

LANDSCAPE MANAGEMENT PLAN

ROYAL BOTANIC GARDENS, KEW
LANSDOWN CONSERVATION AND RESEARCH NURSERY
WAKEHURST PLACE, SUSSEX

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1. INTRODUCTION

BACKGROUND

1.1 This is a Landscape Management Plan in respect of the proposed Lansdown Conservation and Research Nursery (LCRN), Wakehurst Place in Sussex. The document has been produced to address Planning Condition 10 of planning amendment to permission ref DM/22/1774.

1.2 Condition 10 reads as follows:

Prior to the commencement of any development above ground/slab level, a Landscape Management Plan, including long term design objectives, management responsibilities and maintenance schedules and periods for all soft landscape areas with a timetable for the implementation of the landscape management plan, shall have been submitted to and approved in writing by the Local Planning Authority. The Landscape Management Plan shall be carried out in accordance with the approved details and timetable.

Reason: To achieve a development of visual quality in the AONB and to accord with Policies DP16, DP25 and DP37 of the Mid Sussex District Plan and Policy ARD2 of the Neighbourhood Plan.

1.3 This report should be read in conjunction with the following documents, which form the proposed landscape scheme for the site:

- 6730-LLB-XX-E1-DR-L-0001 - Landscape Masterplan - Main Site.
- 6730-LLB-XX-E2-DR-L-0002 - Landscape Masterplan - Western Boundary.
- 6730-LLB-ZZ-XX-RP-L-0001 - Landscape Design Statement.
- 6730-LLB-XX-E1-DR-L-0003 - Planting Plan - Main Site.
- 6730-LLB-XX-E2-DR-L-0004 - Planting Plan - Western Boundary.
- 6730-LLB-XX-XX-DR-L-0006 - Landscape Cross Sections.
- 6730-LLB-XX-XX-SP-L-0001 - NBS Landscape Specification.

LONG-TERM DESIGN OBJECTIVES

- 1.4 The principal elements of the landscape strategy and respective long-term design objectives are summarised below:
- Comprehensive landscape scheme along the western boundary of the site, including:
 - Mixed native species hedgerow with trees along the western boundary. This will be protected from rabbits and livestock in the adjacent field by rabbit / stock proof fencing.
 - New area of native species deciduous woodland in the northern part of the western boundary. This will replace the reservoir which was formerly in this location and is no longer required. It will allow a significant increase in the amount of tree, shrub and woodland habitat provision within the site, as well as offering additional screening in the long-term from localised views from the north.
 - New woodland planting will also be provided to reinforce the existing area of Lowland Mixed Deciduous Woodland next to the existing pond to be retained, in the south-western corner of the site.
 - The proposed swale area and relocated drainage ditch along the western boundary will be seeded with a native species grass / wildflower seed mixture, harvested from seeds from existing meadows within the Wakehurst Estate.
 - New areas of mixed scrub habitat will be created in the intervening landscape parcels between the proposed western boundary hedgerow and the swale / drainage ditch.
 - The proposed mixed scrub habitat will continue along the western edge of Building 4 and connect to an existing vegetation surrounding the existing pond in the south-western corner of the site. This area will also be enhanced and managed to increase the amount of lowland mixed deciduous woodland on the site, in line with Biodiversity Net Gain (BNG) objectives.
 - In the wider site, the landscape typologies will follow those proposed along the western boundary of the site, with the provision of mixed native species boundary hedgerows to provide landscape structure and wildlife connectivity, creation of grass / wildflower meadow areas and pockets of mixed native species scrub.

MANAGEMENT RESPONSIBILITIES

- 1.5 All areas of soft landscape within the LCRN site will be managed by the Wakehurst Place horticultural team, who are fully qualified and experienced in horticulture and landscape maintenance who are already managing the habitat types proposed within the wider estate.

TIMETABLE FOR IMPLEMENTATION

- 1.6 The current timetable for implementation is yet to be agreed at the time of writing this landscape management plan, as this will be subject to the planning timetable and other logistics relating to the targeted construction programme.
- 1.7 In terms of soft landscape implementation, it is proposed that the proposed earthworks along the western boundary (to form the proposed attenuation feature / swale and redirected ditch) will be undertaken at the earliest possible stage of the project, in order for that area to be subsequently prepared for seeding grass / wildflower meadows (typically during March to May or August to October) and following that, planting of bare rooted trees and shrubs, including areas of mixed scrub and woodland (typically during Late October to late March).
- 1.8 The soft landscape areas within the main part of the development (for example the grass seeded slopes and other miscellaneous tree / shrub planting close to the proposed buildings / glasshouses), would be implemented at the above times of year, as appropriate to the completion of the construction of all proposed retaining structures, buildings, glasshouses and hard surfaced areas.
- 1.9 It follows that the Landscape Management Plan would commence at the earliest opportunity following practical completion of these areas (including rectification of any defects, if applicable).

2. LANDSCAPE MAINTENANCE SCHEDULE

- 2.1 This sections shows the routine landscape maintenance operations for each landscape management type, within a rolling 12 month period for the agreed duration of the maintenance period.
- 2.2 Arisings from landscape maintenance works (e.g grass cuttings which are not left in situ for meadow areas, and arisings from routine plant and woodland maintenance) are to be chipped and composted on site, or for larger material - cut and stacked to create brash piles in suitable locations within areas of mixed scrub, longer grass margins and / or woodland areas.

GRASS

Feature	Detail	Operation	Timing	Min / Year
Grass	Amenity Grass (typically edges to hard-standing areas).	Grass mowing to maintain as area of amenity grass (broadly a 50-125mm range) avoiding swathes of bulb planting, wildflower areas and marginal planting (where applicable).	Monthly during the growing season, or more frequently if required to maintain neat and tidy appearance. Avoid cutting in times of wet weather / water logging, to avoid rutting.	8 - 10
Edges	Edges to kerbs and hard surfaces (amenity grass).	Cut back once per year.	Cut back during winter.	1
	Edges to shrub borders.	Clip to maintain neat and tidy appearance	Generally as amenity lawns, if required.	4
Grass	Grass / Wildflower Areas.	Generally, wildflower areas should be cut down at the end of July / early August every year. It is acceptable to leave the cuttings to die for a week or so and then they should be cleared. After the initial cut once it has greened up again cutting can continue throughout the winter. A further mow can be carried out in early spring (to tidy up appearing), with the mower blade adjusted to the highest cut as mowing too short can damage any yellow rattle as it starts to germinate around early March.	1. July/early August. 2. c2 cuts during winter, if required. 3. Early spring cut, if required.	3-4
	Weed Control - Establishment Phase Only (e.g. Years 1-3, or similar).	Weed control (weeds > 200mm in height), preferably by mowing (in mid to late summer) to allow easier identification of the weeds, thereby avoiding the use of herbicide treatment.	Spring / summer, as required.	2 - 4

Grass (Continued)

Feature	Detail	Operation	Timing	Min / Year
Water attenuation features.	Grass Banks around culverts / headwalls.	Strim / mow grass embankments. Manage other vegetation e.g. naturally colonised marginal vegetation along ditch / swale channel, culverts and headwalls - only to avoid excessive encroachment and remove nuisance plants. Remove any leaf litter or other naturally occurring debris, if causing obstruction to water course.	Cut bi-monthly during the season.	4
Remedial Works.	Remedial works (Generally).	Inspect for possible future remedial works, such as; re-seeding locally. Provide Contract Administrator with written report.	Annual Inspection, mainly autumn.	1

TREE AND SHRUB PLANTING

Feature	Detail	Operation	Timing	Min / Year
Shrub Planting.	Mulch.	Mulch shrub planting beds and keep topped up.	Autumn.	1
	Weed control.	Preferably by maintaining the full thickness of mulch at base of plants, or by hand.	Monthly during season.	1
	Pruning.	Pruning to remove dead and diseased.	At appropriate season (mainly autumn).	1
Trees.	Inspection.	Inspect condition from ground.	Once in leaf / once out of leaf.	2
	Pruning.	Formative pruning, if required.	At appropriate season (mainly autumn).	1
	Sundries.	Check stakes and ties.	Re-firm and adjust / re-stake as required. Remove when tree is of sufficient maturity to remain stable by itself.	2
All Plantings	Plant Replacement	Carry out inspection to identify remedial works to planted areas, in particular: removal of dead plants and replacement with new.	Next suitable planting season, if required.	1
Plant Shelters (where applicable)	Bare Rooted Plant Stock with plant shelters (NBS Q31.486)	Checking plant shelters are present and vertical, while not hindering the growth and development of each plant.	As required during each scheduled maintenance visit, during Years 1 and 2 from planting.	2
		Check during summer / early autumn during Year 3 and remove plant shelter if necessary (if plant is well established and thriving or if plant shelter is hindering growth and development for this and next year's growth). Continue to check at years 4 and 5 (as applicable) and remove at Year 5, if plant shelters are still present at this time.	Annual check at end of summer / early autumn	1

MIXED NATIVE SPECIES HEDGEROWS

Feature	Detail	Operation	Timing	Min / Year
Hedgerows	Mixed Native Species Hedgerows.	Routine Cutting: Years 1 - 3: Formative cutting / pruning to establish structure of hedgerow, generally 2m wide by 1.5-2m high. Where the size of the hedgerow does need to be restricted, one side of the hedge will be cut in preference to cutting the top.	Annually - outside of the bird breeding and nesting season, (generally November - February), unless inspections carried out by qualified ecologist outside of these times.	1
		Rotational Cutting - Year 3 onwards: Formative cutting / pruning on rotational basis: 20% of hedges to be cut in Year 4, a further 20% in Year 5 and so on; so that each section is cut on a 5-year rotation and some sections grow on for up to 10 years.	Annually - outside of the bird breeding and nesting season, (generally November - February), unless inspections carried out by qualified ecologist outside of these times.	1
	Pruning	Pruning to remove dead and diseased	At appropriate season (mainly autumn)	1
	Weed control.	Preferably by maintaining the full thickness of mulch at base of plants, or by hand. Keep bases of plants neat and tidy.	Monthly during season.	1

3. SPECIFIC HABITAT MANAGEMENT - PERFORMANCE SPECIFICATIONS

LOWLAND MIXED DECIDUOUS WOODLAND

3.1 The project aims to create a new area of woodland in the north-western part of the site and retain the existing area of woodland adjacent to the existing pond to be retained (in the south-western corner of the site), reinforcing its edges with new native species woodland planting, as shown on the proposed Planting Plans detailed in Section 1 of this report. The long-term objective for these areas will be to manage them as a Lowland Mixed Deciduous Woodland habitat type.

3.2 The 'UK Biodiversity Action Plan Priority Habitat Descriptions (2008)' describes Lowland Mixed Deciduous Woodland as:

Lowland mixed deciduous woodland includes woodland growing on the full range of soil conditions, from very acidic to base-rich, and takes in most semi-natural woodland in southern and eastern England, and in parts of lowland Wales and Scotland. It thus complements the ranges of upland oak and upland ash types. It occurs largely within enclosed landscapes, usually on sites with well-defined boundaries, at relatively low altitudes, although altitude is not a defining feature. Many are ancient woods and they include the classic examples of ancient woodland studied by Rackham (1980) and Peterken (1981) in East Anglia and the East Midlands. The woods tend to be small, less than 20ha. Often there is evidence of past coppicing, particularly on moderately acid to base-rich soils; on very acid sands the type may be represented by former wood-pastures of oak and birch.

3.3 Lowland mixed deciduous woodland management involves maintaining the woodland's structure, diversity, and naturalness. The overall aim is to create a habitat that supports a variety of plants and animals by:

- **Maintain structural diversity:** Keeping a mix of mature trees and scrub of different ages.
- **Creating localised open spaces:** Leave small clearings, or 'glades' to create sunny areas for flowering plants. This should be done by selective thinning only, by those who are suitably qualified and experienced, in order to carry out a balanced amount of thinning at the appropriate time of year, relative to the age structure of the woodland, thereby carefully managing its overall woodland structure and allow newly planted areas to gradually marry with existing / older woodland areas.
- **Increase species diversity:** Encourage the growth of new species to reduce the impact of single species abundance changes (see target species list below).
- **Reduce grazing:** Reduce grazing pressure from deer to allow more ground flora to grow (where applicable within the life-span of the development).
- **Remove non-native species:** Remove non-native species, such as laurel, rhododendron or sycamore (if applicable), which can cast shade and out-compete desirable native plants in terms of rooting area, water and nutrients.
- **Allow natural regeneration:** Encourage natural regeneration of native species.
- **Avoid drastic modification:** Avoid sudden and drastic changes to the woodland.
- **Maintain woodland edges:** Maintain woodland edges to encourage a variety of flora and fauna.

- **Management of deadwood:** Standing and fallen deadwood should be left in place, especially in shady and sunny areas. Leaving deadwood in place will also provide nesting and feeding areas for wildlife.
- **Connection with other habitats:** Connect woodlands with other habitats, such as native species hedgerows, areas of mixed scrub and swales / ditches, by allowing a continuation of vegetation cover to allow wildlife to move between them.

Fig. 1: Extract from the UK Habitat Classification, showing definitions and species inclusions / exclusions in terms of species management, for Lowland Mixed Deciduous Woodland.



Code and Name
w1f Lowland mixed deciduous woodland

Category Type
Primary Level 4

Spatial Feature Type
Area

Status
Priority Habitat

Definition
Includes woodland growing on the full range of soil conditions, from very acidic to base-rich. It occurs largely within enclosed landscapes, usually on sites with well-defined boundaries, at relatively low altitudes, although altitude is not a defining feature.

Landscape and ecological context
Includes most established semi-natural woodland in southern and eastern England, and in parts of lowland Wales and Scotland. Many are ancient woods, including classic examples of ancient woodland in East Anglia and the East Midlands.

Inclusions
Monospecific stands of native species such as Elm *Ulmus spp.*, Field maple *Acer campestre*, Ash *Fraxinus excelsior* or Hazel *Corylus avellana* in the drier non-Atlantic lowlands.

Exclusions
Mixed woodland, as in 'a mixture of broadleaved and coniferous species' (see w1hr).

Species
There is great variety in the species composition of the canopy layer and the ground flora. Pedunculate Oak *Quercus robur* is generally the more frequent oak (although Sessile Oak *Quercus petraea* may be abundant locally), and it may occur with virtually all combinations of other locally native tree species.

[Back to Woodland Ecosystem](#)

MIXED SCRUB

- 3.4 Scrub is an extremely valuable habitat and one on which many species depend for their survival. However, if left unmanaged, it can rapidly take over areas such as grassland and heathland.
- 3.5 Scrub is often described as a 'successional habitat', meaning that it is temporary and in transition between one habitat (more open areas such as grassland and heathland) and another (generally woodland, unless the soils are very poor).
- 3.6 The overall aim for proposed areas of mixed scrub within the site, will be to keep a diverse structure with varied heights and species and to maintain its value to wildlife. The following will therefore apply:
- **Low intensity management at regular intervals:** This is generally better and easier to achieve compared to major work every few years. Scrub generally takes about 15 years to reach maturity, so on this basis, proposed long-term management could allow for coppicing 3/15th of the areas of managed scrub every third year.
 - **Management Rotation:** This will allow a mix of young and mature scrub, which in turn will ensure more structural diversity and will appeal to a wider variety of species.
 - **Bare Ground / Dead Wood:** In some areas, bare ground and dead wood should be allowed to increase the range of micro-habitats, however, it there should always be some scrub that is left, as a source of shelter and food and to ensure there are patches of tall and short vegetation in and around it.
 - **Habitat Connectivity:** As with the management objectives described above, it is important to make sure the areas of mixed scrub link up with surrounding habitats such as hedgerows, woodland and wildflower meadows, in order to create wildlife corridors and enable species dispersal through the landscape.
 - **Remove non-native species:** Invasive species such as rhododendron which can have a limited value for wildlife should be controlled.
 - **Management Timing:** The timing of management works should minimise the impact on wildlife. Do not cut during the bird breeding season (i.e carry out the work between November and February, generally). However, even in January, reptiles can be found basking in a sunny, sheltered spot, so cutting should be avoided if in close proximity to hibernation sites.
 - **Management of arisings:** Arisings from the management of mixed scrub areas should be stacked into piles of deadwood where ever possible.

Ecotones

- 3.7 Many species thrive in areas where two different habitats meet such as woodland / grassland or grassland / water. However, these transitional zones or 'ecotones' are even more valuable for wildlife when there is a gradual change from (for example) short vegetation through to tall vegetation, a scrub / shrub zone and then taller woodland. This gradation allows for many more subtle changes in aspect, soil quality, vegetation structure and type, and topography, and thus encourages much more species diversity and abundance.

- 3.8 The proposed mixed scrub habitat will be planted in clumps or groups of the same species to ensure a naturalised composition and aesthetic, while also encouraging a diverse mix of species (row planting will be avoided) and planting in semi-circles where possible, to help encourage scalloped edges and micro-habitats with mosaic of thicket areas to be maintained in the long-term, contrasting with localised clearings or glades.

Mixed Scrub - Target Species

- 3.9 In terms of species composition, the UK Habitat Classification defined 'Mixed Scrub' habitat as:

'Dense scrub comprising a mixture of species without a single species dominant or stands with a dominant species not listed in h3a-h3k.' [See lists below].

- 3.10 The species in Habitat Classifications h3a-h3k inclusive, are as follows:

- Blackthorn (*Prunus spinosa*)
- Hazel (*Corylus avellana*)
- Sea-buckthorn (*Hippophae rhamnoides*)
- Bramble (*Rubus fruticosus*)
- Gorse (*Ulex spp.*)
- Hawthorn (*Crataegus monogyna*)
- Willow (*Salix spp.*)
- Juniper (*Juniperus communis*).