

Llangatwg Comprehensive School, Neath

Landscape Management and Maintenance Plan



Austin • Smith • Lord

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1.0 Introduction

- 1.0.1** This Landscape Management and Maintenance Plan has been prepared following guidance from BS 42020:2013 and outlines the strategies and procedures for the upkeep and preservation of the landscape scheme for Llangatwg Comprehensive School in Neath.
- 1.0.2** The purpose of this document is to provide a maintenance, management and monitoring plan for a 5-year period from the first beneficial use of the school occupation, with key objectives for the long-term management. After this period, this document can be used as a basis to help inform any longer-term maintenance and management strategies for this area.
- 1.0.3** The proposed development site sits within the residential area of Aberdulais. Residential dwellings are present to the north-east and south-west of the school and houses extend along Penscynor Road to the north and the A4230 to the south-west. An area of Ancient Semi Natural Woodland (ASNW) is present along the northern boundary of the school. The woodland extends to the north and south-east of the local area providing excellent habitat connectivity into the wider landscape northwards. A railway line is present approximately 45m south and the A465 is located approximately 140m south from the southern school boundary. These features both extend into the wider landscape. The Tenant Canal and River Neath lie to the south of the A465. Both these features provide excellent habitat connectivity into the wider landscape.
- 1.0.4** The school site sits between areas of woodland to the north and the Tenant Canal and River Neath to the south and as such aids with habitat connectivity for a range of wildlife. As such the design of the new school and grounds has been created to help maintain habitat connectivity to the wider landscape. The drainage design within the school site aims to treat all surface water within the school grounds using SUDs principles to prevent any pollution incidents. The landscape design has considered climate change incorporating species within the planting schedule that are drought and warm weather tolerant. Dark commuting corridors will be retained along the eastern and western boundaries of the site to create commuting corridors for wildlife across the landscape.
- 1.0.5** The document should be read in conjunction with the specification, schedules and drawings submitted with the planning application. For details of the location and extent of the areas described in this report, please refer to the following plans:
- 26CC07-ASL-30-XX-D-L-1001 Landscape Masterplan
 - 26CC07-ASL-30-XX-D-L-1003 Soft Landscape
 - 26CC07-ASL-30-XX-D-L-1008 Biodiversity Enhancement.

2.0 General soft landscaping maintenance

- 2.0.1** Maintenance operations will be scheduled based on weather conditions and carried out as necessary by the Contractor or as directed by the Contract Administrator (CA). While the CA may instruct the Contractor to perform operations at any time during the Maintenance

Period, it is the sole responsibility of the Contractor to arrange the operations appropriately to keep weed growth in check, ensure adequate watering, maintain a well-groomed appearance and achieve the intended establishment of the plantings.

2.1 Mowing regimes

- 2.1.1** The grassed areas should be mown and strimmed in line with the management program detailed for grassland type (see below). While there are no grass areas with gradients exceeding 1:3, caution should still be exercised when mowing on softer gradients.

2.2 Watering

- 2.2.1** Water all trees if there has been no rain for 10 consecutive days during the establishment period.
- 2.2.2** The Contractor should water the plants during dry periods in sufficient quantities to ensure thorough penetration of the rooting zone.
- 2.2.3** The Contractor should provide all necessary hoses, fittings, sprays, etc., to implement watering as required until practical completion.
- 2.2.4** If mains water is unavailable, freshwater delivery should be arranged through a bowser or another suitable method.

2.3 Mulching

- 2.3.1** Mulch should be brushed monthly to ensure even coverage and topped up to maintain a depth of 75 mm.
- 2.3.2** The mulch depth should be reviewed annually, and additional material should be applied, if necessary, to maintain a depth of 75 mm on a weed-free surface in April/May.
- 2.3.3** Mulching should not be carried out after a long dry period.

2.4 Weed control

- 2.4.1** Maintenance visits should occur at least every four weeks between April and November to remove any species that have not intentionally been planted in ornamental areas.
- 2.4.2** Only products listed in the current Agricultural Chemicals Approval Scheme should be used. Weed control in hedgerows should be achieved through hand weeding and/or spot treatments of glyphosate (weed killer).
- 2.4.3** No invasive non-native plant species have been recorded at the site during pre-construction surveys. The presence of any invasive non-native plant species must be immediately reported to the CA. These weeds are classified as 'Controlled Waste' and must be treated and disposed of in accordance with current regulations. A list of invasive non-native plants is provided in Appendix 3.

2.5 Pest and disease control

- 2.5.1** All pesticides/herbicides used must be authorized by the CA and approved for use in amenity horticulture, following the Control of Pesticides Regulations 1986 (Amended 1997).
- 2.5.2** The control of pests should be carried out using suitable and appropriate methods as determined by the CA. A method statement must be submitted for approval in advance of treatment. Pests will be identified, eradicated and litter will be removed.

- 2.5.3** The Contractor must possess recognised Certificates of Competence for the use of pesticides approved for amenity plant protection unless working under the direct supervision of a certified individual. The Contractor should provide written evidence to the CA regarding which members of their staff are certified to apply pesticides.
 - 2.5.4** During the regular monthly site inspection, the Contractor should identify any pests or diseases and take necessary action, including the use of approved chemicals or removal of infected plants. Replacement planting should be conducted as needed.
- 2.6 Litter removal**
- 2.6.1** Remove litter from all areas fortnightly.

3.0 Management Objectives and Actions

- 3.0.1** Management and maintenance are essential for the establishment of new vegetation and wildlife features. Specific objectives and management for each green infrastructure element are described in subsequent sections.
- 3.0.2** Even though native, hardy and disease resilient species have been selected in the planting palette, if any planting disease is identified on site it will need to be reported immediately to the client and dealt with by a specialist.

3.1 Tree planting

- 3.1.1** Objective: the establishment of healthy, mature trees across the site connecting hard and soft landscaping.
- 3.1.2** The management of tree planting aims to ensure successful establishment, following the plans specified in Part 1.0 of this document. All tree-related tasks will adhere to the guidelines outlined in BS3998:2010 Tree Work. Existing retained trees should be allowed to grow naturally, considering safety precautions.
- 3.1.3** The maintenance contractor will be responsible for irrigation/watering throughout the maintenance period to promote establishment, healthy growth, and vitality of the tree planting. If there is bark mulch, it should be pulled back to allow water to penetrate the entire topsoil depth. Watering tubes will be used where applicable. Sufficient watering will be provided to ensure full penetration of the tree's rooting zone.
- 3.1.4** Tree protection, stakes, and ties will be inspected twice a year by the Contractor during the establishment phase and adjusted as needed to prevent tree damage. Trees will be maintained upright, with necessary adjustments made after strong winds. The Contractor will remove all stakes and ties no earlier than year three and no later than year five, once the

trees can support themselves. Any trees with underground guying will be monitored to ensure their stability.

- 3.1.5** Weeding activities will be carried out during the main growth period (April to June) for three years to maintain a weed-free area around each tree with a minimum radius of 0.5 m. Weeding will be performed using appropriate safeguards such as hand pulling, strimming (avoiding tree damage) or chemical means with approved herbicides following manufacturer's instructions. Care will be taken to prevent harm to the trees.
- 3.1.6** The Contractor will regularly assess the health of each tree and prune to eliminate dead, dying, or diseased wood and encourage healthy growth, following good horticultural and arboricultural practices. Lower branches causing obstructions or damage to other plants will be pruned as part of formative pruning to maintain a well-balanced and healthy crown. This pruning should be done once or twice a year, ideally in late winter before spring growth and outside of nesting bird season (March-September). Any wounds on the trees will be carefully trimmed back to sound tissue. Disposal of any waste material will be done at a licensed tip or recycling facility.
- 3.1.7** Annual monitoring of newly planted trees will be conducted each autumn by an arboriculturist during the first five years after planting to assess establishment. The arboriculturist will make recommendations for additional management, as necessary. Any failed trees will be replaced by the contractor. If, after 5 years the trees have established no further monitoring will be required. Ongoing maintenance, as described in this document, will be applied to ensure their health and tidiness.

3.2 Ornamental and native shrub planting

- 3.2.1** Objective: To establish diverse shrub planting that is aesthetically pleasing and provides cover for wildlife.
- 3.2.2** Ornamental shrub beds will be kept free from debris, litter, grass and weed growth throughout the maintenance period. Weeds will be controlled either manually or using herbicides, with a tolerance limit of no more than 5% coverage and a maximum height of 100 mm. Any dead weeds will be removed and disposed of at a licensed tip or recycling facility.
- 3.2.3** A surface layer of wood bark mulch will be applied to control weed growth. A 75 mm depth of wood bark mulch will be maintained and topped up as necessary in ornamental shrub beds during the maintenance period. Mulch spillage on adjacent edgings and paving will be promptly cleared during each visit.
- 3.2.4** Scotts Enmag fertiliser will be applied each spring as a top dressing to the area around the shrubs at a rate of 70 gms/m², lightly raked in.
- 3.2.5** Each plant's health will be monitored, and pruning will be carried out to remove dead, diseased, or damaged branches, water shoots and reversion growth. Spring pruning will promote bushiness and mulch of well-rotted manure or garden compost may be applied.
- 3.2.6** Disposal of any waste material will be done at a licensed tip or recycling facility. Plants that have been loosened by wind or frost will be firmed back into place.
- 3.2.7** Annual monitoring of newly planted shrubs will be conducted by the landscape contractor each autumn during the first five years after planting to assess establishment. Any failed shrubs will be replaced. If, after 5 years the shrubs are established no further monitoring will

be required. Ongoing maintenance, as described in this document, will be applied to ensure their health and tidiness.

3.3 Hedgerow Planting

- 3.3.1** Objective: to establish a dense, mature hedgerow that connects habitats within and adjacent to the site and can be used for foraging, commuting and nesting by local species.
- 3.3.2** The Contractor should regularly inspect the health of each plant and conduct pruning to remove any dead, diseased or damaged branches. Trimming of hedges should follow the schedule in the table below. The cutting and pruning should aim to maintain a strong and even shape, cutting back the previous growth to maintain a height between 1000 mm and 1100 mm. All trimmings should be taken to a licensed tip/recycling facility.
- 3.3.3** Newly established hedging will be protected with post and wire timber fencing to prevent accidental damage by the public. Once the hedging has developed strong roots and dense growth and is self-supporting, the fence can be removed. Regular monitoring will determine the optimal timing for fence removal, allowing the hedging to thrive while maintaining its protection during the establishment phase.
- 3.3.4** The following actions should be taken to support the long-term establishment of the hedgerow:

Year	Action
1	Ensure the base of each plant is weed-free within 1 m diameter. Litter should be picked up during each visit.
2	Lightly trim plants in February, maintain weed-free conditions, and apply general-purpose fertiliser in spring. Litter should be picked up during each visit.
3-4-5	Lightly trim and begin shaping the hedge to reach a final height of approximately 1 m by 1 m wide. Litter should be picked up during each visit. Year 4 - Apply Scotts Enmag fertiliser or agreed alternative once between mid-May and August.
6+	<u>Formal hedgerows:</u> The hedge should have reached its final height of 1 m - 1.1 m. They should be clipped at least four times a year to maintain a neat and tidy appearance. Monthly clipping may be necessary during the summer months if growth limits access. <u>Native hedgerows:</u> Allow the hedge to reach its final height of 1.5 m - 2 m. Cut once every 2 years between the months of November to February inclusive. Apply general-purpose fertiliser in spring. Litter should be picked up during each visit. During the summer period if the hedgerows need to be clipped, they must be assessed appropriately by a fully qualified ecologist before each cut to ensure there are no active nests within.

- 3.3.5** Weed control along the hedgerow alignment should be carried out using appropriate herbicides to achieve a weed-free strip of 0.5 m. The Contractor should ensure that weeds are removed from the planting beds and hedgerow alignment, with a tolerance of no more than 5% of the area and not exceeding a height of 100 mm.
- 3.3.6** The Contractor should apply Scotts Enmag fertiliser or agreed alternative to each planting station at a rate of 5 gms per plant. This application should take place between mid-May and August each year.
- 3.3.7** Annual monitoring of new hedgerows will be conducted each autumn during the first five years after planting to assess establishment.

3.4 Amenity grassland

- 3.4.1** Objective: To provide recreational grassland areas.
- 3.4.2** Amenity grassland will be maintained below 75 mm. Grass cutting will be performed as needed between March and the end of October, keeping the cut height at 40 mm. A rotary mower fitted with a steel roller will be used and all clippings will be collected and disposed of at a licensed tip or recycling facility. Before each cut, all litter and debris will be removed.
- 3.4.3** Grass cutting will not be performed in adverse weather conditions or excessively wet or dry ground conditions.
- 3.4.4** During each cut, the grass edges around trees, manholes, etc., will be trimmed while taking precautions to avoid damage to tree trunks. All clippings will be removed and adjacent hard areas will be swept clear of cuttings and swept material will be disposed of.
- 3.4.5** Broad-leaved weeds in the grassland will be controlled as required by applying suitable approved selective herbicides. Fallen leaves will be removed in autumn.
- 3.4.6** Failures in grass growth, including bare patches and areas with extreme wear, bare patches, or wheel ruts that have not established, will be rectified through re-cultivation and reseeding using specified seed mixes.
- 3.4.7** The grassland will be watered as necessary to maintain a healthy sward until it becomes established.

3.5 Species-rich Grassland / Marshy Grassland

- 3.5.1** Objective: Species rich wildflower grassland containing similar species to those found pre-construction, to provide a biodiverse grassland resource which supports local wildlife.
- 3.5.2** During the first year after sowing, grasslands will be left to establish without mowing until early August. The regrowth will then be cut through to late autumn/winter to 50 mm.
- 3.5.3** In subsequent years, existing and proposed areas of species-rich grassland will be cut twice annually. The first cutting will occur at the end of July after flowering with grassland cut to a height of 100 mm, and the second cut will take place in September/October mowing to a height of 75 mm, depending on weather conditions. The cut material will be left on the ground for 2-3 days to allow seed dispersal and support invertebrates. All cut material will then be removed from the site or sent for composting.
- 3.5.4** Scrub and weed control will be carried out as necessary to prevent the establishment of persistent perennial weed species (such as broad-leave dock, ragwort and nettle) or scrub species (sucking blackthorn, bramble, tree saplings, etc). Control methods may include hand-

pulling or spot treatment with suitable approved selective herbicides, depending on the affected species and appropriate timing. Weeds and scrub will not exceed 20 % coverage.

- 3.5.5** Worn or damaged areas of wildflower meadows will be repaired by over-seeding into prepared seedbeds using the appropriate wildflower mixture specified in the Landscape Masterplan drawing. This will be done within seasonal limitations and suitable weather and ground conditions, following best practice guidelines.
- 3.5.6** Monitoring of the grassland areas will be completed annually by an ecologist between May-August to ensure plants are becoming established. If low diversity of species is recorded, plug planting of grassland species will be recommended to improve diversity. If less than 5% coverage of bird's-foot trefoil is recorded along the butterfly bund, seeding of this species will be recommended.

3.6 Butterfly Bund Planting

- 3.6.1** The central bund and adjacent 4m of habitat either side will be subject to low intensity management. One side of the bank and 4m width will be cut using a trimmer or bush cutter once per year during April. The opposite side will be cut in the alternate year.
- 3.6.2** Every two years bare ground scrapes will be created. At least two bare earth scrapes covering 25% of the bund and two bare earth scrapes covering 25% of the 4m wide buffer from the base of the bund will be provided.

3.7 Wildflower blanket green roof

- 3.7.1** Objective: Species rich wildflower grassland to provide a biodiverse grassland resource for locally occurring invertebrates.
- 3.7.2** A wildflower blanket green roof will be installed by an appropriately experienced contractor on the roof terraces. The manufacturer should be consulted on the most appropriate product and installation method in advance of purchase and on the need for built-in irrigation. Material will be pre-planted with native wildflower species and will be installed to the manufacturer's instructions.
- 3.7.3** Once established, management will be in line with the wildflower grassland across the rest of the site, with added maintenance tasks required for a green roof as described below.
- 3.7.4** Maintenance actions:

Spring maintenance actions:

- Removal of unwanted plant material such as saplings or dense patches of perennial weeds, as detailed in the annual report from the previous year.
- If the application of fertiliser is recommended in the annual report, organic 6-month slow release granular fertiliser will be applied in spring.

Summer maintenance actions:

- During dry periods water weekly to the point of saturation.

Autumn maintenance actions:

- Vegetation should be strimmed back to a height of 50-70mm in late August. The cut material will be left on the roof for 2-3 days to allow seed dispersal and support

invertebrates. All cut material will then be removed from the site or sent for composting.

- Inspection of rainwater outlet chambers, inspection chambers, walkways and vegetation barrier, and removal of vegetation.
- Replenishment of any areas of settled substrate.

Winter maintenance actions:

- No visit needed.

- 3.7.5** Monitoring of the wildflower roof will be completed annually between May-August to ensure plants are becoming established. If low diversity of species is recorded, the original supplier will be consulted on how best to achieve more diversity and remedial work carried out during the following year.

3.8 Rain garden planting mix

- 3.8.1** Objective: To establish functional rain gardens that provide cover for commuting wildlife.

- 3.8.2** Twice a year during May and August, the landscape contractor will inspect areas to identify accumulation of sediment and matted organic debris that could seal the surface as well as extended duration of ponding (ponding for more than 24 hours after cessation of rain). The contractor should rake accumulated sediment from the rain garden surface, taking care to protect the plants. Minor accumulations may be raked into the soil. The inspection will also include the correction of erosion problems and identify any damage to vegetation. Inspect for uniformity in cross-section and longitudinal slope, correct as needed.

- 3.8.3** Mow and trim vegetation to ensure safety, aesthetics, proper operation, and to suppress weeds and invasive vegetation; mow only when areas are dry to avoid rutting. Perform these actions twice during the growing season (April to October). Cut back ornamental grasses and flower stalks from herbaceous plants from the previous season's growth. Clean up shall be completed by the end of April each year.

- 3.8.4** Replant bare areas in accordance with project plans and specifications; install appropriate erosion control measures when native soil is exposed or erosion channels are forming. Re-mulch any void areas.

3.9 Woodland

- 3.9.1** Objective: To maintain and improve the woodland along the boundaries of the site and establish a functional extension through woodland planting.

- 3.9.2** Once operational, annual inspections of woodland areas should be conducted by an arboriculturist to assess the health and condition of the trees, understory and woodland generally. The arboriculturist will make recommendations for pruning or thinning of trees as appropriate to improve the structure and diversity of the woodland and understory.

- 3.9.3** Pruning of trees should be carried out as needed to remove dead, diseased or damaged branches, and to shape the canopy. Pruning activities should follow good arboricultural practices and ensure the long-term health and structural integrity of the trees.

- 3.9.4** Invasive species management should be implemented to prevent the establishment and spread of non-native plants. Prompt removal and control measures should be undertaken to prevent their dominance.
- 3.9.5** If thinning is required it should take place during the dormant months, typically November to January and outside of the wildlife nesting and breeding seasons.

3.10 Pond Edge Planting

- 3.10.1** Objective: To establish a species-rich plant margin around new ponds on site, to support local wildlife.
- 3.10.2** **Coir rolls to be installed along the edges of the ponds.** The manufacturer should be consulted on the most appropriate product and installation method in advance of purchase.
- 3.10.3** Once established, native marginal vegetation will be managed to encourage structural diversity and maximise biodiversity value. Work will be undertaken between September and November to minimise disturbance to wildlife, using pedestrian operated machinery or hand tools as desired.
- 3.10.4** Short lengths of bankside vegetation (5-10 m) will be cut to <100 mm and the arisings removed every 2 years, rotating around the Site so that all vegetation is cut by the end of each 4th year. Removal of contiguous sections will be avoided to maintain some cover for wildlife at all times. Dense stands of larger species such as yellow flag iris and great reed-mace may be selectively thinned as appropriate.
- 3.10.5** Monitoring of the pond edge planting will be completed annually by an ecologist between May-August to ensure plants are becoming established. If areas of the coir rolls fail to be established, additional pond planting will be recommended.
- 3.10.6** One dredge of the pond every 10 years. Remove 75% of the vegetation and silt, leave on the side for 24hrs and then remove. Allow natural regeneration of the pond via retained vegetation.

3.11 Bat boxes

- 3.11.1** Objective: to increase the provision of bat roost features within the site, supporting local bat populations.
- 3.11.2** The bat boxes selected do not require internal maintenance. The boxes will be monitored annually to ensure they are still present and suitable for use by bats. Damaged or missing boxes will be replaced. A bat licensed surveyor will inspect the boxes prior to replacement. If bats are present the boxes will be left in situ and the need for replacement reviewed.

3.12 Bird boxes

- 3.12.1** Objective: to maintain the provision of bird nesting features within the site, supporting local bird populations.
- 3.12.2** Bird boxes will be checked annually during the winter (October- Jan) and cleaned out, if necessary. Damaged or missing boxes will be replaced.

3.13 Hedgehogs

- 3.13.1** Objective: to facilitate continued movement of hedgehog through and around the site.
- 3.13.2** Access points through fencing will be checked quarterly to ensure that routes through the site have not become blocked.

3.14 Reptiles

- 3.14.1** Objective: to ensure continued use of the site by local reptile populations.
- 3.14.2** Habitat around and on top of the hibernaculum will be managed as wildflower grassland and monitored annually.
- 3.14.3** Recommendations for vegetation management to be provided to the Client with the intention of reducing scrub encroachment and developing structural diversity within the grassland.

4.0 Ecology and Biodiversity

- 4.0.1** This section summarises the landscape proposals and highlights their positive impact towards ecology and biodiversity.

4.1 Ecological value within the site boundary

- 4.1.1** Refer to Appendix 5 drawing *26CC07-ASL-30-XX-D-L-1008 Biodiversity Enhancement* for more details on the ecological enhancement proposals.

4.2 Benefits & making the most of the local ecology

- 4.2.1** The landscape strategy has identified the following principal objectives, which will ensure a comprehensive approach to achieve the enhancement of the existing landscape and successful integration of the proposed landscape within the site.
- 4.2.2** Planting of additional stretches of hedgerow using locally-sourced native species.
- 4.2.3** Creation of habitat connectivity around the site.
- 4.2.4** Incorporation of bat and bird boxes within the fabric of the new development.
- 4.2.5** Inclusion of native tree and shrub mix species within the landscape design to provide additional resources for invertebrates.
- 4.2.6** Hedgehog friendly fencing around the site - proposed perimeter fencing to allow for wildlife access by having regular gaps at its base.

4.3 Enhancing Ecological value

- 4.3.1** Native and climate resilient tree planting is proposed within the site.
- 4.3.2** Hedgerows not linked to the wider landscape are removed but replaced with stretches of hedgerows linked to adjacent planting forming a stronger soft buffer.
- 4.3.3** Rain gardens are introduced into the site, previously not present.
- 4.3.4** Ornamental and native shrub planting including pollinating species, provide an attractive external environment with additional ecological benefits.
- 4.3.5** A butterfly bank is proposed close to the forest school with habitat and educational benefits.

- 4.3.6 A reptile hibernacula is proposed close to the forest school area using site-gained materials, promoting sustainability and habitat creation.
- 4.3.7 The creation of a lively open water channel provides opportunities for new habitat creation.
- 4.3.8 Creation of a sensory garden.

4.4 Contact Details

- 4.4.1 Refer to Appendix 4 for details of the maintenance responsibilities and appointed professionals.

4.5 Local Information - links

- 4.5.1 [Wildlife in your Ward \(gov.wales\)](#)
- 4.5.2 [Local Places for Nature \(gov.wales\)](#)
- 4.5.3 [Biodiversity \(gov.wales\)](#)

5.0 Reporting

- 5.0.1 An annual report of monitoring surveys will be produced by an arboriculturist (tree, shrub and woodland) and ecologist (other biodiversity features) detailing the results of the survey and any additional management that may be required to achieve the objective set for each feature. It will also include a figure showing the as-built locations of all biodiversity features. This report will be provided to the management company and Council Ecologist.
- 5.0.2 NPT Council will be responsible for appointing appropriate companies / consultants.

6.0 Establishment and Defects Liability Period

- 6.0.1 If any plants are found to be defective within the 12 month Defects Liability Period due to:
 - failure
 - poor materials
 - lack of vigor
 - damage from theft or vandalismthe contractor is responsible for rectifying them and maintaining the scheme as described in this document during that period.
- 6.0.2 From year 2 and until the completion of year 5, the responsibility for maintenance and replacement of failed plants will lie with the developer.
- 6.0.3 There is no limit on the number of times plant replacement can be carried out during the Defects Liability Period in order to achieve complete plant coverage and maintain the intended scheme designed by the Landscape Architect and indicated in the plans specified in Part 1.0 Introduction.
- 6.0.4 The Contractor/Managing Agent must carry out all maintenance operations at a time that is suitable for wildlife and planting. Refer to Appendix 1 for details.

- 6.0.5** All maintenance operations, including irrigation, will be dependent on weather conditions and carried out as necessary by the Contractor or as directed by the Contract Administrator (CA). While the CA may instruct the Contractor to perform operations at any time during the Maintenance Period, it is the Contractor's responsibility to ensure that the operations are arranged appropriately to ensure the proper establishment and vitality of the planting material.
- 6.0.6** Before commencing maintenance work, the Contractor/Managing Agent must inspect all areas on each visit to ensure there are no visible hazards that could cause injury.
- 6.0.7** Protective barriers and signage must be used at all times, and alternative routes should be provided if public access is affected.
- 6.0.8** Excavated or imported materials must not be placed directly on any surface. Any damage or disturbance to the soil structure or other features resulting from the implementation of the management plan should be addressed by reinstating them to their original condition.
- 6.0.9** All operations must comply with relevant legislation and current sections of Health and Safety, including:
- Health and Safety at Work Act 1974
 - Control of Pollution Act 1974
 - Food and Environment Protection Act 1985
 - The Wildlife and Countryside Act 1981
 - The Control of Pesticides Regulations 1986
 - The Environmental Protection (Duty of Care) 1991
 - The British Standards included in Part 6 of this document.

Appendix 1 - Summary of Management Works

Specific management task	Detail	Who completes task?	Timing	Management year					
				1	2	3	4	5	6 to 10
Tree and shrub planting	Monitoring of tree failures - Replace failed trees and shrubs	Landscape management contractor / ecologist	Once annually	✓	✓	✓	✓	✓	N/A
	Assessment of tree health and pruning - Prune dead, damaged or diseased branches, and those obstructing / damaging other plants. - Firm in any loose trees by foot - Any wounds to be trimmed back to sound tissue	Landscape management contractor / arborist	Up to twice annually (outside of nesting bird period)	✓	✓	✓	✓	✓	✓
	Assessment of tree protection, stakes and ties - Straighten trees, maintain tree protection and ties	Landscape management contractor	Twice annually	✓	✓	✓	✓	✓	TBC
	Removal of tree protection and stakes once trees can support themselves	Landscape management contractor	Between year 3 and year 5						
	Weed removal - Remove weeds within 0.5 m of the trunk by hand, using a strimmer or approved herbicide, avoiding damage to the tree.	Landscape management contractor	Regularly from April - June	✓	✓	✓			
	Top up bark mulch - A 75 mm layer of bark mulch to be maintained within a 1000 mm diameter of the tree.	Landscape management contractor	Annually	✓	✓	✓			
Ornamental and native shrub planting	Monitoring of shrub failures - Replace failed shrubs	Landscape management contractor / ecologist	Once annually	✓	✓	✓	✓	✓	TBC

Specific management task	Detail	Who completes task?	Timing	Management year					
				1	2	3	4	5	6 to 10
	Assessment of shrub health and pruning - Prune dead, damaged or diseased branches, water shoots and reversion growth. - Firm in any loose shrubs by foot - Any wounds to be trimmed back to sound tissue	Landscape management contractor / arborist	Up to twice annually (outside of nesting bird period)	✓	✓	✓	✓	✓	✓
	Weed control and rubbish removal - Remove weeds and rubbish by hand, using a strimmer or approved herbicide, avoiding damage to the shrubs.	Landscape management contractor	Regularly from April - June	✓	✓	✓			
	Top up bark mulch - A 75 mm layer of bark mulch to be maintained around shrubs	Landscape management contractor	Annually	✓	✓	✓			
	Apply Scotts Enmag fertiliser - Apply at a rate of 70 gms/m2 and lightly rake in.	Landscape management contractor	Annually between mid-May and August	✓	✓	✓	✓	✓	✓
Hedgerow planting	Monitoring of hedgerow failures - Replace failed trees	Landscape management contractor / ecologist	Once annually	✓	✓	✓	✓	✓	TBC
	Assessment of hedgerow health and pruning - Prune dead, damaged or diseased branches - shape hedgerow	Landscape management contractor / arborist	Follow schedule for each year provided in section 4.4.3	✓	✓	✓	✓	✓	✓
	Weed control - Remove weeds by hand, using a strimmer or approved herbicide, avoiding damage to the hedgerow.	Landscape management contractor	Regularly from April - June	✓	✓	✓			

Specific management task	Detail	Who completes task?	Timing	Management year					
				1	2	3	4	5	6 to 10
	Rubbish removal - remove rubbish regularly	Landscape management contractor	Regularly year round	✓	✓	✓	✓	✓	✓
	Apply Scotts Enmag fertiliser - Apply at a rate of 5 gms/plant	Landscape management contractor	Annually between mid-May and August				✓	✓	✓
Amenity grassland	Grass cutting - Grass to be maintained below 75 mm	Landscape management contractor	Regularly between March and the end of October	✓	✓	✓	✓	✓	✓
	Weed control - broad-leaved weeds to be controlled using selective herbicides.	Landscape management contractor	Regularly from April - June	✓	✓	✓			
	Rubbish removal - remove rubbish regularly - remove dead leaves through the autumn	Landscape management contractor	Regularly year round	✓	✓	✓	✓	✓	✓
	Grass failures - re-cultivate and re-seed bare patches, wheel ruts and areas of wear.	Landscape management contractor	As needed	✓	✓	✓	✓	✓	✓
Species-rich grassland / marshy grassland / butterfly bund	First year cutting - Grasslands to be maintained below 75 mm	Landscape management contractor	Regularly through the year	✓					
	Maintaining a diverse sward - Cut to 100 mm in late July - Leave arisings for 2-3 days then remove - Mow to 75 mm in September / October	Landscape management contractor	Annually		✓	✓	✓	✓	✓

Specific management task	Detail	Who completes task?	Timing	Management year					
				1	2	3	4	5	6 to 10
	Scrub and weed controlled to below 20% area - broad-leaved weeds to be controlled using selective herbicides. - scrub species to be removed	Landscape management contractor	Regularly throughout the year	✓	✓	✓			
	Grassland failures - re-cultivate and re-seed bare patches, wheel ruts and areas of wear.	Landscape management contractor	As needed	✓	✓	✓	✓	✓	✓
	Assessment of diversity - a survey will be completed to assess the species composition of the grassland, if low species diversity is apparent advice on ways to increase diversity will be provided.	Ecologist	Annually in summer	✓	✓	✓	✓	✓	✓
Pond edge planting	Detail needed	Landscape management contractor		✓	✓	✓	✓	✓	✓
	Assessment of diversity - a survey will be completed to assess the species composition of the grassland, if low species diversity is apparent advice on ways to increase diversity will be provided.	Ecologist	Annually in summer	✓	✓	✓	✓	✓	✓
Wildflower blanket green roof	First year maintenance - Follow detail schedule provided in section 3.6	Landscape management contractor		✓					

Specific management task	Detail	Who completes task?	Timing	Management year					
				1	2	3	4	5	6 to 10
	Removal of unwanted plant material - remove unwanted plants by hand pulling	Landscape management contractor	Annually in spring and autumn		✓	✓	✓	✓	✓
	Application of fertiliser - Apply 6-month slow release granular fertiliser	Landscape management contractor	Annually between April and May		✓	✓	✓	✓	✓
	Maintaining a diverse sward - Cut to 50-70 mm in late August - Leave arisings for 2-3 days then remove	Landscape management contractor	Annually		✓	✓	✓	✓	✓
	Grassland failures - to be discussed with supplier, actions taken in the following year	Landscape management contractor	Annually						
	Assessment of diversity - a survey will be completed to assess the species composition of the grassland, if low species diversity is apparent advice on ways to increase diversity will be provided.	Ecologist	Annually in summer	✓	✓	✓	✓	✓	✓
Rain gardens	Ensure rain gardens are functional - identify and correct accumulations of sediment / organic matter - correct erosion problems - identify damage to vegetation	Landscape management contractor	Twice a year during May and August	✓	✓	✓	✓	✓	✓

Specific management task	Detail	Who completes task?	Timing	Management year					
				1	2	3	4	5	6 to 10
	Maintaining a healthy rain garden - mow / trim vegetation - remove weeds and invasive vegetation	Landscape management contractor	Twice during growing season (April - October) when the ground is dry	✓	✓	✓	✓	✓	✓
	Maintenance of plants - cut back ornamental grasses and flower stalks from previous season	Landscape management contractor	Annually by the end of April	✓	✓	✓	✓	✓	✓
	Failures - Replant bare areas with specified plants	Landscape management contractor	As needed	✓	✓	✓	✓	✓	✓
Woodland areas	Assessment of tree health and pruning - Prune dead, damaged or diseased branches, and those obstructing / damaging other plants. - Firm in any loose trees by foot - Any wounds to be trimmed back to sound tissue	Landscape management contractor / arborist	Up to twice annually (outside of nesting bird period)	✓	✓	✓	✓	✓	✓
	Invasive plant control - Annual monitoring to identify any Non-Native Invasive (plant) Species (INNS) that have colonised the woodland. - Appropriate management and controlled removed of INNS before it spreads and becomes established.	Specialist contractor	Annually in late spring	✓	✓	✓	✓	✓	✓

Specific management task	Detail	Who completes task?	Timing	Management year					
				1	2	3	4	5	6 to 10
	Woodland thinning - an annual monitoring will be completed which will identify the need for selective thinning to support a diverse understorey. - trees identified for thinning will be cut and dropped avoiding damage to retained trees.	Landscape management contractor / arborist	Annual survey in spring / summer, selective thinning in winter.	✓	✓	✓	✓	✓	✓
Bat boxes	Maintain roost features for bats - Check for signs of damage - Replace boxes if damaged (following inspection by licenced ecologist)	Landscape management contractor / ecologist	Annually in winter	✓	✓	✓	✓	✓	✓
Bird boxes	Maintain nesting features for birds - Check for signs of damage and remove old nests as needed. - Replace boxes if damaged	Landscape management contractor	Annually in winter	✓	✓	✓	✓	✓	✓
Hedgehog/ wildlife access	Maintain access through site for hedgehog - visual checks for obstructions - removal of obstruction	Landscape management contractor	Quarterly through year	✓	✓	✓	✓	✓	✓
	Management of translocation area - control of scrub encroachment - implementation of other management recommendations	Landscape management contractor	Suitable timings to be agreed based on activities.	✓	✓	✓	✓	✓	✓

Appendix 2 - British Standards

As well as the standards described above the soft landscape works should meet the following British Standards:

Topsoil handling, stripping and storage

- BS ISO 15799:2003 Soil quality - guidance on eco-toxicological characterization of soils and soil materials
- BS 3882:1994 Specification for topsoil
- BS 6031:1981 Code of practice for earthworks
- BS 7562-4:1992 Planning, design and installation of irrigation schemes guide to water resources
- BS 4428:1989 guide of practice for general landscape operations (excluding hard surfaces) AMD 6784
- BS 3882:1994 specification for topsoil and AMD 9938.

Quality of Trees and Shrubs

- BS 3936-1:1992 Nursery stock specification for trees and shrubs
- BS 3936-5:1985 nursery stock specification for poplars and willows
- BS 3936-10:1990 nursery stock specification for ground cover plants.

Maintenance of gardens/ Landscapes

- BS 7370-3:1991 grounds maintenance recommendations for maintenance of amenity and functional turf (other than sports turf)
- BS 3998:2010 recommendations for tree work and AMD 6549.

Horticulture

- BS EN 12579:2000 Soil improvers and growing media - sampling
- BS EN 13037:2000 Soil improvers and growing media - determination of pH.

Turf

- BS 3969:1998 Recommendations for turf for general purposes
- BS 4428:1989 Code of practice for general landscape operations (excluding hard surfaces).

Appendix 3 – Invasive Non-Native Plant Species

Wildlife and Countryside Act 1981 Section 14 Schedule 9 Part II Plants

Under the Act it is illegal to plant or otherwise cause to grow in the wild any plant listed in

Schedule 9 to the Act. The current list is available at:
<http://www.nonnativespecies.org/index.cfm?pageid=67>

Northern Ireland list:
<http://www.legislation.gov.uk/nia/2011/15/schedules/enacted>

(These lists omit marine algae)
 Schedule 9 Plant Species: Land plants

Common name	Scientific name	England & Wales	Scotland	Northern Ireland
Alexanders, Perfoliate	<i>Smyrniolum perfoliatum</i>	✓		
Archangel, Variegated Yellow	<i>Lamium galeobdolon</i> subsp. <i>argenteum</i>	✓		
Azalea, Yellow	<i>Rhododendron luteum</i>	✓		
Balsam, Himalayan	<i>Impatiens glandulifera</i>	✓		✓
Bluebell, Spanish	<i>Hyacinthoides hispanica</i>			✓
Cabbage, Skunk	<i>Lysichiton americanum</i>			✓
Cotoneaster	<i>Cotoneaster horizontalis</i>	✓		
Cotoneaster, Entire-leaved	<i>Cotoneaster integrifolius</i>	✓		
Cotoneaster, Himalayan	<i>Cotoneaster simonsii</i>	✓		
Cotoneaster, Hollyberry	<i>Cotoneaster bullatus</i>	✓		
Cotoneaster, Small-leaved	<i>Cotoneaster microphyllus</i>	✓		
Creeper, False Virginia	<i>Parthenocissus inserta</i>	✓		
Creeper, Virginia	<i>Parthenocissus quinquefolia</i>	✓		
Dewplant, Purple	<i>Disphyma crassifolium</i>	✓		
False-acacia	<i>Robinia pseudoacacia</i>		✓	
Fig, Hottentot	<i>Carpobrotus edulis</i>	✓	✓	✓
Garlic, Three-cornered	<i>Allium triquetrum</i>	✓		

Hogweed, Giant	Heracleum mantegazzianum	✓	✓	
Honeysuckle, Japanese	Lonicera japonica			✓
Knotweed, Himalayan	Polygonum wallichii			✓
Knotweed, Giant	Fallopia sachalinensis	✓		✓
Knotweed, Hybrid	Fallopia japonica x Fallopia sachalinensis	✓		
Knotweed, Japanese	Fallopia japonica (Polygonum cuspidatum)	✓	✓	✓
Leek, Few-flowered	Allium paradoxum	✓	✓	✓
Mile-A-Minute Weed	Polygonum perfoliatum			✓
Montbretia	Crocasmia x crocosmiiflora	✓		
Reed, Giant	Arundo donax			✓
Rhododendron	Rhododendron ponticum Rhododendron maximum	✓		
Rhubarb, Giant	Gunnera tinctoria	✓		✓
Rose, Japanese	Rosa rugosa	✓		
Salmonberry	Rubus spectabilis			✓
Sea-buckthorn	Hippophae rhamnoides			✓
Shallon	Gaultheria shallon		✓	

Schedule 9 Plant Species: Freshwater plants

Common name	Scientific name	England & Wales	Scotland	Northern Ireland
Fanwort (or Carolina Water-shield)	Cabomba caroliniana	✓	✓	✓
Fern, Water	Azolla filiculoides	✓	✓	✓
Hyacinth, Water	Eichhornia crassipes	✓	✓	
Lettuce, water	Pistia stratiotes	✓	✓	✓
Parrot's Feather	Myriophyllum aquaticum	✓		✓

Pennywort, Floating	Hydrocotyle ranunculoides	✓		✓
Potato, Duck	Sagittaria latifolia	✓		
Primrose, Floating Water	Ludwigia peploides	✓		✓
Primrose, Water	Ludwigia grandiflora Ludwigia uruguayensis	✓		✓
Salvinia, Giant	Salvinia molesta	✓	✓	✓
Stonecrop, Australian Swamp (or New Zealand Pigmyweed)	Crassula helmsii	✓	✓	✓
Water chestnut	Trapa natans			✓
Water soldier	Stratiotes aloides			✓
Waterlily, fringed	Nymphoides peltata			✓
Waterweed, Curly	Lagarosiphon major	✓	✓	
Waterweeds	All species of the genus Elodea	✓		✓

Species in bold are now banned from sale under “The Wildlife and Countryside Act 1981 (prohibition on Sale etc. of Invasive Non-native Plants) (England) Order 2014”.

Appendix 4 – Maintenance Team Directory

Specific management areas	Subcontractor/ Specialist team name	Company address	Contact number	Name of main contact
Tree and shrub planting				
Ornamental and native shrub planting				
Hedgerow planting				
Amenity grassland				
Species-rich grassland / marshy grassland / butterfly bund				
Pond edge planting				
Wildflower blanket green roof				
Rain gardens				
Woodland areas				
Bat/bird boxes				
Hedgehog/wildlife access				

