

Dunsbury Park

Landscape Management Plan (5 years)

August 2020

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1 Introduction

- 1.1 This document has been prepared by The terra firma Consultancy to provide a comprehensive ongoing management plan for the external environment at Dunsbury Park.
- 1.2 This document outlines design and management principles and objectives and then gives more detailed guidance for the maintenance of the site's green infrastructure so as to ensure the long-term sustainability of the proposed and existing landscape framework as an amenity and biodiversity resource.
- 1.3 Specialist ecological advice has been provided by Atkins (Habitat Management and Maintenance Plan (Link Road and Associated Infrastructure Phase March 2014) – Appendix A) with regard to managing ecologically sensitive habitats and this report should be read in conjunction with their recommendations.
- 1.4 This document covers all landscape areas related to the development and should be read in conjunction with the following landscape proposals drawings by The terra firma Consultancy.
 - 1569-1009 Landscape, Open Space and Ecology Strategy;
 - 1569-1002, 1002, 1003 1008 Landscape proposals- highways
- 1.5 Soft landscape proposals include tree planting, ornamental shrubs, clipped hedges, groundcover planting, native shrub and hedge planting, grass seeding and lawns in addition to hard surfacing.
- 1.6 The site management and maintenance will initially be overseen by the Main Contractor and carried out by the Landscape Contractor for the duration of the defects period until final completion. It should be noted that there may be management and maintenance required prior to practical completion of retained areas of the site.
- 1.7 At completion, responsibility for ongoing maintenance will be handed over to the 'Management Team' (see 6.1 below) who will appoint a Landscape Contractor to undertake the work.
- 1.8 The management and maintenance works should be carried out by suitably qualified contractors, in particular where specialist management and maintenance is required (e.g. for ecological or arboricultural reasons). This document refers to the 'Landscape Contractor' to cover all parties undertaking management and maintenance works hereon, both before final completion and afterwards as outlined above.

2 Design Strategy

- 2.1 The design strategy aimed to draw together the strategic objectives of the Design and Access Statement March 2012 by Atkins and the Environmental Statement Non-Technical Summary March 2012 by Atkins and should be read in conjunction with those documents.
- 2.2 The principle objectives are summarised as below:
- 2.3 Design principles:
 - To create a sense of character and of place
 - To respond positively to topography and landscape
 - To create legible design to aid identity and movement and demarcate public and private areas
- 2.4 To developed areas:
 - Create new wetlands
 - Create attractive private and public sunlit places
 - Use 3D landmarks, gateways and edges to aid legibility
 - Treat the following high profile areas differently;
 - Site entrance/link roads
 - Hotel
 - Plot entrances
 - Create communal areas between buildings for staff use and ensure they relate positively to buildings
 - Use planting within car parks to prevent 'drive thru'
- 2.5 'Protect and connect'
 - Ensure existing green infrastructure is protected and connected including:

- Hedgerows – thicken and link (including to connect Cherry Tree Row with Beech Road East via Dormouse underpass)
- Safeguard Sites of Importance for Nature Conservation (SINCS)
- Potentially aim to create link between proposed Havant Thicket Reservoir and Dunsbury Hill Farm
- Create 'woodland fingers' stretching east from Beech Wood
- Maintain a 150-180m min undeveloped buffer to A3(M)
 - Replacement oak planting in vicinity of Neville's Park East / Neville's' Park

2.6 Access

- Manage some woodland for public access
- Improve management to open space to east of the site

2.7 Habitat Creation and Mitigation

- Plant buffers to woodlands and hedgerows (predominantly blackthorn/hawthorn mix and including dormouse-friendly species)
- Create additional wetlands including seasonal scrapes and SUDS
- Visual connections/mitigation (of appropriate form and scale) to Bridleway 123 (Park Lane) and to new footpaths/cycleways
- Habitat Creation Area to the north of site comprising:
 - Mosaic of woodland edge
 - Species rich grassland (possibly transplanted from Hotel footprint)
 - Scrub and scrapes
- New aquatic planting to SUDS to benefit fauna
- Mitigate views from Calcott and Ramsdale Roads and new Woolston Rd development
- Install dormouse crossing to bridge over Hermitage Stream
- Provide bat and dormouse boxes
- Create SUDS to drain car parks and hard standing

2.8 Water

- Create new wetlands and scrapes
- SUDS to drain to Hermitage and Park Lane Streams via SUDS
- SUDS to car parks and hard standing
- SUDS outside development plots to be managed by retention ponds
 - De-canalise Hermitage Stream

2.9 Planting

- Use of blackthorn/hawthorn etc. hedge/shrub mix
- Locally appropriate trees species to integrate woodland
- 1.2m beech hedges to link road and plot boundaries
- Buildings set back from tree planting to max solar gain and prevent over shadowing
- Use of deciduous trees near building for summer shade and winter solar gain
- Street and car park trees to provide shelter and shade
- Advanced woodland planting within buffer to shelter development from prevailing wind.

2.10 Management and access

- Management and governance structures to ensure maintenance of features and SUDS and to ensure community engagement and consultation. E.g. Trusts etc.
- SUDS to provide biodiversity and recreation opportunities and a high quality environment
- Woodland cover managed to diversify habitat, improve accessibility and potentially create a north-south walk via Neville's Park
- Improved open space management to Eastern boundary with Leigh Park for recreational purposes

2.11 The site layout includes the following principal components:

- Bus link
- Footpath / cycleway circulation
- Open Space
- Setting for employment / hotel use
- Hermitage stream rehabilitation

- SUDS system

3 Ecological Mitigation

- 3.1 Measures for the mitigation of effects on ecological assets have been set out in Atkins Habitat Management and Maintenance Plan (Link Road and Associated Infrastructure Phase) March 2014, see Appendix 1. These measures have been incorporated into landscape proposals for the road (terra firma drawings 1569-1001, 1002, 1003, 1008) and 1569-1009 Landscape, Open Space and Ecology Strategy.
- 3.2 Ecological mitigation measures include the following:
- Transplanting hotel footprint turf (where a suitable location is available)- ecologist to advise
 - Buffers to woodland SINCS
 - Strengthen and buffer to hedgerows – Connect and Protect
 - Transplant hedgerow to be moved
 - Replacement Oak Trees to Neville's Park
 - Additional trees to Edge of Beech Woods at Habitat creation area
 - Bat boxes, bird boxes, dormouse nest boxes
 - Hermitage Stream realignment
 - Dormouse crossing point
 - Green fingers heading eastwards from Beech Wood into individual parcels
 - Bat hop-overs
 - Habitat Creation Area (see below)

4 Objectives

- 4.1 The overall objectives for the management and maintenance works are as follows:
- To realise the vision of the development's landscape design with the long term provision of high quality Green Infrastructure for the new community at Dunsbury Hill Farm and the wider community of Waterlooville and Leigh Park.
 - To ensure the thriving of existing planting, successful establishment of any new planting and long-term health of all landscape elements for the benefit of the users and the wildlife (flora and fauna).
 - To maintain a crisp and tidy finish to all elements adjacent to building curtilages, access, car parks, entrances, and other hard surfaces and fencing so creating a high-quality environment.
 - To continue improvements into the future by thorough and creative management.
 - To ensure best horticultural and health and safety practices at all times.
 - To ensure that methods employed enhance and encourage wildlife, wherever possible.
 - To comply with all relevant legislation relating to flora and fauna, in particular protected species, whether known to be present on site, or found.

5 Maintenance activities (years 1-5)

- 5.1 Appendix 2 provides a list of maintenance activities to be carried out in the short term and doubles as a checklist to be used during maintenance visits.
- 5.2 The Landscape Contractor shall be required, whenever maintenance visits are carried out, to complete and sign the checklist itemising the operations that have been carried out and that the work has been completed. This should be submitted for approval to the Main Contractor or the Management Team.
- 5.3 The outline of a suggested programme of work has been produced as a guide (see Appendices 2 and 3). The final maintenance programme produced by the Landscape Contractor should ensure that the frequency of activities is sufficient to meet the management objectives in sections 9.
- 5.4 Refer to appendix 1 Atkins (Habitat Management and Maintenance Plan (Link Road and Associated Infrastructure Phase) March 2014, section 5, for monitoring of ecological features.

6 Monitoring (reporting) and review processes

- 6.1 A Management Team shall be established to ensure that the management plan is implemented and oversee its ongoing use and development through a process of monitoring and review. The Management Team shall comprise representatives from the development company, the Landscape Contractor and any specialist consultants as appropriate.
- 6.2 In order to monitor standards and make amendments where required, the Management Team will need to review the management work (with reference to this document) with the Main Contractor and the Landscape Contractor prior to handover and at least quarterly for the first year after practical completion of the development. Post-handover, review annually with the Landscape Contractor unless agreed otherwise.
- 6.3 All plant failures should be logged and reported to the Management Team at the first opportunity. It is anticipated that, where approved, replacement planting should be carried out in the next planting season, with replacement plants to match size and species of adjacent plants. If the originally specified species is found to be unsuitable for the current situation (during the design stages species were chosen carefully so as to avoid this issue), then the Landscape Contractor should propose an appropriate alternative.
- 6.4 The Landscape Contractor will contribute to an annual review of the use of the site carried out by the management team, looking at the following (as appropriate):
- Pedestrian routes and desire lines
 - Litter
 - Neighbouring properties and uses and any problems arising (such as dead, dying or dangerous trees)
 - Wildlife impact
 - H&S management and duty of care
- 6.5 It is anticipated that following the review of the use, any issues or changes that are impacting on the landscape will be either accommodated through design proposals by the Landscape Contractor or approach to the appropriate body by the Management Team.
- 6.6 It is suggested that the Management Team discuss any significant changes to the site layout and management regime, where appropriate, with the Local Authority.

7 Procedures for external contractors

- 7.1 The following should be discussed and confirmed at initial meetings with the Landscape Contractor:
- Storage of materials and parking;
 - Location of underground services;
 - First aid arrangements;
 - Emergency procedures.
- 7.2 In the event of an incident occurring during the implementation of the landscape management works this would be required to be reported to the Management Team. Any incident shall be reported immediately and emergency services contacted if necessary.

8 Health and Safety

Safe working at height

- 8.1 The Landscape Contractor is fully accountable for demonstrating statutory compliance and in particular comprehensive risk assessment and method statements for all works and undertakings in respect of the provision of landscape management.

Safe working in or near water

- 8.2 The Landscape Contractor is fully accountable for demonstrating statutory compliance and in particular comprehensive risk assessment for all works and undertakings in respect of the provision of landscape management.

- 8.3 A full risk assessment must be carried out by the contractor to ensure all hazards are identified. This will include identification of potential hazards including, but not limited to, working in fast flowing water, use of suitable footwear and protective clothing, identification of underwater obstacles, risk of hypothermia, risk of drowning and quality of water. It should be noted that:
- 8.4 Operating in or near to flood water can bring additional hazards not normally encountered in an everyday working environment. Fast flowing water is particularly hazardous as the weight of water exerted in these conditions will be extreme. Walking into, wading or driving through fast flowing water carries a significant risk that the person will be swept away with the force of the current.
- 8.5 Following flooding, staff should not wade through any water until a thorough survey for hidden obstacles has been carried out.
- 8.6 Dirty contaminated water can also mask ditches, hollows and areas of deeper water. These types of situation represent an unseen hazard even in the shallowest of waters.
- 8.7 Floodwater will contain substantial amounts of debris which could cause entrapment.
- 8.8 Health hazards from water borne contaminants will be present in floodwater. These hazards may derive from overflow from sewage treatment plants, or from nearby agricultural or industrial premises.
- 8.9 To minimize risk of infection, staff should undertake basic precautions such as:
- Covering cuts and broken skin with waterproof plasters;
 - Wear protective clothing;
 - Wash hands after handling any animal or contaminated clothing or other material;
 - Wash hands before eating or drinking.
- 8.10 Risk Assessment Compliance Review, Audit and Action Plans prior to any work should be drawn up and a responsible person identified by the contractor.
- 8.11 Access points should be identified by workers to allow safe entry and exit to the working area.

Chemical Use

- 8.12 It is the responsibility of the Landscape Contractor to ensure they are aware of, familiar with and abide by all current legislation pertaining to pesticides (insecticides, herbicides, fungicides) and their use.
- 8.13 A full Risk Assessment shall be undertaken and documented for each planned chemical application.
- 8.14 Chemicals are only to be used for weed control and pests/diseases where specified and approved. All work and workmanship shall comply with latest COSHH regulations. Where work is near to drainage ditches or land drains it must comply with Environment Agency guidelines for use of chemicals. Where scheduled or instructed the Landscape Contractor shall apply a suitable foliar acting herbicide to kill regrowth and allow the recommended period before clearing arisings.

First Aid

- 8.15 The Landscape Contractor shall provide a minimum of one First Aid trained staff member, who should be present on site at any time during working hours.

9 Management Specification

9.1 General actions

- 9.1.1 The Landscape Contractor is to produce Method Statements for approval by the Main Contractor or Management Team for all operations.
- 9.1.2 The Landscape Contractor is expected to adopt a pro-active approach to management and maintenance generally, and bring any issues requiring attention and action to the notice of the Main Contractor or Management Team.
- 9.1.3 All materials and workmanship are to be to the highest possible standards in accordance with relevant good practice, as described by British Standards or other relevant laws, policy or guidance.
- 9.1.4 All operatives must be appropriately skilled and experienced for the type and quality of work, especially where COSHH is applicable.
- 9.1.5 Work is only to be carried out while soil and weather conditions are suitable, or as appropriate to any ecological constraints (e.g. bird nesting seasons etc.).
- 9.1.6 Only machinery and tools suitable for site conditions and the work carried out are to be used. Hand tools should be used around existing trees and in confined places. Nylon filament rotary cutters or other mechanical tools shall not be used closer than 100mm to the stem of any tree or plant. All machinery is to be fitted with appropriate guarding to prevent damage to adjacent planting, structures, fittings or surfaces.
- 9.1.7 All grass cutting machinery to be well maintained and correctly adjusted to give a clean and even cut. Each machine is to be appropriate to the management plan requirements.
- 9.1.8 Any ground disturbed during maintenance operations must be made good.
- 9.1.9 All woody arisings are to be disposed of offsite. All grass cuttings may be let fly as appropriate.
- 9.1.10 Soil and other arisings are to be removed from hard surfaces and all areas left in a clean and tidy condition after maintenance operations are complete.
- 9.1.11 All litter is to be collected from all soft landscape areas and disposed of offsite. No burning on site will be allowed.
- 9.1.12 Prior to handover, all newly planted beds and grass areas shall be watered to ensure their successful establishment and vigorous growth, particularly during dry periods.
- 9.1.13 After handover, watering of planted areas shall not generally be carried out, with the exception of any newly planted beds or new grass, which shall be watered to ensure their successful establishment and vigorous growth, particularly during dry periods.
- 9.1.14 The contractor is responsible for ensuring availability of water, and transportation to planting areas (by hose or bowser). Water shall be kept free from any impurities at all times.
- 9.1.15 All plants and planting areas shall be maintained as weed free. Planting beds shall be kept clear of all weeds, including roots, by hand using hoes, trowels or forks, taking care to remove not more than a minimum quantity of soil and causing minimum disturbance to trees, plants and mulched surfaces, leaving the area in a neat, raked, clean condition. All mulch spilling onto adjacent areas shall be swept up and if not contaminated with weeds or rubbish, returned to planted/mulched areas. Remove weeds growing on or in mulch by hand weeding or use of herbicide.
- 9.1.16 All plants and planting areas shall be maintained as pest and disease free at all times. The Landscape Contractor is expected to adopt a pro-active approach to pests and diseases and treat accordingly. Any plant losses as a result of pest and disease infestation shall be reported to the Main Contractor or the Management Team and replacement planting discussed.
- 9.1.17 The Landscape Contractor will ensure feeding of all grass, plants and trees using a suitable and approved organic slow release fertilizer, used at appropriate times of year.
- 9.1.18 All vegetation shall be pruned as necessary and when requested to avoid the following: obstruction of pedestrians or vehicles; obstruction of signage or lighting; obstruction of sight lines.
- 9.1.19 Dead plants shall be removed and where approved by the Main Contractor or Management Team and deemed appropriate to the design of the landscape or required for functional purposes (i.e. screening), gaps should be

filled during the next planting season using an appropriate sized replacement. Dead foliage, wood and flowers shall be removed as far as is practical, with priority given to areas subject to closest and heaviest pedestrian and vehicular traffic.

- 9.1.20 Legislation relating to nature conservation and protection of wildlife and wild places is to be followed and any specialist licences obtained before commencement of work.
- 9.1.21 All plant species are to be resilient to pest and diseases and adhere to basic bio-security measures to prevent the introduction and spread of pests and diseases. Refer to relevant government guidelines and British Standards.

NOTES:

- 9.1.22 **All woodland, trees and hedgerows shall be managed separately by Arboricultural specialists – refer to section 9.15-9.23.**
- 9.1.23 **Certain landscape maintenance prescriptions, such as fertiliser application or mulch, should only be applied within formal areas as these operations are not suitable for areas that are to be managed primarily for the benefit of ecology (e.g. rough grass and hay meadow).**

9.2 Hard surfaces, external fittings and furniture

Management objective

- 9.2.1 To ensure that all hard surfaced areas, including roads and access points, are kept in a neat and tidy condition (in both planned and reactive manners), including hard surfaced areas in and around delivery, refuse and storage areas and parking bays.
- 9.2.2 To ensure that all fittings and furniture, including signage, lighting, bollards and seating, are kept in a clean condition and in good repair.

Management operations

- 9.2.3 Remove litter, fallen leaves, cigarette ends, chewing gum etc. from all paving to maintain neat appearance. Particular attention should be paid to areas where leaves collect e.g. to corners and within undercroft parking areas.
- 9.2.4 All bitmac and paved areas should be treated with a suitable herbicide spray in accordance with the manufacturer's recommendations (as required) to remove algae, weeds and moss. All bitmac and paving should be swept thoroughly to remove any debris. Allow for thorough annual cleaning of all bitmac and paving using jetwash or other effective means.
- 9.2.5 Areas of timber or composite decking are to be cleaned and maintained in accordance with the manufacturer's recommendations.
- 9.2.6 Permeable surfaces are to be cleaned and kept debris free to prevent silting and clogging. Manual or mechanical cleaning or removal of debris is to be in accordance with the manufacturer's recommendations and suitable for use on the type of surface.
- 9.2.7 All fittings and furniture should be maintained in a clean state at all times and shall be regularly checked.
- 9.2.8 Report any deterioration and damage to hard surfacing, fittings and furniture to the Main Contractor or the Management Team immediately to allow repair or replacement as soon as possible.
- 9.2.9 Painted fittings shall be regularly inspected for rust and any rusting surfaces reported to the Main Contractor or the Management Team. If authorised to do so these shall be treated appropriately before applying paint to match existing.
- 9.2.10 Road marking are required to be clear, visible and complete. Any deterioration in road markings should be reported to the Main Contractor or the Management Team so that specialist contractors can be engaged for reinstatement works.
- 9.2.11 Exterior stainless steel furniture requires cleaning 6-12 times per annum. Clean all stainless steel with suitable detergent/cleaning solution to remove dirt, oil and grease, limescale and staining.

9.3 Fencing and gates

Management objective

- 9.3.1 To ensure that all fencing and gates are kept in a well maintained, neat and tidy condition in order to ensure all gates and fittings are operational and in good working order.

Management operations

- 9.3.2 Remove litter and fallen leaves to maintain neat appearance on face and at base of fencing. Particular attention should be paid to areas where leaves gather, and these should be removed regularly to prevent a build-up.
- 9.3.3 Maintenance of locks and hinges (e.g. regular lubrication) is not anticipated to form part of this management plan.
- 9.3.4 All posts shall be periodically checked for stability and damage to ensure that the integrity of fencing is not compromised. All cross members shall be similarly checked, as shall the tautness of wires where applicable.
- 9.3.5 Report any damage or deterioration in condition to the Main Contractor or the Management Team immediately to allow consideration of repair or replacement as soon as possible.

9.4 Surface water drainage systems

Management objective

- 9.4.1 To ensure that drainage system is kept in good working condition.

Management operations

- 9.4.2 Ensure that all above ground area of drains are kept free from litter and leaves at all times.
- 9.4.3 Any suspected blocked drains should be reported to the Main Contractor or the Management Team as soon as they are identified so that arrangements, with the Landscape Contractor or other specialist contractor can be made for their clearance.
- 9.4.4 All surface drains to be cleared out regularly by jet-washing or manually extracting debris, dependent upon drain type.
- 9.4.5 Report any blocked drains, deterioration or damage to the Management Team and repair or replace as soon as possible.

9.5 Swales

Management objectives

- 9.5.1 To ensure that swales are maintained to allow free flow of water at all times whilst providing areas of damp grassland habitat.

Management operations

- 9.5.2 Swales shall be regularly checked and any debris, leaves, litter or undesirable plant species shall be removed.
- 9.5.3 Pipes, inlets, outflows and overflows shall be monitored on a monthly basis (or more frequently if required) and cleared of blockages as necessary.
- 9.5.4 Infiltration surfaces shall be monitored on a monthly basis (or more frequently if required) for ponding, compaction and silt accumulation. Ponding for a period greater than 48 hours shall be recorded and appropriate remedial measures taken if further monitoring reveals this to be necessary.
- 9.5.5 Mowing shall be carried out using approved machinery to maintain the vegetation length within the limits of 50 mm and 70 mm during March to October inclusive and between 70 mm and 100 mm during the rest of the year. (As a guide, this will normally require mowing at up to once a fortnight in the peak of the season). The clippings shall be removed from site or to an agreed compost pile location. Mowing shall be carried out without rutting or compaction of the surface, especially when ground conditions are soft. Do not cut during periods of drought, or when ground conditions or grass are wet, without the prior agreement of the Management Team. All machinery is to be fitted with appropriate guarding to prevent damage to adjacent planting, structures, fittings or surfaces.
- 9.5.6 Within and around swales one strim per year shall be carried out to remove vegetation comprising 25% of the edge treatment on rotation. 15% of the edge shall be maintained as bare accessible ground through regular

mowing and 60% shall remain under cover of rough/marginal vegetation. Strimming shall only take place during winter months.

- 9.5.7 All material removed shall be left adjacent to swales (without compromising use of site) for two days to allow for migration of animals and insects back to channel, prior to removal off site. Areas adjacent to the swales used for clearance operations should be limited to avoid damage to grassed areas.
- 9.5.8 As required, the following remedial actions shall be carried out: Repairs to erosion or other damage by re-turfing or reseeded; Re-levelling of uneven surfaces and reinstatement of design levels; Scarification and spiking of topsoil layer to improve infiltration performance, break up silt deposits and prevent compaction; Removal of sediment build-up where appropriate; Removal of harmful or polluting residues by safe means.
- 9.5.9 Accessible edges shall be checked to ensure good ground stability and adequate surfacing to prevent slips, trips and falls. Any shortfalls shall be reported to the Management Team and access to the edge of the swale restricted until appropriate corrective measures have been undertaken.

9.6 Ditches

Management objectives

- 9.6.1 To maintain ditches as clean, clear waterways with a dense fringe of healthy marginal vegetation, creating suitable habitat for a diverse range of invertebrates, plants, mammals, reptiles and birds.

Management operations

- 9.6.2 All ditches shall be checked for litter and other waste, which shall be removed and carted offsite. No burning on site shall be allowed.
- 9.6.3 Management operations such as cutting of vegetation and de-silting of ditches shall take place rotationally following an assessment of requirement.
- 9.6.4 De-silting of channels shall be undertaken in consultation with the Environment Agency and only where necessary (approximately every 10-15 years) in September or October. Machinery shall only be permitted on one bank. Marginal vegetation shall not be disturbed, nor will a minimum of one third of the channel. Regard shall be had for potential protected species present, such as reptiles. A method statement prepared with input from a suitably qualified Ecologist may be required to undertake works if protected species are found to be present within the area of works.
- 9.6.5 Fallen trees and other debris shall be removed from the water, with the exception of those which are regularly observed to be providing shelter for wildlife.

9.7 Ponds

Management objectives

- 9.7.1 To maintain water quality for amenity value and the benefit of wildlife.
- 9.7.2 To ensure water bodies are maintained to allow free flow of water and in a safe and healthy condition, and to encourage a naturalistic landscape setting to benefit the ecological value of the area. To maintain marginal and emergent growth as a visually attractive, varied and balanced habitat.
- 9.7.3 To maintain selected edges of the water body as safe, accessible areas and to ensure that grass margins form a safe and accessible point of approach to the water edge for pedestrians, whilst maintaining a margin of naturalised longer grass and water edge plants to create a suitable habitat for water side fauna and flora including birds, reptiles, amphibians and invertebrates.

Management operations

- 9.7.4 Water shall be tested regularly to ensure that it is free from contaminants and that the quality remains within acceptable limits (as determined by test kit parameters). Algal blooms and infestation by undesirable weed species should be responded to immediately.
- 9.7.5 Chemicals are not to be used within a 10m radius of ponds to minimise leaching.
- 9.7.6 The bottom of the water body shall be periodically dredged to redress the naturally occurring build-up of silt and debris, in order to maintain habitats and water quality. Regard shall be had to potential protected species presence such as reptiles and nesting birds. A method statement prepared with input from a suitably qualified

- Ecologist may be required to undertake works if protected species are found to be present within the area of works.
- 9.7.7 Any reed growth shall be cut on a rotational basis once a year during autumn. The aim is that the cutting back of reeds is undertaken in sections of no more than 1/3 at any time, so that the area is never left completely levelled, ensuring that wildlife value and visual appearance are maintained.
 - 9.7.8 All materials removed shall be left adjacent to waterbodies (without compromising use of site) for two days to allow for migration of animals and insects back marginal habitat, prior to removal. Areas adjacent to the water bodies used for clearance operations shall be limited to avoid damage to marginal areas.
 - 9.7.9 Accessible edges shall be checked to ensure good ground stability and adequate surfacing to prevent slips, trips and falls. Any shortfalls shall be reported to the Management Team and access to the edge of the water body restricted until appropriate corrective measures have been undertaken.
 - 9.7.10 Grass edges around water bodies shall be cut in sections on a rotational basis during the early autumn, to leave sections of varied length. Some areas of bare mud will also be retained around the edge of ponds where there would otherwise be grass. Proportions shall be approximately as follows: 25% cut; 15% bare ground; 60% rough/marginal vegetation.
 - 9.7.11 Planting on banks shall be cut back regularly to ensure it is maintained at a manageable height, whilst retaining wildlife habitat value. No more than 40% shall be cut back at any one time to provide shelter for wildlife and no cutting shall take place during the nesting season of aquatic birds.
 - 9.7.12 Emergent and submerged vegetation of ponds (no more than 25%) shall be cleared during the autumn or winter of each year to create areas of both open water and varied structure.
 - 9.7.13 Aquatic species shall be maintained as appropriate, dividing and removing any vegetation encroaching upon deeper areas of the pond outside of shallow pockets and ledges.
 - 9.7.14 Pond weed and water lilies shall be reduced regularly to keep them manageable and prevent harm to other aquatic wildlife.
 - 9.7.15 Ponds shall be managed in a pro-active way to adapt to the changes taking place as a result of succession.
 - 9.7.16 Fallen trees and other debris shall be removed from the water, with the exception of those which are regularly observed to be providing shelter for wildlife.
 - 9.7.17 Throughout the year, the water level shall be checked and topped up as required to provide sufficient cover for aquatic wildlife. In the event of restrictions being put in place by Statutory Undertakers, consult the Management Team for guidance on water use.

9.8 Scrapes (within Habitat Creation Area)

Management objectives

- 9.8.1 To maintain the scrapes as seasonally wet depressions with a varied structure and fringe of healthy marginal vegetation, creating suitable habitat for a range of invertebrates, plants, mammals, reptiles and birds.

Management operations

- 9.8.2 The scrapes shall be checked for litter and other waste, which shall be removed and carted offsite. No burning on site shall be allowed. Natural debris such as branches shall be left in situ to provide shelter and habitat for wildlife, unless it is contributing to a debris dam that is harmful to the overall health of the scrapes.
- 9.8.3 Fallen trees and other debris shall be removed from the scrapes, with the exception of those which are regularly observed to be providing shelter for wildlife provided they do not cause a blockage by the formation of debris dams.
- 9.8.4 Management operations such as cutting of vegetation shall take place rotationally following an assessment of requirement.
- 9.8.5 Regard shall be had for potential protected species present, such as reptiles. A method statement prepared with input from a suitably qualified Ecologist may be required to undertake works if protected species are found to be present within the area of works.

9.9 The Hermitage Stream

Management objectives

- 9.9.1 To maintain the stream as a clean, clear waterway with a varied structure and dense fringe of healthy marginal vegetation, creating suitable habitat for a range of invertebrates, plants, mammals, fish, reptiles and birds.

Management operations

- 9.9.2 The channel shall be checked for litter and other waste, which shall be removed and carted offsite. No burning on site shall be allowed. Natural debris such as branches shall be left in situ to provide shelter and habitat for wildlife, unless it is contributing to a debris dam that is harmful to the overall health of the stream.
- 9.9.3 Fallen trees and other debris shall be removed from the channel, with the exception of those which are regularly observed to be providing shelter for wildlife provided they do not cause a blockage by the formation of debris dams.
- 9.9.4 Management operations such as cutting of vegetation and de-silting of the channel shall take place rotationally following an assessment of requirement.
- 9.9.5 De-silting of the channel shall be undertaken in consultation with the Environment Agency and only where necessary, in September or October. Machinery shall only be permitted on one bank. Marginal vegetation shall not be disturbed, nor will a minimum of one third of the channel. Regard shall be had for potential protected species present, such as reptiles. A method statement prepared with input from a suitably qualified Ecologist may be required to undertake works if protected species are found to be present within the area of works.
- 9.9.6 Regular checks shall be made for the presence of Himalayan Balsam, which shall be removed at the earliest opportunity by one of two means:
- Strimming or cutting all stems as close to ground level as possible by the end of June and before plants have set seed. Close monitoring should take place to ensure that plants do not regenerate and set seed within the season.
 - Pulling up before plants have set seed. Close monitoring should take place to ensure that late maturing seedlings are not overlooked.

9.10 Lawns and amenity grass areas

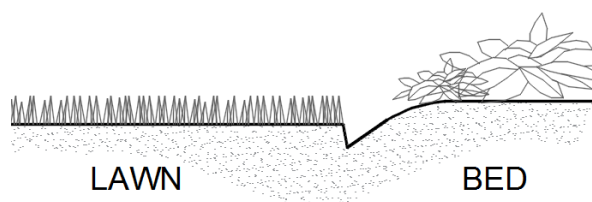
Management objective

- 9.10.1 To provide an even stand of vegetation of uniform height and colour comprising predominantly grass species, although a small percentage of dicotyledonous plants - no more than 5% would be acceptable.

Management operations

- 9.10.2 All litter, large amounts of fallen leaves, twigs and branches shall be removed to maintain a neat appearance (and before mowing).
- 9.10.3 Mowing is to be carried out using approved machinery to maintain the vegetation length within the limits of 30 mm and 50 mm during April to August inclusive and between 50 mm and 70 mm during the rest of the year. (As a guide, this will normally require mowing at up to once a fortnight in the peak of the season). The clippings may be let fly but must be distributed evenly over the surface and at no time shall the layer of clippings be of such a depth that will affect the growth of vegetation. Clippings are not to be left on paths or roads. All machinery is to be fitted with appropriate guarding to prevent damage to adjacent planting, structures, fittings or surfaces.
- 9.10.4 Nylon filament rotary cutters or other mechanical tools are not to be used closer than 100mm to the stem of any tree or plant. All machinery is to be fitted with appropriate guarding to prevent damage to adjacent planting, structures, fittings or surfaces.
- 9.10.5 Mowing shall be carried out without rutting or compaction of the surface, especially when ground conditions are soft. Do not cut during periods of drought, or when ground conditions or grass are wet, without the prior agreement of the Management Team.
- 9.10.6 All edges of grass areas, against footpaths, roadways, trees, posts, shrub borders and any other obstruction are to be kept trimmed neat and tidy at each mow.
- 9.10.7 Clippings are not to be left on paths or roads – all hard areas shall be swept clear of arisings.

- 9.10.8 Re-form edges abutting paths, borders, manhole covers and the like once a year, with a suitable edging tool, to clean straight lines or smooth flowing curves. A clean edge shall be formed, sloping slightly back from vertical (refer to diagram below). Soil shall be drawn back from edges to permit the use of edging shears and arisings removed.



- 9.10.9 Spot weeding of isolated weed infestation is to be carried out, with spraying of areas with a suitable approved selective herbicide in accordance with the manufacturer's instructions as necessary.
- 9.10.10 Spring Renovation - all close mown grass areas are to be scarified, verti-drained (or spiked with hand fork where access is restricted) and overseeded where necessary.
- 9.10.11 All close mown grass areas are to receive an application of spring/summer organic fertilizer after the spring renovation works.
- 9.10.12 Between September and March one application of autumn/ winter turf fertilizer shall be applied. Do not apply if the rootzone is dry.
- 9.10.13 Any areas damaged by trampling, abrasion or scalping during mowing shall be re-seeded or repaired. Reinstall worn areas as follows:
- Remove the damaged turf to a depth of 50mm, cultivate to a fine tilth and either
 - returf using turf of a quality and appearance to match existing, or;
 - fill with fine topsoil to BS 3882 premium (or as originally laid) grade, substantially free from stones, debris and weeds, and reseed with a seed mix to match existing grass in quality and appearance;
 - Provide protection and watering to promote successful germination and/or establishment;
 - Turf laid for new grass areas or as part of repairs to existing grass shall be watered immediately after laying, then repeatedly and sufficiently during the establishment period to allow water to reach the underlying soil and ensure establishment.
- 9.10.14 All edges are to be trimmed with every cut and edges to be reformed once a year.

9.11 Species-rich Grassland / Wildflower Meadow

Management objective

- 9.11.1 To provide lower maintenance species-rich meadow grassland areas with enhanced ecological diversity and value.

Management operations

- 9.11.2 All grass cutting machinery must be approved by the Management Team and be appropriate to the grass cutting operation required, giving due regard to grass type, mowing specification, ground contour and condition. Machinery shall be well maintained and correctly adjusted to give a clean and even cut without damage to the grass or ground.
- 9.11.3 Nylon filament rotary cutters or other mechanical tools are not to be used closer than 100mm to the stem of any tree or plant and care shall be taken to ensure that cutting does not impact on reptile populations along the edges of rougher grassland and hedge boundary habitat.
- 9.11.4 Meadow grass shall be cut during dry weather twice per year, to a height of 40-70mm in April to remove excess grass and to a height of 100mm in September following flowering. Arisings shall be left to dry and shed seed back into the sward before being removed within 3 days to prevent nutrient enrichment of the soil.
- 9.11.5 At the time of each cut all edges adjoining hard surfaces, manholes, tree pits and planting beds shall be trimmed.
- 9.11.6 Clippings are not to be left on paths or roads – all hard areas and footpaths shall be swept clear of arisings.

- 9.11.7 The Landscape Contractor shall walk through grass areas with a suitable portable applicator and spot treat excessive weed growth of Common Ragwort, ensuring to retain Hoary Ragwort, Creeping Thistle and Spear Thistle but not allowing these to spread to other land in accordance with the Weeds Act 1959 and Countryside Act 1981. Only excessive weed growth shall be treated, with a suitable selective herbicide approved by the Management Team and used in accordance with the manufacturer's instructions.
- 9.11.8 Where meadow areas adjoin paths and roads and where informal paths are intended a 1m wide close mown edge shall be maintained. Mowing shall be carried out using approved machinery to maintain the vegetation length within the limits of 30 mm and 50 mm during April to August inclusive and between 50 mm and 70 mm during the rest of the year. (As a guide, this will normally require mowing at up to once a fortnight in the peak of the season). The clippings shall be removed from site.

9.12 Species –rich grassland (transplanted)

Management objective

- 9.12.1 To translocate grassland turves from the proposed location of the hotel which contain common spotted orchids and ensure their successful establishment and colonisation. To provide low-maintenance species-rich grassland to create areas with enhanced ecological diversity and value, particularly for protected species.

Management operations

- 9.12.2 All vegetation to be planted will be maintained in order for it to become established; and the planting will be monitored during the establishment period and any failing/dead plants must be replaced with the same native species.
- 9.12.3 The species-rich grassland will be managed in accordance with the management methodology described in the Dunsbury Hill Farm Works Information and Series 3000 Appendices – Landscape and Ecology

9.13 Rough Grassland

Management objective

- 9.13.1 To provide low maintenance grassland comprising a rough tussocky sward of uncut coarse grasses, to create areas with enhanced ecological diversity and value, particularly for protected species, having regard to reptile populations around the retained boundary features and the need to maintain rough grassland edge habitat for these populations.

Management operations

- 9.13.2 Rough grassland areas should be checked once per year to establish whether maintenance is necessary.
- 9.13.3 Rough grassland areas shall not be mown but their extent maintained by cutting back of excessive bramble and woody scrub growth using a mechanical tri-blade brushcutter or similar. Cutting shall only take place during winter months to minimise disturbance to wildlife. Rough grassland shall be a minimum of 1m wide and wider wherever possible.
- 9.13.4 Shallow 'scallop' or 'bays' (approximately 1m deep by 5m wide) shall be cut into woody vegetation bordering rough grassland areas, particularly on non-northerly facing hedges, to provide a wavy edge to hedges and wooded boundaries, providing an enhanced edge habitat for wildlife.
- 9.13.5 All arisings may be left in situ, or larger woody arisings removed and piled beneath wooded habitat to provide additional wildlife value.
- 9.13.6 Vehicles shall not be allowed to track across grassland habitat in order to protect wildlife.

9.14 Grass banks

Management objective

- 9.14.1 Refer to each section above for management objectives.

Management operations

- 9.14.2 Refer to each section above for management operations.

- 9.14.3 A specific risk assessment is to be carried out prior to mowing/cutting grass banks, to include assessment of weather and surface conditions to identify any potential hazards.
- 9.14.4 Mowing is to be carried out using approved machinery suitable for use on slopes.
- 9.14.5 Refer to all relevant British Standard Code of Practice for Landscaping and HSE guidelines for suitable mowing machinery, all machinery is to be used within its specified safe working angle. Contractor is to provide working method statements to be approved by the Management Team.
- 9.14.6 In general slopes greater than 1:3 will require either a specialist rotary machine or strimmer/brushcutter.

9.15 Existing trees & vegetation

Maintenance objective

- 9.15.1 To ensure existing trees and vegetation are kept in a healthy and safe condition and are protected and managed to conserve and enhance their existing value in terms of amenity and ecology.
- 9.15.2 To carry out an inventory of all Veteran and Mature trees on site and provide individually tailored management prescriptions for these trees in an action plan, and taking into account protected species.
- 9.15.3 To care for established trees in informal and recreational areas to maintain balanced canopies and frameworks for future healthy growth, with a natural appearance, including around the base of the trees. Standing dead wood habitat shall be maintained as a wildlife resource unless it represents an imminent danger to the public.
- 9.15.4 To prevent overcrowding of tree groups, selective thinning and stump removal may be required as trees mature. The extent of any thinning operations shall be carefully considered to ensure that connectivity of woody boundary features is maintained.
- 9.15.5 To ensure a balanced age structure within tree groups by planting new trees of the same species or allowing natural regeneration as appropriate to prevent group senility.
- 9.15.6 The Landscape Contractor shall ensure that all existing trees and vegetation are treated with the same care and attention as the newly planted stock.

Maintenance operations

- 9.15.7 Regular checks are to be made on the condition of existing trees. Any necessary tree works are to be carried out by a qualified tree surgeon to BS 3998:2010 and approved by the Management Team (NB. Any trees subject to a Tree Preservation Order will require permission from the Local Authority for any arboricultural work to be carried out).
- 9.15.8 The Wildlife and Countryside Act 1981 should be adhered to and any specialist licences obtained before commencement of work e.g for bat roosts.
- 9.15.9 Mature and veteran trees shall be managed in accordance with guidance published by Natural England entitled 'Veteran Trees: A Guide to Good Management (IN13)'.
- 9.15.10 The condition and management requirements of mature trees shall be assessed on a regular and ongoing basis by an appropriately qualified Arboriculturalist to ensure that trees remain in good health and public safety is not compromised. A report should be produced on the findings of each assessment, drawing attention to any signs of disease, decay or dead wood. Remedial pruning works shall be undertaken as soon as is practicable to address any safety concerns identified. Before any works take place, the potential for bat roosts will be checked with the relevant ecology plans, regard will be had to any veteran tree management and a thorough assessment shall be made of any potential impacts on bat roosts or potential for bat roosts by a suitably qualified ecologist. Regard should also be had to potential for nesting birds.
- 9.15.11 If problems are identified in trees off site, the Landscape Contractor shall notify the Management Team, who should contact and notify the appropriate land owner.
- 9.15.12 Semi-natural features such as established native hedgerows and rough grass areas shall not be subject to highly prescriptive landscape maintenance operations (such as regular cutting, weeding, mulching etc.) and shall be managed with minimal inputs that have due regard for wildlife. For example, native hedgerows shall generally be left to look natural and cut, on one side only in any year, on a 2 or 3 year rotation during late winter to avoid the bird nesting season.
- 9.15.13 Dead plants shall not be removed from semi-natural areas in order to benefit wildlife, except where they represent a material and imminent danger to the public.

- 9.15.14 All landscape maintenance operations prescribed for formal landscaping shall be carried out with due regard for the proximity and health of semi-natural features. Where necessary appropriate measures shall be taken to ensure that semi-natural features remain unharmed (e.g. chemicals shall not be used for weed control within or immediately adjacent to rough grass areas).
- 9.15.15 Refer to Habitat Management and Maintenance Plan (Link Road and Associated Infrastructure Phase) produced by Atkins dated March 2014
- 9.15.16 Existing shrubs, groundcover and perennials retained should be regularly cut, trimmed, pruned, and thinned as required in accordance with the programme found in Appendix A. Planting beds are to be maintained as weed free at all times.

9.16 Existing specimen trees in all areas

Management objectives

- 9.16.1 To maintain stable and healthily growing trees and groups of trees that will provide amenity and ecological benefits. To have regard to presence of known bat roosts and potential for bat roosts within trees on site, and that any works on such trees should be through consultation with a suitably qualified ecologist. Refer to Habitat Management and Maintenance Plan (Link Road and Associated Infrastructure Phase) produced by Atkins dated March 2014 – Appendix A.
- 9.16.2 To carry out an inventory of all Veteran and Mature trees on site and provide individually tailored management prescriptions for these trees in an action plan, and taking into account protected species.
- 9.16.3 To care for established trees in informal and recreational areas to maintain balanced canopies and frameworks for future healthy growth, with a natural appearance, including around the base of the trees. Standing dead wood habitat shall be maintained as a wildlife resource unless it represents an imminent danger to the public.
- 9.16.4 To prevent overcrowding of tree groups, selective thinning and stump removal may be required as trees mature. The extent of any thinning operations shall be carefully considered to ensure that connectivity of woody boundary features is maintained.
- 9.16.5 To ensure a balanced age structure within tree groups by planting new trees of the same species or allowing natural regeneration as appropriate to prevent group senility.

Management operations

- 9.16.6 Mature and veteran trees shall be managed in accordance with guidance published by Natural England entitled 'Veteran Trees: A Guide to Good Management (IN13)'.
- 9.16.7 The condition and management requirements of mature trees shall be assessed on a regular and ongoing basis by an appropriately qualified Arboriculturalist to ensure that trees remain in good health and public safety is not compromised. A report should be produced on the findings of each assessment, drawing attention to any signs of disease, decay or dead wood. Remedial pruning works shall be undertaken as soon as is practicable to address any safety concerns identified. Before any works take place, the potential for bat roosts will be checked with the relevant ecology plans, regard will be had to any veteran tree management and a thorough assessment shall be made of any potential impacts on bat roosts or potential for bat roosts by a suitably qualified ecologist. Regard should also be had to potential for nesting birds.
- 9.16.8 Where trees are set within planting beds, the area to the base of each tree shall be maintained as weed free at all times unless published guidance specifies otherwise.
- 9.16.9 Trees shall be pruned as necessary to avoid any excessive overhang encroaching onto paths, roads, signs, sightlines and light fittings, or obstruction of pedestrians, vehicles, lighting, and sight lines. Before any works take place a thorough assessment shall be made of any potential impacts on bat roosts and bird nests and if necessary, works shall be delayed or, if this is not possible, the advice of an appropriately qualified Ecologist shall be sought.
- 9.16.10 Pruning generally:
- Prune in accordance with good horticultural practice. Prune larger branches and woody stems greater than 40mm diameter in accordance with good arboricultural practice.
 - Thin, trim and shape appropriately to each species, location, season, and stage of growth, leaving a well-balanced natural appearance.
 - Use clean sharp secateurs, hand saws or other tools approved by the Management Team. Trim off ragged edges of bark or wood with a sharp knife.

- Remove branches without damaging or tearing the stem.
- Keep wounds as small as possible and cut cleanly back to sound wood. Make cuts above and sloping away from an outward facing healthy bud, angled so that water will not collect on cut area.
- Prune larger branches neither flush nor leaving a stub, but using the branch bark ridge or branch collar as a pruning guide.
- Notify the Management Team of any disease or fungus. Do not apply growth retardants, fungicide or sealant unless instructed by the Management Team.
- Before any works take place, the potential for bat roosts will be checked with the relevant ecology plans, regard will be had to any veteran tree management and a thorough assessment shall be made of any potential impacts on bat roosts or potential for bat roosts by a suitably qualified ecologist. Regard should also be had to potential for nesting birds. Refer to Habitat Management and Maintenance Plan (Link Road and Associated Infrastructure Phase) produced by Atkins dated March 2014

NOTE: Do not prune whips or feathered trees and do not prune any trees during the late winter/early spring sap flow period, unless specified otherwise.

- 9.16.11 Crown prune young trees up to 4m high by removing dead branches and reducing selected side branches by one third to preserve a well-balanced head, ensuring the development of a single strong leader and the removal of duplicated branches and potentially weak or tight forks. In each case cut back to live wood.
- 9.16.12 Any necessary non-routine tree works, such as extensive pruning to young trees or any surgery to larger trees, must be carried out to BS 3998 by a member of the Arboricultural Association or qualified specialist and approved by the Management Team. Before any works take place a thorough assessment shall be made of any potential impacts on bat roosts and bird nests and if necessary, works shall be delayed or, if this is not possible, the advice of an appropriately qualified Ecologist shall be sought.

9.17 New specimen trees in formal areas

Management objectives

- 9.17.1 To establish, within three years from planting, well-shaped new trees with balanced canopies and frameworks for future healthy growth, and a natural but overall neat and tidy appearance, including around the base of the trees, free from all dead and dying vegetation and crossing wood.

Management operations

- 9.17.2 Where trees are set within planting beds, the area to the base of each tree shall be maintained as weed free at all times.
- 9.17.3 Where trees are set within grass areas a weed free circle of 1m diameter, mulched to a settled depth of 75mm shall be maintained at all times.
- 9.17.4 Where trees are set within hard landscaping, the area to the base of each tree shall be maintained as weed free at all times.
- 9.17.5 Mulch levels around tree bases in grass areas shall be topped up each spring to maintain continuous 75mm settled depth. Any additional material required shall match existing mulch.
- 9.17.6 In the first two years following planting, any new trees shall be closely monitored on a fortnightly basis to ensure they are upright, firm and stable and in good health.
- 9.17.7 It is important to ensure during the establishment period that new trees have adequate water, supplemented by other means if necessary. The soil around new trees in planting beds and tree pits shall be inspected to a depth of 300mm at regular intervals during the growing season to determine whether watering is required, and action taken if so.
- 9.17.8 In further years water newly planted trees throughout the summer months (May to August) at minimum fortnightly intervals after any period of four weeks without significant rainfall (less than 5mm). Heavy watering will be required in dry periods.
- 9.17.9 Should the Statutory Undertakers impose restrictions on the use of water for watering any plants, the Landscape Contractor shall be responsible for making any special arrangements which may be necessary to ensure regular and adequate watering of plant material to ensure successful establishment.
- 9.17.10 It is also important to ensure that the trees are not over-watered. All drainage points shall be regularly checked. Any plants lost due to water-logging or drought shall be replaced with matching species and size as appropriate

- at no additional cost to residents. Size shall match that of the surrounding plants, rather than the originally specified size, unless agreed otherwise with the Management Team.
- 9.17.11 Guys, stakes and ties shall be regularly checked for firmness, tightness and support and adjusted as necessary. Tree stakes shall be checked regularly for breaks and decay, replaced as necessary to original specification.
 - 9.17.12 Adjust, refix or replace loose or defective ties as necessary, allowing for growth and some movement to encourage development of a stable root system whilst preventing chafing, excessive windrock, and to compensate for settlement. Where chafing has occurred, reposition or replace ties to prevent further chafing. Ties shall at no point be over-tight on the tree and shall be checked and loosened regularly, especially at the start of the growing season to allow room for growth. Remove redundant tapes, tags, ties, labels and other encumbrances.
 - 9.17.13 Where stakes are longer than the height of the lowest branch of the tree, cut the stake to this height in spring and retie to tree firmly but not tightly with a single tie.
 - 9.17.14 If a tree with a defective stake has grown sufficiently to become self-supporting, the Landscape Contractor shall inform the Management Team and, if instructed, remove stake(s) and fill the hole(s) with lightly compacted soil.
 - 9.17.15 Stakes and ties shall be removed once trees are established and as agreed with the Management Team (anticipated in the region of years 5-10).
 - 9.17.16 Tree guy wires shall be inspected as outlined in the maintenance programme and after strong winds, and replace or re-secure loosened or missing guy wires, adjusting tension of guy wires to suit stem growth and to provide correct and uniform tension. Remove guy wires when instructed or, if not instructed, then after a maximum period of 10 years.
 - 9.17.17 Soils around trees shall receive a surface application of suitable and approved compound, controlled-release fertiliser each spring.
 - 9.17.18 Soil shall be firmed around the roots to ensure that trees are securely planted in the ground and upright. All trees shall be re-firmed in the spring period following planting. Any trees loosened due to late frosts, strong winds or surface water movement shall be refirmed as required. 'Collars' at the base of tree stems created by tree movement to be broken up by fork, avoiding damage to roots and stem, backfilled with topsoil as necessary, and refirmed.
 - 9.17.19 Trees shall be pruned as necessary to remove any dead, diseased or damaged shoots and to create a balanced form for future growth. Before any works take place a thorough assessment shall be made of any potential impacts on bat roosts and bird nests and if necessary, works shall be delayed or, if this is not possible, the advice of an appropriately qualified Ecologist shall be sought.

9.18 New specimen trees in informal SINC buffer

Management objectives

- 9.18.1 To establish, within three years from planting, well-shaped new trees with balanced canopies and frameworks for future healthy growth, and a natural appearance.

Management operations

- 9.18.2 Around the base of new trees within informal and nature conservation areas, only vegetation that may be harmful to the successful establishment of the trees shall be removed.
- 9.18.3 Trees within informal and nature conservation areas shall not be mulched.
- 9.18.4 In the first two years following planting, any new trees shall be closely monitored on a fortnightly basis to ensure they are upright, firm and stable and in good health.
- 9.18.5 It is important to ensure during the establishment period that new trees have adequate water, supplemented by other means if necessary. The soil around new trees in planting beds and tree pits shall be inspected to a depth of 300mm at regular intervals during the growing season to determine whether watering is required, and action taken if so.
- 9.18.6 In further years water newly planted trees throughout the summer months (May to August) at minimum fortnightly intervals after any period of four weeks without significant rainfall (less than 5mm). Heavy watering will be required in dry periods.

- 9.18.7 Should the Statutory Undertakers impose restrictions on the use of water for watering any plants, the Landscape Contractor shall be responsible for making any special arrangements which may be necessary to ensure regular and adequate watering of plant material to ensure successful establishment.
- 9.18.8 It is also important to ensure that the trees are not over-watered. All drainage points shall be regularly checked. Any plants lost due to water-logging or drought shall be replaced with matching species and size as appropriate at no additional cost to tenants. Size shall match that of the surrounding plants, rather than the originally specified size, unless agreed otherwise with the Management Team.
- 9.18.9 Guys, stakes and ties shall be regularly checked for firmness, tightness and support and adjusted as necessary. Tree stakes shall be checked regularly for breaks and decay, replaced as necessary to original specification.
- 9.18.10 Adjust, refix or replace loose or defective ties as necessary, allowing for growth and some movement to encourage development of a stable root system whilst preventing chafing, excessive windrock, and to compensate for settlement. Where chafing has occurred, reposition or replace ties to prevent further chafing. Ties shall at no point be over-tight on the tree and shall be checked and loosened regularly, especially at the start of the growing season to allow room for growth. Remove redundant tapes, tags, ties, labels and other encumbrances.
- 9.18.11 Where stakes are longer than the height of the lowest branch of the tree, cut the stake to this height in spring and retie to tree firmly but not tightly with a single tie.
- 9.18.12 If a tree with a defective stake has grown sufficiently to become self-supporting, the Landscape Contractor shall inform the Management Team and, if instructed, remove stake(s) and fill the hole(s) with lightly compacted soil.
- 9.18.13 Stakes and ties shall be removed once trees are established and as agreed with the Management Team (anticipated in the region of years 5-10).
- 9.18.14 Tree guy wires shall be inspected as outlined in the maintenance programme and after strong winds, and replace or re-secure loosened or missing guy wires, adjusting tension of guy wires to suit stem growth and to provide correct and uniform tension. Remove guy wires when instructed or, if not instructed, then after a maximum period of 10 years.
- 9.18.15 Protective structures shall be regularly checked for stability, security and damage and adjusted or repaired as necessary.
- 9.18.16 Soil shall be firmed around the roots to ensure that trees are securely planted in the ground and upright. All trees shall be re-firmed in the spring period following planting. Any trees loosened due to late frosts, strong winds or surface water movement shall be refirmed as required. 'Collars' at the base of tree stems created by tree movement to be broken up by fork, avoiding damage to roots and stem, backfilled with topsoil as necessary, and refirmed whilst minimising disturbance to wildlife.
- 9.18.17 Trees shall be pruned as necessary to remove any dead, diseased or damaged shoots that may represent a material and imminent danger to the public and to create a balanced form for future growth. Before any works take place a thorough assessment shall be made of any potential impacts on bat roosts and bird nests and if necessary, works shall be delayed or, if this is not possible, the advice of an appropriately qualified Ecologist shall be sought.

9.19 Woodland planting

Management objectives

- 9.19.1 To create and maintain a unified belt of attractive, safe, healthy and diverse woodland that benefits local wildlife, site users, and the general public.
- 9.19.2 To encourage an ecologically beneficial understorey in the long term to provide wildlife with green links across the site and provide habitat.

Management operations

- 9.19.3 Around the base of new trees within informal and nature conservation areas, only vegetation that may be harmful to the successful establishment of the trees shall be removed.
- 9.19.4 Trees within informal and nature conservation areas shall not be mulched.
- 9.19.5 Soils around trees and shrubs in formal areas only shall receive a surface application of suitable and approved compound, controlled-release fertiliser each spring until well established.

- 9.19.6 It is important to ensure during the establishment period that new trees have adequate water, supplemented by other means if necessary. The soil around new trees in planting beds and tree pits shall be inspected to a depth of 300mm at regular intervals during the growing season to determine whether watering is required, and action taken if so.
- 9.19.7 Should the Statutory Undertakers impose restrictions on the use of water for watering any plants, the Landscape Contractor shall be responsible for making any special arrangements which may be necessary to ensure regular and adequate watering of plant material to ensure successful establishment.
- 9.19.8 It is also important to ensure that the trees are not over-watered. All drainage points shall be regularly checked. Any plants lost due to water-logging or drought shall be replaced with matching species and size as appropriate. Size shall match that of the surrounding plants, rather than the originally specified size, unless agreed otherwise with the Management Team.
- 9.19.9 The Landscape Contractor shall allow for re-firming soil around roots to ensure plants are securely planted and upright especially following periods of high winds.
- 9.19.10 Stakes and shelters shall be regularly checked for firmness, tightness and support and adjusted as necessary. Stakes shall be checked regularly for breaks and decay, replaced as necessary to original specification.
- 9.19.11 Stakes and shelters shall be removed once plants are established and as agreed with the Management Team (anticipated in the region of years 3-8).
- 9.19.12 Any dead or damaged plants shall be replaced with matching species and size. Size shall match that of the surrounding plants, rather than the originally specified size.
- 9.19.13 The understorey (where comprised of appropriate species e.g. Hazel) shall be managed as coppice only as required for good woodland management, in compartments of approximately equal size, ensuring that each compartment does not span the full width of the woodland area in order to retain a continuous corridor for wildlife crossing the site.
- 9.19.14 Brambles shall be cut back to a suitable degree so as not to suppress newly planted or self-seeded native trees and shrubs. Particularly well established brambles shall be grubbed out in places to create a mosaic of mixed dominance within the understorey. Where bramble cutting is due to take place this should have regard to nesting birds and not disturb the ground where reptiles may be present.
- 9.19.15 When agreed with the Management Team the plants shall be selectively thinned to remove poor or weak specimens, allow room for growth and avoid overcrowding. Care shall be taken to avoid overthinning, so creating obvious gaps in planting.
- 9.19.16 Regular checks shall be made on the condition of trees for damage or potential hazards and any such issues reported to the Management Team along with suggestions for new planting as appropriate to prevent group senility.
- 9.19.17 Pruning of trees and shrubs shall be carried out as required in order to remove any dead, diseased or damaged shoots and to create a balanced form for future growth. Before any works take place a thorough assessment shall be made of any potential impacts on bat roosts and bird nests and if necessary, works shall be delayed or, if this is not possible, the advice of an appropriately qualified Ecologist shall be sought. Refer to Habitat Management and Maintenance Plan (Link Road and Associated Infrastructure Phase) produced by Atkins dated March 2014.
- 9.19.18 Pruning of mature trees generally:
- Refer to section 9.16.
- 9.19.19 Any necessary non-routine tree works, such as extensive pruning to young trees or any surgery to larger trees, must be carried out to BS 3998 by a member of the Arboricultural Association or qualified specialist and approved by the Management Team.

NOTE: Any trees subject to a Tree Preservation Order will require permission from the Local Authority for any arboricultural work to be carried out.

- 9.19.20 Deadwood and arisings from pruning and thinning works shall be used to create habitat for invertebrates within the woodland area by stacking in log piles.
- 9.19.21 No trees works shall take place within the bird nesting season.

- 9.19.22 Before any trees works take place any trees identified as having roost potential for bats shall be inspected 24 hours beforehand to ensure that they have not become occupied. Any trees identified as having roosting potential for bats shall only have tree works undertaken after consultation with a qualified ecologist.
- 9.19.23 If problems are identified in trees off site, the Landscape Contractor shall notify the Management Team, who shall contact and notify the appropriate land-owner.
- 9.19.24 Regular checks should be made for presence of non-native invasive species including Himalayan Balsam and Variegated Yellow Archangel (with careful distinction made between variegated and native yellow archangel), with measures taken to remove invasive species at the earliest opportunity.

9.20 Woodland edge planting

Management objectives

- 9.20.1 To establish and maintain trees and vegetation in a healthy, stable and safe condition with a well-shaped framework for future healthy growth of plants to achieve their natural form as part of a balanced and ultimately self-sustaining planting area, providing amenity and ecological benefits.
- 9.20.2 To prevent overcrowding of tree and shrub groups by selective thinning and stump removal, if required as plants mature, to create a well-structured habitat.

Management operations

- 9.20.3 The understorey of newly planted areas shall be maintained as weed free short grass at all times by use of a strimmer or brushcutter, taking care to avoid damage to plant stems, until such time as the planting provides sufficient coverage to suppress weeds and grasses.
- 9.20.4 It is important to ensure during the establishment period that new trees have adequate water, supplemented by other means if necessary. The soil around new trees in planting beds and tree pits shall be inspected to a depth of 300mm at regular intervals during the growing season to determine whether watering is required, and action taken if so.
- 9.20.5 In further years water newly planted trees throughout the summer months (May to August) at minimum fortnightly intervals after any period of four weeks without significant rainfall (less than 5mm). Heavy watering will be required in dry periods.
- 9.20.6 Should the Statutory Undertakers impose restrictions on the use of water for watering any plants, the Landscape Contractor shall be responsible for making any special arrangements which may be necessary to ensure regular and adequate watering of plant material to ensure successful establishment.
- 9.20.7 It is also important to ensure that the trees are not over-watered. All drainage points shall be regularly checked. Any plants lost due to water-logging or drought shall be replaced with matching species and size as appropriate. Size shall match that of the surrounding plants, rather than the originally specified size, unless agreed otherwise with the Management Team.
- 9.20.8 The Landscape Contractor shall allow for re-firming soil around roots to ensure plants are securely planted and upright especially following periods of high winds.
- 9.20.9 Stakes and shelters shall be regularly checked for firmness, tightness and support and adjusted as necessary. Stakes shall be checked regularly for breaks and decay, replaced as necessary to original specification.
- 9.20.10 Stakes and shelters shall be removed once plants are established and as agreed with the Management Team (anticipated in the region of years 3-8).
- 9.20.11 Any dead or damaged plants shall be replaced with matching species and size. Size shall match that of the surrounding plants, rather than the originally specified size.
- 9.20.12 When agreed with the Management Team the plants shall be selectively thinned to allow room for growth and avoid overcrowding. Care shall be taken to avoid overthinning, so creating obvious gaps in planting.
- 9.20.13 Regular checks shall be made on the condition of trees for damage or potential hazards and any such issues reported to the Management Team along with suggestions for new planting as appropriate to prevent group senility.
- 9.20.14 Pruning of trees and shrubs shall be carried out as required in order to achieve healthy, well-shaped growth.
- 9.20.15 Pruning generally:

- Refer to section 9.16.
- 9.20.16 Any necessary non-routine tree works, such as extensive pruning to young trees or any surgery to larger trees, must be carried out to BS 3998 by a member of the Arboricultural Association or qualified specialist and approved by the Management Team.
- 9.20.17 No trees works shall take place within the bird nesting season.
- 9.20.18 Before any trees works take place those trees identified as having roost potential for bats shall be inspected 24 hours beforehand to ensure that they have not become occupied.
- 9.20.19 Deadwood shall be used to create wildlife habitat within woodland areas on flat ground by stacking in log piles.
- 9.20.20 If problems are identified in trees off site, the Landscape Contractor shall notify the Management Team, who shall contact and notify the appropriate land-owner. Any trees identified as having roosting potential for bats shall only have tree works undertaken after consultation with a qualified ecologist.

9.21 Clipped Hedges

Management objective

- 9.21.1 To maintain hedges with healthy thriving plants and encourage strong growth.
- 9.21.2 To provide hedgerow habitat for nesting birds and small mammals.

Management operations

- 9.21.3 The planting area is to be maintained as weed free at all times.
- 9.21.4 Hedges shall be pruned to encourage dense bushy growth. The contractor will ensure that they are aware of the specific needs of each variety of shrub. The main stems of plants shall not be visible on the sides or top of the hedge.
- 9.21.5 Cut hedge a minimum of twice a year to maintain a tidy appearance at all times and 'a wedge shape' (with the top of the hedge slightly narrower than the base) to encourage healthy bushy growth, with formal shape.
 - Beech hedging shall be cut in May and August to uniform 1.2m height.
- 9.21.6 When cutting hedges, care should be taken to ensure that there are no nesting birds within the hedging as it is an offence under the Wildlife and Countryside Act 1981 to disturb wild birds, their nests or eggs.
- 9.21.7 Where transitions in hedge height and width are required these shall be achieved in a smooth uninterrupted manner. Where abrupt changes in height are required these shall be maintained as crisp right angled profiles.
- 9.21.8 Ensure that tools used are sharp and cut hedge so that top is narrower than the base to ensure base will remain clothed in leaves.
- 9.21.9 Subject to approval, replace any dead or damaged plants with matching species and size.
- 9.21.10 Soils to receive a surface application of a compound, controlled-release fertilizer each spring.
- 9.21.11 Top up mulch as required to maintain continuous 75mm deep cover.
- 9.21.12 Allow for re-firming soil around roots to ensure plants are securely planted and upright especially following periods of high winds.
- 9.21.13 Ensure the all post and wire fencing remains in good condition with taut wires, and that all hedge plants are regularly checked to ensure that they are tied in.

9.22 Native hedge planting

Management objective

- 9.22.1 To maintain hedges with healthy thriving plants and encourage strong growth that is maintained in an informal manner to encourage natural green boundaries and wildlife habitat to flourish.

Management operations

- 9.22.2 The planting area is to be checked on a quarterly basis, and maintained substantially free of weeds (less than 5% of weed cover, with no unsightly weed growth even if less than 5% cover). Allow for manual or herbicide treatment once in the winter or spring, taking care to avoid contact with the plant stems.

- 9.22.3 Hedges shall be pruned to encourage dense bushy growth. Hedging is to be pruned in autumn to front face and top only.
- 9.22.4 Ensure that tools used are sharp and cut hedge so that top is narrower than the base to ensure base will remain clothed in leaves.
- 9.22.5 Subject to approval, replace any dead or damaged plants with matching species and size.
- 9.22.6 Allow for re-firming soil around roots to ensure plants are securely planted and upright especially following periods of high winds.
- 9.22.7 When agreed with the management team, shrubs are to be selectively thinned to allow room for growth and avoid 'overcrowding'. Care is to be taken to avoid overthinning, so creating obvious 'gaps'.
- 9.22.8 Shelterguards are to be removed and recycled if possible, at between years 3-5, dependent on growth and condition.
- 9.22.9 Ensure the all post and wire fencing remains in good condition with taut wires, and that all hedge plants are regularly checked to ensure that they are tied in.
- 9.22.10 At approximately 5 yearly intervals the planting should be reviewed in terms of thinning and trimming for the benefit of long term good health and diversity.

9.23 Native shrub planting

Management objective

- 9.23.1 To establish mixed species stands of healthily growing vegetation with a well-shaped framework for healthy future growth, keeping the overall appearance neat and tidy.
- 9.23.2 To ensure successful establishment and growth of plants to achieve their natural form as part of a balanced and ultimately self-sustaining planting area.
- 9.23.3 To produce a predominant shrub-thicket to form a visual screen, physical barrier and attractive visual feature.

Maintenance operations

- 9.23.4 The planting area is to be checked on a quarterly basis, and maintained substantially free of weeds (less than 5% of weed cover, with no unsightly weed growth even if less than 5% cover). Allow for herbicide treatment once in the winter or spring, taking care to avoid contact with the plant stems.
- 9.23.5 When agreed with the management team, shrubs are to be selectively thinned to allow room for growth and avoid 'overcrowding'. Care is to be taken to avoid overthinning, so creating obvious 'gaps'.
- 9.23.6 Any dead or damaged plants are to be replaced with matching species and size. Size should match that of the surrounding plants, rather than the originally specified size.
- 9.23.7 Soil around roots is to be refirmed as necessary to ensure plants are securely planted and upright especially following periods of high winds.
- 9.23.8 Shelterguards are to be removed at between years 3-5, dependent on growth and condition.
- 9.23.9 At approximately 5 yearly intervals the planting should be reviewed in terms of thinning and trimming for the benefit of long term good health and diversity.

9.24 Planting beds

Management objectives

- 9.24.1 To maintain attractive ornamental borders with healthily growing vegetation with a well-shaped framework for healthy growth, with a managed and tidy appearance.

Management operations

- 9.24.2 The planting area is to be maintained weed free at all times.
- 9.24.3 Plants are required to be pruned to encourage healthy regeneration and flowering. The contractor will ensure that they are aware of the specific needs of each variety of shrub.

- 9.24.4 When agreed with the Management Team the plants are to be selectively thinned to allow room for growth and avoid 'overcrowding'. Care is to be taken to avoid overthinning, so creating obvious 'gaps' in shrub beds.
- 9.24.5 Subject to approval, any dead or damaged plants are to be replaced with matching species and size. Size should match that of the surrounding plants, rather than the originally specified size.
- 9.24.6 Soils to receive a surface application of an organic compound, controlled-release fertilizer each spring.
- 9.24.7 Mulch is to be topped up as required to maintain continuous 75mm deep cover. Any additional material required is to match specified mulch.
- 9.24.8 Soil around roots is to be refirmed as necessary to ensure plants are securely planted and upright especially following periods of high winds.

9.25 Perennials

Management objectives

- 9.25.1 To maintain formal planting areas of dense, weed-free perennials of healthy growth, trimmed and supported as necessary to give a neat and tidy finish contained within the planted area and a crisp and even interface with all paved areas.

Management operations

- 9.25.2 The planted area shall be maintained as weed free at all times.
- 9.25.3 Where perennials abut road kerbs, they shall be trimmed and supported as necessary to ensure that they do not spill over the face of the kerbs. Care shall be taken to prevent perennials encroaching onto roads or footpaths.
- 9.25.4 Where perennials abut grass, they shall be trimmed to form a neat and tidy interface.
- 9.25.5 Plants shall be trimmed and tidied to remove dead vegetation or overgrowing branches. Dead flower heads shall be removed.
- 9.25.6 Untidiness of top growth shall be corrected by trimming as required.
- 9.25.7 Staking shall be introduced as required to support larger plants.
- 9.25.8 Soil around roots to be refirmed as necessary to ensure plants are securely planted and upright especially following periods of high winds.
- 9.25.9 Soils to receive a surface application of a compound, controlled-release fertilizer each spring.
- 9.25.10 Mulch around perennials shall be topped up each spring to maintain a continuous 75mm settled depth. Any additional material shall match existing mulch.
- 9.25.11 Any dead or damaged plants shall be replaced with matching species, which need not be the same size as adjacent plants.

9.26 Groundcover

Management objectives

- 9.26.1 To maintain areas of dense, weed-free groundcover of healthy growth, clipped or pruned as necessary to give a neat and tidy finish and contained within the planted area and a crisp and even interface with all paved areas.

Management operations

- 9.26.2 The planting area is to be maintained as weed free at all times.
- 9.26.3 Where groundcover abuts road kerbs, it shall be managed uniformly to cover the top and face of the kerbs.
- 9.26.4 Where groundcover abuts grass, it shall be encouraged to develop onto the sward and shall then be trimmed to form a crisp interface.
- 9.26.5 Care should be taken to prevent groundcover encroaching onto roads or footpaths.
- 9.26.6 Plants are to be trimmed and tidied to remove dead vegetation or overgrowing branches.
- 9.26.7 Untidiness of top growth shall be corrected by pruning as required.
- 9.26.8 Plants should not be allowed to climb other plant stems.

- 9.26.9 Subject to approval, any dead or damaged plants are to be replaced with matching species.
- 9.26.10 Soils to receive a surface application of a compound, controlled-release fertilizer each spring.
- 9.26.11 Mulch is to be topped up as required to maintain continuous 75mm deep cover.
- 9.26.12 Soil around roots to be refirmed as necessary to ensure plants are securely planted and upright especially following periods of high winds.
- 9.26.13 Ivy should be pruned to maintain a fresh appearance and shall not be encouraged to form woody stems.

9.27 Climbers

Maintenance objectives

- 9.27.1 To establish and maintain attractive ornamental climbing plants of managed and tidy appearance, with healthily growing vegetation and a well-shaped framework for future healthy growth in formal planting areas.

Maintenance operations

- 9.27.2 The area around the base of each climbing plant is to be maintained weed free at all times.
- 9.27.3 Excess growth shall be removed by pruning, to ensure that signs, light fittings, doors, windows, gutters and downpipes are kept clear at all times.
- 9.27.4 Insecure growth shall be attached to supporting wires using natural fibre twine.
- 9.27.5 Check and repair as necessary supporting structures of climbing plants; wires to be extended if required.
- 9.27.6 Soil around roots to be refirmed as necessary to ensure plants are securely planted and upright especially following periods of high winds.
- 9.27.7 Soils around the base of climbing plants shall receive a surface application of compound, controlled-release fertilizer each spring.
- 9.27.8 Mulch within planted areas is to be topped up as required to maintain continuous 75mm settled depth during establishment period (first 3 years). Any additional material required is to match existing mulch.
- 9.27.9 Any dead or damaged plants shall be replaced with matching species and size. Size shall match that of the surrounding plants, rather than the originally specified size.

9.28 Bulbs

Maintenance objectives

- 9.28.1 To establish and maintain attractive ornamental bulb planting, managed and tidy appearance, with healthily growing vegetation.

Maintenance operations

- 9.28.2 For Daffodils (*Narcissus* species). Deadhead plants after flowering and let the leaves remain above ground level. After 6 weeks cut back foliage to the base of the flower stalk.
- 9.28.3 No routine maintenance is required for the Crocus or Bluebells (*Hyacinthoides non-scripta*).

9.29 Weed, Pest and Disease Control

- 9.29.1 All plants, planting beds, trees and grass areas shall be maintained as weed, pest and disease free at all times. The Landscape Contractor is expected to adopt a pro-active approach to weeds, pests and diseases and treat accordingly.
- 9.29.2 Any plant or trees losses resulting from pest and disease infestation will be replaced by the Landscape Contractor. Exceptions will occur when this is as a direct result of an instruction from the Management Team, e.g. a ban on chemical use.
- 9.29.3 The Landscape Contractor shall periodically inspect all planted areas, including trees, for any signs of pest or disease infection and report any such discovery to the Management Team.
- 9.29.4 The same diligence shall be required in monitoring soil and plant health in terms of the application of fertilizers, ameliorates, mulches or anti-desiccant sprays.

- 9.29.5 If damage is found to be occurring then, where necessary and with agreement and in consultation with the Management Team, appropriate pest control shall be used. The Landscape Contractor shall, where possible, use non-chemical means in the first instance and seek approval from the Management Team for any use of pesticides.
- 9.29.6 The use of chemical weed control is to be kept to a minimum and is only to be used where manual removal of weeds is inappropriate or where large areas of invasive weeds are present.

Ecological Management

9.30 Habitat Creation Area

- 9.30.1 All details for this area of land are provided in the Dunsbury Hill Farm, Hampshire, Habitat Management and Maintenance Plan¹ and are summarised below.
- 9.30.2 The Habitat Creation Area comprises the following habitat and enhancement features:
- Woodland edge buffer planting of native species of local provenance, such as hazel, hornbeam, field maple, silver birch, elder, blackthorn, hawthorn, dogwood, beech, pedunculate oak, spindle, wayfaring tree, holly and guelder rose adjoining Beech Wood East SINC (completed in 2018);
 - Hedgerow planting of native species of local provenance to strengthen the existing hedgerows which lay along the south boundary and the east boundary (Park Lane). Hedgerow species include hawthorn, hazel, field maple, hornbeam, dogwood, wild privet, beech, wayfaring tree, blackthorn, guelder rose, spindle, and wild honeysuckle (completed in Feb 2019);
 - Native species-rich grassland mix of local provenance to be seeded and include yarrow, common knapweed, wild carrot, lady's bedstraw, ox-eye daisy, salad burnet, self-heal, meadow buttercup, common sorrel, red campion, bladder campion, common bent, crested dog's-tail, smaller cat's-tail and slender creeping red fescue (completed in 2017);
 - Translocated grassland turfs from Plot 1, which contained common spotted orchids (completed between 2015 and 2017 - topsoil retained and used in the grassland creation);
 - Two reptile hibernation sites (hibernacula) to be placed in south-facing locations along the fence line of the highways boundary fence to the A3(M) verge (completed in 2015);
 - Two log/ brash piles along with decaying tree stumps with roots to be placed in south-facing locations (completed in 2015); and
 - Two scrapes created in suitable locations away from overhanging trees, to be left to colonise naturally (completed in 2015).
- 9.30.3 The management and maintenance of the woodland edge and hedgerow planting will follow the details within Section 9.20 Woodland edge planting and 9.22 Native hedge planting above. Full details are provided in these sections and include weed control, adequate watering, re-firming soil, checking/ adjusting ties, fertilizer application, pruning (also detailed in Section 9.16) and checking post and wire fences.
- 9.30.4 The management and maintenance of the species-rich grassland is detailed within Section 9.12 Species-rich grassland (transplanted) above and the Dunsbury Hill Farm Works Information and Series 3000 Appendices – Landscape and Ecology, which includes details on species planted, weeding and monitoring species during the establishment period and re-planting native species where necessary.
- 9.30.5 Details regarding the management and maintenance of reptile hibernacula and log/ brash piles are provided in Sections 9.34 and 9.35 below.
- 9.30.6 The management and maintenance of the scrapes is detailed within Section 9.8 and includes checking the area for litter and fallen branches being left in situ if found (unless considered harmful to the eco-system).
- 9.30.7 The Habitat Creation Area will continue to be monitored in the establishment period (5 years post completion).

¹ Atkins 2014 (updated in 2016) Dunsbury Hill Farm, Hampshire, Habitat Management and Maintenance Plan (Link Road and Associated Infrastructure Phase). A report under contract to Portsmouth City Council (unpublished at the time of writing this report).

9.31 Park Lane Stream Buffer

- 9.31.1 All details for this area of land are provided in the Park Lane Stream Buffer report² and are summarised below. This area of land already comprises a diverse mosaic of habitats and will be managed as a wildlife corridor to form a buffer between Plot 6 and the Park Lane Stream.
- 9.31.2 The Park Lane Stream Buffer comprises the following habitat and enhancement features. None of these works are due to be started until 2021 onwards:
- The grassland will be managed using hand tool to increase its coverage and improve floral species diversity. For this purpose, the grassland is divided into three sections (A, B and C) and will be managed as a hay meadow on a 3-year rotational basis to form differing vegetation heights and transitional zones. Cutting will take place in the late summer/ early autumn (August - October) and all arisings will be placed within an identified compost location on Site (see details below). No fertilisers or chemical herbicides, or application of seed mixes will be used;
 - The scrub within the grassland will be cut back using hand tools on a three-year rotation over winter (November - February) to ensure that this habitat does not encroach on the grassland. Areas of scrub cut back are to be concentrated in a different section to the grassland (i.e. all of the scrub and grassland will not be cut down in a single area) in each management year. All arisings will be removed from the Site. If the cutting regime is not successful in preventing the spread of scrub, alternative methods such as digging out a maximum of 25% of the scrub by hand will be required;
 - All scrub around the edges of the Site will be retained and can be lightly managed using hand tools on a three-year rotation as above to prevent overgrowth (i.e. intrusion into plot 6);
 - Scrub planting to infill gaps and provide continuous habitat along the western Site boundary;
 - Local thinning of the trees/ shrub using hand tools adjacent to Park Lane Stream to open up the channel and enable more light to reach the stream, which would support in the establishment of marginal vegetation. Dead wood (where suitable) is to be used to provide deflectors, which can be placed on alternate banks within the reach of the stream to move flow from one side to another to provide increased sinuosity; and
 - Deadwood arising from fallen tree limbs is to be retained and placed in sunny sheltered areas at the edges of the grassland/ scrub.
- 9.31.3 The above scrub management within the grassland and tree/ shrub thinning adjacent to Park Lane Stream is to be carried out under a Precautionary Method of Working during the winter (i.e. November to February) with an ecologist present in the first management year. The Ecologist will undertake pre-works checks of vegetation to be cleared and advise on suitable working methods to avoid harm to hazel dormice and other protected species (e.g. hibernating reptiles). Subsequent management years for each area is to be timed to occur during the winter (i.e. November to February) and depending on the extent of regrowth, ecological supervision may not be required (to be confirmed by the Ecologist).
- 9.31.4 Additional measures are to be put in place to protect the buffer from the future development of plot 6 and other nearby plots within the Scheme (e.g. no lighting within the buffer, sensitive lighting scheme in adjacent plots, monitoring litter and recreational use, introduction of an informal mown path to discourage use in adjacent habitats), full details of which are provided in the Park Lane Stream Buffer report².

9.32 Triangular Area of Land Retained to the South of Plot 6

- 9.32.1 No specific management strategy for this area has been compiled as it is anticipated that a small portion of the land may be required for access to plot 6; however, the existing grassland and scrub should be retained as far as possible and managed via the same 3 - year rotational method as detailed above in paragraphs 9.32.2 – 9.32.3 and in the Park Lane Stream Buffer report². This management approach will encourage grassland diversity and reduce scrub encroachment from the boundaries.
- 9.32.2 There are some gaps in the northern boundary to this area (also the southern boundary to plot 6), which should be planted with whips and managed to form continuous scrub (following detail provided in the Park Lane Stream Buffer report² for the western boundary), which will provide enhanced connectivity for hazel dormice.
- 9.32.3 Additional measures are to be put in place to protect the retained habitats from future development of adjacent plots within the Scheme, as outlined in paragraph 9.32.4 above.

² Atkins 2020. Park Lane Stream Buffer. A report under contract to Portsmouth City Council (unpublished at the time of writing this report).

9.33 Bat Boxes and Dormouse Nest Boxes

- 9.33.1 Figure 1 shows the approximate locations of the bat and dormouse boxes within the Scheme.
- 9.33.2 These features were monitored in accordance with the terms of the relevant protected species licences for the Scheme by licensed bat/ dormouse surveyors. The bat boxes were monitored in autumn from 2014 until 2018. In 2018 approximately 15-20 brown long-eared bats were recorded in one of the boxes. The dormouse boxes were also monitored from 2015 until 2018, and evidence of dormice and old dormouse nests were recorded. Monitoring is now complete and the boxes will remain in-situ, with no further management required at this stage of the Scheme.

9.34 Hibernacula

- 9.34.1 Two hibernation sites (hibernacula) have been created for reptiles within the Habitat Creation Area in suitable south facing locations. These hibernacula are comprised of cut logs and branches from some of the felled trees along the link road, along with brash, tree roots and suitable inert hardcore/ rubble from other areas of the Scheme.
- 9.34.2 No management or maintenance of these features is proposed, they should be left in-situ and intervention would only be required if impacts to this feature were observed.

9.35 Log Piles/Refugia/Compost

- 9.35.1 Log/ brash piles and decaying tree stumps with roots were created within the Habitat Creation Area to provide places for reptiles to bask and shelter, and the decaying tree stumps will also be potential egg-laying sites for grass snakes. These features were placed in south-facing areas that are not at risk of flooding.
- 9.35.2 Further log/ brash piles were also created in another area of the Scheme, namely along the west verge of the link road between Hulbert Road and the Hermitage Stream. These log/ brash piles were placed in south-facing areas that are not at risk of flooding.
- 9.35.3 A compost heap will be created in the Park Stream Buffer location that will provide egg laying opportunities for grass snakes as well as sheltering opportunities for a number of animals including hedgehogs. The compost heap is proposed at the south west corner of the buffer area (due to be created in 2021) and will be established on brash (to encourage aeration and allow access for animals at the base) and be at least 1 m³. This area should then be sectioned off and left undisturbed (with the exception of new cuttings being placed on top).
- 9.35.4 No management or maintenance of these features is proposed, they should be left in-situ and intervention would only be required if impacts to this feature were observed.

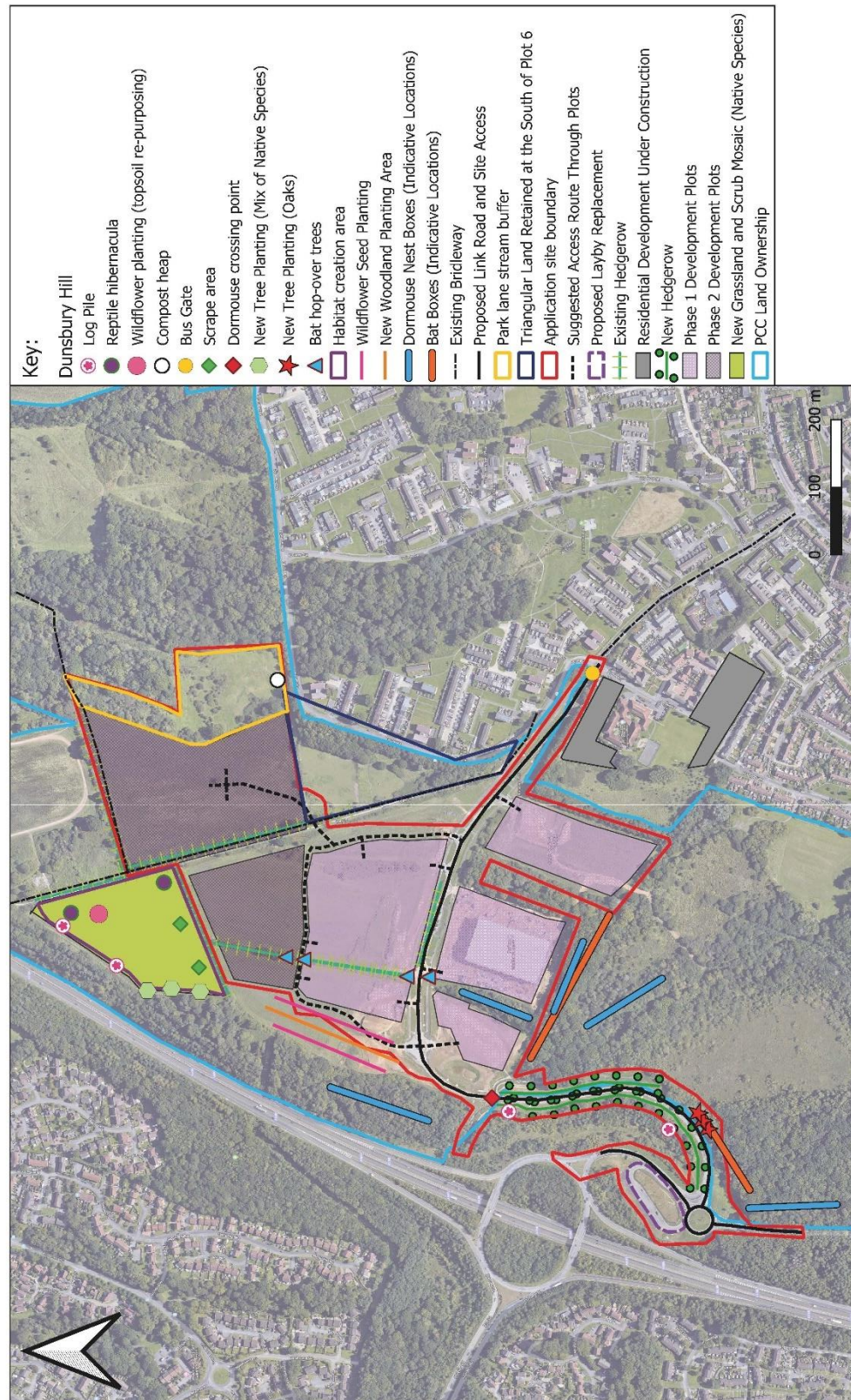


Figure 1: Plan illustrating the approximate locations of the bat and dormouse boxes within the Scheme

Appendix 1: Habitat Management and Maintenance Plan (March 2014)

(Appended separately)

Appendix 2 – Activities checklist (years 1-5)

DATE:	OPERATIVES ON SITE:	WEATHER:	NOTES:

ITEM		ACTIVITY	ACTIONED Y / N / NA			NOTES / COMMENTS (incl. any reasons for not actioning)
General actions		• Litter pick • Remove dead plants / foliage / wood / flowers • Top up mulch • Fertilizer application • Weed control as required • Prick up soil in all beds • Pruning as required • Check for loose plants and re-firm • Clean up and remove all arisings • Water grass, trees & planted areas as required				
Hard surfaces, external fittings & furniture		• Weed control as required • Inspect and clean • Report damage • Treat rust as required • Paint as required • Inspect road markings for wear				
Fencing & gates		• Inspect, check stability • Report damage • Cut back vegetation as required				
Surface water drainage systems and Ditches		• Inspect • Clear drains • Remove debris				
Swales		• Remove debris, leaves, litter and undesirable plant species • Grass cutting • Strim vegetation on rotation • Remove strimmed vegetation after two days • Check proper functioning of drainage and correct problems • Remedial actions as required to maintain proper operation • Check ground stability				
Ponds and scrapes		• Inspect • Remove debris • Cut back vegetation as required				
The Hermitage Stream		• Inspect • Remove debris • Cut back vegetation as required				
Lawns & amenity grass		• Mowing • Edging • Reform edges/repair uneven surfaces and damage (once annually) • Selective herbicide/spot weeding as required • Spring renovation • Fertilizer application				
Species rich grassland		• Cutting (once/twice per year) • Short cut at edges • Edging where required • Selective herbicide/spot weeding as required				

ITEM		ACTIVITY	ACTIONED Y / N / NA			NOTES / COMMENTS (incl. any reasons for not actioning)
Existing trees & vegetation		• Regular tree inspections • Remove dangerous material • Arboricultural work as required • Understorey management • Thinning as required • Pruning as required • Weed control as required				
New specimen trees		• Weed control as required • Check & adjust ties, stakes & fittings • Fertilizer application • Break up root collars • Pruning • Mulch • Reform tree circles in grass areas				
Clipped Hedges		• Weed control as required • Prune/trim/cut • Fertilizer application • Top up mulch • Inspect post & wire fencing				
Planting Beds		• Weed control as required • Thinning as required • Pruning as required • Fertilizer application • Top up mulch • Trimming and support as required				
Perennials		• Weed control as required • Trim and deadhead • Support as required • Fertilizer application • Top up mulch				
Groundcover		• Weed control as required • Trim edges • Remove from other plant stems as required • Fertilizer application • Top up mulch				
Climbers		• Weed control as required • Trim • Secure loose growth to support as required • Fertilizer application				
Bulbs		• Dead head • Cut back foliage				
Native hedge planting		• Cutting • Thinning as required • Weed control as required				
Native shrub planting		• Thinning as required • Pruning as required • Check stakes and shelters • Understorey management • Weed control as required				

SIGNED: (for Management Team)

Print:

date:

SIGNED: (Landscape Contractor)

Print:

Date:

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Appendix 3 – Indicative programme (years 1-5)

Item	Ref	Activity and minimum frequency	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
General	9.1	Litter 12/yr												
		Water as required												
		Weed control as required												
		Top up mulch 1/yr												
		Prick up soil as required												
Swales	9.5	Remove debris, leaves, litter, weeds as required												
		Grass cutting 16/yr												
		Strim edge vegetation on rotation and remove after 2 day 1/yr												
		Check drainage function and correct problems 12/yr												
		Remedial actions as required												
		Check ground stability 12/yr												
Ponds and scrapes	9.7-8	Remove debris and litter												
		Cut back vegetation (on rotation)												
Hermitage Stream	9.9	Remove debris and litter												
Lawn and amenity grass areas	9.10	Cutting 16/yr												
		Edging 15/yr												
		Reform edges 1/yr												
		Selective herbicide / spot weeding as required												
		Spring renovation 1/yr												
		Fertilizer application 2/yr												
Species rich grassland	9.11	Cutting 1/yr												
		Short cut at edges 16/yr												
		Edging where required 16/yr												
		Selective herbicide/spot weeding as required												
Existing trees and vegetation	9.15	Regular tree inspections and work as required												
		Cutting and pruning												
New specimen trees	9.17	Selective herbicide / spot weeding as required												
		Check and adjust ties, stakes 2/yr												
		Fertilizer application 1/yr												
		Weed control as required												
		Break up root collars as required												
		Prune 1/yr												
Clipped hedges	9.21	Weed control as required												
		Cutting 2/yr												
		Fertilizer application 1/yr												
		Check post and wire support 4/yr												
Native hedge planting	9.22	Weed control as required												
		Thinning as required												
		Pruning as required 1/yr												
		Check post and wire fence												
Native shrub planting	9.23	Weed control as required												
		Thinning as required												
		Pruning as required												
		Check stakes & shelters 2/yr												
		Understorey management as required												
Planting beds	9.24	Weed control as required												
		Thinning as required												
		Pruning as required												
		Fertilizer application 1/yr												
Perennials	9.25	Weed control as required												
		Trim edges & deadhead 4/yr												
		Support as required												
		Fertilizer application 1/yr												
Groundcover	9.26	Weed control as required												

Item	Ref	Activity and minimum frequency	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
		Remove from other plant stems as required												
		Fertilizer application 1/yr												
		Trim edges 4/yr												
Bulbs	9.28	Deadhead Daffodils												
		Cut back vegetation to ground level												
Climbers	9.27	Weed control as required												
		Pruning as required												
		Secure loose growth to support as required												
		Fertilizer application 1/yr												
Park Lane Stream Buffer & Triangular Area of Land Retained to the South of Plot 6	9.31 & 9.32	Grassland managed on 3-year rotation (as per plan at Figure 2)												
		Cut back scrub on 3-year rotation to prevent encroachment												

As required

Frequency of visit