

**Landscape Management &
Maintenance Plan**
Phase 1, Catalyst, Bicester

for Albion Land
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RF18-598-R-02-PL02

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1. Introduction

- 1.1. This Landscape Management Plan sets out the management and maintenance requirements for the first phase of the site at Catalyst, Bicester. The purpose of this management plan is to aid the efficient and effective management of the site, to ensure the healthy establishment of all planting types and to preserve the design intent for the first five years after planting.

2. Site description

- 2.1. The site is located to the southern edge of Bicester, Oxfordshire. The site is bounded by Wendlebury Road to the west, Bicester Avenue home and garden centre to the north, and agricultural land enclosed by hedgerows to the east and south.
- 2.2. The site is currently agricultural land and comprises of open fields separated with native hedgerow and incidental tree planting. To the east and south of the site is open pasture and farmland, bounded by hedgerows and occasional mature tree planting.
- 2.3. The Phase 1 proposals comprises B2 employment buildings, including parking and service areas; a new access off Wendlebury Road, internal roads, and footpaths; landscaping, including green infrastructure and SUDs provision (swale) as part of a flood compensation area.

3. Objectives

- 3.1. The aims of the management plan are:
 - Provide a quality landscape setting to the new development
 - Conserve and enhance ecology and biodiversity
 - Ensure healthy establishment of the proposed planting
 - Establish important areas of green infrastructure within the new development
- 3.2 All maintenance operations are to be in accordance with BS7370-4: 1993 *Grounds Maintenance: recommendations for maintenance of soft landscape* other than amenity turf.

4. Phasing

- 4.1. The site will be delivered in phases, including an initial enabling phase. This management plan covers landscape management planting for Phase 1 as per re-form Landscape Architecture's Planting Plans RFM-XX-00-DR-L-0001 and RFM-XX-00-DR-L-0002.
- 4.2. The 'Enabling Phase' allows for the removal of existing trees and hedgerows to facilitate the start of the construction works. All existing trees and hedgerows will be protected according to BS 5837:2012 'Trees in relation to construction'.

5. Soft Landscaping & planting

5.1. This management plan is to be read in conjunction with the following drawings by re-form Landscape architecture:

- RFM-XX-00-DR-L-0001 Phase 1 Planting Plan 01
- RFM-XX-00-DR-L-0002 Phase 1 Planting Plan 02

5.2. All maintenance operations are to be in accordance with BS7370-4: 1993 *Grounds Maintenance: recommendations for maintenance of soft landscape* other than amenity turf.

5.3. The proposed soft landscape and planting consists of:

- General tree planting:
Native tree species in a range of sizes: semi mature, extra heavy standard and standard trees. This will include deciduous and evergreen species.
- General native woodland planting:
In conjunction with larger trees, a native woodland mix of transplants, whips and feathered trees shall be provided at an average rate of 1 plant/1.5m². This will form bands of native vegetation comprising both tree and shrub species, including deciduous and evergreen species. Native transplant and whip species will be spread evenly throughout the woodland planting area to maximize cover for visual mitigation and amenity.
- Native shrub planting:
Within more open areas around the access road, generously spaced trees are located within areas of native woodland shrubs planted in swathes at 1500mm centres.
- General amenity shrub planting:
This will comprise a variety of robust & hardy groundcover and low level (below 1.2m mature height with some specimen/accent plants, all requiring minimal maintenance. There will be a predominance of amenity shrub planting with a high proportion of evergreen and flowering species to give year round structure and interest
- Meadow seed mix to swale:
Wet tolerant wildflower meadow grass is used to the proposed swale. This mix will be appropriate for seasonally wet soils in the swale.
- Amenity grass:
Some areas of amenity grass will be provided for verges adjacent to road and footways through the site.
- Soils:
Suitable quality topsoil shall be provided to the following depths:
Native woodland planting (transplants & whips) Planted areas – 300mm
Meadow grass to swale – 100mm low nutrient

Amenity shrubs – 400mm
Amenity grass – 150mm

6. Management Plan

6.1. General preamble

- **Duration of plan:**
There will be a provision of 25 years for plant establishment, maintenance and replacement. The duration of the management plan is to be confirmed within a detailed Management Plan to be provided by the client following practical completion of the landscape works.
- **Area:**
The management plan applies to all external areas within the Phase 1 boundary as shown on drawings RFM-XX-00-DR-L-0001 and RFM-XX-00-DR-L-0002.
- **Visits:**
The contractor shall notify the Client 48 hours prior to any visits to confirm suitability of time and works to be undertaken to avoid disruption to the Client's activities.
- **Specification and planting stock:**
Any replacement planting required during the period of the management plan should be undertaken in accordance with the Landscape Specification as part of the building works. All plant stock should comply as follows:
 - 6.1..1. All plants are to be supplied in accordance with Horticultural Trade Association's National Plant Specification and from a HTA certified nursery. All plants and trees to be planted in accordance with BS3936. Delivery and backfilling of all plant material to be in accordance with BS4428:1989 'Code of practice for general landscape operations' and CPSE Code of Practice for 'Handling and Establishing Landscape Plants, Parts I, II and III'.
 - 6.1..2. The supply and aftercare of trees will be in accordance with BS8545:2014
 - 6.1..3. All excavated areas to be backfilled with either topsoil from site or imported to be BS3882 – General purpose grade. All topsoiled areas to be clear of rocks and rubble larger than 50mm diameter and any other debris that may interfere with the establishment of plants.
 - 6.1..4. Existing trees and hedgerows to be retained shall be protected in accordance with BS5837, from commencement to completion of all works on site.

6.2. Machinery and Tools

Use only machines and tools suitable for the site conditions and the work to be carried out. Use hand tools around trees, plants and in confined spaces where it is impracticable to use machinery. The use of trimmers is not permitted around tree stems below 8-10cm in girth.

6.3. Chemicals

- Legislation

Pesticides include herbicides, insecticides, fungicides and plant growth regulators. The use of pesticides is governed by legislation. The Landscape Contractor must comply with the 'The Control of Pesticides Regulations 1986' made under the 'Food and the Environment Protection Act 1985', 'The Control of Substances Hazardous to Health Regulations 1988' made under the 'Health and Safety at Work Act 1974' and any other legislation enacted during the contract period.

All pesticides must be products on the current list of Agricultural Chemicals Approval Scheme. All pesticide users shall comply with the conditions of approval relating to use clearly stated on the product label.

The Contractor must comply with all relevant Codes of Practice issued by DeFRA. In particular, where work is near water, comply with the 'Code of Practice for the Use of Herbicides on Weeds in Watercourses and Lakes'. Written approval from the Environment Agency should be obtained prior to the use of pesticides within these areas.

Wherever practical, other non-chemical means of plant removal should be used in consultation with the Environment Agency.

- Use of pesticides

The Contractor shall keep a written logbook detailing all uses and pesticide applications carried out.

The Contractor is required to notify the public of any pesticide application. A warning sign shall be posted on the railing to any public routes. Where contained solely within planting beds the sign shall be placed adjacent to edges in noticeable positions. Details of the application and a contact person shall be indicated on the sign.

The Contractor shall in accordance with COSHH Regulations protect employees and other persons, including the public, who may be exposed to substances hazardous to health.

6.4. General planting maintenance (1 to 25 years)

- Failures of planting: general

Any trees/shrubs/plants that have died or failed to thrive (not developing full foliage throughout all branches) within the period of this maintenance plan should be replaced.

Years 1 – 3:

Replacements must match the size of adjacent or nearby plants of the same species or should match the original specification, whichever is the greater.

Years 4 – 25:

Replacements to be as original specification. Replacements of tree species left to grow to maturity, after thinning at years 7 – 10 must be to original specification.

- Watering: general

The contractor shall make due allowance in his rates for carrying out these tasks outside normal working hours when necessary to avoid premature evaporation or leaf damage caused through watering in bright sunlight.

The contractor is to allow for the provision of water, water carts or hoses with a fine hose attachment or sprinklers at normal mains pressure. The contractor is to include and state in his tender the cost of compliance with this clause so that the cost of visits can be deducted in whole or in part if not required to be used.

Drought Conditions:

Should emergency legislation restricting the use of water during drought conditions be imposed, the contractor will be required to ascertain — before operations — the availability and cost of, and arrange to collect and apply second class water by bowser or other means from an approved sewage works, deliver to site and apply as specified. When required by the Architect, the contractor shall arrange for tests of this water to be carried out in accordance with BS 6068:2000 Water Quality.

- Pests and Diseases: general

Maintenance shall include the control of insects, fungus and disease by spraying with an approved insecticide or fungicide.

- Litter Collection: general

The contractor shall at all times keep the site clean, tidy and free from litter and carry out a litter collection at each maintenance visit.

'Litter' is anything whatsoever that is thrown down, dropped or otherwise deposited in onto or from any place in the open air to which the public are permitted to have access without payment.

'Fly tipping': large items such as discarded furniture that require two or more people to lift or are in excess of 0.5m³ will be treated as fly tipping and not litter. The contractor should provide a cost for removal and depositing for fly tipping on each and every occasion.

The contractor shall take care to avoid any spillage of fuel, oil, chemicals or other materials toxic to plant life. Plants or soil contaminated by such material must be removed off site and replaced.

- Cleanliness: general

At completion and at each visit, remove soil and other debris from all hard surfaces and grassed areas and leave the works in a clean and tidy condition.

- Leaf Clearance: general

The contractor is responsible for the clearance of leaves, twigs, etc from all areas of the grounds including planting beds, lawns, paths, channels, drains, car park steps and other areas specified by the Client, from leaf fall (normally October until end December). The Client will instruct the contractor when to begin.

The clearance shall be carried out with hand raking or sweeping, or using machinery appropriate and approved by the Client.

All collected leaves to be removed from site and should not be left in piles awaiting removal but cleared immediately.

Leaves should not be left on ground for more than a week. The contractor shall schedule operations to achieve this standard.

- Management of proposed tree planting

General Health of Trees, Years 1, 3 and 5:

Check general health of all trees by qualified arboriculturalist. Recommendations will be made for replacements and remedial works as required.

In order to ensure that trees do not become hazardous, the condition of all trees at the site should be checked annually. Trees should also be checked following storms, where there may be damage from wind throw.

Deciduous trees are often vulnerable to diseases caused by pathogens, fungi, bacteria and viruses. Trees should be monitored for signs of diseases, which may include visible mushrooms and patchy and discoloured leaves. Where it is suspected that a tree may be suffering from a disease advice should be sought from an Arboriculturalist.

Hazardous branches or mature trees that are to be removed must be surveyed for potential birds' nests or bat roosts prior to felling. Trees and hazardous branches should only be removed outside the bird-breeding season, between March and August for most species, unless a suitably qualified ecologist undertakes a survey of the affected area.

All tree surgery works should be undertaken by a professional tree surgeon who should work in accordance with BS 3998:1989 'Recommendations for Tree Work'.

Inspection of trees:

Arboricultural inspections and works are to continue up to the 25 years and beyond. They will address wind damage, disease, dead wooding and tackling windblown trees.

- Newly Planted Trees

Trees to be compliant with BS8545: 2014 *Trees: from Nursery to independence in the landscape – Recommendations*.

1. Staked trees will be inspected at each maintenance visit, and any trees which have died or are excessively damaged will be removed from site, complete with the stake, and the ground reinstated.
2. Irrigation timing and frequency will take into account the prevailing weather conditions, soil moisture release, response of the tree species to water deficits or prolonged soil saturation. The holding capacity of the soil and amount of water available to the tree to be assessed at each visit. Frequency of watering is more important than the volume and should be undertaken as required.
3. Monitoring is recommended when 10 consecutive days at 25 degrees is recorded during the growing season. Water should only be added if the probe / tensiometer values indicate that it would be appropriate to do so.
4. Mulched areas around trees will be maintained to an acceptable standard (see details on mulching standard set out below in reference to ornamental shrub planting).
5. At the start and end of each growing season all stakes, ties and guying systems will be inspected. Any looseness, constriction or abrasion will be corrected by adjustment or replacement as necessary. Where the support of a stake is no longer required the stake will be removed from site.
6. All trees to be formatively pruned in accordance with BS3998: 2010 to prevent unhealthy growth and future failures.

7. Any trees which have died as a result of the Contractors operations or omissions will be replaced by the Contractor at their expense during the next planting season.

8. Where the appointing authority has agreed that plant deaths have arisen due to circumstances out of the control of the Contractor, replacement planting will be instructed by the appointing authority and paid for at an agreed rate.

9. A formal assessment of tree health and development carried out annually, foliar appearance assessment necessary (lack of leaf chlorosis and/or necrosis), leaf size and leaf canopy density, extension growth and incremental girth development.

General tree maintenance & establishment:

Watering: Year 1 and 2 – Establishment

Between May and September all newly planted trees shall be watered at a rate of 50 litres per visit.

Mulching and weeding: Years 1-3

Maintain a mulched, weed-free area 500mm radius around each tree. Mulch should be maintained at a depth of 75mm deep. Weeding within this zone should be hand-weeding which should be done as often as required or through the use of biodegradable mulch.

Inspection of stakes, ties etc. Years 1-3

Twice a year check condition of stakes, ties, guys and guards.

Redundant ties: Check for excessive movement at ground level by pulling on tree at shoulder height. If most of movement is in the bending of the stem then it is likely that the root system is providing adequate support and stakes and ties can be removed.

Adjustment and/or replacement of ties:

Trees should be able to move approximately 50mm (2”) in all directions when staked properly. Too little movement may result in poor root structure and inability to withstand wind loading. Too much movement may cause rocking and damage of new root growth. Ties should not rub bark. Ties should be loosened, tightened or replaced as required.

Stakes to be removed after the third winter from time of planting, unless further tree stabilisation is required.

Re-firming Trees and Specimen Shrubs:

Re-firming Trees and Shrubs – shall be carried out after strong winds, frost heave and other disturbances. To re-firm the Contractor should tread around the base until firmly bedded. Any collars in the soil at the base of tree stems, created by tree movement should be broken up by fork, avoiding damage to roots. The voids should be backfilled with topsoil and re-firmed.

- Pruning newly planted trees: Years 1 onwards

Prune at appropriate times, to remove dead, dying, damaged and diseased wood along with crossing branches (where branches are rubbing together) in accordance with BS 3998: 1989, to promote healthy growth and natural shape. Trees should be allowed to grow to their natural mature height. Pruning shall only be carried out to remove dead, diseased or dying branches.

All trees shall be cut using sharp shears, reciprocating hand held cutters or secateurs.

All cuts shall be clean and any ragged edges shall be removed using a sharp knife or secateurs. Keep wounds as small as possible, cut cleanly back to sound wood leaving a smooth surface, and angled so that water will not collect on the cut area.

All arisings shall be collected immediately following cutting or at the end of each work period and taken to the designated location for disposal.

The Contractor shall ensure that trees do not present a hazard or obstruction to pedestrians, pavements, roads or signs at any time.

Once commenced, the cutting operation shall continue and be completed without delay.

The Contractor shall avoid cutting/pruning in March to June to cause minimum disturbance to nesting birds and wildlife, in compliance with the Wildlife and Countryside Act.

- Disease of fungus

Give notice if detected. Do not apply fungicide or sealant unless instructed.

- Watering

Water throughout the growing season in line with the maintenance schedules.

- Thinning Out

The object of the native woodland planting is to encourage full woodland growth to encourage the screening of large units. Trees shall be checked from 3 years to ensure healthy growth. Vigorous deciduous trees in the native woodland mix shall be thinned out after 7 to 10 years to allow slower growing species to reach their full height.

The following species are to be allowed to grow onto maturity:

Acer campestre
Pinus sylvestris
Prunus avium
Quercus robur

These species are to be spread evenly throughout the woodland to achieve desired coverage as set out in the planting matrix. Trees that are over shadowing these species shall be selected and removed to the base. Any encroaching vegetation adjacent to public rights of way will be thinned out in order to maintain width and sightlines.

- Mulching
All mulch beds to tree planting to be topped up in line with the maintenance programme
- Protection
All planting shall be suitably supported during the establishment period and protected from damage caused by animals e.g. rabbits

6.5. Management of native shrub mix

- Watering

Water as necessary through the growing season in line with the maintenance schedules.
- Cutting back/foilage removal

Native shrubs to be maintained at maximum 1.8m height. Plants should be cut twice a year in the spring and summer to promote healthy growth and maintain a neat, dense form.

6.6. Management of grass

- Mowing

For first year of management mow regularly throughout the first year of establishment to a height of 40-60mm, removing cuttings if dense. This will control annual weeds and help maintain balance between faster growing grasses and slower developing wild flowers.

For future years:

Swale meadow mix:

Grass to be cut back once a year in late August and early September, left for a minimum of 3 days and then arisings removed, thus allowing the majority of the grassland plants to bloom and set seed.

Amenity grass verges:

Grass to be cut to height of 50mm monthly during growing season with arisings to be removed.

- Weeding

Weeds, over 100mm in height in late May, that do not form part of the seed mix should be removed from site.

- Re-seeding

Bare patches to be re-seeded annually in September as per the original specification. If bare patches appear, do not top dress with topsoil and do not apply fertiliser. Add grass seed as per original specification.

6.7. Amenity shrub planting

- Watering: Year 1 – Establishment

Between May and September of the first year shrub beds will be watered on each visit if there has been no rainfall for a period of seven days. Shrub areas should be watered at a rate of 15 litres per square metre. During subsequent years watering should be undertaken as necessary.

- Weeding and mulching: Years 1-25

Shrub beds should be weeded monthly during the growing season, March to October inclusive, utilizing the following methods:

Ornamental shrub & perennial areas - Hand pulling only

General amenity shrub areas - Hand pulling or herbicide spot treatment

Use only an approved herbicide in accordance with manufacturer's instructions. Care should be taken not to spray the green parts of shrubs or low ground cover planting. All weeds are to be removed from site once they have died down.

Remulch as necessary the whole surface of shrub beds to ensure a depth of 75mm. Ensure that the soil is thoroughly moistened prior to remulching, applying water where necessary.

- Fertiliser: Years 1-3

Annual application of a slow release organic fertilizer in accordance with manufacturer's instructions.

- Protective fencing: Year 1

Where newly planted areas are protected with Chestnut Paling fencing. Maintain fencing until end of Defects period then remove and reinstate ground. Make good any damage to planting until area is accepted. The fencing will remain the property of the Contractor.

- **Pruning: Years 1-25**
Shrub plants should be pruned at appropriate times, to remove dead or dying and diseased shoots or branches, to promote healthy growth and natural shape. Prune overgrowing specimens to avoid suppression of adjacent species, overgrowth onto grass or paving etc. Ensure that shrubs are maintained at a maximum of waist height.

All shrubs shall be cut using sharp shears, reciprocating hand held cutters or secateurs. Large leafed species such as Prunus should only be pruned using secateurs or similar approved equipment. All cuts shall be clean and any ragged edges shall be removed using a sharp knife or secateurs.

All arisings shall be collected immediately following cutting or at the end of each work period and taken to the designated location for disposal off site by the contractor. This includes trimmings hung up in shrubs and the sweeping of adjacent hard surfaces.

Once commenced, the cutting operation shall continue and be completed without delay.

- Maintenance of shrub area base

The Contractor shall be required to leave the base of the shrub beds clean, tidy and weed free on every occasion that maintenance operations are carried out, and this shall include the removal of all litter, leaves, debris and other such deleterious matter. The site shall be left clean and tidy.

All beds and bare areas shall be maintained free of litter and weeds at all times.

Bed soil shall be pushed back and left at a 45-degree angle from the bed edge, starting slightly below surrounding levels.

7. Maintenance schedule

On following page. All landscape maintenance operations will be carried out in accordance with Landscape Services' Technical Specifications, as a requirement of the 106 Agreement. This is to ensure that the appropriate standard of landscape maintenance is achieved.