

## Poole Park Life

Tree Survey, Arboricultural Impact Assessment and  
Tree Protection Scheme to BS5837:2012

### Appendix 5A - Planning Application March 2017



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# 1 Executive Summary

## 1.1 The Project

- 1.1.1 Borough of Poole's Environmental Services has submitted a stage two grant application to the Heritage Lottery Fund (HLF) for a wide range of improvements to Poole Park. During the Development Phase of the project nearly 300 trees were surveyed to understand their current condition and to inform design development.
- 1.1.2 The arboricultural impacts have been assessed for each design proposal with specific mitigation to protect trees from development operations.
- 1.1.3 A full method statement has been written to guide contractors and park staff and ensure best practice is followed and Poole Park's trees are well respected throughout any development.
- 1.1.4 A range of supporting plans accompany the report, showing tree survey information and RPA's, tree removal, protection and planting.
- 1.1.5 Finally, a future Tree Strategy is being developed as part of the HLF project that will set future tree management policy in Poole Park from 2020 to 2070.

## 1.2 Findings

- 1.2.1 The survey assessed 295 trees and 14 groups of trees.
- 1.2.2 Survey results show that the tree population is ageing and the horse chestnut avenue is declining, resulting in loss of unity.
- 1.2.3 An active management approach has been chosen for the strategic renewal of the trees within the avenue to ensure the long term viability of a high quality landscape feature in the future.
- 1.2.3 Impacts of the development proposals have been assessed and found that in conjunction with the strategic replanting the proposals will make a positive contribution to long term tree stock and the overall character of the Park.

## 2 Introduction and Background

### 2.1 Purpose and Scope of this Report

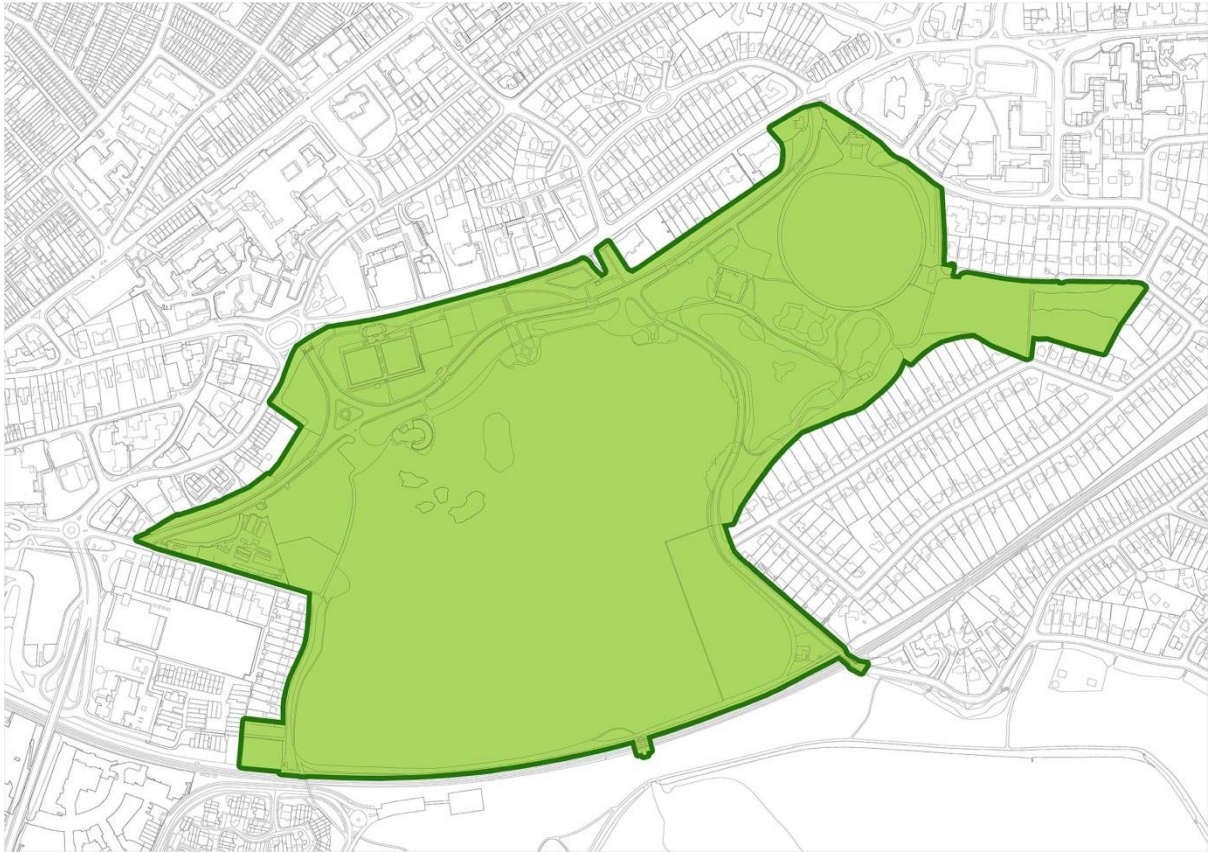
- 2.1.1 Poole Park is a Grade II listed Late-Victorian Public Park and is owned and managed by Borough of Poole (BoP). To ensure that Poole Park is passed on to future generations to enjoy, BoP aims to manage the Park effectively and efficiently, balancing the responsibility to conserve and enhance the historic landscape with the objectives to encourage access and to increase opportunities for enjoyment, education and recreation.
- 2.1.2 In 2015, BoP was awarded Stage 1 in its application to the Heritage Lottery Fund to gain vital funding for capital works necessary for the long-term conservation of the Park. A Stage 2 HLF application was made at the end of February 2017.
- 2.1.3 The Park's trees are recognised for their importance in defining the Park's historic landscape character which is emphasised in the Poole Park Life Conservation Plan. The application for HLF funding is a unique opportunity for strategic renewal of the tree stock with the aim to ensure a long term structure of high quality trees.
- 2.1.3 The 'Tree Survey, Arboricultural Impact Assessment and Tree Protection Scheme to BS5837:2012' has been prepared to ensure that the proposed capital works do not have an adverse impact on the trees in the Park. It also informs the strategic management of structural tree planting in the Park, such as the Horse Chestnut avenue, boundary tree belts and parkland trees.

### 2.3 Regulatory and Policy Framework

- 2.3.1 Poole Park is listed Grade II on the Register of Parks and Gardens of Special Historic Interest, Entry no. 1001588. The Park's trees are of high significance in defining the historic character of the landscape, for providing wildlife habitat in particular bats and birds and in providing environmental benefits such as moderating urban microclimate.
- 2.3.2 Poole Park's trees are subject to statutory protection as afforded by the 'Poole Park Conservation Area' designation and Tree Protection Orders covering trees along the northern and eastern boundary.

## **2.4 Site Location**

2.4.1 The location of the site is shown in Figure 2.4 below, with the extent of the Park shown in a dark green line.



**Figure 2.4.1** Poole Park – Location Plan

## 3 Survey Methodology

### 3.1 Survey Method

3.1.1 The site was visited regularly over a period between September 2016 and February 2017 to carry out an assessment in accordance with BS 5837:2012 – *Trees in relation to design, Demolition and Construction – Recommendations*.

3.1.2 The following information was collected for each tree:

- Sequential reference number
- Species
- Height (m)
- Stem diameter @1.5m height (mm) or where appropriate as per Annex C of BS 5837
- Branch spread (m)
- Existing height (m) above ground level of:
  1. First significant branch and directions of growth (e.g. 3 NW)
  2. Canopy
- Life stage:
  - J – Juvenile
  - SM – Semi Mature
  - EM – Early Mature
  - M – Mature
  - LM – Late Mature
  - V – Veteran
- General observations, particularly of structural/and or physiological condition;
- Preliminary recommendations
- Estimated remaining contribution
- Category 'U' or 'A' to 'C' grading with the subcategory 1,2,or 3 reflecting arboricultural, landscape or cultural values, respectively.

### 3.2 Personnel

3.2.1 Andy Osborne (Author) is the Senior Arboricultural Officer for the Borough of Poole, Cert. H.E. Arb; Dip (Am.) Hort; Cert. Mgmt. (I.o.M.). He has 13 years experience in arboriculture with the Local Authority, the last 8 years as Senior Arboricultural Officer. He also has 20 years experience of involvement with Poole Park as a key amenity site.

3.2.2 Andy was assisted by Barbara Uphoff, Landscape Designer for the Borough of Poole, in the preparation of drawings. Barbara is Chartered Member of the Landscape Institute since 2002. She has previous experience in working with Arboricultural Consultants in the preparation of tree surveys and impact assessments.

## 4 Limitations

### 4.1 Survey

- 4.1.1 Each of the surveyed trees has been plotted and recorded as an individual tree or a tree group in accordance with the criteria detailed in section 4.4.2.5 of BS 5837:2012.
- 4.1.2 Trees were assessed from ground level using the Visual Tree Assessment (VTA) method (Mattheck 2007). No climbed inspection, removal of ivy or detailed investigation of decay was made.
- 4.1.3 No liability can be accepted by the consultant in respect of the trees unless the recommendations of this report are carried out under his supervision and within his timescale. Acceptance of this report represents an agreement with the guiding principles and the terms listed.
- 4.1.4 The findings and recommendations contained within this report are, assuming its recommendations are observed, valid for a period of twelve months from the date of survey. Trees are living organisms and their condition can change significantly over a relatively short period of time – good practice dictates they are inspected on a regular basis for reasons of safety.
- 4.1.5 The report relates only to the trees shown on the attached tree survey schedule (Appendix 5C) and annotated plans (Appendices 5B, D and E).
- 4.1.6 Where trees were extensively ivy clad this was recorded in the survey schedule. It is not possible to ascertain the presence of cavities or other defects beneath the ivy and, therefore, ivy should be removed and a re-inspection carried out.

## 5 Survey Results

### 5.1 Tree Survey

5.1.1 Full results of the tree survey are provided in:

**The Tree Survey Schedule (Appendix 5C)  
Tree Survey Plans, drawings no.'s PPL-TP-101 to 111 (Appendix 5 B).**

5.1.2 The tree survey area consisted of the horse chestnut avenue along the Drive and nearby parkland trees and boundary tree belts which were assessed to be in the zone of influence of the proposed development. It also included the area of Copse Close car park and parts of the Freshwater Lakes where development is proposed; and the Cygnet and Westfield play areas.

5.1.3 A total of 295 individual trees and 14 tree groups were assessed, the quality and current environmental pressures are summarised below.

5.1.4 BS 5837:2012 quality classification defines four value groups:  
Category 'A' – attractive trees with high visibility and no significant defects, which are able to make a substantial contribution for a minimum of 40 years.

Category 'B' - healthy attractive trees with remediable defects and that are in a condition as to be able to make a significant contribution for a minimum of 20 years.

Category 'C' – trees that are unremarkable of limited merit that are easily replaced, small growing, young species which have a relatively low potential amenity value, and low landscape benefit.

Category 'U' – trees that cannot realistically be retained in the current context for longer than 10 years.

Further trees are allocated one or more subcategories including 1, 2, or 3 reflecting arboricultural, landscape or cultural values, respectively.

### 5.2 Survey Summary of Key Areas

#### Seldown Entrance to Fountain

5.2.1 23 no. horse chestnut trees were surveyed in this section of the Drive; 10no. trees were classified as category 'B' trees, 11no. trees were assessed as category 'C' and 2 no. trees were assessed as category 'U'.

5.2.2 The single avenue of horse chestnuts from the west gate entrance were planted in narrow verges and may have grown reasonably well in the early phase of their lives. As time passed and new features were introduced, such

as carriageway and footpath hard surfacing, more environmental pressure was applied (photos below).

5.2.3 In the last three or four decades, as the perimeter screening trees to the north (not under hard surfacing) have become more established and have become dominant in the northern border, their overarching canopies have led to suppression of the horse chestnuts in places throughout the avenue. This, coupled with their assimilation of the available rooting zone has proved challenging for the growth rates of the horse chestnuts which have become less vigorous. This effect may be seen at various locations with diminutive trees compared to those further away from the competition (photo below, left).

5.2.4 To add to this pressure on the avenue trees, many are affected by pests and diseases, especially as their vigour decreases. Bacterial canker (*Pseudomonas syringae* pv. *aesculi*) is evident on many of the tree stems and lower main branch structures with typical symptoms of tarry exudate (some dried from infection in previous years), bark splitting and bark death. In some cases, recovery growth may be seen where the tree is attempting to reform cambium over bare wood to produce new bark.



5.2.5 With lowered vigour and internal resources being utilised for repairing damaged bark, the trees are susceptible to secondary damage from Guignardia leaf blotch (*Guignardia aesculi*) and Horse chestnut leaf miner (HCLM) (*Cameraria ohridella*). *Guignardia* is a fungal pathogen that attacks the leaves and causes reddish or dull brown blotches with bright yellow borders around the perimeter. The blotches are usually at the tips or edges of leaves, which is not usually a problem on its own.

5.2.6 Together with horse chestnut leaf miner; (the larval stage of the moth) which began to come into the park around 2008, the pressure on the trees is greater. Leaves are almost completely dysfunctional by the end of July and photosynthates are not produced when the leaves are either mined or blotched. The physiological effect is cumulative and the overall vigour of the tree gradually declines. Leaves are smaller and fruit production has all but ceased.

5.2.7 Some of the affected trees are now dying, two are dead. This trend is likely to continue despite reasonable horticultural practice such as removing fallen

leaves from around the trees to prevent overwintering of the HCLM larvae and production of their next generation.

- 5.2.8 In addition to 2 no. category 'U' trees, 7 no. category 'C' trees were recommended for removal for arboricultural reasons. This will create a number of gaps in the line of trees.

#### Western Entrance Gardens

- 5.2.9 14 no. trees were assessed in this area. 3 no. trees were categorised as 'A'. These included a late mature yew to the west of the area and a mature maidenhair tree to the east. 5 no. trees were assigned category 'B' and another 5 no. trees were identified as category 'C' trees. 1 no. tree was identified to be unsuitable for retention.

The trees form part of an important shrub and tree belt which screens views to the boundary fencing of the nursery the south. It contained a number of Leyland cypresses with poor structural qualities. Their removal was recommended due this and the inappropriateness of this species in a historic park setting.

#### Norton's Gate

- 5.2.10 23 no. Horse chestnut trees were surveyed; 5 no. trees were classified as category 'A' trees, 16 no. trees were assessed as category 'B' and 2 no. trees were assessed as category 'U'.
- 5.2.11 A small double avenue of mature horse chestnut trees leads from the stepped entrance in Parkstone Road and splays out to the south towards the fountain (photo, below left). Originally, these trees in small verges connected with the western single avenue but several of these trees have been lost through disease over time, leaving a gap in the line of trees outside the Putting Green.



- 5.2.12 This avenue has been more successful with mature trees of roughly uniform size. This is likely to be due to the open areas of grass on either side of the trees to west and east with no competition from other trees nearby; the higher amenity grass to the west is irrigated and the trees to the east have some shelter from their companions to the west.

5.2.13 There is hard surfacing between the trees, used as *ad hoc* parking for visitors to the bowling green. At present, vehicles park between the trees and tend to drive over the verges to achieve this. Inevitably, there is compaction of the rooting zone and some damage to bark through direct contact from time to time.

5.2.14 2 no. category 'U' trees were identified for removal which will create further gaps in the avenue.

#### East of Norton's Gate to War Memorial

5.2.15 This section along the Drive does not contain avenue tree planting. Historic photographs show the verges free of trees from the opening of the Park in 1890. Instead, informal groups and single specimen trees are located in the lawn areas either side.

5.2.16 21no. trees were assessed consisting of a mixture of ornamental conifers and parkland trees and a group of bay laurel. 17no. trees and one group were assigned as category 'A' and 4no. trees were classified as category 'B'.

5.2.17 Selective coppicing of the group of bay laurel has been recommended to allow rejuvenation and further planting of other ornamental species.

5.2.18 The area contains a number of semi-mature conifer trees near the Kitchen Restaurant and three of Poole Park's iconic leaning trees (photo below, middle). These are pine trees that are part windblown but continued growing and have been used as a play feature in recent decades.



#### War Memorials Area

5.2.19 This area stretches from Parkstone Road, where it is contained by a tree belt, to the edge of the Lagoon in the south. 8 no. trees which form part of the tree belt were surveyed either side of the Memorial Gates. These were mainly holm oak and Corsican pine and were assessed as category 'A' trees with one tree being category 'B'. The trees form an important function in screening the surrounding urban built form. A sycamore and hawthorn were recorded further to the east of the gates and classified as category 'B' and category 'C' respectively. 3 no. large oak trees are located along the eastern approach of the Memorial landscape. These trees are thriving despite the exposure and

particularly wet ground conditions. These trees were assessed as category 'A'.

#### War Memorial to Middle Gate (including Oak trees south of Drive)

5.2.20 22 no. horse chestnut trees were surveyed; 13 no. trees were classified as category 'B' trees, 8 no. trees were assessed as category 'C' and 1 no. trees was assessed as category 'U'. Further 6 no. oak trees were surveyed on the south-side of the Drive; 3 no. trees were assessed as category 'A', 2 no. trees as category 'B' and 1 no. tree as category 'C'.

5.2.21 A remnant of the single avenue remains in the mid-section of the Park, east of the war memorial to south of the rose garden (T133-T155) (photo below, right). Several of the trees are in decline and have a limited useful life expectancy. The remaining trees are of low vigour, are not expected to thrive and may live for up to another 20 years (category B1).

5.2.22 The line of five oaks (T142-T146) (middle photo below, trees on the left of the drive) have grown reasonably well over the years despite periods of flooding and drought, growing in a relatively shallow rooting area in consideration of the proximity to the brackish water of the lake. The Turkey oak (T145) is in poor physical condition compared to the English oaks and should be removed at this point. There is space for future crown growth of two replacement English oaks at the same location.

5.2.23 The double line of horse chestnuts leading up Middle Gate entrance is in relatively good condition. However, two trees just to the east past the junction to Whitecliff Road 2no. trees have been recommended for removal (T164 – Cat 'C' and T166 – Cat 'U').



#### East of Middle Gate to East Gate Entrance

5.2.24 13 no. horse chestnut trees were surveyed; 4 no. trees were classified as category 'B' trees, 9 no. trees were assessed as category 'C' and 1 no. trees was assigned category 'U'. There are 11 no. trees planted in continuous line. The trees are growing in a particularly narrow verge and are in direct competition with the large trees in the adjacent tree belt to the north. This is reflected in their relative small size and low quality classification. 8 of the 11 trees are recommended for removal due to arboricultural reasons.

- 5.2.25 One large horse chestnut tree (T233) (Photo below, left), likely to be one of the original trees, remains isolated adjacent to the eastern entrance garden areas. Located next to an open and irrigated lawn area has allowed the tree to grow into a larger size. Being a lapsed pollard it has structural defects which require remediation work.
- 5.2.26 One large oak tree (T235) is located just to the west of the East Gate entrance. The tree is visible in historic photographs from the early years of the Park and has grown into a prominent tree which can be seen from within the Park and the surrounding highway.
- 5.2.27 Trees to the south of the Drive contain distinct groups of pine and holm oak (G9 and G10) (photo below, right) at the entrance to the Ark car park and planting of predominantly oak trees interspersed with small ornamental trees leading up to East Gate entrance.



Tree belts to northern boundary

- 5.2.28 There are two areas: from the West Gate to the putting green and from the Middle Gate to the rockery feature near East Gate Lodge. These strips of border trees are often Holm oaks which were originally treated as screening shrubs for the perimeter of the Park. This may be seen from the multiple stems which have arisen from at or near ground level in most specimens where previous pruning of the young trees has produced a more shrubby form. The early management of these trees lapsed at some point, decades ago.
- 5.2.29 These holm oaks have grown particularly well in the maritime environment of the Park; they have become over dominant in relation to most other species, including those trees and shrubs originally intended to provide ornamental flowering borders. Their success has led to suppression and eventual demise of many of the ornamental shrubs and smaller trees as their canopies have naturally spread southward over the borders and beyond. The outside of many of the holm oak canopies have produced multiple pendulous tertiary branches, effectively forming a curtain to intercept available light, further suppressing any growth at ground level. The result is now areas of bare earth or diminutive shrubs and small trees of low vigour under these canopies.
- 5.2.30 Although these evergreen trees have significant value as a screen against buildings and the urban environment generally, their highly successful growth

now prevents virtually any ornamental species. In order to allow any future ornamental planting in these northern borders adjacent to the main driveway, the overhanging canopies of the Holm oaks need to be lifted to a substantial degree to allow more light to the borders. This form of management will need to be repeated in future years to prevent a reoccurrence of the same problem.

- 5.2.31 Monterey Pine (T182) (photo below) is situated along the boundary opposite the Ark Café. This is a locally notable tree of nearly 5 metres in girth. It is estimated that the tree is around 150 years of age. The tree has a large canopy and is visible from some distance away. Over time, the tree canopy has expanded over the horse chestnut avenue causing suppression of these trees to the point where they are now not worth retaining.



#### Copse Close Car Park

- 5.2.31 This small parking area on the east side of the Park has a number of maturing and mature specimen trees surrounding it (11 no. trees, including 10 no. category A and 1 no. category 'B'). There is a lapsed hedge consisting of leyland cypresses (G12), category 'C', to the south of the car park. Multiple upright branching growths indicate that this line of conifers was originally maintained at about two metres (Photos, below)). Weak branch attachments are evident; a branch has snapped out recently from one of the larger tree stems and has been dealt with as an emergency.



5.2.32 There are several mature tree species in the immediate vicinity which have part of their root zones covered with hard surfacing, extending relatively closely to the tree stems. Removal of this line of lapsed hedging would benefit the long term health of these mature trees by reducing competition for resources. The relative amenity loss is considered to be low.

5.2.33 There are two trees (T286 & T287) on the island in the car park (Photo below) which should have more permanent protection for their root zones. There is evidence that vehicles are turning, especially when the car park is busy and using the island as turning space, impinging on the RPAs of the trees in situ and causing root damage through compaction.



### Freshwater lakes

5.2.34 29 no. trees and 2 no. groups have been surveyed along the banks of the Freshwater Lakes and the island on the small Freshwater Lake. Species contain a large proportion of oak and willow trees which appear to thrive in the wet ground conditions. The area generally contains a number of dead or dying alders. An initial assessment carried out by the Forestry Commission in December 2016 indicated the potential presence of Phytophthora (Alder dieback disease).

5.2.35 Vegetation of G13 and G14 has received little management in the past years and requires selective clearing, coppicing and replanting to rejuvenate.



### Cygnets Play Area

- 5.4.4 6 no. trees were surveyed; these contained 3 no. oak and beech trees assessed a category 'A', 2 no. category 'B' trees (oak and lime) and 1 no. poplar pollard. The later is recommended for removal due to its limited useful life.

### Westfield Play Area

- 5.2.36 5 no. trees were surveyed along the southern boundary of the play area containing a mixture of Corsican pine and holm oak; 3 no. trees were assessed as category 'A' and trees as category 'B'. Requirement for crown lifting was identified where the canopies overhangs the adjacent footpath and outdoor gym equipment.

## **5.3 Overall Summary**

- 5.3.1 A total of 295 individual trees and 14 groups were surveyed.
- 5.3.2 Irrespective of any development proposals, the survey demonstrates that the trees in Poole Park are in need of strategic management. 59% of the surveyed trees are mature or late mature and are therefore being in their in the final third of their life expectancy or having exceeded their life expectancy; this may be the result of low levels of planting over the preceding decades. 44 no. trees and one group were identified to be removed in the interest of sensible and reasonable arboricultural recommendations; and 15 no. trees were assessed for removal under category 'U' classification. Two groups within the Freshwater Lakes were recommended for selective clearing under a vegetation management regime.

## 6 Proposed Development

### 6.1 Hard landscape proposals

6.1.1 A detailed description of the proposed capital works are provided in the Poole Park Life Design and Access Statement. Key elements of the proposals are outlined below:

*a. Refurbishment of Park Drive*

Originally build for horse and carriage proposals include structural repairs and resurfacing to accommodate modern vehicle use and access requirements.

*b. Improvements to Western Gardens*

Removal of a raised planter, alterations to planting beds, new footpath and installation of benches.

*c. Formalised parking at Norton's Avenue and overspill parking for the use of Bowls Club.*

*d. Revised parking layout and extent of West field car park and Middle gate car park.*

*e. Alterations to the War Memorial*

This includes new step-free pedestrian access from Parkstone Road and works to existing paths including removal of steps and change in path levels and surfaces to achieve wheelchair access.

*f. Improved pedestrian circulation at Copse Close Car park*

*g. Freshwater Lakes*

This includes selective clearing and crown lifting of vegetation associated with the Small Freshwater Lake to re-instate views to the Cricket pavilion, alteration to the northern bank of the large Freshwater Lakes and vegetation management of the southern bank.

*h. Refurbishment of Westfield and Cygnet Play areas*

6.1.2 Mitigation of impacts on the trees both during construction and the final development has been integral to the design process. The following measures have been incorporated:

- A considered path layout at Western Entrance Gardens to avoid impacting on a late mature yew tree.
- Non-dig, permeable surfacing at Norton's Gate and the new path link between Parkstone Road leading to the War Memorial.
- Omission of kerbs to avoid excavation in RPAs where possible; and
- Replacement planting for all proposed tree removals.

- Provision of individual mulched circles and larger contained areas of mulching to existing trees to improve growing conditions.
- Provision of raised kerb edging and cut stone blocks to serve as vehicle barriers for the trees in the grassed island of the Copse Close car parking area.

## 6.2 Renewal of the Avenue to the Drive

### Existing condition

- 6.2.1 The majority of avenue trees stem from the original planting some 126 years ago and are coming to the end of their useful life. Combined with new environmental pressures such as compaction and damage from vehicles, change in climate, competition from large trees in the neighbouring tree belts and the spread of diseases affecting this species has led to the continual decline of the horse chestnut avenue in recent decades.
- 6.2.2 Although the double lines of trees leading up to Norton's gate and Middle gate are in better condition, a number of gaps have appeared in other sections of the avenue where trees had to be removed.
- 6.2.3 The tree survey highlighted the need for further removals under good arboricultural practices.
- 6.2.4 Two sections of avenue have been identified as particularly poor; these are the trees between Seldown Lodge and the Crazy Golf and the line of trees between Middle Gate and East Gate entrance. The majority of trees are unlikely to make a significant contribution for more than 20 years. The overall visual amenity is poor due to the poor form and stunted growth.

### Strategy for Renewal

- 6.2.5 As part of the design process two options for replanting have been explored. The overall aim is to conserve the avenue as a tree structure with a high visual amenity.

*A. Retain trees until dead, dying or structurally unsafe. Replant gaps as they appear.*

#### *Pros*

- Continued mature, although visually poor, tree structure in the short term.

#### *Cons*

- Results in an uneven aged avenue with trees at different shapes and size; low visual amenity.
- Restricted planting area in order to avoid the roots of adjacent trees.
- Future budget pressures are likely to limit implementation.

*B. Removal of larger sections of trees now and replant*

*Pros*

- Opportunity to create a better growing environment by incorporating a suitable tree pit layout and irrigation in the improvement works to the Drive. This will improve the establishment and long term health of the trees.
- Consistent age and therefore more uniform and formal appearance as expected of an avenue.
- More control over species selection, sourcing of trees and quality of installation.
- Availability of funds (subject to HLF grant bid outcome)

*Cons*

- Initial visual impact created by the removal of a long section of trees.

- 6.2.6 Option B provides an 'active management approach' compared to ad hoc replacement, which will replace the avenue in lines to ensure future uniform character of the avenue; this an approach also outlined in the Arboricultural practice Note APN 09, Management of Avenues published by the Arboricultural association. The benefits outweigh the negative short term visual impact and make the best use of the HLF capital funding.
- 6.2.7 Strategic planting proposals have been prepared (refer Planting Plans PPL-T-PL-401 to 405 in App 5E). It is important to try to 'future proof' trees in the park from increasing incidences of pests and diseases that are entering the UK and are predicted to increase with rising average temperatures and milder, wetter winters. To do this three species are being proposed for replacement planting, retaining the avenue format and planting gaps.
- 6.2.8 The proposed development provides the opportunity to plant new trees in a much improved rooting volume, in turn improving vigour and therefore is likely to give the trees more resistance to pests and diseases and a longer life span.
- 6.2.9 Trees will be specified at a girth of 18-20cm or 20-25cm (nursery measurement), depending on species.
- 6.2.10 Species selection is based upon author site knowledge, the assessment of site conditions and following discussions with national tree suppliers. To mitigate future pests and diseases a varied species selection has been made, diversifying the largely single species avenue. Trees will be planted in lines of single species groups to provide some continuity, selecting the most appropriate species according to the conditions:
1. English oak, *Quercus robur*, to be planted in areas that can accommodate a large crown and there is a chance for rooting into adjacent lawn areas; and in wet areas. Currently thriving in the area between the Middle gate and War Memorial.
  2. Small Leaved Lime, *Tilia Cordata* 'Greenspire', is a compact clone with a relatively small pyramidal crown and shall be used in places where there is crown competition from other trees. The Greenspire is known

to have fewer problems with aphids and is therefore acceptable in parking areas.

3. Common Hornbeam, *Carpinus betulus*, is suitable due to its parkland character and will tolerate for more confined, and dryer growing spaces.
4. Pin Oak, *Quercus pinnata*, will provide an alternative to Common Oak for the wetter areas of the site.



Top, 1: English oak, *Quercus robur*  
Above, 2: Small Leaved Lime, *Tilia Cordata* 'Greenspire'  
Right, 3: Common Hornbeam, *Carpinus betulus*  
Below: Pin oak, *Quercus palustris*



- 6.2.11 Other tree species were considered and ruled out for the following reasons:
- Sessile Oak, *Quercus petraea*, is not widely available at larger planting sizes.
  - Elm, *Ulmus* 'New Horizon' and similar species are not proven to be disease resistant (DEFRA advice over threat of Yellow leaf disease) and are considered to be too big a risk to plant in such an historic location.
  - Indian Horse Chestnut, *Aesculus indica*, there is a national shortage at the stated sizes and may still be susceptible to prevailing diseases affecting horse chestnuts.
- 6.2.12 For planting proposals refer to drawings PPL-T-PL-401 to 405 in App 5E. Planting proposals for the Freshwater Lakes area are shown on drawing PPL-FL-PL-02 Freshwater Lakes area – Proposed Layout (App FL3 & 4). Details of structural tree pits are given in App A27.

## 7 Arboricultural Impact Assessment (AIA)

### 7.1 Tree Survey Schedule & Management Recommendations

7.1.1 The Tree Impact Assessment has been carried out with reference to the following drawings:

**The Drive Improvements:** Appendix A1 – A10 Construction drawings;  
Appendix A11 – 26 General Arrangement drawings.

**Freshwater Lakes Proposals:** Appendix FL3 and FL4

**Play areas:** Appendix P1 and P2

**Lighting:** Appendix A28

7.1.2 General tree works detailed in the Tree Schedule (Appendix 5C) have been identified solely in the context of the current layout and existing site use and should not be interpreted as being necessary to implement the proposed development.

### 7.2 Trees Suitable for Retention

7.2.1 Where possible, it is generally considered desirable for Category 'A' and Category 'B' trees to be retained and incorporated into the new development and layouts. Trees in Category 'C' are unremarkable trees of lower merit or small-growing, young species which have a relatively low potential amenity value and low landscape benefit. Category 'U' trees are not considered to be appropriate for retention in a public open space setting.

### 7.3 Trees to be removed

7.3.1 A total of 75 no. trees are proposed for removal. The reasons for removal are as follows:

- 15 no. individual assessed trees were identified as being unsuitable for retention (Category 'U'). This includes 5no. horse chestnut avenue trees (T31, T43, T77, T99, T166) and 10 no. other trees - T38 leyland cypress, T44 holm oak, G5 leyland cypress, T67 flowering cherry, T75 flowering cherry, T76 flowering cherry, T219 rowan sp, T226 holly, T267 willow and T268 alder.
- 44 no. trees and one group were recommended to be removed in the interest of sensible and reasonable arboricultural management, consisting of the following:
  - Category B1: T24 false cypress, T202 Monterey cypress, T234, T244 Norway maple
  - Category C1: T20 western red cedar, T22 leyland cypress, T23 Leyland cypress, T26 cherry, T45 sycamore, T60 holly, T72 cornus sp, T145 turkey oak, T176 hawthorn, T208 cherry, T214 western red cedar, T246 grey poplar, T266 goat willow, T269 alder; and horse chestnut avenue trees T28, T29, T51, T52,

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T133, T135, T150, T151, T153, T164, T179, T183, T184, T185, T200, T201, T203, T204, T231.

- Category C2: T46 holly, T49 holm oak, T222 western red cedar, G12 Leyland cypress; and horse chestnut trees T3, T13, and T42.

- 15 no. trees were proposed to be removed to allow the strategic replanting of the avenue; including:
  - Category B1: T35, T40, T50, T56, T57, T58
  - Category B2 : T19, T21
  - Category C1: T231
  - Category C2: T1, T2, T8, T11, T12, T41
- 1 no. tree, a mature Hawthorn (T131) of low vigour through long term suppression by larger specimens near the War Memorial entrance gates, will be lost due the direct implementation of the development.

7.3.2 Selective clearing of the vegetation on the islands of the Small Freshwater Lakes will result in the removal of approximately 5 no. trees (G13); and clearing along the bank of the Large Freshwater lakes will result in the removal of approximately 10 no. trees (G14).

#### **7.4 Tree loss evaluation**

7.4.1 Of the 76 individual trees and 1 no. group detailed for removal, only 16 no. trees are to be removed due the proposed hard landscape improvements and strategic replanting of the tree avenue. The remaining trees would need removal immediately or in the short term due to unsuitability for retention in a public open space setting and should not be considered as part of the impact of the development.

7.3.3 From an arboricultural and amenity aspect it is considered that the most significant and visually prominent surveyed trees on site have been retained.

7.3.4 The proposed tree planting detailed in section 6 show the planting of 80 no. trees. This is considered adequate and reasonable mitigation measure to address loss of amenity.

7.3.5 It is considered that the resultant loss of amenity associated with the works, detailed above, will have a relatively low, short term impact on the treed character of the Park. Although there will be a temporary loss of mature trees, these trees are already in decline and their removal is anticipated to be within the next 10-20years. The proposed strategic replanting will ensure that a quality tree stock remains in the Park for the future. Overall, proposals can be assessed as making a positive contribution to the long term treed landscape of the Park.

## 7.4 Incursion into Root Protection Areas – Development

7.5.1. The erection of protective fencing as per the 'Tree Removal and Protection Plans' and at those distances specified as the Protection Radius in the Tree Schedule (App 5C), prior to the commencement of any works on site will protect the RPA of retained trees.

7.5.1. The existing ground level should be retained with the RPAs. Intrusions into the soil within the RPAs are generally not acceptable and topsoil within it Should remain in situ.

7.5.2 However, the development necessitates the incursion in some RPA. The impact of this has been assessed and is detailed in table 7.4 below.

Tree Ref:		Proposed Works within RPA	Assessment Considered Impact Negligible/Low/High
<b>T7</b> Yew	A2	<ul style="list-style-type: none"> <li>- Overlay of existing carriageway surface only.</li> <li>- Replacement of existing kerb to carriageway with PCC 125 x 255 BN kerbs.</li> <li>- Proposed decorative surface course to footpath. Existing tarmac patched and prepared as required.</li> <li>- Filling of mowing edge (channel detail) along footpath using granite setts on mortar bedding.</li> <li>- Removal of knee rail.</li> </ul>	<p>Excavation limited to removal of existing structures. No significant changes in ground levels.</p> <p><i>Considered Impact: Negligible</i></p>
<b>T36</b> Holm oak	B1	<ul style="list-style-type: none"> <li>- Proposed decorative surface course to the footpath. Existing tarmac patched and prepared as required.</li> <li>- Filling of mowing edge (channel detail) along footpath using granite setts.</li> <li>- Removal of knee rail.</li> </ul>	<p>Excavation limited to removal of existing structures. No significant changes in ground levels.</p> <p><i>Considered Impact: Negligible</i></p>
<b>T39</b> Maidenhair tree	A1	<p>Proposed raised table crossing:</p> <ul style="list-style-type: none"> <li>- Replacing of existing concrete edge detail with 250mm wide kerb.</li> <li>- Footpath surface replaced with concrete slab paving.</li> </ul> <p>Footpath: Proposed decorative surface course. Existing tarmac patched and prepared as required.</p> <ul style="list-style-type: none"> <li>- Filling of mowing edge (channel detail) along footpath using granite setts.</li> <li>- Removal of knee rail.</li> </ul>	<p>No significant change in ground levels. Excavation for new kerbs and concrete slab paving to a small proportion of overall RPA (12sqm or 9.2 % of RPA). Works to be carried out under supervision of Arboricultural officer and in accordance with AMS.</p>

			<i>Considered Impact: Low</i>
<b>T62</b> Holm oak	B1	Removal of speed bump: - New kerblines PCC 125 x 255 BN kerbs (approx 9m length overall length). - Section of grass verge to be replaced with carriageway (4sqm).	3.6% Incursion of RPA  Intrusion in RPA is limited. Works to be carried out under supervision of Arboricultural officer and in accordance with AMS.  <i>Considered Impact: Low</i>
<b>T78</b> Horse chestnut	B	Formalising of existing parking: - Removal of existing verge and tarmac path east of tree. - Installation of non-dig stabilised gravel surfacing with timber edging. - Resurfacing of existing road with non- dig porous carriageway construction. - Topdressing with decorative gravel to base of tree contained by timber edging.  Threshold paving to steps: - Proposed decorative tarmac on cellweb non-dig construction.	Impact on tree mitigated through installation of non-dig and porous surfacing. Prior to installation carry out air spading replenishment of soil around surface roots. Works to be carried out under supervision of Arboricultural officer and in accordance with AMS.  <i>Considered Impact: Low</i>
<b>T80</b> Horse chestnut	B1	- Proposed decorative surface course to footpath. Existing tarmac patched and prepared as required. - Verge topdressed with decorative gravel and timber edging. - Resurfacing of existing road with non- dig, porous carriageway construction.	Impact on tree mitigated through installation of non-dig and porous surfacing.  <i>Considered Impact: Low</i>
<b>T81</b> Horse chestnut	B1	Formalising of existing parking: - Removal of existing verge and tarmac path east of tree. - Installation of stabilised gravel surfacing with timber edging. - Resurfacing of existing access road with porous non-dig carriageway construction. - Topdressing with decorative gravel to base of tree contained by timber edging.	Impact on tree mitigated through installation of non-dig and porous surfacing.  Prior to installation carry out air spading replenishment of soil around surface roots.  <i>Considered Impact: Low</i>

<b>T82</b> Horse chestnut	A1	As <b>T80</b>	
<b>T83</b> Horse chestnut	B1	As <b>T81</b>	
<b>T85</b> Horse chestnut	B1	As <b>T80</b>	
<b>T86</b> Horse chestnut	B1	As <b>T81</b>	
<b>T87</b> Horse chestnut	B1	As <b>T80</b>	
<b>T88</b> Horse chestnut	B1	As <b>T81</b>	
<b>T89</b> Horse chestnut	A1	<ul style="list-style-type: none"> <li>- Proposed decorative surface course to footpath. Existing tarmac patched and prepared as required.</li> <li>- Verge topdressed with decorative gravel and timber edging.</li> <li>- Resurfacing of existing road with non-dig, porous carriageway construction (northern section of RPA).</li> <li>- Overlay of existing carriageway with pigmented asphalt (southern section of RPA).</li> <li>- Construction of tarmac footpath ramped over from main carriageway over verge to existing footpath.</li> </ul>	<p>Raising of levels over the existing carriage way to south by up to 150mm to meet non-dig cellweb construction to north. Possible surface excavation to key in to install kerb between different carriageway construction types.</p> <p>Works to be carried out under supervision of Arboricultural officer and in accordance with AMS.</p> <p><i>Considered Impact:</i> <i>Low</i></p>
<b>T90</b> Horse chestnut	B1	<p>Formalising of existing parking:</p> <ul style="list-style-type: none"> <li>- Removal of existing verge and tarmac path east of tree.</li> <li>- Installation of stabilised gravel surfacing with timber edging.</li> <li>- Topdressing with decorative gravel to base of tree contained by timber edging.</li> <li>- Resurfacing of existing road with non-dig, porous carriageway construction (northern section of RPA).</li> <li>- Overlay of existing carriageway with pigmented asphalt (southern section of RPA).</li> <li>- Construction of tarmac footpath ramped over from main carriageway over verge to existing footpath.</li> </ul>	<p>Raising of levels over the existing carriage way to south by up to 150mm to meet non-dig cellweb construction to north. Possible surface excavation to key in to install kerb between different carriageway construction types.</p> <p>Works to be carried out under supervision of Arboricultural officer and in accordance with AMS.</p> <p><i>Considered Impact:</i> <i>Low</i></p>
<b>T91</b> Horse chestnut	B1	<ul style="list-style-type: none"> <li>- Proposed decorative surface course to footpath. Existing tarmac patched and prepared as required.</li> <li>- Verge slightly extended.</li> </ul>	<p>Proximity to tree stem - Works to be carried out under supervision of Arboricultural officer and in accordance with AMS.</p> <p><i>Considered Impact:</i></p>

			<i>Low</i>
<b>T92</b> Horse chestnut	B1	<ul style="list-style-type: none"> <li>- Proposed decorative surface course to footpath. Existing tarmac patched and prepared as required.</li> <li>- Grass verge retained and reinstated.</li> <li>- Slight raising and overlay of existing carriageway with pigmented asphalt.</li> </ul>	<p>Raising of levels over the existing carriage way to south by up to 150mm to meet non-dig cellweb construction to north.</p> <p><i>Considered Impact: Low</i></p>
<b>T93</b> Horse chestnut	A1	As T92	<p>Raising of levels over the existing carriage way to south by up to 150mm to meet non-dig cellweb construction to north.</p> <p><i>Considered Impact: Low</i></p>
<b>T94</b> Horse chestnut	B1	As T92	<p>Raising of levels over the existing carriage way to south by up to 150mm to meet non-dig cellweb construction to north.</p> <p><i>Considered Impact: Low</i></p>
<b>T95</b> Larged leaved lime	B1	<ul style="list-style-type: none"> <li>- Proposed decorative surface course to footpath. Existing tarmac patched and prepared as required.</li> <li>- Grass verge retained and reinstated.</li> </ul>	<i>Considered Impact: Negligible</i>
<b>T96</b> Horse chestnut	A1	<ul style="list-style-type: none"> <li>- Proposed decorative surface course to footpath. Existing tarmac patched and prepared as required.</li> <li>- Grass verge extended and 250mm wide kerb installed to carriageway edge using non-dig construction method. Feasibility to be confirmed on site following further advice by Arboricultural officer.</li> <li>- Existing tarmac crossing over verge replaced with pc slab paving.</li> </ul>	<p>Works to be carried out under supervision of Arboricultural officer and in accordance with AMS.</p> <p><i>Considered Impact: Low</i></p>
<b>T97</b> Horse chestnut	B1	As T96	<p>Works to be carried out under supervision of Arboricultural officer and in accordance with AMS.</p>

			<i>Considered Impact: Low</i>
<b>T98</b> Horse chestnut	A1	<ul style="list-style-type: none"> <li>- Proposed decorative surface course to footpath. Existing tarmac patched and prepared as required.</li> <li>- Grass verge extended and 250mm wide kerb installed to carriageway edge using non-dig construction method. Feasibility to be confirmed on site following further advice by Arboricultural officer.</li> </ul>	<p>Works to be carried out under supervision of Arboricultural officer and in accordance with AMS.</p> <p><i>Considered Impact: Low</i></p>
<b>T101</b> Horse chestnut	A1	<ul style="list-style-type: none"> <li>- Proposed decorative surface course to footpath. Existing tarmac patched and prepared as required.</li> <li>- Layout of road altered at junction including new footpath and installation of kerbs. Footpath and kerb largely over existing carriageway construction.</li> </ul>	<p>Alteration in levels, but works require raising of levels in area of existing carriage way. 18% of RPA.</p> <p>Works to be carried out under supervision of Arboricultural officer and in accordance with AMS.</p> <p><i>Considered Impact: Low</i></p>
<b>T102</b> Common lime	A1	<ul style="list-style-type: none"> <li>- Proposed decorative surface course to footpath. Existing tarmac patched and prepared as required.</li> </ul>	<i>Considered Impact: Negligible</i>
<b>T103</b> Horse chestnut	B1	<ul style="list-style-type: none"> <li>- Proposed decorative surface course to footpath. Existing tarmac patched and prepared as required.</li> <li>- Layout of road altered at junction including new footpath and installation of kerbs. Footpath and kerb largely over existing carriageway construction.</li> </ul>	<p>Slight alteration in levels. 8.2% of RPA.</p> <p>Works to be carried out under supervision of Arboricultural officer and in accordance with AMS.</p> <p><i>Considered Impact: Low</i></p>
<b>T126</b> Holm oak	A2	<ul style="list-style-type: none"> <li>- Removal of existing steps and construction of sloped paths on the same footprint.</li> <li>- Filling of topsoil to tie levels of new path in with adjacent ground.</li> </ul>	<p>No excavation other than removal of existing structures.</p> <p><i>Considered Impact: Low</i></p>

<b>T128</b> English oak	A1	- Slight raising of soil levels to tie new footpath levels in with adjacent ground (0.5m wide area along paths).	No excavation.  <i>Considered Impact: Low</i>
<b>T129</b> Corsican pine	B1	- Construction of a new 1.2m wide, open textured tarmacadam footpath; steel edging. 50sqm non-dig construction; 10sqm dig construction up to 200mm depth under supervision of Arboricultural consultant. - New planting of groundcover shrubs.	Works to be carried out under supervision of Arboricultural officer and in accordance with AMS.  <i>Considered Impact: Low - Medium</i>
<b>T130</b> Holm oak	A2	As T129, but all non dig construction.	Works to be carried out under supervision of Arboricultural officer and in accordance with AMS.  <i>Considered Impact: Low</i>
<b>T132</b> Sycamore	C1	As T129, but all non dig construction.	Works to be carried out under supervision of Arboricultural officer and in accordance with AMS.  <i>Considered Impact: Low</i>
<b>T138</b> English Oak	A1	- Construction access required in RPA.	Appropriate ground protection as per AMS.  <i>Considered Impact: Negligible</i>
<b>T139</b> Dawn Redwood	B1	- Construction access required in RPA.	Appropriate ground protection as per AMS.  <i>Considered Impact: Negligible</i>
<b>T140</b> English oak	A1	- Construction access required in RPA. - Overlay of tarmacadam to existing footpath and marrying of edges to tie in with proposed ramp access.	Appropriate ground protection as per AMS. Works to be carried out under supervision of Arboricultural officer and in accordance with AMS.  <i>Considered Impact: Negligible</i>
<b>T154</b> Horse chestnut	B1	- Proposed decorative surface course to footpath. Existing tarmac patched	No significant changes in ground levels.

		and prepared as required.	<i>Considered Impact: Negligible</i>
<b>T155</b> Horse chestnut	B1	- Proposed decorative surface course to footpath. Existing tarmac patched and prepared as required.	No significant changes in ground levels.  <i>Considered Impact: Negligible</i>
<b>T163</b> Horse chestnut	B1	- Proposed decorative surface course to footpath. Existing tarmac patched and prepared as required.	No significant changes in ground levels.  <i>Considered Impact: Negligible</i>
<b>T177</b> Horse chestnut	B1	- Surface overlay of carriageway.	No significant changes in ground levels.  <i>Considered Impact: Negligible</i>
<b>T178</b> Horse chestnut	B1	- Surface overlay of carriageway.	No significant changes in ground levels.  <i>Considered Impact: Negligible</i>
<b>T182</b> Monterey Pine	B1	- Proposed raised table. Existing verge widened into carriageway. - Area of tarmac (former bench recess) removed and returned to soft landscape.	Works to be carried out under supervision of Arboricultural officer and in accordance with AMS.  <i>Considered Impact: Low</i>
<b>T205</b> Horse chestnut	B1	- Proposed build out; Verge extended and defined by new kerbs.	Works to be carried out under supervision of Arboricultural officer and in accordance with AMS.  <i>Considered Impact: Low</i>
<b>T221</b> English Oak	A1	- Proposed decorative surface course to footpath. Existing tarmac patched and prepared as required. - Proposed 250mm wide kerb to define path edge.	Excavation for new kerbline. 5% of RPA  Works to be carried out under supervision of Arboricultural officer and in accordance with AMS.

			<i>Considered Impact: Low</i>
<b>T232</b> Midland Hawthorn	A1	- Proposed decorative surface course to footpath. Existing tarmac patched and prepared as required.	<i>Considered Impact: Negligible</i>
<b>T233</b> Horse chestnut	B1	<ul style="list-style-type: none"> <li>- Proposed decorative surface course to footpath. Existing tarmac patched and prepared as required.</li> <li>- Surface overlay of carriageway.</li> <li>- Levelling of mowing edge detail along footpath using granite setts on mortar bedding.</li> <li>- Removal of knee rail.</li> </ul>	<p>Excavation limited to removal of existing structures. No significant changes in ground levels.</p> <p><i>Considered Impact: Negligible</i></p>
<b>T235</b> English oak	A1	<ul style="list-style-type: none"> <li>- Alignment of existing kerb (west) from Parkstone Road (outside park) altered.</li> <li>- New threshold ramp detail with 250mm wide kerb detail.</li> <li>- Proposed raised table, including replacing existing kerbs with 250mm wide kerbs.</li> <li>- Filling of mowing edge (channel detail) along footpath using granite setts.</li> <li>- Proposed decorative finish to footpaths.</li> <li>- Removal of knee rails.</li> <li>- Proposed footpath leading to plaque on north elevation of East gate lodge – non-dig construction to tie in with existing footpath levels.</li> </ul>	<p>Construction in area of existing carriageway. Excavation only required for the removal of the existing kerb (inside the Park) and installation of a new kerb in its place.</p> <p>Works to be carried out under supervision of Arboricultural officer and in accordance with AMS.</p> <p><i>Considered Impact: Low-medium</i></p>
<b>T242</b> English oak	A1	<ul style="list-style-type: none"> <li>- Proposed decorative surface course to footpath.</li> <li>- Surface overlay of carriageway.</li> </ul>	<i>Considered Impact: Negligible</i>
<b>T254</b> English oak	B1	<ul style="list-style-type: none"> <li>- Surface overlay of cycle track and installation grassed swale to 400mm depth.</li> <li>- Pipework to tie into existing drainage infrastructure in situ.</li> </ul>	<p>Tree rooting zone periodically floods; proposals will aid drainage of the area. Limited excavation in RPA (14% of RPA) ; Works to be carried out under supervision of Arboricultural officer and in accordance with AMS.</p> <p><i>Considered Impact: Low</i></p>
<b>T262, T263, T264, T265</b> Alder	B1	<ul style="list-style-type: none"> <li>- Filling of rooting area with dredge material from lake up to 200mm deep;</li> <li>- Topsoiling up to 100mm depth.</li> </ul>	Dredged material to be tested for its suitability for plant growth prior to

			<p>depositing on root protection area. Alder as an riparian species is considered to be more tolerant to deposit of silt on its root zone.</p> <p><i>Considered Impact: Low</i></p>
<b>T270, T271</b> Alder	B1	<ul style="list-style-type: none"> <li>- Proposed self-binding gravel path; raised construction with timber edging.</li> <li>- New shrub and hedge planting.</li> </ul>	<p>Non-dig construction; hand-digging for planting only.</p> <p><i>Considered Impact: Low</i></p>
<b>T272</b> Oak	A1	<ul style="list-style-type: none"> <li>- Proposed self-binding gravel path; raised construction with timber edging.</li> <li>- New shrub and hedge planting</li> </ul>	<p>Non-dig construction; hand-digging for planting only.</p> <p><i>Considered Impact: Low</i></p>
<b>G11</b> Alder	B2	<ul style="list-style-type: none"> <li>- Proposed self-binding gravel path; raised construction with timber edging.</li> <li>- New shrub and hedge planting.</li> </ul>	<p>Non-dig construction; hand-digging for planting only.</p> <p><i>Considered Impact: Low</i></p>
<b>T286</b> Corsican pine	A1	<ul style="list-style-type: none"> <li>- Removal of existing kerb to green island.</li> <li>- Area of island extended and new raised kerbs installed.</li> <li>- Installation of vehicle barriers – block stone placed.</li> <li>- Surface overlay to existing Copse Close car park;</li> </ul>	<p>Change in ground levels, but increase in permeable soft area inside root zone. Limited excavation to install new kerblines. Works to be carried out under supervision of Arboricultural officer and in accordance with AMS.</p> <p><i>Considered Impact: Low</i></p>
<b>T282</b> Horse chestnut	A1	<ul style="list-style-type: none"> <li>- Surface overlay to existing Copse Close car park;</li> <li>- Replacement of concrete bollards with stone blocks.</li> </ul>	<p>No significant change in ground levels. Excavation limited to the removal of existing structures.</p> <p><i>Considered Impact: Negligible</i></p>

<b>T283</b> Horse chestnut	A1	- Surface overlay to existing Copse Close car park; - Replacement of concrete bollards with stone blocks (placed)..	No significant change in ground levels. Excavation limited to the removal of existing structures.  <i>Considered Impact: Negligible</i>
<b>T289</b> Beech	A1	- Surface overlay to existing Copse Close car park; - Replacement of concrete bollards with stone blocks (placed).	No significant change in ground levels. Excavation limited to the removal of existing structures.  <i>Considered Impact: Negligible</i>
<b>T288</b> Horse chestnut	A1	- Surface overlay to existing Copse Close car park; - Replacement of concrete bollards with stone blocks (placed).	No significant change in ground levels. Excavation limited to the removal of existing structures.  <i>Considered Impact: Negligible</i>

7.5.3 In summary, the impact on the RPAs through any construction has been sufficiently mitigated and was assessed to be low to negligible.

## **7.6 Incursion on Root Protection Areas – Construction Access**

7.5.1 It is anticipated that construction access is required within the RPA of T140 (oak), T139 (dawn redwood), T141 (oak) just to the east of the War Memorial. Prior to any access ground protection shall be installed as per section 8.6 to prevent compaction of the soil and damage to roots.

## **7.7 Infrastructure**

### Lighting

7.7.1 The proposed lighting scheme will be a replacement of existing columns in the same location (or close proximity) and follow existing ducts as far as possible. Where excavation in RPAs is required that will be carried out under the guidance of the Project Arboriculturalist and NJUG guidelines.

7.7.2 New lighting columns are proposed to the eastern perimeter of the cycle track to provide an illuminated route linking the Copse Close and the Cricket Pavilion. All ducts will run within the cricket pitch (inside of the cycle track) and

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link from there directly to location of the new column avoiding the RPA of the adjacent tree belt.

#### Other services

- 7.7.3 No other service runs are proposed. Should the need arise, the alignment will be assessed by the Arboricultural Project Officer to minimise impact on the RPA and mitigated where necessary.

### **7.8 Trees to be pruned**

- 7.8.1 Additional pruning works to facilitate and implement the proposed development are anticipated to be as follows:
- 7.8.2 Proposed crown lifting of Holm Oak (T130) and Sycamore (T32) will allow for clearance and sightlines along this new pedestrian route.
- 7.8.3 Proposed crown lifting of two oak trees (T272, T275) in the Freshwater Lakes area to re-establish lost historic views to the Cricket Pavilion.
- 7.8.4 Facilitative pruning is proposed to a group of holm oaks (G10) at the entrance to the car park to the Ark Café to avoid possible damage to low branches from large vehicle turning.
- 7.8.5 These are vigorous trees and the impact of the proposed pruning works are considered not to be low.

### **7.9 Issues to be addressed by an Arboricultural Method Statement**

- 7.9.1 The Arboricultural Method Statement (Section 8) details the general methodology for the implementation of those aspects that have the potential to result in loss, damage or detriment to long term health of retained trees.

### **7.10 Tree Protection Plan**

- 7.10.1 The TPP (Appendix 5D), when read in conjunction with sections 6 and 7 of this report, will inform on and describe the required tree protection measures for the retained trees in the context of the proposed layout.
- 7.10.2 The TPP should be read in conjunction with the Tree Survey Schedule (Appendix 5C) in order to establish the PLR for the erection of the protective fencing and the extent of ground protection measures, where necessary, from the retained trees.

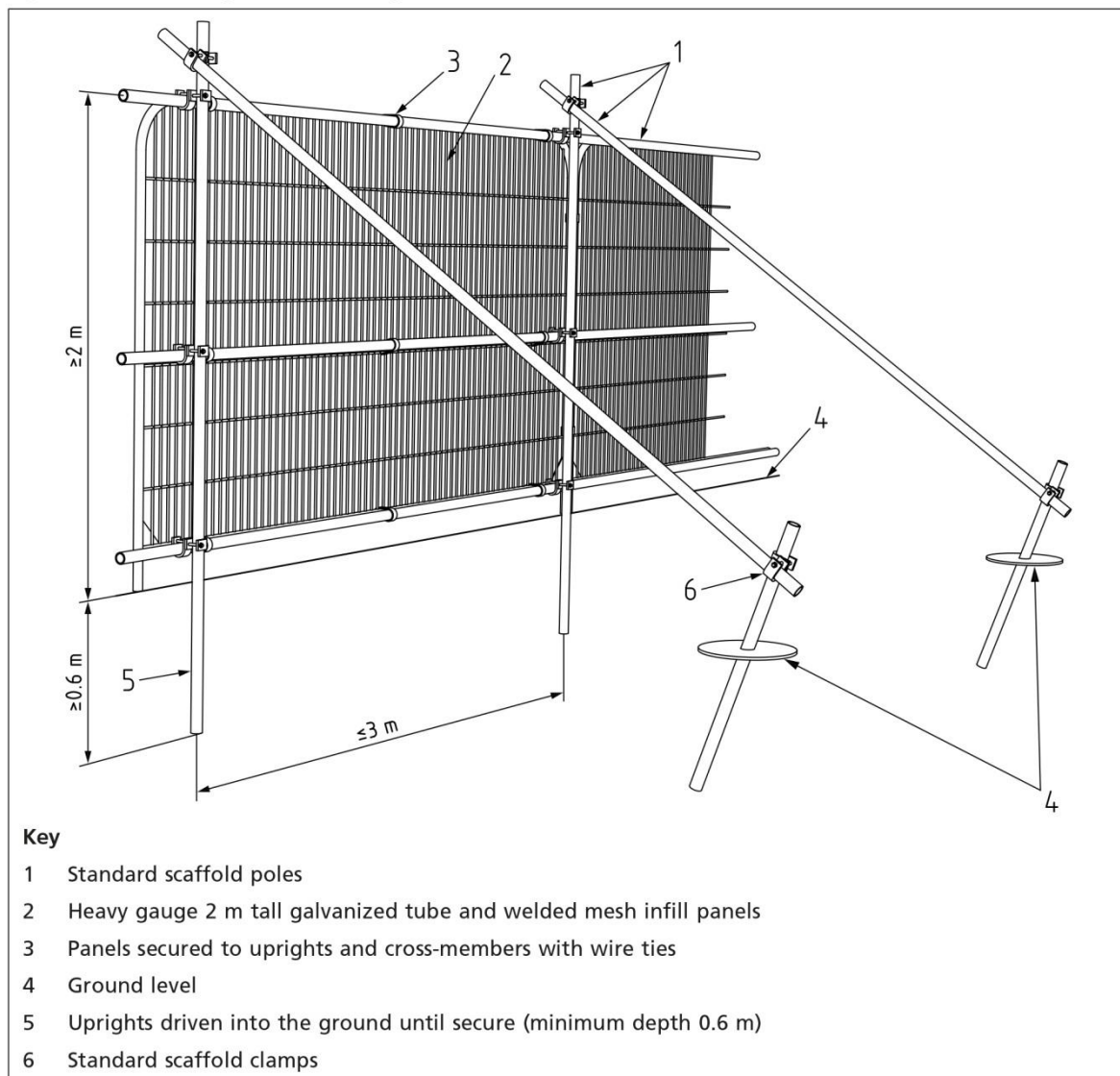
## 8 Arboricultural Method Statement (AMS)

### 8.1 Tree Works/Removals

- 8.1.1 Tree works including removal, pruning and other remedial works are detailed in the Tree Survey Schedule (Appendix 5C) and the Tree Removal and Protection Plans (Appendix 5D).
- 8.1.2 Any tree works should be carried out using the principles and practices described in British Standards 3998:2010-*Tree Works-Recommendations*.
- 8.1.3 The Wildlife and Countryside Act 1981 as amended, the Countryside and Rights of Way Act 2000 and the Conservation (Natural Habitats) Regulations 1994 protect ALL wild birds, their nests (whether in use or being built) and eggs and other wild animals including bats and their roosts in or adjacent to trees.
- 8.1.4 In simple terms, you should make sure that there are no wild birds nesting in or bats roosting in or adjacent to the trees that you are proposing to work on. It is a criminal offence to recklessly or intentionally destroy any bird, its nest or its eggs or any bat or its roost (even if the roost is not occupied at the time).
- 8.1.5 Planning consent from the LPA does not override responsibilities under the above wildlife acts.

## 8.2 Tree Protection Measures

- 8.2.1 Where practical and appropriate, protective fencing should be erected as per the Tree Removal and Protection Plans at the linear distances from the trees, specified as the PLR in the Tree Survey Schedule, prior commencement of any works on site.
- 8.2.2 Additional ground protection measures, are anticipated in the War Memorials Areas (Tree Removal and Protection Plan, dwg no. PPL-T-PL-205 contained in App 5D).
- 8.2.3 The default specification should consist of a vertical and horizontal scaffold framework, well braced to resist impacts, as illustrated in Figure 8.1 (see below).



**Figure 7.1** Default specification for protective barrier (Copyright British Standards Institute)

- 8.2.4 All-weather notices should be attached to the fencing in accordance with BS5837:2012 item 6.2.2.4.
- 8.2.5 Once erected, the protected area should be regarded as sacrosanct and should not be removed or altered without prior recommendation by the project Arboriculturalist and, where necessary, approval from the local planning authority.
- 8.2.6 Where the site circumstances and associated risk of damaging incursion into the RPAs are not considered to necessitate the default level of protection an alternative barrier is considered to be appropriate. This shall be minimum 1m high orange **barrier netting** (1mm durable plastic) fixed to roughneck fencing pins with cable ties. This barrier is only to be used in locations confirmed by the Project Arboriculturalist.
- 8.2.7 In areas where access by construction vehicles cannot be fully excluded, such as in the Norton's gate area, and to avoid accidental damage of the trunk, **chestnut pale fencing** shall be wrapped around the tree trunk at base level and a second layer further up the stem. High visibility tape shall be attached to the protective fence. (Norton's Gate - Tree Removal and Protection Plan, dwg no. PPL-T-PL-203, contained in App 5D).

### 8.3 Site Monitoring

- 8.3.1 Final on-site measurements should be taken to ascertain the extent of the tree protection measures and identify whether or not any additional incursions into the RPA's of the retained trees which have not been anticipated, will be required to facilitate the construction and its associated activities.
- 8.3.2 It is recommended that a Project Arboriculturalist is appointed prior to the commencement of any works and retained for the duration of the project.
- 8.3.4 The appointed person should be consulted in the event that additional ground protection measures are considered necessary, root pruning is required or incursions into the RPAs are considered necessary.

### 8.4 Ground Works & Demolition

- 8.4.1 The erection of protective fencing and use of ground protection measures, where necessary, as per the Tree Protection drawings and prior to the commencement of any works on site, will allow the ground works and demolition to take place whilst minimising the potential for any adverse effect and/or impact on the retained trees.
- 8.4.2 All plant and vehicles engaged in ground works, demolition or associated activities should either operate outside the RPA, or run on ground protection where appropriate (see 8.6).

## **8.5 Construction Works**

- 8.5.1 Protective fencing and use of ground protection measures, where necessary, as per the 'Tree Removal and Tree Protection Plan' should be erected prior to the commencement of any works on site.
- 8.5.2 All plant and vehicle engaged in construction activity should either operate outside the RPAs or run on ground protection (see below).

## **8.6 Vehicular access in RPAs**

- 8.6.1 Ground protection shall be designed to comply with British Standard 5837:2012. The standard advises that new temporary ground protection should be capable of supporting any traffic entering or using the site without being distorted or causing compaction to underlying soil and further provides the following note:

*The ground protection might comprise one of the following:*

- a) for pedestrian movements only, a single thickness of scaffold boards placed either on top of a driven scaffold frame, so as to form a suspended walkway, or on top of a compression resistant layer (e.g. 100 mm depth of woodchip), laid onto a geotextile membrane;*
- b) for pedestrian-operated plant up to a gross weight of 2 t, proprietary, inter-linked ground protection boards placed on top of a compression-resistant layer (e.g. 150 mm depth of woodchip), laid onto a geotextile membrane;*
- c) for wheeled or tracked construction traffic exceeding 2 t gross weight, an alternative system (e.g. proprietary systems or pre-cast reinforced concrete slabs) to an engineering specification designed in conjunction with arboricultural advice, to accommodate the likely loading to which it will be subjected.*

## **8.7 Contractors Storage, parking and access**

- 8.7.1 Provision should be made for welfare facilities, the site office, contractor parking, storage for materials, plant and spoil and space for mixing outside of the RPAs of retained trees.
- 8.7.2 In this instance it is considered that within the whole site, there is sufficient space for provision of the above, without placing significant constraints on the working space available for the construction and its associated activities, principally on Westfield, Copse Close, the end of Park Lake Road and other smaller spaces.

## **8.8 No-Dig Surfacing**

- 8.8.1 Use of a 3-dimensional, cellular confinement type of no-dig surfacing has been specified, for example at Norton's Gate avenue, and the appropriate installation methodology shall be followed, this includes the following methods.
- 8.8.2 Existing hard surfacing should be retained as temporary ground protection within the RPA for the duration of the construction and then only removed when ready, by hand tools, immediately prior to the installation of the 'no-dig' surfacing.
- 8.8.3 Once the RPA beneath the existing hard surfacing has been exposed it should be treated as sacrosanct and excavation, skimming or scraping should not take place within it.
- 8.8.4 Holes shall be punched into the existing surface to allow aeration and water penetration.

## **8.9 Planing off surfaces and excavation of areas that may contain roots outside of the RPA**

- 8.9.1 Surface materials such as tarmac or aggregate sub-bases shall first be broken-up or loosened by manual or mechanical means (e.g. hydraulic jack-hammer), taking care to minimise the disturbance of the underlying ground. The loosened material shall then be scraped in small incremental layers using a toothless bucket, or manually, again taking care to avoid disturbance of the underlying ground.
- 8.9.2 Excavation will be undertaken to a maximum depth of 150mm using a combination of manual digging and excavator with a toothless bucket. Any roots encountered less than 25mm dia. will be pruned back to the inside face of the excavation and covered with a damp geo-textile to prevent desiccation. Roots greater than 25mm dia. will be assessed by an arborist on site and appropriate action determined.
- 8.9.3 New surfaces will be installed as soon as possible after excavation to minimize exposure time
- 8.9.4 Sections of kerbing shall be manually dislodged and pulled away from the tree.
- 8.9.5 Any surface roots along the Park Drive shall be identified and marked prior to the commencement of works for hand digging. The planing of the wearing course only, with a toothless bucket, shall then take place under arboriculturalist supervision.

## 8.10 Soil Compaction and Remediation Measures

- 8.10.1 Soil that has been compacted will not provide suitable conditions for the survival and growth of vegetation, whether existing or new, and is a common cause of post-construction tree loss on development sites.
- 8.10.2 Compacted soil will adversely affect drainage, gas exchange, nutrient uptake and organic content, and will seriously impede or restrict root growth and will therefore be avoided around existing vegetation, including trees, and in areas where new planting or seeding is proposed.
- 8.10.3 Where soil compaction has occurred in the vicinity of existing trees, such as at Norton's Gate avenue, remedial works might include sub-soil aeration using compressed air, and the addition of other materials, preferably of a bulky, organic nature (but excluding peat), to improve structure. Use of compressed air ('AirSpade') can be used on soil, dislodging it in a fraction of a second. Soil is an unconsolidated assemblage of solid particles that may or may not contain organic matter and the voids between the particles are occupied by air and/or water. The aggregate nature of soil aids the ability of the air to fracture it; while stronger materials and ones that are not porous like tree roots are unaffected.
- 8.10.4 Heavy mechanical cultivation such as ploughing or rotovation shall not occur within the RPA. Care should be taken during other decompaction measures such as forking, spiking, soil auguring and tilled radial trenching, to minimize the risk of further damage to tree roots.

## 8.11 Tree Biosecurity

- 8.11.1 With the known presence of a form of Phytophthora present around the freshwater lakes, it is relevant to ensure good biosecurity practice - "good biosecurity practice refers to ways of working that minimise the risk of contamination and the spread of pests and invasive plants" (Forestry Commission (FC) Biodiversity [guidance](#), 2012).
- 8.11.2 In Spring 2017 the specific form of Phytophthora will be analysed and from the Forestry Commission advice sought on the appropriate mitigation measures. These are likely to be consistent with the FC Phytophthora Control Sites [publication](#) that states:

Before entering a Phytophthora control site:

- Footwear must be clean and free from soil and plant debris. The footwear should be sprayed with Propeller™ and left until it has evaporated.

Before leaving a Phytophthora control site

- Footwear must be washed off on a hard standing near the entrance to the wood using a stiff brush and water.

- It is essential that all traces of soil be removed. The brush for this must be kept on site in a bucket of disinfectant.
- After cleaning, footwear must be sprayed with Propeller™ and left until it has evaporated. Care must be taken to ensure that any water run-off does not enter watercourses.

Various precautions and measures related to work operations (machinery, plant etc.), clothing, transport used, processing of arisings etc. are all to be considered. These measures will be evaluated within the context of Poole Park, a busy public open space and practical means of implementation.

## **8.12 Tree Planting & After Care**

8.12.1 The following points summarise good after care for newly planted trees with an additional consideration to any necessary formative, corrective and maintenance pruning:

- Water immediately after planting and weekly in first growing season (10 – 20 litres) if the weather is dry.
- Do not allow weeds or grass to grow within a 500mm radius of the stem.
- Maintain mulch to a depth of approximately 50mm.
- Ensure ties are not damaging the stems and loosen if necessary.
- Ensure stake remains firm. Remove when stem can support itself, usually after 1 -3 years.
- Remove dead or crossing branches, suckers arising from the roots or weak shoots on the stems.

## **8.13 Management of existing trees**

8.13.1 Tree management measures will be introduced to improve the growing condition and therefore the quality of the existing tree population. This includes:

8.13.2 A regime of surface tining and provision of a 75mm layer of well composted bulky organic matter over the RPAs of existing parkland trees, such as oaks to the south of the main drive to the east of the war memorial. This will gradually improve soil conditions for the trees and act as a means to reduce the effects of periods of drought and flooding. The mulched area will be contained within pinned wooden boards and maintenance to replenish mulch and repair edging will be undertaken on an annual basis.

8.13.3 Remedial works as outlined in the Tree Survey Schedule 'additional comments' section, such as pruning and soft bracing.

## **8.14 Completion**

8.14.1 Upon completion of the project, advice of the project Arboriculturalist should be sought in coordination of the removal of the protective fencing and ground

protection if necessary, to survey the retained trees for signs or symptoms of damage and/or stress that the construction might have caused.

- 8.14.2 The protective fencing and ground protection measures should remain in situ until its use is considered unnecessary and any risk of damage to the retained trees and/or their respective RPAs e.g. soil compaction from vehicular plant or machinery, has passed.

## **8.15 Contact Details**

- 8.15.1 As project Leader for the Poole Park Life project:

Martin Whitchurch (Poole Park Life Project Leader), Borough of Poole,  
Environmental Services  
[m.whitchurch@poole.gov.uk](mailto:m.whitchurch@poole.gov.uk),  
Tel: (01202) 261323,  
Unit 1, Newfields Business Park, 2 Stinsford Road, Poole, BH17 0NF.

Project Arboricultural Officer – details to be confirmed.

## 9 Species List from Tree Schedule.

Botanical name	Common name
<i>Aesculus hippocastanum</i>	Horse chestnut
<i>Acer platanoides</i>	Norway maple
<i>Acer platanoides</i> 'Crimson King'	Norway maple
<i>Acer pseudoplatanus</i>	Sycamore
<i>Aesculus indica</i>	Indian horse-chestnut
<i>Aesculus x carnea</i>	Red horse-chestnut
<i>Ailanthus altissima</i>	Tree of heaven
<i>Alnus glutinosa</i>	Common alder
<i>Araucaria araucana</i>	Monkey puzzle tree
<i>Arbutus unedo</i>	Strawberry tree
<i>Betulus utilis</i> var <i>jacquemontii</i>	Himalayan Birch
<i>Carpinus betulus</i>	Common hornbeam
<i>Castanea sativa</i>	Sweet chestnut
<i>Chamaecyparis</i> sp.	Cypress
<i>Cornus</i> sp.	Dogwood
<i>Crataegus crus-galli</i>	Cockspur hawthorn
<i>Crataegus monogyna</i>	Common hawthorn
<i>Cupressus macrocarpa</i>	Monterey cypress
<i>Fagus sylvatica</i>	Beech
<i>Fagus sylvatica</i> 'Asplenifolia'	Cut-leaf Beech
<i>Fagus sylvatica</i> 'Purpurea'	Purple Beech
<i>Ginkgo biloba</i>	Maidenhair tree
<i>Griselinia littoralis</i>	New Zealand broadleaf
<i>Ilex aquifolium</i>	Holly
<i>Ilex aquifolium</i> 'Argentea Marginata'	Silver Holly
<i>Juglans nigra</i>	Eastern black walnut
<i>Laurus nobilis</i>	Bay laurel
<i>Liquidambar styraciflua</i>	American sweetgum
<i>Liriodendron tulipifera</i>	Tulip tree
<i>Malus hupehensis</i>	Chinese crab apple
<i>Malus</i> sp.	Apple
<i>Metasequoia glyptostroboides</i>	Dawn redwood
<i>Nothofagus</i> sp.	Southern Beech sp.
<i>Pinus nigra</i> subsp. <i>laricio</i>	Black pine sp.
<i>Pinus pinaster</i>	Maritime Pine
<i>Pinus radiata</i>	Monterey Pine
<i>Pinus sylvestris</i>	Scots Pine
<i>Populus x canescens</i>	Grey poplar
<i>Prunus</i> 'Kanzan'	Cheery Kanzan sp.
<i>Prunus lusitanica</i>	Portugal Laurel
<i>Quercus cerris</i>	Turkey Oak
<i>Quercus ilex</i>	Holm Oak
<i>Quercus robur</i>	Oak

<b>Quercus rubra</b>	<b>Northern Red Oak</b>
<b>Salix alba</b>	<b>White Willow</b>
<b>Salix caprea</b>	<b>Pussy Willow</b>
<b>Salix x sepulcralis 'Chrysocoma'</b>	<b>Weeping Golden Willow</b>
<b>Sequoiadendron giganteum</b>	<b>Giant sequoia</b>
<b>Sorbus sp.</b>	<b>European Rowan</b>
<b>Taxodium distichum</b>	<b>Bald cypress</b>
<b>Taxus baccata</b>	<b>English Yew</b>
<b>Thuja plicata</b>	<b>Western red-cedar</b>
<b>Tilia platyphyllos</b>	<b>Large leaved Lime</b>
<b>Tilia x europaea</b>	<b>Common Lime</b>
<b>Trachycarpus fortunei</b>	<b>Chinese windmill palm</b>
<b>Tsuga heterophylla</b>	<b>Western Hemlock</b>
<b>Ulmus 'New Horizon'</b>	<b>Elm New horizon</b>
<b>Ulmus glabra 'Camperdownii'</b>	<b>Camperdown Elm</b>
<b>X Cupressocyparis leylandii</b>	<b>Leyland cypress</b>