.

## 2.3 Mature Trees

- The mature trees should be inspected annually to ensure that they are in good health, and are not hazardous to the users of the site. Both the inspection and all works to mature trees should be carried out by qualified arboricultural personnel. Routine pruning should include the following operations:
  - the removal of dead, diseased and dying branches;
  - the removal of vegetation growing onto footpaths, parking areas, POS, roads, signs, sightlines and any other location where it presents a hazard to the users of the site;
  - inspection for, and reporting of, any incidence of pests and disease.
- Occasionally, the inspection may result in a recommendation for more specialist pruning of which crown thinning and reduction are likely to be the most commonly needed.
- All tree works should be carried out in a safe manner complying with all relevant legislation.

## 2.4 Existing Trees and Woodland

Woodland management will comprise selective thinning in some sections of the woods with the aim to create occasional gaps in the canopy and understorey to encourage natural regeneration and development of the ground flora. Management will also include controlling the overall ground cover of bramble. Selected areas of scrub growth will be left to provide connectivity through the woodland. Thinning works will need to be carried out on a rotational basis to keep any impacts upon the woodland flora and fauna to a minimum.

- Standing dead wood is to be retained in situ and where possible. This will include reducing the height and spread of standing dead trees to reduce potential failure but retaining habitat value. Where dead trees are too close to public rights of way or newly constructed infrastructure, they should be felled to ground level and left within the woodland.
- Management should seek to retain existing tree heights and be undertaken only by suitably skilled and qualified arboriculturalist.
- Any branches requiring removal should be cut accordance with BS 3998:2010 Tree work Recommendations.
- If pollarding or coppicing of individual existing trees is deemed necessary by a suitably skilled and qualified arboriculturalist, once started it is important to keep trees within the specified rotation. lapse in management may result in the development of heavy branches and or stems, dense crown foliage and decay or disease associated with heavy pruning.
- Cut material of appropriate size should be retained as large wood/habitat piles within, and around, the informal POS areas. These wood/habitat piles will provide additional habitat for reptiles and invertebrates.
- Trees across the site situated within hedgerows and tree groups will need minimal management. Works will consist of removing broken, dead and or dying branches where trees are in close proximity to public footpaths, public opens space and newly constructed infrastructure and plots. All tree work will again be in accordance with BS 3998:2010 Tree work Recommendations.

## 2.5 Hedges

### **Structural Hedges**

Structural hedges will provide aesthetic advantages and low level screening and containment. Hedges have been used to define space, provide screening and soften boundary treatments.

Hedgerows are to be maintained in a weed free condition (aided by bark mulch).

Structural species hedgerows should be maintained as follows:

- Following planting, all hedges are to be mulched with a 50mm depth of BSI PAS 100 standard mulch;
- The depth of mulch should be maintained at a minimum of 50mm until the hedgerows are well established; Mulch layer may need to be topped up every year or two.
- Annual trim in October until objective height is achieved; Thin-back laterals in first 2-3 years to shape. Shape to oblique angle (wider base than top), particularly in formative second year, allowing the apical shoot to grow to the desired height before trimming back.
- Once the objective height is achieved, the hedges should be trimmed 3 times annually in April, June and October to the various objective heights required. Trimming should achieve flat, uniform sides and a flat, level top to the hedges.
- Allow hedges to grow laterally through any adjacent fences. Once projecting growth is established and sufficiently dense, trim back to a minimum distance of 50cm from fences. Adjust trimming distance as required to achieve dense hedge growth as viewed from non-planted side of fence. Where space permits trim opposite side of hedge to match in order to maintain balanced growth.
- If necessary an appropriate contact herbicide should be applied in May.
- To prevent weed growth, fertiliser application should be avoided unless there are localised areas of poor growth. Hand weed throughout where necessary.
- Watering should be carried out as necessary, particularly from June to October for the first 3 years following planting. A provision of at least 12 waterings per year should be included.

## New Hedges (up to establishment only)

Newly planted hedges take some time to establish and until this occurs they are subject to very vigorous competition in their root zone from weed growth. The use of mulch mats aims to minimise this competition until plants are established and also helps to retain moisture within the root zone. To ensure that plants thrive, the following checks and actions are required:

- New planting should be regularly inspected during establishment to encourage healthy, vigorous condition. Until the new planting is established, formative pruning will be undertaken once annually to keep the hedgerow tidy.
- Check that all mulch mats are fixed correctly in place in accordance with the manufacturer's instructions, and re-fix any that have become loose.
- Individual tree guards will be required to prevent damage to newly planted saplings by browsing rabbits and will be removed once established.
- Check that all rabbit guards are in place and undamaged, replacing any that are damaged or loose.
- Tree guards will be reviewed and removed as necessary after three years.
- Remove any weed growth at base of plant either by hand weeding or spot treatment with an approved translocated herbicide. If treating near swales check that any herbicide is suitable for use near water.
- Remove litter from all beds.
- Water as required until plants are established.
- Control pests and diseases by monitoring regularly and treating affected areas swiftly as required.
- At the appropriate time and when weather conditions allow, add a folia or granular feed to maintain healthy growth of plant material.
- Any diseased or rotten wood will be pruned back to sound wood, including the removal of main stems and limbs.
- All cut material will be removed from the site, unless used within designated log pile habitat creation. No burning on site will occur.
- Like-for-like replacement of failed saplings will be undertaken until the hedgerow is mature and established.

Once newly planted hedgerows area established, they will enter the same management regime as the existing hedgerows.

The following schedule lists the hedges as proposed at the planning stage of the project. There may be some variation to those actually planted depending on nursery availability:

#### **Proposed Ornamental Hedgerows**

Beech, Fagus sylvatica, 90-120cm high, bare root, 5no plants per linear metre on a double staggered row circa 250mm apart, maintain at a height of 1.2m

#### **Proposed Native Species Hedgerows**

Corylus avellana 15% - 60-90cm br Crataegus monogyna 50% - 60-90cm br Ilex aquifolium 10% - 60-80cm - 3lt cg Prunus spinosa 20% - 60-90cm br Viburnum opulus 5% - 60-90cm br 5no plants per lin m in groups of up to 5, on a double staggered row, circa 250mm apart, maintain at a height of 1.2m & 1.8m adjacent to fences

#### **Existing Hedges**

- Where existing hedges are retained on site, they are to be gapped up as necessary to provide neat, even boundary treatments.
- Allow newly planted hedging within existing hedgerows to grow and be maintained at the final heights of the adjoining hedgerows. Trim back annual growth as required to maintain this height.
- Allow existing and newly planted hedges to grow laterally through any adjacent fences. Once projecting growth is established and sufficiently dense, trim back to a minimum distance of 50cm from fences. Adjust trimming distance as required to achieve dense hedge growth as viewed from non-planted side of fence. Where space permits trim opposite side of hedge to match in order to maintain balanced growth.
- Existing hedges should be trimmed and lopped annually in September to the various objective heights required. Trimming should achieve flat, uniform sides and a flat, level top to the hedges.

## 2.6 Ornamental Planting

Ornamental planting is proposed to provide interest around the site, offering a mix of deciduous and evergreen species for seasonal interest.

Ornamental planting areas are to be maintained in a weed free condition (aided by bark mulch).

- The ornamental planting areas are predominantly species which are not native to this country, and newly planted stock can take some time to establish. Until this occurs, young plants are subject to competition in their root-zone from weeds.
- Many areas of ornamental planting contain groundcover species which might be damaged by herbicides. These areas will therefore need to be hand-weeded and will require regular hoeing. Areas of ornamental planting should also be watered until they are established.
- The end of the establishment phase is usually when the leaf canopies of the plants meet and they are thereby able to suppress weed growth. After establishment, the weed population will change to become more localised, but probably larger specimens. These can be hand-weeded or receive a spot treatment of an appropriate herbicide as necessary through the growing season.
- Only a small amount of routine annual pruning should be necessary in the first five years. Where shrubs grow over roads, paths or sightlines, their growth should be controlled to prevent a hazard to the site users. The ornamental plants should not be pruned routinely since this spoils their natural shape. The shrubs should <u>not</u> be pruned to a plain surface (like hedges are); pruning should consist of the removal of individual branches, to maintain the natural shape of the plant. Pruning should therefore be carried out by horticulturally competent personnel.
- An approved translocated herbicide should be applied as required for the control of pernicious weed growth.
- Remove litter from all beds.
- Ensure that all plants are firmed into the soil.
- Water as necessary
- Control pests and diseases by monitoring regularly and treating affected areas swiftly as required.
- At the appropriate time and when weather conditions allow, add a folia or granular feed to maintain healthy growth of plant material.
- Prune back shrubs overhanging hard areas.

## 2.7 Lawn & Amenity Grassland

Lawn and Amenity Grassland are located where the design objective is to create areas of short mown grass for informal recreation with easy pedestrian access for the users of the site.

To achieve the objectives for Amenity Grassland, the sward should be cut approximately fourteen times per year during the growing season, to a height of 25 mm. This frequency and height of cut should allow the cuttings to be dispersed without leaving too many residues, but obviously is dependent on the weather conditions. Only where a 'manicured' lawn is required and for the first cut after growth in the winter and spring should the removal of cuttings be required.

An application of selective herbicide can be made during the spring or early summer. Again this should be restricted to the areas where it is really required and not applied to the whole site.

Areas of short grass should be maintained as follows:

- The sward should be cut 14 times per year once in April, twice in May, 3 times in June, July and August and twice in September;
- The frequency may need to be greater than 14 times in wetter seasons in more formal areas to ensure a tidy appearance is achieved.
- An appropriate selective herbicide can be applied as necessary once per year in May;
- A slow release fertiliser can be applied as necessary once per year in May;
- Watering should be carried out as necessary, particularly from June to October for the first 3 years following planting. A provision of at least 12 waterings per year should be included;
- Before cutting, remove all litter and debris from grass areas.
- Trim edges adjacent to planting areas using long handled shears.
- Trim and reform edges adjacent to hard surfacing / manholes etc. as necessary.
- At the end of each visit ensure that the site is left in a tidy condition.
- Overseed or repair and returf any worn patches.
- Manually spike to aerate turf and maintain drainage if problem areas occur
- Manual scarification to remove moss and thatch.
- Application of fungicide as required to control the spread of fungal disease.

## 2.8 Wild Flower & Grassland Outline Management Prescriptions

## Establishment of Wildflower Grassland

The following main points must be followed during the establishment of the wildflower grassland.

- The ground must be suitably prepared, i.e. free of weeds, be suitably nutrient-poor, and of a medium tilth to allow the seed to be worked into the very top of the root zone. It will be necessary, given the sites previous agricultural improvement, to remove the fertile topsoil from all areas in which wildflower grassland is proposed.
- Weed control may be achieved either by physical means (soil strip and ploughing, or hand removal of weeds) or by chemical means (i.e. application of herbicide to kill all unwanted vegetation. This may to 3 to 6 weeks to complete).
- Sowing: As wildflower mixtures are sown at such low rates (typically 3-5g/m2) it is important to ensure that any equipment being used is capable of sowing at these levels. To get around this it may be necessary to "bulk out" the seed with an inert carrier such as silver sand. In all cases, however, it will be necessary to regularly mix the seed during the sowing process to prevent separation of the various species.
- Sowing rates for the grassland will be 5g per m2, or as per the manufacturers recommendation.
- The initial management of the grassland during its establishment will be dependent upon the date of its sowing. Tables for the suitable management of the grassland habitats based upon their initial sowing (i.e. Autumn or Spring).

### Management of Wildflower Grassland

Suitable management and regular monitoring of these areas is required to ensure they maintain their species diversity. Wildflower mixtures can soon degenerate into rough grassland within only a few years due to lack of maintenance. Cutting the sward is a vital component in achieving good results.

For flower-rich habitats to survive and remain stable over a long term period, competition from grasses and problem weeds such as docks and thistles needs to be kept under control. Stress induced upon grass by mowing will allow the wildflowers to compete within a grassland.

Unlike standard amenity grassland, the management of wild flower mixtures is more complex due to the wider range of growth characteristics between species. Factors such as rate of growth and flowering date will all influence the maintenance programme.

For example, a cut at the wrong time of the year may result in a plant not producing seed. This would result in short lived perennial and biennial species being lost from the sward. The survival of certain species relies on a return of seed into the soil to form new plants.

It is essential, particularly in the first twelve months to manage the sward to aid seedling development and maintain a balanced composition from one year to the next. Wild flowers in most cases require a lower maintenance input with a more flexible approach than our traditional amenity grasslands.

Mixtures which have been established during the autumn, for example, are unlikely to require cutting until the following spring. By this time there should be a sufficiently developed sward of companion grasses. This will be growing faster than the flora content of the mixture. To reduce the grass canopy and allow established broad leaved species to develop a cut will be required. The timing of the first cut will depend mainly on the rate of growth of companion grasses.

- The sward should be cut once the height exceeds 10 cm (late March/early April) reducing the height to between 4 to 7cm according to evenness of the ground. The lower the cutting height, the slower the re-growth of grasses.
- A second cut could be required if re-growth exceeds 10cm by the end of April/early May. This will be very much influenced by local growing conditions such as rainfall and ground temperatures. The greatest influence will be soil fertility. Subsoil may not require any more than one cut in comparison to a fertile site, which may need 3 to 4 cuts during the first year.
- In order to maintain species diversity, the cuttings should be removed from site and recycled in a green waste facility. Where wildflower seed mixes are used this is considered an essential requirement to avoid the nutrient build up in the soils which will limit the diversity of the swards proposed.

Autumn Sown				
March/April	Cut to 7cm if required no later than the end of April.			
September/October	Cut to 4-7cm to prevent grasses and annuals out competing perennial species.			
Maintenance thereafter:				
March/April	Cut to 4-7cm to remove excess grass			
.September/October	Cut to 4cm after flowering. In all cases, remove the clippings.			
Spring Sown				
August/Sept/October	Cut to 4-7cm after flowering. (NB: a late spring sowing will result in later flowering)			
Maintenance thereafter:				
March/April.	Cut to 4-7cm to remove excess grass			
September/October	Cut to 4cm after flowering. In all cases, remove the clippings.			

#### **Example Cutting Regimes Based Upon Timing of Initial Sowing**

- If monitoring indicates that the species-richness of the sward is deteriorating, then an altered management technique will be required, and methods to enhance the sward (such as seeding with Yellow-rattle (Rhinanthus minor)) should be considered.
- To maintain the aesthetic appeal of the wildflower grassland regular litter picking should be adopted as part of the overall site management.

## 2.9 Native Woodland Wild Flowers & Grasses

The areas of Native Woodland Wild Flowers & Grasses have been specified primarily to provide a visual and ecological transition between the shorter grass and hedgerows, providing a sward with a greater diversity of species than short grass, with a predominance of wildflowers. Thus providing a species rich habitat / hunting ground for local bird and bat populations.

#### Site Preparation

- No works associated with the creation of native planting and wildflower areas will be carried out until all adjacent construction activities are complete.
- Re-graded areas are to be feathered into the existing levels using subsoil within the upper 300mm (min).
- Adjacent areas which may have been disturbed but have not been regraded, should be stripped of topsoil to 300mm and subsequently deep ploughed to a minimum of 500mm in order to reduce the fertility of the tilth prior to seeding.
- All other undisturbed areas which are to be sown with EM3 Special General Purpose Meadow Seed Mixture, but are not disturbed by any construction activity are to be sprayed with a suitable residual herbicide. After a suitable time period, ie when the sward has died off, the areas should be stripped of topsoil to a depth of 300mm.
- All earthworks including topsoil stripping, subsoil stripping, soil spreading works and cultivation activities, shall only be carried out when the soil is sufficiently dry that no damage to the structure of the soil will result.
- The handling of soil and subsoil generally, should be kept to a minimum.

#### Cultivation

- All areas to be seeded are to be cultivated to create a well broken seed bed, forming a minimum tilth of 25mm which crumbles easily. Stones larger than 70mm in any dimension are to be picked and disposed of in a suitable manner.
- All cultivation works are to be undertaken in late summer prior to the seed being sown.

### Native Woodland Wild Flowers & Grasses Establishment

- If necessary, the cultivated subsoil should be sprayed with a suitable non-selective herbicide to control emerging weeds prior to seeding.
- The Native Woodland Wild Flowers & Grasses seed mix is to comprise Emorsgate Seeds Limited (<u>www.wildseed.co.uk</u>) EW1 seed mix – Woodland Mixture or suitable equivalent.

Wild Flowers				
%	Latin name	Common name		
2	Alliaria petiolata	Garlic Mustard		
0.8	Allium ursinum	Ramsons		
1	Betonica officinalis	Betony		
1	Campanula trachelium	Nettle-leaved Bellflower		
1.5	Digitalis purpurea	Foxglove		
1.6	Filipendula ulmaria	Meadowsweet		
2	Galium album	Hedge Bedstraw		
2.8	Geum urbanum	Wood Avens		
1	Hyacinthoides non-scripta	Bluebell		
0.1	Primula vulgaris	Primrose		
2	Prunella vulgaris	Selfheal		
2.5	Silene dioica	Red Campion		
0.2	Silene flos-cuculi	Ragged Robin		
0.5	Stachys sylvatica	Hedge Woundwort		
1	Teucrium scorodonia	Wood Sage		
20				
Grasses				
10	Agrostis capillaris	Common Bent		
1	Anthoxanthum odoratum	Sweet Vernal-grass (w)		
6	Brachypodium sylvaticum	False Brome (w)		
35	Cynosurus cristatus	Crested Dogstail		
2	Deschampsia cespitosa	Tufted Hair-grass (w)		
26	Festuca rubra	Slender-creeping Red-fescue		
80				

Mixture Composition:

• The sowing rate shall be 4g/m<sup>2</sup>.

- After the first growing season, all seeded areas are to be over seeded with 0.5g/m<sup>2</sup> of yellow rattle in autumn ie after the last cut of the year.
- Seed is to be stored in an appropriate environment prior to seeding. All seed is to be kept free of dampness and fungal growth.
- Seed is to be sown onto the soil surface using appropriate agricultural equipment to ensure an even, well mixed distribution in the autumn or spring, but can be sown at other times of the year if there is sufficient warmth and moisture.
- Sowing will not take place in frozen, excessively wet or drought conditions. After sowing, the ground should be rolled with a Cambridge roller, or equivalent, to ensure good contact with the soil. No fertilisers should be added to any wildflower areas.
- All seeded areas are to be delineated with high visibility tape attached to steel pins to deter any persons or vehicles from accessing or tracking across areas which have recently been seeded.

#### Maintenance Operations

- During the first growing season following an autumn sowing, it is normal for there to be a flush of annual weeds. These can be controlled by topping or cutting as necessary. It is unlikely that the wildflower species will flower during the first growing season as they are slow to germinate, so the priority for the first year is to control any weed growth.
- Prior to the first cut, the meadow should be rolled to reduce the chances of wildflowers being lifted by the cutter.
- When the seed has germinated in the first growing season following the seeding works, the meadow should be allowed to achieve a height of about 100mm before it is cut for the first time.
- The cut should reduce the height of the sward to around 50mm. This will knock back any unwanted weeds (larger weed species such as thistle and dock should be pulled up).
- During the first year the Native Meadow and Grassland should be cut every 6-8 weeks or when it achieves a height of 100mm, whichever is first.
- All cuttings should be removed and disposed of appropriately.
- After the first year, the Native Meadow and Grassland should be cut two times per year, once in mid-summer ie July and once in August/September. This will ensure that the wildflowers are given the best opportunity to grow. Early spring and summer cuts should be avoided to enable the Yellow Rattle to flower and then be cut in July. It will also prevent thistles, docks, brambles and scrub from taking over.
- Cutting should be undertaken using a tractor drawn grass cutter. Cutting should again reduce the height of the sward to 50mm and the 'hay' should be left to dry and shed seed for 1-7 days before being removed from site.
- The marginal areas adjacent to the woodland and trees should be cut using a slightly different regime. Approximately 50% of the margin should be left and the other 50% should be cut. The following year this should be reversed so that the area which was left should be cut and the area which was cut should be left. This cutting pattern should be adopted for the margins which should vary in width by weaving gently between 2 and 5 metres.

## 2.10 Hard Surfaces, Boundary Treatments & Elements

Hard surfaces within this management plan encompass areas of public footpath and boundary treatments within the open space.

- The site should be inspected regularly and any litter removed.
- Any graffiti or vandalism should be removed/rectified as soon as possible, since if it is left unattended the problem tends to escalate.
- All problems with hard elements should be attended to as a matter of urgency.
- Routine maintenance of the hard elements and surfaces should be carried out in accordance with a programme, since this allows budgeting for the work.
- Some weed control will be required on hard surfaces, particularly those which are not sealed (such as areas of compacted gravel). Weed control should be carried out if the surfaces are hazardous for pedestrians or unsightly, but residual herbicides should not be used.
- Elements including all boundary treatments, fences, railings, hard surfaces, board walks, street furniture and lighting should all be inspected regularly for defects, damage, trip hazards and vandalism in accordance with manufacturer's recommendations. Repairs and replacements should be carried as a matter of urgency to maintain site safety.
- Drainage channels should be kept clear of silt and other debris throughout the year.

## 3.0 Routine operation schedules

The schedules are compiled for the annual maintenance of each of the landscape elements identified in Section 2.0, refer to document M3570-MS-2408-V01 Open Space Landscape Management Schedules for details.

The frequency and timing of most landscape maintenance operations will depend upon the weather and growing conditions. The operations described are therefore for guidance only, and should be carried out according to the requirements of the site conditions and therefore not treated as a rigid programme.

If maintenance is undertaken by an external contractor, payments should be linked to work <u>actually</u> completed, rather than paying an unvarying monthly maintenance sum which is a twelfth of the total. In this way, expenditure will match the requirements of the site more accurately. All operations should therefore be regarded as provisional items. Whether specific operations are carried out should be judged against the conditions on site at the time.

### **Further Information**

If any additional information or advice is required regarding the landscape design intentions or maintenance requirements please contact the designer Barnes Walker Ltd. 0161 946 0808