



Winstanley and York Road Estate Regeneration

Hybrid Application

Arboricultural Assessment

Town And Country Planning Act 1990 - Application For Planning Permission

Farrer Huxley

December 2018











Arboricultural Development Statement

Winstanley & York Road Estate Regeneration Project, York Road Estate, York Gardens and part of Winstanley Estate

Client Name: Winstanley and York Road

Regeneration LLP

Project Number: P2929.2.7

Date: 20 December 2018

ENABLING DEVELOPMENT

Applicant:	Winstanley and York Road Regeneration LLP	
Site:	Winstanley & York Road Estate Regeneration Project York Road Estate, York Gardens and part of Winstanley Estate	
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1 Report Summary

This Arboricultural Development Statement has been prepared to support a planning application for development at Winstanley & York Road Estate Regeneration Project York Road Estate, York Gardens and part of Winstanley Estate.

The application site, which formed part of a much larger survey area, contained 51 individual trees and 52 groups, comprised of 25 different tree species. Many of these were large established trees with considerable prominence in the local environment.

Development comprises urban regeneration, with demolition of existing buildings and construction of new buildings, to include a new community and leisure facility, car parking, external landscaping, access roads and other associated works. Development as proposed would result in the following tree removals:

- Category A: six trees and one group;
- Category B: 22 trees and 36 groups:
- Category C: six trees and four groups.

This would result in a total loss of 34 individual trees (67% of the total) and partial or complete loss of 41 groups (79% of the total). However, it must be noted that the current landscaping layout is illustrative and will be the subject of a reserved matters application.

A maximum parameters layout for the buildings was also assessed. This did not affect trees currently shown as requiring removal due to conflict with the building footprints shown in this report.

Retained trees have potential to be affected by development. The trees and proposed mitigation measures are set out in the table.

Potential Development Impact	Proposed Mitigation Measures	
	Pull back buildings and concrete bases away from trees to avoid working on unprotected ground.	
	Pull back surfacing using hand tools only.	
Demolition, concrete base and hard surface removal, and reinstatement works, causing damage to tree roots.	Provide protection against desiccation, and ground protection if construction access is required across exposed ground.	
	Roll out good quality topsoil and new surfacing towards trees, to no greater depth than the surfacing removed.	
	Use hand excavation for the final 600mm closest to trees and to 600mm depth.	
Excavation within the RPA for construction of for new	Use a clean, sharp hand saw for root removal to minimise wound size.	
buildings and structures, leading to root damage and removal, crown reduction and tree removal.	Design foundations to tolerate the presence of trees.	
	Excavations must be lined with an impermeable membrane to prevent leachate from concrete affecting tree roots.	
Construction of new hard surfacing, leading to root damage, removal and dieback, and future tree removal to alleviate damage.	Use reduced-dig methodology to minimise excavation, retain permeability and provide a resilient construction.	

Potential Development Impact	Proposed Mitigation Measures
Damage to tree roots from compaction and contamination from construction activities. Damage to tree stems and crowns from construction activities.	Erect protective fencing to encompass all sections of tree crowns and RPAs, whichever is the greater, with this erected prior to the commencement of development and maintained in place until all development is complete. Install ground protection where construction access is required within any RPA.

It has been confirmed that the site was not located within a Conservation Area, nor were any of the trees within this report subject to Tree Preservation Orders. The status of tree protection can change at any time and should be confirmed with the Local Planning Authority prior to any works on the trees taking place.

This report sets out tree removal required to allow space for viable development, together with the preliminary methodology for construction, soft landscaping and tree protection requirements.

Development includes extensive new tree planting to compensate for tree removals. The ability of the planting scheme to provide effective compensation is dependent on the numbers, species and establishment, details of which were not available at the time of reporting. Subject to this, new planting offers both potential to compensate effectively all tree losses and deliver a long-term enhancement of the local tree stock, in particular by increasing both age and species diversity.

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2 Introduction

2.1 Brief

agb Environmental Ltd was commissioned by Winstanley and York Road Regeneration LLP to undertake an Arboricultural Survey at Winstanley & York Road Estate Regeneration Project York Road Estate, York Gardens and part of Winstanley Estate to accompany a planning application. The purpose of the survey was to identify:

- Tree age, condition, dimensions, general health and Root Protection Area (RPA);
- · Constraints and potential tree removals in respect of the proposed layout;
- The location and means of protecting retained trees;
- Preliminary methodology for implementing the proposed layout.

2.2 Documents and Information

The following documents were utilised in the preparation of this report:

- WIM-WYW_HTA-A_OS Detail Base;
- 686-FHA-XX-00-DP-L-102 Landscape General Arrangement Revision A- Site Layout;
- BS5837:2012 Trees in relation to design, demolition & construction -Recommendations.

2.3 Survey Details and Constraints

The survey for the trees included in this survey was undertaken on the 4th October 2017, 8th and 9th March 2018 by the agb Environmental Arboricultural Consultant, in adherence to the principles of BS5837:2012 *Trees in relation to design, demolition & construction - Recommendations*. Tree inspections have been undertaken from ground level using non-invasive techniques only, in accordance with the principles of the Visual Tree Assessment method developed by Mattheck and Breloer (1994).

The surveys obtained data on 51 individual trees, and 52 groups. Trees with a stem diameter below 75mm, when measured at 1.5m above ground level, were not included. The terms used to explain the data recorded are provided in **Appendix 1**.

Comments on tree condition and safety relate to the condition of trees at the time of survey. It should be recognised that tree condition is subject to change in response to a range of factors. This report does not take into account potential extreme climatic events that would be unexpected in this locality (which could include, but aren't restricted to, severe windstorms, floods or drought), or potential outbreaks of pests or diseases.

This report contains work recommendations to manage the risks posed to and by trees responsibly, reducing them to an acceptable level. Even after the recommended work has been carried out some trees could still fail, but it is unlikely that they will cause significant harm unless the weather conditions are extreme and / or there are major hidden defects.

This report considers the potential for trees to influence soil in such a way as to cause the proposed development, or other buildings, to suffer tree related subsidence or heave damage, but does not attempt to quantify this. Operations carried out in the vicinity of the trees, either in the past or future, could affect their health and stability; such operations could include, but aren't restricted to, trenches dug for the installation or repair of utilities.

3 Site and Surrounding Area Context

3.1 Site Description

The area concerned with the development (Winstanley and York Road Regeneration) is the broadly rectangular central section to the west of Winstanley Estate. Boundaries were formed by York Road to the west, Fairchild Close, Wye Street and Ingrave Street to the north, Sullivan Close to the east, and Winstanley Road, part of Huitt Square and multi-storey housing block to the south. There were various access routes to the estate via numerous access road and footpaths for pedestrian access, through unfenced boundaries.

The western third contained York Gardens, York Gardens Library and Community Centre and a school with play area, associated areas of hard surfacing and recreational areas, hard surfacing and parking areas. The remainder of the site contained blocks of housing (including Ganley Court, Galleon Court, Chesterton House), Battersea Chapel, Thames Christian College street parking alongside Lavender Road and larger open spaces to the far east, surrounding by eight-storey blocks of Holcroft and Scholey House.

The site was predominantly flat; however, there were larger banked areas alongside some of the open spaces, with smaller level changes accommodated via flights of steps and sloped paths.

3.2 Soil Assessment

Information from the Geology of Britain viewer (British Geological Survey, 2017) indicates that the bedrock geology local to the site was London Clay Formation - Clay and Silt and that local superficial deposits are Langley Silt Member - Clay and Silt. Clay-based soils generally have high volume change potential in response to soil moisture change, possibly resulting from the presence of trees.

An assessment of the soil conditions within the site will be required to inform foundation construction. This assessment must be made by a qualified structural engineer or geotechnical consultant.

3.3 Existing Tree Stock Summary

Details of all trees surveyed are provided in the Tree Survey Table in **Appendix 2**, with locations in relation to the site in the Tree Protection Plan (TPP) in **Appendix 4**.

The trees surveyed formed part of a larger survey area. Only those trees considered relevant to this development proposal have been included in this report. Consequently, tree and group numbering is not consecutive, with breaks resulting from trees beyond the scope of this report. However, trees not relevant are shown in grey in the Tree Survey Table in **Appendix 2** to aid understanding of tree numbering.

The development area contained a relatively high density of large, mature and early mature trees spread around the site, the majority being roadside planting. Consequently, the public visibility of many trees was generally high.

The percentage analysis of tree quality was as follows:

- High quality, Category A (9%)
- Moderate quality, Category B (71%)

- Low quality, Category C (14%)
- Category U (6%)

The survey recorded a total of 25 different tree species. Seventeen groups were surveyed for which the number of individual trees and species were not recorded due to the large number of trees present (though the species present were recorded). For individual trees and small groups (covering 156 trees) the most frequently recorded species were:

- London plane (26%)
- Cherry (17%)
- Ash (10%)
- Lime (9%)
- False acacia (8%)
- Horse chestnut (6%)

Thirteen other species accounted for 24% of the total. Six further species were recorded within the larger groups.

4 Statutory Tree Protection

It has been confirmed with Wandsworth Council (e-mail from Richard Fletcher dated 16th November 2017), that the site was not located within a Conservation Area, nor were any of the trees within this report subject to Tree Preservation Orders. This can change at any time and should be confirmed with the Local Planning Authority (LPA) prior to any works on the trees taking place.

In the event that statutory tree protection is put in place, the LPA will contact the landowner, explaining the implications and the required process for contacting the LPA prior to commencing any work.

The presence of statutory tree protection may prevent work that may normally be carried out, such as reducing overhanging branches from a neighbour's tree back to the site boundary. In circumstances where work is required in an emergency, the work may proceed, though contact should be made with the LPA to advise them that this is the case prior to carrying out any work.

If this report is submitted to accompany a planning application, any tree work specified, relating to trees subject to statutory tree protection, will be considered as part of that application. Therefore, if planning permission is subsequently granted, this would normally provide permission for all tree work. Clarification may be sought from the LPA over this.

5 Principal Survey Findings and Arboricultural Impacts

The main findings are summarised in the following section. For ease of reference, it is recommended that this section is cross referenced with the information and plans provided within **Appendices 2, 3, and 4**.

5.1 Development Proposals

Development comprises urban regeneration, with demolition of existing buildings and construction of new buildings, to include a leisure centre, car parking, external landscaping, new access roads and other associated works.

5.2 Tree Removals and Reduction

Details of all tree work and tree removals are provided in **Appendix 3** and illustrated on the Tree Removals Plan provided in **Appendix 4**.

5.2.1 Removal and Reduction for Reasons of Condition

Work within this section is recommended irrespective of any proposed development, based upon tree risk management within the context of site use at the time of the survey.

Removal is recommended for three individual trees (T42-44) and for trees from ten groups (G19, G20, G22, G34, G43, G44, G46 – entire group, G48, G49 and G61).

Removal of dead wood, ivy and debris is recommended for T64 and G45.

Consideration should be given to relaying of hard surfacing to remove trip hazards around seven trees (T59-63, T80 and T94), and three groups (G40, G65 and G77).

5.2.2 Removal and Reduction for Reasons of Incompatibility

Work in this section is specified due to incompatibility of tree retention with the layout proposed, including where tree stems directly conflict with the layout, loss of crown and / or root volume would be beyond the tolerance of the trees, or future use of the site would mean tree retention would not be feasible. Details are summarised in **Table 5.1**.

Table 5.1: Summary of tree removals.

Feature	Low Quality – Category C	Moderate Quality – Category B	High Quality – Category A
Trees	T70, ash T71, hawthorn T78, horse chestnut T79, alder T86, Norway maple T93, cherry	T35, ash T36, crab apple T37, cherry T38, cherry T39, Italian alder T40, cherry T41, cherry T59, false acacia T60, London plane T65, whitebeam T66, London plane T66A, horse chestnut T67, horse chestnut T68, hybrid black poplar T76, sycamore T81, sycamore T81, sycamore T82, aspen T83, false acacia T84, aspen T87, London plane T91, London plane T92, London plane	T58, horse chestnut T61, London plane T88, London plane T89, London plane T90, alder T94, horse chestnut

Feature	Low Quality – Category C	Moderate Quality – Category B	High Quality – Category A
Groups	G33, Norway maple G49, horse chestnut and lime G53, mixed species – part only G56, ash – part only	G18, mixed species G19, cherry and Italian alder G20, mixed species – part only G32, Norway maple - one tree only G34, mixed species G35, London plane, willow and lime G37, mixed species G38, Norway maple G39, London plane and Norway maple G40, London plane and false acacia G41, false acacia and ash. G42, mixed species – part only G43, mixed species G45, mixed species G47, cab apple G58, mixed species - two trees G60, ash – part only G51, London plane and birch G52, cherry and lime – part only G54, crab apple G58, mixed species – part only G61, mixed species – part only G62, mixed species G60, ash – part only G61, mixed species G60, ash and lime G65, false acacia and lime G66, mixed species G67, London plane G68, mixed species G67, London plane G68, mixed species G67, London plane G73, cherry G74, cherry and London plane G73, cherry G74, cherry and London plane G76, mixed species G77, sweet gum and cherry G78, cherry	G75, horse chestnut

The impact of tree removal on the numbers and proportion of each tree species are summarised in **Table 5.2**. It must be noted that this table does not distinguish between the removal of an entire group and removal of selected trees from within the group. Partial removal only is required for twelve groups.

It must be noted that the current landscaping layout is illustrative only. The final landscaping layout will be the subject of a reserved matters application, which may alter the tree removal required.

In addition to the plan used to produce this report, a maximum parameters plan was assessed for the building footprints, to determine if this altered tree removal requirements. This did not make any difference to the trees already shown as requiring removal due to conflict with the building footprints shown in this report.

5.2.3 Assessment of Proposed Tree Removal

The survey recorded 51 individual trees and 52 groups. Development as proposed would result in the following tree removals:

- Category A: six trees and one group;
- Category B: 22 trees and 36 groups:
- Category C: six trees and four groups.

This would result in a total loss of 34 individual trees (67% of the total) and partial or complete loss of 41 groups (79% of the total).

Table 5.2: Tree species and percentage change.

Tree Species	Total Number	Number Removed	Percentage Removed
London Plane	40	26	65%
Cherry	26	23	88%
Ash	16	12	75%
Lime	14	6	43%
False acacia	12	7	58%
Horse chestnut	10	9	90%
Norway maple	6	6	100%
Sycamore	6	4	67%
Crab apple	5	4	80%
Italian alder	5	2	40%
Alder	3	3	100%
Lombardy poplar	3	3	100%
Whitebeam	3	3	100%
Aspen	2	2	100%
Birch	1	1	100%
Hawthorn	1	1	100%
Hybrid black poplar	1	0	0%
Turkish hazel	1	0	0%
Willow	1	1	100%
Mixed species group (includes in addition to species listed above: Indian horse chestnut Oak Silver maple Holm oak Hornbeam Sweet gum)	17	11	65%

5.3 Tree Interface with Proposals

Where trees are retained, both the works required to develop the site and its future use have potential to adversely affect trees, either causing damage to them or threatening their long-term retention. Damage can occur both above ground to tree crowns, limbs and trunks, and to roots below ground within the calculated RPA. The potential causes of such threats, together with proposals to avoid or minimise them, are set out in this section.

It is noted that surface changes are proposed around the northern-most tree within G32, adjacent to Ingrave Street. If implemented as shown, there is considerable potential that the tree will not tolerate the anticipated root disturbance and loss.

It is understood at the time of reporting that the surface treatment around this tree will be reviewed and revised to minimise the impact. In the event that suitable alteration of the design is not possible, removal of this tree may be required in addition to those already identified.

Table 5.2: Potential arboricultural impacts and proposed mitigation.

Development Activity	Potential Risk	Consequence	Mitigation
	Falling materials.	Stem and crown damage.	Erect tree protective fencing around the working area within the RPA. Pull back buildings away from trees, in onto their footprint.
Building demolition.	Plant operation, material transport and storage within RPA, causing soil compaction and contamination.	Root damage and die-back.	Pull back buildings away from trees, in onto their footprint, avoiding any work from unsurfaced ground within any RPA.
Foundation excavation within RPAs.	Over excavation, accidental and poor root removal. Leachate from concrete affecting tree roots.	Excessive root loss and rot die-back.	Hand excavate the closest 600mm to trees, to a depth of 600mm, using a sharp hand saw to remove roots. Line foundations with an impermeable membrane.
	Over-excavation.	Root damage and loss.	Use hand tools only for all hard surface removal within the RPA.
Hard surface	Exposure causing desiccation of roots.	Root death.	Cover exposed roots with dampened hessian or washed sharp sand until permanent covering is provided.
removal within RPAs.	Plant operation, material transport and storage within RPA, causing soil compaction and contamination.	Root damage and die-back.	Avoid the use of all plant and storage of materials within any unsurfaced ground, pulling back the surfacing across the RPA so that areas of surface for subsequent removal can be used for transport and storage.
November	Inappropriate soil structure, or the presence of contaminants	Root die-back.	Use good quality topsoil only, of a sandy texture and free of contaminants.
New soil spreading.	Plant operation, soil transport and spreading within RPA, causing soil compaction.	Root damage and die-back.	Import soil using barrows running on boards, with soil spread using hand tools only.
			Construct new hard surfacing with both a permeable sub-base and wearing layer.
			Using reduced-dig techniques using hand tools, minimising excavation.
New hard surface construction	Loss of permeability.	Root die-back.	Protect any exposed roots against desiccation.
within RPAs.			Protect any exposed roots against desiccation.
			Use 3D cellular sub base confinement system, filled with reduced-fines stone, with geotextile membranes above and below.

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Development Activity	Potential Risk	Consequence	Mitigation
Construction activities, including materials delivery, transport and storage, contractor parking, site facilities and working areas.	Soil compaction and contamination. Accidental contact damage.	Root damage and die-back. Crown damage, die-back and loss.	Erect tree protective fencing round the entire RPA and crown spread, whichever is the greater, for the entire duration of the development, only removed temporarily when surface removal and reinstatement work commences, and replaced once completed. Install ground protection where construction access is required within any RPA.

6 Arboricultural Method Statement

The information in this section has been provided on the basis of the plans provided at the time the report was prepared.

Should the site layout alter in the future, the advice provided may have reduced relevance and need to be revised prior to the commencement of the development.

6.1 Guidance Utilised

This section provides a site specific Arboricultural Method Statement (AMS), based on guidance provided within:

- BS5837:2012 Trees in relation to design, demolition & construction -Recommendations.
- BS3998:2010 Tree work Recommendations.
- Volume 4 NJUG Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees (Issue 2, 2007).

6.2 Contact Details

The details of all the principal points of contact are provided in the table below.

Table 6.1: Principal contact details.

Contact	Name	Address	Contact Details
Local Planning Authority	Richard Fletcher Tree Officer	Wandsworth Council The Town Hall Wandsworth High Street London SW18 2PU	0208 871 7620 planning@wandsworth.gov.uk
Applicant	Winstanley and York Road Regeneration LLP	c/o Farrer Huxley Associates 28-42 Banner Street London EC1Y 8QE	020 7490 3625
Arboricultural Consultant	Peter Brais Arboricultural Consultant	agb Environmental Newmarket Business Centre 341 Exning Road Newmarket Suffolk CB8 0AT	01638 663226 peter@agbenvironmental.co.uk

6.3 Tree Works

Tree works should be the first activity on site to prevent accidental damage during clearance / demolition / construction and to enable sufficient vehicular clearance such that the proposals can be implemented.

Tree work is a potentially dangerous occupation. All tree work contractors should be required to provide evidence that they are competent to undertake the required works and are adequately insured. The contractor should also be asked to provide a site-specific risk assessment prior to commencement of any tree works. All tree works should be in accordance with BS 3998:2010 *Tree work - Recommendations*.

Some of the trees may possess features that increase their potential for use by nesting birds and roosting bats. It is recommended that all tree works take place outside of the main bird

nesting season (generally accepted as being March-August inclusive). Where work is required on trees containing cracks, cavities, splits and major (>100mm) dead wood, it is recommended that these features are inspected by a licensed ecologist or bat surveyor prior to work being carried out.

Details for all tree works are given in the table in **Appendix 3**.

6.4 Demolition Phase

6.4.1 Tree Protection

Following tree works and before any other works commence on site, tree protective fencing shall be immediately installed around all on-site trees. The default location will be to encompass the entirety of the onsite crown spread and RPA (whichever is the greater).

Where any building or structure, scheduled for demolition, is within the RPA of a tree, fencing must be installed against the outside of the structure.

Once demolition work has been completed, the location of tree protective fencing must be altered to protect the full extent of tree crowns and RPAs before further works commence.

All fencing must be in accordance with the specification provided in **Appendix 5**, signed accordingly with warning notices.

At any stage tree protection is installed or relocated, once all is in place and before any further works commence on site, it is recommended that this be viewed and signed off, by the Project Arboriculturist. All protection shall be in place during the entire construction phase of the development unless otherwise specified.

6.4.2 Demolition Access / Materials Storage

The large size of the site and phasing of demolition means that more than one site compound may be required. It is recommended that areas of hard surfacing are retained until all demolition works have been completed, to provide space for all facilities and storage until surface removal and reinstatement work commences.

The limitations on materials storage are those given under General Guidance in 6.8.

6.4.3 Demolition, Hard Surface Removal and Soil Reinstatement Work

Following tree work and the initial installation of tree protective fencing, the first activity will be the demolition of all buildings, and the removal of any hard surfacing and building bases from the site.

Demolition must take place from within the building footprint, pulling the roof and walls inwards onto the base, then removing all material away via access routes outside of any RPA.

Base and hard surface removal must commence from the edge closest to retained trees. Surfacing must be pulled back away from trees, to avoid working off exposed ground beneath. Hand tools only must be used for all base and surface removal within any RPA, to avoid accidental over-excavation that could lead to root damage or loss.

Where roots are exposed, these must be protected against desiccation. Dampened hessian or washed sharp sand is suitable, spread over roots until the permanent covering is provided. On no account must builder's sand be used as this can have a high salt content that can lead to root death.

Ideally such covering is used for the shortest possible time, with permanent replacement provided as quickly as is possible. In the event that temporary covering is required overnight, this must be dampened at the end of the working day, to prevent overnight desiccation or exposure to temperature extremes. The covering must then be inspected at the commencement of the next working day, re-dampened if necessary. If new surface provision does not take place immediately following hard surface removal the use of ground protection is required until such time as new surfaces are provided.

Soil reinstatement work must proceed in the opposite direction to surface removal, rolling out the new soil towards trees. Soil must be delivered by barrow and spread by hand, using boards or other suitable ground protection for transporting soil within RPAs.

Good quality topsoil must be used, free of weeds and contaminants, and be in accordance with the latest recommendations within BS 3882:2015 *British Standard specification for topsoil and requirements for use*. Imported topsoil should be of a sandy texture to maintain good permeability for roots beneath. It must not be spread to a depth greater than that of the excavation it replaces.

Once all hard surface removal and reinstatement works have been completed, tree protective fencing must then be realigned in accordance with the TPP and checked before any further works commence.

6.5 Construction Phase

6.5.1 Tree Protection

Following building demolition and before any other works commence on site, tree protective fencing shall be immediately installed in accordance with the Tree Protection Plan (TPP) provided in **Appendix 4**. The default location will be to encompass the entirety of the onsite crown spread and RPA (whichever is the greater), unless otherwise specified on the TPP.

All fencing must be in accordance with the specification provided in **Appendix 5** and signed accordingly with warning notices.

Ground Protection may be required in proximity to new buildings and surfaces where the required working space is within the RPAs of retained trees. For pedestrian use only the specification provided in **Appendix 6** is suitable for use.

If construction traffic needs access via any RPA, then ground protection would have to be capable of supporting the maximum load of any vehicle. The use of a suitable proprietary ground protection system, sufficient to support the maximum anticipated loading evenly without causing soil compaction, will be required

At any stage tree protection is installed or relocated, once all is in place and before any further works commence on site, it is recommended that this be viewed and signed off, by the Project Arboriculturist. All protection shall remain in place during the entire construction phase of the development unless otherwise specified.

6.5.2 Provision of New Foundations Within RPAs

Hand excavation must be used for the initial 600mm depth, within the final 600mm of excavation closest to trees, to minimise the potential for root damage. Where roots below 25mm diameter are encountered, these shall be cut using a clean, sharp, hand saw. In the event that roots exceeding 25mm diameter are encountered, no severance must take place

without first consulting the Project Arboriculturist, to assess the impact of removal on tree health and stability. All excavation and root severance should be supervised by the Project Arboriculturist.

Where new foundations are constructed within the RPA, the excavation must be lined with an impermeable membrane to prevent leachate from concrete affecting tree roots.

The design of all foundations and surfaces likely to be affected by trees must be specified by a suitably qualified structural engineer, with consideration given to the proximity and species of trees, and the surrounding soil conditions.

6.5.3 Service Provision

All service runs should be designed to avoid any RPA if possible. In the event that services must pass through any RPA, priority must be given to alternatives to excavation, such as thrust boring. If excavation is required, service runs must either be routed to pass through the outer third of the RPA diameter, where root loss is less critical, or if this is not feasible, passing directly beneath the trunk, parallel to the radial spread of tree roots, rather than across it.

All excavation must be carried out using hand tools only, including air spades, with roots above 25mm diameter retained unless approval for removal is provided by the project's arboriculturist.

6.5.4 Provision of New Hard Surfacing Within RPAs

This approach is also relevant to in-situ concrete path construction across open spaces, though it must be noted that this surface will be impermeable.

Where new hard surfacing is required within the RPA, this should be constructed using reduced-dig techniques, minimising excavation. Excavation must be limited to the removal of turf and loose material only, using hand tools to minimise the potential for root damage.

Where roots are exposed, temporary protection against desiccation must be provided, as set out under Demolition, Hard Surface Removal and Soil Reinstatement Works in **6.4.3**. All excavation and root severance should be supervised by the project arboriculturist.

Where new hard surfacing will replace existing hard surfacing, excavation must be limited to the depth of past excavation. Where feasible, retention of any existing sub-base is preferred, to avoid the need to expose roots beneath. Though not essential as the installation of new hard surfacing will maintain previous conditions, it is recommended that the opportunity is taken to enhance the rooting environment beneath by adopting the same reduced-dig construction approach in such areas.

New surfacing must be rolled out across the RPA, either working towards the trees or from one side of the RPA to the other, so that work can take place from surfaced areas. The use of a proprietary three-dimensional cellular confinement system, in combination with a no-fines sub-base and permeable wearing layer, is recommended to ensure continued permeability and accommodate future root expansion. Details are provided in **Appendix 7.**

6.6 Landscaping Phase

Drawing 686-FHA-XX-00-DP-L-102 Landscape General Arrangement Revision A states the following surface treatments will be incorporated within the design:

Pre-cast concrete large format paving

- · Granite rectangular paving
- Concrete flag paving
- Seeded block paving
- Self-binding gravel
- Block paving (rectangular and square)
- Composite timber
- Woodchip surface

The following methods of construction will need to be considered when this takes place within the RPA of retained trees. **Table 6.2.**

Table 6.2: Surface construction details.

Surfacing	Method		
Pre-cast concrete large format paving.	 Using reduced-dig techniques, minimising excavation. Excavation must be limited to the removal of turf and loose material only, using hand tools to minimise the potential for root damage. Protect any exposed roots against desiccation. Roll new surfacing out across the RPA. Use permeable bedding layer to ensure continued permeability. Use 3D cellular sub base confinement system, filled with reduced-fines stone, with geotextile membranes above and below. 		
Granite rectangular paving.	 Using reduced-dig techniques, minimising excavation. Excavation must be limited to the removal of turf and loose material onl using hand tools to minimise the potential for root damage. Protect any exposed roots against desiccation. 		
Concrete flag paving.	 Using reduced-dig techniques, minimising excavation. Excavation must be limited to the removal of turf and loose material only, using hand tools to minimise the potential for root damage. Protect any exposed roots against desiccation. Roll new surfacing out across the RPA. Use permeable bedding layer to ensure continued permeability. Use 3D cellular sub base confinement system, filled with reduced-fines stone, with geotextile membranes above and below. 		
Self-binding gravel.	 Using reduced-dig techniques, minimising excavation. Excavation must be limited to the removal of turf and loose material only, using hand tools to minimise the potential for root damage. Protect any exposed roots against desiccation. Roll new surfacing out across the RPA. 		
Block paving (rectangular and square.	 Using reduced-dig techniques, minimising excavation. Excavation must be limited to the removal of turf and loose material only, using hand tools to minimise the potential for root damage. Protect any exposed roots against desiccation. Roll new surfacing out across the RPA. Use permeable bedding and wearing layer to ensure continued permeability. Use 3D cellular sub base confinement system, filled with reduced-fines stone, with geotextile membranes above and below. 		

Surfacing	Method
Composite timber	 Using reduced-dig techniques, minimising excavation, and maintaining existing levels wherever possible. Use geotextile sub-layer. Hand excavate positions for supporting post locations. Posts should be positioned to avoid tree roots greater than 25mm diameter. If such roots are encountered, post location should be moved to find a more suitable location not containing large roots.
Woodchip surface.	 Using reduced-dig techniques, minimising excavation, and maintaining existing levels wherever possible. Use permeable geotextile base layer. Lay woodchips to a depth of no less than 50mm.

6.6.1 New Tree Planting

This may take place in areas that have been subject to long-term cover by impermeable hard surfacing. Potentially the soil conditions present may be unfavourable for the establishment of new planting and consideration should be given to remediation work to provide a more suitable rooting environment, unless new tree pits including fresh soil will be provided. This may involve decompaction of the soil using compressed air and / or the importation of new screened topsoil or organic matter to improve soil structure, fertility and microbial activity.

If new topsoil is imported, this must conform to the latest recommendations within BS 3882:2015 *British Standard specification for topsoil and requirements for use*. All preparatory work and planting is the responsibility of the project's Landscape Architect.

The ability of new tree planting to deliver the intended compensation for tree removal is dependent upon three key factors, **Species Selection**; **Planting Location**; and **Aftercare to Independence**. These are discussed in more detail below. The project's Landscape Architect will need to consider these factors when determining the landscape plan. It is recommended that British Standard BS 8545:2014 *Trees: from nursery to independence in the landscape – Recommendations* is used to inform the process.

6.6.2 Species Selection

When selecting species for planting, the following need to be considered:

- The space available select species able to grow to mature size without requiring substantial reduction or maintenance to alleviate future problems;
- The adjacent land use avoid species that may conflict with use of the surrounding area, giving consideration to shading, debris fall, potential use by nesting birds and insects, and potential to cause irritation;
- The local environmental conditions the urban setting may result in higher temperatures, reflected heat, wind deflection and higher levels of pollution.

6.6.3 Planting Location

Due to the extensive and comprehensive redevelopment of the site, new trees may require planting provision. The following needs to be considered when designing this:

 Provide a sufficient soil volume for tree roots at the anticipated mature size – if this is not feasible, then consideration must be given to a smaller growing species;

- Provide a means for water, nutrients and air to reach roots beneath new hard surfacing

 this may be via a permeable paving construction or the installation of an underground irrigation and aeration system;
- Provide suitable soil conditions consideration needs to be given to soil structure, composition and potential contaminants. The specifications for imported topsoil should conform to the latest recommendations within BS 3882:2015 British Standard specification for topsoil and requirements for use;
- Provide a construction capable of tolerating the tree at mature size incremental expansion of the trunk and roots can cause damage to surfacing, potentially leading to expensive future repairs and possible tree removal.

There are a number of proprietary tree planting products designed specifically for the urban environment. Manufacturers will be able to provide advice on soil volume requirements, irrigation and aeration, and the ability to tolerate future growth.

6.6.4 Aftercare to Independence

Trees will need periodic inspection and irrigation during the first few growing seasons, to help them establish successfully to the point where they can survive independently.

A regime of post-planting aftercare should be provided, to cover the following:

- Irrigation schedule;
- Inspection schedule for damage (trees and structures), pests and disease;
- Formative pruning in accordance with BS 3998:2010 *Tree work Recommendations*. Section 7.4, page 25; and
- Replacement provision for any failures or those that have poor establishment.

6.7 Schedule of Works and Supervision

Supervision is recommended for key stages where these have greatest potential to result in tree damage if carried out incorrectly. Arboricultural supervision may be made a requirement of the development by way of appropriate planning conditions. This supervision should be provided by the designated Project Arboriculturist. Following supervision, a photographic report would be presented to the LPA.

A proposed schedule detailing the scope and frequency of arboricultural supervision visits is detailed below in **Table 6.3**. This schedule is intended to minimise the potential for development to result in damage to retained trees, providing a logical sequence of works. However, the LPA may request an alternative schedule within any planning conditions.

Table 6.3: Schedule of works and supervision.

Sequence	Activity	Supervision Responsibility
1	All tree works and removals.	Project Arboriculturist.
2	Installation of all tree protection as specified for the demolition phase.	Site Manager & Project Arboriculturist.
3	All demolition.	Site Manager.
4	Hard surface removal and soil reinstatement work within any RPA, including provision of temporary root protection and ground protection.	Site Manager & Project Arboriculturist.
5	Realignment of tree protection fencing in line with the TPP, together with ground protection if required, following the completion of all demolition and hard surface reinstatement works.	Site Manager & Project Arboriculturist.
6	Foundation excavation within any RPA.	Site Manager & Project Arboriculturist.
7	All building construction.	Site Manager.
8	Hard surface construction within any RPA, including main infrastructure.	Site Manager Project Landscape Architect & Project Arboriculturist.
9	Hard surface construction outside of any RPA.	Site Manager.
10	Removal of all tree protection following completion of all development.	Site Manager.
11	Landscaping works for new surfacing across the open space.	Site Manager. & Project Arboriculturist.
12	Soft landscaping	Project Landscape Architect.
13	Assessment of tree condition post-development	Project Arboriculturist.

6.8 General Guidance

The following general precautions must also be taken during the construction phase.

- No materials or fuel shall be stored close to or within the RPAs of trees to be retained or where new trees are to be established.
- There shall be no bonfires within 10m of the outer edge of the crown or RPA of a tree to be retained.
- Mechanical equipment must not be refuelled within the RPAs of retained trees or areas where new trees are to be established.
- No cement shall be mixed or stored within the RPAs of retained trees or areas where new trees are to be established.
- Cement mixers must not be washed within or uphill of the RPAs of retained trees or areas where new trees are to be established.
- The soil level within the RPA of a retained tree must not be raised or lowered without the agreement of the local authority Tree Officer.

- No plant shall be operated within the RPAs of retained trees unless the soil is suitably protected against compaction.
- Excavation should not take place within the RPAs of retained trees unless an arboricultural consultant or the local authority Tree Officer is supervising the work.
- The guidance provided by NJUG (2007) should be followed when installing underground services within the RPAs of retained trees.
- Surface water runoff must not be redirected into or out of the RPA of a retained tree.
- No materials shall be dumped within the RPA of a tree, whether in a skip or on the ground.
- No vehicles shall be parked or operate within the RPA of a retained tree.

7 Conclusions

Development at Winstanley & York Road Estate Regeneration Project York Road Estate, York Gardens and part of Winstanley Estate requires a significant quantity of tree removal due to direct conflict with the proposed layout. The majority of the trees to be removed are of moderate quality, Category B, some with considerable local prominence. As a consequence, tree removal will have a substantial visual impact and result in a loss of amenity value, in particular for views into the estate from surrounding main roads.

Current landscaping plans are illustrative only, with the final layout to be subject to a reserved matters application, which may alter tree removal and retention requirements beyond the building footprints. However, even if maximum parameters for all building footprints are to be implemented, tree removal due to incompatibility with buildings would remain as is shown in this report.

The development includes an indicative new planting scheme. The ability of new planting to compensate for losses is dependent upon:

- The provision of suitable planting conditions;
- Successful establishment;
- Species selection suited to the location and site use.

In addition, to provide suitable compensation the planting scheme will need to include both a large number of trees and a wide range of species. Subject to this, in the long-term new planting could deliver an enhanced local tree stock, of increased numbers, species and age diversity, and increased resilience against future climate change, pests and diseases.

Retained trees have potential to be damaged by development. The methodology and tree protection requirements are provided to minimise this potential.

Arboricultural supervision is recommended for key stages in the development that have potential impacts upon trees, to help ensure that all tree protection and the methodology are implemented correctly.

Once full details of all surface treatments, service runs and level changes are available, a Tree protection Plan and detailed Arboricultural Method Statement will be required to identify specific mitigation requirements for all retained trees.

8 References

British Geological Survey. (2017) *Geology of Britain viewer* [online]. http://mapapps.bgs.ac.uk/geologyofbritain/home.html (Accessed 10th November 2017).

Mattheck, C. and Breloer, H. (1994) The body language of trees. London: TSO

National Joint Utilities Group. (2007). Volume 4 *NJUG Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees* (Issue 2) [online]. Available at: http://www.njug.org.uk/document-download/?URL=http://www.njug.org.uk/wp-content/uploads/V4-Trees-Issue-2-16-11-2007.pdf (Accessed 23rd July 2015).

Appendix 1 Explanatory Notes for Terms Used in Appendices 2, 3 & 4

Tree Number

Number used to indicate the approximate position on plans inserted as Appendices 2, 3 & 4

Species

The species identification is based on visual observations.

Age Class

Sapling or newly established (Y) = a size which could be easily transplanted;

Semi-mature (SM) = prior to seed bearing age and could be transplanted with care;

Early Mature (EM) = of seed bearing age, may be close to or have achieved mature height, but with considerable apical dominance and lacking a broad, domed crown;

Mature (M) = fully grown, annual growth is much reduced, with a broad, domed crown;

Old Mature (OM) = exceptionally old for the species, possibly starting to decline;

Veteran (V) = often old for the species, the crown may be retrenching or displaying damage, containing features that provide many opportunities for wildlife, likely to offer important habitat.

Condition

The physiological condition of the tree:

Good (G) = normal growth and twig extension showing good vitality, canopy of typical density, with foliage of normal size and colour for the species - no notable indication of ill health.

Fair (F) = reduced twig extension, minor deadwood, but other than that few signs of ill health;

Poor (P) = small internodes and low vitality, the canopy may be thinning and contain dead twigs and/or branches in the outer canopy, discoloured, dwarfed, misshapen or wilting foliage, obvious presence of disease or infection;

Dead (D) = Dead

Height

The height of the tree measured to the nearest metre, or half-metre if below ten metres.

Crown Spread

The distance from the tree trunk to the most relevant of the four cardinal points of the compass, measured in metres.

Compass Bearing

N = north; S = south; E = east; W = west;

Crown Clearance

The existing height of the first significant branch or section of canopy, to the nearest half-metre, to inform on ground clearance, crown/stem ratio and shading.

Diameter at Breast Height (DBH)

Trunk diameter 1.5m above ground level recorded in millimetres measured with a diameter tape. If branches emerge below 1.5m, or if the trunk divides at or close to this height, the trunk diameter will be measured at a different height above the ground and this height will be mentioned. More than one figure indicates that the individual has several stems. Many stems are indicated with an 'M', where it is not possible to determine the number. If the DBH has been estimated this will be marked with an asterix (*) in the column.

PRF

Potential Roost Features – features that have potential for use by bats for roosting, likely to require further inspection if tree work is required.

Category & Remaining Contribution

The category assessed using the guidance in Table 1 of BS 5837:2012 and the potential for safe tree retention based on the current context.

- (A) (light green) Trees of high quality and value: in such condition as to be able to make a substantial contribution (a minimum of 40 years is suggested);
 - A1 Exemplary arboricultural specimens
 - A2 Trees of particular visual importance as arb/landscape features
 - A3 Significant conservation/historical value.
- (B) (mid blue) Trees of moderate quality and value: those in such a condition as to make a significant contribution (a minimum of 20 years is suggested);
 - B1 Might have been A Cat, but downgraded because of impaired condition.
 - B2 Present in numbers reduced value as individuals but higher as a collective group.
 - B3 Trees with material conservation or other cultural value.
- (C) (grey) Trees of low quality and value: currently in adequate condition to remain until new planting could be established (a minimum of 10 years is suggested), or young trees with a stem diameter below 150mm:
 - C1 Unremarkable tree, limited merit/impaired condition.
 - C2 Trees present in groups/woodlands without inferring greater collective value.
 - C3 Tree with no material or other cultural value.
- (U) (dark red) Trees in such a condition that any existing value would be lost within 10 years and should, in the current context, be removed under sound arboricultural management.

Radius of the RPA

The radius of a circular Root Protection Area (RPA) in metres as specified using the guidance contained in BS 5837:2012.

Appendix 2 Tree Survey Table

All work recommendations provided in this table are given on the basis of tree condition at the time of the survey and do not relate to any development proposal.

The tree survey extended to trees beyond the current development boundary. Trees shown in grey text form part of the wider survey area and are not relevant to this proposal, but are included to maintain numerical consistency.

Tree	A			Height	S	prea	ıd (m	1)	Crown	DBH	6	205		BS 5837	Remaining	RPA
No.	Species	Age	Con	(m)	N	s	E	w	Clearance (m)	(mm)	Comments	PRF	Recommendations	Category	Contribution (est.)	Radius (m)
T32	Sycamore	EM	F	10	3	3	3	3	2.5	490	Intermediate tree of good extension growth and fair crown density. Previously pollarded. Located in large planting area.	Z	No work recommended.	B1	20-40	5.88
T33	Ash	EM	F	11	4	4	4	4	3.0	330 370				B1	20-40	6.00
T34	London Plane	М	G	14	9	9	9	9	4.5	850*	Dominant and very prominent tree of good extension growth and crown density and form. Located in raised planting bed. Reduced in past with good regrowth.	N	No work recommended.	A1,2	40+	10.20
G16	Lime (x3) Turkish Hazel (x1)	EM M	F G	10 Max.	6	6	6	6	1.5 Min	380 Max.	Intermediate group of four roadside trees. Fair extension growth and crown density.	N	No work recommended.	B2	20-40	4.56
G17	Ash (x1) Lime (x3)	EM	G	10 Max.	7	7	7	7	1.5 min	330 Max.	Group of three roadside trees of good extension growth and crown density. Located within limited planting areas. Limes have numerous stems at 3-4m.	N	No work recommended.	B2	20-40	3.96

Tree	6	Age		Height	S	prea	ıd (m	1)	Crown	DBH	6	205		BS 5837	Remaining	RPA
No.	Species	Age	Con	(m)	N	s	E	w	Clearance (m)	(mm)	Comments	PRF	Recommendations	Category	Contribution (est.)	Radius (m)
T35	Ash	М	F	12	8	8	3	8	3.0	330 Max	Intermediate tree of fair extension growth and crown density. Forms two stems at 2m with U-shaped union. Numerous occluded wounds, up to 200mm diameter, on main stem. Moderate (25-100mm diameter) and major (>100mm diameter) deadwood in crown.	N	No work recommended.	B1	20-40	7.08
G18	Silver Maple Indian Horse Chestnut Ash Cherry Norway Maple Oak Silver Birch Hawthorn Hybrid Black Poplar	SM EM M	F G	14 Max.	8	8	8	8	1.5	700 Max.	Dominant group at the edge of York Road. Generally of good condition with moderate deadwood, and canopies leaning over road. Located on unsurfaced mound.	N	No work recommended.	B2	20-40	8.40
T36	Crab Apple	EM	G	8.0	6	4	5	4	2.5	240	Intermediate tree of good extension growth and crown density. Forms multiple stems at 2-3m.	N	No work recommended.	B1	20-40	2.88
T37	Cherry	М	F	9.0	5	5	8	4	2.0	370	Intermediate tree of fair extension growth and crown density to the east of G18. Partially occluded, longitudinal bark damage, 35 x 10cm, at 0.5m to the north	Z	No work recommended.	B1	20-40	4.44
T38	Cherry	М	G	12	8	8	8	4	1.5	470	Intermediate tree of good extension growth and crown density.	N	No work recommended.	B1	20-40	5.64
T39	Italian Alder	М	G	13	7	3	7	7	1.5	420	Intermediate tree of good extension growth and crown density.	N	No work recommended.	B1	40+	5.04

Tree	Species Age		Con	Height	S	prea	d (n	1)	Crown Clearance	DBH (mm)	Comments	PRF	Recommendations	BS 5837	Remaining Contribution	RPA Radius
No.	Species	Age	Con	(m)	N	s	E	w	(m)	(mm)	Comments	PNF	Recommendations	Category	(est.)	(m)
T40	Cherry	EM	G	9.0	5	5	5	5	2.5	280	Intermediate tree of good extension growth and crown density. Forms two stems at 2.3m with V-shaped union. Located close to path with possible root damage in the future.	N	No work recommended.	B1	20-40	3.36
T41	Cherry	М	G	9.5	9	9	9	9	2.5	530	Dominant tree of good extension growth, crown density and form. 90% occluded wound to north-east, 20 x 80cm, 0.4m above ground level.	N	No work recommended.	B1	40+	6.36
G19	Cherry (x5) Italian Alder (x1)	EM M	D G F	12	8	8	8	8	1.5	440 Max.	Group of trees of generally good extension growth and crown density. 50% occluded, up to 200mm diameter. Bark damage to main stems of central cherries.	N	Remove dead trees to west of group within six months of survey date.	B2	20-40 40+	5.28
G20	Norway Maple Ash Sycamore Cherry Lime Italian Alder Horse Chestnut Silver Maple	М	FG	16 Max.	0	0	9	9	1.5	520 Max.	Boundary shelter belt around southern edge of York Gardens. Two trees closest to building heavily reduced / topped. 50% occluded wounds on trees at 1m from base to the south, and trees embedded in railings. Bark damage, 70x30cm, on cherry 0.4m above ground level to the west.	Z	Remove trees closest to existing building to present failure on people or property. In particular urgent removal of lime within six months of survey date.	B2	20-40 40+	6.24
T42	Cherry	М	Р	7.5	4	4	4	4	3.0	350	Intermediate tree of poor extension growth and fair crown density. Severe bark cracking and delamination at base. Unoccluded, 230mm diameter, wound at 2.1m to the south-west. Heartwood exposed, 40x30cm, at 0.4m above ground level to the west.	N	Remove within six months of survey date.	U	<10	4.20
G21	Italian Alder	ЕМ	G	14	5	5	5	5	2.0	410 Max.	Intermediate group of three trees to the west of G20. Good extension growth and crown density.	N	No work recommended.	B2	20-40 40+	4.92

Tree No.	Species	Age	Con	Height (m)	S N	prea		n) w	Crown Clearance (m)	DBH (mm)	Comments	PRF	Recommendations	BS 5837 Category	Remaining Contribution (est.)	RPA Radius (m)
T43	Horse chestnut	М	F	14	8	8	8	8	3.0	790	Dominant tree by entrance to park of fair extension growth and crown density. Large unoccluded tear-out, 50x130cm, at 1m to the south, with decay at the base. Unoccluded wound 200mm diameter, 0.7m distal to branch fork on north-east scaffold branch. Extensive bark cracking.	N	Remove within six months of survey date.	U	<10	9.48
G22	Cherry (x2) Lime (x1)	EM M	F G	12	5	5	5	5	2.0	410 Max.	Intermediate group of three trees of generally fair extension growth and crown density. Central lime exhibited damage around base 50% heartwood exposed up to 0.7m.to the north-east Decay in V-shaped union of most northern cherry.	N	Remove central lime within six months of survey date.	U	<10 10-20	4.92
T44	Crab Apple	EM	G	5.0	3	3	3	3	2.5	180	Dominant tree of good extension growth and crown density. Extensive bark damage to north and west from ground level to 0.9m. Some partial occlusion but high proportion of heart wood exposed.	N	Remove within six months of survey date.	U	<10	2.16
G23	Hornbeam	EM	G	8.0	3	3	3	3	2.0	140 Max		N		C2	20-40	1.68
G24	Hornbeam	EM	G	8.0	3	3	3	3	2.0	130 Max				C2	20-40	1.56
G25	London Plane	EM	G	12	6	6	6	6	3.5	490 Max				B2	40+	5.88

Tree			Con	Height	S	prea	d (m	1)	Crown Clearance	DBH	Comments	PRF	Recommendations	BS 5837	Remaining Contribution	RPA Radius
No.	Species	Age	Con	(m)	N	s	E	w	(m)	(mm)	Comments	PNF	Recommendations	Category	(est.)	(m)
T45	Hornbeam	EM	F	6.5	3	3	3	3	3.5	240				B1	20-40	2.88
T46	Whitebeam	EM	F	8.5	4	4	4	4	4.0	310				C1	10-20	3.72
T47	Whitebeam	EM	F	9.0	4	4	4	4	3.5	330				C1	10-20	3.96
G26	Hornbeam	M	G	11.0	5	5	5	5	4.0	430 Max				B2	20-40	5.16
T48	London Plane	M	G	14	7	7	7	7	6.0	940 @ 0.5m				B1	20-40	11.28
G27	London Plane (x1) Whitebeam(x2)	EM	g	10	7	7	7	7	2.5	330			Re-set paving around base of trees within six months of survey date.	B2	20-40	3.96
T49	Norway maple	M	F	12	6	6	6	6	3.0	410				B1	20-40	4.92

Tree	6	Age	6	Height	S	prea	oread (m)		Crown	DBH	C	200	B	BS 5837	Remaining Contribution	RPA
No.	Species	Age	Con	(m)	N	s	E	w	Clearance (m)	(mm)	Comments	PRF	Recommendations	Category	(est.)	Radius (m)
G28	Eucalyptus (x2) London plane (x3) Cherry (x3) Yew	M	F G	16	9	9	9	9	3.0	490 Max.				B2	20-40 40+	5.88
G29	London plane	EM M	G	12	8	8	8	8	4.0	440				B2	20-40	5.28
T50	London plane	EM	F	15	80	8	8	8	3.0	490				C1	10-20	5.88
G30	London plane (x2)	EM	G	13	6	6	6	6	4.0	480 Max.				B2	20-40	5.76
T51	Sycamore	M	F	15	6	6	6	6	4.0	450*				B1	20-40	5.40
T52	Norway maple	EM	F	11	4	4	4	2	2.0	310				B1	20-40	3.72
T53	Cherry	SM	G	6.0	2	2	2	2	2.5	110				C1	10-20	1.32

Tree	Species Age Co		ge Con	Height	S	prea	d (m	1)	Crown Clearance	DBH	Comments	PRF	Recommendations	BS 5837	Remaining Contribution	RPA Radius
No.	Species	Age	Con	(m)	N	s	E	w	(m)	(mm)	Comments	PNF	Recommendations	Category	(est.)	(m)
T54	Sweet gum	EM	Р	10	3	3	3	3	3.0	440				C1	10-20	5.28
G31	Fastigiate hornbeam	М	G	14	5	5	5	5	3.5	390	Co-dominant group with mutual crown formation. Good extension growth and crown density. Located within a rectangular planting area.	N	No work recommended.	B2	20-40	4.68
G32	Norway Maple	EM M	F G	14 Max.	7	7	7	7	4.0	510 Max.	Co-dominant group with mutual crown formation. Two rows of trees of generally good extension growth and crown density.	N	No work recommended.	B2	40+ 20-40	6.12
T55	False Acacia	M	F	12	5	5	5	5	3.5	440				B1	20-40	5.28
G33	Norway maple	Υ	G	4.0	1. 5	1. 5	1. 5	1. 5	2.0	90	Intermediate group of three trees. Good extension growth and crown density. Similar size and form.	N	No work recommended.	C2	10-20	1.08
T56	Willow	M	F	10	4	4	4	4	2.5	1010				B1	20-40	12.12

Tree	Species	Age	Con	Height	S	prea	d (m	1)	Crown Clearance	DBH	Comments	PRF	Recommendations	BS 5837	Remaining Contribution	RPA Radius
No.	Species	Age	Con	(m)	N	s	E	w	(m)	(mm)	Comments	PNF	Recommendations	Category	(est.)	(m)
G34	Lime London plane Ash Horse chestnut	ЕМ	G	12 Max.	5	5	5	5	4.0	580 Max.	Co-dominant group with mutual crown formation adjacent to pavement located on raised mound. Generally good extension growth and crown density. Some trees topped and / or reduced. One tree exhibited large area of terminal basal bark damage.	N	Remove decayed tree within one year of survey date.	B2	20-40	6.96
T57	False acacia	М	G	13	8	8	8	8	3.5	500	Dominant tree of good extension growth and crown density. Roots constraints and distorted within small planting area. Forms two stems at 3m with V-shaped union.	N	No work recommended.	C1	10-20	6.00
T58	Horse chestnut	М	G	12	8	8	8	8	4.0	480	Dominant tree of good extension growth, crown density and form.	N	No work recommended.	A1	40+	5.76
G35	London plane (x4) Willow (x1) Lime (x1)	EM M	F G	14	7	7	7	7	3.0	500 Max.	Dominant group of fair/good extension growth and crown density, with mutual crown formation. Many reduced / pollarded. Two trees located within asphalt surfacing.	Z	No work recommended.	B2	20-40	6.00
G36	False acacia	М	G	16	7	7	7	7	2.0	690	Co-dominant pair with mutual crown formation. Both form two stems at 3-4m with V-shaped unions. Close to wall in poor rooting environment which is expected to limit life expectancy.	N	No work recommended.	C2	10-20	8.28
G37	London plane Hawthorn Willow Norway maple	EM	G	12 Max.	5	5	5	5	3.0	360 Max.	Dominant group with mutual crown formation, Good extension growth and crown density.	N	No work recommended.	B2	20-4-	4.32

Tree	Species	Age	Con	Height	S	prea	d (n	1)	Crown Clearance	DBH	Comments	PRF	Recommendations	BS 5837	Remaining Contribution	RPA Radius
No.	Species	Age	Con	(m)	N	S	E	w	(m)	(mm)	comments	PKF	Recommendations	Category	(est.)	(m)
G38	Norway maple (x2)	EM	G	13	5	5	5	5	5.0	410 Max.	Co-dominant group with mutual crown formation, good extension growth and crown density. Forming multiple stems at 3-4m.	N	No work recommended.	B2	20-40	4.92
G39	London plane (x5) Norway maple (x1)	EM	G	14	7	7	7	7	3.5	490	Co-dominant group with mutual crown formation. Good extension growth and crown density. Norway maple exhibited 50% bark removal at base to the north and north-west.	N	No work recommended.	B2	40+	5.88
T59	False acacia	М	F	14	6	6	6	4	3.0	610	Dominant tree of fair extension growth and crown density. Main stem leans at 15 degrees to the north at 1.5m. Pair of unoccluded wounds, 190mm diameter, at 2m to the north-east.	N	Consider re-laying slabs around stem within one year.	B1	20-40	7.32
G40	London plane False acacia	EM M	G	15	1 0	6	7	7	5.0	720	Pair of co-dominant trees with mutual crown formation. Major roots pushing up paving slabs around base of trees. London plane stem leans to the north and forms four stems at 3 to 4m with U-shaped unions. Robinia forms two stems at 3.5m with U-shaped union.	Z	Consider re-laying slabs around stem within one year.	B2	20-40	8.64
G41	False acacia (x2) Ash (x1)	EM M	F G	15 Max.	5	5	5	5	2.0	450 Max.	Co-dominant trees with mutual crown formation. Fair/good extension growth and crown density. Ash severely reduced to the east to clear building, with 150mm* diameter unoccluded pruning wound.	N	No work recommended.	B2	20-40	5.40
T60	London plane	ЕМ	G	8.5	4	4	4	4	2.0	220	Intermediate tree of good extension growth, crown density and form. Incremental root growth lifting surrounding paving slabs.	Z	Consider re-laying slabs around stem within one year.	B1	40+	2.64

Tree	Species	Age	Con	Height	S	prea	d (m	1)	Crown Clearance	DBH	Comments	PRF	Recommendations	BS 5837	Remaining Contribution	RPA Radius
No.	Species	Age	Con	(m)	N	S	E	w	(m)	(mm)	Comments	PNF	Recommendations	Category	(est.)	(m)
T61	London Plane	М	G	17	1 2	1 2	1 2	1 2	4.0	920	Dominant tree of good extension growth, crown density and from. Scaffold branch unions between 3 and 5m are all U-shaped.	N	Consider re-laying hard- surfacing around stem within one year.	A1	40+	11.04
G42	London plane (x2) Lime (x1) Horse chestnut (x2) Norway maple (x1) False acacia (x1) Ash(x1)	EM M	G	14 Max.	7	7	7	7	3.5	610 Max.	Dominant group with generally good extension growth, crown density and form. Mutual crown formation.	N	No work recommended.	B2	40+ 20-40	7.32
T62	London plane	SM	G	7.5	3	3	4	3	2.0	140	Intermediate tree of good extension growth, crown density. Single stem form.	N	Consider re-laying slabs around stem within one year.	C1	20-40	1.68
T63	London plane	SM	G	8.0	4	4	4	3	2.0	160	Intermediate tree with good extension growth and crown density. Main stem leans at 8 degrees to the north at 1.5m.	N	Consider re-laying slabs around stem within one year.	B1	20-40	1.92
T64	London plane	EM	G	13	6	6	6	6	4.0	560	Dominant tree of good extension growth and crown density. Plastic debris within tree crown. Previously reduced to high pollard heads. Forms three stems at 2.5 to 3.5m with Ushaped unions.	Z	Remove debris from tree within one year of survey date.	B1	40+	6.72
G43	Norway maple Lombardy poplar Alder Lime	EM M	F G	14 Max.	6	6	6	6	2.0	350 Max.	Dominant boundary group located on a raised mound. Generally good extension growth and crown density. Single tree within group exhibited bark damage from ground level to 1.5m to the west and north, 0.2m wide, and approximately 50% occluded. Another tree exhibited near 50% bark removal from ground level to 1.4m to the east, with extensive decay at base of wound.	N	Remove decayed tree within six months of survey date.	B2	20-40	4.20

Tree	Species	A ===	Con	Height	S	prea	d (n	1)	Crown Clearance	DBH	Comments	PRF	Recommendations	BS 5837	Remaining Contribution	RPA Radius
No.	Species	Age	Con	(m)	N	s	E	w	(m)	(mm)	Comments	PKF	Recommendations	Category	(est.)	(m)
T65	Whitebeam	М	G	8.0	5	2	4	4	2.5	270	Intermediate tree of good extension growth and crown density. Leans at 16 degrees to the north at 1.5m. Single stemmed form.	N	No work recommended.	B1	20-40	3.24
T66	London plane	Y EM	G	13	6	5	6	6	2.5	530	Dominant tree of good extension growth and crown density. Leans at 7 degrees to the north at 1.5m. Forms four stems at 3m with U-shaped unions.	N	No work recommended.	B1	40+	6.36
G44	Cherry (x2) Lombardy poplar (x3) Alder Whitebeam Ash	EM M	F G	14 Max.	5	5	5	5	2.0	460 Max.	Intermediate group, generally of good extension growth and crown density. Significant decay in one poplar and two cherries. Cavity and fungal fruiting body (FFB) on cherry stem base with horizontal split with cavity. Cherry leaning at 30 degrees towards footpath.	N	Remove two cherry trees and one poplar within six months of survey date.	B2	20-40	5.52
G45	Cherry Sycamore Horse chestnut Oak Poplar Norway maple Ash Hawthorn Holm Oak Silver birch Aspen	Y EM M	P F G	16	7	7	7	7	2.0	160 240	Dominant boundary group alongside main road. Generally good extension growth and crown density, with recently applied mulch around trees. Ivy covering stem of silver birch adjacent to play area up to 6m. Major hanging deadwood at 2 to 6m to the south.	N	Cut ivy at base of roadside trees within six month of survey date and re-inspect. Remove hanging deadwood with six months of survey date.	B2	20-40 40+	3.48
T66 A	Horse chestnut	М	F	10	8	8	8	8	3.5	670	Intermediate tree to south of G45. Fair extension growth and crown density. Unoccluded wounds, up to 190mm dimeter, from 2 to 3m around stem.	N	No work recommended.	B1	20-40	8.04

Tree	0			Height	Sį	prea	d (m	1)	Crown	DBH	6ti	200		BS 5837	Remaining	RPA
No.	Species	Age	Con	(m)	N	S	E	w	Clearance (m)	(mm)	Comments	PRF	Recommendations	Category	Contribution (est.)	Radius (m)
T67	Horse chestnut	М	G	14	1 0	1 0	1 0	1 0	5.0	900*	Intermediate tree in nursery garden. Good extension growth and crown density, unable to access for more detailed inspection.	N	No work recommended.	B1	20-40	10.80
T68	Hybrid black poplar	М	G	18	1 4	1 4	1 4	1 4	3.5	1170	Very dominant tree, highly visible within the local area. Good extension growth, crown density and form. Exposed major roots to west up to 5m distal from the main stem. Forms multiple stems at 3m with U-shaped unions.	Z	No work recommended.	B1	20-40	14.04
G46	Ash	SM	F	7.0	2	2	2	2	1.5	130	Pair of intermediate trees of fair extension growth and crown density. Poor and unremarkable form, touching boundary fence	N	Remove within one year of survey date.	U	<10	-
T69	Whitebeam	М	F	6.0	3	3	3	3	1.5	180* 180*	Intermediate tree of fair extension growth and crown density located within children's play area. Decay at base. Crown severely reduced. Bark absent from eastern stem, with unoccluded wounds up to 150mm dimeter.	N	Remove within six months of survey date.	U	<10	-
G47	Norway maple Hornbeam Cherry Alder Lime Ash	SM M	F G	14 Max.	8	8	8	8	2.0	420 Max.	Dominant group with mutual crown formation. Generally good extension growth and crown density. Most north Norway maple exhibited severe branch damage, with unoccluded wounds at 1.5m.	N	No work recommended.	B2	20-40	5.04
G48	Alder Norway maple Horse Chestnut	EM M	F G	18 Max.	7	7	7	7	2.5	510 Max.	Co-dominant group with mutual crown formation. Generally good extension growth and crown density. Located on raised bank to the east of a footpath. Horse chestnut exhibited longitudinal bark damage, 50% occluded, with decay absent at base.	N	Removed damaged horse chestnut within one year of survey date.	B2	20-40	6.12

Tree	S		C	Height	S	prea	d (m	1)	Crown Clearance	DBH	Comments	DDE	Danaman dations	BS 5837	Remaining Contribution	RPA Radius
No.	Species	Age	Con	(m)	N	s	E	w	(m)	(mm)	Comments	PRF	Recommendations	Category	(est.)	(m)
G49	Horse chestnut Lime	EM	F	12 Max.	6	6	6	6	1.0	440 Max.	Co-dominant pair of trees with mutual crown formation. Lime to north exhibited half its heartwood exposed to the west from ground level to 1.8m. Exposed internal wood contained horizontal crack and partial failure of main stem. Southern tree exhibited bark removal and heartwood exposed 20x40cm at 0.5m to the north-west. Loose and cracked bark from base to 1.5 to the south west.	N	Remove rotten tree within three months of survey date.	C2	10-20	5.28
G50	London plane	EM	G	14 Max.	8	8	8	8	3.5	510 Max.	Co-dominant group of three trees of good extension growth and crown density. Forming multiple stems at 4m, with U-shaped unions. High pollarded at 8-12m with good knuckle formation.	N	No work recommended.	B2	40+	6.12
G51	London plane (x2) Silver birch (x1)	EM] M	G	16 Max.	8	8	8	8	4.5	530 Max.	Co-dominant group with mutual crown formation, good extension growth and crown density. Plane topped to 12m with no reduction in width of crown.	N	No work recommended.	B1	20-40	6.36
G52	Cherry Lime	М	G	12	7	7	7	7	1.5	440	Pair of intermediate trees with mutual crown formation, good extension growth and crown density.	N	No work recommended.	B2	20-40	5.28
G53	Lime Cherry Alder London plane Hornbeam Crab apple	Y SM	F G	6.0 Max.	2	2	2	2	2.0	130	Group of recently planted trees with stem protection installed. All of similar size and form.	N	No work recommended.	C2	20-40	1.56

Tree No.	Species	Age	Con	Height (m)	S N	·	d (m	n) W	Crown Clearance (m)	DBH (mm)	Comments	PRF	Recommendations	BS 5837 Category	Remaining Contribution (est.)	RPA Radius (m)
G54	Crab apple	EM	G	8.5 Max.	4	4	4	4	3.5	260 Max	Group of three trees of good extension growth and crown density. Similar size shape and form. Central tree exhibited basal bark damage 40x10cm at 0.2m to the south-west, with partial occlusion. Eastern trees exhibited longitudinal bark damage 1.2 x 10cm, 0.2m above base to the north, with some occlusion and wound wood formation.	N	No work recommended.	B2	20-40	3.12
T70	Ash	EM	F	12	4	4	4	4	4.0	390	Dominant tree of far extension growth. Canopy previously reduced with good regrowth from pollard heads. 90% occluded wound, 200mm diameter, at 3m to the north-east with associated FFB.	Ν	No work recommended.	C1	20-40	4.68
T71	Hawthorn	М	F	8.0	3	3	3	3	3.0	350*	Dominant tree of fair extension growth and crown density. Topped at 7m, with no occlusion of wounds and minimal re-growth.	Ν	No work recommended.	C1	10-20	4.20
G55	London plane	EM	G	12 Max.	6	6	6	6	4.0	540 Max.	Co-dominant group of good extension growth and crown density with mutual crown formation. All leaning to the north at up to 15 degrees at 1.5m. Central tree has 50% occluded wound at 3m to the west, with decay at base and decayed FFB.	Z	No work recommended.	B2	20-40	6.48
T72	London plane	EM	G	12	5	5	5	5	4.5	540	Intermediate tree of good extension growth and crown density. 50% occluded wound, 200mm diameter, at 2.5m to the north-east. Forms 3 stems at 3.5m with U-shaped unions. 90% occluded 150mm diameter wound at 3m to the south-east.	Ν	No work recommended.	B1	20-40	6.48

Tree	Species	Age	Con	Height	S	prea	d (m	ո)	Crown Clearance	DBH	Comments	PRF	Recommendations	BS 5837	Remaining Contribution	RPA Radius
No.	Species	Age	Con	(m)	N	s	E	w	(m)	(mm)	Comments	PKF	Recommendations	Category	(est.)	(m)
T73	Sycamore	EM	F	12	4	4	4	4	0	370* 350	Dominant tree of fair extension growth and crown density growing close to brick wall. Forms two stems at ground level with acute V-shaped union with bark inclusion. Numerous, up to 50%, unoccluded wounds, 150mm diameter at 4m to the north east. Heavily reduced at 10m with fair regrowth.	N	No work recommended.	C1	10-20	6.12
T74	Cherry	М	F	13	6	3	5	5	2.5	450	Dominant within rear courtyard. Good extension growth and crown density and of unremarkable form. Numerous 20% occluded wounds up to 80mm* diameter to the south at 4-6m.	N	No work recommended.	C1	10-20	5.40
G56	Ash (x2)	ЕМ	F	11 Max.	6	6	6	6	4.0	320 Max.	Pair of trees of fair extension growth and crown density. Located in restricted planting area. Eastern tree forms two stems at 3m with Ushaped union.	N	No work recommended.	C2	10-20	3.84
G57	Ash (x1) Cherry (x1) Lime (x1)	EM M	G	16	8	8	8	8	2.5	450*	Intermediate group with mutual crown formation. Good extension growth and crown density. Ash crown lifted to 8m to the east.	N	No work recommended.	B2	20-40	5.40
G58	Horse chestnut Ash Lime Cherry Norway maple Sycamore	EM M	FG	16 Max	7	7	7	7	2.0	550* Max.	Dominant group with mutual crown formation in front of Ganley Court. Generally good extension growth and crown density. Norway maple crown lifted to 6m, with numerous fully occluded and 50% occluded wounds up to 180mm* diameter.	Z	No work recommended.	B2	20-40	6.60-
G59	Cherry Sycamore	М	G	16 Max.	1 0	1 0	1 0	1 0	4.0	700*	Pair of trees dominated by sycamore. Good extension growth, crown density and form. Unable to access for closer inspection. Cherry to east forms three stems at 2m with U-shaped union and numerous occluded wounds up to 180mm* diameter.	N	No work recommended.	A1	40+	8.40

Tree	Species	A 770	Con	Height	S	prea	ıd (m	1)	Crown Clearance	DBH	Comments	PRF	Recommendations	BS 5837	Remaining Contribution	RPA Radius
No.	Species	Age	Con	(m)	N	s	E	w	(m)	(mm)	comments	PKF	Recommendations	Category	(est.)	(m)
G60	Ash	SM	F	8.0	4	4	4	4	2.0	160	Group of four trees of similar size and form.	N	No work recommended.	B2	20-40	1.92
T75	False acacia	М	G	16	7	7	7	7	5.0	690	Dominant tree of good extension growth and crown density. Forms four main stems at 4 to 6m with V-shaped unions 80% occluded wound 3-4m to the north.	N	No work recommended.	B2	20-40	8.28
T76	Sycamore	EM	G	14	7	7	7	7	4.0	460	Intermediate tree of good extension growth and crown density. Forms four main stems at 2m with U-shaped unions.	Z	No work recommended.	B1	40+	5.52
G61	Norway maple Lime Horse chestnut	EM	F	12	7	7	7	7	1.5	510 Max.	Dominant group with predominantly mutual crown formation. Fair extension growth and crown density. Horse chestnut exhibited major branch tear out, 1 x 0.4m at 1.4m above ground level to the south-west with no occlusion. Cracking within the top of wound.	Z	Remove horse chestnut within three months of survey date.	B2	20-40	6.12
T77	Norway maple	EM	G	8.5	6	6	6	6	2.0	240	Dominant tree of good extension growth and crown density.	N	No work recommended.	B1	20-40	2.88
G62	Horse chestnut Ash Lime	EM	F G	14	7	7	7	7	2.5	440	Co-dominant group in unsurfaced green space. Generally good extension growth and crown density, except for most eastern ash.	N	No work recommended.	B2	20-40	5.28
T78	Horse chestnut	EM	F	8.0	4	4	4	4	3.0	410	Intermediate tree of far extension growth and crown density. Branch tear out, 30% occluded, 0.4 x1.5m at 3m to the south-east. Severely topped, with poor form regrowth.	N	No work recommended.	C1	10-20	4.92

Tree	Species	Age	Con	Height	S	prea	d (m	1)	Crown Clearance	DBH	Comments	PRF	Recommendations	BS 5837	Remaining Contribution	RPA Radius
No.	Species	Age	Con	(m)	N	S	E	w	(m)	(mm)	Comments	FKF	Recommendations	Category	(est.)	(m)
T79	Alder	EM	G	15	6	6	6	6	2.0	470	Dominant tree of good extension growth and crown density. Leans at 13 degrees at 1.5m to the southeast.	Ν	No work recommended.	C1	10-20	5.64
T80	Sycamore	М	G	12	7	7	7	7	4.0	450	Dominant tree of good extension growth and crown density. Forms five stems at 1.8 to 2.5m with U-shaped unions. Slabs pushed up around stem by incremental root growth.	Z	Consider re-laying paving slabs around base to reduce trip hazard risk.	B1	29-40	5.40
G63	London plane	EM	G	12	5	5	5	5	4.0	530	Pair of trees with good extension growth and crown density. Pollarded at 8m.	N	No work recommended.	B2	20-40	6.36
T81	Sycamore	EM	G	12	5	5	5	5	4.5	330	Dominant tree of good extension growth and crown density. Forms numerous stems.	N	No work recommended.	B1	20-40	3.96
G64	Ash Lime	ЕМ	G	12	6	6	6	6	4.0	400	Intermediate group of good extension growth and crown density.	N	No work recommended.	B2	20-40	4.80
T82	Aspen	М	G	18	9	9	9	9	2.5	590	Dominant tree of good extension growth, crown density and form.	N	No work recommended.	B1	20-40	7.08
G65	False acacia Lime	ЕМ	F G	14	6	6	6	6	3.0	340	Intermediate pair of trees of fair / good extension growth and crown density. Lime root growth pushing up surfacing around base of trees.	N	Consider re-laying paving slabs around base to reduce trip hazard risk.	B2	20-40	4.08

Tree	Consina		C	Height	S	prea	ıd (m	1)	Crown	DBH	Comments	DDF	Danaman daking	BS 5837	Remaining	RPA
No.	Species	Age	Con	(m)	N	s	E	w	Clearance (m)	(mm)	Comments	PRF	Recommendations	Category	Contribution (est.)	Radius (m)
G66	False acacia Ash Lime Horse chestnut	Y EM	G	11	5	5	5	5	2.0	470	Intermediate group of good extension growth and crown density.	N	No work recommended.	B2	20-40	5.64
G67	London plane	EM	G	14	8	8	8	8	3.0	410	Group of three trees with mutual crown formation. Good extension growth and crown density.	N	No work recommended.	B2	40+	4.92
T83	False acacia	EM	G	12	6	6	6	6	2.5	340	Intermediate tree of good extension growth and crown density. Bark damage with minimal occlusion, 80 x 20cm at 0.4m from base to south. V-shaped union at 2.5m.	N	No work recommended.	B1	20-40	4.08
G68	Lime Horse chestnut False acacia	EM	G	13	7	7	7	7	2.5	470	Dominant group with mutual crown formation. Good extension growth and crown density. Located on small mound.	N	No work recommended.	B2	20-40	5.64
T84	Aspen	М	G	20	1 0	1 0	1 0	1 0	4.0	650	Dominant tree of good extension growth and crown density.	N	No work recommended.	B1	20-40	7.80
G69	Lime Alder Whitebeam London plane Ash	EM	G	10	4	4	4	4	2.0	320	Dominant group with mutual crown formation. Good extension growth and crown density.	Z	No work recommended.	B2	20-40	3.84
T85	False acacia	ЕМ	F	10	6	6	6	6	2.0	490	Dominant tree of fair extension growth and crown density. Forms two stems at 2m with U-shaped union. Topped at 8m with moderate regrowth.	N	No work recommended.	C1	10-20	5.88

Tree	Species	A = =	Con	Height	S	prea	d (m	1)	Crown Clearance	DBH	Comments	PRF	Recommendations	BS 5837	Remaining Contribution	RPA Radius
No.	Species	Age	Con	(m)	N	s	E	w	(m)	(mm)	comments	PKF	Recommendations	Category	(est.)	(m)
G70	Ash	EM	G	16	8	8	8	8	4.0	470	Dominant tree of good extension growth and crown density.	N	No work recommended.	B2	40+	5.64
T86	Norway maple	SM	G	7.5	3	3	3	3	2.0	130	Intermediate tree of good extension growth and crown density. Damage to north of main stem at 1.0 to 1.5m, with good occlusion formation.	N	No work recommended.	C1	20-40	1.56
G71	London plane	EM	G	14	6	6	6	6	5.0	540	Group of three trees with good extension growth and crown density. Cavity, 50x10cm at 4m to the north-west on most eastern tree.	N	No work recommended.	B2	40+	6.48
T87	London plane	EM	G	14	5	5	5	5	3.5	670.	Good extension growth and crown density. Pollarded at 10-12m with good knuckle formation and regrowth.	Z	No work recommended.	B1	20-40	8.04
T88	London plane	М	G	18	1 2	1 2	1 2	1 2	9.5	960	Dominant tree of good extension growth crown, density and form. Forms four stems at 3 to 5m with U-shaped unions. Bird nest in canopy to south.	N	No work recommended.	A1	40+	11.52
T89	Norway maple	EM	G	14	8	8	8	8	2.5	340	Intermediate tree of good extension growth and crown density. Forms two stems at 2.5 with V-shaped unions and associated bulging.	Z	No work recommended.	A1	40+	4.08
G72	London plane	М	G	18	1 0	1 0	1 0	1 0	2.0	900*	Dominant pair of trees with mutual crown formation. Good extension growth and crown density. Unable to access base of trees for detailed inspection.	N	No work recommended.	B2	40+	10.80

Tree	Species	Age	Con	Height	S	prea	d (m	1)	Crown Clearance	DBH	Comments	PRF	Recommendations	BS 5837	Remaining Contribution	RPA Radius
No.	Species	Age	Con	(m)	N	s	E	w	(m)	(mm)	comments	PKF	Recommendations	Category	(est.)	(m)
T90	Alder	М	G	15	6	6	6	6	3.5	450*	Dominant tree of good extension growth, crown density and form. U-shaped unions throughout.	N	No work recommended.	A1	40+	5.40
T91	London plane	EM	G	14	7	7	7	7	4.0	560	Dominant tree of good extension growth and crown density. Pollarded at 8 to 10m with good knuckle formation and regrowth.	Z	No work recommended.	B1	40+	6.72
T92	London plane	EM	G	14	7	7	7	7	5.0	620	Dominant tree of good extension growth and crown density. Pollarded at 8 to 10m with good knuckle formation and regrowth.	N	No work recommended.	B1	40+	7.44
Т93	Cherry	EM	F	12	4	4	4	4	6.0	320	Intermediate tree of fair extension growth and crown density. Forms two stems at 4.5m. Topped at 11m with poor regrowth.	N	No work recommended.	C1	20-40	3.84
G73	Cherry	EM	F G	12 Max.	5	5	5	5	3.5	420 Max.	Intermediate group with mutual crown formation. Fair / good extension growth and crown formation.	Z	No work recommended.	B2	20-40	5.04
G74	Cherry (x2) London plane (x1)	EM M	F G	13	6	6	6	6	2.0	490	Intermediate group of good extension growth and crown density Cherry to the east poorly reduced with unoccluded stubs. London plane pollarded with good knuckle formation and regrowth.	Z	No work recommended.	B2	20-40	5.88
G75	Horse chestnut	М	G	15	1 2	1 2	1 2	1 2	2.5	760	Pair of co-dominant trees of good extension growth and crown density. Excellent form and high prominence in local environment.	N	No work recommended.	A2	40+	9.12

Tree	6			Height	S	prea	ıd (n	1)	Crown	DBH		205	B	BS 5837	Remaining	RPA
No.	Species	Age	Con	(m)	N	s	E	w	Clearance (m)	(mm)	Comments	PRF	Recommendations	Category	Contribution (est.)	Radius (m)
G76	Chery Horse chestnut Lime Willow Ash	EM M	F G	15	8	8	8	8	3.0	860 Max.	Dominant group of fair / good extension growth and crown density. Large lime has cavity, 300mm diameter and >300mm deep, at 1.8m to the east.	Z	No work recommended.	B2	20-40	10.32
G77	Sweet gum Cherry	EM	F G	14	5	5	5	5	2.0	510	Dominant group in front of existing building. Generally good extension growth and crown density. Cherry root growth pushing up paving slabs. Area of bark damage 30 x 300mm exposing heartwood on one cherry.	N	Consider re-laying slabs around base within six months of survey date.	B2	20-40	6.12
T94	Horse chestnut	М	G	14	9	9	9	9	4.0	740	Dominant tree of good extension growth and good form. Rooting area limited by existing location. 50% occluded wound, 70mm diameter, at 3.5m to the north-west.	N	Consider re-hard- surfacing around base within six months of survey date.	A1	20-40	8.88
G78	Cherry	EM	G	12	5	5	5	5	2.5	270	Co-dominant trees of good extension growth and crown density. High visibility from road.	N	No work recommended.	B2	20-40	3.24

^{*} Indicates estimated value due to access constraints.

Appendix 3 Tree Works Table

Colours shown are in accordance with tree categorisation, as set out within BS 5837:2012.

Tree No.	Species	Work Recommended Irrespective of Development	Work Required to Facilitate Development
T35	Ash	No work recommended.	Remove due to direct conflict with the proposed layout.
T36	Crab apple	No work recommended.	Remove due to direct conflict with the proposed layout.
T37	Cherry	No work recommended.	Remove due to direct conflict with the proposed layout.
T38	Cherry	No work recommended.	Remove due to direct conflict with the proposed layout.
T39	Italian Alder	No work recommended.	Remove due to direct conflict with the proposed layout.
T40	Cherry	No work recommended.	Remove due to direct conflict with the proposed layout.
T41	Cherry	No work recommended.	Remove due to direct conflict with the proposed layout.
T42	Cherry	Remove within six months of survey date.	Assumed removed.
T43	Horse chestnut	Remove within six months of survey date.	Assumed removed.
T44	Crab apple	Remove within six months of survey date.	Assumed removed.
T58	Horse chestnut	No work recommended	Remove due to direct conflict with the proposed layout
T59	False acacia	Consider re-laying slabs around stem within one year.	Remove due to direct conflict with the proposed layout
T60	London Plane	Consider re-laying hard- surfacing around stem within one year.	Remove due to direct conflict with the proposed layout.
T61	London Plane	Consider re-laying hard- surfacing around stem within one year.	Remove due to direct conflict with the proposed layout.
T62	London plane	Consider re-laying hard- surfacing around stem within one year.	No work required.
T63	London plane	Consider re-laying hard- surfacing around stem within one year.	No work required.
T64	London plane	Remove debris from tree within one year of survey date.	No work required.

Tree No.	Species	Work Recommended Irrespective of Development	Work Required to Facilitate Development
T65	Whitebeam	No work recommended.	Remove due to direct conflict with the proposed layout
T66	London plane	No work recommended.	Remove due to direct conflict with the proposed layout
T66A	Horse chestnut	No work recommended.	Remove due to direct conflict with the proposed layout.
T67	Horse chestnut	No work recommended.	Remove due to direct conflict with the proposed layout.
T68	Hybrid black poplar	No work recommended.	Remove due to direct conflict with the proposed layout.
T69	Whitebeam	Remove within six months of survey date.	Assumed removed.
T70	Ash	No work recommended.	Remove due to direct conflict with the proposed layout.
T71	Hawthorn	No work recommended.	Remove due to direct conflict with the proposed layout.
T76	Sycamore	No work recommended.	Remove due to direct conflict with the proposed layout.
T78	Horse chestnut	No work recommended.	Remove due to direct conflict with the proposed layout.
T79	Alder	No work recommended.	Remove due to direct conflict with the proposed layout.
T80	Sycamore	Consider re-laying paving slabs around base to reduce trip hazard risk.	No work required.
T81	Sycamore	No work recommended.	Remove due to direct conflict with the proposed layout.
T82	Aspen	No work recommended.	Remove due to direct conflict with the proposed layout.
T83	False acacia	No work recommended.	Remove due to direct conflict with the proposed layout.
T84	Aspen	No work recommended.	Remove due to direct conflict with the proposed layout.
T86	Norway maple	No work recommended.	Remove due to direct conflict with the proposed layout.
T87	London plane	No work recommended.	Remove due to direct conflict with the proposed layout.
T88	London plane	No work recommended.	Remove due to direct conflict with the proposed layout.

Tree No.	Species	Work Recommended Irrespective of Development	Work Required to Facilitate Development
T89	London plane	No work recommended.	Remove due to direct conflict with the proposed layout.
T90	Alder	No work recommended.	Remove due to direct conflict with the proposed layout.
T91	London plane	No work recommended.	Remove due to direct conflict with the proposed layout.
T92	London plane	No work recommended.	Remove due to direct conflict with the proposed layout.
T93	Cherry	No work recommended.	Remove due to direct conflict with the proposed layout.
T94	Horse chestnut	Consider re-laying slabs around base within six months of survey date.	Remove due to direct conflict with the proposed layout.
G18	Silver Maple Indian Horse Chestnut Ash Cherry Norway Maple Oak Silver Birch Hawthorn Hybrid Black Poplar	No work recommended.	Remove due to direct conflict with the proposed layout.
G19	Cherry (x5) Italian Alder (x1)	Remove dead trees to west of group within six months of survey date	Remove due to direct conflict with the proposed layout.
G20	Norway Maple Ash Sycamore Cherry Lime Italian Alder Horse Chestnut Silver Maple	Remove trees closest to existing building to present failure on people or property. In particular urgent removal of lime within six months of survey date.	Remove all except northern and southern sections due to direct conflict with the proposed layout.
G22	Cherry Lime	Remove central lime within six months of survey date.	Assumed removed.
G32	Norway maple	No work recommended.	Remove one tree due to direct conflict with the proposed layout.
G33	Norway maple	No work recommended.	Remove due to direct conflict with the proposed layout.
G34	Lime London plane Ash Horsed chestnut	Remove decayed tree within one year of survey date.	Remove due to direct conflict with the proposed layout.
G35	London plane (x4) Willow (x1) Lime (x1)	No work recommended.	Remove due to direct conflict with the proposed layout

Tree No.	Species	Work Recommended Irrespective of Development	Work Required to Facilitate Development
G37	London plane Hawthorn Willow Norway maple	No work recommended.	Remove due to direct conflict with the proposed layout.
G38	Norway maple (x2)	No work recommended	Remove due to direct conflict with the proposed layout
G39	London plane (x5) Norway maple (x1)	No work recommended	Remove due to direct conflict with the proposed layout
G40	London plane False acacia	Consider re-laying slabs around stem within one year.	Remove due to direct conflict with the proposed layout
G41	False acacia (x2) Ash (x1)	No work recommended.	Remove due to direct conflict with the proposed layout
G42	London plane (x2) Lime (x1) Horse chestnut (x2) Norway maple (x1) False acacia (x1) Ash(x1)	No work recommended.	Remove all except most northern tree due to direct conflict with the proposed layout
G43	Norway maple Lombardy poplar Alder Lime	Remove decayed tree within six months of survey date.	Remove all trees except for southern- most pair due to direct conflict with the proposed layout.
G44	Cherry (x2) Lombardy poplar (x3) Alder Whitebeam Ash	Remove two cherry trees and one poplar within six months of survey date.	Remove due to direct conflict with the proposed layout.
G45	Cherry Sycamore Horse chestnut Oak Poplar Norway maple Ash Hawthorn Holm Oak Silver birch Aspen	Cut ivy at base of roadside trees within six month of survey date and re-inspect. Remove hanging deadwood with six months of survey date	Remove due to direct conflict with the proposed layout.
G46	Ash	Remove within one year of survey date.	Assumed removed.
G47	Norway maple Hornbeam Cherry Alder Lime Ash	No work recommended.	Remove western-most five trees due to direct conflict with the proposed layout
G48	Alder Norway maple Horse Chestnut	Removed damaged horse chestnut within one year of survey date.	No work required.
G49	Horse chestnut Lime	Remove rotten tree within three months of survey date.	Remove due to direct conflict with the proposed layout.

Tree No.	Species	Work Recommended Irrespective of Development	Work Required to Facilitate Development
G50	London plane	No work recommended.	Remove eastern two trees due to direct conflict with the proposed layout.
G51	London plane (x2) Silver birch (x1)	No work recommended.	Remove due to direct conflict with the proposed layout.
G52	Cherry Lime	No work recommended.	Remove western tree due to direct conflict with the proposed layout.
G53	Lime Cherry Alder London plane Hornbeam Crab apple	No work recommended.	Remove all except eastern two trees due to direct conflict with the proposed layout.
G54	Crab apple	No work recommended.	Remove due to direct conflict with the proposed layout.
G56	Ash	No work recommended.	Remove western tree due to direct conflict with the proposed layout.
G58	Horse chestnut Ash Lime Cherry Norway maple Sycamore	No work recommended.	Remove two trees due to direct conflict with the proposed layout
G60	Ash	No work recommended.	Remove two southern trees due to direct conflict with the proposed layout
G61	Norway maple Lime Horse chestnut	Remove horse chestnut within three months of survey date.	Remove two most northern trees due to direct conflict with the proposed layout
G62	Horse chestnut Ash Lime	No work recommended.	Remove due to direct conflict with the proposed layout.
G64	Ash Lime	No work recommended.	Remove due to direct conflict with the proposed layout.
G65	False acacia Lime	Consider re-laying paving slabs around base to reduce trip hazard risk	Remove due to direct conflict with the proposed layout.
G66	False acacia Ash Lime Horse chestnut	No work recommended.	Remove due to direct conflict with the proposed layout.
G67	London plane	No work recommended.	Remove due to direct conflict with the proposed layout.
G68	Lime Horse chestnut False acacia	No work recommended.	Remove due to direct conflict with the proposed layout.

Tree No.	Species	Work Recommended Irrespective of Development	Work Required to Facilitate Development
G69	Lime Alder Whitebeam London plane Ash	No work recommended.	Remove due to direct conflict with the proposed layout.
G71	London plane	No work recommended.	Remove due to direct conflict with the proposed layout.
G73	Cherry	No work recommended.	Remove due to direct conflict with the proposed layout.
G74	Cherry (x2) London plane (x1)	No work recommended.	Remove due to direct conflict with the proposed layout.
G75	Horse chestnut	No work recommended.	Remove due to direct conflict with the proposed layout.
G76	Chery Horse chestnut Lime Willow Ash	No work recommended.	Remove due to direct conflict with the proposed layout.
G77	Sweet gum Cherry	Consider re-laying slabs around base within six months of survey date.	Remove due to direct conflict with the proposed layout.
G78	Cherry	No work recommended.	Remove due to direct conflict with the proposed layout.

Appendix 4 Tree Protection Plan













