

# **GREEN INFRASTRUCTURE MANAGEMENT PLAN**

**LONDON 4**

**HAYES**

**COLT DATA CENTRE SERVICES**



**Barry Chinn Associated Limited**

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Southam, Warwickshire, CV47 2SZ

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## **MAINTENANCE AND MANAGEMENT STATEMENT**

The establishment and future success of the external landscape is largely dependent on the standard and frequency of the subsequent maintenance and management it receives. Throughout the development period and thereafter a maintenance and management regime will be adopted with the following aims and objectives.

The aims and objectives of the landscape maintenance and management will be:

- To ensure the successful establishment and continued growth through to maturity of the Soft Landscape scheme shown on drawing no. 2179/21/01 Rev F Soft Landscape Concept Layout.
- To ensure that the landscape at London 4 develops in a manner commensurate with the original design intentions.
- To ensure that the maintenance and management of the soft landscape areas is commensurate with achieving ecological benefit.
- To ensure the successful establishment and retention of effective landscape buffer and screening particularly adjacent to the eastern and southern boundaries of the site,
- To secure a long term future for the existing retained trees and new tree and thicket planting with particular emphasis upon achieving enhancement of ecological potential, conservation and visual amenity.
- To achieve rapid establishment of the plant material with resultant total ground cover, thereby suppressing weed growth and reducing maintenance requirements.
- To retain the natural growth form and maximise the seasonal potential of individual species by the pruning methods adopted.
- To maintain site security, avoiding obstruction of security cameras and keeping necessary clearance distances from site fencing.
- To manage the landscape in a manner convivial with the safety of site users, such as maintaining visibility splays, preventing overhanging or obstruction of pedestrian routes and the removal of dead, dying or diseased tree branches.
- To ensure the successful establishment and continual enhancement of the landscape across the site and particularly adjacent to the Yeading Brook, in accordance with ecological principles to increase the overall bio-diversity of the site.

The soft landscape will, for the initial 1 year after Practical Completion, be maintained by the Landscape Contractor responsible for implementation of the works. The contract will include a defects liability clause to ensure replacement planting is carried out and successful establishment achieved. Refer to Appendix A for the schedule of maintenance for year 1. Thereafter maintenance contracts will be organised by facilities management on an annual basis.

The maintenance and management matrix (Appendix B) provides information on the general techniques and methods to be adopted for the ongoing maintenance operations.

These will be reviewed at regular intervals to respond to natural or man-made changes in the environment which affect the landscape types (eg. tree disease) and maintenance of the necessary site

security arrangements. Management will also be reviewed on a semi-regular basis by the developer's ecologist or landscape management team in order to ensure that biodiversity gains (particularly along the river corridors) are realised in the long-term, with iterations made to this management plan if and when required. The guiding principle of management is to realise overall ecological gains and to ensure structural diversity across the site in order to provide opportunities for the greatest range of species.

The above approach will ensure that the quality of the landscape infrastructure created in the early years can be maintained for the benefit of visitors to the London 4 site as well as providing a benefit to persons who live near and pass by the boundaries. In addition it will ensure that the landscape develops to maximise the ecological potential of the proposals.

## **APPENDIX A**

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### **YEAR 1 MAINTENANCE SCHEDULE**

	<b>YEAR 1 LANDSCAPE MAINTENANCE SCHEDULE</b>	<b>FREQUENCY</b>
	<b>DESCRIPTION</b>	
	During the initial twelve month period after Practical Completion.	
	Note: Allow for twenty-two maintenance visits (18 during the growing season, 4 during the dormant season). A visit shall be defined as the period of time required by the Contractor to carry out all maintenance items specified in the Schedule of work below.	
<b>A</b>	<b>GENERAL</b>	
A.1	Tidy up areas removing rubbish, litter, etc., from planted and grassed areas.	At each visit
A.2	Check that the plant material is firmly planted and firm in where required.	6 times
A.3	Treat pests and diseases by agreement with the Contract Administrator.	As necessary
A.4	Prune woodland transplants / shrubs as necessary to avoid conflict with footpaths, grass mowing, etc.	As necessary
A5	Check for possible invasive species particularly along the river embankments	
<b>B</b>	<b>TREE PLANTING</b>	
B.1	To extra heavy standard/heavy standard trees: Check, adjust and replace stakes and ties as necessary. Prune, water and feed where required. Check underground guying to semi-mature trees.	As necessary
B.2	Check spiral guards and replace when required.	Four times
<b>C</b>	<b>THICKET / NATIVE HEDGE PLANTED AREAS</b>	
C.1	Keep areas clear of weed growth by spot herbicide treatment as appropriate from mid-April to late September.	Four times
C.2	Check shelter guards and refirm / replace when required. Remove weed growth from within.	Four times
C.3	Prune native hedges as necessary to maintain desired height and encourage establishment of bushy growth as shown on the drawing.	As necessary

	<b>YEAR 1 LANDSCAPE MAINTENANCE SCHEDULE</b>	<b>FREQUENCY</b>
<b>D</b>	<b>SHRUB PLANTED AREAS</b>	
D.1	Water ornamental shrub beds to maintain healthy growth.	As necessary
D.2	Prune shrubs as required to achieve desired form and prevent invasive species smothering less aggressive species.	As necessary
D.3	Prune dead, dying or diseased wood from plant material.	As necessary
D.4	Keep shrub areas clear of weed growth by hand weeding and spot herbicide treatment as appropriate.	12 times
D.5	Apply a slow release fertilizer, Enmag CRF or similar approved, composition NPK 11 + 22 + 9 + 6.0% Mg, to shrub areas at a rate of 30 gms / m <sup>2</sup> (timing to be agreed with Contract Administrator).	Once only
D.6	Edge up planted areas to maintain soil level 25mm below adjacent hard surfaces and kerbs. Any soil washed onto hard surfaces to be cleaned off. Repeat at each maintenance visit.	At each visit
D.7	Lightly cultivate all shrub beds, breaking up soil evenly. Once only. Timing to be agreed with the Contract Administrator.	Once only
<b>F</b>	<b>MAINTENANCE OF THE SEDUM ROOF</b>	
F.1	Removal of unwanted plant material, i.e. grasses etc. from sedum surface, once during April	As necessary
F.2	Removal of unwanted plant material, i.e. grasses etc. from sedum surface, once during August	As necessary
F.3	Replacement of any naturally failed plants not exceeding 5% of total plants installed. Between November and February	As necessary
F.4	Supply and spread spring/summer fertilizer between March and May	Annually
F.5	Removal of dead flower heads (if required).	
F.6	Inspection of rainwater outlet chambers and surrounding vegetation breaks. Once only	Annually
F.7	Replenishment of any areas of settled substrate as required	As necessary

## **APPENDIX B**

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### **MANAGEMENT PLAN MATRIX FOR 10 YEAR PERIOD**



MAINTENANCE AND MANAGEMENT SCHEDULE MATRIX FOR 10 YEAR PERIOD										
ITEM OF WORK	YR 1	YR 2	YR 3	YR 4	YR 5	YR 6	YR 7	YR 8	YR 9	YR 10

### GENERAL

Tidy up areas removing rubbish, litter, etc, from planted and grass areas	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Treat pests and disease as necessary	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Water all plant material and grass as necessary to maintain healthy growth	✓	✓	✓							
Check plant material is firmly planted and firm in where required.	✓	✓	✓							
Dead, dying or diseased wood to be pruned out	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Check shelter guards / rabbit protection and refirm / replace as required including removing weed growth from within. Consider removal of guards at years 4 to 5.	✓	4 times	4 times	2 times	2 times	✓	✓	✓	✓	✓
Removal of diseased or dead plants with replacements as appropriate	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

### TREE PLANTING

Check, adjust, replace stakes and ties and underground guying as necessary. Remove stakes after approximately 3 years if appropriate. Prune, water and feed as necessary.	✓	✓	✓	✓	✓					
Remedial tree surgery as necessary to remove any dead, dying or diseased branches and to allow the tree to achieve full stature. All works to be carried out by an Arboricultural Association approved contractor in accordance with BS3998: Recommendations for Tree Work.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

**MAINTENANCE AND MANAGEMENT SCHEDULE MATRIX FOR 10 YEAR PERIOD (CONTINUED)**

ITEM OF WORK	YR 1	YR 2	YR 3	YR 4	YR 5	YR 6	YR 7	YR 8	YR 9	YR 10
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**THICKET / NATIVE HEDGE PLANTED AREAS**

<i>NB All maintenance of thicket planting and hedges shall be carried out with regard to the necessary demands of maintaining the necessary security of the site.</i>										
Keep areas clear of weed growth by herbicide treatment as appropriate from mid-April to late September.	4 times	4 times	4 times	4 times	2 times	2 times	2 times	Once	Once	Once
Woodland mix planting to be managed to ultimately achieve a tree canopy with understorey. Woodland Edge mix to achieve age diversity. A gradual development of a diverse age structure should be established over a period of time by the use of a regime of selective thinning, pruning and coppicing.					1/3 of thicket plants			1/3 of thicket plants		
Remove branches that overhang footpaths or prevent access for grass cutting. Allow native hedges to achieve natural form with only lower branches removed.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Prune native hedges to heights stated on landscape drawings (approx. timing September) as required depending on establishment. Cut sides, tops and ends to straight and true lines.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

**SHRUB PLANTED AREAS**

Keep ornamental shrub areas clear of weed growth by hand weeding or spot herbicide treatment.	12 times	12 times	12 times	10 times	10 times	6 times	6 times	6 times	6 times	6 times
Prune shrubs as necessary to prevent invasive species smothering less aggressive species and to prevent shrubs overhanging footpaths and other areas of hard paving.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Slow release fertilizer application as appropriate to ensure establishment of planting.	✓	✓	✓							

**MAINTENANCE AND MANAGEMENT SCHEDULE MATRIX FOR 10 YEAR PERIOD (CONTINUED)**

ITEM OF WORK	YR 1	YR 2	YR 3	YR 4	YR 5	YR 6	YR 7	YR 8	YR 9	YR 10
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**SHRUB PLANTED AREAS (CONTINUED)**

Lightly cultivate all planted areas, breaking up soil evenly. Once only.	✓	✓								
Edge up planted areas to maintain soil level 25mm below adjacent hard surfaces and kerbs. Any soil wash onto hard surfaces to be cleaned off.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

**MAINTENANCE OF THE SEDUM ROOF**

Removal of unwanted plant material, i.e. grasses etc. from sedum surface, once during April	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Removal of unwanted plant material, i.e. grasses etc. from sedum surface, once during August	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Replacement of any naturally failed plants not exceeding 5% of total plants installed. Between November and February	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Supply and spread spring/summer fertilizer between March and May	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
PROVISIONAL) Removal of dead flower heads (if required).	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Inspection of rainwater outlet chambers and surrounding vegetation breaks. Once only	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Replenishment of any areas of settled substrate as required	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓