

LAND AT APPLEDORE ROAD, TENTERDEN

Landscape and Ecological Management Plan (LEMP)
Prepared for: **Wates Developments**

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1.0 Introduction

2.1 Purpose of the report

SLR Consulting Ltd (SLR) has been commissioned by Wates Developments Limited to prepare an outline Landscape and Ecological Management Plan (LEMP) to support their proposed development on land at Appledore Road, Tenterden (refer to Drawing T-4).

The LEMP is prepared to support a hybrid planning application as follows:

- a) *Outline application for the development of up to 145 residential dwellings (50% affordable) including the creation of access points from Appledore Road and Woodchurch Road and creation of a network of roads, footways, and cycleways through the site. Provision of open space including children's play areas, community orchards, sustainable drainage systems, landscape buffers and green links all on 12.66 ha of the site. (Matters for approval: Access)*
- b) *Full planning permission for the change of land use from agricultural land to land to be used as a country park (8.45 ha), and land to be used as formal sports pitches (3.2 ha), together with pavilion to serve the proposal and the surrounding area. Including accesses, ancillary parking, pathways, sustainable drainage systems and associated landscaping.*

2.2 Scope of Report

The LEMP is divided into the following sections:

- Introduction;
- Site Context;
- Proposed Development – Aims and Objectives;
- Implementation of the Landscape Scheme;
- Vegetation Establishment;
- Hard Surfacing, furniture and other features;
- Management Responsibilities; and
- Management Operations.

The LEMP provides the broad principles for long term management of both areas of the site and has been completed with input from the relevant professionals to reflect key landscape and ecological objectives and strategies for the site. The proposed management of the site also reflects the principles of Community Stewardship as set out in Local Plan Policy IMP4 (Governance of Public Community Space and Facilities), underpinned by Commuted Maintenance Sums calculated in accordance with the Public Green Spaces and Water Environment SPD (refer to Section 7.0).

Further detail on the management of the site would be provided at the reserved matters stage through a detailed LEMP, which would be reviewed and updated in the longer term to meet the requirements of the landscape as it matures.

2.0 Site Context

2.3 Introduction

The site comprises approximately 24.51 hectares of land located between Appledore Road and Woodchurch Road, on the south-east side of Tenterden. The site currently comprises a number of agricultural fields used for grazing sheep. An existing playing pitch for Homewood School occupies land north of Appledore Road. A public footpath (PRoW no. AB12) crosses the site and connects Appledore Road to Woodchurch Road.

The site abuts the built-up residential edge of Tenterden on three sides; north, west and south, with open countryside to the east. The site is generally well enclosed by built form and tree belts with topography adding to the sense of enclosure. A low ridge (c 60m AOD), which lies close to the PRoW, separates the west, town-facing and enclosed slopes from the east, outward facing slopes. Panoramic views eastwards are possible from the highest parts of the site, although mature tree belts along the eastern boundary enclose the site.

The High Weald AONB lies to the east of the site extending up to Woodchurch Road and touches the site on the eastern edge of the Country Park. Knock Wood lies to the north of Woodchurch Road, designated as a Local Wildlife Site, it is also an area of Ancient and Semi-Natural Woodland (ASNW).

2.4 Landscape Context

A Landscape and Visual Appraisal (LVA) was undertaken by SLR in March 2021 and identified that:

- At a national scale, the site is close to the eastern edge of the High Weald character area, NCA 122. NCA 121, Low Weald, lies approximately half a kilometre to the north east and east of the application site.
- In the Kent County Landscape assessment (2004) the site is classified as being on the northern edge of the Oxney: Lower Rother Valley character area, close to the Biddenden-High Halden Wooded Farmlands character area.
- In the Ashford Landscape Character Assessment (2009) the site is classified as being part of the Woodchurch Undulating Farmlands character area. Key characteristics of this area which are of relevance to the application site include the following:
 - Undulating landscape;
 - Mixed farmland with little intensive land use;
 - Varied field pattern;
 - Strong sense of enclosure provided by mixed woodlands and hedgerows;
 - Broadleaf and coppice woodland with mixed ground flora;
 - Field ponds and narrow stream corridors;
 - Historic settlement of Woodchurch situated around a village green;
 - Traditional converted buildings;
 - Narrow roads enclosed by woodlands and hedgerows.
- This landscape character context is helpful in guiding the management operations on site. It is important that the existing framework of hedgerows is maintained and enhanced, e.g. with the planting of further hedgerow trees such as Oaks to reinforce the enclosed rural qualities of the landscape, and that existing ponds are also retained and new ones added, e.g. for Great Crested Newts (GCN). Mixed farmland is characteristic and therefore the retention of grassland as well as traditionally managed orchards for

example is appropriate. There does however need to be a balance between recreational and biodiversity needs.

- The arboricultural survey has identified three ancient trees (Oak (No.345), Hornbeam (No. 354) and Field Maple (No. 381)) and three veteran trees (2 Oaks (No. 197 & No. 312) and 1 Field maple (No. 353)) within or immediately adjacent to the boundaries, which impart age and maturity to the site, and which are considered as irreplaceable habitat. There are 82 other mature Oak trees, notably the tree (no. 267) on the highest part of the site east of the PRoW. Other large specimens within tree belts, almost exclusively native broadleaves, also contribute significantly to the site's landscape structure and character.

2.5 Ecological Context

Habitat and protected species surveys have been undertaken historically across the application site by EDP with recent updated walkover surveys undertaken by Ecology Solutions. All findings and assessment of previous works are reported within the most recent 2021 Ecological Assessment as produced by Ecology Solutions. This identified that:

- The surveys confirm that the site contains a range of currently grazed and sports grassland fields in varying condition, albeit all generally represent an over dominance of grass species with limited herb species diversity for the most part.
- Where wetter areas are located, damper rush-dominated grassland with ruderal elements exist. Six waterbodies are located within the site, in addition to several ditches however the majority of features are subject to drying, particularly during periods of drought. In part due to this, in addition to the lack of management and over-shading, all waterbodies are currently in a poor state with no significant marginal vegetation.
- A large proportion of hedgerows and treelines are scattered across the site. Whilst for the majority species-rich, due to a lack of clear and obvious management, many have developed a 'gappy' structure or a lack of clear structural integrity.
- Surveys undertaken across the site identified populations of Great Crested Newt within three ponds. Furthermore, populations of reptiles (Slow-worm, Common Lizard and Grass Snake) were all recorded on site.
- Whilst bat activity recorded across the site was fairly low, a number of trees were recorded to contain a potential to support roosting bats. A single badger outlier sett was recorded along the eastern boundary of the site.
- During the Dormouse surveys undertaken across the site, no evidence of presence was recorded.
- Due to the habitats present, the site is known to support a range of common and widespread breeding bird species and likely to support a range of common and widespread invertebrate species.

The ecological strategy for the site (further detailed in Section 3.1) is considered to be two-fold. In the first instance, widespread and extensive habitat measures will be incorporated within and around areas of development through the implemented of green infrastructure (concentrated within the west of the site) as well as through the creation of the Country Park (located within the east of the site). Measures will include:

- Large scale enhancement of existing grassland in order to create extensive areas of species-rich, wildflower grassland.
- Creation of new ponds and swales in addition to enhancement of existing ponds and ditch network.

-
- Inclusion of large-scale green infrastructure / wildlife corridors that will permeate throughout all areas of development in order to provide habitat linkages across the site.
 - Planting of scrub habitats in order to increase connectivity with existing ecological assets on site and within the wider area.
 - Planting of Orchard pockets to facilitate both wildlife but also important amenity purposes.

The above measures will provide a wide range of benefits to faunal species previously recorded within the site, in addition to those which may be present within the wider area. Measures will also be implemented directly within areas of development, such as bat / bird / invertebrate boxes, ecologically desirable street planting as well as the distribution of pamphlets to new residents outlining the benefits to maximising biodiversity. The above measures are considered to directly provide a range of benefits to faunal species including GCN, breeding birds, invertebrate species, Badgers, reptiles and bats.

3.0 Proposed Development – Aims and Objectives

3.1 Strategies

Taking into consideration the findings of professional assessments and studies on site and across the wider area, the main aims and objectives for the proposed landscape masterplan are set out in the following strategies.

3.1.1 Western residential development area

Landscape Strategy

The proposed landscape scheme for this area will:

- Retain and enhance the existing landscape structure of hedgerows and mature trees.
- Enhance biodiversity by creating new species-rich grasslands, scrub and wetlands.
- Create an attractive landscape to live, work and play with cycleway and PRoW links.
- Provide educational benefits.
- Create a functional landscape, e.g., with surface water attenuation.
- Ensure positive management to retain landscape character.
- Support Community engagement.
- Create an Interconnected network of paths and cycleways between town and the country park.
- Provide LAPs within 5mins of residential properties.
- Lighting kept to a minimum.

Ecology Strategy

- The proposed residential development will be set within a network of interlinked multi-functional green infrastructure focussed around retained habitats and connecting to the wider wooded habitats of Knock Wood, Hales Place and the High Weald AONB. The green infrastructure will also allow for the passage of faunal species across the site, providing key linkages through the development site into the Country Park.
- The site could contribute to the Kent Nature Partnership Low Weald Woodland Biodiversity Opportunity Area (BOA) enhancing wildflower grasslands to provide habitats, e.g. within orchards, adding to the ponds network that supports Great Crested Newts (GCN), and providing traditional orchards and small areas of interconnected scrub.
- The site will be integral to the green network through the retention and enhancement of existing habitats and creation of new ones, further achieving biodiversity net gain and better connectivity.
- Contribute to local BAP targets and ecological objectives of the High Weald AONB.
- Main aims:
 - to enhance currently species-poor grassland into areas of managed species-rich grasslands/wildflower meadows;
 - to recreate, restore and manage native hedgerows and treelines to benefit local biodiversity and to establish strong green links throughout the site;

- to create new ponds and ecologically designed attenuation features to enhance biodiversity benefits such as for nesting and foraging habitat for terrestrial and aquatic species;
- to restore and enhance existing ditches and ponds to benefit aquatic species;
- To incorporate the use of ecologically sensitive landscape planting as well as the inclusion of a large number of bat, bird and invertebrate boxes into areas of built-form in order to provide immediate opportunities for a range of faunal species and to ensure developed spaces remained as biodiversity rich as possible.
- To manage all areas of internal green infrastructure and habitats around areas of development in an ecologically sensitive manner for the long-term.

3.1.2 Country Park

Landscape Strategy

- Enhancement of biodiversity is the key objective, including diversifying the existing habitats and introducing new habitats.
- Informal recreation is the other key objective; equipment has been kept to a minimum, including only small areas of timber seating.
- Extensive area of informal open space on the countryside edge.
- Retained and enhanced landscape structure of tree belts, hedgerows, scrub and grassland mosaic, meadows, acid grasslands, and ponds.
- Retention of mature and veteran trees, tree belts and hedgerows along historic boundaries to enhance landscape structure. Lost boundaries restored.
- Existing ponds and watercourses retained and enhanced
- Extensive lowland meadows managed to enhance biodiversity.
- New damp grasslands created
- Informal paths connecting with PRow to provide extensive public access.
- Interpretation boards provided to explain key features.
- The provision of trails and community orchards to enhance community engagement and learning.
- No lighting to retain 'dark skies'.

Ecology Strategy

- The enhancement of the Country Park will be undertaken in order to provide a betterment to each of the habitats and faunal species recorded on site, as well as assisting the ecological objectives as outlined within local biodiversity initiatives.
- Country Park design and subsequent management has been primarily designed to maximise ecological value, this has been ensured through the careful selection of appropriate habitat creation and management measures suitable to that of both the local area and the current baseline of the site. Such measures will include:
 - Large-scale block enhancement of currently species-poor neutral and acidic grassland through the removal of overly detrimental and persistent grazing and through a sensitive scarification and overseeding programme, in addition to long-term maintenance and care;

- Planting of dense scrub habitat as well as enhancements to existing treelines and boundary hedgerows to strengthen linkages throughout the Country Park;
 - Incorporation of dedicated biodiversity ponds and grassland mosaic habitat to increase range of habitats within Country Park;
 - Encouragement of direct links with areas of green infrastructure located within the western development zones.
- Through the incorporation of the above measures, opportunities for faunal species within the Country Park and across the wider site will be greatly enhanced over the current baseline situation.

3.2 Extent of Proposed Planting and habitat/landscape features

- 10 Proposed Trees, including Street Trees and trees within open space
- 1,111 l/m Proposed Native Mixed Hedgerows (including reinforced hedgerows)
- 10 no. Proposed Hedgerow Trees
- 6,387m² Proposed Orchards and Cobnut Platts
- 14,132m² Proposed Scrub and Grassland Mosaic
- 169,967m² Proposed Wildflower Meadows/Species Rich Grasslands
- 21,954m² Proposed Amenity Grassland
- 5 Proposed Sports Pitches
- 2 Proposed Ponds and 777 l/m Ditches
- 5,814m² Proposed Wet Grassland
- 1,273m² Emergent and Aquatic Vegetation
- 3 Play areas and 1 outdoor gym
- Bat boxes, hibernaculum and invertebrate banks
- Board walks, Interpretation boards, bins, benches etc.

3.3 Management Aims and Objectives

In order to facilitate the proposed design more specific management objectives have been noted for each of the vegetation/habitat types:

- **Existing Trees and groups** – to be retained to positively contribute to landscape structure and the overall ecological value of the site, e.g. value to bats and nesting birds as well as visual amenity and character, e.g. adjacent to the High Weald AONB, through appropriate methods of protection during construction and longer term remedial works to maintain the health and vigour of established trees.
- **Existing Hedgerows** – to improve the structure, integrity, diversity, visual amenity and ecological value of existing hedgerows through supplementary native species planting and traditional management methods to fill any existing gaps and create interlinking wildlife corridors and foraging habitats and shelter.

- **Existing Ponds and Ditches** – to be managed to enhance their biodiversity, landscape and amenity value, including to enhance and extend habitats for amphibians, and as part of an interconnected green infrastructure network (refer also to RSK SUDs Management Strategy (133187-R1(0)-FRA-Appendix K).
- **Existing Grasslands, including acid grassland** – enhance and manage wildflower meadows and other grassland areas to increase diversity of species and create habitats for invertebrates, reptiles and amphibians.
- **Existing cultivation ridges** – grassland in this area to be managed to avoid scrub invasion and protect the cultural heritage feature.
- **Proposed Orchards and Cobnut Platts** – manage orchards to promote their value to biodiversity, provide community foraging and contribute to the local landscape.
- **Proposed Trees, including Street Trees and Trees in POS** – to be managed to ensure healthy growth in the interests of visual amenity and biodiversity.
- **Proposed Native Mixed Hedgerows (including reinforced hedgerows)** – to be managed to improve the connectivity of the hedgerow network around the site and thus nesting and foraging habitat for wildlife, as well as local character and visual amenity, community and educational value, e.g. with edible trail.
- **Proposed Scrub and Grassland Mosaic.** To be managed to provide a new habitat to biodiversity and to increase opportunities for faunal species, notably invertebrates.
- **Proposed Wildflower Meadows/Species Rich Grassland** – to be managed to establish a diverse, species rich sward to maximise biodiversity value and species diversity as well as visual amenity.
- **Proposed Ponds and Ditches**– to be managed to ensure their successful operation and to establish a diverse species rich sward in attenuation basins during dry periods as well as emergent vegetation in areas of permanent water (refer also to RSK SUDs Management Strategy (133187-R1(0)-FRA-Appendix K).
- **Proposed Wet Grassland** - To be managed to provide a range of grassland habitats throughout the year, in order to maximise long-term opportunities to both floral and faunal species.
- **Proposed Emergent and Aquatic vegetation.** To be managed in order to complement the overall pond network and to provide a range of resting, foraging and breeding opportunities for aquatic species in particular.
- **Proposed Amenity Grassland** – to be managed to establish a satisfactory sward which is free from weeds and visually contributes to amenity areas as well as the setting of the development.
- **Proposed Sports Pitches** – to be managed so appropriate to their desired use.
- **Play Areas** – to be managed to ensure all areas are safe and fit for purpose.
- **Proposed Hard Landscape Areas and Structures** – to manage all hard landscape surfaces and features to ensure they are in a good and safe condition, appropriate for their use, and are repaired and replaced where necessary.
- **Proposed Ecological features (including hibernacula, bat and bird boxes, invertebrate banks).** To be managed to provide immediate opportunities to faunal species, both in areas of residential development as well as in larger areas of open space (Country Park) and green infrastructure. To also be used to assist in education of local residents.

The remainder of the LEMP sets out how these objectives translate into the establishment as well as management prescriptions/operations for the various vegetation/habitat types and features of the application site.

4.0 Implementation of the Landscape Scheme

4.1 Introduction

The implementation of the landscape masterplan will be undertaken in phases. All works within the Country park and sports pitch areas will be undertaken in the first phase of development. If consent is granted locally in the Summer of 2021 construction of the Sports Hub would commence in the Spring of 2022, with the pitches and pavilion ready for use in the Autumn of 2023. All other aspects of the landscape scheme related to the residential area would be undertaken in the first available planting season following the completion of each phase of construction.

Prior to any works commencing on site a detailed LEMP will be prepared as part of the Reserved Matters application, which would provide further detail on the operations/prescriptions set out in this outline LEMP and would include detailed schedules and programmes for implementation, monitoring and management for the first 5 years of establishment and beyond.

4.2 General Operations

4.2.1 Protection of Existing Vegetation

Areas of existing vegetation to be retained would be protected throughout the proposed construction and planting works. Any excavation work (for planting purposes, for example) beneath canopy spreads shall be carried out by hand.

It is not anticipated that there would be any tracking of machinery, storage of materials or chemicals within the RPAs of existing trees; however, if necessary, protective fencing should be installed to protect existing vegetation from such activities. Protective fencing will comprise Heras fencing supported by a vertical and horizontal framework of scaffolding in accordance with Figure 2 in BS 5837:2012. Protective fencing should be located outside of the root protection areas (RPAs) of trees to be retained.

Should any construction works be required within the RPAs of existing trees which requires mechanical digging, the Contractor shall obtain an Arboricultural Method Statement to facilitate works and to provide a detailed review of appropriate work methods.

All trees retained as part of the development proposals should be protected in accordance with the approved Arboricultural Method Statement and Tree Protection Plan.

Following construction and occupation all trees will be monitored and managed in an appropriate manner by an arboriculturist, to be set out in a detailed LEMP to be compiled to accompany a Reserved Matters application. This is likely to include the commissioning of a qualified arboriculturist to undertake a regular inspection of the health and structural condition of all trees and to produce a schedule of any remedial or arboricultural management works required or recommended in accordance with British Standards. Particular focus will be given to the risk of trees causing harm to persons or property, to the physiological and structural condition of individual trees (including the recording and monitoring of diseases or decay) and to the ongoing management of trees, understorey and soils to improve arboricultural quality and longevity.

The ancient and veteran trees will be accorded specific protection, as set out in a veteran tree management plan that will specify specific monitoring and management objectives and actions.

4.2.2 Protection of Existing Ecological Features and Habitats During Construction

Prior to the removal of dense undergrowth and/or debris piles, they will first be searched for vulnerable wildlife by an appropriately qualified ecologist. Should any vulnerable wildlife be found, they will be relocated to a place of safety.

Prior to habitat clearance in order to facilitate development where works are located within close proximity to confirmed GCN ponds, a licenced translocation of all suitable habitat will be undertaken in order to safeguard GCN, reptiles and other amphibian species. All translocated animals will be moved to dedicated receptor sites where it will be ensured proper breeding and foraging habitat is immediately available. The details of which will be determined at the correct licencing stage.

All temporary and permanent external lighting will be designed to minimise the risk of light spill outside the area it is desired to illuminate; and particular care will be taken to minimise light spill on hedgerows or other linear features that can be used by bats for commuting. This can be achieved using baffles and directional lighting coupled with low-level lighting columns.

All trenches and excavations will be closed overnight to prevent badgers and other wildlife from becoming trapped. Where it is not feasible to close excavations overnight, they will be excavated with at least one sloping end or provided with a sturdy plank to provide a means of escape.

To avoid contamination of retained habitats, particularly boundary features as well as areas of Country Park to the east of the development space, best practice guidelines will be followed to ensure there remains negligible potential for degradation of retained habitats.

It is envisaged that this will involve providing spill kits to machine operators and agreed safe storage of all materials away from areas of boundary habitat to be retained. Activities which are deemed to be of high-risk (i.e. refuelling), will only be undertaken within identified operational areas. Where appropriate, interception boards / bunds will be installed to limit the dispersal opportunities for potentially contaminated run-off impacting retained and more sensitive habitats.

A suitable surface water strategy for the site will be instigated to ensure that any water discharged from the site will be cleaned to environmentally appropriate levels in accordance with CIRIA guidance. At this stage, it is envisaged that gullies will be utilised to trap silt and oil, capturing any contaminants from the main development footprint, particularly diverting potential contaminants away from the northern boundary of the site. Regarding the treatment of foul and storm water, this would be discharged to an identified Wastewater Treatment Works (WWTW) following confirmation of local capacity.

Aggregates will be stored on the far side of operational areas / away from potentially sensitive ecological receptors, materials will be sprayed down to limit airborne movement and wheel-washers are to be implemented purely on a precautionary basis.

4.2.3 Ground Preparation and Vegetation Removal

Prior to commencement of any softworks, all areas would be suitably cleared and prepared for planting / seeding. All proposed planting/seeding areas shall be cleared of all unwanted rubbish, and any debris and unwanted vegetation/weeds removed prior to planting. The location of any existing services within the site will also be established before clearance works and planting begins.

Vegetation requiring removal (either for development or habitat enhancement reasons), should be cleared outside the bird nesting season (which runs from March to late August inclusive) and checked for the presence of breeding birds prior to work commencing. Where the former is not possible, a bird nesting survey should be carried out prior to the commencement of works by a suitably qualified ecologist.

4.2.4 Soil Resource

The substrate will be inspected and assessed for its suitability for landscaping prior to the commencement of implementation works. The substrate may require the addition of soils/soil-forming materials to improve ground conditions for the proposed planting (such as soil structure and drainage/water holding capacity) and also mechanical de-compaction. In general terms, however, a low nutrient substrate will inhibit growth of competitive species and therefore have the potential to support ecologically diverse plant communities, e.g. across the grassland areas.

All soil handling operations will follow the guidelines set out in *BS:3882: Specification for topsoil and requirements for use* to make the best use of the available soil resource and minimise compaction as follows:

- All soil units will be separately stripped, stored and replaced;
- All soil units will be handled when dry and friable; and
- Where possible, no heavy wheeled earthmoving vehicles or machines will run over in-situ/un-disturbed or replaced soils.

Where space is limited during construction, the soils will be placed into temporary storage mounds, according to the following methods:

- The storage areas will be subdivided into each part to receive each soil unit (topsoil or subsoil);
- Materials will be placed on dry firm foundations, which have been stripped of soils and/or soft material, as appropriate;
- Stored in heaps of a maximum 2m height; and
- To minimise soil wetness storage heaps will be shaped to shed water and positioned in the direction of flood water flows.

When stripping of topsoil is required, for example where there will be hard surfacing or extensive vehicle movements, this should be to an average depth of 300mm, although soils will not be removed from below the spread of trees to be retained.

Where planting is required above existing underground structures, e.g. foundations etc. (exact location to be confirmed by contractor before work commences) and proposed services e.g. cables in ducting, the minimum required soil depth will be 750mm for shrub planting and 1000mm within 2m of tree planting and 500mm for grass and ground cover plants. These profiles allow for a minimum of 300mm of topsoil.

Stones larger than 50mm as well as other debris will be removed. All soil will be graded to smooth flowing contours to achieve the specified finished levels.

All areas of tree and shrub planting will be assessed for compaction prior to planting and if necessary or practical, de-compaction will be carried out to a depth of 300mm, with soils loosened, aerated and broken up, when ground conditions are reasonably dry.

All areas to be sown with seed will require good preparation in order to control weeds and produce a good quality seed bed before sowing. To prepare the seed bed weeds would first be removed using repeated cultivation and then the ground harrowed or raked to produce a medium tilth, and then rolled to produce a firm surface.

For areas of over-seeding where grassland is to be retained and enhanced (namely, within the Country Park and areas of internal green infrastructure), ground preparation will include for initial scarification/harrowing of the grassland in order to expose the soil and allow for seeding with the target seed mix. This will follow a mixture of

continued heavy grazing of the grassland and mechanical cutting to ensure ground conditions remain unsuitable to reptile and amphibian species, prior to seeding.

4.2.5 Herbicide

A suitable non-residual herbicide may be used to clear existing weeds or unwanted vegetation in proposed planting areas where this cannot be achieved by cultivation alone. Herbicides are not to be applied within 10m of any watercourse or waterbody. If deemed necessary Environment Agency consent would be required (refer to Environment Agency Guidance Notes AqHerb01: Agreement to use herbicides in or near water). Where weeds are to be controlled by the application of herbicides this will be carried out by a certified competent person, according to manufacturer's instructions (For example, NPTC Certificate of Competence for use of Pesticides). If herbicides are to be used prior to planting and seeding then 2 weeks should be allowed before planting and seeding operations commence.

4.2.6 Watering

The need for watering will be assessed prior to the commencement of works. If considered necessary, the full depth of soil will be watered during planting operations and all areas thoroughly watered immediately after operations, without damaging or displacing plants. It is anticipated that new planting may require watering, in exceptional drier periods in the first year, but it is not intended that this be other than on initial requirements.

5.0 Vegetation Establishment

The following section of this Management Plan deals with how the various proposed vegetation/habitat types will be established on site (refer to Drawing T-4 for their locations).

5.1 Proposed Tree, Shrub and Hedgerow Establishment

All plants will be well-grown nursery stock as seed-raised transplants, 1+1, 1/1 (2-year-old transplant, one year in seedbed, transplanted and grown for one year) using a combination of 40-60cm/60-80cm transplants and container grown stock, unless otherwise detailed. All plants will be planted in the first available planting season (November – March) in accordance with the appropriate construction phase.

Plants will be sourced as locally as possible, and all effort will be made to source stock of native genetic origin. All plant handling and planting operations will comply with relevant clauses of CPSE 'Handling and Establishing of Landscape Plants' (obtainable from the Horticultural Trades Association).

Prior to planting, ground will be prepared and will include for the re-grading and tilling of soil to create optimal planting medium.

All transplants (which will be bare root and supplied to site in bags containing the whole root system, unless otherwise specified) will be notch planted whilst all larger stock will be pit planted. For the notch planting, a notch will be cut with a spade or mattock and, whilst holding it open, the transplant slipped in and roots spread. It is important to make sure the root collar is level with the soil surface. Then tread the split closed and check that the shrub/tree is firmly planted. Backfill will consist of previously excavated material and 3L of sanitized and stabilised, friable compost (non-peat compost) to PAS 100 (1:3 ratio) per transplant/tree as well as fertiliser as required.

Individual Feathered/Standard trees will be pit planted with a slightly raised bottom to the pits and scarified sides, with a pit size to allow 300mm in any direction from the rootball by 450mm depth or as necessary to accommodate their root systems. All pits will be excavated on the same day of planting. Trees will be double staked with expandable ties.

As per the notch planting, when pit planting the top of the root collar must be level with the surrounding soil surface and the ground around the plant will be firmed in by treading, taking care to avoid scuffing or damage. The completed planting pit will be either at ground level or slightly domed to prevent waterlogging. On no account will any roots be left exposed or bent. The soil around all plants will then be suitably firmed and watered.

All proposed tree, shrub and hedgerow plants (transplants) will be individually protected by 0.6m high translucent plastic spiral guards supported by a single stout cane or, in the case of the bushier and larger stock, a 0.6m shrub shelter and softwood timber stake. Planting areas may be fenced off into compartments using internal rabbit fencing if appropriate.

A 50mm deep layer of Bromide free bark mulch will be spread across all planted areas to assist with weed control (1m diameter around all trees).

5.1.1 Proposed Trees, including Street Trees and trees in POS

Tree Species will include native species such as Oak, Hornbeam, Field Maple, Crab Apple, Spindle and Native Wild Cherry, and other appropriate local native species within the residential and open space areas. Trees will be selected to enhance the aesthetic and visual qualities of the area, providing seasonal interest but also in the interests of biodiversity to provide nesting and foraging habitats.

5.1.2 Proposed Orchards and Cobnut Platts

Orchards will be managed to maximise value to biodiversity as well as to provide fruit production for use by the community and would include apple, cherry and cobnut species including Kentish heritage varieties (see schedule below and Detailed Design Drawing 1). The orchards will be under-sown as appropriate with a wildflower meadow mix suitable for the Weald (refer to Section 5.2). In order to provide shelter for the establishing orchard and to attract pollinators, the existing hedgerows surrounding the orchards will be reinforced with native species, including hazel and crab apple (refer to schedule in Section 5.1.3 below).

Mistletoe *Viscum album* can be readily sustained on trees (Apple trees *Malus domestica* being one of the commonest host plants) without causing harm. The presence of Mistletoe will provide a valuable winter berry resource for a range of foraging birds.

The cherry and apple orchards would be planted on a 10 x 10m grid.

The cobnuts would be planted on a 5 x 7m grid.

Table 5-1
Indicative Orchard and Cobnut Platt Species

No.	Latin name	Common name
7	<i>Malus domestica</i> 'Beauty of Kent'	Apple 'Beauty of Kent'
8	<i>Malus domestica</i> 'Red Devil'	Apple 'Red Devil'
7	<i>Malus domestica</i> 'Meridian'	Apple 'Meridian'
7	<i>Prunus avium</i> 'Morello'	Cherry 'Morello'
7	<i>Prunus avium</i> 'Kentish Red'	Cherry 'Kentish Red'
7	<i>Prunus avium</i> 'Amber Heart'	Cherry 'Amber Heart'
18	<i>Coryllus avellana</i> 'Kentish Cob'	Cobnuts

5.1.3 Proposed Native Mixed Hedgerows (including reinforcement of existing hedgerows)

New hedgerows will comprise locally native species such as Hawthorn, Hazel, Blackthorn, Wild Rose, Spindle, Wild Cherry, Damson, and Crab Apple which are characteristic of the hedgerows of the local landscape and include hedgerow trees such as Field Maple, where appropriate. The choice of species will also help to provide suitable foraging habitat as well as encourage pollinators to assist with the successful establishment of the nearby orchards and reinforce the historic pattern of hedgerows. Hedgerows will be planted in double staggered rows, 5 plants per linear metre with hedgerow trees planted as indicated.

Table 5-2
Indicative Native Hedgerow Mix

%	Latin name	Common name
20	<i>Coryllus avellana</i>	Common Hazel

%	Latin name	Common name
25	<i>Crataegus monogyna</i>	Common Hawthorn
10	<i>Rosa canina</i>	Dog Rose
15	<i>Prunus spinosa</i>	Blackthorn
15	<i>Prunus avium</i>	Wild Cherry
5	<i>Euonymus europaeus</i>	Spindle
10	<i>Prunus domestica</i>	Damson
3 No.	<i>Malus sylvestris</i>	Crab Apple
5 No.	<i>Acer campestre</i>	Field Maple
2 No.	<i>Quercus robur</i>	English Oak

5.1.4 Proposed Scrub and Grassland Mosaic

Discrete areas of grassland and scrub mosaic habitat will be created within pockets along the eastern boundary of the application site and across the Country Park. Planting will be undertaken in such a way as to encourage a scalloped edge between grassland to be retained and enhanced, and boundary vegetated features. This will in turn create both sheltered pockets of habitat (subject to varying levels of sunlight throughout the day) as well as a range of vertical habitats from shorter grassland to mid-storey scrub and eventually climaxing in canopy layer treelines. This will provide a range of opportunities and habitats for invertebrate species in particular.

Native species would be planted in single species groups of 5 or 7 plants spaced 500mm apart in locations as required within existing grassland areas. Over time the single species groups would be thinned to maintain a varied mosaic of scrub and grassland. The native species mix would be the same as that proposed for hedgerows (refer to Table 5-2 in Section 5.1.3) but with an additional focus on the use of ‘thorny’ species, e.g. Hawthorn and Blackthorn along the boundary areas, i.e. in between the scrub/grassland mosaic and Country Park, to discourage people/dogs from walking through the area and allow sheltered basking spots for reptiles and invertebrates.

It would be necessary to control grass growth within a 1m diameter around proposed plants by application of a suitable non-residual herbicide two weeks prior to planting. This will allow new plants to establish free of competition from grasses / weeds. Other areas of existing grassland should be left in-tact wherever possible to form the desired grassland mosaic. Any areas of bare ground resulting from clearance works should be over-sown with the proposed Wildflower Grassland Mix. It may also be necessary to over-sow areas of existing grassland if it proves to be species poor. The requirement for this should be assessed prior to planting and a suitable methodology established as necessary.

5.2 Proposed Grassland Establishment

The aim is to limit the loss of existing areas of grassland where possible and retain and enhance these areas, although it is appreciated that there will be areas of topsoil stripping required where new grassland will need to be established.

Fresh seed for each grassland type should be purchased for each growing season and should be blue label certified seed varieties complying with EC regulations for purity and germination. Seed should be of local provenance where possible.

For areas of created grassland, ground preparation is essential to success, so the aim is to control weeds and produce a good quality seed bed before sowing. To prepare areas of created grassland, works to the seed bed must first remove undesirable species using repeated cultivation or a herbicide. Then plough or dig to bury the surface vegetation.

The required mix should then be sown in the spring (dependant on construction programme) onto bare ground after harrowing/raking the surface and should not be sown on compacted ground. Bulking up the seed with an inert carrier such as sand can make distribution easier. The seed must be surface sown and can be applied by machine or broadcast by hand. Rolling is not necessary. Preparing a seed bed on clay can be difficult, being prone to compaction and poor drainage. Well timed preparation and sowings are therefore important to successful establishment. As clay is unworkable when very wet or very dry, autumn sowings may not be possible. It is sometimes better to dig or plough the soil in the autumn, allow winter frosts to break down the clods, and prepare a seedbed in the spring using a harrow or rake to produce a medium tilth. To get an even distribution, divide the seed into two or more parts and sow in overlapping sections.

After sowing lightly rake or harrow the surface to settle the seed in. Take care not to bury the seed at depth. Firm with a roll, or by treading, to give good soil/seed contact. The newly seeded areas should be fenced off using pegs and tapes until the grass is well established.

5.2.1 Proposed Wildflower Meadows/Species Rich Grasslands

For areas of retained grassland that is to be subject to an extensive enhancement regime (i.e. within the Country Park and across green infrastructure and boundary areas of the development zones), works will be focused on improving the species diversity and forb assemblage within the grassland sward.

In order to achieve this, consideration will be given to ensure that grassland is enhanced in an ecologically sensitive manor. This will primarily be achieved through ensuring that the grassland is maintained as short through continuation of the current grazing regime, prior to the undertaking of an immediate scarification exercise, or where this is not possible, through mechanical means to remove as much overly dominant grass species biomass as possible. Following scarification, the target seed-mix will be distributed within exposed soils.

A Species Rich Wildflower grassland mix would be sown across both the development area and the Country Park as indicated on the landscape masterplan where necessary (Drawing T-4). Within the orchard areas and adjacent to existing hedgerows a local seed source would be oversown. Any seed used would be suitable to the Weald Landscape as indicated below.

Weald Meadow Seed Mix or similar approved. (<https://britishwildflowermeadowseeds.co.uk/products/weald-meadow-seed-mix>) 4g/sqm with ratio of 30:70 flowers: grasses. *'Weald Native Origin Seed is a diverse meadow seed mix, sustainably harvested from ancient meadows throughout the Weald (in Kent, Sussex and Surrey). Many donor fields are designated sites (SSSI or SNCI). The donor sites are lowland neutral /acidic meadows, characterized as MG5, and are relatively wet and naturally species rich with large populations of Weald specialties such as Common Spotted Orchids, Dyers Greenweed, Pignut, Meadow Vetchling and Yellow Rattle'*.

If an autumn seeding during Year 1 is not appropriate (i.e. due to unfavourable ground conditions) and instead a spring seeding is required, then Yellow Rattle will instead be sown separately during autumn/winter of Year 1 due to its requirement to experience periods of colder weather prior to germination.

During Year 5, the requirement of a potential second scarification and re-seeding programme will be assessed in light of the success of the initial enhancement programme. Should it be determined that further measures are required in order to reach target condition, the exact methodology and seed-mix will be determined after evaluation.

5.2.2 Proposed Amenity Grassland

Open space areas which are to be used for formal play, areas close to dwellings, and along the edges of roads will be amenity grassland. For example, Emorsgate Seeds EG22 Strong Lawn Grass Mixture or similar approved (25g/sqm). EG22 contains finer bent and fescue grasses plus some dwarf perennial ryegrass and smooth-stalked meadow-grass. This combination produces both an attractive fine turf structure and resilience to wear for pathways and play areas. As well as being tolerant of a wide range of conditions the mix is quick and easy to establish.

Table 5-3
Emorsgate Seeds Mix E22 Strong Lawn Grass Mixture

%	Latin name	Common name
2.5	<i>Agrostis capillaris</i>	Common Bent
2.5	<i>Agrostis castellana</i>	Highland Bent
50	<i>Festuca rubra</i>	Slender-creeping Red-fescue
25	<i>Lolium perenne</i>	Perennial Ryegrass
20	<i>Poa pratensis</i>	Smooth-stalked Meadow-grass
100		

5.2.3 Proposed Sports Pitches

Sports pitches will be seeded with a Perennial ryegrass seed mix. The mix will include at least 3 varieties of Perennial ryegrass and be sown at a rate to provide visual merit (refer to BSPB Turf grass seed book. Table S1: Perennial Ryegrass, Sports Uses).

5.3 Proposed Ponds and Ditches

The location of the new ponds and ditches is shown on the Illustrative Masterplan (Drawing T-4). These are designed to control overland flows and manage surface water run-off and will create a variety of conditions which will also enhance the range and diversity of 'wet' habitats.

The ditches that remain largely dry will support species-rich meadow grassland, with the precise nature of the sward related to the ecological and hydrological requirements. Where ponds have a maintained water level these will also include emergent planting where appropriate.

Where ponds are planted up with native emergent and aquatic planting, they will also include wide margins. Shelves would be created for the establishment of aquatic/marginal habitat. Areas of deeper water would also be used as a design tool to control the spread of both planted and invasive emergent plants. All aquatic/marginal planting would be notch planted bare root plants or container grown, planted in Spring. All planting would be supervised on site to ensure the correct ecological conditions.

Whilst the above ponds are expected to provide a range of benefits to biodiversity in addition to their dual purpose of facilitating drainage needs, specialist biodiversity ponds will be created within the Country Park which will be hydrologically separate from the proposed surface water attenuation network and are specifically provided for GCN mitigation during construction and to provide permanent features which will extend and connect the pond network for this and other species.

These biodiversity ponds will realise a diversity of aquatic conditions and micro habitats. The surface area, shape, maximum depth and bank gradients will vary between each pond, ensuring a variation in drawdown zones and permanence of standing water, in turn maximising opportunities for diverse aquatic communities to establish.

A 'pockmarked' pond basin surface will form a design principle and will add micro-habitat diversity, particularly within areas where these areas will be seasonally exposed through drawdown.

Following establishment, management of these pools in the long term will be low key, with specific operations only undertaken where required for sound ecological reasons (refer to Section 8.0 for further details).

5.3.1 Proposed Wet Grassland

Those seasonally wet areas of the site, i.e. in and around ponds, will be seeded with a wet grassland following suitable ground preparation and scarification. A seed mix such as, Emorsgate EM8 Meadow Mixture for Wetlands (4g/sqm) or similar approved. EM8 contains species suitable for seasonally wet soils and is based on the vegetation of traditional floodplain and water meadows.

Sowings on ground prone to winter flooding are safest either in late summer or in spring once the land has drained. Most plants need time to grow mature enough to withstand flooding. The seed must be surface sown and can be applied by machine or broadcast by hand. To get an even distribution and avoid running out divide the seed into two or more parts and sow in overlapping sections. Do not incorporate or cover the seed.

Table 5-4
Emorsgate Seeds EM8 Meadow Mixture for Wetlands

%	Latin name	Common name
Wildflowers		
0.2	<i>Achillea millefolium</i>	Yarrow
2	<i>Centaurea nigra</i>	Common Knapweed
2	<i>Filipendula ulmaria</i>	Meadowsweet
1.5	<i>Galium verum</i>	Lady's Bedstraw
0.5	<i>Geum rivale</i>	Water Avens
0.2	<i>Iris pseudacorus</i>	Yellow Iris
1.5	<i>Leucanthemum vulgare</i>	Oxeye Daisy - (Moon Daisy)
1	<i>Lotus corniculatus</i>	Birdsfoot Trefoil
0.04	<i>Lotus pedunculatus</i>	Greater Birdsfoot Trefoil
1	<i>Plantago lanceolata</i>	Ribwort Plantain
0.4	<i>Primula veris</i>	Cowslip
2	<i>Prunella vulgaris</i>	Selfheal
0.5	<i>Pulicaria dysenterica</i>	Common Fleabane

%	Latin name	Common name
0.46	<i>Ranunculus acris</i>	Meadow Buttercup
1	<i>Rhinanthus minor</i>	Yellow Rattle
1	<i>Rumex acetosa</i>	Common Sorrel
1.5	<i>Sanguisorba officinalis</i>	Great Burnet
1	<i>Silaum silaus</i>	Pepper Saxifrage
1	<i>Taraxacum officinale</i>	Dandelion
0.2	<i>Thalictrum flavum</i>	Common Meadow-rue
1	<i>Vicia cracca</i>	Tufted Vetch
20		
Grasses		
10	<i>Agrostis capillaris</i>	Common Bent
3	<i>Alopecurus pratensis</i>	Meadow Foxtail (w)
3	<i>Anthoxanthum odoratum</i>	Sweet Vernal-grass (w)
3	<i>Briza media</i>	Quaking Grass (w)
24	<i>Cynosurus cristatus</i>	Crested Dogstail
2	<i>Deschampsia cespitosa</i>	Tufted Hair-grass (w)
32	<i>Festuca rubra</i>	Red Fescue
3	<i>Hordeum secalinum</i>	Meadow Barley (w)
80		

5.3.2 Proposed Emergent and Aquatic planting

To ensure further variation within pond structure, emergent and aquatic planting will be proposed for each pond, where appropriate, through the provision of a bespoke mix of native aquatic marginal plants within each pond (refer to indicative species in table below). Marginal plants would be established as a mix of seed and plugs in random mixed species groups.

Table 5-5
Indicative Native Aquatic Marginal Species

Latin name	Common name
<i>Alisma plantago-aquatica</i>	Water Plantain
<i>Caltha palustris</i>	Marsh Marigold
<i>Cardemine pratensis</i>	Lady's Smock
<i>Carex acutiformis</i>	Reed Sweet Grass
<i>Carex flacca glauca</i>	Glaucous Sedge
<i>Deschampsia cespitosa</i>	Tufted Hair-grass
<i>Equisetum fluviatile</i>	Water Horsetail
<i>Filipendula ulmaria</i>	Meadowsweet
<i>Trefoil Lotus pedunculatus</i>	Greater Birds-foot
<i>Lychnis flos-cuculi</i>	Ragged Robin
<i>Lythrum salicaria</i>	Purple Loosetrife
<i>Phalaris arundinacea</i>	Reed Canary Grass

In addition to the above, the proposals will deliver new wetland habitat within the site through the creation and management of pockets of reed bed to be associated with the new ponds across the site, a habitat largely void from the site but present in small amounts within the wider area.

All new reedbed will be installed in and adjacent to areas of wetland and where new ponds are being formed. Areas for proposed reedbed will first be dug to approximately 20 – 70 cm depth in order to encourage water retention, however it is noted that where planted in and adjacent to areas of new pond, a greater range of depth will be available, ultimately ending in areas of open water. During warmer months and period of drought, it is expected that areas of 'dry' reed bed will occur, providing further habitat diversity.

Areas of proposed reed bed will be planted with pot grown specimens, able to compete and survive adverse weather conditions. Planted reed will likely be undertaken by hand and preferably during spring or early-summer of Year 1 after pond creation, by which point water levels should ideally be at or just above the soil surface layer.

Whilst an initial dense layer of reed will first be planted, natural colonisation will be managed in the longer term in order to encourage a more natural habitat, capable of finding a correct equilibrium between the adjacent dryer grassland/scrub habitats and areas of proposed wetland.

6.0 Hard surfaces, furniture and other landscape/ecology features

The landscape masterplan (Drawing T-4) includes areas of paving and hard landscape features. The paths within the residential area would be partly hoggins with timber edging, with some mown grass paths. Paths within the country park will be mainly mown grass. Wooden benches and signage would also be located at appropriate locations around the POS and within the country park.

All hard surfaces and landscape features including seating, signage, bins etc. will be constructed in accordance with the appropriate British Standards and Supplier guidance which would be further detailed at the reserved matters stage. Lighting within the residential area would be sensitively sited following a detailed lighting assessment to ensure site safety whilst reducing impact on local wildlife. The Country Park would have no lighting in order to retain a 'dark skies' environment.

In order to provide immediate opportunities for faunal species in addition to those to come forward as part of the extensive habitat proposals, a large number of faunal specific measures are to be incorporated as part of the development proposals, particularly within the fabric of built form. These will include integrated bat, bird and invertebrate boxes to be installed across buildings within the application site (numbers TBC). All boxes will be situated in such a way as to provide access to either boundary open areas or interior green infrastructure in order to allow for increased dispersal opportunities.

In addition to the above, free-hanging bat and bird boxes will be installed within retained, mature trees across the green infrastructure and Country Park. A range of box designs will be chosen in order to maximise target species and to provide a range of opportunities year-round.

Where trees are to be felled as part of the development proposals, cuttings will be set aside and used to create hibernacula that will be distributed across the application site, focusing within key biodiversity areas such as around ponds networks, within the green infrastructure and distributed across boundary areas within the country park. This will provide a range of opportunities for reptile, amphibian and invertebrate species.

7.0 Management Responsibilities

7.1 Overview

7.1.1 Residential area

A Management Company will be set up by Wates Developments for the proposed development which will be responsible for the management of roads, fences, site services, security, street lighting, and common areas beyond the ownership boundaries of individual properties. An appointed professional managing agent will be responsible for and coordinate all management of this part of the site. A Commuted Maintenance Sum has been calculated in accordance with the Public Green Spaces and Water Environment SPD. Long-term maintenance would be financed by an annual maintenance charge on each residential property.

7.1.2 Country Park and POS

The proposals for operation and management of the wider public green space facilities, namely the Country Park and Sports Hub, have been developed within the context of Local Plan Policy IMP4, "Governance of Public Community Space and Facilities".

The applicant would seek to work in partnership with the Borough Council to identify suitable organisations to manage the Country Park and Sports Hub. This approach is proposed to offer compliance with preferred Community Stewardship model set out in Policy IMP4. The approach would allow for operation of the Country Park and Sports Hub either jointly by one body or separately by different organisations.

Furthermore, to further secure community access to the playing fields, it is proposed that a Community Use Agreement, based on the Sport England template, would be put in place.

7.1.3 Adopted Roads

All adopted roads within the scheme will be maintained by Kent County Council.

7.2 Monitoring and Personnel

This LEMP provides an initial overview of activities for 5 years following implementation of the landscape scheme on site (both within the residential area and country park). As discussed, a more detailed LEMP including maintenance programmes and schedules will be produced prior to works commencing. The various tasks contained within the LEMP should be reviewed and revised as deemed necessary every 5 years. All areas of the Landscape Scheme will be closely monitored throughout a 5-year aftercare period by a suitably competent professional so that the most appropriate management regime can be defined on an area-by-area basis. This process will identify where the existing management regime requires modification to meet management objectives, both annually and in the long-term. It will be the responsibility of the appointed Management Company and/or Community Stewardship organisation(s) to review and update the LEMP at the end of the 5-year post-construction period and at subsequent appropriate regular intervals.

It is suggested that the following are appointed:

- appoint a consultant ecologist to monitor the wildflower grassland areas, wetland areas, ponds, hedgerows and treelines, bird/bat/invertebrate boxes and hibernacula, across both the areas of Country Park and in and around the green infrastructure of the development space.
- appoint a qualified arboriculturalist to undertake the annual tree inspections and any remedial work; and

- contact an independent inspector to undertake the Annual Risk Assessment of the Equipped Children's Play Area; and undertake the more frequent inspections of the Area and street furniture.

All materials, workmanship, quality and operations will be in accordance with all relevant British Standards, Codes of Practice and legislation.

There is an opportunity for involvement of residents, volunteers and school children with habitat creation, management and monitoring of the site in public open space areas to foster a sense of community ownership, and for educational purposes. This may also affect the management requirements over time and would be reflected in the more detailed LEMP.

Annual visual inspections during years 1 to 5 should be carried out twice a year (at the start and end of the growing season in September/October and March) to check for good strong foliage, and growth, and the success of habitats, so that the most suitable management regime/operations can be defined for the forthcoming year.

It is proposed that a checklist and detailed record of management operations are maintained by the operator once the aftercare period commences. It is also recommended that details of each year's aftercare, including works carried out and proposed works for the next year are compiled as an annual report. All areas of planting / vegetation should be cleared of litter at least twice annually to keep planted areas clean and tidy. The requirement for watering should be assessed regularly during long, dry periods (typically during the summer months) to ensure that all areas of new and existing planting are maintained in good health and vigour. Replacement planting should be carried out in November or February/March, avoiding the winter frosts. Replacement seeding should be carried out in spring or autumn.

In years 6 to 15 maintenance operations will be adapted to reflect the increasing maturity of planting and habitats and visual inspections would be carried out once per year in late September. Annual visual inspections will be required in order that operations can be adapted to respond to the needs of planting as it becomes more established and also to respond to unpredictable events, such as extreme weather, which may require additional, specific actions and to keep an up to date record of maintenance requirements.

In order to assess the effectiveness of habitat creation, establishment and the 'condition' of habitats post-development, specific ecological monitoring surveys are proposed. It is proposed that these habitat surveys are undertaken in the following years (post development): 1, 3, 5, 10, 15, 25, 30. Following each monitoring period, a monitoring report will be issued to the LPA, including for any necessary remedial measures or management 'tweaks'.

Habitat monitoring will be in the form of a Phase 1 Habitat survey, albeit it will moreover include for the collection of relevant data to allow for the condition assessment of respective habitats. The information collected for condition assessment will accord with that detailed within the Farm Environment Plan (FEP) Manual for each respective habitat.

8.0 Management Operations

The following section includes outline management operations for the entire site (residential and country park areas)

8.1 Annual Management Prescriptions

All vegetation will be managed, with the aims of improving wildlife habitat value and amenity. All areas of proposed and existing planting should take account of the below General Management Considerations, and Table 5-6 which details the timings of Main Annual Management Operations. In addition to these tasks many of the proposed vegetation types/new habitats, as well as existing, will require more specific management operations to ensure their longer-term establishment, as discussed in Section 8.1.2 (refer also to the Biodiversity Management Plan).

8.1.1 General Management Considerations

- Pruning may take place at certain times, as required, to remove dead or dying and diseased wood to promote healthy growth and natural shape. All pruning should be carried out in accordance with good horticultural practices. All tree works are to be carried out by an approved member of the Arboricultural Association. Cuttings from pruning would be utilised in log piles if appropriate or off-cuts would be chipped/shred and spread around the base of each plant as mulch within the Country Park, provided that ground flora and associated habitats are not disturbed. Any surplus or unwanted cuttings would be removed off site.
- All management operations requiring vegetation removal, including pruning, should have regard to the bird nesting season (running from March to late August inclusive) and any potential disturbance to bird habitats should be avoided during this time and/or ecological supervision provided.
- In all planted / seeded areas, weed control, including ring weeding and hand pulling of seedlings and monitoring for invasive non-native species should be carried out annually. A minimum of three maintenance visits for weed control should be carried out in spring, summer and autumn. More visits should be carried out if required to keep the individual planting areas set out below free of weeds.
- Under the provisions of the Weeds Act 1959, it is the responsibility of all occupiers of land - whether used for agriculture or not, to control injurious weeds, so that they do not spread. Noxious and/or non native invasive species will be controlled, removed and disposed of in accordance with best practice and the appropriate guidelines, e.g. for Japanese Knotweed.
- An assessment of watering need should be carried out during dry periods, with particular note paid to planting areas that could be more susceptible to dry conditions;
- Annual checks on plant health and vigour shall inform the requirement for fertiliser and frequency of application. Use of fertiliser should be avoided in order to promote a floristically diverse sward of meadow grassland; and
- Replacement planting should be carried out between November and March inclusive, avoiding the winter frosts. Replacement seeding should be carried out in spring or autumn.
- Check shelters, stakes and ties for new trees and replace/adjust/remove as required in spring /autumn.
- Monitoring of grassland should be undertaken during the initial establishment period in order to ensure target results are achieved. Any observations noted should be taken into account in order to update prescribed longer-term management operations as appropriate.

Table 5-6 - Timings of Main Annual Management Operations

Timings	Standard Operations, to be carried out as required
WINTER	<ul style="list-style-type: none"> • Complete record of previous year’s operations • Thinning/felling operations within existing woodland/scrub areas to maintain desired structure. Removal of scrub such as bramble where identified to be dominating planting • Hedgerow siding up on rotation (from year 3 onwards once established) • Final cut of species-rich grassland to occur during winter • Replacement planting –avoiding winter frosts • Checking of tree shelters and plant guards, stakes and ties and replace if necessary / remove where no longer required • Litter collection
SPRING	<ul style="list-style-type: none"> • Visual inspection of vegetation and habitats • Replacement seeding • Weed control • Readjustments and firming of planting areas, including shelters and ties • 1st Grass cut of wildflower/meadow grass/acid grassland to be undertaken in early-spring (if required) • 1st Grass cut of meadow grassland in orchard areas as required • Grass cut of sports pitches • Assessment of fertiliser requirements, including sports pitches • Aeration, scarification and sand top dressing of sports pitches • Litter collection
SUMMER	<ul style="list-style-type: none"> • Weed control • Grass cut of amenity grassland • Main annual cut of meadow grassland to occur between August to October. Additional cuts to occur in autumn or early spring if required • Grass cut of scrub/grassland mosaic • Grass cut of sports pitches • Assess irrigation / watering requirements • Assessment of fertiliser requirements, including sports pitches • Litter collection
AUTUMN	<ul style="list-style-type: none"> • Visual inspection of vegetation and habitats • Collection of leaf litter • Grass cut of meadow grassland in orchard areas as required • Grass cut of wet grassland on rotation • Weed control • Review of woodland thinning requirements • Review of pond vegetation thinning requirements • Replacement planting –avoiding winter frosts • Inspect log piles/habitat piles to make sure still intact and mend/recreate additional piles elsewhere as required • Litter collection

8.1.2 Specific considerations

The following additional considerations are provided for specific planting areas (existing to be retained and proposed) for 0-5 years (N.B. More detailed monitoring programmes and schedules will be prepared as part of the detailed LEMP, which will be reviewed and revised as the site matures and management needs change. Refer also to the Biodiversity Management Plan):

Existing Vegetation/Habitats

Existing Trees

- Those to be retained will be protected in accordance with the appropriate arboricultural method statement (refer to Section 4.2.1). A qualified arboriculturalist would be employed to undertake an annual inspection of the health of all trees and advise on any remedial and corrective measures in accordance with British Standards and a suggested programme to include timings for erection of protective fencing etc.
- Ring weeding would be undertaken around the base of each tree within 500mm from the trunk, 2-3 times a year during the growing season.
- Areas of existing woodland/tree belts would be managed through thinning and coppicing where appropriate on a rotational basis.

Existing Hedgerows

- Existing hedgerows to be retained and enhanced will also be protected with fencing (refer to Section 4.2.2) during any adjacent works.
- Existing hedgerows would be cut prior to installation of any new native planting, including hedgerow trees. It may also be necessary to carry out hedgerow laying if existing hedgerows have become gappy at their bases prior to installation of new planting.
- Once established, species rich hedgerows will be cut no more than once annually, and on a rotational basis, with 50% cut per annum (ensuring continued habitat for nesting birds and varied structure). Any cuts shall typically be undertaken in late-autumn / winter if possible, in order to avoid any potential impacts on nesting birds. However, if management is required between March and July this will be preceded by a survey by an ecologist to check for nesting birds.
- Ground flora will be allowed to develop beneath the hedgerows/unmown margins to enhance the function as a wildlife corridor. These areas of grassland will be strimmed once every three years on rotation (1/3 of vegetation strimmed at any one time)

Existing Ponds and Ditches

- All existing ponds will be fenced off during construction works to prevent incursions by traffic or materials.
- All existing ditches and drainage features will be fenced off during construction and temporary silt management features installed to ensure that the quality of surface water flowing through the site is not compromised.
- Ponds would be monitored annually in terms of water quality and samples taken as necessary. Freshwater algae would be monitored in particular, excessive accumulations of foams, scums and discolouration of the water. Algae would be removed in Summer as required. The Environment Agency would be contacted for advice in the event of algae bloom appearing on the site in response to the threat to wild and domestic animals, as well as humans.

- Any unwanted vegetation and litter/debris would also be removed from the pond on a monthly basis under ecological supervision if necessary.
- Selective removal or pollarding of vegetation surrounding the ponds and removal of excessive organic matter and desilting would take place as necessary to bring the ponds back to their original profiles.
- An enhanced existing pond and new pond will be created in the Country Park for GCN translocation which will be undertaken under the appropriate GCN licence by a suitably qualified ecologist. Translocation areas will be fenced off.
- For ponds intended to serve the GCN population they would be managed by a yearly trim of vegetation to 150mm to allow a coverage of 40% of water only. Sections would be trimmed on an annual rotation and arising removed and disposed of sustainably.
- Ponds and ditches will be monitored for GCN at the discretion and direction of the granted licence. Should intrusive works be required to ponds outside of this period covered by the licence, a suitable qualified ecologist will be contacted for advice.
- Necessary works would be carried out on a rotational basis, so that as broad a range of successional stages as possible is evident; for example from areas of sparse vegetation with open water to more dense emergent/margins. Rotational management options potentially include thinning of alternate areas on a rotational basis in order to leave other areas undisturbed. It is envisaged that works are carried out on a two year cycle, but this would be assessed so that factors such as vegetation growth rates, function as a drainage feature and presence of any other management operations can be taken into account.
- Thinning may be required to reduce the spread of the most aggressive species. A balanced ecosystem will rely on the interaction of a wide variety of plant and invertebrate species; complete removal of any one species may upset this balance and should only be implemented to remove non-native invasive species.
- Autumn is the best time of the year for carrying out maintenance. During winter some animal species will be hibernating in and around the pond and maintenance during the spring and early summer will disturb the breeding seasons of many amphibian species. Plants will be cut down in autumn and arisings removed. Discarded plants will be left adjacent to the pond for 48 hours to allow aquatic wildlife to crawl back into the pond.
- Any work should aim to minimise disturbance to the sediments at the bottom of a pond because this may release nutrients into the water which could cause algal blooms and disrupt the ecological balance of the system.
- Vegetation around some of the water's edge should remain uncut to provide shelter for amphibians. When thinning aquatic vegetation, planting should remain in a range of depths to provide a variety of habitats for different species. Aquatic invertebrates will tend to inhabit the zone where vegetation thins and open water begins. Thinning of vegetation to maximize this zone rather than running parallel to the pond edge, will promote a balanced ecosystem.
- It is envisaged that in order to remove build up of organic material, dredging of ponds will be required from year 5 onwards. This will be undertaken during winter when amphibians should not be in the waterbody and under the direction of an ecologist.
- A scheme will be maintained in consultation with the local authority, local schools / community groups, local emergency services etc. to allow for: clearly visible signage and notices along all main access points to provide warnings and safety information, such as areas and dangers of deep water, a prohibition on swimming; and provision of appropriate life-saving appliances, such as life-jackets / rings.

Existing Grasslands (including acid grassland)

- Will be protected during construction, e.g. using pegs and tape.
- Informal paths will be mown through existing wildflower grassland areas, c. 1.5m wide to a height of c.100mm on a fortnightly basis during the cutting season (to be assessed on an area by area basis).
- Following management during establishment, meadow grasslands should be cut up to two times a year; once in March/April (where required) and again between late August to October (after flowering). These cuts should be completed once the sward has reached a height in excess of 150mm, and cutting should be completed to a height of approximately 100mm. Based on the current site conditions and success of establishment, a third late winter cut can also be undertaken in order to further aid in the gradual removal of excess nutrients.
- In drier areas, a proportion of the grassland (20%) should be reduced to a sward height of <5cm, thereby creating basking spots for reptiles (should they colonise in future years) as well as opportunities for solitary insects. It should also be noted that rabbit grazing within the application site will also contribute to areas of shorter, open sward within the areas of dry meadow.
- Small patches of bare ground will also be created within these drier areas, with a target for this to comprise of 5 to 10% of the overall area. Whilst of negligible botanical interest, this habitat type provides important opportunities for solitary invertebrates.
- To ensure the retention of significant areas of longer vegetation, pockets of neutral grassland (20%) will remain uncut in each year. These uncut areas will primarily be in the form of edge habitat adjacent to scrub pockets as well as adjacent to tree and hedge lines. Within these areas grasses will be subject to only irregular cuts, with cutting undertaken on a 2 to 3 year rotation such that scrub succession is kept in check and to provide further opportunities for faunal species.
- Arisings from the above management (excluding invasive/undesirable species) will be retained on site for a period of 5 days to allow seed to set, following which material will be removed.
- By undertaking the above prescribed cuts, the need for additional management to meadow grassland habitats in the form of weed removal or scrub clearance will be largely alleviated. Should additional management be required this should be in the form of either manual or mechanical vegetation removal. Where this is not possible Glyphosate based herbicides may be applied to habitats of concern, where necessary.
- In addition to the above mechanical regime, it is considered that it is possible to introduce a conservation grazing regime into the Country Park. This would include the use of a small number of traditional grazing species in order to minimise mechanical management. This would be the subject to continued longer-term monitoring.

Proposed Vegetation/Habitats

Proposed trees including street trees and trees in POS

- All individual trees (including those planted with urban irrigation and anchor systems within the residential area) will be checked regularly, particularly during drier periods, to ensure the tree is of good health and vigour. All tree grilles and guards will be checked as appropriate.
- Herbicide would be applied to a 1m diameter around the base of each tree, using a controlled droplet applicator, or similar, to minimise spray drift, approximately twice per year during the growing season.

- Crown reduction to mature trees and progressive crown lifting of canopies of street trees may be required once established, i.e. raising canopies above main roads and thinning to minimise potential gale damage and/or trimming of trees to ensure no obstructions; and
- Pollarding of trees may also be required as trees establish.

Proposed Orchards and Cobnut Platts

- It is envisaged that management of the orchard will be relatively minimal, however steps will be taken in order to maximise its value to biodiversity whenever possible. Indeed, it is envisaged that this recourse will primarily be utilised as an important invertebrate resource.
- Management of the orchards will favour the non-use of chemicals and instead natural techniques for pest control will be encouraged.
- Management is likely to include the retention of standing deadwood, provision of log-piles, maintenance of micro-habitats as well as steps taken once sufficient maturity has been established (anticipated year 15 onwards), such as coppicing, pruning as well as selective seeding of Mistletoe. Whilst Mistletoe *Viscum album* is a hemiparasite, it can be readily sustained on trees (Apple trees *Malus domestica* being one of the commonest host plants) without causing harm. The presence of Mistletoe will provide a valuable winter berry resource for a range of foraging birds. Management of Mistletoe should be low key and limited to keeping check of the plants abundance, preventing any one tree from becoming over laden with the plant (which may weaken trees in the long term).
- The adjacent grassland habitats will also be managed in such a way as to compliment Orchard habitat and to provide further increased opportunities for faunal species.
- Under sown meadows in orchard areas will be maintained to allow public access with mown grass paths, c.1.5m wide between the trees and areas of longer grass beneath the trees.
- Maintenance of the orchard meadows will generally be restricted to spring and late summer/autumn cuts to a height of c.150mm to allow maximum wildlife benefits and seeding of meadow species. Mown paths will allow access and so will be cut more frequently to a height of c. 50 - 100mm. Arisings will be placed on compost heaps.

During the first 5 years of the management plan period, the following activities would be required to improve the condition of the Orchards and to maintain their productivity:

- Clear vegetation from around the tree base;
- Replace dead/dying or vandalised trees;
- Manage scrub encroachment if required;
- Check stability and remove stakes/ties;
- Prune and shape as appropriate to prevent branch rubbing and retain a balanced shape, air and light to the tree and induce flower and fruit bud formation as well as shoot growth; and
- Collect and clear fallen fruit

It may be necessary for the timing / frequency of activities to be adapted according to the particular requirements of the Orchard in later years – there may, for example be increased requirements for pruning as trees mature.

Proposed Native Mixed Hedgerows

(Refer also to maintenance prescriptions for existing hedgerows)

- In addition to annual tasks in relation to weed control, fertiliser application and watering, as undertaken for tree planting areas, the hedgerows will also be cut once established so that they retain a healthy form.
- The proposed hedgerows within the residential area/adjacent to roads and pathways will be maintained so they do not overhang them (in the interests of safety) using a reciprocating blade cutter, not a flail. They will be cut on average every 2 years between September – March (outside the bird nesting season) once established, or annually as deemed appropriate in the interest of the health of the hedgerow as well as aesthetics. In these areas new hedgerow plants and hedgerow trees would also be subject to routine checks and should be kept weed-free during the first few years of establishment to reduce competition at ground level. This would require the maintenance of a weed-free strip 0.5m wide along either side of hedgerows using a suitable residual herbicide.
- For those hedgerows within the Country Park and adjacent to POS, wildflower grassland/a herb layer is to be permitted to develop beneath and at the edges of the hedgerows and as such the use of herbicides is to be discouraged, with the understorey instead strimmed on rotation.

Proposed Scrub and Grassland Mosaic

Once the scrub has become well established, a series of management activities will be undertaken with the objective of realising long term ecological enhancements. It is considered at this stage that the instigation of longer term management measures are unlikely to be required until Year 15 (post planting).

Adopted management activities will include for the following. The principle of this management will be to deliver a species rich and structurally varied woodland ecosystem in the long term;

- Small scale felling/thinning of scrub;
- Coppicing;
- Creation/retention of fallen deadwood;
- Encouragement of natural sapling generation/establishment;
- Scrub edge management;
- Management to control/remove non-native and overly dominant species;

During the first 5 years of the management plan period, the following activities may however be required to achieve successful establishment of scrub and grassland mosaic:

- Following initial scrub clearance, requirements for further clearance would be reviewed annually to keep on top of vigorous species such as bramble whilst allowing new shrubs to establish;
- Existing scrub/shrub species that are retained would be managed by pruning as appropriate to promote healthy growth;
- Existing grassland to be retained to form the grassland mosaic would be protected during management operations. Grassland would be mown in late summer (x2) to help promote floristic diversity in the next growing season. If sowing of new grassland is required, this would be carried out in spring with newly seeded areas protected with tape and pegs until fully established.

Proposed Wildflower Meadows

(Refer also to maintenance prescriptions for Existing Grasslands)

- The management regime within the Country Park will include 'conservation cutting' and, if necessary, minor interventions, such as scarification and 'green haying' to improve plant species richness. Management regimes will be reviewed regularly to ensure these respond to the changing needs of a maturing landscape and biodiversity considerations.
- A sympathetic cutting regime, involving traditional cutting times and management methods such as 'green haying', management of encroaching scrub and removal of arisings to keep nutrient levels low, will enhance floristic diversity, allow seeding and reduce ruderal encroachment.
- All less intensively managed areas will be edged with a regularly mown grass strip, where they abut formal hard or soft areas, to create a neat transition.

Proposed Amenity Grassland

- These grass areas will generally be subject to a more intensive cutting regime, relative to the other grass areas within the site. Areas of proposed amenity grassland would be mown on a fortnightly basis throughout the growing season (generally between March and October) to a height of c. 50mm to maintain a neat and tidy appearance around public areas of the residential area, including alongside pathways and recreational areas. Arisings should be removed off site and be appropriately disposed of. Leaf clearance would be undertaken in October, November and December and broad leaf selective herbicide applied yearly as required.
- Visual inspections should identify any requirements for re-seeding in the longer term in heavily used or worn areas.

Proposed Sports Pitches

- Management Operations would include a well-structured maintenance programme which aims to maintain the pitches in good condition. A site-specific maintenance specification has been prepared by TGMS Ltd, the consultancy responsible for the design and specification of the pitches. This is appended to the LEMP and detailed below.
- Maintenance operations will typically include:
 - Mowing. It may be necessary to carry out the first cut in the early spring with a rotary mower if the grass has reached a height of more than 40 mm with uneven growth over the surface. The Contractor shall maintain the height of cut at 30 - 35 mm with low ground pressure cylinder mowing equipment for the remainder of the contract period. The grass should never be allowed to exceed a height of 50 mm. If the grass does become too long, the height of cut should be reduced gradually over 3 – 4 cuts to achieve the desired height allowing some time for recovery in between. N.B. On no account, should the grass height be reduced by more than 50% on any one occasion.
 - It is anticipated that 40 cuts will be required in total throughout a growing season. Only cut grass when surface and sub surface conditions are dry. Excessive grass clippings are a significant contributing factor to thatch accumulation and disruption to surface uniformity, if thatch is becoming increasingly prevalent, grass clipping should be collected during mowing.
 - Fertiliser. The Contractor shall allow for a minimum of 4 turf fertiliser applications during the growing season to maintain healthy grass plant growth and colour throughout the growing

season. Plan for the first application of fertiliser to commence in March/April when weather and ground conditions are conducive to the start of healthy turf growth. Fertiliser applications should not be applied when turf is under drought stress and should ideally be applied prior to rainfall. Allowance should be made for a sufficient number of fertiliser applications to maintain healthy growth and colour. The fertiliser regime should be based on the results of annual soil sampling to determine nutrient concentrations, but the following programme is provided as a guide.

Mar/April 15:5:15 at 350 kg/ha

Jun 20:5:15 at 350 kg/ha

Aug/Sept 15:5:15 at 350 kg/ha

Oct 4:5:15 at 350 kg/ha

- Weed control. An application of an approved and appropriate selective herbicide should be applied in the spring or early summer at least two weeks after any fertiliser treatment and at a time when grass growth is strong and healthy. Do not apply herbicide during periods of potential turf stress i.e. if the weather is hot and dry or if the weather is frosty. Apply herbicide strictly according to the manufacturer's label recommendations. Herbicide should only be applied by a competent certified operative. Risk assessments shall be carried out by all personnel paying particular attention to members of the public and wind conditions.
- Scarification. Scarification in two directions to a depth of 10 mm to reduce and maintain the level of organic material (thatch) at the grass sward base and encourage the development of an upright grass sward is to be undertaken. Scarification should only be implemented during strong growing conditions and following a fertiliser application at least 2 weeks prior to scarification. All arising shall be disposed of off-site. Do not scarify in wet ground conditions or during periods of drought.
- Overseeding. The pitch should be over seeded as and when required with special attention to areas most vulnerable to high wear such as goal mouths and centre areas.
- Worn areas of a pitch can be overseeded at any time from March through to September, although generally over-seeding is carried out at the end of the playing season to ensure new grasses are well established by the start of the following season. Overseed using a disc or dimple seeder using a suitable Perennial ryegrass seed mix drilled at ~25 g m⁻². The seed mix shall be made up from at least three varieties each with a minimum rating for the mean of live ground cover and visual merit of 7.0 as listed in the latest BSPB Turf grass Seed Book, Table S1: Perennial Ryegrass, Sports Uses.
- Areas of high wear should be dressed and seeded using a divot repair mix (seed/sand) during the playing season as required in order to maintain good grass cover. These areas should be hand watered (if necessary) to ensure rapid grass germination and establishment.
- At the end of the season the whole pitch should be scarified, aerated (Verti - drain), over seeded and sand top dressed as part of the overall maintenance programme.
- Aeration. Verti-drain the development area on two occasions (April and September) when ground conditions are suitable (sufficient water content to allow penetration of Verti-drain tines to full operating depth). Ideally use 18 mm diameter solid tines working to a minimum depth of 200 mm below the surface. Heave shall be dictated by ground conditions.
- In addition, it may be beneficial to occasionally use linear de-compaction treatments (such as an Earthquake or Shockwave) to improve sub surface drainage conditions. This process encourages

the development of cracks and fissures underneath the soil surface which improve gas and air exchange, root depth and water infiltration.

- Additional aeration treatments (e.g. slitting or spiking) during the playing season would also be highly beneficial to maintain surface drainage rates. All of the above aeration treatments should only be undertaken when ground and surface conditions are suitable. Please note: Avoid using rollers to flatten spots pitches as this can cause a significant reduction in drainage efficacy due to over-consolidating (compacting) soils.
- Sand topdressing. Nominal 1 x 5 mm application to be applied to the surface when turf is healthy and actively growing in late spring and during renovation work. Topdressing treatments should be preceded by an appropriate mechanical treatment such as Verti Draining or scarification and thoroughly brushed into the surface after application when sand is dry. Sand to comply with the following specification:
 - V. coarse sand (2.0 – 1.0 mm) <5%
 - Coarse sand (1.0 – 0.5 mm) 10 – 20%
 - Medium sand (0.5 – 0.25 mm) 55 – 70%
 - Fine sand (0.25 – 0.15 mm) 10 – 20%
 - V. fine sand (0.15 – 0.05 mm) <5%
 - Saturated hydraulic conductivity >300 mm h⁻¹.
 - pH 5.5 – 7.0.
 - Contain less than 0.5% (w/w) CaCO₃.
 - Compliant with Tier 1 Classification.After application, the surface shall either be brushed or drag-matted to work the sand into the surface. Sand shall not be applied if the turf is under stress (e.g. drought conditions).
- Pest and diseases should be controlled using an approved control agent if required. Any pest and diseases should be identified by an experienced sports turf Agronomist who will recommend the appropriate treatment. To help reduce the onset of disease, frequent due removal, particularly during the autumn and winter months can help reduce disease manifestation.
- General Use of the Pitch. After each match, divot and tread the divots back into position. This will remove any bare soil which allows weeds and weed grasses to germinate. Filling in divots with seed/soil mix will help to maintain better grass coverage.
- Maintenance of drainage scheme. After the end of each season all inspection chambers shall be cleaned out and all silt removed from the silt trap within the IC's. Where applicable all artificial turf attached to the lids of the inspection chambers shall be replaced if necessary.
- The jetting of collector drains annually is also considered good practice to remove any potential blockages within the pipe.

Proposed Ponds and Ditches

(Refer also to maintenance prescriptions for Existing Ponds and Ditches)

- Management of aquatic and marginal habitats, including areas of wet grassland, reed bed, trees and shrubs and grassland will be low key and will be guided by those measures set out above for these respective habitats. Management will ensure no more than 50% of pond margins are shaded overall,

thus ensuring continued opportunities for aquatic/marginal flora to flourish. Rotational clearance of over shading vegetation will be undertaken on an ad-hoc basis where required. All marginal planting will be subject to rotational cutting on a typical three-year cycle in order to encourage habitat diversity and to ensure opportunities for faunal species are maintained at all times.

- Control of any unwanted bank-side vegetation and emergent and submerged weeds should follow the Environment Agency's best practice guidance. The frequency of weed control shall depend on the extent of weed growth but would typically comprise weed removal from alternate sides of the wetland area(s) on a 3 to 5-year rotation in autumn (September/October).
- At this stage it is considered that management will be largely limited to the removal of invasive or overly dominant species, however rotational clearance of aquatic vegetation, as well as dredging, may be undertaken in order to ensure areas of open water are retained at a variety of depths in the long term. At this stage it is considered unlikely that any dredging would be required prior to Year 5 and no more regularly than on a five year rotation thereon. Pond management will be staggered so no more than two ponds are subject to management in any one year. Any pond dredging will occur during winter months when any amphibian species (should they colonise the site in the future) will be absent.
- The grassland areas in the ditches will be cut as appropriate for the specific meadow mix allowing long grass/wildflowers to develop. Where access is required, such as along paths, on embankments then mowing/strimming will take place on a more regular basis, approximately 8 cuts per season. Elsewhere once established, wet grassland should be managed as a long sward through the summer, allowing it to flower and seed, before being cut back in the autumn.
- Regular monitoring and maintenance will be required to remove litter and debris especially after any storm event. The ponds and ditches will also be monitored regularly to determine if any repairs or reinstatement is required to embankments or forebays etc. Remedial work will be undertaken as required. Siltation will be monitored annually and excessive deposits removed as necessary.
- Periodic measurement of siltation should be carried out to monitor the ponds. The minimum desilting required to promote good aquatic plant communities should be undertaken, whilst retaining the hydrological functions. De-silting operations should not be allowed to affect marginal vegetation and it should be focused on only one bank at a time.
- Periodic maintenance may also be required such as re-seeding if there is poor vegetation growth or erosion.

Specific Ecological Features

- Annual condition checks of bat and bird boxes will be undertaken (free hanging boxes only) which will be replaced as necessary from Year 1. Advice will be sought from an appropriately qualified ecologist where necessary.
- Trees with bat potential are to be selected for retention wherever possible. Should removal be required for reasons such as health and safety, trees will be subject to appropriate surveys (and to be licenced where required).
- Scrub/treeline/woodland management is to be undertaken between September to February or otherwise be preceded by a nesting bird check undertaken by a suitably qualified ecologist.
- Created hibernacula / wood piles will be monitored and replaced every three years as original woody material rots down. The size/shape of each wood/brush pile should not exceed 1m x 1m x 0.6m high, and piles should be tidy and secure, with ties re-instated if necessary.

- Where possible, proposed bat and bird boxes to be installed within the fabric of built-form will be designed to be self-cleaning and require no additional long-term management.

Proposed Footpaths, Cycleways and Hard Landscape Areas (including Street Furniture and Play Areas/Equipment)

- All hard surfaces, furniture and landscape features will be maintained in accordance with the supplier/manufacturers specifications. However, the following general maintenance operations will be undertaken:
 - Footpaths and cycleways will be checked annually for wear and tear. Any areas of settlement or damage will be made good in accordance with current UK safety standards;
 - Footpaths will be kept free of litter, weeds, grass cuttings, and general debris. All weed growth will be sprayed twice annually;
 - Weeds and moss on hard surfaces and along kerbs will be prevented from becoming established by being removed manually or using suitable herbicides when they are less than 50mm in height. Jet cleaning will not be carried out to prevent undermining paving sub-base materials;
 - All hard surfaces are to be kept free of leaves and debris using a leaf blower;
 - Street furniture will be inspected monthly to ensure there is no vandalism or missing features, and no health and safety issues. Missing or broken items will be replaced. Any necessary repairs are to be carried out in accordance with UK safety standards; and
 - 52 weekly visits will be undertaken to empty dog and litter bins.
 - A routine inspection of all-natural play features and play equipment will be undertaken weekly, by a competent (trained) person in strict accordance with the manufacturer's/suppliers instructions. The routine inspection will include:
 - visually checking the play features for any obvious faults or hazards that can be a danger to children, parents or carers; and
 - ensuring that the surface and surrounding areas are free from debris, which could cause injury or be a hazard to health or the environment; for example, litter or fouling.

Routine inspections will be followed by the necessary remedial work, e.g. lubrication of fixings, touching up paint work and repairing safety surfacing and other components and removing any litter.

8.2 Management Programme

Table 5-7 on the following pages provides a list of key maintenance operations for each of the proposed vegetation/habitat types for Year 1 to 5 of plant establishment and illustrates the anticipated frequency (on a monthly basis) that operations are required (to be read in conjunction with the specific maintenance considerations in Section 8.1.2). This would form the basis of more detailed and comprehensive programmes and schedules as part of the detailed LEMP which would be regularly reviewed and updated beyond year 5/ as the site matures.

Table 5-7
Monthly Management Operations – Years 1-5

Table 5-7: Monthly Management Operations												
Action	J	F	M	A	M	J	J	A	S	O	N	D
Existing vegetation to be retained												
Annual safety inspection to include checks for major deadwood and damaged branches and include cut back of vegetation from roadsides/sightlines.										✓		
Pruning and management to promote vigour (in accordance with species and area specific management recommendations).	✓	✓									✓	✓
Existing and Proposed Trees												
Removal of dead, dying or diseased wood.										✓		
Replacement of dead, missing, dying or defective plants.											✓	
Weeding around new trees.							✓	✓	✓			
Removal of self-sown trees by digging up or use of suitable herbicides.							✓					
Check and re-adjust tree stakes and ties/guys (if too loose, tight or chaffing). Replace if damaged or missing.			✓									
Application of slow release fertiliser.			✓									
Formative pruning and trimming back from roads or paths.										✓	✓	
Check and re-adjust tree grilles.			✓							✓		

Action	J	F	M	A	M	J	J	A	S	O	N	D
Existing and Proposed Native Hedgerows (including reinforcement planting)												
Hand weeding around new plants, keep bases weed free			✓	✓	✓	✓	✓	✓	✓	✓		
Rotational strimming of wildflower understorey								✓				
Check tubes and stakes			✓									
Application of slow-release fertiliser if appropriate.			✓									
Adjustments to ensure plants remain upright.			✓									
Pruning to remove any dead, dying or diseased wood and suckers.			✓			✓			✓			
Replacement of dead or defective new planting.										✓		
Once established, cut in height and sides to be cut back to a tidy appearance.											✓	
Cut back plants adjacent to signs and to avoid obscuring sightlines.										✓		
Removal of self-sown trees by digging up or use of suitable herbicides.							✓					
Removal of fallen leaves.											✓	✓
Proposed Scrub and Grassland Mosaic												
Scrub clearance/thinning as required.										✓	✓	
Oversowing of seed/replacement seeding in bare areas.				✓								
Grass mowing as required.								✓	✓			

Action	J	F	M	A	M	J	J	A	S	O	N	D
Existing and Proposed Wildflower Meadow/Species Rich Grassland												
Carry out establishment cut to a height of 40mm in first and second growing season (Years 1 and 2). Leave the 'hay' to dry and shed seed for 1-7 days then remove from site. This will also control the first flush of annual weeds.					✓		✓		✓			
Established grassland cut up to 2 times per year to 100mm in March/April and late August after flowering. A third winter cut may be required to aid the gradual removal of excess nutrients.				✓				✓			✓	
Hedgerow Margins to be cut on rotation.								✓				
Grass paths should be cut to ensure grass no longer than 100mm.					✓		✓		✓			
Maintain grass-free circle of 1.2m diameter around new trees, and 1.8m diameter around mature trees.					✓		✓		✓			
Hand weeding, with spot treatments if necessary to control unwanted plant growth					✓		✓		✓			
Proposed Amenity Grass												
Cut of amenity grass (fortnightly), as necessary, to height of 50mm. Grass areas around/among bulbs remain uncut until at least six weeks after flowering.			✓	✓	✓	✓	✓	✓	✓	✓		
Removal of fallen leaves.										✓	✓	✓
Selective herbicide treatment as necessary to control weeds.						✓						
Scarification, spiking and top-dressing to ensure the ongoing health of the grass sward.					✓							
Application of fertiliser to maintain healthy growth.					✓				✓			

Action	J	F	M	A	M	J	J	A	S	O	N	D
Existing and Proposed Ponds – including Aquatic Planting and Wet Grassland												
Monitor wetland planting and undertake additional planting to replace failures		✓								✓		
Thin wetland plants / aquatics to reflect original plant centres when growth and spread exceeds one third of individual wetland area(s)										✓		
Undertake clearance/cutting of vegetation if required.										✓		
Removal of algae growth in stagnant water. Vegetation removed from ponds should be kept on the sides for 48 hours for invertebrates to crawl back into the water, and then removed.						✓		✓				
Monitoring/control of weeds / non-native species as required.				✓		✓		✓		✓		
Mow all plant growth (sown grasses and weeds) to 40-60mm during establishment to prevent weeds smothering the slower-growing grasses. Remove cuttings if dense.				✓				✓				
Specific Ecological Features												
Undertake bat surveys of trees with bat roost potential that require management.	As required											
Annual condition check of bat and bird boxes (free hanging only)	As required											
Top-up wood piles every three years as original woody material rots down. The size/shape of each wood/brush pile should not exceed 1m x 1m x 0.6m high, and piles should be tidy and stable, secured with ties if necessary.											✓	
Footpaths and Hard Landscape Areas												
Annual wear and tear inspection.			✓									

Action	J	F	M	A	M	J	J	A	S	O	N	D
Footpaths and hard landscape areas maintained free of invasive vegetation and fallen timber.				✓		✓	✓		✓			
Weeds and moss on hard surfaces removed.									✓	✓		
Street Furniture												
Check safety of equipment and arrange RoSPA inspections on a regular basis during the plan period.	As required											
Clear site for rubbish and deleterious furniture / associated materials.	As required											
Check boundary walls, railings and fences. Check for good condition. Any necessary repairs should be carried out in accordance with UK and EU safety standards.	Annually											
Check way-markers, stiles, seating, litter bins, lifebuoys, gates, and any interpretation boards and replace missing or broken items.	As required, but at least 4 times per year											
Play/Outdoor Gym Equipment												
Check safety of equipment and arrange RoSPA inspections on a regular basis during plan period.	As required											
Clear site of rubbish and deleterious equipment /associated materials.	As required											
Sports Pitches (Essential timings. Operations may be required more frequently depending on growth and ground conditions)												
Grass mown to a height of 30-35mm (no longer than 50mm) using a cylinder mower (40 cuts anticipated during the growing season).			✓	✓	✓	✓	✓	✓	✓	✓		

4 Turf fertiliser applications to be allowed during the growing season (March/April, June, August/September and October)				✓		✓		✓		✓		
Action	J	F	M	A	M	J	J	A	S	O	N	D
A selective herbicide would be applied at least two weeks after any fertiliser application in the Spring or early Summer when grass growth is strong and healthy.					✓							
Scarification to be implemented during strong growing conditions and at least two weeks after fertiliser application.					✓							
'Slitting' or 'spiking' to maintain surface drainage rates as required during the playing season.	As required											
Sand top dressing to be preceded by scarification. To be applied when turf actively growing in late Spring.					✓							
Overseeding high wear areas as required between March and September.					✓							
Pest/Disease Control undertaken as required by an approved control agent.	✓	✓	✓						✓	✓	✓	✓
Maintenance of Drainage Scheme to be undertaken after the end of each season.									✓			

DRAWINGS



- LEGEND**
-  EXISTING TREES AND VEGETATION
 -  EXISTING CONTOURS
 -  EXISTING / PROPOSED PONDS AND WATER COURSES
 -  PROPOSED TREE PLANTING
 -  PROPOSED ORCHARD TREE PLANTING
 -  PROPOSED REINFORCEMENT / NEW NATIVE HEDGEROWS
 -  PROPOSED SCRUB AND GRASSLAND MOSAIC PLANTING
 -  PROPOSED WET GRASSLANDS
 -  PROPOSED REED BEDS
 -  PROPOSED WILDFLOWER / SPECIES RICH GRASSLANDS
 -  PROPOSED AMENITY GRASSLANDS
 -  PROPOSED SPORTS PITCHES
 -  PROPOSED HOUSING
 -  PROPOSED PAVILLION
 -  PROPOSED MAIN ROADS
 -  PROPOSED CUL-DE-SAC / SHARED SURFACE
 -  PROPOSED PRIVATE DRIVEWAYS
 -  PROPOSED FOOTWAYS
 -  PROPOSED HOGGIN FOOTPATHS
 -  PROPOSED MOWN GRASS PATHS
 -  PROPOSED LOW GARDEN WALL
 -  PROPOSED GARDEN HEDGE
 -  PROPOSED GARDEN PICKET FENCE
 -  PROPOSED GARDEN DRY STONE WALL
 -  PROPOSED CLOSE BOARD FENCE
 -  PROPOSED LEAP AND OUTDOOR GYM AREA
 -  PROPOSED LAP PLAY AREA
 -  PROPOSED SEATING AREAS
 -  PROPOSED BOARDWALK AREA

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Google Earth



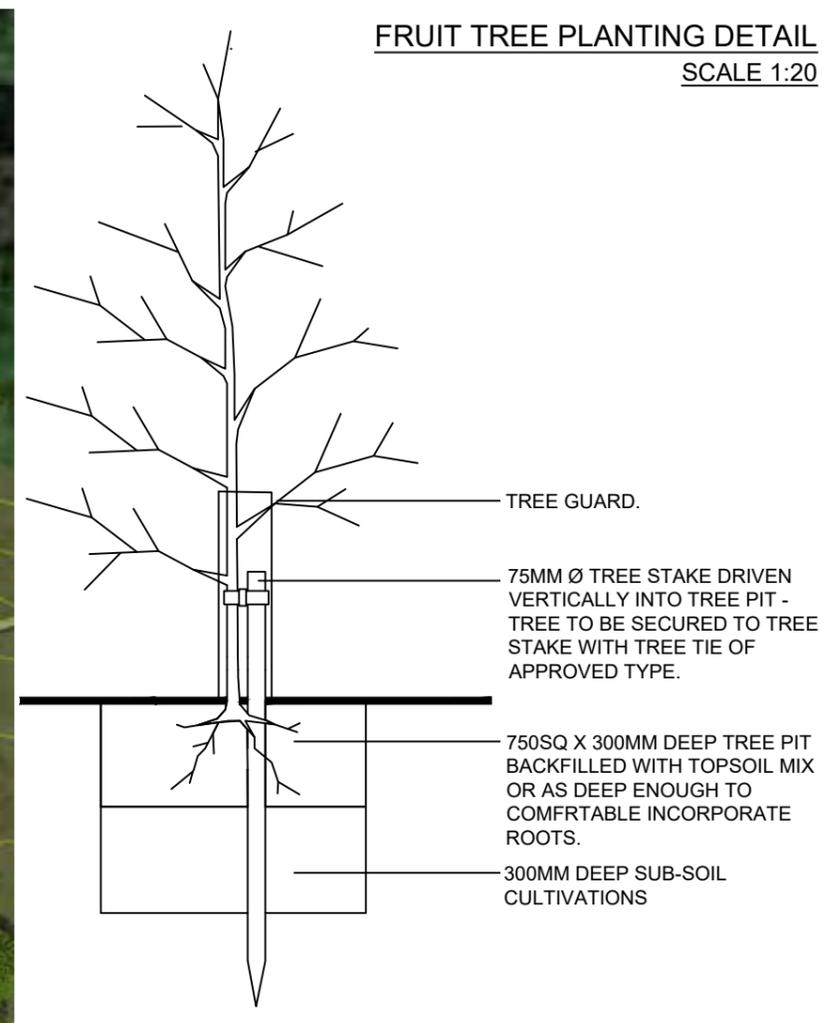
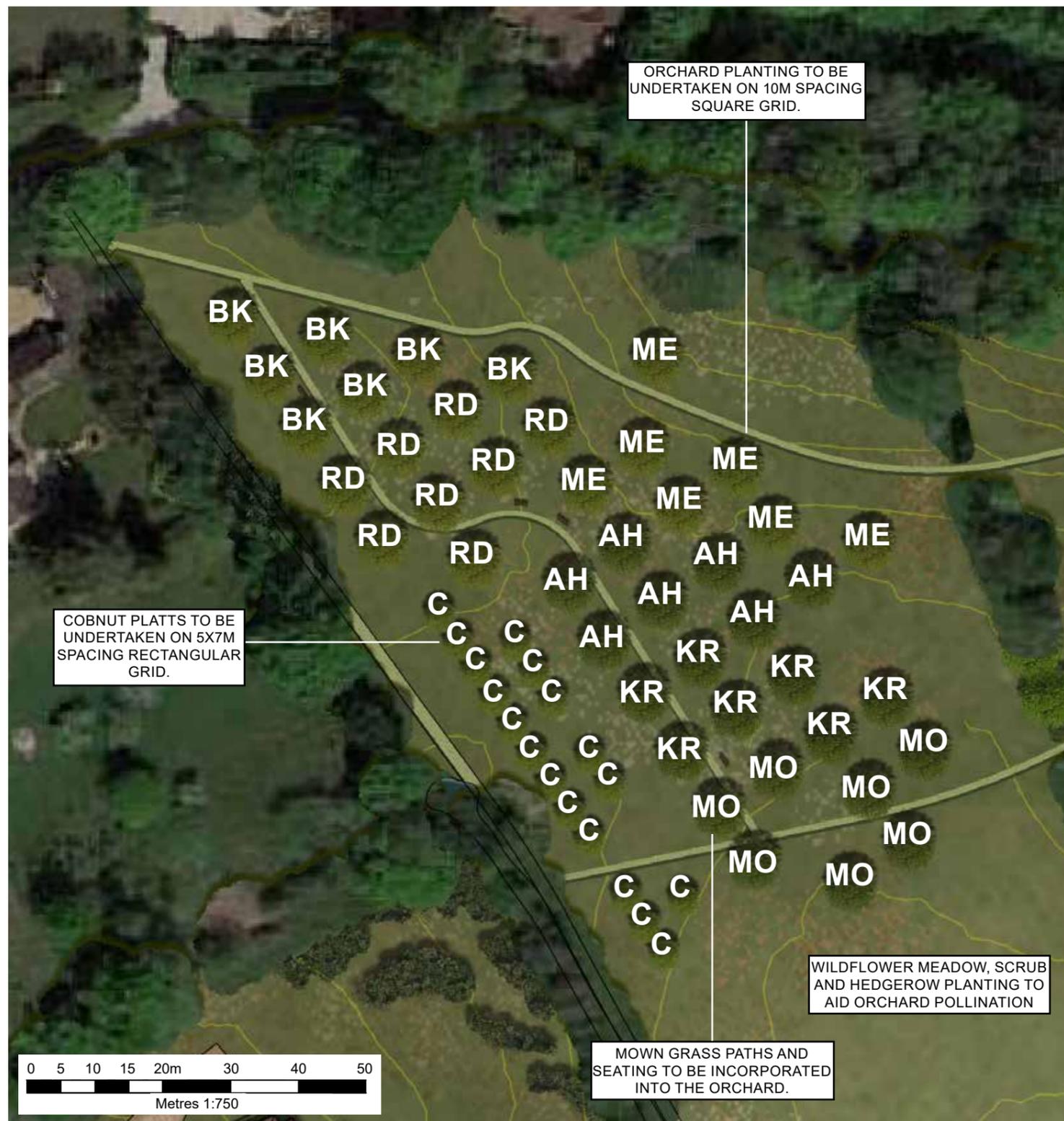
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TENTERDEN, KENT
LANDSCAPE AND
VISUAL APPRAISAL
**ILLUSTRATIVE LANDSCAPE
MASTERPLAN**

T-4
Scale 1:1250 @ A1 Date APRIL 2021

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LEGEND	
BK	TREE - <i>Malus domestica</i> 'Beauty of Kent'
RD	TREE - <i>Malus domestica</i> 'Red Devil'
ME	TREE - <i>Malus domestica</i> 'Meridian'
AH	TREE - <i>Prunus cerasus</i> 'Amber Heart'
KR	TREE - <i>Prunus cerasus</i> 'Kentish Red'
MO	TREE - <i>Prunus cerasus</i> 'Morello'
C	TREE - <i>Corylus maxima</i> 'Kentish Cob'

WILDFLOWER MEADOW - Weald Meadow Seed Mix or similar approved

TREES							
Species	Cultivar	Specification	Pollination Group	Root Zone	Girth (cm)	Overall Height (cm)	Total
<i>Corylus maxima</i>	Kentish Cob	Branched; 5 breaks		15L		80-100	18
<i>Malus domestica</i>	Beauty of Kent	2x; Standard; clear stem 175-200cm; 3 breaks	C	B	8-10	250-300	7
<i>Malus domestica</i>	Meridian	2x; Standard; clear stem 175-200cm; 3 breaks	C	B	8-10	250-300	7
<i>Malus domestica</i>	Red Devil	2x; Standard; clear stem 175-200cm; 3 breaks	C	B	8-10	250-300	8
<i>Prunus cerasus</i>	Amber Heart	2x; Standard; clear stem 175-200cm; 3 breaks	C	B	8-10	250-300	7
<i>Prunus cerasus</i>	Kentish Red	2x; Standard; clear stem 175-200cm; 3 breaks	D	B	8-10	250-300	7
<i>Prunus cerasus</i>	Morello	2x; Standard; clear stem 175-200cm; 3 breaks	E	B	8-10	250-300	7
						TOTAL	61

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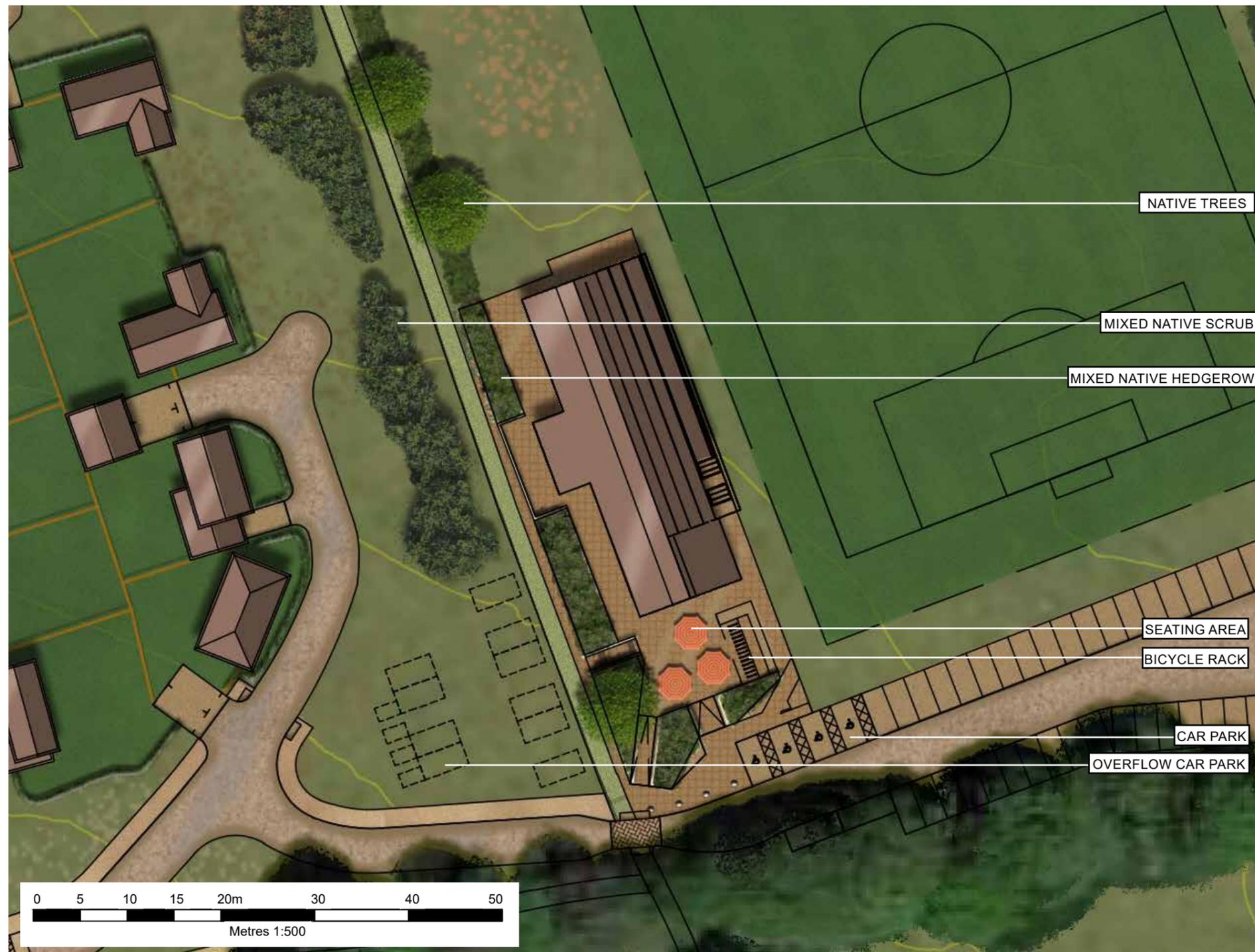
TENTERDEN, KENT

**DETAILED DESIGN 1 -
ORCHARD AND COBNUT PLATTS**

Scale AS SHOWN	Date APRIL 2021
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NATIVE HEDGEROW AND TREES - PLANT IN A DOUBLE STAGGERED ROW AT A RATE OF 5 / LINEAR METER								
Species	Common Name	Specification	Root Zone	Overall Height (cm)	Girth (cm)	% MIX (m)	Total Length	Total Number
							49	
<i>Corylus avellana</i>	Common Hazel	1+2; Transplant - seed raised; branched; 3 breaks	B	60-80		20%	50	
<i>Crataegus monogyna</i>	Common Hawthorn	1+1; Transplant - seed raised	B	60-80		25%	65	
<i>Euonymus europaeus</i>	Spindle	1+2; Transplant - seed raised; branched; 5 breaks	B	60-80		5%	15	
<i>Prunus avium</i>	Wild Cherry	1+1; Transplant - seed raised	B	60-80		15%	10	
<i>Prunus domestica</i>	Damson	1+1; Transplant - seed raised; branched; 3 breaks	B	60-80		10%	5	
<i>Prunus spinosa</i>	Blackthorn	1+1; Transplant - seed raised; branched; 2 breaks	B	60-80		15%	5	
<i>Rosa canina</i>	Dog Rose	1+1; Transplant - seed raised; branched; 3 breaks	B	60-80		10%	5	
<i>Acer campestre</i>	Field Maple	2x; Standard; clear stem 175-200cm; 3 breaks	B	250-300	8-10			1
<i>Malus sylvestris</i>	Crab Apple	2x; Standard; clear stem 175-200cm; 3 breaks	B	250-300	8-10			2
						100%		

- LEGEND**
- MIXED NATIVE HEDGEROW SPECIES -
Corylus avellana
Crataegus monogyna
Euonymus europaeus
Prunus avium
Prunus domestica
Prunus spinosa
Rosa canina
- SCRUB MIX SPECIES TO USE THE SAME SPECIES LIST AS THE HEDGEROW MIX
- TREES SPECIES -
Malus sylvestris
Acer campestre
- WILDFLOWER MEADOW -
 Weald Meadow Seed Mix or similar approved
- SPORTS PITCHES -
 Perennial ryegrass seed mix



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TENTERDEN, KENT

DETAILED DESIGN 2 - PAVILION AREA

Scale AS SHOWN

Date APRIL 2021

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LEGEND	
1.	STEP UP BLOCKS
2.	JOGGER
3.	ELLIPTICAL BIKE
4.	DUAL BIKE
5.	PULL UP BAR
6.	DOUBLE CRADLE SEAT SWING
7.	DOUBLE FLAT SEAT SWING
8.	CLIMBING NEST
9.	REACT SEESAW
10.	WOODEN TEEPEES WITH LOG STEPS

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TENTERDEN, KENT	
DETAILED DESIGN 3 - OUTDOOR PLAY AREAS	
Scale AS SHOWN	Date APRIL 2021

APPENDICES



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Amphill
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MK45 2ND

Tel: 01525 307060

Email: matt.young@tgms.co.uk

Web: www.tgms.co.uk

MAINTENANCE PROGRAMME FOR THE NATURAL TURF SPORTS PITCHES AT APPLIEDORE ROAD.

WATES DEVELOPMENT

TGMS1044.27

REVISION RECORD					
Rev	Date	Description	Prepared	Checked	Approved
0	08/03/2021	Document Creation	MY	RE	RE



TGMS and PSD Agronomy are trading names of Professional Sportsturf Design (North West) Ltd. Company number 01957538.
Registered Office: Shorrock House, 1 Faraday Court, Fulwood, Preston, Lancashire, PR2 9NB.
Directors: Charles Henderson, Aurélien Le Blan

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1. PART I:

1.1 PROJECT PARTICULARS

1.1.1 The Project

- Name: Appledore Road Grass Pitches – F10 and F14
- Nature: Natural turf sports pitch maintenance programme.
- Location: Appledore Road, Tenterden, Kent, TN30 7BB
- Length of contract: TBC.

1.1.2 Employer (Client)

- Name: TBC
- Address:
- Contact:
- Telephone:
- Email:

1.1.3 Principal Contractor (CDM)

- Name: Awardee of this contract, to be appointed.
- Address:
- Contact:
- Telephone:
- E-mail:

1.1.4 Consultant

- Name: TGMS Sports Surface Consultants trading under Professional Sportsturf Design (North West) Ltd.
- Address: 4 Doolittle Mill, Froghall Road, Ampthill, Bedfordshire, MK45 2ND
- Contact: Matt Young
- Telephone: 01525 307060
- Email: matt.young@tgms.co.uk

1.1.5 Principal Designer

- Name: TBC
- Address:
- Contact:
- Telephone:
- Email:

1.2 FORM OF TENDER

3.3.1 PROJECT TITLE: The provision of a maintenance programme for the natural turfsports pitches at Appledore Road, Tenterden.

We..... (Tenderer's name to be entered) hereby tender and undertake to perform the whole of the works/services required in and associated with the Project for **Wates Developments** according to the Specification, Work Schedules, Preliminaries and Drawings examined by us for the firm price sum of:

.....(pounds)

.....(pence)

(£ : p) excluding VAT.

Further we are prepared, when called upon to do so, to enter into and sign a contract, the full terms of which we have read, for the due and proper completion of the works/services.

We understand that we are tendering at our own expense and that the Client is not bound to accept the lowest or any tender.

We declare that we are not party to any scheme or agreement under which:

- we inform any other person the amount of our tender; and/or
- we have fixed the amount of any tender in accordance with a price fixing arrangement.

We accept that the Client is entitled to cancel the contract and to recover from us the amount of any loss resulting from such cancellation if it is discovered that there has been any corrupt or fraudulent act or omission by us which in any way induced the Client to enter into the contract.

We declare that all goods materials and workmanship will meet the appropriate British Standard Specification or British Standard Code of Practice issued by the British Standards Institution or equivalent European standard current at the date of the contract.

We undertake in respect of all persons employed by us or with whom we sub-contract to comply with the Equality Act 2010, Disability Discrimination Act 1995, the Commission for Racial Equality's Code of Practice issued under the Race Relations Act 1976 aimed at eliminating discrimination and promoting equality of opportunity and the Council's whistleblowing policy enforced from time to time (which can be provided upon request).

We undertake not to transfer, assign, or sub-let any portion of the contract nor create any lien or charge on premises, goods or equipment connected with or forming part of the contract, without the written consent of the Client or its duly authorised officer.

We agree that if, before acceptance of this tender, an error in computation of the tender is detected in the priced document submitted by us we will be given details of the error and the opportunity of confirming the total tender sum or withdrawing the tender.

We agree that the insertion by us of any qualifications to this tender or any unauthorised alterations to any of the tender documents will not affect the original text but will cause the tender to be liable to rejection.

We agree that this tender will remain open for acceptance by the Client and will not be withdrawn by us for a period of 90 days from the last date fixed for the receipt of tenders or any notified extension thereof.

We certify that this is a bona fide tender.

Tenderer's Name

.....

Address

.....

.....

.....

Telephone

.....

Facsimile

.....

Signature*

.....

Name

.....

Date

.....

Witness

.....

Name

.....

Date

.....

* Where the Tenderer is an incorporated association the Company Secretary or a duly authorised Director should sign. In the case of a partnership a Partner should sign. In the case of an individual the Proprietor should sign.

2. PART II: MAINTENANCE PROGRAMME

2.1 INTRODUCTION AND SITE INFORMATION

2.1.1 Site location and access

Vehicular access to the sports pitches is from Appledore Road. Additional points of access will be confirmed. The site address is:

Appledore Road, Tenterden, Kent; nearest postcode: TN30 7BB

The grid reference for the development area is approximately: OSGB 589572 133670.

2.1.2 Relevant site investigation

TGMS1044.8 Rev 1 - An amalgamated feasibility study for the development of winter sports pitches on land off Appledore Road, Tenterden, Kent, TN30 7BB (Areas F10 and F14).

2.1.3 Arrangements to visit the site can be made by contacting

Contact Name: Rio Daniel

Position: Land and Planning Manager

Organisation: Wates Developments

Contact Number: 01372 861107

Email: Rio Daniel <Rio.Daniel@wates.co.uk>

2.1.4 CDM (2015) Regulations

Not applicable

2.2 GENERAL SCOPE

The work proposed in this maintenance programme shall be as follows:

PART A: MAINTENANCE PROGRAMME

- Mowing
- Fertiliser application
- Herbicide (if required)
- Scarification
- Over-seeding
- Aeration
- Sand topdressing
- Pesticide/Fungicide application (if required)
- Drainage maintenance

These specifications relate to the sports surface maintenance works only and encompasses the natural turf sports pitches on F10 and F14.

General Notes

- All ancillary equipment to be fitted with low ground pressure tyres.
- Diesel or any other deleterious matter shall be prevented from contaminating the site etc. Any such matter allowed to pollute the site shall be removed together with all affected soil and/or plant material and carted to tip at the Contractor's own expense. Any material necessary to make good the soil formation or plant material will be provided by the Contractor and will be of the type and quality of the original material prior to damage, and must be approved by the Contract Administrator.
- Stones are a particular safety hazard and are a key component of Performance Quality Standards. The Contractor should note that the imported materials, notably sand topdressing must not include stones or any material outside the specified particle size distribution.
- It is the Contractor's responsibility to determine the presence of any services and utilities running through the site which may be affected during deep tine aeration. All this should be before the commencement of any work on site.
- Prior to start on site, the Contractor shall prepare a photographic Schedule of Condition and agree same with the Contract Administrator.
- The works listed below are not necessarily to be conducted in chronological order. It is the responsibility of the contractor to implement all items specified to the desired standards irrespective of the order that they are presented in this document.

2.3 DETAILED SPECIFICATION

PART A: MAINTENANCE SPECIFICATION

Item	Operation								
P1	If applicable and depending on the operation, the Contractor shall allow for all necessary fencing and signage in order to secure the working and site compound areas and haulage routes in order to protect members of the public from the works. It is anticipated that fencing shall be used to demarcate the working areas and site compound. Footpath crossing points shall be marked appropriately.								
P2	The Contractor shall allow for compliance with all relevant Health and Safety regulations including the Construction Design and Management regulations (CDM) 2015. This shall include performing the role of Principal Contractor.								
P3	The Contractor shall allow for the provision of all welfare facilities for staff.								
P4	The Contractor shall allow for the mobilisation and demobilisation of all necessary plant to complete the project.								
P5	The Contractor will be responsible for making good any damage caused by maintenance.								
P6	Please note, these specifications are purely advisory and based on best practice. This specification should not be carried out by personnel who are not competent in Sport Pitch maintenance. The implementation plan and schedule of works may change depending on ground and weather conditions.								
B1	<p><u>Mowing</u>. It may be necessary to carry out the first cut in the early spring with a rotary mower if the grass has reached a height of more than 40 mm with uneven growth over the surface. The Contractor shall maintain the height of cut at 30 - 35 mm with low ground pressure cylinder mowing equipment for the remainder of the contract period. The grass should never be allowed to exceed a height of 50 mm. If the grass does become too long, the height of cut should be reduced gradually over 3 – 4 cuts to achieve the desired height allowing some time for recovery in between. N.B. On no account, should the grass height be reduced by more than 50% on any one occasion.</p> <p>It is anticipated that 40 cuts will be required in total throughout a growing season. Only cut grass when surface and sub surface conditions are dry. Excessive grass clippings are a significant contributing factor to thatch accumulation and disruption to surface uniformity, if thatch is becoming increasingly prevalent, grass clipping should be collected during mowing.</p>								
B2	<p><u>Fertiliser</u>. The Contractor shall allow for a minimum of 4 turf fertiliser applications during the growing season to maintain healthy grass plant growth and colour throughout the growing season. Plan for the first application of fertiliser to commence in March/April when weather and ground conditions are conducive to the start of healthy turf growth. Fertiliser applications should not be applied when turf is under drought stress and should ideally be applied prior to rainfall. Allowance should be made for a sufficient number of fertiliser applications to maintain healthy growth and colour. The fertiliser regime should be based on the results of annual soil sampling to determine nutrient concentrations, but the following programme is provided as a guide.</p> <table><tbody><tr><td>Mar/April</td><td>15:5:15 at 350 kg/ha</td></tr><tr><td>Jun</td><td>20:5:15 at 350 kg/ha</td></tr><tr><td>Aug/Sept</td><td>15:5:15 at 350 kg/ha</td></tr><tr><td>Oct</td><td>4:5:15 at 350 kg/ha</td></tr></tbody></table>	Mar/April	15:5:15 at 350 kg/ha	Jun	20:5:15 at 350 kg/ha	Aug/Sept	15:5:15 at 350 kg/ha	Oct	4:5:15 at 350 kg/ha
Mar/April	15:5:15 at 350 kg/ha								
Jun	20:5:15 at 350 kg/ha								
Aug/Sept	15:5:15 at 350 kg/ha								
Oct	4:5:15 at 350 kg/ha								

B3 Weed control. An application of an approved and appropriate selective herbicide should be applied in the spring or early summer at least two weeks after any fertiliser treatment and at a time when grass growth is strong and healthy. Do not apply herbicide during periods of potential turf stress i.e. if the weather is hot and dry or if the weather is frosty. Apply herbicide strictly according to the manufacturer's label recommendations. Herbicide should only be applied by a competent certified operative. Risk assessments shall be carried out by all personnel paying particular attention to members of the public and wind conditions.

B4 Deep scarification. Scarification in two directions to a depth of 10 mm to reduce and maintain the level of organic material (thatch) at the grass sward base and encourage the development of an upright grass sward. Scarification should only be implemented during strong growing conditions and following a fertiliser application at least 2 weeks prior to scarification. All arising shall be disposed of off-site. Do not scarify in wet ground conditions or during periods of drought.

B5 Overseeding. The pitch should be over seeded as and when required with special attention to areas most vulnerable to high wear such as goal mouths and centre areas.

Worn areas of a pitch can be overseeded at any time from March through to September, although generally over-seeding is carried out at the end of the playing season to ensure new grasses are well established by the start of the following season. Overseed using a disc or dimple seeder using a suitable Perennial ryegrass seed mix drilled at ~25 g m². The seed mix shall be made up from at least three varieties each with a minimum rating for the mean of live ground cover and visual merit of 7.0 as listed in the latest BSPB Turf grass Seed Book, Table S1: Perennial Ryegrass, Sports Uses.

Areas of high wear. Areas of high wear - should be dressed and seeded using a divot repair mix (seed/sand) during the playing season as required in order to maintain good grass cover. These areas should be hand watered (if necessary) to ensure rapid grass germination and establishment.

End of season Renovation. At the end of the season the whole pitch should be scarified, aerated (Verti - drain), over seeded and sand top dressed (see section B7) as part of the overall maintenance programme.

B6 Aeration. Verti-drain the development area on two occasions (April and September) when ground conditions are suitable (sufficient water content to allow penetration of Verti-drain tines to full operating depth). Ideally use 18 mm diameter solid tines working to a minimum depth of 200 mm below the surface. Heave shall be dictated by ground conditions.

In addition, it may be beneficial to occasionally use linear de-compaction treatments (such as an Earthquake or Shockwave) to improve sub surface drainage conditions. This process encourages the development of cracks and fissures underneath the soil surface which improve gas and air exchange, root depth and water infiltration.

Additional aeration treatments (e.g. slitting or spiking) during the playing season would also be highly beneficial to maintain surface drainage rates. All of the above aeration treatments should only be undertaken when ground and surface conditions are suitable. Please note: Avoid using rollers to flatten spots pitches as this can cause a significant reduction in drainage efficacy due to over-consolidating (compacting) soils.

B7 Sand topdressing. Nominal 1 x 5 mm application to be applied to the surface when turf is healthy and actively growing in late spring and during renovation work. Topdressing treatments should be preceded by an appropriate mechanical treatment such as Verti Draining or scarification and thoroughly brushed into the surface after application when sand is dry. Sand to comply with the following specification:

- V. coarse sand (2.0 – 1.0 mm) <5%
- Coarse sand (1.0 – 0.5 mm) 10 – 20%
- Medium sand (0.5 – 0.25 mm) 55 – 70%
- Fine sand (0.25 – 0.15 mm) 10 – 20%
- V. fine sand (0.15 – 0.05 mm) <5%
- Saturated hydraulic conductivity >300 mm h⁻¹.
- pH 5.5 – 7.0.
- Contain less than 0.5% (w/w) CaCO₃.
- Compliant with Tier 1 Classification.

After application, the surface shall either be brushed or drag-matted to work the sand into the surface. Sand shall not be applied if the turf is under stress (e.g. drought conditions).

B8 Pest and disease control. Pest and diseases should be controlled using an approved control agent if required. Any pest and diseases should be identified by an experienced sports turf Agronomist who will recommend the appropriate treatment. To help reduce the onset of disease, frequent due removal, particularly during the autumn and winter months can help reduce disease manifestation.

B9 General Use of the Pitch. After each match, divot and tread the divots back into position. This will remove any bare soil which allows weeds and weed grasses to germinate. Filling in divots with seed/soil mix will help to maintain better grass coverage.

B10 Maintenance of drainage scheme. After the end of each season all inspection chambers shall be cleaned out and all silt removed from the silt trap within the IC's. Where applicable all artificial turf attached to the lids of the inspection chambers shall be replaced if necessary.

The jetting of collector drains annually is also considered good practice to remove any potential blockages within the pipe.

Important, please note:

This maintenance plan is based on the expected agronomic conditions of a pitch at handover following construction and a 12-month maintenance period. The maintenance guidance contained within this document is advisory and to be implemented by a competent, experienced Sports Pitch contractor/grounds person. The implementation of the practices outlined in this document may vary based on weather and ground conditions, as such TGMS will not accept responsibility for poor outcomes from maintenance operations completed in poor conditions.

2.4 INDICATIVE WORK PROGRAMME – TYPICAL MAINTENANCE PROGRAMME

	August	September	October	November	December	January	February	March	April	May	June	July
Mowing	Essential											
Fertiliser (x4)	Essential		Essential						Essential			Essential
Aeration Verti-draining, earthquaking	When required according to growth and ground conditions	When required according to growth and ground conditions	When required according to growth and ground conditions					When required according to growth and ground conditions	Essential	When required according to growth and ground conditions	When required according to growth and ground conditions	When required according to growth and ground conditions
Slitting/Quadraplay	When required according to growth and ground conditions	When required according to growth and ground conditions	When required according to growth and ground conditions	When required according to growth and ground conditions	When required according to growth and ground conditions	When required according to growth and ground conditions	When required according to growth and ground conditions	When required according to growth and ground conditions	When required according to growth and ground conditions	When required according to growth and ground conditions	When required according to growth and ground conditions	When required according to growth and ground conditions
Scarification										Essential		
Sand top dressing										Essential		
Over seeding/high wear areas	When required according to growth and ground conditions	When required according to growth and ground conditions	When required according to growth and ground conditions	When required according to growth and ground conditions				When required according to growth and ground conditions	When required according to growth and ground conditions	Essential	When required according to growth and ground conditions	When required according to growth and ground conditions
Weed Control											Essential	
Pest/Disease Control		May be required										
Maintenance of drainage scheme		Essential	May be required									

May be required	May be required
Essential	Essential
When required according to growth and ground conditions	When required according to growth and ground conditions

2.5 DESIGNERS ASSESSMENT OF RESIDUAL RISK

2.5.1 The project:

- Name: Appledore Road Grass Pitches – F10 and F14
- Nature: Natural turf sports pitch maintenance programme.
- Location: Appledore Road, Tenterden, Kent, TN30 7BB

2.5.2 Nature of work:

PART A: MAINTENANCE PROGRAMME

- Mowing
- Fertiliser application
- Herbicide (if required)
- Scarification
- Overseeding
- Aeration
- Sand topdressing
- Pesticide/Fungicide application (if required)
- Maintenance of drainage scheme

2.5.3 Timescale for works:

Implementation Plan

2.5.4 Existing drawings:

Not applicable.

2.5.5 Existing environment:

N/A

2.5.6 Residual risk to maintenance workers:

1. Tetanus.
2. Injury from vehicle movements in and around site.
3. Fertiliser application.
4. Herbicide application.
5. Materials handling, including bulk materials handling.

2.5.7 Residual maintenance risks:

1. Handling, storage and application of pesticides.
2. Handling, storage and application of fertilisers.
3. Dust (soil).
4. Manual handling.
5. Use of machinery including tractors, mowers, rollers and others.
6. Vibration.
7. Confined, deep spaces (maintenance of inspection chambers)

2.5.8 Residual operator risks:

1. Risk of acute and chronic sport injury – this risk has been minimised through the use of industry approved products and systems, material selection, the use of industry best practice design and the use of performance testing.
2. The use of sports facilities during the construction phase (this risk is owned by the Contractor and the Client and behaviour; coordination and communication are as important as physical control measures such as fencing and signage).

2.5.9 Maintenance materials that are hazardous to health:

1. Fertiliser
2. Soil
3. Herbicide
4. Cement
5. Fuel/oil

2.5.10 Site wide elements:

The working areas and haul routes shall be secured prior to any works commencing.

2.6 CONFIDENTIALITY

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