BMD

KEYSOURCE, TELEDATA MAN2

5 YEAR LANDSCAPE MAINTENANCE & MANAGEMENT PLAN

170188-BMD-XX-XX-RP-L-000001

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1. Introduction

Purpose of the Document

This Landscape Maintenance and Management Plan (LMMP) has been prepared on behalf of Keysource in support of landscape proposals for the development at Teledata MAN2.

The purpose of this document is to provide a maintenance and management plan that can be utilised for the establishment over the first five year period. After this time, this document and the key objectives set out within it, can then be used to help inform the long term maintenance and management strategy for the site.

Associated Documents

This document has been informed by and should be read alongside the following drawing:

- 170188-BMD-XX-00-DR-L-000001 Rev E General Arrangement & Planting Plan

Management Responsibilities

The establishment maintenance period and associated operations outlined in this report will run for a minimum of five years commencing on the date of certification of Practical Completion. For a period after certification of Practical Completion, maintenance will be undertaken by the Landscape Contractor responsible for the implementation of these works. This maintenance period will run concurrently with the Rectification Period. During this time the Landscape Contractor responsible for implementing the works will be liable for any failings or defects in accordance with the landscape plans.

The rectification periods will be:

- Grasslands: 12 months
- Native Planting: 12 months
- Standard Trees: 24 months

After certification of Final Completion (typically 12 months after certification of Practical Completion), Keysource will appoint an Estate Management Company who will be responsible for ensuring the landscape is maintained in accordance with the recommendations of this document.

At the end of the five year establishment maintenance period, the appointed Estate Management Company will use operations prescribed by this document to inform the management of the scheme in perpetuity, taking into consideration the long term objectives set out overleaf.

Key Objectives

The establishment and future success of the soft landscaping around the development is largely dependent on the standard and frequency of the maintenance and management it receives.

Key objectives for maintenance and management include:

- To create a well established landscape to the perimeter of the development, which will assist in softening the views into the site;
- To promote species diversity within the tree, shrub and grassland species set out within the scheme;
- To enhance the site for local wildlife by providing ecological enhancements areas for birds and insects;
- To ensure the successful establishment and continued growth through to maturity of the trees and other planting identified on the Landscape Proposals;
- To manage the landscape in a manner which ensures the safety of site users, such as avoiding low hanging branches on trees for visibility and to avoid any security issues;
- To manage the landscape to ensure the removal of dead, dying or diseased trees and plants, when necessary;
- To monitor and review the maintenance regimes and adapt accordingly to external factors; and
- To utilise skilled operatives and supervisors to deliver high quality installation and management regimes.

Relevant Standards

Design, specification, implementation, maintenance and management operations should be undertaken in accordance with the following British Standards:

- BS 3998: Tree Work - Recommendations
- BS 5837: Trees in relation to design, demolition and construction
- BS 7370-1: Grounds maintenance. Recommendations for establishing and managing grounds
- BS 7370-4: Grounds maintenance. Recommendations for maintenance of soft landscape
- BS 8516: Recommendations for tree safety inspection
- BS 8545: Trees from nursery to independence in the landscape

2. Existing Trees

During the Establishment Maintenance Period (5 years)

To maintain access around the building and ensure the existing trees are maintained in good health, they will be monitored and managed accordingly. The Landscape Contractor responsible for implementing the soft works will undertake the following operations during the establishment period of the landscape scheme. After certification of Final Completion, Keysource or their appointed Estate Management Company will be required to carry out these operations for the remainder of the establishment maintenance period.

- Remove any litter to maintain a clean and tidy site;
- Remove any items that have been attached to trees;
- Prune trees to remove dead, dying or diseased wood;
- Remove suckers/ epicormic growth and formatively prune (if necessary) to achieve natural shape;
- Undertake an assessment of any trees that are deemed unsafe or failing. Note: Confirm with an Arboriculturalist prior to removal;
- Monitor the presence of any invasive species or diseased wood and address according to guidance;
- Undertake any tree maintenance operations outside of the bird nesting season (March to September). If work is deemed necessary within this time, a qualified ecologist will carry out checks prior to work commencing;
- Remove any overhanging branches of existing trees that will conflict with main access routes. Should there be a delay in removing these branches, they should be cordoned off.

Maintenance Schedule

The below schedule includes the initial maintenance operations as well as long term maintenance requirements. The frequency and timings of each operation has been indicated for a typical annual cycle or as required.

		Time of year when maintenance operation is required or number of operations required											
Maintenance Operation	Frequency	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Health and safety assessment of existing trees	1 x Annually		1										
Pruning works	Annually												
Removal of items attached to trees	As required	All Year											
Removal of litter	As required at each visit												
Inspect trees for pests and diseases	2 x Annually	1						1					
Inspect trees for nesting birds prior to any remedial action being undertaken	As required												

Long Term Management (year 6 onwards)

It is recommended that Keysource or their appointed Estate Management Company undertake the relevant long term maintenance operations listed in the maintenance schedule and use these as a basis for a long term management plan / strategy, including the ongoing inspection and maintenance requirements.

The type, extent and frequency of maintenance operations to be undertaken in the long term are subject to review and should be monitored in perpetuity to align with the design and management objectives.

3. Tree Planting

Establishment Maintenance Period (5 years)

To ensure their survival and optimal development, proposed trees will be subject to intensive establishment maintenance. The Landscape Contractor responsible for implementing the soft works will undertake the following operations as necessary after Practical Completion for a period of 24 months. After certification of Final Completion, Keysource or their appointed Estate Management Company will be required to carry out these operations for the remainder of the establishment maintenance period.

- Maintenance of a weed free area around the base of each tree;
- Watering to ensure moisture levels are maintained appropriate for optimum growth;
- Application of a slow release fertiliser around the base of all trees, if required following soil fertility testing, to ensure soil fertility is maintained;
- Remove any vandalised, unhealthy or dead specimens as soon as possible and replace with trees of the same size to those adjacent, during the next available planting season;
- Inspection, adjustment and maintenance of stakes and ties;
- Re-firming of trees after strong winds, frost heave or other disturbances;
- Pruning to remove dead, dying or diseased wood;
- Remove suckers / epicormic growth and formatively prune if necessary to achieve natural shape, healthy growth and to favour a single leader;
- Topping up mulch at the end of the rectification period to achieve a 75mm layer; and
- The formative pruning of specimens to achieve optimum growth rates and maintain a good shape, clear of any access routes.

Maintenance Schedule

The below schedule includes the initial maintenance operations as well as long term maintenance requirements. The frequency and timings of each operation has been indicated for a typical annual cycle or as required.

		Time of year when maintenance operation is required or number of operations required											
Maintenance Operation	Frequency	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Weed control around base of each tree	4 x Annually				1		1		1		1		
Re-firming of trees	As required	All Year											
Apply slow release fertiliser to base of tree	Annually			1									
Formative pruning for optimum growth (as required)	Annually												
Removal of litter	As required at each visit												
Pruning (general)	As required												
Replace damaged / vandalised / unhealthy stock	Annually												
Watering of area to ensure moisture levels are appropriate	As required												
Top up mulch	1 x Annually			1									
Drainage Inspection	As required	All Year											
Check for nesting bird presence prior to any necessary remedial action.	As required												

Long Term Management (year 6 onwards)

It is recommended that Keysource or their appointed Estate Management Company undertake the relevant long term maintenance operations listed in the maintenance schedule and use these as a basis for a long term management plan / strategy, including the ongoing inspection and maintenance requirements.

The type, extent and frequency of maintenance operations to be undertaken in the long term are subject to review and should be monitored in perpetuity to align with the design and management objectives.

4. Native Hedgerows

Establishment Maintenance Period (5 years)

To ensure the successful establishment of species rich native hedgerows within the landscape, the Landscape Contractor responsible for implementing the soft works will undertake the following operations as necessary for a minimum of 12 months after Practical Completion. After certification of Final Completion, Keysource or their appointed Estate Management Company will be required to carry out these operations for the remainder of the establishment maintenance period.

- Control and removal of weeds;
- Re-firming of plants/ trees after strong winds, frost heave or other disturbances;
- Monitoring of plants and if they show signs of nutrient deficiency, a slow release fertiliser will be applied (to the manufacturer's recommended rates);
- Pruning to remove dead, dying or diseased growth. Remove any failed, vandalised, unhealthy or dead specimens as soon as possible and provide replacements of the same size to those adjacent, during the next available planting season;
- Native hedgerow plants will be protected against pest damage using biodegradable tree guards, and maintained for no less than 5 years after planting. A weed-free zone under the base of all hedges will be maintained for a width of 500mm to either side of the centre line, using selective herbicide or mulch, as required;
- Newly planted native hedgerows will be trimmed annually in order to train them into a good shape, encourage bushy growth and maintain a neat appearance. Native hedges will be maintained at a maximum height of 1.5m. Native hedgerows to be cut to form a flat topped 'A' shape. Care must be taken to ensure no damage is caused to trees planted within the hedge line during cutting operations. All native hedgerows will be trimmed between January and February, allowing the majority of hedgerow fruits to be eaten by birds and other wildlife prior to cutting;
- Watering of plants to ensure moisture levels are maintained appropriate for optimum growth;
- Removal of litter from all planting beds to maintain site in a tidy condition;
- Mulch levels will be topped up to 75mm depth annually.

Maintenance Schedule

The below schedule includes the initial maintenance operations as well as long term maintenance requirements. The frequency and timings of each operation has been indicated for a typical annual cycle or as required.

		Time of year when maintenance operation is required or number of operations required											
Maintenance Operation	Frequency	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Weed control around base of hedgerows	4 x Annually				1		1		1		1		
Re-firming of hedgerow plants	As required	All Year											
Trimming & cutting native hedgerows Do not cut hedgerow trees	Annually												
Replace damaged / vandalised / unhealthy stock	Annually												
Watering of areas to ensure moisture levels are appropriate	As required												
Removal of litter	As required at each visit												
Top up mulch	1 x Annually			1									
Check for nesting bird presence prior to any necessary remedial action.	As required												
Check for pests and diseases on hedgerows	As required												

Long Term Management (year 6 onwards)

It is recommended that Keysource or their appointed Estate Management Company undertake the relevant long term maintenance operations listed in the maintenance schedule and use these as a basis for a long term management plan / strategy, including the ongoing inspection and maintenance requirements.

The type, extent and frequency of maintenance operations to be undertaken in the long term are subject to review and should be monitored in perpetuity to align with the design and management objectives.

7. Wildflower Meadow Grassland

Establishment Maintenance Period (5 years)

To ensure the successful establishment of the Hedgerow edge wildflower meadow areas, the Landscape Contractor responsible for implementing the soft works will undertake the following operations as necessary for a minimum of 12 months after Practical Completion. After certification of Final Completion, Keysource or their appointed Estate Management Company will be required to carry out these operations for the remainder of the establishment maintenance period.

- Regular mowing (every 6-8 weeks) until autumn within the first growing season to height of 50-100mm;
- Post first year, meadow to be cut to a height of 50-100mm both in May or June and September or October. Cut in only in dry periods of weather to avoid compaction of wet soils;
- Trim edges to hard standing & native hedgerow;
- Remove any undesirable or residual perennial weed species by hand and dispose of offsite;
- Water to ensure moisture levels are maintained appropriate for optimum growth;
- Repair damaged or failed areas by re-seeding and top dressing;
- All mowing arisings are to be left in situ to shed seed for a period of 5-7 days before removal to a suitable licensed facility;
- Remove litter to maintain the site in a tidy condition;and
- Review establishment of grassland within shaded areas.

		Time of year when maintenance operation is required or number of operations required											
Maintenance Operation	Frequency	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Mowing in first growing season	As required					■	■	■	■	■	■		
Cutting after first growing season	2 x Annually					■	■			■	■		
Trim edges to hard standing and tree mulch circles	As required					■	■			■	■		
Replacement of damaged or worn grass areas by seeding and top dressing	As required			■	■	■	■	■	■	■	■		
Weed removal by hand and dispose of offsite	As required			■	■	■	■	■	■	■	■		
Watering of area to ensure moisture levels are appropriate	As required				■	■	■	■	■	■			
Repair of damaged & failed areas	As required			■	■					■	■		
Removal of Litter	At time of each visit			■	■	■	■	■	■	■	■	■	

Long Term Management (year 6 onwards)

It is recommended that Keysource or their appointed Estate Management Company undertake the relevant long term maintenance operations listed in the maintenance schedule and use these as a basis for a long term management plan / strategy, including the ongoing inspection and maintenance requirements.

The type, extent and frequency of maintenance operations to be undertaken in the long term are subject to review and should be monitored in perpetuity to align with the design and management objectives.

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