

APPENDIX 8.4: ARBORICULTURAL IMPACT ASSESSMENT REPORT



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**Royal Brunswick Park– BS5837 Tree Survey and
Arboricultural Impact Assessment**

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Prepared by:	James Rawlinson	James Rawlinson
Signature:		
Authorised by:	Mike Harris	Mike Harris
Signature:		
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1.0 EXECUTIVE SUMMARY

- 1.1 Greengage Environmental Ltd was commissioned by Comer Homes to undertake a tree survey and prepare an Arboricultural Impact Assessment at the site known as Royal Brunswick Park, in the London Borough of Barnet, to the *BS 5837:2012 Trees in relation to design, demolition and construction – Recommendations* methodology.
- 1.2 This document presents the findings of the tree survey and has been produced to support a hybrid planning application for the phased comprehensive redevelopment of the North London Business Park to deliver a residential-led mixed use development. The detailed element comprises up to 466 residential units in five blocks reaching 9 storeys, the provision of a 5 form entry secondary school, a gymnasium, a multi-use sports pitch and associated changing facilities and improvements to open space and transport infrastructure, including improvements to the access from Brunswick Park Road and; the outline element comprises up to 1,951 additional residential units in buildings ranging from three to twelve storeys, up to 7,148 sqm of non-residential floor space (use Class E) and 20,250sqm of open space. Associated site preparation/enabling work, transport infrastructure and junction work, landscaping and car parking.
- 1.3 A visit was made to the site on 17th and 18th April 2021 to survey trees, hedges and vegetation following guidance in BS5837. The crowns and stems were inspected from the ground using the 'Visual Tree Assessment' (VTA) method; no invasive techniques were used at this stage.
- 1.4 The Tree Schedule (Appendix 2) contains details of all surveyed trees falling within the scope of this report. For consistency purposes, the tree numbers used in the previous surveys were again utilised. However, a section of the original site is now being taken forward under a separate application and as such where tree numbers and Tree Group numbers are missing in the tree data table, these are trees/groups that are located within the area being taken forward separately. A summary of the BS5837 tree categories associated with the Royal Brunswick Park site are given in Table 1.

Table 1.1 BS4142 Category mix

Category	Individual Trees	Tree Group/Hedge	Total
A	4	0	4
B	21	15	36
C	41	31	72
U	3	1	4
Total	69	47	116

- 1.5 An assessment of the potential below and above ground impacts of the proposed development and recommendations to help avoid, minimise or compensate for these impacts are outlined within this report.

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- 1.6 As a result of both identified constraints within the proposed development and of poor arboricultural quality, 19 Category B1/B2 trees and tree groups, 51 Category C1/C2 trees and tree groups, and 4 Category U trees are proposed for removal. It should though be noted that of the tree group removals four are only to be partially removed.
 - 1.7 In recognizing the extent of tree removals that allow the development to progress, an extensive and detailed landscaping and planting plan will deliver a high-quality and robust tree stock in keeping with both the site design and the wider existing landscape character and to offer climate change and bio-security resilience.
 - 1.8 Overall the landscape proposals include the planting of 189 new trees in phase 1 and circa 470 trees new trees across the site in order to reduce the impact of the proposed tree loss. The detailed landscape plan included with the application is then summarised within this report.

2.0 INTRODUCTION

OVERVIEW

- 2.1 Greengage was commissioned by Comer Homes to undertake a BS5837 tree survey and prepare an Arboricultural Impact Assessment (AIA) report for the Royal Brunswick Park site located in the London Borough of Barnet.
- 2.2 This document presents the findings of the tree survey and has been produced to support a hybrid planning application for the phased comprehensive redevelopment of the North London Business Park to deliver a residential-led mixed use development. The detailed element comprises up to 466 residential units in five blocks reaching 9 storeys, the provision of a 5 form entry secondary school, a gymnasium, a multi-use sports pitch and associated changing facilities and improvements to open space and transport infrastructure, including improvements to the access from Brunswick Park Road and; the outline element comprises up to 1,951 additional residential units in buildings ranging from three to twelve storeys, up to 7,148 sqm of non-residential floor space (use Class E) and 20,250sqm of open space. Associated site preparation/enabling work, transport infrastructure and junction work, landscaping and car parking.
- 2.3 A site visit was made by Greengage on 17th and 18th April 2021 to survey all trees within and adjacent to the site following the approach set out in BS5837.
- 2.4 As required by the British Standard, an Arboricultural Impact Assessment has been undertaken to evaluate the constraints to the development from the existing trees both on and adjacent to the site using information gained from the BS5837 Tree Survey.
- 2.5 The methodology followed to complete the survey and prepare this report is provided in Appendix 1. Full details of the surveyed trees can be found in the Tree Schedule (Appendix 2). The Tree Constraints Plan (Appendix 3) presents the locations, crown spreads, root protection areas (RPAs) and BS5837 Categories of the surveyed trees against proposed layout.

SITE DESCRIPTION

- 2.6 The survey area extends to approximately 16 hectares and is centered on National Grid Reference TQ280935, OS Co-ordinates 528019, 193504.
- 2.7 There are ten buildings on the site with the largest being office buildings and an associated car park, additional buildings include a nursery, a school, site security offices and storage sheds. Surrounding these buildings are areas of hardstanding roads and car parking as well as landscaping in the form of amenity grassland, introduced shrubs, a pond and scattered trees. There is an expanse of rough grassland and scattered scrub to the north of the site.

- 2.8 The site is situated in a residential area in south Barnet and is surrounded by residential streets with terraces houses in all directions. It is bounded by the Southern Railway line to the west which runs from north to south.
- 2.9 The surrounding landscape is mainly comprised of parks and green open spaces including New Southgate Cemetery ~200m south east of the site, Brunswick Park ~200m east, Friary Park ~900m south west and Oak Hill Park ~1km north.
- 2.10 The survey area is shown in Figure 2.1 below, (taken form Google maps).

Figure 2.1 Survey area



3.0 TREE SURVEY METHODOLOGY

TREE LEGAL PROTECTION

- 3.1 Trees found within the London Borough of Barnet may be protected under the Town & Country Planning Act by a Tree Preservation Order (TPO) or by virtue of being within a Conservation Area.
- 3.2 A TPO makes it an offence to wilfully damage or destroy a protected tree and written permission from the Council must be obtained prior to undertaking any works to the tree. Similarly, if any stem on any tree in a Conservation Area is larger than 75mm diameter when measured at 1.5 metres above ground level it is automatically protected and required by law to notify the Council of any proposed works.
- 3.3 To determine whether any of the trees are protected by TPOs a search of the readily available data on London Borough of Barnet website was undertaken. Additionally, the website map were reviewed to identify any local Conservation Areas that would add additional protection to the trees.

SITE VISIT

- 3.4 A site survey was undertaken on 17th and 18th April 2021 to survey trees, hedges and vegetation following guidance in the British Standard. The crowns and stems were inspected from the ground using the 'Visual Tree Assessment (VTA)' method; no invasive techniques were used at this stage.
- 3.5 The survey followed the methodology outlined in BS 5837:2012 Trees in relation to design, demolition and construction – Recommendations.
- 3.6 The site visit was undertaken in dry weather conditions with trees in partial leaf. Full details on the methodology can be found at Appendix 1.

LIMITATIONS

- 3.7 This report includes information on only the trees that were inspected and the condition they were observed in at the time of survey. The condition of trees can change, and as such any findings from this report should be held valid to inform for purposes of development for no longer than 12 months from the survey date. No guarantee can be given for the structural integrity of any trees on site as a full hazard assessment has not been made.
- 3.8 There were no significant constraints to the assessment; although some areas of the site were non fully accessible to survey. The survey was completed at a suitable time of year for species identification and condition assessment. Any constraints over winter identification techniques are not applicable in this instance.

4.0 RESULTS OF SURVEY

TREE LEGAL PROTECTION

- 4.1 As the London Borough of Barnet does not include a map of its tree preservation orders on its website, an email was sent to the council to request this information. The email and the Council's response are shown at Appendix 9.
- 4.2 As the Council only confirmed that there are TPOs on site but did not provide any further information, it is not possible to be clear on this matter for the purpose of the planning application.
- 4.3 That being the case, the following (Table 4.1) then only presents detail from the historical 1989 TPO designation.
- 4.4 It is though noted that the Council confirmed that the site does not fall within a Conservation Area.

Table 4.1. North London Business Park Tree Preservation Order (July 1989)

Greengage AIA Reference No.	TPO Reference No.
T3	G1
TG30	T1
TG39	G9
TG41	T2, T3, G7, G8
TG59	T1
T60-T65	G6
T88-T91	G4

SITE VISIT

- 4.1 In line with the BS5837 guidelines, 69 trees and 47 tree groups, were identified either within or directly adjacent to the proposed development area. The following section should be read as a summary description of the onsite trees with full details given in the Arboricultural Data Tables (Appendix 2), together with their respective BS category ratings. For consistency purposes, the tree numbers used in the previous surveys were again utilised. However, a section of the original site is now being taken forward under a separate application and as such where tree numbers and Tree Group numbers are missing in the tree data table, these are trees/groups that are located within the area being taken forward separately.

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- 4.2 Surveyed trees within and directly adjacent to the site boundary include a mix of species, life stages and condition with BS5837 assessments ranging from Category A to U.
- 4.3 As shown on the Tree Constraints Plans (TCP's) many of the trees included in the survey are located towards the outer areas of the site (or just beyond) as well as within the central areas adjacent to existing buildings, hard and soft landscaping areas and large grassed areas.
- 4.4 Overall, the site has clearly been historically landscaped with a view to creating a lasting and strong visually impacting tree scape across the whole area. In doing so, the planting has been selectively located throughout the grounds both with consideration to the visual presentation of individual species as well as to allow for areas of desired site screening sections to become established, both within and adjacent to the site boundary.
- 4.5 The general success of this tree establishment has then resulted in a large number of Category B trees and high value Category C trees both within the individual and group/woodland context. Further to this, the species selection and variety along with routine arboricultural maintenance, has also added to the high number of Category B classifications, albeit only four trees were classed as Category A.
- 4.6 That said, there are a number of lower quality trees throughout the site that are either in decline as result of their age or are struggling to establish themselves into the mature form as a result of either poor growing areas (such as soil compaction or heavy over shading and smothering from adjacent trees), or as a result of pest and disease.
- 4.7 The Tree Constraints Plan found at Appendix 3 shows the full layout of the existing tree stock with reference to BS5837 Category and survey data.

Southeast Site Area of the North London Business Park

- 4.8 The hatched area shown on the Tree Constraints Plan (Appendix 3) is covered by a separate Arboricultural Impact Assessment report. For completeness, this has been appended within this report at Appendix 8.

5.0 ARBORICULTURAL IMPACT ASSESSMENT

INTRODUCTION

- 5.1 The purpose of this Arboricultural Impact Assessment (AIA) is to assess the potential below and above ground impacts to existing trees from the proposed development, and to highlight the need for the pruning, removal or retention and protection of specific trees during construction.
- 5.2 Works associated with development of this type can damage trees, threatening the survival of those that are to be retained. The following actions can have negative impacts upon tree health:
- Soil compaction;
 - Root damage (e.g. severance);
 - Soil coverage with impermeable material;
 - Alterations in ground level;
 - Leaks and spillages from stored materials; and
 - Vehicle and heavy plant collision.
- 5.3 As such, where possible, the RPAs and canopies that are shown in Appendix 3 should be protected and considered throughout works to prevent risks to the health of the trees.

TREE REMOVALS

- 5.4 Of the 69 trees and 47 tree groups included within the survey, 38 trees and 36 tree groups (4 partially) are proposed to be removed to facilitate the proposed development, or as a result of their poor or deteriorating quality (Category U trees).
- 5.5 All tree removals (Category B to U, with all Category A trees retained), are as a result of significant direct impacts with either proposed buildings, new site access roads or as a result of the total redesign of the sites existing hard and soft landscape layout.
- 5.6 These removals are as detailed within Table 5.1 and include: 19 Category B1/B2 trees and tree groups, 51 Category C1/C2 trees and tree groups, and 4 Category U trees. It should though be noted that of the tree group removals four are only to be partially removed.
- 5.7 BS5837 trees categories (A1/A2, B1/B2, C1/C2 and U), are as described at Appendix 1.

Table 5.1 Proposed tree removals

Category	Tree Ref (T, TG) and Reason for Removals		
	Proposed buildings	Proposed access roads	Proposed hard and soft landscape changes
A (0)	0	0	0
B (19)	8	4	7
C (51)	22	12	17
U (4)	Trees in poor condition or terminal decline within development area.		

FACILITATION PRUNING

- 5.8 With the stated tree removals undertaken, the need for additional pruning will be minimal and will relate to those tree section nearest to proposed roads and buildings that may have put on growth between the April 2021 survey and the time of the site build out.
- 5.9 Full details of all required pruning works will be set out at the pre commencement meeting and agreed with the project arboriculturist and council tree officer, prior to any works being undertaken.
- 5.10 It is essential though that arboricultural best practice as set out in *BS:3998 Tree work – Recommendations*, is adhered to for any required tree work.

DEVELOPMENT WITHIN ROOT PROTECTION AREAS (RPA)

- 5.11 The provisional root protection areas for all site trees have been calculated via the methodology set out in BS5837 and are shown in the Tree Constraints Plan (Appendix 3).
- 5.12 In terms of providing constraints information for any future development, providing accurate root zone information is of great significance, as this defines the area that cannot be generally constructed over or disturbed without bespoke foundation and site design considerations.
- 5.13 With the stated tree removals undertaken, the only development elements and layout constraints shown to be within the RPA's of retained trees, are those that relate to both the hard and soft landscaping of the site as a whole.

Hard landscaping within RPA's

- 5.14 In constructing all new hard standing areas within the RPA's of retained trees, such as footpaths, recreational areas and new access roads, the Landscaping Plan has specifically factored in the fundamental design requirement for "no dig" construction which allows for existing ground levels within these RPA's to be retained. This will then avoid any significant excavation or alteration in ground levels, other than the installation of

required ground protection and surface finishes, that will remain both porous and non-compacting.

- 5.15 Any such construction will allow for continued gaseous, water and nutrient exchange to take place between the air, soil and roots that will be key to the continued health of all retained trees. Such surface treatments as detailed within the Landscaping Plan include block paving, asphalt, loose gravel, grass and gravel retention systems and resin bound gravel.
- 5.16 In line with the need to remain non-compacting, the areas stated above will therefore require specific ground protection to be designed by the project engineer and arboriculturalist to accommodate the likely vehicle and pedestrian loadings respectively (examples of proposed ground protection is shown at Appendix 6). This would most likely require the use of proprietary systems such as the no-dig three-dimensional cellular confinement, specifically designed for tree root protection. This follows the guidance in BS5837 Section 6.2.3.3.
- 5.17 To fit in with the “no dig” approach to the overall design and build of hard standing areas within the RPAs of retained trees, specific consideration will be required with respect to any kerb construction and installation that falls within RPA’s. With standard deep set kerb stones (that often require a 150 mm excavation line) not being suitable. Options for such locations will then need to consider either a shallower construction or one that allows for root bridging.

Soft Landscaping within RPA’s

- 5.18 For any proposed soft landscaping works within the RPA’s of retained, heavy mechanical cultivation such as rotavating should be avoided. Any such cultivation operations should be undertaken carefully by hand to minimize damage to tree roots. The introduction of additional new trees and small planting within the RPAs of retained trees should not therefore negatively impact their long-term health, provided the existing root structures of retaining trees is not significantly impacted.

Tree Group 33

- 5.19 Although the intention is to retain as much of TG33 as possible, as it is currently an island within the existing site lake, it was not possible to survey the area for the purpose of advising the design, build and construction within the immediate vicinity of the tree group.
- 5.20 It is though understood that the construction plan is to cofferdam the southeast area of the lake to allow it to be drained and reconstructed at ground level as new soft landscaping. This then leaving the remaining northwest section of the lake as a key feature within the proposed landscape, and in doing so retain as many of the trees within the group as possible.

5.21 The project arboriculturalist will therefore be a key consultee during this aspect of the site development along with the Councils tree officer.

LANDSCAPING PROPOSALS

5.22 In recognising the extent of tree removals that allow the development to progress, an extensive and detailed landscaping and planting plan will deliver a high-quality and robust tree stock in keeping with both the site design and the wider existing landscape character and to offer climate change and bio-security resilience.

5.23 The planting strategy will therefore include a diverse mix of broad-canopied species, accompanied by a landscape management plan to ensure all new planting is successfully established.

5.24 The general proposal is to create a new network of green infrastructure, that incorporates the retained early mature/mature trees, which in turn have provided a reference for native species selection.

5.25 Where the site layout allows, the plans provide an opportunity to plant long lived large canopy tree species to become the next generation of trees across the site. This will include careful species selection to meet the needs and environmental constraints of this semi urban environment, as well as the current understanding of pests and diseases.

5.26 A total of 470no. Trees will be planted as part of the landscaping including those listed in Table 5.2.

Table 5.2 Planting Schedule.

PLANTING SCHEDULE							
TREES							
Species	Common Name	Form/Height	Root	Height	Girth	Density	Quantity
Acer campestre 'Elsrijk'	Field Maple 'Elsrijk'	Semi-mature 'Standard'	RB / CG	5.5-6m	30-35cm	as shown	23
Alnus glutinosa	Alder	Semi-mature 'Standard'	RB / CG	5.5-6m	30-35cm	as shown	2
Amelanchier lamarckii	Robin Hill	Semi-mature Multistem	RB / CG	3-4m	12-14cm	as shown	22
Betula pendula	Birch	Semi-mature Multistem	RB / CG	5-5.5m	25-30cm	as shown	18
Betula utilis 'Jacquemontii'	West Himalayan birch	Semi-mature Multistem	CG	3-4m	12-14cm	as shown	11
Carpinus betulus 'Frans Fontaine'	Hornbeam	Semi-mature Fastigate	RB / CG	5.5-6m	30-35cm	as shown	10
Ginkgo biloba	Maidenhair Trees	Semi-mature Fastigate	RB / CG	5-5.5m	25-30cm	as shown	9
Ginkgo biloba 'Fastigiata'	Maidenhair Trees Fastigate	Semi-mature Fastigate	RB / CG	5-5.5m	25-30cm	as shown	6
Liquidambar styraciflua	Sweet Gum	Semi-mature 'Standard'	RB / CG	5-5.5m	25-30cm	as shown	10
Liriodendron tulipifera	Tulip tree	Semi-mature 'Standard'	RB / CG	5.5-6m	30-35cm	as shown	4
Platanus acerfolia	London Plane	Semi-mature 'Standard'	RB / CG	5-5.5m	25-30cm	as shown	12
Prunus avium	Wild Cherry	Semi-mature 'Standard'	RB / CG	5.5-6m	30-35cm	as shown	28
Prunus serrula	Tibetan cherry	Semi-mature Multistem	RB / CG	3-4m	12-14cm	as shown	8
Quercus robur	English Oak	Semi-mature 'Standard'	RB / CG	5.5-6m	30-35cm	as shown	1
Sorbus aucuparia 'Edulis'	Rowan	Semi-mature 'Standard'	RB / CG	5.5-6m	30-35cm	as shown	5
Tilia cordata 'Streetwise'	Small-leaved lime 'Streetwise'	Semi-mature 'Standard'	RB / CG	6-7m	30-35cm	as shown	5
Pinus sylvestris	Scots Pine	Semi-mature 'Standard'	RB / CG	5.5-6m	30-35cm	as shown	15
All trees to be Rootballed and Container Grown (RB/CG) using proprietary methods like 'Air pots', 'Hillier handles' or similar and to be free of root girdling.							total 189

5.27 The landscape strategy will be accompanied by a landscape management plan to ensure all new planting is successfully established.

5.28 Full details of all tree planting are contained in the Landscaping Strategy that accompanies the planning application and is summarised at Appendix 7.

Site Utilities

- 5.29 Given the destructive impacts that trench excavation can have on tree roots and the subsequent physiological and structural health of trees, all subterranean utility lines across the site that conflict with the RPA's of retained trees will need to be identified.
- 5.30 Should the need to run utilities (including gas, water, electric and communications) within the RPA of retained trees be identified, then these must be reduced to a depth to avoid significant damage to the rooting areas. Any requirement to open up these areas will require the use of soft dig techniques such as through airspade and/or hand digging.
- 5.31 Should the need for any minor root pruning and trench backfilling be identified to facilitate the installation of utilities, then anything approximately 25 mm diameter or less may be pruned back, making a clean cut with a suitable sharp tool. If larger roots are located in this area, the advice of an arboriculturist should be sought.
- 5.32 During these works (if not immediately re-covered), exposed roots should immediately be wrapped or covered with a wet hessian sack (or similar), to prevent desiccation. Any wrapping should be removed prior to backfilling, which should take place as soon as possible.
- 5.33 Prior to backfilling, retained roots should be surrounded with topsoil or uncompacted sharp sand (builders' sand should not be used because of its toxic high salt content), or other loose inert granular fill, before soil is replaced.
- 5.34 At this stage, detailed utility plans are still to be drawn up, but will be done so in due course in line with the detailed Tree Constraints Plans included within this report.

TREE PROTECTION MEASURES

- 5.35 Whilst no other tree constraints other than those described above having been identified, good site management will be vital for the protection of all retained Site trees during the construction phase.
- 5.36 Subsequent to this AIA report it is anticipated that the Local Authority will secure by planning condition a formal Arboricultural Method Statement (AMS) that will be drawn up in unison with the Construction Management Plan, to ensure all tree related construction constraints are fully understood.
- 5.37 To inform any future AMS, construction site good practice and guidance for how site works should be carried out near trees to avoid accidental damage is set out at Appendix 5. This then detailing the key tree protection measures, relevant to this development.

6.0 SUMMARY AND CONCLUSIONS

- 6.1 All trees under assessment have been considered both individually and within their groups (where relevant), with a total of 69 trees and 47 tree groups within or adjacent to the proposed development area.
- 6.2 The quality of the surveyed trees varies, with a mix of Category A through to Category U trees, of both individual and grouped arboricultural qualities.
- 6.3 Leading on from the tree survey, the Arboricultural Impact Assessment for the proposed development was drawn up based on the detailed design of the proposed new road access and parking area.
- 6.4 As a result of the identified constraints between the proposed development design and the existing site trees, there are shown to be a loss of 19 Category B1/B2 trees and tree groups, 51 Category C1/C2 trees and tree groups, and 4 Category U trees. It is though noted that of the tree group removals four are only to be partially removed.
- 6.5 The constraints rationale for all tree losses is set out and includes as a direct result of the construction of new buildings, site roads and infrastructure, as well as a result of poor quality or deteriorating condition.
- 6.6 In recognising the extent of tree removals to allow the development to progress, an extensive and detailed landscaping and planting plan will deliver a high-quality and robust tree stock in keeping with both the site design and the wider existing landscape character.
- 6.7 The general proposal is to create a new network of green infrastructure, that incorporates the retained early mature/mature trees, (which in turn have provided a reference for native species selection) that will become the next generation of trees across the site. Overall the landscape proposals include the planting of 470 new trees.
- 6.8 All works required to be undertaken in and around existing trees to be retained have been described, with technical tree protection good practice presented. These will be further developed through a detailed Arboricultural Method Statement and Tree Protection Plan, which can be secured by planning condition.

APPENDIX 1: TREE SURVEY METHODOLOGY

Trees, tree groups and woodlands have been considered following evaluation into one of four categories (U, A, B, C) based on tree quality as outlined in British Standard 5837 (2012) which has been followed. Categorisation of trees, following the British Standard, gives an indication as to the trees' importance in relation to the site and the local landscape and also, the overall value and quality of the existing tree stock on site. This allows for informed decisions to be made concerning which trees should be removed or retained, should development occur.

For a tree to qualify under any given category it should fall within the scope of that category's definition. In the categories A, B, C which collectively deal with trees that should be a material consideration in the development process, there are three sub-categories which are intended to reflect arboricultural, landscape and cultural values respectively. Category U trees are those which would be lost in the short-term for reasons connected with their poor physiological or structural condition. They are, for this reason, not usually considered in the planning process.

In assigning trees to the A, B or C categories the presence of any serious disease or tree related hazards are taken into account. If the disease is considered fatal and / or irremediable, or likely to require sanitation for the protection of other trees it may be categorised as U, even if they are otherwise of considerable value.

Category (A) – trees whose retention is most desirable and is of high quality and value. These trees are considered to be in such a condition as to be able to make a lasting contribution (a minimum of 40 years) and may comprise:

- A1. Trees which are particularly good examples of their species especially rare or unusual, or essential components of groups or of formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue);
- A2. Trees, groups or woodlands which provide a definite screening or softening effect to the locality in relation to views into or out of the site, or those of particular visual importance (e.g. avenues or other arboricultural features assessed as groups); and
- A3. Trees or groups or woodlands of significant conservation, historical, commemorative or other value (e.g. Veteran or wood-pasture trees).

Category (B) – are trees whose retention is considered desirable and are of moderate quality and value. These trees are considered to be in such a condition as to make a significant contribution (a minimum of 20 years) and may comprise:

- B1. Trees that might be included in the high category but because of their numbers or slightly impaired condition (e.g. presence of remediable defects including unsympathetic past management and minor storm damage), are downgraded in favour of the best individuals;

- B2. Trees present in numbers such that they form distinct landscape features and attract a higher collective rating than they would as individuals. Individually these trees are not essential components of formal or semi-formal arboricultural features, or trees situated mainly internally to the site and have little visual impact beyond the site; and
- B3. Trees with clearly identifiable conservation or other cultural benefits.

Category (C) – are trees that could be retained and are considered to be of low quality and value. These trees are in an adequate condition to remain until new planting could be established (a minimum of ten years) or are young trees with a stem diameter below 150mm and may comprise:

- C1. Trees not qualifying in higher categories;
- C2. Trees present in groups or woodlands, but without this conferring on them significantly greater landscape value and or trees offering low or only temporary screening benefit; and
- C3. Trees with very limited conservation or other cultural benefits.

Category (U) – trees for removal are those trees in such a condition that any existing value would be lost within 10 years and which should in the current context be removed for reasons of sound arboricultural management. Trees within this category are:

- Trees that have a serious irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal of other category U trees;
- Trees that are dead or are showing signs of significant, immediate or irreversible overall decline; and
- Trees infected with pathogens of significance to the health and or/safety of other trees nearby trees or very low quality trees suppressing adjacent trees of better quality.

Species has been recorded by common name and recorded as such in the Tree Schedule. Height has been estimated in metre and stem diameters have been measured at 1.5 metres above ground level and recorded in millimetres (unless otherwise stated). Crown spreads have been measured in half metres and taken to the point of greatest spread unless the crown has presented a pronounced asymmetrical form and therefore measurements have been taken for the four cardinal points. The measurements have always been considered in the following sequence, North, East, South, and West, and therefore appear as such within the Tree Schedule.

In the assessment particular consideration has been given to the following when deciding the most appropriate British Standard Category and Sub-Category allocation:

- a. the health, vigour and condition of each tree;
- b. the presence of any structural defects in each tree and its life expectancy;

- c. the size and form of each tree and its suitability within the context of the proposed scheme; and
- d. the location of each tree relative to existing site features, e.g. its value as a screen or as a skyline feature.

Age class is assessed according to the age class categories referred to in BS 5837.

- Y: Young trees up to five years of age;
- SM: Semi-mature, trees less than 1/3 life expectancy;
- EM: Early mature, trees 1/3 – 2/3 life expectancy;
- M: Mature trees over 2/3 life expectancy;
- OM: Over mature – declining or moribund trees of low vigour; and
- V: Veteran - characteristics have been noted where a tree exhibits certain characteristic features of veteran trees.

The overall condition of the tree, or group of trees, has been referred to as one of the following. A more detailed description of condition has been noted in the Tree Schedule and discussed in the main text of the report.

- Good: A sound tree, trees, needing little, if any, attention;
- Fair: A tree, trees, with minor but rectifiable defects or in the early stages of stress, from which it may recover;
- Poor: A tree, trees, with major structural and physiological defects or stressed such that it would be expensive and inappropriate to retain; and
- Dead: A tree, trees, no longer alive. However, this could also apply to those trees that are dying and will be unlikely to recover, or are / have become dangerous.

Major defects or diseases and relevant observations have also been recorded under Structural Condition. The assessment for structural condition has included inspection of the following defects:

- The presence of fungal fruiting bodies around the base of the tree or on the stem, as they could possibly indicate the presence of possible internal decay;
- Soil cracks and any heaving of the soil around the base indicating possible root plate movement;
- Any abrupt bends in branches and limbs resulting from past pruning, as it may be an indication of internal weakness and decay;
- Tight or weak 'V' shaped unions and co-dominant stems;
- Hazard beam formations and other such biomechanical related defects (as described by Claus Mattheck, Body Language of Trees HMSO Research for Amenity Trees No. 4 1994);

- Cavities as a result of limb losses or previous pruning;
- Broken branches;
- Storm damage;
- Canker formations;
- Loose bark;
- Damage to roots;
- Basal, stem or branch / limb cavities;
- Crown die-back;
- Abnormal foliage size and colour;
- Any changes to the timing of normal leaf flush and leaf fall patterns; and
- Other pathological diseases affecting any part of the tree.
- Major defects or diseases and relevant observations have also been recorded. Dead wood has been defined as the following:
 - Twigs and small branch material up to 5cm in diameter;
 - Minor dead wood 5cm to 10cm in diameter; and
 - Major dead wood 10cm in diameter and above.

The survey was completed from ground level only, aerial inspection of trees was not undertaken. Investigations as to the internal condition of a tree have not been undertaken. Further investigations of this type can be made and have been recommended where it has been considered necessary, within the report although these investigations are beyond the scope of this report.

Evaluation of the trees condition given within this assessment applies to the date of survey and cannot be assumed to remain unchanged. It may be necessary to review these within 12 months, in accordance with sound arboricultural practice.

The individual positions of trees and groups of trees recorded in the Tree Schedule have been shown on the Tree Constraints Plan. The positions of trees are based on a topographical / land survey supplied by the client in dwg. format for the purpose of plotting the trees.

The Root Protection Areas (RPA) to be required by the individual and groups of trees are indicated by the Tree Constraints element of the above plans. The Root Protection Areas are formulated as described below.

Below ground constraints to future development is represented by the area surrounding the tree that contains sufficient rooting volume to ensure survival of the tree, which need protecting in order for the tree to be incorporated into any future scheme, without adverse harm to the tree or structural integrity of buildings. This is referred to as the RPA and is shown as a circle of a given radius.

The circle may be modified in shape to maintain a similar total area depending on the presence of surrounding obstacles. Where groups of trees have been assessed, the RPA has been shown based on the maximum sized tree in any one group and so would automatically exceed the RPA's required for many of the individual specimens within the group. The RPA is equivalent to a circle with a radius 12x the stem diameter for single stem trees and 10x the basal diameter for trees with more than one stem arising less than 1.5 meters above ground level.

APPENDIX 2: TREE SCHEDULE

a

Tree No	Species	Height (m)	Stem Diameter (mm)	Crown Spread				Age Class	Condition		General Notes	Estimated years remaining	Grade Category (R= to be removed)
				N	E	S	W		P	S			
T1	Horse Chestnut	7	290	4	4	4	4	S	G	G	Multistem structure from 2 m, with some lower pruning history. Slightly asymmetrical crown as a result of adjacent fence and ivy covering. Good general crown structure.	>10	C2 (R)
T2	Horse Chestnut	7	310	4	4	4	4	S	G	G	Multistem structure from 1.5 m, with some lower pruning history. Slightly asymmetrical crown as a result of adjacent building. Good general crown structure. Large semi occluded wound on the south at 1.5 m. Some exposed roots within soft grass area.	>10	C2
T3	Sycamore	9	660	4	6	7	7	M	G	G	Good general crown structure, with some lost limbs and target pruned limbs within the mid crown. Signs of historic crown reduction work with regrowth. Slightly asymmetrical structure as a result of adjacent T4 with which it forms a shared crown.	>20	B2
T4	Hornbeam	9	520	7	6	4	7	E	G	G	Slightly asymmetrical structure as a result of adjacent T5 with which it forms a shared crown. Good general crown structure. No notable significant defects.	>20	B2
T5	Horse Chestnut	10	840	7	7	7	7	M	G	G	Good general crown structure. No notable significant defects. Presents as a tree of high amenity value at the entrance area of the site	>20	B1
T6	Common Lime	7	530	5	5	5	5	E	P	G	Multistem old coppice with 7 m of un coppiced regrowth. Most likely growth from previous felled tree that was not stump treated.	>10	C1 (R)
T7	Austrian Pine	7	400	2	4	4	4	S	G	P	Poorly structured tree with very asymmetrical structure as a result of adjacent T8. Shows significant internal deadwood and ivy development within crown. History of poor pruning.	>10	C2
T8	Austrian Pine	8	580	5	5	5	5	S	F	G	Poorly structured tree with very asymmetrical structure as a result of adjacent T7. Shows significant internal deadwood within crown. History of poor pruning.	>10	C2
T9	Ash	12	660	9	8	7	9	M	G	G	Growing on steep soft ground embankment which has resulted in eastern lean to stem that straightens to form well-structured crown area. Early signs of ash dieback. Large deadwood within lower crown and some crown rise history.	>20	B2

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Tree No	Species	Height (m)	Stem Diameter (mm)	Crown Spread				Age Class	Condition		General Notes	Estimated years remaining	Grade Category (R= to be removed)
				N	E	S	W		P	S			
T10	Beech	13	530	7	8	5	7	E	G	F	Growing on steep soft ground embankment. Forms a multi stem erratic crown structure. Self bracing in upper crown area.	>20	B2
T11	Ash	11	230	5	5	5	5	S	G	P	Multistem old coppice with 11 m of un coppiced regrowth. Most likely growth from previous felled tree that was not stump treated.	>10	C2
T12	Turkey Oak	8	270	3	3	5	5	S	G	G	Multistem structure from 2 m. Growing on the end of the G3 lime group, and is starting to show slightly suppressed asymmetrical growth as result. History of lower pruning history.	>10	C2
T13	Lawson Cypress	9	350	4	4	4	4	M	P	F	Poorly structured multistem tree of low arboricultural and amenity value.	>10	C1 (R)
T14	Wild Cherry	13	470	6	6	6	7	M	G	G	Large specimen, growing very close to existing site buildings on two sides. Now starting to be suppressed as result. History of lower pruning, with semi occluded wounding.	>20	B1 (R)
T15	Mountain Ash	10	250	3	3	1	1	S	G	P	Small suppressed self seeded fastigate specimen of low arboricultural value.	>10	C2 (R)
T37	English Oak	14	830	9	7	8	7	M	G	G	Off site tree with overhang and overlap of both the southern sections of the RPA and crown areas. A good well-structured example of its species. Moderate dead wood with some lower pruning history.	>40	A1
T38	Whitebeam	6	300	3	4	5	5	E	G	P	Leaning western structure with slightly twisted stem.	>10	C2
T39	Leyland Cypress	9	270	3	4	4	3	E	F	F	Small tree of typical form and structure for species.	>10	C2 (R)
T40	Whitebeam	5	300	3	3	3	3	S	F	F	Well-formed young crown structure with slightly twisted stem.	>10	C2 (R)
T41	Common Lime	8	270	4	4	4	3	S	G	G	Single stem tree with a young well formed crown that is now starting to clash with that of T42. Will likely form a shared crown over time. Exposed roots with mower damage in soft ground. Lower pruning history.	>10	C2

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Tree No	Species	Height (m)	Stem Diameter (mm)	Crown Spread				Age Class	Condition		General Notes	Estimated years remaining	Grade Category (R= to be removed)
				N	E	S	W		P	S			
T42	Common Lime	7	270	4	3	4	4	S	G	G	Single stem tree with a young well formed crown that is now starting to clash with that of T41. Will likely form a shared crown over time. Exposed roots with mower damage in soft ground. Lower pruning history.	>10	C2 (R)
T43	Aspen	9	280	5	6	5	3	S	G	F	Significant leaning structure. Possibly as a result of previously tree now removed. Poor pruning history.	>10	C2 (R)
T44	Ash	6	170	3	3	3	2	S	G	F	Tree of low arboricultural and amenity value. Large canker would it 1.5 m up wounds.	>10	C2 (R)
T45	Ash	5	170	3	2	1	3	S	G	F	Tree of low arboricultural and amenity value. With poor pruning history.	>10	C2
T46	Alder	6	210	3	3	3	3	S	G	G	Well structured tree with some reduction history in the upper crown.	>10	C2 (R)
T47	Alder	5	140	1	1	3	2	Y	G	P	Poorly structured tree with twisted stem. Tree of low arboricultural and amenity value. Poor pruning history with basal cankerous growth.	>10	C2 (R)
T48	Wild Cherry	6	270	5	5	4	5	E	G	F	Multistem structure from 1.5 m, with some central limbs having now died, with others in decline.	>10	C2
T49	Austrian Pine	13	760	5	6	7	3	M	P	P	Poorly structured tree with history of large snap outs and failed limbs. Remaining crown area now dying and in decline.	<10	U (R)
T50	Common Lime	9	350	5	5	5	5	E	G	P	Multistem from base old coppice.	>10	C2 (R)
T51	Whitebeam	6	190	2	3	1	1	S	G	F	Heavily suppressed crown as a result of dominant T52 of same species.	>10	C2
T52	Whitebeam	8	350	3	4	5	4	S	G	F	Sweeping southern lean to structure, which straightens in the upper well formed crown.	>10	C2
T53	London Plane	10	480	8	8	7	8	S	G	G	Well formed crown developing within open growing area. No notable defects.	>20	B2 (R)

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Tree No	Species	Height (m)	Stem Diameter (mm)	Crown Spread				Age Class	Condition		General Notes	Estimated years remaining	Grade Category (R = to be removed)
				N	E	S	W		P	S			
T54	Goat Willow	8	260	6	7	6	4	S	F	P	Multistem from base old coppice.	>10	C2 (R)
T55	Aspen	12	350	6	3	4	5	E	G	G	Dominant single stem structured tree, albeit with numerous large side sub dominant upper limbs. Minor deadwood throughout.	>20	B2 (R)
T56	Silver Birch	12	330	1	1	2	1	E	P	F	Very fastigate structure as a result of adjacent competition.	>10	C2 (R)
T57	Horse Chestnut	7	310	4	3	4	4	S	G	G	Generally well structure tree showing an increasing shared crown area with T58.	>20	B2 (R)
T58	Horse Chestnut	7	270	4	2	4	3	S	G	F	Generally well structured tree showing an increasing shared crown area with T57 and adjacent leylandii group.	>10	C2 (R)
T59	Lombardy Poplar	17	600	5	5	5	5	E	F	P	Single specimen of typically fastigate structure, growing within the wider group of smaller trees within the G42.	>10	C1
T60	English Oak	9	620	10	9	13	13	E	F	P	Shows numerous snapped out and subsiding limbs with dead large wood in the upper crown area.	>10	C2 (R)
T61	English Oak	10	390	8	7	7	6	E	G	F	Multistem structured tree growing from ground level with numerous minor and moderate dead wood throughout the crown area.	>10	C2 (R)
T62	English Oak	7	450	6	9	8	4	S	G	P	Very asymmetrical and suppressed structure as a result of competition for space from adjacent larger tree. Large deadwood sections noted, with recent snap outs. Large sweeping limbs now becoming overweight.	>10	C2 (R)
T63	Hawthorn	4	150	2	2	4	2	S	G	P	Small heavily suppressed specimen within the crown areas of the large mature English oaks.	>10	C2
T64	English Oak	9	770	9	5	9	7	M	G	P	Included bark twin stem structure, with signs of decay within the included bark opening. Large deadwood and tear outs within the crown.	>10	C2 (R)
T65	English Oak	7	430	7	9	7	2	E	G	P	Heavily suppressed form that dominates T64. Shows significant dominance of the crown in the eastern direction as	>10	C2 (R)

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Tree No	Species	Height (m)	Stem Diameter (mm)	Crown Spread				Age Class	Condition		General Notes	Estimated years remaining	Grade Category (R= to be removed)
				N	E	S	W		P	S			
											a result of this and that it is the final tree within tis linear group		
T66	Copper Beech	13	610	8	8	8	8	E	G	G	Well structured good example of its species with heavy understory of laurel and yew.	>40	A1
T67	Common Lime	9	490	5	5	5	5	M	F	P	Tree of poor structure as it has lost its top section that seems to have snapped out. Epicormic and deadwood in the lower to mid crown area.	>10	C2
T68	Common Lime	15	770	6	6	6	6	M	G	G	Twin stem structure from 4 m that has seen a previously heavy crown reduction, with crown now formed of regrowth from pruning points.	>20	B2
T69	Holly	4	180	2	2	2	2	S	G	G	Small amenity Holly species of limited arboricultural value.	>10	C2 (R)
T71	Beech	15	710	6	7	6	6	M	G	G	Well structured crown area with T72. Shows an included bark twin stem of fastigate form.	>20	B2
T72	Copper Beech	14	490	3	6	6	7	E	G	G	Shows as a naturally formed asymmetrical shared crown area with T71.	>20	B2
T73	Purple Plum	6	320	4	6	6	3	M	G	P	Very poorly structure tree with numerous failing and snapped out sections along with significant areas of active decay noted by the appearance of Cushion fungus (<i>Phellinus pomaceus</i>)	<10	U2 (R)
T76	Fastigate beech	13	410	3	3	3	2	E	G	G	Well structured typically fastigate form growing within small soft landscaping strip with hard standing surroundings. Exposed roots noted.	>20	B1
T77	Hybrid Black Poplar	17	470	7	7	4	7	M	G	G	Good example of a well structured shared twin crown with T78. Together providing a notable landscaping feature with high visual amenity value. Exposed roots noted through the grass with mower damage.	>40	A2
T78	Hybrid Black Poplar	17	610	7	7	7	7	M	G	G	Good example of a well structured shared twin crown with T77. Together providing a notable landscaping feature with high visual amenity value. Exposed roots noted through the grass with mower damage.	>40	A2

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Tree No	Species	Height (m)	Stem Diameter (mm)	Crown Spread				Age Class	Condition		General Notes	Estimated years remaining	Grade Category (R= to be removed)
				N	E	S	W		P	S			
T79	Silver Birch	4	150	3	3	2	2	S	G	G	Currently well structure but will struggle over time as it becomes smothered by the adjacent T77 and T78.	>10	C2
T88	Common Lime	9	600	7	7	6	7	E	G	G	Multistem structure with no leader from 3 m with a good even crown structure. Shows some road clearance pruning and is growing on the road side embankment soft landscaping area. No significant defects.	>20	B2
T89	Common Lime	10	570	6	7	3	6	E	G	F	Multistem structure with no leader from 3 m with asymmetrical crown structure. Shows some road clearance pruning and is growing on the road side embankment soft landscaping area. No significant defects. Minor and moderate deadwood throughout.	>20	B2
T90	Common Lime	10	480	5	7	7	6	E	G	G	Multistem structure with dominant central stem. Shows good open crown structure. Shows some road clearance pruning and is growing on the roadside embankment soft landscaping area. No significant defects. Minor deadwood throughout with some major deadwood.	>20	B2
T91	Common Lime	13	800	7	7	7	7	M	G	G	Largest tree within this group of four. Multistem structure with no leader from 3 m with a good even crown structure. Shows some road clearance pruning and is growing on the road side embankment soft landscaping area. No significant defects. Heavy ivy covering around the stem.	>20	B2 (R)
T92	Black polar		400	4	5	5	4				Leaning structure with a shared crown area with T93. Forms the end of the group structure of TG28.	>20	B2 (R)
T93	Black polar		400	4	6	5	4	M	G	F	Leaning structure with a shared crown area with T92. Forms the end of the group structure of TG28.	>20	B2 (R)
T94	Silver birch		350	3	3	3	3	M	G	F	Well-formed tree growing within G59	>20	B1 (R)
T95	Ash		350	3	3	3	3	S	G	G	Well-formed tree growing within G63	>10	C2 (R)

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				N	E	S	W		P	S			
T96	Cherry		600	7	7	7	7	OM	P	P	Poorly structured tree in terminal decline, with large snapped out included bark stem section and heavy active decay in the base.	<10	U (R)
T97	Apple		150	3	3	3	3	S	G	G	Small amenity tree growing on top of embankment.	>10	C1 (R)
T98	TBC		380	4	5	5	5	M	G	F	Asymmetrical shared crown structure growing on embankment section.	>10	C2 (R)
T99	TBC		380	5	4	4	4	M	G	F	Asymmetrical shared crown structure growing on embankment section.	>10	C2 (R)
T100	TBC		380	4	3	4	4	E	G	G	Well-formed tree growing within T61	>10	C2 (R)
T101	Fastigate beech		410	3	3	3	3	E	G	G	Well structured typically fastigate form growing within small soft landscaping strip.	>20	B1 (R)
TG1	Ash, Red Horse Chestnut, Horse Chestnut	7	420	See Tree Constraints Plan				E	F	F	Low crown form No major defects were noted Pruning wounds noted Typical crown form Group of 9 horse chestnut 1 Common ash 1 red horse chestnut Uniformly planted and spaced Good landscape feature "Guignardia aesculi Horse chestnut leaf blotch"	>20	B2
TG2	Ash, Silver birch, Wild cherry	12	350	See Tree Constraints Plan				M	G	G	No major defects were noted Situated offsite Unable to gain access	>10	C2
TG3	Common Lime	22	820	See Tree Constraints Plan				M	F	F	Old pollard regrowth structure Bark wounds noted Basal suckers present	>20	B2 (R)

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				N	E	S	W		P	S			
										Crossing and rubbing branches Dense undergrowth at the base Included bark union Major dead wood evident in the crown Multi leadered form East most specimen formed with poor bifurcate stem union - potential point of weakness Typical of species in relation to age Uniformly spaced at around 6 metre spacing's Group of 3			
TG4	Common Lime	9	350	See Tree Constraints Plan				EM	G	F	Compacted ground at the base Epicormic growth evident within the crown Multi leadered form No major defects were noted Pruning wounds noted Uniform row of evenly spaced limes Previously pollarded at 4 metres Road sits to west of trees base Good landscape feature	>20	B2 (R)
TG5	Common Lime	9	350	See Tree Constraints Plan				EM	G	G	Compacted ground at the base Epicormic growth evident within the crown Multi leadered form No major defects were noted Pruning wounds noted Uniform row of evenly spaced limes Previously pollarded at 4 metres Road sits to west of trees base Good landscape feature	>20	B2
TG6	Common Lime	20	750	See Tree Constraints Plan				M	F	F	Basal suckers present Branch socket cavities observed Epicormic growth evident within the crown Interlocking crowns Low crown form Major dead wood evident in the crown Minor dead wood evident in the crown	>10	C2 (R)

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				N	E	S	W		P	S			
										Multi leadered form Pruning wounds noted, Suppressed crown form Uniform group of 8 lime trees positioned alongside car park/access road - Tarmac surface to south side of trees 1 x specimen suppressed and poor in relation to other trees in group 1 x multi-leadered specimen			
TG7	Beech, Common Lime, Norway Maple, Wild Cherry, Holly, Laurel	18	700	See Tree Constraints Plan				M	F	G	Basal suckers present Epicormic growth evident within the crown Interlocking crowns Low crown form Minor dead wood evident in the crown Multi leadered form Pruning wounds noted Group of mixed species trees positioned in a road bounding verge	>20	B2 (R)
TG8	Common Lime	17	550	See Tree Constraints Plan				M	F	G	Basal suckers present Epicormic growth evident within the crown Minor dead wood evident in the crown No major defects were noted Pruning wounds noted Group of 4 uniformly spaced lime trees Stem leans on far eastern specimen to the east	>20	B2 (R)
TG9	Leyland Cypress	16	700	See Tree Constraints Plan				M	G	F	Interlocking crowns Minor dead wood evident in the crown Multi leadered form Multi stemmed from base No major defects were noted Pruning wounds noted Group of 8 specimens Typical of species Spaced at 1-2 metre intervals 1 x specimen failed at 5 metres above ground (remove)	>10	C2 (R)

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				N	E	S	W		P	S			
TG10	Austrian Pine, Purple plum	18	760	See Tree Constraints Plan				M	F	F	Branch stubs evident Low crown form Minor dead wood evident in the crown Pruning wounds noted Typical crown form Branch stubs from poor past pruning Crown to ground 2 x specimens with 3 metres of one and other Close to buildings- within 1 metre (crown) Typical of species	>20	B2 (R)
TG11	Leyland Cypress, Ash, Elder, Mountain Ash, Weeping Birch, laurel	8	150	See Tree Constraints Plan				S	F	F	Dense undergrowth at the base Minor dead wood evident in the crown No major defects were noted Site bounding tree group situated on a raised bank next to access road Provides screening to adjacent development	>10	C2
TG24	Western Red Cedar	9	290	See Tree Constraints Plan				M	G	G	Group of 3 trees spaced at 3-4 metres 1 x larger specimen Crown on larger specimen lifted	>10	C2 (R)
TG25	Whitebeam	7	180	See Tree Constraints Plan				EM	F	G	Leaning stem Multi leaded form No major defects were noted Typical crown form Row of 9 trees all uniformly spaced alongside access road	>10	C2 (R)
TG26	Horse Chestnut	9	380	See Tree Constraints Plan				EM	P	F	Of these 3 trees, 2 are now dead and 1 one is decline.	<10	U2 (R)
TG27	Leyland Cypress, Western Red Cedar	9	280	See Tree Constraints Plan				M	G	G	Interlocking crowns Low crown form No major defects were noted Typical crown form Good landscape screening around edge of parking bays	>10	C2 (R)
TG28	Leyland Cypress, Crack Willow,	15	520	See Tree Constraints Plan				M	F	F	Basal suckers present Epicormic growth evident within the crown	>10	C2 (R)

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Tree No	Species	Height (m)	Stem Diameter (mm)	Crown Spread				Age Class	Condition		General Notes	Estimated years remaining	Grade Category (R= to be removed)
				N	E	S	W		P	S			
	English Oak, Hawthorn, Norway Maple, Aspen									Interlocking crowns Light ivy cover on main stem Low crown form Major dead wood evident in the crown Minor dead wood evident in the crown Multi leadered form Multi stemmed from base Positioned along boundary of site Dense tree belt providing buffering to adjacent residential properties Tree group requiring some management- removal of dead wood and crown lifting Several suppressed specimens			
TG29	False Acacia	14	620	See Tree Constraints Plan				M	F	F	Dense ivy cover on main stem Interlocking crowns Major dead wood evident in the crown Minor dead wood evident in the crown In landscaped area	>10	C2
TG30	Whitebeam	6	180	See Tree Constraints Plan				S	G	G	No major defects were noted Typical crown form	>10	C2 (R)
TG31	Silver Birch, Whitebeam	6	160	See Tree Constraints Plan				S	G	G	Bo major defects were noted 3 Whitebeam 1 silver birch	>10	C2 (R)
TG32	Leyland Cypress, Ash, Beech, Crack Willow, Goat Willow, Wild Cherry, Whitebeam	10	300	See Tree Constraints Plan				S	F	F	Unable to gain access In school ground Typical forms	>10	C2 (R)
TG33	Ash, Crack Willow, Sycamore, Lombardy Poplar	12	580	See Tree Constraints Plan				M	F	F	Dense undergrowth at the base Group on island Unable to gain access	>20	B2 (R)

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Tree No	Species	Height (m)	Stem Diameter (mm)	Crown Spread				Age Class	Condition		General Notes	Estimated years remaining	Grade Category (R = to be removed)
				N	E	S	W		P	S			
TG34	Ash, Hawthorn, Hornbeam	5	120	See Tree Constraints Plan				S	F	F	No major defects were noted New planted trees	>10	C2
TG35	Ash, Hawthorn, Hornbeam	5	130	See Tree Constraints Plan				S	F	F	No major defects were noted New planted trees	>10	C2 (R)
TG36	Common Lime, Crack Willow, English Oak, Hawthorn, Sycamore, Wild Cherry	13	700	See Tree Constraints Plan				E	F	F	Branch stubs evident Broken branches evident Dense ivy cover on main stem Dense undergrowth at the base Interlocking crowns Major dead wood evident in the crown Minor dead wood evident in the crown Multi leadered form Pruning wounds noted Typical crown form Situated on steep back	>20	B2 (R)
TG37	Hornbeam, Swedish Whitebeam	8	380	See Tree Constraints Plan				S	F	F	Low crown form. Minor dead wood evident in the crown, No major defects were noted. Pruning wounds noted. Single stem forms	>20	B2 (R)
TG38	Lawson Cypress	8	500	See Tree Constraints Plan				E	P	P	Heavily reduced Limited live growth	>10	C2 (R)
TG39	Ash, Crack Willow, Elder, Sycamore, Rowan	10	350	See Tree Constraints Plan				M	F	F	Dense undergrowth at the base Interlocking crowns Situated offsite Unable to gain access	>10	C2 (R)
TG40	Leyland Cypress	8	180	See Tree Constraints Plan				EM	F	F	No major defects were noted	>10	C2 (R)
TG41	Ash Fraxinus, Common Lime, English Oak, Silver Birch, Wild Cherry, Aspen, Rowan,	13	530	See Tree Constraints Plan				M	F	F	Base obscured Dense ivy cover on main stem Dense undergrowth at the base Minor dead wood evident in the crown Situated offsite Unable to gain access	>20	B2 (R)

Project: North London Business Park
Client: Comer Homes
Project Number: 551510
Greengage Environmental

G: Good
F: Fair
P: Poor
SM: Semi mature
EM: Early mature

m

Tree No	Species	Height (m)	Stem Diameter (mm)	Crown Spread				Age Class	Condition		General Notes	Estimated years remaining	Grade Category (R = to be removed)
				N	E	S	W		P	S			
	Small leaved Lime, Turkey Oak												
TG42	Crack Willow, English Oak, Goat Willow, Hawthorn, Wild Cherry, Hazel, Rowan, Swedish Whitebeam	10	370	See Tree Constraints Plan				M	F	F	Base obscured Situated offsite Sporadic self-seeded group of trees Unable to gain access	>10	C2
TG43	Grand Fir, Ash, Horse Chestnut, Silver Birch, Hazel, Horse Chestnut, Silver Birch, Hazel	9	450	See Tree Constraints Plan				E	F	F	Base obscured Densely planted group along railway	>10	C2 (R)
TG44	Common Lime, English Oak, Field Maple	9	240	See Tree Constraints Plan				S	F	F	No major defects were noted Typical crown form	>10	C2 (R)
TG45	Common Lime, Field Maple, Horse Chestnut	12	310	See Tree Constraints Plan				E	F	F	Interlocking crowns Minor dead wood evident in the crown Multi leadered form Pruning wounds noted	>10	C2)
TG46	Common Lime, English Oak, Field Maple	10	170	See Tree Constraints Plan				E	F	F	Interlocking crowns Minor dead wood evident in the crown Multi leadered form Pruning wounds noted	>10	C2 (R)
TG47	Leyland Cypress	14	600	See Tree Constraints Plan				M	F	F	Interlocking crowns Pruning wounds noted Typical crown form 2 m spacing's Dense tree belt Crowns raised in past	>20	B2
TG48	Yew, Ash, Beech, Elder, Sycamore, Wych Elm, Damson	10	420	See Tree Constraints Plan				M	F	F	Branch stubs evident Broken branches evident Dense undergrowth at the base	>10	C2 (R)

Project: North London Business Park
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Tree No	Species	Height (m)	Stem Diameter (mm)	Crown Spread				Age Class	Condition		General Notes	Estimated years remaining	Grade Category (R= to be removed)
				N	E	S	W		P	S			
										Minor dead wood evident in the crown Pruning wounds noted Typical crown form Dense visual screen			
TG49	Yew, Laurel	7	270	See Tree Constraints Plan				E	F	F	Minor dead wood evident in the crown Multi leadered form Multi stemmed from base Dense visual screen	>10	C2 (R)
TG50	Lombardy Poplar	22	690	See Tree Constraints Plan				M	F	F	Minor dead wood evident in the crown No major defects were noted Typical crown form	>20	B2
TG51	Horse Chestnut	6	270	See Tree Constraints Plan				S	F	F	Multi leadered form No major defects were noted 3 trees "Guignardia aesculi Horse chestnut leaf blotch"	>10	C2 (R)
TG52	Field Maple, Hawthorn, Horse Chestnut, Sumac, Viburnum	12	300	See Tree Constraints Plan				M	F	F	Interlocking crowns Low crown form Minor dead wood evident in the crown Multi leadered form Multi stemmed from base No major defects were noted Good amenity planted tree group Provides buffering to adjacent buildings	>10	C2 (R)
TG53	English Oak, Wild Cherry, Holly	13	480	See Tree Constraints Plan				M	G	F	Dense undergrowth at the base Light ivy cover on main stem Low crown form Minor dead wood evident in the crown No major defects were noted Group of 1 oak and 2 cherry as prominent trees Small clipped shrubs at base	>10	C2 (R)
TG57	Ash, Crack Willow, Goat Willow, Dogwood	12	430	See Tree Constraints Plan				M	F	G	Dense undergrowth at the base Light ivy cover on main stem Low crown form	>10	C2 (R)

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Project Number: 551510
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Tree No	Species	Height (m)	Stem Diameter (mm)	Crown Spread				Age Class	Condition		General Notes	Estimated years remaining	Grade Category (R= to be removed)
				N	E	S	W		P	S			
										Minor dead wood evident in the crown Multi leadered form Multi stemmed from base Sporadic self-seeded group of trees Unable to gain access Pond verging tree group Crowns extend over water			
TG58	Silver Birch, Wild Cherry	16	350	See Tree Constraints Plan				M	G	G	No major defects were noted Unable to gain access Situated in fence off area 1 x Cherry (small) 3 x Silver birch	>20	B2 (R)
TG59	Silver Birch, Damson, Silver maple	13	350	See Tree Constraints Plan				E	F	F	Crossing and rubbing branches Epicormic growth evident within the crown Interlocking crowns Light ivy cover on main stem Low crown form Minor dead wood evident in the crown Multi stemmed from base Typical crown form Un-maintained hedgerow Dense ornamental tree group positioned around edge of building and internal footpaths	>10	C2 (R)
TG60	Ash, English Oak, Norway Maple, Silver Birch, Mountain Ash, Weeping Birch, Sugar leaf maple	15	430	See Tree Constraints Plan				M	F	G	Interlocking crowns Light ivy cover on main stem Low crown form Minor dead wood evident in the crown Multi leadered form No major defects were noted Pruning wounds noted Site bounding tree group situated on a raised bank next to access road Good landscape feature	>20	B2

Project: North London Business Park
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Tree No	Species	Height (m)	Stem Diameter (mm)	Crown Spread				Age Class	Condition		General Notes	Estimated years remaining	Grade Category (R= to be removed)
				N	E	S	W		P	S			
										Provides screening to adjacent development			
TG61	Common Lime, Crack Willow, English Oak, Hawthorn, Sycamore, Wild Cherry	13	700	See Tree Constraints Plan				E	F	F	Branch stubs evident Broken branches evident Dense ivy cover on main stem Dense undergrowth at the base Interlocking crowns Major dead wood evident in the crown Minor dead wood evident in the crown Multi leadered form Pruning wounds noted Typical crown form Situated on steep back	>10	C2 (R)
TG62	Leyland Cypress, Ash, Elder, Mountain Ash, Weeping Birch, laurel	8	150	See Tree Constraints Plan				S	F	F	Dense undergrowth at the base Low crown form No major defects were noted Provide good habitat cover with central area of the site.	>10	C2 (R)

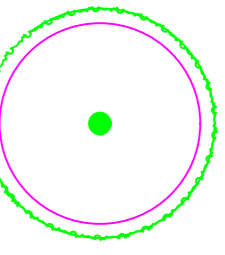
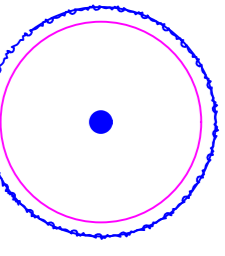
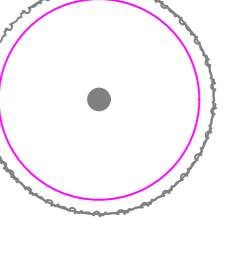
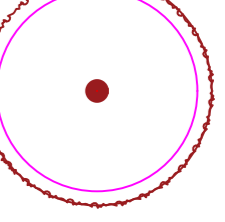
APPENDIX 3: TREE CONSTRAINTS PLANS




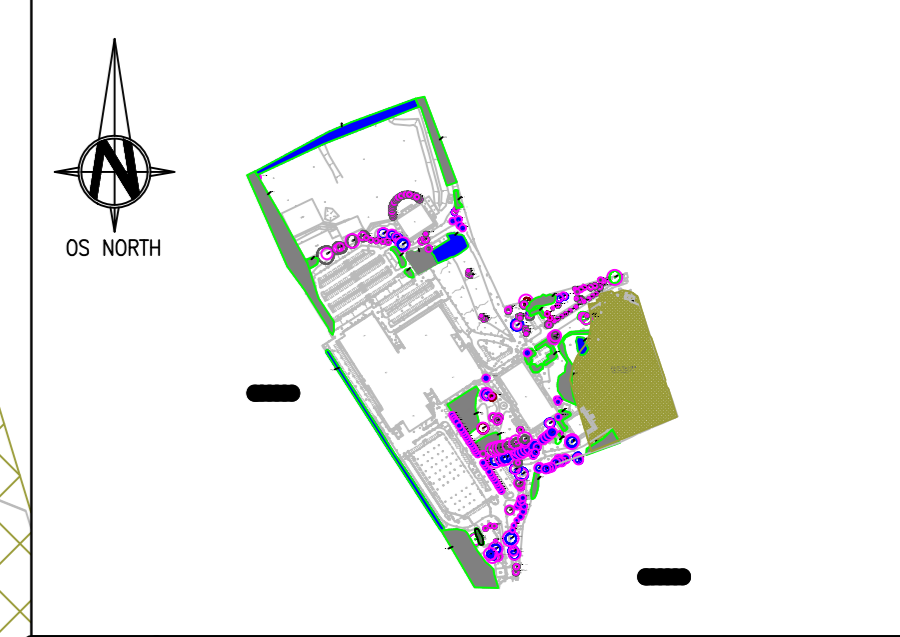
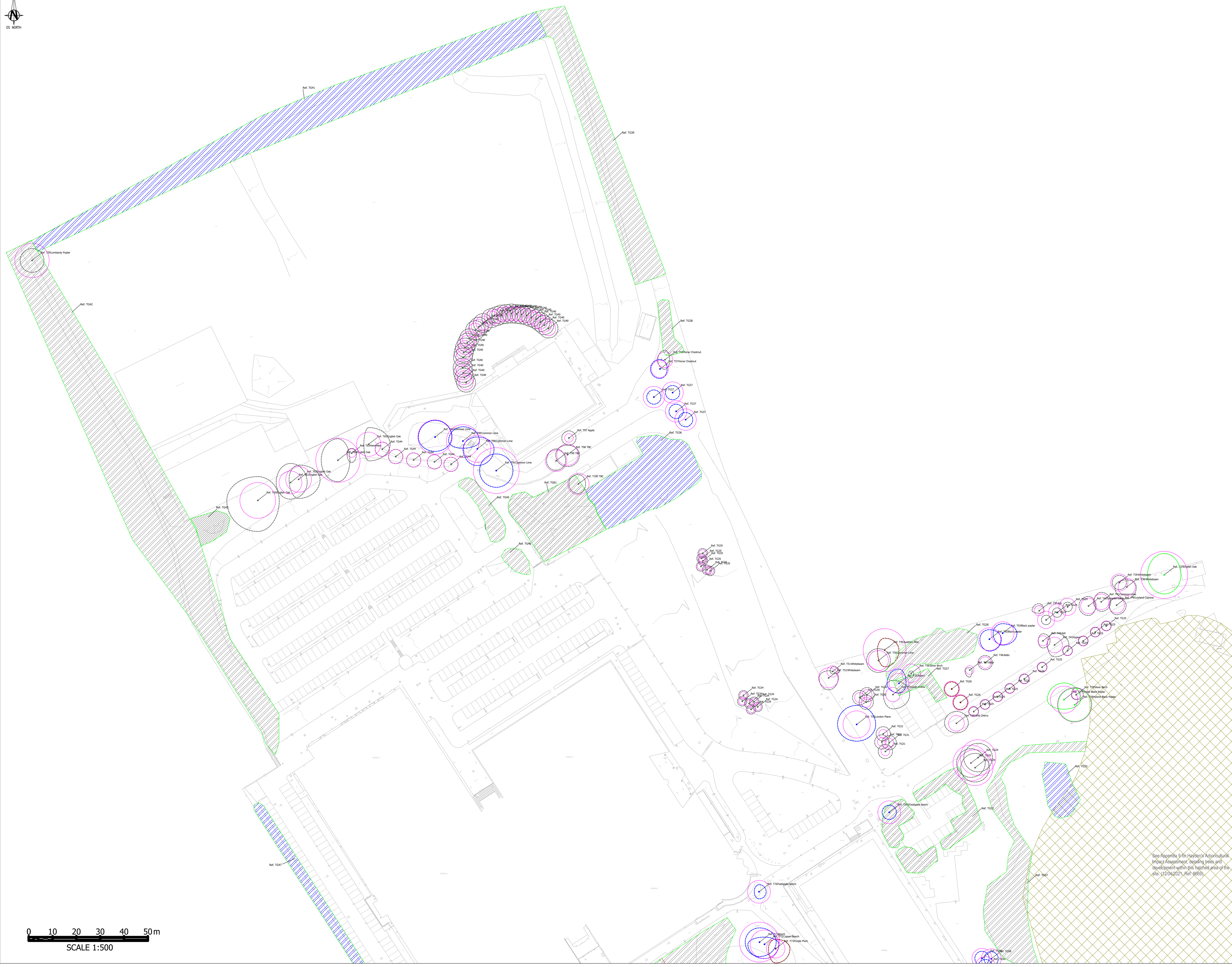
Tree Constraints Plan showing existing layout against BS5837:2012 tree categories & Root Protection Areas

BS5837 Categories
Canopy and stem colour denotes BS5837 category. Pink denotes Root Protection Area.

- Category A (Green)
- Category B (Blue)
- Category C (Green)
- Category U (Dark Red)

- Category A**
 Trees of high quality with an estimated remaining life expectancy of at least 40 years.
- Category B**
 Trees of moderate quality with an estimated remaining expectancy of at least 20 years.
- Category C**
 Trees of low quality with an estimated remaining life expectancy of at least 10 years, or a stem diameter below 150mm.
- Category U**
 Trees in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years.

Trees Groups
 Surveyed tree groups with BS5837 Category denoted by hatch colour.



0 10 20 30 40 50m
SCALE 1:500

1	551510jr04Aug21_TCPex_FV1	04/08/21
No.	Revision/Issue	Date

 **Greengage**

9 Holyrood Street
SE1 2EL
Tel: 0203 544 4000

Project Name and Address
North London Business Park
Brunswick Park Rd
London
N11 1GN

Project North London Business Park	Sheet North
Date 04/08/2021	Scale 1:500 at A0

Site Report 9 for Hayden's Arboricultural Impact Assessment, detailing trees and development within the highlighted area of the site. (12/04/2021, Ref: 0850)



Tree Constraints Plan showing existing layout against BS5837:2012 tree categories & Root Protection Areas

BS5837 Categories
Canopy and stem colour denotes BS5837 category. Pink denotes Root Protection Area.

- Category A (Green)
- Category B (Blue)
- Category C (Green)
- Category U (Dark Red)

Category A
Trees of high quality with an estimated remaining life expectancy of at least 40 years.

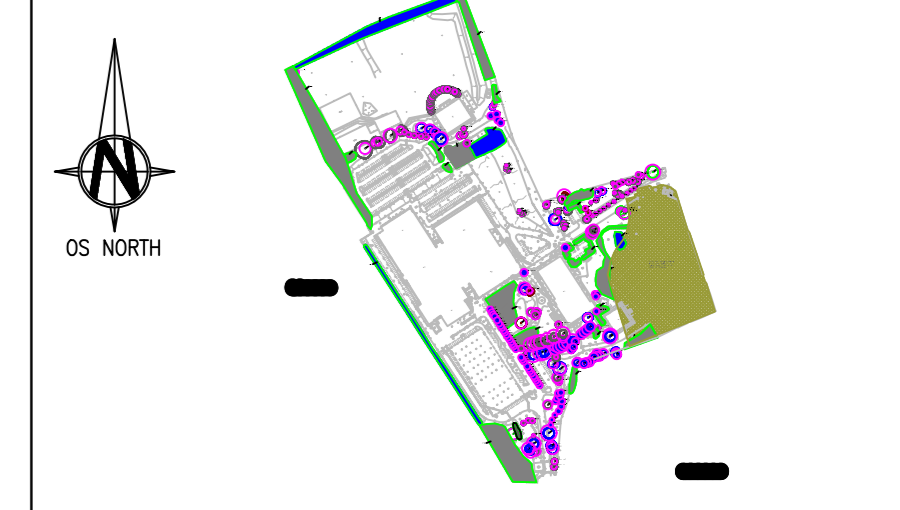
Category B
Trees of moderate quality with an estimated remaining expectancy of at least 20 years.

Category C
Trees of low quality with an estimated remaining life expectancy of at least 10 years, or a stem diameter below 150mm.

Category U
Trees in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years.

Trees Groups
Surveyed tree groups with BS5837 Category denoted by hatch colour.

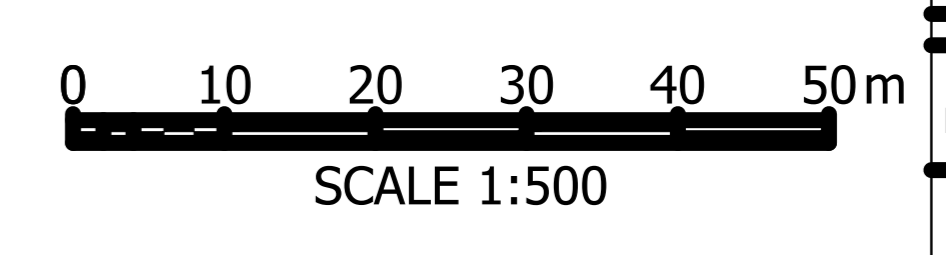
See Appendix 9 for Holyrood's Arboricultural Impact Assessment, detailing trees and development within this hatched area of the site. (12/04/2021, Ref: 8869)



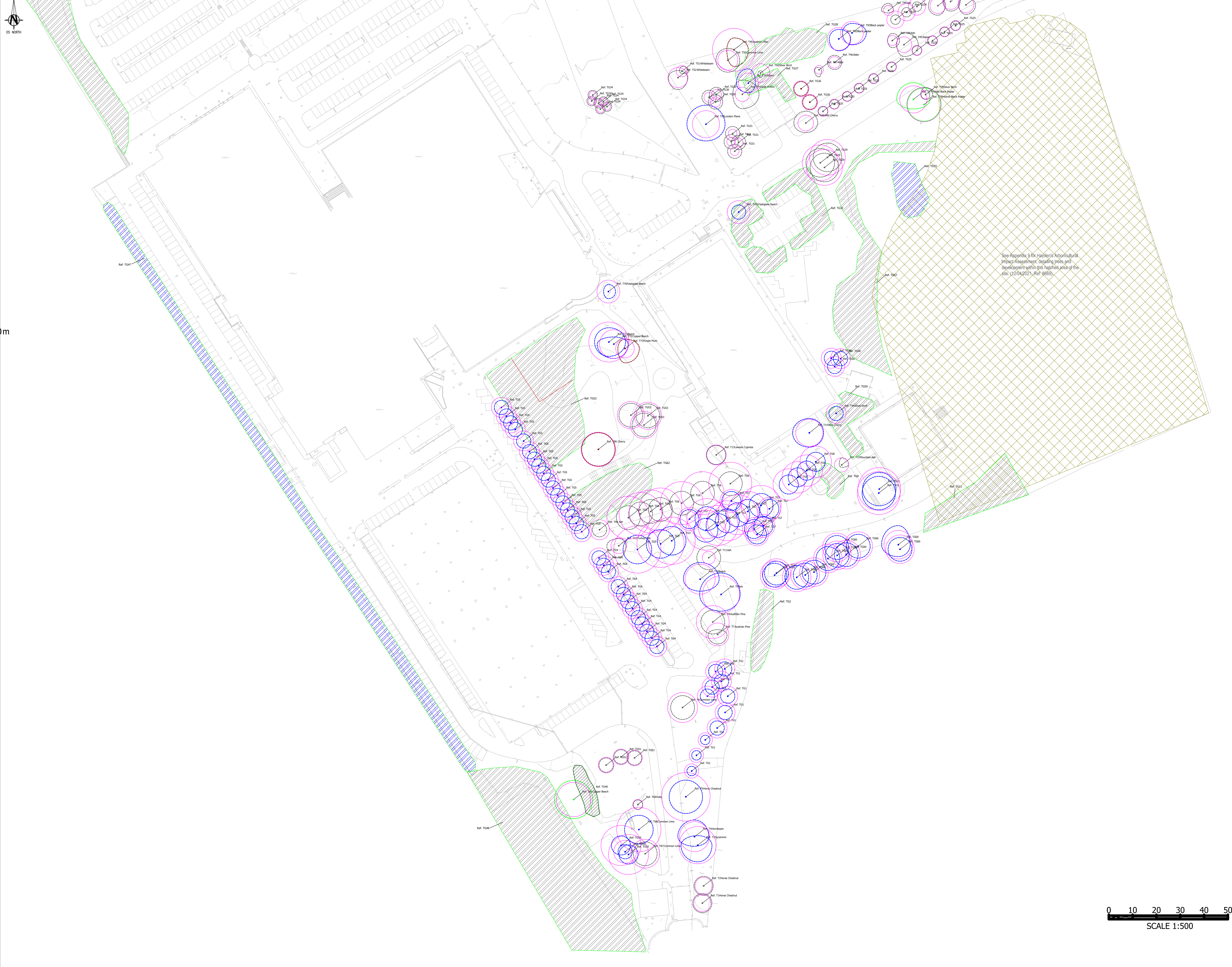
1	551510jr04Aug21_TCPex_FV1	04/08/21
No.	Revision/Issue	Date

Greengage
9 Holyrood Street
SE1 2EL
Tel: 0203 544 4000

Project Name and Address
North London Business Park
Brunswick Park Rd
London
N11 1GN



North	South
North London Business Park	South
Date	Date
04/08/2021	
Scale	Scale
1:500 at A0	



APPENDIX 8: HAYDENS ARBORICULTURAL IMPACT ASSESSMENT



**Tree Survey, Arboricultural Impact Assessment
Preliminary Arboricultural Method Statement & Tree Protection Plan
In Accordance with BS 5837:2012**

Proj. No 8669	North London Business Park, Oakleigh Road South, Brunswick Park, London N11 1GN		
Client:		Bowmer and Kirkland	
Date of Report:	12/04/2021	Revision:	Original

Tree Survey, Arboricultural Impact Assessment, Preliminary Arboricultural Method Statement & Tree Protection Plan – In Accordance with BS 5837:2012

Summary

The purpose of this report is to provide a preliminary consideration of the arboricultural implications created by the proposed development. In accordance with the feasibility and planning sections of BS5837:2012 “*Trees in relation to design, demolition and construction – Recommendations*”, trees deemed to be within the influencing distance of the projected construction have been evaluated for quality, longevity and initial maintenance requirements. Where trees do not have to be removed for health and safety reasons, a detailed and objective assessment has been made of the consequences of the intended layout.

In this circumstance it is intended to construct a new school. As a result, eighty four individual trees, one group of trees, three areas of trees and two hedges were inspected. The arboricultural related implications of the proposal are as follows:

- 1 In addition to trees which require felling irrespective of development, it is necessary to fell twenty two category ‘B’ and thirty three category ‘C’ trees and six category ‘C’ landscape features in order to achieve the proposed layout. Additionally, two trees require minor surgery to permit construction.
- 2 Thirteen trees have been identified for removal irrespective of any development proposals. The removal of ten of these trees coincides with the requirements of the proposed layout.
- 3 The alignment of the sports block nominally intrudes within the Root Protection Area of one tree to be retained. This has only a minor influence on the tree’s Root Protection Area and as such it is considered appropriate to undertake linear root pruning, as discussed at item 4.4.1.
- 4 The alignment of the teaching block does not encroach within the Root Protection Areas of any trees that are to be retained. In view of this and as assessed in accordance with BS5837:2012, no specialist foundation designs or construction techniques will be required to prevent damage to tree roots. Specialist foundations may still be required for other reasons, including mitigating the influencing distance of tree roots, subject to expert advice from a Structural Engineer.
- 5 This report recommends that specialist advice is obtained by expert practitioners in other disciplines. Such input should always be sought prior to the submission of this report in support of a planning application in order to demonstrate that the techniques and methods hereby proposed are achievable. In this particular circumstance it is necessary to contact the following:
 - Structural Engineer (foundation design, items 4.4.1 and 4.4.2)
- 6 All trees and landscape features that are to remain as part of the development should suffer no structural damage provided that the findings with this report are complied with in full. This includes ensuring that protective fencing is erected as detailed at items 4.5 and 5.1 of this report.



- 7 Post Planning Permission – Subject to achieving Planning Permission, a detailed Arboricultural Method Statement and Tree Protection Plan will be required. This will include the following: fencing type, ground protection measures, access facilitation pruning specification, service drawings, project phasing and an auditable monitoring schedule.



Contact Details

Client – Bowmer and Kirkland			
Address South Regional Office 1230 Arlington Business Park Theale Reading RG7 4SA	Contact Daniel Plunkett	Tel: E-mail:	0118 916 7200 d.plunkett@bandk.co.uk

Local Planning Authority – London Borough of Barnet Council			
Address North London Business Park (NLBP) Oakleigh Road South London N11 1NP	Trees Officer	Tel: E-mail:	0208 359 3000 planningtrees@barnet.gov.uk

Arboricultural Consultant – Hayden’s Arboricultural Consultants Limited			
Address Unit 6 Enterprise House Cherry Orchard Lane Salisbury Wiltshire SP2 7LD	Report Author: Nick Hayden	Tel: E-mail:	01722 657423 nick@treesurveys.co.uk



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- 1.0 Introduction**
- 2.0 The Site**
- 3.0 Tree Survey**
- 4.0 Arboricultural Impact Assessment**
- 5.0 Design Advice, Preliminary Arboricultural Method Statement & Tree Protection Plan**
- 6.0 Recommendations**
- 7.0 Limitations & Qualifications**
- 8.0 References**
- 9.0 Appendices**



1.0 Introduction

1.1 Terms of Reference

1.1.1 Hayden's Arboricultural Consultants Limited has been commissioned by Bowmer and Kirkland to prepare a Tree Survey, Arboricultural Impact Assessment, Preliminary Arboricultural Method Statement and Preliminary Tree Protection Plan for the existing trees at North London Business Park, Oakleigh Road South, Brunswick Park, London N11 1GN.

1.1.2 The site survey was carried out on 02/03/2021. The relevant qualitative and quantitative tree data was recorded in order to assess the condition of the existing trees, their constraints upon the prospective development and the necessary protection and construction specifications required to allow their retention as a sustainable and integral part of the completed development.

1.1.3 Information is given on condition, age, size and indicative positioning of all the trees, both on and affecting the site. This is in accordance with the British Standard 5837:2012 *Trees in relation to design, demolition and construction - Recommendations*.

1.2 Scope of Works

1.2.1 The survey of the trees and any other factors are of a preliminary nature. The trees were inspected on the basis of the Visual Tree Assessment (VTA) method as developed by Mattheck and Breloer (1994). The trees were inspected from ground level with no climbing inspections undertaken. It is not always possible to access every tree and as such some measurements may have to be estimated. Trees with estimated measurements are highlighted in the schedule of trees. No samples have been removed from the site for analysis. The survey does not cover the arrangements that may be required in connection with the removal of existing underground services.

1.2.2 Whilst this is an arboricultural report, comments relating to non arboricultural matters are given, such as built structures and soil data. Any opinion thus expressed should be viewed as provisional and confirmation from an appropriately qualified professional sought. Such points are clearly identified within the body of the report.

1.2.3 An intrinsic part of tree inspection in relation to development is the assessment of risk associated with trees in close proximity to persons and property. Most human activities involve a degree of risk with such risks being commonly accepted, if the associated benefits are perceived to be commensurate. In general, the risk relating to trees tends to increase with the age of the trees concerned, as do the benefits. It will be deemed to be accepted by the client that the formulation of the recommendations for all tree management will be guided by the cost-benefit analysis (in terms of amenity) of the tree work.

1.3 Documentation

1.3.1 The following documentation was provided prior to the commencement of the production of this report;

- Email of instruction from Daniel Plunkett on the 18th February 2021
- Definition of site boundary – dwg no. 658-ALA-00-XX-DR-L-008 rev. P01
- Topographical survey - dwg no. TSA-20-0958_201-202_Issue01
- Proposed site layout – dwg no. FS0200-ALA-XX-XX-M2-L-0001



2.0 The Site

2.1 Overview

2.1.1. The site is North London Business Park, Oakleigh Road South, Brunswick Park, London. The section of the business park relating to this application is located on the site's eastern aspect, adjacent to Brunswick Park Road and from which the site is accessed. Residential dwellings in Howard Close border the site's northern boundary and Brunswick Crescent its southern boundary. A lake borders the site's western aspect, beyond which is the existing school. The trees surveyed were found to be of mixed age and condition and to provide a variety of amenity benefits to the locality.

2.2 Soils

2.2.1 The soil type commonly associated with this site are slowly permeable and seasonally wet, slightly acid but base-rich loams and clays. They are of moderate fertility and mainly support seasonally wet pastures and woodlands type habitats. This soil type constitutes approximately 19.9% of the total English land mass.

2.2.2 The data given was obtained from a desk top study which provides indications of likely soil types. By definition, this information is not comprehensive and therefore any decisions taken with regards the management, usage or construction on site should be based on a detailed soil analysis.

2.2.3 Further to item 2.2.2, this report provides no information on soil shrinkability. It may be necessary for practitioners in other disciplines (e.g. engineers considering foundation design) to obtain this data as required.

2.3 Statutory Tree Protection

2.3.1 Tree Preservation Order(s)

The Local Planning Authority (LPA), London Borough of Barnet Council, have deemed it appropriate to provide statutory protection to trees on and/or neighbouring this site through the serving of a Tree Preservation Order (TPO), ref no. TRE-BA-55. The effect of this on anyone wishing to undertake work on preserved trees is to require them to obtain written permission from London Borough of Barnet Council prior to undertaking any tree works. The purpose of this process is to try to ensure that the works are appropriate, proportionate and in keeping with the long-term aims of the TPO. However, given that trees are living organisms and the locality within which they are set is liable to change, it is often the case that LPA decisions relating to TPO applications require regular review to reflect the current situation rather than the historical perspective of the original date of protection.

There are certain circumstances where written permission from the LPA may not be necessary before undertaking works. These include;

- Making a tree safe if it is an imminent threat to people or property.
- Removing deadwood or a dead tree.

Anyone wishing to undertake work as an exemption to the written permission process **are required** to provide the LPA with 5 days' notice prior to attending to a tree which they deem as being dead or dangerous; unless such works are required in an emergency.



It is the tree owner's responsibility to provide proof that the tree was indeed dead or dangerous should this exception be challenged; hence, it is advisable always to request an inspection by the LPA prior to carrying out such operations. Furthermore, even in the event of an emergency situation there is still a duty to notify the LPA that work has been completed including supplying an explanation of the necessity. Failure to comply with the requirements of TPO legislation can lead to a maximum fine of up to £20,000 per tree in the Magistrates Court. Fines in the Crown Court are unlimited.

Following our enquiry, the LPA did not supply a copy of the schedule or plan identifying which trees are covered under the above Order. As such, it has not been possible to identify the protected trees within this report

If **detailed planning permission** is granted and as part of the relevant approval, works (felling or surgery) to trees protected by a TPO are agreed as acceptable by the LPA, no **additional** written permission to proceed will be required provided that:

- (i) the planning permission remains live
- (ii) the works are in strict accordance with the specification of the extant planning permission
- (iii) the works are being completed solely to implement the detailed planning permission.

2.3.2 Felling Licence

All trees within the United Kingdom are protected under the Forestry Acts. In general, anyone felling more than 5 cubic metres of timber in any calendar quarter requires a Felling Licence from the Forestry Commission. There are exemptions however and these are as follows:-

A Felling Licence is not required in the following instances:

- To fell trees in a garden, an orchard, a churchyard, or a designated open space (Commons Act 1899).
- To carry out surgery operations such as pruning, reduction, dead wooding or pollarding.
- To fell less than 5 cubic metres in a calendar quarter. (Please note that not more than 2 cubic metres in a calendar quarter may be sold).
- To fell trees that are 8 centimetres or less in diameter when measured 1.3 metres from the ground. Trees removed for thinning may have a diameter of up to 10 centimetres and trees managed under a coppice regime may have a diameter of up to 15 centimetres.
- To fell trees previously approved for removal under a Dedication Scheme, or where Detailed Planning Permission has been granted.

Substantial fines exist for not complying with the requirements of a Felling Licence.



3.0 Tree Survey

- 3.1 As part of this survey a total of eighty four individual trees, one group of trees, three areas of trees and two hedges have been identified. These have been numbered T001 – T084, G001, A001 – A003 and H001 – H002 respectively.
- 3.2 A topographical survey was provided which showed the position of the trees on site. However, it should be noted that topographical surveys are not always comprehensive and sometimes it is considered appropriate to record details of trees and landscape features omitted from or beyond the scope of the plan. If this circumstance occurs, the location of the individual tree or landscape feature is estimated. The position of each tree is shown on the attached drawing no. 8669-D-AIA.
- 3.3 In order to provide a systematic, consistent and transparent evaluation of the trees included within this survey, they have been assessed and categorised in accordance with the method detailed in item 4.3 of *BS 5837:2012 "Trees in Relation to Design, Demolition and Construction - Recommendations"*. For further information, please see the attached Explanatory Notes.
- 3.4 The detailed assessment of each tree and its work requirements with priorities are listed in the attached Schedule of Trees.
- 3.5 Several items would benefit from tree surgery or additional investigation, be it for health and safety, cultural, aesthetic or structural reasons as detailed in the attached Schedule of Trees. Including the trees recommended for felling, the items requiring the **most urgent** intervention are as follows:

As soon as possible:

T043	Fell.
T044	Fell.

Within six months:

T001	Remove deadwood.
T002	Remove deadwood.
T016	Remove Ivy and re-inspect. Remove broken hanging branches.
T020	Remove Ivy and reinspect.
T026	Remove Ivy to 2m. Undertake secondary investigations with a Resistograph Microdrill.
T042	Fell.
T055	Fell.
T056	Fell.
T060	Fell.
T061	Fell.
T062	Fell.
T082	Remove Ivy and re-inspect. Remove deadwood.
T083	Fell.

- 3.6 Over and above the general and prudent recommendation that all trees are inspected on an annual basis, the following items have been identified as requiring enhanced monitoring to assess any changes in faults and weaknesses etc as detailed in the Schedule of Trees:

T022	Monitor annually (dieback / vigour).
------	--------------------------------------



T025	Monitor or fell.
T047	Monitor annually (defective union).
T076	Monitor annually (defective unions).
T079	Monitor annually (decay and vigour).

3.7 In accordance with item 4.2.4 (c) of BS 5837:2012, the items inspected and detailed within this report have been selected for inclusion due to the likely influence of any proposed development on the trees, rather than strictly adhering to the curtilage of the site. However, it must be understood that there may be trees beyond the site and not included in this survey which may exert an influence on the development. Where works for cultural, health and safety, quality of life or development purposes have been recommended on trees outside the ownership of the site, these can only progress with the agreement of the owner except where it involves portions of the trees overhanging the boundary.

4.0 Arboricultural Impact Assessment

4.1 The Proposal

4.1.1 The proposal is to construct a new school within the site's curtilage.

4.2 Access

4.2.1 Site access is unencumbered by the Root Protection Areas (RPA) of any trees to be retained. From a purely arboricultural perspective, it will not therefore be necessary to install a proprietary temporary load bearing road to protect tree roots.

4.3 Demolition

4.3.1 Demolition of existing structures affects the theoretical RPA of two off-site Pines, as shown on the attached drawing no. 8669-D-AIA. In order to prevent damage to these specimens works must only be completed with appropriate machinery or by hand within the calculated RPA and may only commence once protective fencing has been erected. In the proximity of the retained trees, all walls and material must be demolished inwards into the footprint of the building and away from the stems (often referred to as "top down, pull back"). Additionally, all plant and vehicles engaged in demolition should either operate outside the theoretical RPA, or should run on a temporary load bearing surface to protect the underlying soil structure. All foundations and / or hard surfaces within the theoretical RPA are to be broken out with extreme care, either manually or with a breaker and small mini digger (operating outside the RPA or on the temporary load bearing surface).

4.3.2 Existing hard surfacing within the RPA of three retained trees (T047, T048 and T050) is to be returned to soft landscaping, as identified on the attached drawing no. 8669-D-AIA by red cross-hatching. It is considered this operation will create an improved future rooting environment for the trees. Prior to the top soil being imported, the existing hard surface and sub-base will be removed by hand. Sharp sand will then be laid over any roots that are exposed, onto which good quality debris free top soil will be laid. The original hard surfacing will be retained during the main phase of construction as ground protection.



4.4 Construction

- 4.4.1 Construction of the sports block's foundations marginally encroach within the calculated RPA of one tree to be retained – T050. Given the minor extent of the intrusion (1.86%) into the periphery of the affected trees RPA and the likely limiting effect of existing hard surfaces, as identified on the attached drawing no. 8669-D-AIA, no significant root disturbance is thought likely. However, to ensure any roots which have permeated to the footprint of the new structure are not damaged, it is advised that precautionary excavation and root pruning is undertaken as part of the access facilitation pruning (AFP) works. However, given the proximity of the proposed construction to the trees to be retained, it is recommended that a Structural Engineer is consulted to assess the implications of the tree retention on the required foundation design.
- 4.4.2 Construction of the teaching block's foundations do not encroach within the RPA of any trees to be retained. From an arboricultural perspective, no specialised construction or foundation techniques will therefore be required to protect tree roots. However, dependent on the soil type, species and topography, trees may have an influence on the soil beyond their calculated RPA. It is recommended that a Structural Engineer is consulted to assess the implications of the tree retention and tree planting on the required foundation design.
- 4.4.3 Installation of new hard surfaces does not encroach within the RPA of any retained trees. From a purely arboricultural perspective, it will not therefore be necessary for these items to be of specialist design.

4.5 Implications of Sloping Ground

- 4.5.1 The arboricultural implications of the proposed structures are based on an assumption that level changes will not occur within the RPA of trees that are shown to be retained. On this site there is a number of considerable slopes and as such it is assumed that "cut and fill" operations will be required. If these works cannot be excluded from the calculated RPA of retained trees, a reappraisal of the arboricultural implications will be required.

4.6 Requirement for Tree Barrier Fencing

- 4.6.1 Prior to the commencement of development and immediately after the completion of the necessary tree surgery and felling work, protective fencing and ground protection will be installed on site. This must be fit for purpose, in full accordance with the requirements of BS 5837:2012 and positioned as shown on the attached drawing no. 8669-D-AIA. Full details of fencing and ground protection will be supplied by Hayden's Arboricultural Consultants in the detailed Arboricultural Method Statement & Tree Protection Plan.

4.7 Compound

- 4.7.1 The site provides adequate internal space to locate a construction compound outside the RPA of any trees and landscape features that are to be retained.

4.8 Phasing

- 4.8.1 The proposal involves the integration of a number of aspects that affect tree protection (e.g. – but not exclusively – demolition, movement of materials and the installation of services). For this reason, the project must be carefully phased to ensure the highest level of protection for retained trees at all times.



As part of the detailed Arboricultural Method Statement & Tree Protection Plan, Hayden's Arboricultural Consultants will produce an in-depth phasing recommendation to cover the salient operations on site as they affect retained trees.

4.9 Monitoring

4.9.1 In accordance with item 6.3 of BS 5837:2012, the site and associated development should be monitored regularly by a competent Arboriculturalist to ensure that the arboricultural aspects of the planning permission are complied with. As part of the detailed Arboricultural Method Statement & Tree Protection Plan, Hayden's Arboricultural Consultants will produce an auditable monitoring schedule to assess the progress of key site events/activities.

4.10 Cultural Implications for Retained Trees

4.10.1 It is necessary to undertake access facilitation pruning (AFP) which includes above and / or below ground works to T047 and T050, as outlined in the *Schedule of Works to Allow Development*. These works are necessary to permit construction and provide appropriate working space. Given the amount of pruning necessary and the locations of the works, the AFP is not considered likely to have a significantly adverse effect on the trees and landscape features concerned. As part of the detailed Arboricultural Method Statement & Tree Protection Plan, Hayden's Arboricultural Consultants will produce an in depth AFP specification.

4.11 Landscape Implications

4.11.1 In addition to trees and landscape features necessitating removal for health and safety, cultural or quality of life reasons (as detailed in the attached Schedule of Works - Irrespective of Development), the items listed in the table below require felling to permit the proposed development to proceed: -

Feature No	Reason for Removal	BS Category*	Visual Amenity Assessment*
A001	To facilitate construction of the sports pitch.	C	Moderate
A002	To facilitate construction of the sports pitch.	C	High
A003	To facilitate construction of the sports pitch.	C	Moderate
G001	To facilitate construction of the sports pitch.	C	Moderate
H001	To facilitate construction of the sports pitch.	C	High
H002	To facilitate construction of the teaching block.	C	High
T004	To facilitate construction of the cycle shelters.	B	High
T005	To facilitate construction of the teaching block.	B	High
T006	To facilitate construction of the access and parking.	B	High
T007	To facilitate construction of the access and parking.	C	High
T008	To facilitate construction of the teaching block.	B	High



T010	To facilitate construction of the teaching block.	C	Moderate
T011	To facilitate construction of the teaching block.	B	Moderate
T012	To facilitate construction of the teaching block.	B	Moderate
T013	To facilitate construction of the teaching block.	C	Moderate
T014	To facilitate construction of the teaching block.	C	Moderate
T015	To facilitate construction of the teaching block.	C	Moderate
T016	To facilitate construction of the playground.	B	Moderate
T017	To facilitate construction of the playground.	C	Moderate
T018	To facilitate construction of the playground.	C	Moderate
T019	To facilitate construction of the playground.	C	Moderate
T020	To facilitate construction of the playground.	B	Moderate
T021	To facilitate construction of the sports pitch.	C	Moderate
T022	To facilitate construction of the sports pitch.	C	Moderate
T023	To facilitate construction of the sports pitch.	C	Moderate
T025	To facilitate construction of the sports pitch.	C	Moderate
T026	To facilitate construction of the sports pitch.	C	High
T029	To facilitate construction of the playground.	B	Moderate
T030	To facilitate construction of the sports block.	B	Moderate
T031	To facilitate construction of the playground.	B	Moderate
T032	To facilitate construction of the sports pitch.	B	Moderate
T033	To facilitate construction of the sports pitch.	B	Moderate
T034	To facilitate construction of the playground.	B	Moderate
T035	To facilitate construction of the sports block.	C	Moderate
T036	To facilitate construction of the sports block.	C	Moderate
T037	To facilitate construction of the sports block.	C	Moderate
T054	To facilitate construction of the sports block.	B	High
T057	To facilitate construction of the sports block and cycle shelter.	B	High
T058	To facilitate construction of the sports block.	C	Moderate



T059	To facilitate construction of the sports block.	C	Moderate
T063	To facilitate construction of the pedestrian site access.	C	Moderate
T064	To facilitate construction of the pedestrian site access.	C	High
T065	To facilitate construction of the pedestrian site access.	C	High
T066	To facilitate construction of the teaching block.	C	High
T067	To facilitate construction of the teaching block.	B	High
T068	To facilitate construction of the teaching block.	B	High
T069	To facilitate construction of the teaching block.	C	High
T070	To facilitate construction of the teaching block.	C	High
T071	To facilitate construction of the teaching block.	C	High
T072	To facilitate construction of the teaching block.	C	Moderate
T073	To facilitate construction of the teaching block.	C	Moderate
T074	To facilitate construction of the teaching block.	C	Moderate
T075	To facilitate construction of the teaching block.	C	Moderate
T076	To facilitate construction of the access to underground parking.	B	High
T077	To facilitate construction of the access to underground parking.	B	High
T078	To facilitate construction of the access to underground parking.	B	High
T079	To facilitate construction of the teaching block.	C	Moderate
T080	To facilitate construction of the teaching block.	C	Moderate
T081	To facilitate construction of the teaching block.	C	Moderate
T082	To facilitate construction of the access to underground parking.	B	High
T084	To facilitate construction of the access and parking.	C	Moderate

* Please see definitions in the Explanatory Notes attached to this report.

4.12 Post Development Implications

4.12.1 No adverse arboricultural implications are considered reasonably foreseeable for the trees that remain provided that the recommendations of this report are complied with in full.

4.12.2 Due to the dynamic nature of trees and their interaction with the environment, their health and structural integrity is liable to change over time. It is therefore recommended that all trees on or adjacent to the site be inspected on an annual basis.



4.12.3 As stated in BS 5837:2012, regular maintenance of newly planted trees is of particular importance for at least three years during the critical post-planting period and might, where required by site conditions, planning requirements or legal agreement, be necessary for five years or more. The designer of the new landscaping should therefore, in conjunction with the landscape design proposals, prepare a detailed maintenance schedule covering this period and appropriate arrangements made for its implementation.

5.0 Design Advice, Preliminary Arboricultural Method Statement & Tree Protection Plan

5.1 Securing of Tree Structure and Root Protection Areas (RPA)

5.1.1 The trees to be retained will be protected by the use of stout barrier fencing erected in the positions indicated on the attached Preliminary Arboricultural Impact Assessment & Tree Protection drawing no. 8669-D-AIA. This fencing will be in accordance with the requirements of BS 5837:2012 including any necessary ground protection.

5.1.2 All fencing provided for the safeguarding of trees will be erected prior to any demolition or development commencing on the site, therefore ensuring the maximum protection. This fencing, which must have all weather notices attached stating "Construction Exclusion Zone – No Access" will be regarded as sacrosanct and, once erected, will not be removed or altered without the prior consent of the LPA.

5.1.3 Where fencing is impractical, consideration must be given to other forms of effective above ground tree structure protection. An example of this would be a combination of Barksavers to secure the stems and a temporary load bearing surface to shield the ground.

5.2 Location of Site Office, Compound and Parking

5.2.1 The position of the office, compound and parking will be agreed in writing with the LPA prior to commencement of any permitted development works. Any proposed re-location of these items through the various phases of development will be agreed prior to re-siting with the LPA.

5.3 On Site Storage of Spoil and Building Materials

5.3.1 Prior to and during all construction works on site, no spoil or construction materials will be stored within the RPA of any tree on, or adjacent to the site, even if the proposed development is to be within the RPA. This is to reduce to a minimum the compaction of the roots of the trees. Details of the RPA for each tree where no spoil or building materials will be stored are indicated on the attached drawing no. 8669-D-AIA. Any encroachment within this protected area will only be with the prior agreement of the LPA.

5.3.2 Any facilities for the storage of oils, fuels or chemicals shall be sited on impervious bases and surrounded by impervious bund walls. The volume of the bund compound shall be at least equivalent to the capacity of the tank plus 10%. If there is a multiple tankage, the compound shall be at least equivalent to the capacity of the largest tank, or the combined capacity of interconnected tanks, plus 10%. All filling points, vents, gauges and sight glasses shall be located within the bund.



The drainage system of the bund shall be sealed with no discharge to any watercourse, land or underground strata. Associated pipe-work shall be located above ground and protected from accidental damage. All filling points and tank overflow pipe outlets shall be detailed to discharge downwards into the bund.

- 5.3.3 All material storage facilities and work areas must consider the effects of sloping ground on the movement of potentially harmful liquid spillages towards or into protected areas.

5.4 Programme of Works

- 5.4.1 All tree surgery works, once approved by the LPA, will be carried out prior to any other site works. Once completed, the proposed protective fencing will be erected along the lines indicated above. All of this will be carried out prior to commencement of any development works on the site. Outline details of the proposed programme are given in the Design and Construction and Tree Care flow chart attached (Appendix G-1).

5.5 Tree Surgery

- 5.5.1 All tree work will be agreed with the LPA and will be carried out in line with BS 3998:2010 (Recommendations for Tree Works). An appropriately qualified, experienced and insured arboricultural contractor will carry out the work. Any alterations to the proposed schedule of works will be agreed with the LPA prior to commencement of works.

5.6 Levels

- 5.6.1 Other than for any specific exception which may be referred to at item 4.0, no alterations to soil levels within the RPA of retained trees are envisaged. However, if it is necessary for these to occur, appropriate measures must be taken to prevent or minimise any detrimental effects on the affected root systems as detailed in 5.6.2 and 5.6.3 below.
- 5.6.2 If it is necessary to excavate so close to trees that roots greater than 50mm diameter are likely to be encountered, particular care will be taken to avoid damage. Excavation in these areas will be undertaken by hand or using an air spade, avoiding any damage to the bark. The roots will be surrounded with sharp sand prior to the replacing of any soil or other material in the vicinity.
- 5.6.3 If it is necessary to raise levels, it is essential that adequate supplies of water and oxygen pass through the soil to the trees' roots. Therefore, where necessary, a granular material will be used which will not inhibit gaseous diffusion. Possible options are no-fines gravel or cobbles. All hard surfaces will be of suitable specification to allow such gaseous diffusion, e.g. brick pavers.

5.7 Services

- 5.7.1 At the time of writing this report, no details on proposed services were available. However, the following principles should be adhered to when planning for their installation.
- 5.7.2 It is proposed that all underground service runs will be placed outside the RPA of the trees on or adjacent to the site. Where it is not possible to do this, the proposed length infringing the RPA will be hand dug 'broken trenches' (NJUG 4 paragraph 4) to ensure the maximum protection of the trees' roots.



The trenches may also be excavated using an air spade, or trenchless technology can be employed if this methodology is considered appropriate by the relevant service company (thus allowing services to pass below and through the roots without the need for traditional excavation). If it is necessary to cut any small roots as part of any of these processes, they should be severed in such a way as to ensure that the final wound is as small as possible and free from ragged, torn ends.

- 5.7.3 All routes for overhead services will aim to avoid the trees. Where this is not possible, any tree work will be agreed prior to commencement with the LPA
- 5.7.4 All service providers (Statutory Authorities) will be consulted prior to commencement of works with the aim of minimising the number of service runs on the site.
- 5.7.5 All service runs/trenches where they encroach within the RPA of retained trees will be agreed with the LPA prior to commencement of works.

5.8 **Reporting and Monitoring Procedures**

- 5.8.1 In accordance with item 6.3 of BS 5837:2012, the site and associated development should be monitored regularly by a competent Arboriculturalist to ensure that the arboricultural aspects of the planning permission (e.g. the installation and maintenance of protective measures and the supervision of specialist working techniques) are implemented. Furthermore, regular contact between the Site Manager and the Arboriculturalist allows them to effectively deal with and advise on any tree related problems that may occur during the development process. This system should be auditable. Should any issues arise during the arboricultural monitoring of the development the Arboriculturalist will contact the LPA and appropriate action taken only with the prior permission of Bowmer and Kirkland and the LPA.



6.0 Recommendations

- 6.1 It is recommended that the measures detailed in this report are implemented in full to provide retained trees with the highest level of protection during the process of demolition and construction.
- 6.2 Subject to achieving Planning Permission, it is recommended that a detailed Arboricultural Method Statement & Tree Protection Plan should be provided. This will include the following: fencing type, ground protection measures, access facilitation pruning specification, service drawings, project phasing and an auditable monitoring schedule.
- 6.3 Tree surgery should be completed as detailed in the Schedule of Trees. Where this has been identified for reasons other than to permit development, this work should be completed within the advised timescales irrespective of any development proposals.
- 6.4 The tree surgery works proposed as part of this survey are recommended to mitigate any identified problems that may be caused by trees in close proximity to the proposed development. To this end, should these recommendations be overruled, this survey stands as the opinion of Hayden's Arboricultural Consultants Limited, and therefore any damage or injury caused by trees recommended by this practice for felling or tree surgery works, to which the proposed schedule of works has been altered or the tree has been requested to be retained by the LPA, cannot be the responsibility of this practice.



7.0 Limitations & Qualifications

Tree inspection reports are subject to the following limitations and qualifications.

General exclusions

Unless specifically mentioned, the report will only be concerned with above ground inspections. No below ground inspections will be carried out without the prior confirmation from the client that such works should be undertaken.

The validity, accuracy and findings of this report will be directly related to the accuracy of the information made available prior to and during the inspection process. No checking of independent third-party data will be undertaken. Hayden's Arboricultural Consultants Limited will not be responsible for the recommendations within this report where essential data are not made available or are inaccurate.

This report will remain valid for one year from the date of inspection subject to the recommendations specified within being adhered to. It must also be appreciated that recommendations proposed within this report may be superseded by extreme weather, or any other unreasonably foreseeable events.

However, if any additional alterations to the property or soil levels are carried out and/or further tree works undertaken other than specified within the report, it will become invalid and a new tree inspection strongly recommended.

It will be appreciated, and deemed to be accepted by the client and their insurers, that the formulation of the recommendations for the management of trees will be guided by the following: -

1. The need to avoid reasonably foreseeable damage.
2. The arboricultural considerations - tree safety, good arboricultural practice (tree work) and aesthetics.

The client and their insurers are deemed to have accepted the limitation placed on the recommendations by the sources quoted in the attached report. Where sources are limited by time constraints or the client, this may lead to an incomplete quantification of the risk.

Signed:



April 2021

For and on Behalf of Hayden's Arboricultural Consultants Limited



8.0 References

British Standards Institute. (2010). *Recommendations for Tree Work BS 3998:2010* BSI, London.

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Mattheck & Breloer, H. (1994). *Research for Amenity Trees No.4: The Body Language of Trees*, HMSO, London.

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Forestry Commission (2007). *Tree Felling – Getting Permission*. Country Services Division, Forestry Commission, Edinburgh.

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9.0 Appendices

Appendix	A	Species List & Tree Problems
Appendix	B	Schedule of Trees
Appendix	C	Schedule of Works - Irrespective of Development
Appendix	D	Preliminary Schedule of Works to Allow Development
Appendix	E	Explanatory Notes
Appendix	F	Tree Preservation Order Enquiry/Response
Appendix	G	Advisory Information & Sample Specifications
		1. BS 5837:2012 Figure 1 - Flow Chart – Design and Construction & Tree Care
		2. European Protected Species and Woodland Operations Checklist (v.4)
		3. BS 5837:2012 Figure 2 - Default specification for protective barrier
		4. BS 5837:2012 Figure 3 - Examples of above-ground stabilising systems
Appendix	H	Drawing no. 8669-D-AIA



Appendix A - Species List & Tree Problems

Species List:

Apple	<i>Malus sp</i>
Bay Laurel	<i>Laurus sp</i>
Beech	<i>Fagus sp</i>
Birch	<i>Betula sp</i>
Cedar	<i>Cedrus sp</i>
Cherry	<i>Prunus sp</i>
Cockspur Thorn	<i>Crataegus sp</i>
Cypress	<i>Cupressus sp</i>
Fastigate Beech	<i>Fagus sp</i>
Hawthorn	<i>Crataegus sp</i>
Hornbeam	<i>Carpinus sp</i>
Horse Chestnut	<i>Aesculus sp</i>
Large Leaf Lime	<i>Tilia sp</i>
Lombardy Poplar	<i>Populus sp</i>
Norway Maple	<i>Acer sp</i>
Oak	<i>Quercus sp</i>
Pine	<i>Pinus sp</i>
Poplar	<i>Populus sp</i>
Pyracantha	<i>Pyracantha sp</i>
Rowan	<i>Sorbus sp</i>
Silver Maple	<i>Acer sp</i>
Swedish Whitebeam	<i>Sorbus sp</i>
Sycamore	<i>Acer sp</i>
Western Red Cedar	<i>Thuja sp</i>
Whitebeam	<i>Sorbus sp</i>
Willow	<i>Salix sp</i>



Tree Problems:

This gives a brief description of the problems identified in the attached Tree Survey.

Name: Basal Suckers	
Symptoms/Damage Type:	A profusion of shoots emanating from the base of the main stem close to ground level. Several species of trees but most notably Limes produce suckers as part of their naturalised habit however in some species this can be an indicator of elevated stress upon the tree.
Consequence:	Suckers do not cause direct harm to the tree in their self however they can be problematic where they impede free use of space such as where a tree is adjacent to a footpath or roadway. Where suckers are established they can impede visibility of the basal area of the stem and prevent identification of more significant defects such as decay cavities or fungal growths. If left unchecked the suckers can establish to become large limbs in their own right and spoil the form of the tree and presenting issues for future management as removal would leave large wounds around the stem base providing opportunity for ingress of decay.
Control Measures:	Regular pruning away of new sucker growth is recommended to prevent the development of the issues mentioned above dependent upon the implications and the trees location.

Name: Deadwood	
Symptoms/Damage Type:	This relates to dead branches in the crown of the tree. In the majority of cases, this is caused by the natural ageing process of the tree or shading due to its close proximity to neighbouring trees. However, in some situations, it may be related to fungal, bacterial or viral infection.
Consequence:	Depending upon the location and mass of dead wood removal of the affected tissue may be necessary to prevent harm to persons or property as the wood will become unstable as it decays and in some circumstances is likely to fall from the tree with little or no warning.
Control Measures:	Detailed monitoring should be undertaken on those trees showing signs of excessive deadwood production to identify the underlying cause.

Name: Ivy (Hedera helix)	
Symptoms/Damage Type:	Ivy may grow to varying degrees on all areas of a tree from the base to the upper crown. It is possible that in doing so it will out-compete the host tree for available light thereby suppressing the host.
Consequence:	This is generally only harmful to the tree on already unhealthy specimens which may be constricted by large ivy stems around the trunk or may have their top growth suppressed by a mass of flowering shoots in the crown.
Control Measures:	Ivy should only be removed if absolutely necessary because it provides abundant cover to wildlife and then by severing twice close to the ground and removing a length of stem thereby causing the gradual dying away of the aerial parts of the plant providing extended benefit to wildlife whilst relieving the pressure on the tree.



Name: <i>Phaeolus schweinitzii</i>	
Symptoms/Damage Type:	It can usually be identified from the annual bracket fruiting body which is reddish brown with a light yellow margin and has a velvety texture when young. This may be found in clusters, but the fruiting bodies are usually single.
Consequence:	This is a very serious root decaying pathogen which affects conifer trees. It causes a rapidly spreading brown rot of the roots and lower stem and thus quickly renders infected trees liable to wind blow or structural collapse.
Control Measures:	Given the nature of this pathogen, and dependent on the location/target of the specimens involved, it is usually necessary to fell infected trees as a matter of urgency.

Name: <i>Phytophthora Bleeding Canker</i> (<i>Phytophthora cactorum</i> or <i>P. citricola</i>)	
Symptoms/Damage Type:	This is a bark killing infection presenting itself as scattered drops of rusty-red, yellow-brown or almost black, gummy liquid oozing from small or large patches on the bark. These run a little down the bark and dry as dark brown or black, often shiny, brittle encrustations or on the underside of branches as little pendulous knobles. The centre of the oozing patch of bark may be cracked and bearing fruit bodies of wood-rotting decay. Further confirmation of the infection can be seen on the inner bark of the oozing patch. This will be a watery orange colour and is often clearly mottled. The underlying wood may be stained blue-black. It has not yet been determined how the spores of the disease reach the aerial parts of trees. Infection does not seem to be dependent on injury to the bark. The exuded gum does not contain the fungus.
Consequence:	The fungus grows through and kills the phloem and cambium and over a number of years may girdle limbs or the main stem leading to death of the host tree.
Control Measures:	The disease is slow spreading as it is confined to the bark and can be excised where infection is localised, although later invasion of the wood by decay fungi can represent a problem.

Name: <i>Pseudomonas syringae</i> pv. <i>Aesculi</i> (Bacterial Bleeding Canker of Horse Chestnut)	
Symptoms/damage type and cause:	Trees with early symptoms show scattered drops of rusty-red, yellow-brown or almost black lesions from which gummy liquid oozes from small or large patches of dying bark on the stems or branches. As the disease progresses, and particularly if a tree has multiple bleeding cankers, the areas of dead phloem and cambium underneath the bleeding areas may coalesce and extend until they encircle the entire trunk or branch. Cankering lesions can cause the trunk to be girdled in some cases and result in death.
Consequence:	In advanced cases crown symptoms become visible, typically consisting of yellowing of foliage, premature leaf drop and eventually, crown death.
Control:	There is currently no proven means of control, pruning away affected tissues may slow the spread of the infection. Some trees can survive for many years with the disease and may show signs of recovery, monitoring is recommended in these cases. Tools should be sterilized to reduce the risk of spread between trees.
Species affected:	Mainly affects <i>Aesculus hippocastanum</i> and <i>Aesculus x carnea</i> although can affect other trees species.



Name: Sulphur Fungus (<i>Laetiporus sulphureus</i>)	
Alternative or common names: Chicken of the woods	
Symptoms/Damage Type:	This occurs on a range of both broad-leaved and coniferous trees, but is particularly common on <i>Quercus</i> , <i>Castanea</i> and <i>Taxus</i> . In the last named species it is by far the commonest decay fungus. Another quite frequent host is <i>Robinia pseudoacacia</i> . In the early stages of decay a yellow or red dis-colouration develops in the wood, and this changes to a rich red-brown as the decay advances. In advanced decay, the wood develops cubical cracking and is very brittle. A yellowish or whitish leathery sheet of fungal mycelium often fills the cracks. Decay is usually confined to the heartwood, which it enters via pruning wounds or broken branches. In some cases, it is found in the stem base and in major roots.
Consequence:	The fungus develops slowly and may persist for many years in large trees leading to hollowing of the stem and potential stem breakage.
Control Measures:	Depending on the degree or distribution of decay it may be necessary to fell the host tree. Full assessment of decay should be undertaken as many trees survive for a considerable time following infection.



Appendix B

Schedule of Trees

SCHEDULE OF TREES (AIA) North London Business Park, Oakleigh Road South, Brunswick Park, London

Surveyed By: Nick Hayden Date: 02/03/2021
Managed By: Nick Hayden

TreeNo	Species	DBH	Height		Visual	Crown Spread	Problems / Comments	BS Cat	Work Required (TS)	Priority (TS)	Work Required (AIA)	Priority (AIA)
		Min Dist	Crown Base	Lowest Branch	Age	Water Demand						
		On site	RPA (m ²)	Aspect	Aspect	SULE						
A001	Birch, Cypress, Laurel, Poplar, Pyracantha and Willow	250	10		Moderate	N3, E3, S3, W3	Mixed species area of trees. No individual trees of merit. Not plotted on TOPO.	C2	No work required.	4	Fell to permit development.	0
		3	0-2m		EM	High						
		Yes	28.3			10+ years						
A002	Birch, Cypress, Laurel, Maple, Oak, Rowan and Willow	600	18		High	N5, E5, S5, W5	Mixed species area of trees, the majority of which are located towards or on top of the bank's apex. Stems not identified on TOPO. Ivy and dense undergrowth impeded a detailed inspection. Tight unions. No individual trees of merit. Dead trees identified within area.	C2	No work required.	4	Fell to permit development.	0
		7.2	0-2m		M	High						
		Yes	162.9			10+ years						
A003	Willow	800	12		Moderate	N6, E6, S6, W6	Inaccessible area due to dense bramble and water. Mature Willow and coppiced Willow.	C2	No work required.	4	Fell to permit development.	0
		9.6	0-2m		M	High						
		Yes	289.5			10+ years						
G001	1x Apple, 6x Birch, 1x Maple and Bay Laurel	400	14		Moderate	N5, E5, S5, W5	Dense understory and shrub bed. Ivy clad trees. All but two stems not plotted on TOPO. Apple heavily clad throughout with Ivy. Birch display reduced vigour. Black staining on Maple, possible Phytophthora. On bankside that rises from car park to building.	C2	No work required.	4	Fell to permit development.	0
		4.8	0-2m		EM	High						
		Yes	72.4			10+ years						
H001	Cypress	450	17		High	N4, E4, S4, W4	Lapsed hedgeline. Located at apex of bank on site's southern boundary. Tight unions. Failed branches upper crown. Reasonable vigour. Not plotted on TOPO.	C2	Reduce to 8m.	3	Fell to permit development.	0
		5.4	0-2m		M	High						
		Yes	91.6			10+ years						
H002	Cypress	350	18		High	N4, E4, S4, W4	Cypress hedge.	C2	No work required.	4	Fell to permit development.	0
		4.2	0-2m		M	High						
		Yes	55.4			10+ years						

TreeNo	Species	DBH	Height		Visual	Crown Spread	Problems / Comments	BS Cat	Work Required (TS)	Priority (TS)	Work Required (AIA)	Priority (AIA)
		Min Dist	Crown Base	Lowest Branch	Age	Water Demand						
		RPA (m ²)	Aspect	Aspect	SULE	Ground Cover						
T001	Poplar	630	23		High	N7.5, E8, S8, W8	Exposed surface roots display mechanical damage with some decay evident. Tight stem / branch unions throughout crown. Moderate deadwood. Reasonable vigour.	B2	Remove deadwood.	2		
		7.56	0-2m		M	High						
No		179.6			20+ years	Grass						
T002	Poplar	520	21.5		High	N7.5, E5.5, S5, W7	Exposed surface roots display mechanical damage with decay evident. Suckering from damaged roots. Basal suckers. Tight stem / branch unions throughout crown. Moderate deadwood. Overhangs access road to north. Reasonable vigour.	B2	Remove deadwood.	2		
		6.24	0-2m		M	High						
No		122.3			20+ years	Grass						
T003	Birch	150	6.5		Moderate	N4, E4.5, S2, W1.5	Poor form and condition. Heavily suppressed specimen with asymmetric crown. Dieback throughout crown.	C2	No work required.	4		
		1.8	0-2m		SM	Low						
No		10.2			10+ years	Grass						
T004	Horse Chestnut	240	9		High	N3, E3.5, S2.5, W2.5	Minor mechanical damage to exposed root. Bifurcates at circa. 2m above ground level, union appears stable. Branch wounds. Reasonable vigour.	B2	No work required.	4	Fell to permit development.	0
		2.88	0-2m		SM	Moderate						
Yes		26.1			20+ years	Grass						
T005	Horse Chestnut	380	10.5		High	N5, E5, S5, W5	Minor mechanical damage to exposed root. Girdling root. Multi-stemmed from circa. 2m above ground level. Minor bark inclusions but currently unions appear stable. Minor deadwood. Reasonable vigour.	B2	No work required.	4	Fell to permit development.	0
		4.56	2.1-4m		EM	Moderate						
Yes		65.3			20+ years	Grass						
T006	Horse Chestnut	260	9.5		High	N3, E3.5, S2.5, W3	Minor mechanical damage to exposed root. Multi-stemmed from circa. 1.4m above ground level. Minor bark inclusions but currently unions appear stable. Slightly suppressed crown on southern aspect. Reasonable vigour. Overhangs access road to north.	B2	No work required.	4	Fell to permit development.	0
		3.12	2.1-4m		SM	Moderate						
Yes		30.6			20+ years	Grass						
T007	Horse Chestnut	310	9		High	N5.5, E5, S4, W5	Minor mechanical damage to exposed root. Stem and branch wounds. Minor bark inclusions but currently unions appear stable. Reasonable vigour. Overhangs access road to north.	B2	No work required.	4	Fell to permit development.	0
		3.72	2.1-4m		EM	Moderate						
Yes		43.5			20+ years	Grass						

TreeNo	Species	DBH	Height		Visual	Crown Spread	Problems / Comments	BS Cat	Work Required (TS)	Priority (TS)	Work Required (AIA)	Priority (AIA)
		Min Dist	Crown Base	Lowest Branch	Age	Water Demand						
		RPA (m²)	Aspect	Aspect	SULE	Ground Cover						
T008	Horse Chestnut	390	10		High	N4, E5, S6, W5	Service hatches in RPA. Girdling root. Stem wounds. Reasonable vigour.	B2	No work required.	4	Fell to permit development.	0
		4.68	0-2m		EM	Moderate						
Yes		68.8			20+ years	Grass						
T009	Whitebeam	290	8		Moderate	N4.5, E4, S3, W3.5	Poor structural condition. Stem lean to north. Bifurcates at circa. 2m above ground level, historic failure at union. Codominant stems have included union and are intertwining. Crossing, rubbing branches. Reasonable vigour.	U	Fell.	3		
		3.48	0-2m		EM	Moderate						
Yes		38			<10 years	Grass						
T010	Whitebeam	330	9		Moderate	N4, E4, S3, W3.5	Stem lean to east. Multi-stemmed from circa. 2.75m above ground level. Fusing stem / branch. Overhangs access. Reasonable vigour.	C2	No work required.	4	Fell to permit development.	0
		3.96	0-2m		EM	Moderate						
Yes		49.3			10+ years	Grass						
T011	Lime	230	8.5		Moderate	N3.5, E3.5, S3.5, W3.5	Minor mechanical damage to exposed roots. Lower branches pruned. Inclusions at stem / branch unions throughout crown, however typical characteristic of species. Reasonable vigour.	B2	No work required.	4	Fell to permit development.	0
		2.76	0-2m		EM	Moderate						
Yes		23.9			20+ years	Grass						
T012	Lime	270	9.5		Moderate	N4, E4.5, S4, W4	Lower branches pruned. Inclusions at stem / branch unions throughout crown, however typical characteristic of species. Reasonable vigour.	B2	No work required.	4	Fell to permit development.	0
		3.24	0-2m		EM	Moderate						
Yes		33			20+ years	Grass						
T013	Apple	170	4.5		Moderate	N2.5, E3, S3.5, W2.5	Crossing, rubbing branches. Congested crown. Reasonable vigour.	B2	No work required.	4	Fell to permit development.	0
		2.04	0-2m		EM	Moderate						
Yes		13.1			20+ years	Grass						
T014	Apple	180	4		Moderate	N2.5, E2.5, S3, W3	Mechanical damage to base of stem. Crossing, rubbing branches. Congested crown. Reasonable vigour.	B2	No work required.	4	Fell to permit development.	0
		2.16	0-2m		EM	Moderate						
Yes		14.7			20+ years	Grass						
T015	Apple	160	4.5		Moderate	N3, E2.5, S3.5, W3	Mechanical damage to base of stem. Crossing, rubbing branches. Congested crown. Reasonable vigour.	B2	No work required.	4	Fell to permit development.	0
		1.92	0-2m		EM	Moderate						
Yes		11.6			20+ years	Grass						

TreeNo	Species	DBH	Height		Visual	Crown Spread	Problems / Comments	BS Cat	Work Required (TS)	Priority (TS)	Work Required (AIA)	Priority (AIA)
		Min Dist	Crown Base	Lowest Branch	Age	Water Demand						
		RPA (m ²)	Aspect	Aspect	SULE	Ground Cover						
T016	Cedar	500	15		Moderate	N5.5, E4.5, S5, W4.5	Dense Ivy impeded a detailed inspection of base and lower 2m of stem. 2x broken hanging branches and evidence of one further historic branch failure in crown. Not untypical for species. Reasonable vigour.	B2	Remove Ivy and re-inspect. Remove broken hanging branches.	2	Fell to permit development.	0
		6	0-2m		EM	Moderate						
Yes		113.1			20+ years	Grass						
T017	Apple	180	4.5		Moderate	N3, E3, S2.5, W3	Minor mechanical damage to base of stem. Crossing, rubbing branches. Congested crown. Reasonable vigour.	B2	No work required.	4	Fell to permit development.	0
		2.16	0-2m		EM	Moderate						
Yes		14.7			20+ years	Grass						
T018	Apple	170	4		Moderate	N2.5, E3, S3, W3.5	Minor mechanical damage to base of stem. Basal suckers. Bifurcates at circa. 1.7m above ground level, bark inclusion but union currently appears stable. Crossing, rubbing branches. Congested crown. Reasonable vigour.	B2	No work required.	4	Fell to permit development.	0
		2.04	0-2m		EM	Moderate						
Yes		13.1			20+ years	Grass						
T019	Apple	200	4		Moderate	N2, E3, S4, W3	Basal suckers. Dense Ivy impeded a detailed inspection. Congested crown. Reasonable vigour.	B2	Remove Ivy and reinspect.	3	Fell to permit development.	0
		2.4	0-2m		EM	Moderate						
Yes		18.1			20+ years	Grass						
T020	Cherry	550	10.5		Moderate	N8.5, E8, S8, W7	Mechanical damage to exposed roots. Dense Ivy impeded a detailed inspection of base and lower 5m of stem(s). Multi-stemmed from circa. 3m above ground level, unions obscured by Ivy. Resinous. Crossing, rubbing branches. Minor deadwood. Reasonable vigour.	B2	Remove Ivy and reinspect.	2	Fell to permit development.	0
		6.6	0-2m		M	Moderate						
Yes		136.8			20+ years	Grass						
T021	Thorn	170	5		Moderate	N3.5, E3.5, S3.5, W3.5	Basal suckers. Crossing, rubbing branches. Reasonable vigour.	B2	No work required.	4	Fell to permit development.	0
		2.04	0-2m		EM	High						
Yes		13.1			20+ years	Grass						
T022	Birch	400	16		Moderate	N4.5, E3.5, S3, W3	Dense shrubs and Ivy impeded a detailed inspection of base and lower 2m of stem. Dominant tree in group of 3. Vigour reasonable but dieback of upper crown evident.	C2	Monitor annually (dieback / vigour).	3	Fell to permit development.	0
		4.8	0-2m		M	Low						
Yes		72.4			10+ years	Ivy, Light undergrowth						

TreeNo	Species	DBH	Height		Visual	Crown Spread	Problems / Comments	BS Cat	Work Required (TS)	Priority (TS)	Work Required (AIA)	Priority (AIA)
		Min Dist	Crown Base	Lowest Branch	Age	Water Demand						
		On site	RPA (m ²)	Aspect	Aspect	SULE						
T023	Birch	310	10		Moderate	N1.5, E4, S3.5, W3.5	Dense shrubs impeded a detailed inspection of base. Stem lean to south east. Asymmetric crown due to being sub-dominant specimen. Reduced vigour.	C2	No work required.	4	Fell to permit development.	0
		3.72	2.1-4m		M	Low						
Yes		43.5			10+ years	Ivy, Light undergrowth						
T024	Birch	240	8.5		Moderate	N2.5, E1.5, S3, W3	Poor form and condition. Dense Ivy impeded a detailed inspection of base and lower 3.5m of stem. Notable dieback of lower crown and reduced vigour throughout remaining crown. Limited SULE.	U	Fell.	3		
		2.88	2.1-4m		EM	Low						
Yes		26.1			<10 years	Ivy, Light undergrowth						
T025	Cypress	690	19		Moderate	N6, E5, S6, W6	Slight stem lean to west and on eastern and southern aspects the ground appears to be raised suggesting possible heave / historic windthrow. Static imbalance hasn't corrected itself indicating movement is fairly recent, however not that recent as Ivy covers raised ground and not snapped at point of lifting. Crown displays reasonable vigour.	C2	Monitor or fell.	3	Fell to permit development.	0
		8.28	0-2m		M	High						
Yes		215.4			10+ years	Light undergrowth, Block paving						
T026	Oak	910	16.5		High	N7, E5.5, S5, W6	Stem densely clad in Ivy which impeded a detailed inspection. Remnants of Chicken of Woods fruiting bodies at base on southern aspect. Tapping lower stem with a sounding mallet suggests notable decay in lower stem. Major deadwood. Cavities. BS may be revised following secondary investigations.	C2	Remove Ivy to 2m. Undertake secondary investigations with a Resistograph Microdrill.	2	Fell to permit development.	0
		10.92	0-2m		M	High						
Yes		374.6			10+ years	Grass						
T027	Hawthorn	330	6		High	N2, E4.5, S2, W2	Mature basal suckers. Densely clad in Ivy throughout. Stem lean to east. Notable dieback / in decline. Limited SULE.	U	Fell.	3		
		3.96	0-2m		M	High						
Yes		49.3			<10 years	Ivy, Grass						
T028	Western Red Cedar	340	13		High	N4, E3.5, S2, W3	Ivy clad. Top five metres of leader if dead and the remainder of the crown displays declining / poor vigour. Limited SULE.	U	Fell.	3		
		4.08	0-2m		EM	High						
Yes		52.3			<10 years	Grass						

TreeNo	Species	DBH	Height		Visual	Crown Spread	Problems / Comments	BS Cat	Work Required (TS)	Priority (TS)	Work Required (AIA)	Priority (AIA)
		Min Dist	Crown Base	Lowest Branch	Age	Water Demand						
		RPA (m ²)	Aspect	Aspect	SULE	Ground Cover						
T029	Cherry	360	11		Moderate	N5, E5.5, S5.5, W5.5	Mechanical damage to exposed roots. Minor deadwood. Reasonable vigour.	B2	No work required.	4	Fell to permit development.	0
		4.32	2.1-4m		M	Moderate						
Yes		58.6			20+ years	Grass						
T030	Cherry	320	9		Moderate	N5, E5, S4, W4.5	Mechanical damage to exposed roots. Large stem pruning wounds. Minor deadwood. Reasonable vigour.	B2	No work required.	4	Fell to permit development.	0
		3.84	0-2m		M	Moderate						
Yes		46.3			20+ years	Grass						
T031	Swedish Whitebeam	280	7.5		Moderate	N3.5, E3.5, S3.5, W4	Minor deadwood. Reasonable vigour.	B2	No work required.	4	Fell to permit development.	0
		3.36	0-2m		EM	Moderate						
Yes		35.5			20+ years	Shrub bed						
T032	Swedish Whitebeam	350	8		Moderate	N3.5, E3.5, S3, W4	Minor deadwood. Tight unions. Reasonable vigour.	B2	No work required.	4	Fell to permit development.	0
		4.2	2.1-4m		EM	Moderate						
Yes		55.4			20+ years	Shrub bed						
T033	Swedish Whitebeam	250	6.5		Moderate	N3, E3, S3, W3	Minor deadwood. Reasonable vigour.	B2	No work required.	4	Fell to permit development.	0
		3	2.1-4m		EM	Moderate						
Yes		28.3			20+ years	Shrub bed						
T034	Swedish Whitebeam	280	7		Moderate	N3.5, E3, S3, W3.5	Minor deadwood. Reasonable vigour.	B2	No work required.	4	Fell to permit development.	0
		3.36	0-2m		EM	Moderate						
Yes		35.5			20+ years	Shrub bed						
T035	Birch	180	9		Moderate	N3, E3, S3, W3	Inspection of base and lower stem impeded by dense vegetation. Tight unions. Crossing, rubbing branches. Reasonable vigour. Not plotted on TOPO.	C2	No work required.	4	Fell to permit development.	0
		2.16	0-2m		EM	Low						
Yes		14.7			10+ years	Dense undergrowth, Shrub bed						
T036	Scots Pine	230	14		Moderate	N5, E4, S1, W2	Companion with asymmetric crown. Contorted stem growth. Minor deadwood.	C2	No work required.	4	Fell to permit development.	0
		2.76	2.1-4m		SM	Moderate						
Yes		23.9			10+ years	Grass						

TreeNo	Species	DBH	Height		Visual	Crown Spread	Problems / Comments	BS Cat	Work Required (TS)	Priority (TS)	Work Required (AIA)	Priority (AIA)
		Min Dist	Crown Base	Lowest Branch	Age	Water Demand						
		RPA (m ²)	Aspect	Aspect	SULE	Ground Cover						
T037	Scots Pine	380	12		Moderate	N4, E4.5, S3.5, W4	Partially Ivy clad stem. Resinosus. Bifurcates at 3m above ground level, union appears stable. Moderate deadwood.	C2	No work required.	4	Fell to permit development.	0
		4.56	2.1-4m		EM	Moderate						
Yes		65.3			10+ years	Grass						
T038	Whitebeam	320	9.5		High	N4, E3.5, S3.5, W4.5	Trifurcates at circa. 1.7m above ground level. Bark inclusions at unions and further inclusions throughout crown, however all currently appear stable. Crossing, rubbing branches. Reasonable vigour. Poorly pruned branches on southern aspect.	C2	No work required.	4		
		3.84	2.1-4m		EM	Moderate						
Yes		46.3			10+ years	Grass						
T039	Whitebeam	160	8.5		Moderate	N1.5, E3, S3, W0.5	Poor form and condition. Bifurcates at circa. 2m above ground level. Southern co-dominant stem removed at union. Poor pruning cut.	C2	No work required.	4		
		1.92	2.1-4m		SM	Moderate						
Yes		11.6			10+ years	Grass						
T040	Whitebeam	320	9.5		High	N4.5, E4.5, S4, W4	Bifurcates at circa. 2m above ground level. Slight bark inclusion on northern aspect but union currently appears stable. Further inclusions throughout crown. Minor deadwood.	C2	No work required.	4		
		3.84	2.1-4m		EM	Moderate						
Yes		46.3			10+ years	Grass						
T041	Sycamore	290	12		High	N4, E4, S4.5, W4	Dense basal growth appears to be emanating from removed stem. Ivy clad to circa. 6m above ground level. Reasonable vigour.	C2	No work required.	4		
		3.48	2.1-4m		EM	Moderate						
Yes		38			10+ years	Grass						
T042	Silver Maple	660	10.5		High	N5, E6, S5.5, W5	Densely clad in Ivy. Significant dieback of crown, most notable on western aspect. Circa. 30% of crown dead and dieback present throughout remainder of crown. Limited SULE. Adjacent to highway.	U	Fell.	2		
		7.92	2.1-4m		M	Moderate						
Yes		197.1			<10 years	Grass						
T043	Ash	530	14		High	N4.5, E4.5, S5.5, W6	Poor form and condition. Multi-stemmed specimen that has grown at the base of and around a mature Pine. Included unions between stems. Removal of dead Pine will leave a large opening in the crown and expose defective stems. Not plotted on TOPO.	U	Fell.	1		
		6.36	0-2m		M	Moderate						
Yes		127.1			<10 years	Grass						

TreeNo	Species	DBH	Height		Visual	Crown Spread	Problems / Comments	BS Cat	Work Required (TS)	Priority (TS)	Work Required (AIA)	Priority (AIA)
		Min Dist	Crown Base	Lowest Branch	Age	Water Demand						
		RPA (m ²)	Aspect	Aspect	SULE	Ground Cover						
T044	Scots Pine	490	13		High	N3, E1.5, S2.5, W6	Dead. Extensive stem decay. 2x Phaeolus brackets at base.	U	Fell.	1		
		5.88	4.1-6m		M	Moderate						
Yes		108.6			<10 years	Grass						
T045	Lime	330	14.5		High	N5.5, E3.5, S5.5, W5.5	Girdling root. Tight stem / branch unions throughout crown but typical characteristic of species. Minor deadwood. Reasonable vigour.	B2	No work required.	4		
		3.96	0-2m		EM	Moderate						
Yes		49.3			20+ years	Grass						
T046	Lime	340	13.5		High	N4.5, E4, S4.5, W4.5	Tight stem / branch unions throughout crown but typical characteristic of species. Minor deadwood. Reasonable vigour.	B2	No work required.	4		
		4.08	0-2m		EM	Moderate						
Yes		52.3			20+ years	Grass						
T047	Norway Maple	450	12.5		High	N6, E4, S6, W7.5	Girdling root. Mechanical damage to exposed roots. Lowest primary branch extending westwards has a weak branch attachment at circa. 3m. Minor deadwood. Reasonable vigour.	B2	Monitor annually (defective union).	3	Tip back crown as shown on drawing no. 8669-D-AIA to permit development.	0
		5.4	2.1-4m		M	Moderate						
Yes		91.6			20+ years	Grass, Block paving						
T048	Lombardy Poplar	590	25		High	N1.5, E3, S3, W3	Suppressed companion with asymmetric crown. Tapping lower stem with a sounding mallet did not reveal presence of any notable decay. Moderate deadwood.	C2	Remove deadwood.	3		
		7.08	2.1-4m		M	High						
Yes		157.5			10+ years	Grass, Block paving						
T049	Lombardy Poplar	360	24		High	N1, E2.5, S2.5, W1	Suppressed companion with asymmetric crown. Tapping lower stem with a sounding mallet did not reveal presence of any notable decay. Moderate deadwood.	C2	Remove deadwood.	3		
		4.32	2.1-4m		M	High						
Yes		58.6			10+ years	Grass						
T050	Poplar	790	25		High	N9, E9.5, S4.5, W10.5	Mechanical damage to exposed roots notable. Lifting of block paving car park to west most likely attributable to roots. Dominant companion with slightly asymmetric crown. Tapping lower stem with a sounding mallet did not reveal presence of any notable decay. Minor deadwood.	B2	No work required.	4		
		9.48	0-2m		M	High						
Yes		282.3			20+ years	Grass, Block paving						

TreeNo	Species	DBH	Height		Visual	Crown Spread	Problems / Comments	BS Cat	Work Required (TS)	Priority (TS)	Work Required (AIA)	Priority (AIA)
		Min Dist	Crown Base	Lowest Branch	Age	Water Demand						
		RPA (m ²)	Aspect	Aspect	SULE	Ground Cover						
T051	Apple	200	8		High	N3.5, E4, S3, W2.5	Notable mechanical damage to base of stem. Stem lean to east. Multi-stemmed from circa. 2m. Reasonable vigour.	C2	No work required.	4		
		2.4	2.1-4m		EM	Moderate						
Yes		18.1			10+ years	Grass						
T052	Apple	210	9.5		High	N3, E3, S3, W3	Mechanical damage to base of stem. Multi-stemmed from circa. 2m. Reasonable vigour.	C2	No work required.	4		
		2.52	2.1-4m		EM	Moderate						
Yes		20			10+ years	Grass						
T053	Apple	300	9.5		High	N4.5, E3.5, S3.5, W3.5	Minor mechanical damage to base of stem. Multi-stemmed from circa. 2m. Multiple bark inclusions but these currently appear to be stable. Reasonable vigour.	C2	No work required.	4		
		3.6	2.1-4m		EM	Moderate						
Yes		40.7			10+ years	Grass						
T054	Beech	340	14.5		High	N4.5, E3.5, S5, W5.5	Trifurcates at circa. 2.5m above ground level, unions appear stable. Suppressed crown on eastern aspect. Reasonable vigour.	B2	No work required.	4	Fell to permit development.	0
		4.08	2.1-4m		EM	Moderate						
Yes		52.3			20+ years	Grass						
T055	Willow	870	17.5		High	N4.5, E9.5, S9.5, W6.5	Tapping lower stem with a sounding hammer revealed the presence of notable decay. On the northern aspect this extended from the base of the stems to circa. 2.5m above ground level and probably ascends further. Southern aspect of lower stem also extensively decayed. Notable dieback throughout crown. Limited SULE.	U	Fell.	2		
		10.44	0-2m		M	High						
Yes		342.4			<10 years	Grass						
T056	Willow	460	12		High	N4, E5, S5, W1.5	Suppressed specimen with heavily asymmetric crown. Branch failures throughout crown. Removal of adjacent dominant companions (T055 and T060) will expose its crown and is likely to result in further branch failures occurring. It's not therefore considered suitable for retention.	U	Fell.	2		
		5.52	0-2m		EM	High						
Yes		95.7			<10 years	Grass						
T057	Beech	350	15		High	N4.5, E4, S5, W5	Suppressed crown on north eastern aspect. Minor deadwood. Reasonable vigour.	B2	No work required.	4	Fell to permit development.	0
		4.2	0-2m		EM	Moderate						
Yes		55.4			20+ years	Grass						

TreeNo	Species	DBH	Height		Visual	Crown Spread	Problems / Comments	BS Cat	Work Required (TS)	Priority (TS)	Work Required (AIA)	Priority (AIA)
		Min Dist	Crown Base	Lowest Branch	Age	Water Demand						
		RPA (m ²)	Aspect	Aspect	SULE	Ground Cover						
T058	Horse Chestnut	360	9		Moderate	N4, E3.5, S3.5, W3.5	Mechanical damage to exposed root. Multi-stemmed from circa. 1.6m above ground level, unions appear stable. Reasonable vigour.	B2	No work required.	4	Fell to permit development.	0
		4.32	0-2m		SM	Moderate						
Yes		58.6			20+ years	Grass						
T059	Horse Chestnut	270	8.5		Moderate	N3.5, E3, S3.5, W3.5	Mechanical damage to exposed roots. Multi-stemmed from circa. 1.8m above ground level, unions appear stable. Reasonable vigour.	B2	No work required.	4	Fell to permit development.	0
		3.24	2.1-4m		SM	Moderate						
Yes		33			20+ years	Grass						
T060	Willow	810	16		High	N8, E5.5, S6.5, W7.5	Ivy clad lower stem. Bifurcates at circa. 2m above ground level. Southern co-dominant stem trifurcates at circa. 3m above ground level. Large cavity at first fork extends circa. 5m up one stem and the other stem has notable bark necrosis to tip and notable dieback in crown. Northern stem forks at circa. 3m above ground level, western extending stem is in notable decline with bark necrosis along much of the stem. Northernmost stem similar condition.	U	Fell.	2		
		9.72	0-2m		M	High						
Yes		296.8			<10 years	Grass						
T061	Willow	470	14.5		High	N3, E6, S4.5, W4	Stem densely clad in Ivy. Trifurcates at circa. 1.7m above ground level, Ivy obscures unions. South eastern stem has multiple branch failures and is in decline. Dieback of northern stem also evident. Removal of adjacent companion will expose crown and lead to further failures. Therefore not considered suitable for retention.	U	Fell.	2		
		5.64	0-2m		EM	High						
Yes		99.9			<10 years	Grass						
T062	Willow	610	15		High	N5.5, E8.5, S5.5, W7.5	Dominant primary branch extending east towards highway has multiple failures throughout and evidence of an old crack/ hazard beam on southern aspect. Moderate deadwood. Whilst in a slightly better condition than its companions, its foreseeable further failures will occur throughout its crown once exposed.	U	Fell.	2		
		7.32	0-2m		M	High						
Yes		168.3			<10 years	Grass						

TreeNo	Species	DBH	Height		Visual	Crown Spread	Problems / Comments	BS Cat	Work Required (TS)	Priority (TS)	Work Required (AIA)	Priority (AIA)
		Min Dist	Crown Base	Lowest Branch	Age	Water Demand						
		RPA (m ²)	Aspect	Aspect	SULE	Ground Cover						
T063	Horse Chestnut	310	9.5		Moderate	N3, E2.5, S3.5, W4	Mechanical damage to exposed roots. Multi-stemmed from circa. 2m above ground level, unions appear stable. Slightly suppressed canopy eastern aspect. Reasonable vigour.	B2	No work required.	4	Fell to permit development.	0
		3.72	2.1-4m		SM	Moderate						
Yes		43.5			20+ years	Grass						
T064	Norway Maple	410	13		High	N5.5, E4, S3.5, W4.5	Partially Ivy clad stem. Bifurcates at circa. 2m above ground level, Ivy obscures union. Suppressed specimen with asymmetric crown. Branch failures throughout crown. Broken hung-up branches. Minor deadwood. Reasonable vigour.	C2	Crown clean by the removal of dead and failed branches.	3	Fell to permit development.	0
		4.92	0-2m		EM	Moderate						
Yes		76			10+ years	Grass						
T065	Ash	410	16		High	N4, E5, S8.5, W8.5	Small girdling root. Asymmetric crown, predominantly to the south and west. Moderate deadwood, mainly lower crown. Broken hung-up branches upper crown. Reasonable vigour.	C2	Crown clean by the removal of dead and failed branches.	3	Fell to permit development.	0
		4.92	2.1-4m		M	Moderate						
Yes		76			10+ years	Grass						
T066	Ash	460	14.5		High	N8.5, E3.5, S5.5, W9	Asymmetric crown, predominantly to the north and west. 2x partially occluded stem wounds / cavities on eastern aspect at circa. 2.5 and 6m above ground level. Moderate deadwood. Reasonable vigour.	C2	Remove deadwood.	3	Fell to permit development.	0
		5.52	0-2m		M	Moderate						
Yes		95.7			10+ years	Grass						
T067	Hornbeam	370	11		High	N6.5, E6.5, S5.5, W4.5	Service hatch in RPA. Mechanical damage to exposed roots. Minor deadwood. Reasonable vigour.	B2	No work required.	4	Fell to permit development.	0
		4.44	0-2m		EM	Moderate						
Yes		61.9			20+ years	Grass						
T068	Norway Maple	410	13		High	N5.5, E4.5, S6.5, W7	Minor deadwood. Reasonable vigour.	B2	No work required.	4	Fell to permit development.	0
		4.92	0-2m		EM	Moderate						
Yes		76			20+ years	Grass						
T069	Silver Maple	130	6		High	N2.5, E3, S2.5, W2.5	Mechanical damage to base of stem. Suppressed specimen. Reasonable vigour.	C2	No work required.	4	Fell to permit development.	0
		1.56	0-2m		Y	Moderate						
Yes		7.6			10+ years	Grass						

TreeNo	Species	DBH	Height		Visual	Crown Spread	Problems / Comments	BS Cat	Work Required (TS)	Priority (TS)	Work Required (AIA)	Priority (AIA)
		Min Dist	Crown Base	Lowest Branch	Age	Water Demand						
		RPA (m ²)	Aspect	Aspect	SULE	Ground Cover						
T070	Silver Maple	500	15		High	N5.5, E7, S6.5, W7	Girdling root. Mechanical damage to base. Multi-stemmed from circa. 2m above ground level, unions appear stable. Tight unions throughout crown. Multiple small branch failures throughout crown. Adventitious growth. Reasonable vigour.	C2	No work required.	4	Fell to permit development.	0
		6	0-2m		M	Moderate						
Yes		113.1			10+ years	Grass						
T071	Silver Maple	420	15		High	N6.5, E6.5, S5, W6	Minor mechanical damage to base. Bifurcates at circa. 2m above ground level, union appears stable. Tight unions throughout crown. Small branch failures. Adventitious growth. Reasonable vigour.	C2	No work required.	4	Fell to permit development.	0
		5.04	0-2m		M	Moderate						
Yes		79.8			10+ years	Grass						
T072	Horse Chestnut	400	9.5		Moderate	N4.5, E3.5, S3.5, W3.5	Horse Chestnut Bleeding Canker. Multi-stemmed. 2m above ground level, unions appear stable. Old pruning wounds stem. Reasonable vigour.	C2	No work required.	4	Fell to permit development.	0
		4.8	0-2m		SM	Moderate						
Yes		72.4			10+ years	Grass						
T073	Horse Chestnut	160	6		Moderate	N2.5, E2.5, S2.5, W2.5	Small pruning wounds on stem. Reasonable vigour.	B2	No work required.	4	Fell to permit development.	0
		1.92	0-2m		SM	Moderate						
Yes		11.6			20+ years	Grass						
T074	Horse Chestnut	270	8.5		Moderate	N3.5, E3.5, S3, W3.5	Minor girdling root and mechanical damage to base. Multi-stemmed. 1.8m above ground level, unions appear stable. Reasonable vigour.	B2	No work required.	4	Fell to permit development.	0
		3.24	2.1-4m		SM	Moderate						
Yes		33			20+ years	Grass						
T075	Horse Chestnut	380	9		Moderate	N3, E3.5, S3.5, W3.5	Bifurcates at .1.6m above ground level, union appears stable. Pruning wounds. Reasonable vigour.	B2	No work required.	4	Fell to permit development.	0
		4.56	0-2m		SM	Moderate						
Yes		65.3			20+ years	Grass						
T076	Norway Maple	300	10.5		High	N4, E4, S5, W4	Mechanical damage to exposed roots. Bifurcates at circa. 2m and southern stem at circa. 3m above ground level. Bark inclusions at both unions but currently appear stable. Minor deadwood. Reasonable vigour.	B2	Monitor annually (defective unions).	3	Fell to permit development.	0
		3.6	0-2m		EM	Moderate						
Yes		40.7			20+ years	Grass						

TreeNo	Species	DBH	Height		Visual	Crown Spread	Problems / Comments	BS Cat	Work Required (TS)	Priority (TS)	Work Required (AIA)	Priority (AIA)
		Min Dist	Crown Base	Lowest Branch	Age	Water Demand						
		RPA (m ²)	Aspect	Aspect	SULE	Ground Cover						
T077	Norway Maple	310	12		High	N3.5, E3.5, S4, W5.5	Mechanical damage to exposed roots. Bifurcates at circa. 2m above ground level, union appears stable. Minor deadwood. Reasonable vigour albeit slightly reduced.	B2	No work required.	4	Fell to permit development.	0
		3.72	0-2m		EM	Moderate						
Yes		43.5			20+ years	Grass						
T078	Norway Maple	370	14		High	N5.5, E5, S5, W5	Bifurcates at circa. 2m above ground level, union appears stable. Minor deadwood. Reasonable vigour.	B2	No work required.	4	Fell to permit development.	0
		4.44	0-2m		EM	Moderate						
Yes		61.9			20+ years	Grass						
T079	Cherry	290	10		Moderate	N6, E4.5, S5.5, W4	Service hatch in RPA. Mechanical damage to exposed roots. Stem lean to east. Resinosis at base on eastern aspect and tapping with sounding hammer suggested presence of decay. Multi-stemmed from circa. 2m above ground level, slight bark inclusion. Moderate deadwood. Reduced vigour.	C2	Monitor annually (decay and vigour).	3	Fell to permit development.	0
		3.48	0-2m		M	Moderate						
Yes		38			10+ years	Grass						
T080	Cherry	400	12		Moderate	N5, E4.5, S6, W6	Service hatch in RPA. Mechanical damage to exposed roots. Stem wound / cavity north west aspect at circa. 2m above ground level. Multi-stemmed from 2.2m above ground level, slight bark inclusions. Moderate deadwood. Reasonable vigour.	C2	No work required.	4	Fell to permit development.	0
		4.8	0-2m		M	Moderate						
Yes		72.4			10+ years	Grass						
T081	Fastigate Beech	140	7.5		Moderate	N1, E1, S2.5, W2.5	Suppressed specimen. Minor deadwood.	C2	No work required.	4	Fell to permit development.	0
		1.68	2.1-4m		Y	Moderate						
Yes		8.9			10+ years	Grass						
T082	Oak	900	19		High	N8, E8.5, S8, W8.5	Heavily clad in Ivy up to 7m above ground level. Inspection of base and stem therefore not possible. Tear out wounds / branch failures. Tip dieback on northern and western aspects. Major deadwood. Reasonable vigour. BS categorisation may change following re-inspection.	B2	Remove Ivy and re-inspect. Remove deadwood.	2	Fell to permit development.	0
		10.8	2.1-4m		M	High						
Yes		366.4			20+ years	Grass						

TreeNo	Species	DBH	Height		Visual	Crown Spread	Problems / Comments	BS Cat	Work Required (TS)	Priority (TS)	Work Required (AIA)	Priority (AIA)
		Min Dist	Crown Base	Lowest Branch	Age	Water Demand						
		RPA (m ²)	Aspect	Aspect	SULE	Ground Cover						
T083	Lombardy Poplar	900	15		High	N3, E3, S3, W3	Remnants of a mature failed Poplar. Significant stem decay. Main stem failed at circa. 2.5m above ground level re-growth now up to 15m on decaying shell.	U	Fell.	2		
		10.8	2.1-4m		M	High						
Yes		366.4			<10 years	Dense undergrowth, Shrub bed						
T084	Hawthorn	100	4.5		Moderate	N2, E2, S1, W1.5	Reasonable vigour.	C2	No work required.	4	Fell to permit development.	0
		1.2	0-2m		Y	High						
Yes		4.5			10+ years	Bare earth						

Appendix C

Schedule of Works - Irrespective of Development

SCHEDULE OF WORK

North London Business Park, Oakleigh Road South, Brunswick Park, London

Surveyed By: Nick Hayden

Surveyed: 02/03/2021

Managed By: Nick Hayden

Tree No.	Species	Work required	Priority
T043	Ash	Fell.	1
T044	Scots Pine	Fell.	1
T001	Poplar	Remove deadwood.	2
T002	Poplar	Remove deadwood.	2
T016	Cedar	Remove Ivy and re-inspect. Remove broken hanging branches.	2
T020	Cherry	Remove Ivy and reinspect.	2
T026	Oak	Remove Ivy to 2m. Undertake secondary investigations with a Resistograph Microdrill.	2
T042	Silver Maple	Fell.	2
T055	Willow	Fell.	2
T056	Willow	Fell.	2
T060	Willow	Fell.	2
T061	Willow	Fell.	2
T062	Willow	Fell.	2
T082	Oak	Remove Ivy and re-inspect. Remove deadwood.	2
T083	Lombardy Poplar	Fell.	2
H001	Cypress	Reduce to 8m.	3
T009	Whitebeam	Fell.	3
T019	Apple	Remove Ivy and reinspect.	3
T024	Birch	Fell.	3
T027	Hawthorn	Fell.	3
T028	Western Red Cedar	Fell.	3
T048	Lombardy Poplar	Remove deadwood.	3
T049	Lombardy Poplar	Remove deadwood.	3
T064	Norway Maple	Crown clean by the removal of dead and failed branches.	3
T065	Ash	Crown clean by the removal of dead and failed branches.	3
T066	Ash	Remove deadwood.	3

Schedule of Enhanced Monitoring

North London Business Park, Oakleigh Road South, Brunswick Park, London

Surveyed By: Nick Hayden

Surveyed: 02/03/2021

Managed By: Nick Hayden

Tree No.	Species	Work required	Priority
T022	Birch	Monitor annually (dieback / vigour).	3
T025	Cypress	Monitor or fell.	3
T047	Norway Maple	Monitor annually (defective union).	3
T076	Norway Maple	Monitor annually (defective unions).	3
T079	Cherry	Monitor annually (decay and vigour).	3

Appendix D

Preliminary Schedule of Works to Allow Development

SCHEDULE OF WORKS (AIA)

North London Business Park, Oakleigh Road South, Brunswick Park, London

Surveyed By: Nick Hayden

Surveyed: 02/03/2021

Managed By: Nick Hayden

Tree No.	Species	Work required	Priority
A001	Birch, Cypress, Laurel, Poplar, Pyracantha and Willow	Fell to permit development.	0
A002	Birch, Cypress, Laurel, Maple, Oak, Rowan and Willow	Fell to permit development.	0
A003	Willow	Fell to permit development.	0
G001	1x Apple, 6x Birch, 1x Maple and Bay Laurel	Fell to permit development.	0
H001	Cypress	Fell to permit development.	0
H002	Cypress	Fell to permit development.	0
T004	Horse Chestnut	Fell to permit development.	0
T005	Horse Chestnut	Fell to permit development.	0
T006	Horse Chestnut	Fell to permit development.	0
T007	Horse Chestnut	Fell to permit development.	0
T008	Horse Chestnut	Fell to permit development.	0
T010	Whitebeam	Fell to permit development.	0
T011	Lime	Fell to permit development.	0
T012	Lime	Fell to permit development.	0
T013	Apple	Fell to permit development.	0
T014	Apple	Fell to permit development.	0
T015	Apple	Fell to permit development.	0
T016	Cedar	Fell to permit development.	0
T017	Apple	Fell to permit development.	0
T018	Apple	Fell to permit development.	0
T019	Apple	Fell to permit development.	0
T020	Cherry	Fell to permit development.	0
T021	Thorn	Fell to permit development.	0
T022	Birch	Fell to permit development.	0
T023	Birch	Fell to permit development.	0
T025	Cypress	Fell to permit development.	0
T026	Oak	Fell to permit development.	0
T029	Cherry	Fell to permit development.	0
T030	Cherry	Fell to permit development.	0

Tree No.	Species	Work required	Priority
T031	Swedish Whitebeam	Fell to permit development.	0
T032	Swedish Whitebeam	Fell to permit development.	0
T033	Swedish Whitebeam	Fell to permit development.	0
T034	Swedish Whitebeam	Fell to permit development.	0
T035	Birch	Fell to permit development.	0
T036	Scots Pine	Fell to permit development.	0
T037	Scots Pine	Fell to permit development.	0
T047	Norway Maple	Tip back crown as shown on drawing no. 8669-D-AIA to permit development.	0
T054	Beech	Fell to permit development.	0
T057	Beech	Fell to permit development.	0
T058	Horse Chestnut	Fell to permit development.	0
T059	Horse Chestnut	Fell to permit development.	0
T063	Horse Chestnut	Fell to permit development.	0
T064	Norway Maple	Fell to permit development.	0
T065	Ash	Fell to permit development.	0
T066	Ash	Fell to permit development.	0
T067	Hornbeam	Fell to permit development.	0
T068	Norway Maple	Fell to permit development.	0
T069	Silver Maple	Fell to permit development.	0
T070	Silver Maple	Fell to permit development.	0
T071	Silver Maple	Fell to permit development.	0
T072	Horse Chestnut	Fell to permit development.	0
T073	Horse Chestnut	Fell to permit development.	0
T074	Horse Chestnut	Fell to permit development.	0
T075	Horse Chestnut	Fell to permit development.	0
T076	Norway Maple	Fell to permit development.	0
T077	Norway Maple	Fell to permit development.	0
T078	Norway Maple	Fell to permit development.	0
T079	Cherry	Fell to permit development.	0
T080	Cherry	Fell to permit development.	0
T081	Fastigiata Beech	Fell to permit development.	0
T082	Oak	Fell to permit development.	0
T084	Hawthorn	Fell to permit development.	0

Appendix E

Explanatory Notes

Explanatory Notes

Categories

Below is an explanation of the categories used in the attached Tree Survey.

No Identifies the tree on the drawing.

Species Common names are given to aid understanding for the wider audience.

BS 5837 Main Category Using this assessment (BS 5837:2012, Table 1), trees can be divided into one of the following simplified categories, and are differentiated by cross-hatching and by colour on the attached drawing:

Category A - Those of high quality with an estimated remaining life expectancy of at least 40 years;

Category B - Those of moderate quality with an estimated remaining life expectancy of at least 20 years;

Category C - Those of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150 mm;

Category U - Those trees in such condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years.

BS 5837 Sub Category Table 1 of BS 5837:2012 also requires a sub category to be applied to the A, B, C, and U assessments. This allows for a further understanding of the determining classification as follows:

Sub Category 1 - Mainly arboricultural qualities;

Sub Category 2 - Mainly landscape qualities;

Sub Category 3 - Mainly cultural values, including conservation .

Please note that a specimen or landscape feature may fulfil the requirements of more than one Sub Category.

DBH (mm) Diameter of main stem in millimetres at 1.5 metres from ground level. Where the tree is a multi-stem, the diameter is calculated in accordance with item 4.6.1 of BS 5837:2012.

Age Recorded as one of seven categories:

Y Young. Recently planted or establishing tree that could be transplanted without specialist equipment, i.e. less than 150 mm DBH.

S/M Semi-mature. An established tree, but one which has not reached its prospective ultimate height.

E/M Early-mature. A tree that is reaching its ultimate potential height, whose growth rate is slowing down but if healthy, will still increase in stem diameter and crown spread.

M Mature. A mature specimen with limited potential for any significant increase in size, even if healthy.

O/M Over-mature. A senescent or moribund specimen with a limited safe useful life expectancy. Possibly also containing sufficient structural defects with attendant safety and/or duty of care implications.



D Dead.

Height	Recorded in metres, measured from the base of the tree.
Crown Base	Recorded in metres, the distance from ground and aspect of the lowest branch material.
Lowest Branch	Recorded in metres, the distance from ground and aspect of the emergence point of the lowest significant branch.
Life Expectancy	Relates to the prospective life expectancy of the tree and is given as 4 categories: 1 = 40 years+; 2 = 20 years+; 3 = 10 years+; 4 = less than 10 years.
Crown Spread	Indicates the radius of the crown from the base of the tree in each of the northern, eastern, southern and western aspects.
Minimum Distance	This is a distance equal to 12 times the diameter of the tree measured at 1.5 metres above ground level for single stemmed trees and 12 times the average diameter of the tree measured at 1.5 metres above ground level tree for multi stemmed specimens. (BS 5837:2012, section 4.6).
RPA	This is the Root Protection Area, measured in square metres and defined in BS5837:2012 as “a layout design tool indicating the minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain the tree’s viability, and where the protection of the roots and soil structure is treated as a priority”. The RPA is shown on the drawing.. Ideally this is an area around the tree that must be kept clear of construction, level changes of construction operations. Some methods of construction can be carried out within the RPA of a retained tree but only if approved by the Local Planning Authority’s tree officer.
Water Demand	This gives the water demand of the species of tree when mature, as given in the NHBC Standards Chapter 4.2 “Building Near Trees”.
Visual Amenity	Concerns the planning and landscape contribution to the development site made by the tree, hedge or tree group, in terms of its amenity value and prominence on the skyline along with functional criteria such as the screening value, shelter provision and wildlife significance. The usual definitions are as follows: Low An inconsequential landscape feature. Moderate Of some note within the immediate vicinity, but not significant in the wider context. High Item of high visual importance.
Problems/ Comments	May include general comments about growth characteristic, how it is affected by other trees and any previous surgery work; also, specific problems such as deadwood, pests, diseases, broken limbs, etc.
Work Required (TS)	Identifies the necessary tree work to mitigate anticipated problems and deal with existing problems identified in the “Problems/comments” category.



Work Required (AIA)

Identifies the tree work specifically necessary to allow a proposed development to proceed.

Priority

This gives a priority rating to each tree allowing the client to prioritise necessary tree works identified within the Tree Survey.

1 Urgent – works required immediately;

2 Works required within 6 months;

3 Works required within 1 year;

4 Re-inspect in 12 months,

0 Remedial works as part of implementation of planning consent.



BS 5837:2012 Terms and Definitions

Access Facilitation Pruning	One-off tree pruning operation, the nature and effects of which are without significant adverse impact on tree physiology or amenity value, which is directly necessary to provide access for operations on site.
Arboricultural Method Statement	Methodology for the implementation of any aspect of development that is within the root protection area, or has the potential to result in loss of or damage to a tree to be retained.
Arboriculturist	Person who has, through relevant education, training and experience, gained expertise in the field of trees in relation to construction.
Competent Person	Person who has training and experience relevant to the matter being addressed and an understanding of the requirements of the particular task being approached. <i>NOTE - a competent person is expected to be able to advise on the best means by which the recommendations of this British Standard may be implemented.</i>
Construction	Site-based operations with the potential to affect existing trees.
Construction Exclusion Zone	Area based on the root protection area from which access is prohibited for the duration of a project.
Root Protection Area (RPA)	Layout design tool indicating the minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain the tree's viability, and where the protection of the roots and soil structure is treated as a priority.
Service	Any above or below ground structure or apparatus required for utility provision. NOTE - examples include drainage, gas supplies, ground source heat pumps, CCTV and satellite communications.
Stem	Principal above ground structural component(s) of a tree that supports its branches.
Structure	Manufactured object, such as a building, carriageway, path, wall, service run, and built or excavated earthwork.
Tree Protection Plan	Scale drawing, informed by descriptive text where necessary, based upon the finalized proposals, showing trees for retention and illustrating the tree and landscape protection measures.
Veteran Tree	Tree that, by recognized criteria, shows features of biological, cultural or aesthetic value that are characteristic of, but not exclusive to, individuals surviving beyond the typical age range for the species concerned. NOTE - these characteristics might typically include a large girth, signs of crown retrenchment and hollowing of the stem.



Appendix F

Tree Preservation Order Enquiry/Response

Service Director – Planning and Building Control
London Borough of Barnet
Planning and Building Control
2 Bristol Avenue
Colindale
London, NW9 4EW

contact: Planning Tree Admin
tel: 0208 359 3000
e-mail: Planningtrees@barnet.gov.uk

date: 18 February 2021
our reference: **TPO-YES, CA-NO** (Application Needed)
your reference:

Dear Sir / Madam

Town and Country Planning Act, 1990 (as amended)
Site: North London Business Park, Oakleigh Road South, London, N11 1GN
Tree Preservation Order

I refer to your recent email dated 18th February 2021

Trees at the above address are included in a Tree Preservation Order and treatment to protected trees requires the formal consent of the Local Planning Authority (Barnet Council).

I attach a form and guidance notes for you to make an application to treat the tree(s), please note that the Town and Country Planning (Tree Preservation) (England) Regulations 2012 requires submission of the form and specified information.

The property is not within a Conservation Area.

Please note that this check for statutory tree protection has been undertaken only for the property for which the full postal address has been supplied and the information refers only to the above specified site.

If you do not own the trees it is advised that you obtain the consent of the owner before carrying out any work.

Yours faithfully

PP. 

Planning Trees Administration
Planning Support Section

From: Planningtrees <Trees.Planningtrees@Barnet.gov.uk>
Sent: 22 February 2021 11:02
To: Gabrielle Justesen
Subject: RE: TPO Enquiry - 8669 - North London Business Park, Oakleigh Road South, Brunswick Park, London, N11 1GN

Dear Gabby,

The reference number for the above is TRE-BA-55.

If you want information about Tree Preservation Order(s) you can either purchase copy Order(s) or, whenever it reopens, make arrangements to come into our Planning Reception to view the relevant Order(s):

- (i) Copies of TPOs are usually available for public inspection by prior arrangement at the Planning Reception 1st floor at Colindale Offices. However please note that the Council offices are not currently open due to Covid 19 restrictions, so should you wish to view copies of TPO(s) at the Council's offices there would be a delay until the restrictions are lifted. Whilst the situation is under regular review, there are no plans at present for the Planning Reception to reopen and staff are working from home. If you wish to pursue this option please contact Planning Trees admin (e-mail planningtrees@barnet.gov.uk) after the restrictions have been lifted for more information.
- (ii) Copies of TPOs are available for purchase - either as a full copy of the document costing £31.00 per TPO, or an extract comprising the TPO map and First Schedule (which should be adequate for to enable identification of the relevant trees) costing £16.00 per Order - either plus postage where relevant.
 - once payment has been made please e-mail Planning Trees admin (planningtrees@barnet.gov.uk) to arrange copying.

Payment should be made upfront by credit or debit card (we do not take American Express). If you wish to make a card payment please call 0208 359 3000 – option 2.

You may wish to note that as a further alternative, the TPO Schedule Item data may be downloaded from:

Open Barnet Portal - <https://open.barnet.gov.uk/dataset/tree-preservation-orders-within-the-london-borough-of-barnet>

However, you will need a GIS system to be able to access the TPO information spatially - otherwise it is shown as spreadsheet, with the addresses/situation cited on the Order when made (which may subsequently have been changed).

- As advised on the Open Barnet website the “spreadsheet” is a dataset containing “polygons for Tree Preservation Order Schedule Items within the London Borough of Barnet” and should be read with an appropriate GIS program – which would enable you to view the location and extent of the individually, group, area and woodland designated Tree Preservation Orders in the Borough in their current context.
- It would not be possible to accurately identify designated protected trees from textual data alone in the absence of the relevant spatial mapping, please note the caveats on the Open Barnet website.

Kind regards

Helen

Helen Conlon
Planning Officer, Trees and Environment
Development and Regulatory Services
London Borough of Barnet, 2 Bristol Avenue, Colindale, NW9 4EW
Barnet Online: www.barnet.gov.uk



From: Gabrielle Justesen <Gabby@treesurveys.co.uk>
Sent: 18 February 2021 13:54
To: Planningtrees <Trees.Planningtrees@Barnet.gov.uk>
Subject: RE: TPO Enquiry - 8669 - North London Business Park, Oakleigh Road South, Brunswick Park, London, N11 1GN

Dear Sir or Madam,

Many thanks for your prompt reply, it's much appreciated.

Would it be possible to have the TPO reference number/s and a copy of the TPO schedule/plan which depicts the trees protected under the order.

With thanks.

Kind regards

Gabby Justesen
Office Manager – Southern Office

(Please note my working hours are 9am – 3pm)

CORONAVIRUS PROCEDURES:

Due to the nature of our work, a large percentage of the site work is lone working and consequently low risk. Therefore, we are still operating as normal providing we can lone work on site and avoid meetings, albeit with reduced staff numbers, meaning there shouldn't be any delay with the service you normally receive from Hayden's. If you have a site visit currently booked with us you will have been contacted by our Head Office. Our office-based staff are all working remotely. We remain vigilant and are carefully following the Government's advice on hygiene and quarantine/movement. We will update this notice as and when operating procedures may change. Rest assured we have both our clients' and employees' best interests at heart and will not compromise these in any way



Tel: 01722 657423

gabby@treesurveys.co.uk

www.treesurveys.co.uk

Head Office: 5 Moseley's Farm Business Centre, Fornham All Saints, Bury St. Edmunds, Suffolk, IP28 6JY

Southern Office: Unit 6 Enterprise House, Cherry Orchard Lane, Salisbury, Wiltshire, SP2 7LD

FACEBOOK TWITTER LINKEDIN INSTAGRAM

The information contained in this email and any attachments is confidential and intend solely for the attention and use of the named addressee(s). If you are not the intended recipient, you may not disclose, copy, distribute or retain this message or any part of it without the prior agreement or consent of the sender. If you have received this in error please delete it and inform the sender to avoid transmission problems for the future.

By entering into email correspondence with Hayden's, you are confirming that you are happy for us to keep your details on file, stored securely, to enable us to provide services and advice at any future point. If you would not like your details stored on our secure client database, please email info@treesurveys.co.uk. Your personal details will not be used for any marketing purposes.

From: Planningtrees [<mailto:Trees.Planningtrees@Barnet.gov.uk>]

Sent: 18 February 2021 13:32

To: Gabrielle Justesen <Gabby@treesurveys.co.uk>

Subject: RE: TPO Enquiry - 8669 - North London Business Park, Oakleigh Road South, Brunswick Park, London, N11 1GN

Planning - Trees and Environment

Planning and Building Control

London Borough of Barnet, 2 Bristol Avenue, Colindale, NW9 4EW

Tel: 020 8359 3000

Web: barnet.gov.uk

From: Gabrielle Justesen <Gabby@treesurveys.co.uk>

Sent: 18 February 2021 13:09

To: Planningtrees <Trees.Planningtrees@Barnet.gov.uk>

Subject: TPO Enquiry - 8669 - North London Business Park, Oakleigh Road South, Brunswick Park, London, N11 1GN

Dear Sir or Madam,

Could you please advise if the above mentioned site and adjacent areas are covered by TPO or located within a Conservation Area?

I have attached a map for your use.

Many thanks and I look forward to hearing from you.

Kind regards

Gabby Justesen

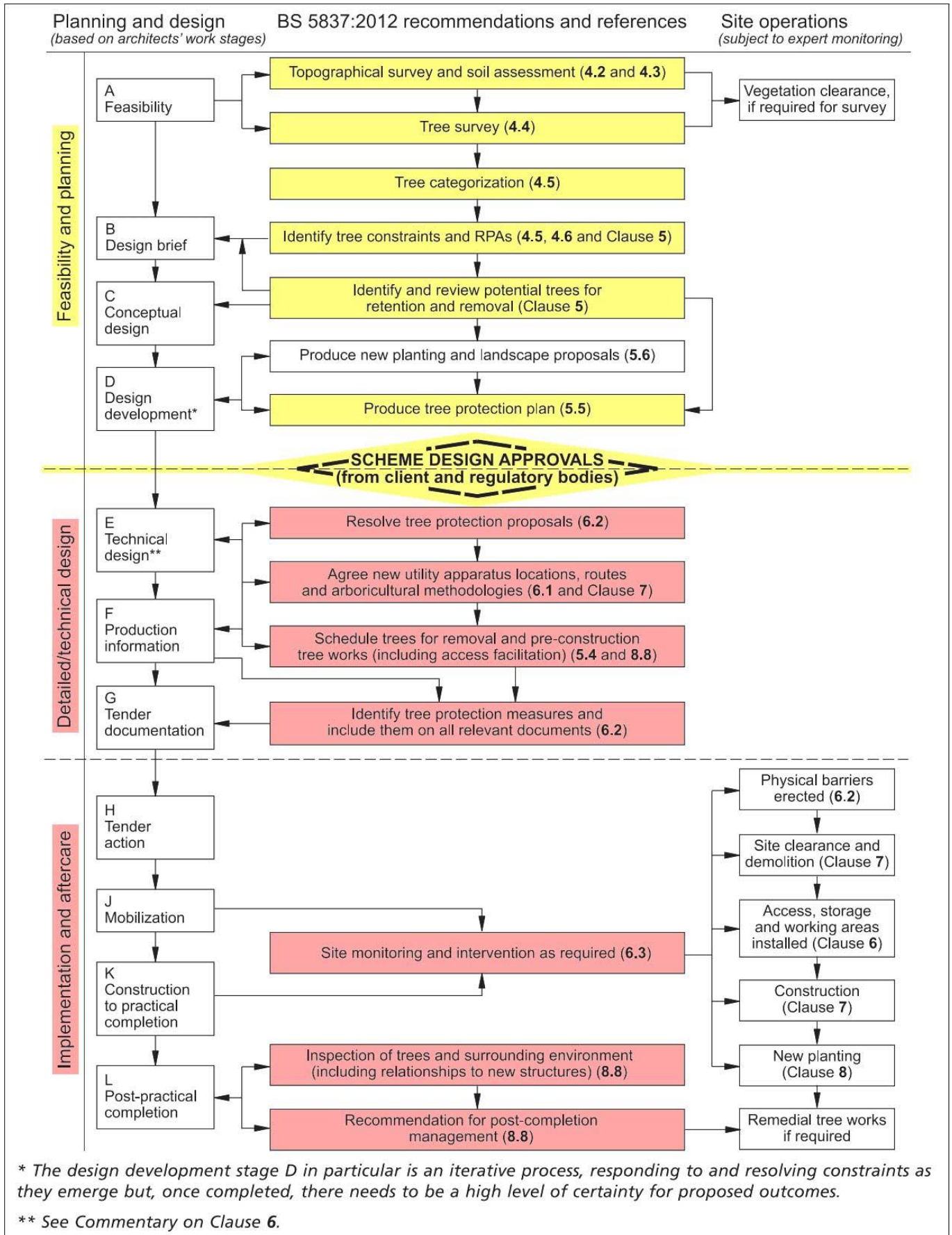
Office Manager – Southern Office

(Please note my working hours are 9am – 3pm)

Appendix G

Advisory Information & Sample Specifications

1. BS 5837:2012 Figure 1 - Flow Chart – Design and Construction & Tree Care

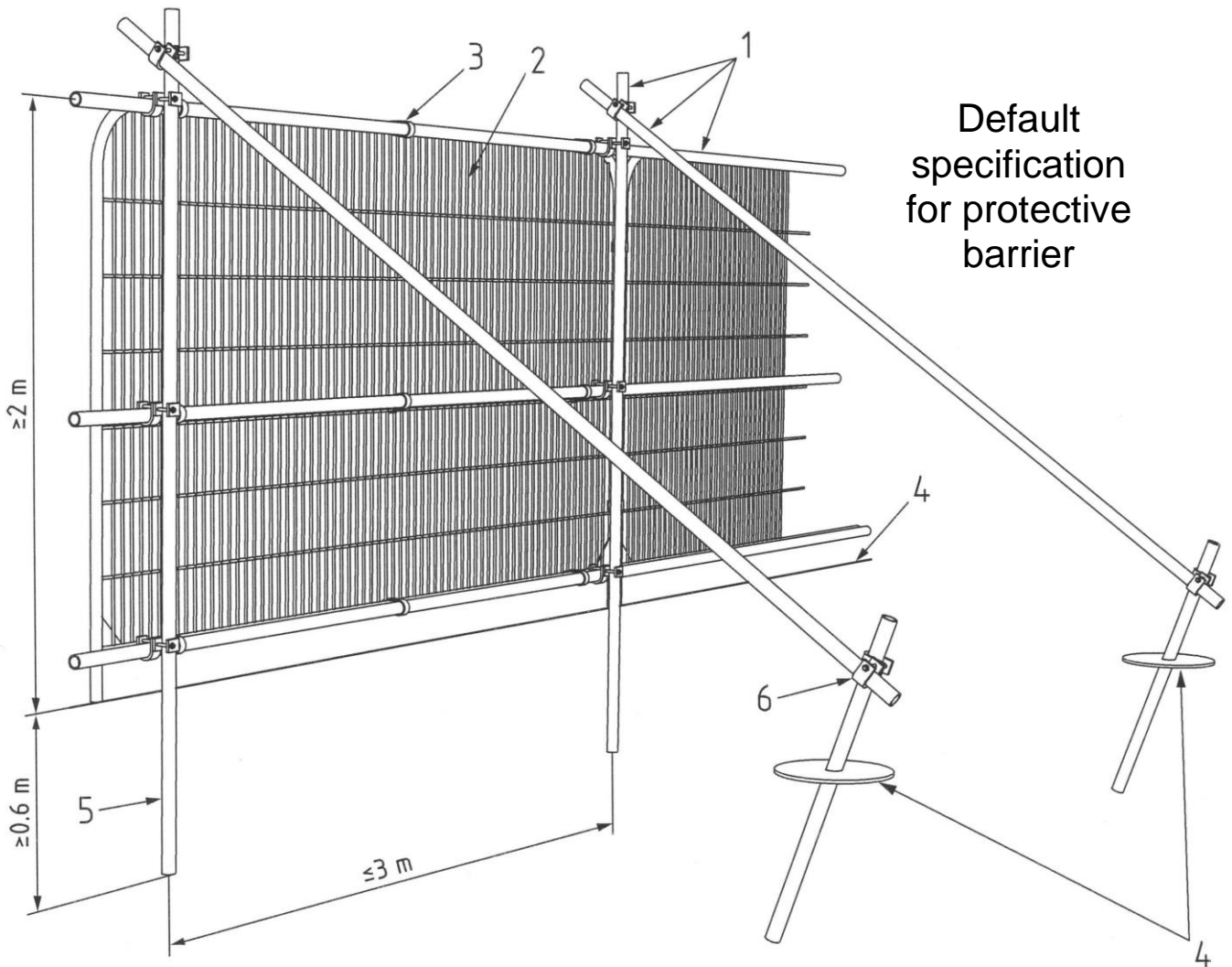


2.

European Protected Species and woodland operations. (V4)
Complete all sections of the Checklist

Checklist		Details												
1	<p>Are you within, or close to, the known mapped range of any of the protected species OTHER THAN BATS which are potentially everywhere? Tick any that apply. See distribution maps in the Good Practice Guidance for each species -</p> <ul style="list-style-type: none"> <input type="checkbox"/> Dormice <input type="checkbox"/> Otters <input type="checkbox"/> Great crested newts <input type="checkbox"/> Sand lizards <input type="checkbox"/> Smooth snakes 	<p>Name of Wood:</p> <hr/> <p>Grid Reference:</p> <table border="1" style="width: 100%; height: 20px; border-collapse: collapse;"> <tr> <td style="width: 25%;"></td> <td style="width: 25%;"></td> <td style="width: 25%;"></td> <td style="width: 25%;"></td> </tr> </table> <p>Area: (ha)</p> <table border="1" style="width: 100%; height: 20px; border-collapse: collapse;"> <tr> <td style="width: 25%;"></td> <td style="width: 25%;"></td> <td style="width: 25%;"></td> <td style="width: 25%;"></td> </tr> </table> <p>Date of Assessment:</p> <table border="1" style="width: 100%; height: 20px; border-collapse: collapse;"> <tr> <td style="width: 25%;"></td> <td style="width: 25%;"></td> <td style="width: 25%;"></td> <td style="width: 25%;"></td> </tr> </table> <p>Name of Assessor:</p> <hr/>												
2	<p>Does your wood contain any of the following habitats? Tick any that apply.</p> <ul style="list-style-type: none"> <input type="checkbox"/> Old trees with holes and crevices which might be used bats <input type="checkbox"/> Species rich scrub/coppice, early growth stage plantations and forest interfaces <input type="checkbox"/> Rivers on which otters might be found <input type="checkbox"/> Ponds which might be occupied by great crested newts <input type="checkbox"/> Open areas on heathy soils 	<p>YES</p> <p>NO</p>												
3	<p>Have any of the protected species been recorded in this wood or on adjoining sites? Tick any that apply. Indicate which sources of information you have checked:</p> <ul style="list-style-type: none"> <input type="checkbox"/> National Biodiversity Network (www.nbn.org.uk) <input type="checkbox"/> Local Biological Records Centre <input type="checkbox"/> Local Wildlife Trust <input type="checkbox"/> Other <p>Specify Other:</p>	<p>YES</p> <p>NO</p>												
4	<p>Have your inspections or any expert surveys found any of the following signs or evidence? Tick any that apply.</p> <ul style="list-style-type: none"> <input type="checkbox"/> Signs (e.g. otter spraint, nuts gnawed by dormice, leaves folded by newts) <input type="checkbox"/> Sightings (or echo-location) <input type="checkbox"/> Potential breeding or roosting sites (e.g. veteran trees, old trees with crevices, riverside hollow trees, ponds, timber stacks, large fallen deadwood) <input type="checkbox"/> Confirmed breeding or roosting sites (i.e. evidence of sites actually being used) <p>Details:</p>	<p>YES</p> <p>NO</p>												
CHECK POINT	<p>If you have answered NO to ALL of the above then only bats need to be considered in your operations.</p> <p>If you have answered YES to any of the above then the species concerned must be considered as well as bats.</p>													
5	<p>Do the operations comply with Good Practice for bats and any other species found (or likely to be found in your wood) or can the operations be modified to do so? <i>Details: Use reverse of form to expand as required.</i></p>	<p>YES</p> <p>NO</p>												
6	<p><u>Whether or not a licence is required...</u> Has the information been communicated to operators (including the location of breeding sites and sensitive areas)? Tick any that apply.</p> <ul style="list-style-type: none"> <input type="checkbox"/> Included in documentation (e.g. contract, letter of instruction, site assessment or other management plan) <input type="checkbox"/> Shown to operators and/or their supervisor <input type="checkbox"/> Marked with paint or hazard tape <input type="checkbox"/> Shown on the site plan <p>Other means:</p>	<p>YES</p> <p>NO</p>												
7	<p>Have arrangements for supervision been made to ensure Good Practice guidance is complied with during the operations? <i>Details:</i></p>	<p>YES</p> <p>NO</p>												
		Notes												
		<p>A licence is not required but continue to sections 6 and 7 below</p> <p>You will need to obtain a licence BEFORE carrying out the work (see EPS Licence Application Forms and Notes)</p>												
		<p>You may commit an offence if you do not tell your operators about the protected species in your wood.</p>												
		<p>You may commit an offence if you do not take steps to ensure that your operators comply with the Good Practice guidance.</p>												

3. BS 5837:2012 Figure 2: Default specification for protective barrier

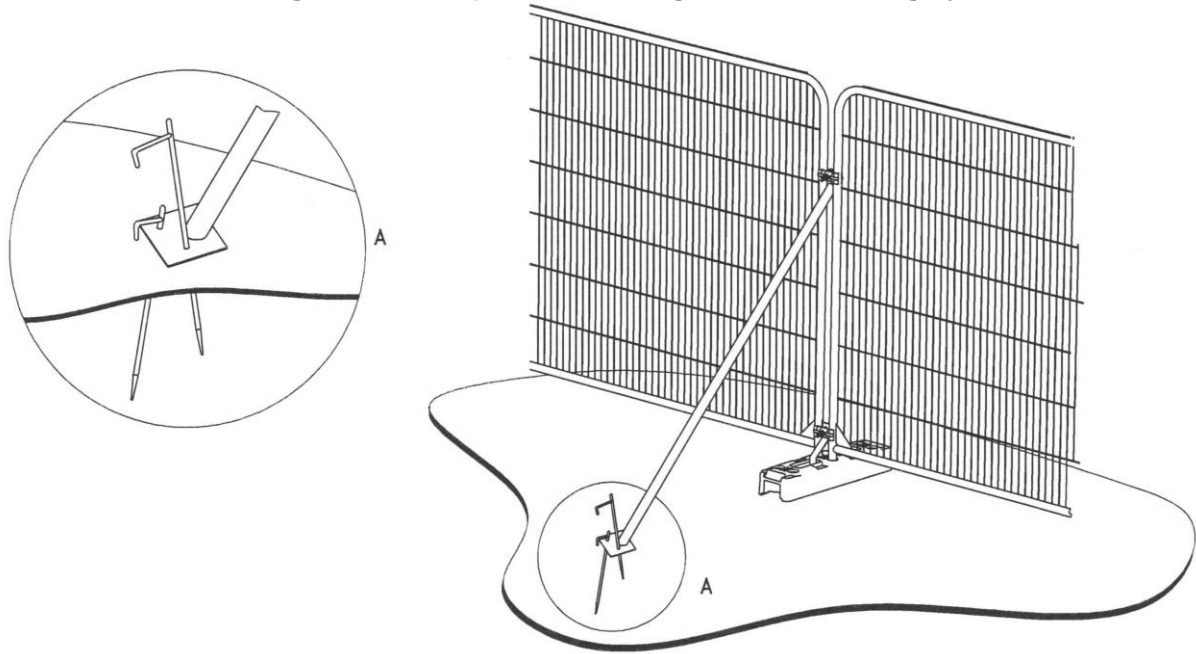


Default
specification
for protective
barrier

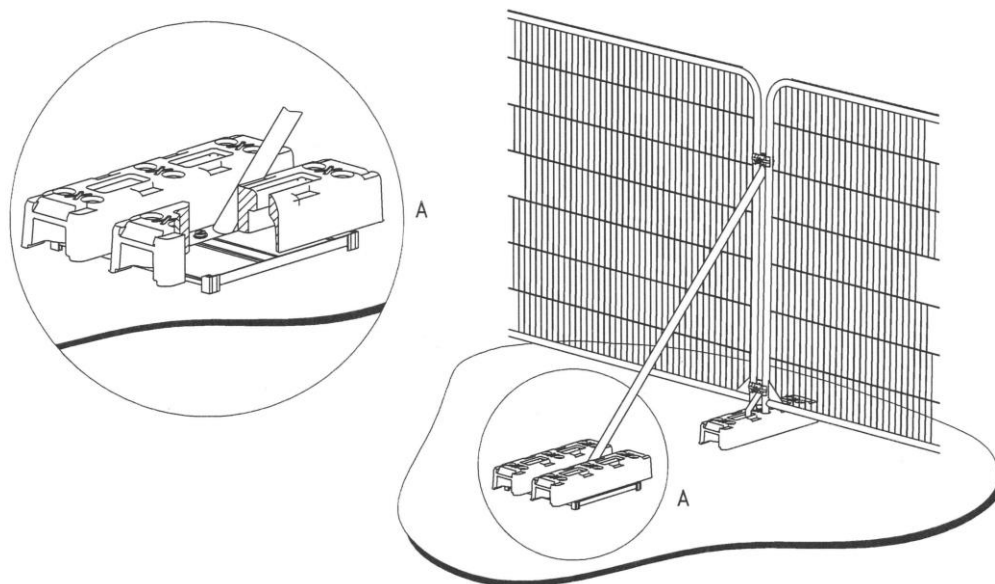
Key

- 1 Standard scaffold pole
- 2 Heavy gauge 2m tall galvanised tube and welded mesh infill panels
- 3 Panels secured to uprights and cross-members with wire ties
- 4 Ground level
- 5 Uprights driven into the ground until secure (minimum depth 0.6m)
- 6 Standard scaffold clamps

4. BS 5837:2012 Figure 3: Examples of above-ground stabilizing systems



a) Stabilizer strut with base plate secured with ground pins



b) Stabilizer strut mounted on block tray

Appendix H

Hayden's Drawing

- Arboricultural Impact Assessments ●
- Arboricultural Method Statements ●
- Tree Constraints Plans ●
- Arboricultural Feasibility Studies ●
- Shade Analysis ●
- Picus Tomography ●
- Arboricultural Consultancy for Local Planning Authority ●
- Quantified Tree Risk Assessment ●
- Health & Safety Audits for Tree Stocks ●
- Tree Stock Survey and Management ●
- Mortgage and Insurance Reports ●
- Subsidence Reports ●
- Woodland Management Plans ●
- Project Management ●
- Ecological Surveys ●



Telephone
01284 765391
Email
info@treesurveys.co.uk
Website
www.treesurveys.co.uk

5 Moseley's Farm
Business Centre
Fornham All Saints
Bury St Edmunds
Suffolk
IP28 6JY

APPENDIX 9: TPO AND CONSERVATION AREA EMAIL

From: James Rawlinson
Sent: 23 August 2020 09:41
To: planningtrees@barnet.gov.uk
Subject: Request for TPO and Conservation Area locations

Dear Planning Trees

We are currently working on the planning application (discharge of conditions) for the North London Business Park redevelopment and need to understand the protected status of trees within the Phase 1 development area. Can you therefore please clarify whether the trees located within the area identified on the attached plan (red line) and are covered by either TPO's or a Conservation Area?

Please let us know if you require any further details.



Regards



JAMES RAWLINSON
CONSULTANT
0203 544 5827 M: 07533 793 587
W: www.greengage-env.com
in 
