



**Turing House Free School,
Hospital Bridge Road.**

Arboricultural Survey

And

Arboricultural Impact
Assessment

For

Campbell Reith

Project No: A-CAM-229/001

August 2018

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FIGURE 1: SITE LOCATION

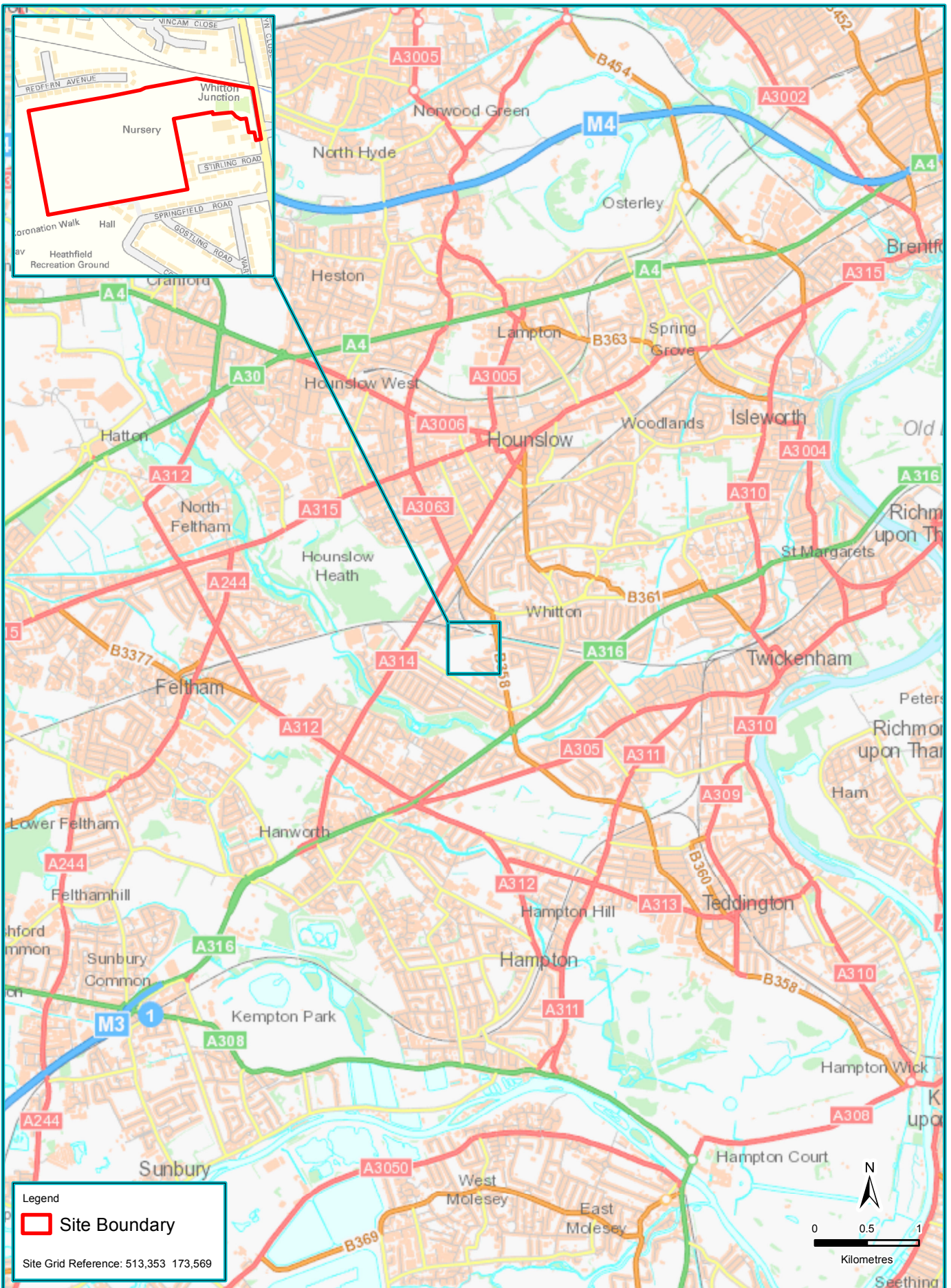
FIGURE 2: TREE CONSTRAINTS PLAN (TCP01)

FIGURE 3: TREE PROTECTION PLAN (TPP01)

1. Summary

- 1.1.1** Education Funding Agency (EFA) is involved in the redevelopment of a plot of land in Whitton, London (see Figure 1). The proposals include the construction of Turing House Free School, to include a teaching block, sports block, hard and soft informal play areas and athletics and sports pitches.
- 1.1.2** Thomson Ecology were commissioned by Campbell Reith to undertake an arboricultural survey of up to 100 trees within and adjacent to the site, and to produce an Arboricultural Impact Assessment (AIA) which discusses the likely impact of the development proposals on the trees at the site. The arboricultural survey was carried out in accordance with BS5837:2012 '*Trees in Relation to Design, Demolition and Construction - Recommendations*' (BS5837:2012).
- 1.1.3** All trees were categorised in accordance with the cascade chart for tree quality assessment in BS5837:2012 (see Appendix 2). Trees were given a ranking of A, B or C in descending order of value and assigned one or more subcategories qualifying the basis of that value as either arboricultural, landscape or cultural. Trees with only short-term remaining value or that require immediate removal for safety or management reasons are given a U rating.
- 1.1.4** A total of 22 individual trees and six groups of trees were recorded during the survey and are listed in the Tree Schedule. The surveyor recorded one Category A tree, 16 Category B trees, one Category B group of trees five Category C trees and five Category C groups of trees located within or adjacent to the site (see Figure 2).
- 1.1.5** An additional survey of six trees was carried out by Thomson Ecology on 24th August 2017 and found two additional Category C trees and four Category U trees.
- 1.1.6** Category A, B and C trees represent a material consideration to development. Concerted effort should be made to retain A and B category trees within the development. While Category C trees should be retained where possible, they should not be retained where they would present a serious constraint to development.
- 1.1.7** It is recommended that an AMS is undertaken once detailed plans of the proposed layout are available.

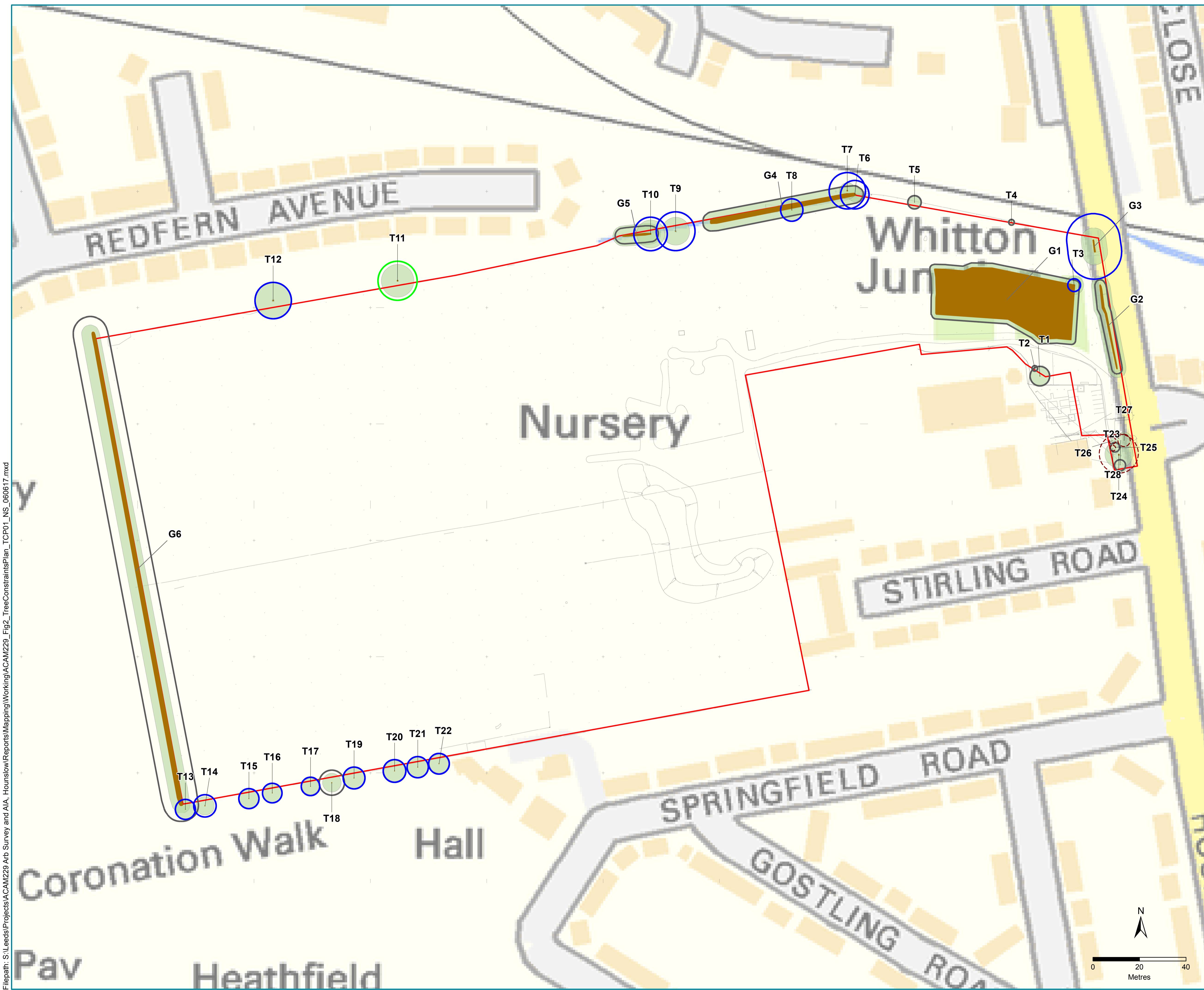
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Figure Title	Site Location		Drawn	NS	Checked	AS
			Date	06/06/2017	Date	06/06/2017
			 www.thomsonecology.com enquiries@thomsonecology.com			

Legend

- Root Protection Area of Category 'A' Tree
- Root Protection Area of Category 'B' Tree
- Root Protection Area of Category 'C' Tree
- Root Protection Area of Category 'U' Tree
- Tree Stem Location
- Tree Canopy Extents
- Site Boundary



Site Grid Reference: 513,353 173,569

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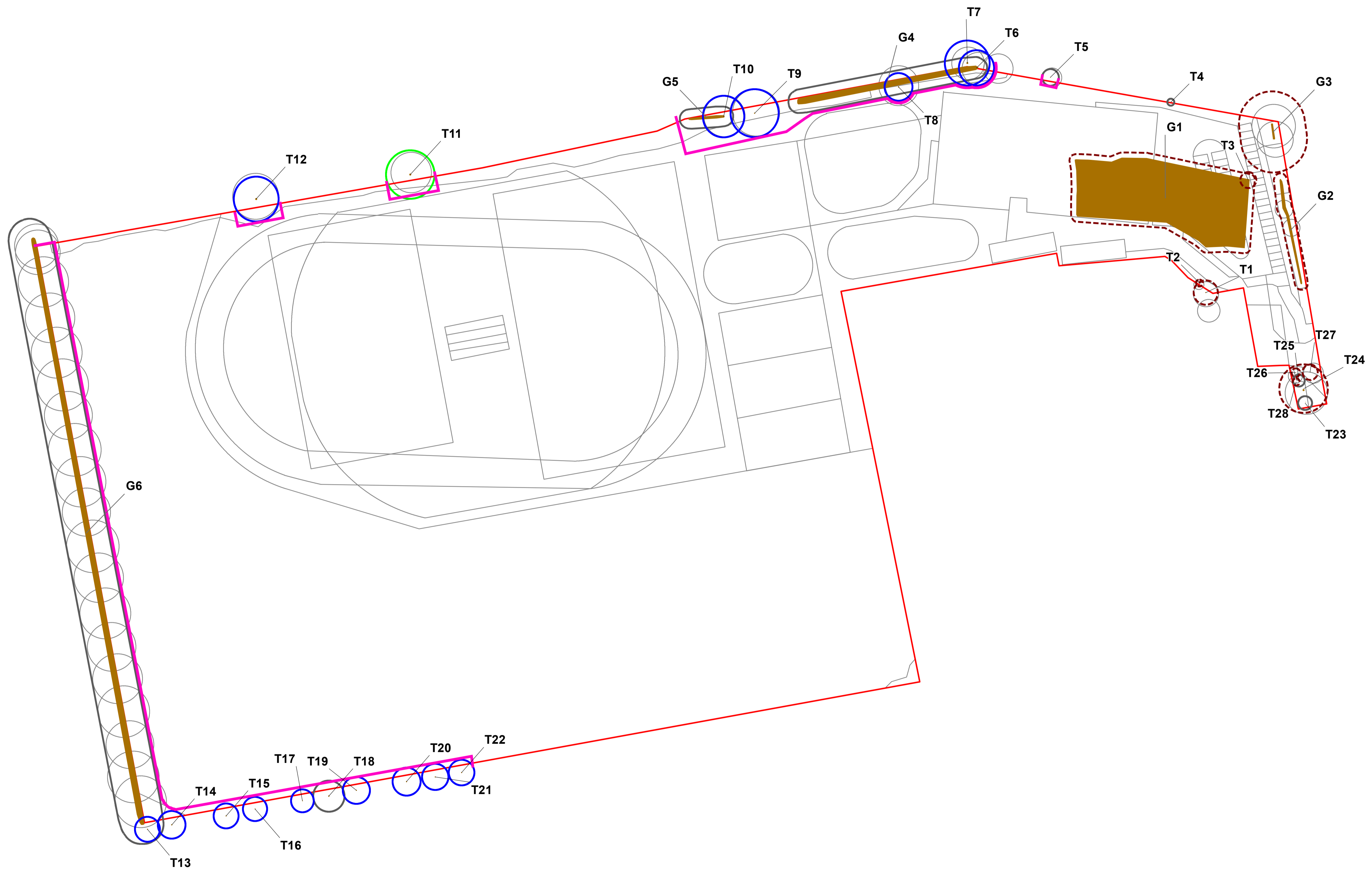
Client **Campbell Reith**

Figure Number **2**

Figure Title
Tree Constraints Plan (TCP01)

Legend

- Protection Fencing
- Root Protection Area of Category 'A' Tree
- Root Protection Area of Category 'B' Tree
- Root Protection Area of Category 'C' Tree
- Trees to be Removed to Facilitate Development
- Tree Stem Location



Site Grid Reference: 513,353 173,569

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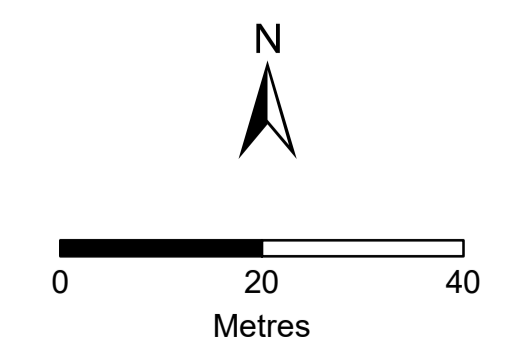
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Drawn TP	Checked NS
Date 29/08/2017	Date 29/08/2017

Client **Campbell Reith**

Figure Number **3**

Figure Title
Tree Protection Plan (TPP01)



2. Introduction

2.1 Development Background

2.1.1 Campbell Reith is involved in the development of a site located off Hospital Bridge road, Whitton, London. Proposals are assessing the feasibility for a new free school with associated buildings and sports facilities as well as informal soft areas. These proposals are hereafter referred to as 'the development'.

2.1.2 The development is located on an approximately 6.7ha area of land (grid reference TQ132735), shown on Figure 1. The area affected by the development is hereafter referred to as 'the site'. The site currently comprises an area of open grass land with no structures on it.

2.1.3 There are a number of trees within the site and adjacent to the site boundary that may be affected by development. Detailed development plans are in the process of being drawn up.

2.2 Site Description

2.2.1 Adjacent to the southern boundary of the site lies Heathfield Recreation Ground and to the west of the site is the Borough Cemetery. Immediately to the east of the site is Sempervirens Nursery and to the north runs a railway line. Residential properties surround the wider area.

2.3 Brief and Objectives

2.3.1 Campbell Reith commissioned Thomson Ecology on 15th January 2017 to complete an arboricultural survey and report of the site and produce an Arboricultural Impact Assessment.

2.3.2 The objective of the survey and report was to assess the condition of the existing trees on site and any off site trees that might be affected by the development, providing sufficient information to enable decisions to be made on potential design layout and tree retention for the proposed development. The brief was to complete:

- An Arboricultural survey of up to 100 trees (grouped where deemed appropriate) within or immediately adjacent to the site (as defined by the plan provided within your email dated 04/01/2017), in line with BS5837:2012.
- A desk study to determine the presence of any Tree Preservation Order or Conservation Area restrictions at the site;
- An Arboricultural report detailing our methods and results including the Tree Schedule and a Tree Constraints Plan;
- An Arboricultural Impact Assessment (AIA) based on the proposed site layout and combined with the report of the survey results; and
- A Tree Protection Plan.

2.4 Limitations

2.4.1 The information provided within this report and in the accompanying Tree Schedule covers only those trees that were inspected and their condition at the time of survey.

- 2.4.2** A full hazard assessment has not been made and therefore no guarantee is given as to the structural integrity of any of the trees on site.
- 2.4.3** Where trees were clad in ivy (*Hedera helix*), or where dense epicormic growth or dense underplanting obscured the main stem, this was recorded in the Tree Schedule. The inspection of such trees is impeded and as such a further inspection may be required following the removal of the obstruction. The retention categories of such trees should be considered as provisional only.
- 2.4.4** Measurements for off-site trees have been estimated and therefore may not fully represent the related constraints.
- 2.4.5** Whilst this report makes general observations on the long term potential of the trees surveyed, trees are dynamic organisms and subject to continual change, thus this report should not be relied upon for the purposes of development for more than 12 months from the date of survey.

3. Methodology

3.1 Desk Study

3.1.1 Records of Tree Preservation Orders (TPOs) existing at the site and Conservation Areas within or adjacent to the site were sought from London Borough of Richmond upon Thames Council.

3.2 Tree Survey

3.2.1 All significant trees at the site were assessed for their potential to be affected by the development proposals. Significant trees are defined as those with a trunk diameter of greater than 75mm at 1.5m above ground level according to the survey methodology outlined in BS5837:2012. Off-site or third party trees have been included where it is likely they would influence the development.

3.2.2 The trees surveyed were inspected from ground level only and no internal investigations were undertaken.

3.2.3 Trees were categorised as single trees or those that formed part of a distinct group such as a woodland or hedgerow. Groups can be defined as cohesive arboricultural features, either aerodynamically (for example, companion shelter), visually or culturally including for biodiversity (BS5837:2012). The information recorded for each tree can be seen in Table 1.

Table 1: Information recorded for each tree during survey

Attribute	Description
Tree No.	Numerical reference given in sequential order starting at number '1', corresponding with the numbers as set out in Figure 2; trees are given the prefix 'T', groups 'G', woodlands 'W' and hedgerows 'H'.
Species	The common names are based upon on site identification and expressed according to <i>Tree Guide</i> (Johnson & More, 2004).
Height	Measured approximately from ground level with the aid of a clinometer and shown in metres (m).
Stem Diameter	Diameter measured at approximately 1.5m above ground level. In the case of multi-stemmed trees, measurement is taken of each stem at 1.5m, where there are two to five stems; or a mean stem diameter at 1.5m, where there are more than five stems. Given in millimetres (mm).
Canopy Spread	Maximum branch spread measured in metres from the centre of the trunk in the direction of the four cardinal points of the compass (or an average can be given if branches demonstrate an even spread).
Crown Clearance	Height above ground level of the first significant branch and direction of growth, and the height above ground level of the overall canopy.

Attribute	Description
Age Class	<ul style="list-style-type: none"> • Young - less than one-third natural life span spent; • Middle-aged - between one-third and two-thirds natural life span spent; • Mature - greater than two-thirds life span completed; • Over-mature - mature, and in an overall state of decline; • Veteran - surviving beyond the typical age range for the species with a high value in terms of conservation and amenity.
Physiological Condition	Overall health, condition and function of the tree in comparison to a 'normal' example of the species of a similar age; e.g. 'good', 'fair', 'poor' or 'dead'. If deemed necessary, these gradings may be elaborated upon in the 'Comments' section.
Structural Condition	The overall structural condition of the tree including the roots, butt, trunk, limbs and their unions, and the presence of any structural defects, decay or pathological defects. <ul style="list-style-type: none"> • Good - no significant visible structural defects with a form typical for the species; • Fair - a specimen with only minor defects that are easily remedied or of no long term significance; • Poor - significant and irremediable physiological or structural defects that may lead to early or premature decline; • Hazardous - significant structural defects of such a degree that there is a risk of imminent collapse or failure. If deemed necessary, these gradings may be elaborated upon in the 'Comments' section.
Comments	Comments have been made, where appropriate, relating to location, health and condition, structure and form, estimated life expectancy, conservation value and amenity value within the local landscape.
Preliminary Management Recommendations	Tree work that should be undertaken for good arboricultural management, regardless of the requirements of the development.
Estimated Remaining Contribution	The estimated time, in years, that the tree will provide a safe contribution to the site (i.e. <10, 10-20, 20-40 and >40).

Quality Assessment

3.2.4 During the survey, the trees were assessed qualitatively, categorising the quality and value of the trees based on arboricultural, landscape and cultural (including conservation) features. Each tree was then placed into one of four categories. The four categories can be seen in Table 2. Definitions for these categories can be found in Appendix 2.

Table 1: Quality assessment categories

Category	Description
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.
Category A	Trees of high quality with an estimated life expectancy of at least 40 years.
Category B	Trees of moderate quality with an estimated remaining life expectancy of at least 20 years.
Category C	Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150mm.

3.2.5 Trees categorised as either A, B or C, were also allocated up to three subcategories. The subcategories chosen for each tree are dependent on the main reasons for selection of the particular category grading. The three subcategories are as follows:

1. Category grading based on mainly arboricultural qualities;
2. Category grading based on mainly landscape qualities; and
3. Category grading based on mainly cultural values, including conservation.

Root Protection Areas (RPAs)

3.2.6 Trees that are selected for retention on the site could be at risk of damage during construction, such as root damage during excavations for foundations or services, or any ground-working for landscaping. Further impacts on the trees may potentially result from vehicle movements and materials storage, including root severance, compaction of the soil and exclusion of air and water to the soil. The risk of tree damage is minimised if construction activities are planned to avoid the roots of trees.

3.2.7 The area of ground adjacent to each tree or group of trees that contains the majority of the roots can be calculated using the equation provided in the BS5837:2012. This Root Protection Area (RPA) is a radius around the tree of 12 times the stem diameter for a single stem. For multi-stemmed trees of two to five stems and greater than five stems, the cumulative stem diameters to be multiplied by 12, are calculated as per the equations in Table 3.

Table 3: Equations for the calculation of the RPA of multi-stemmed trees

Number of stems	Equation
Two to five	$\sqrt{((\text{stem diameter } 1)^2 + (\text{stem diameter } 2)^2 \dots + (\text{stem diameter } 5)^2)}$
More than five	$\sqrt{(\text{mean stem diameter})^2 \times \text{number of stems}}$

- 3.2.8** The RPA for each tree in the Tree Schedule has been calculated and, where relevant, has been adjusted to take into account site conditions. For example, when a tree is growing in a confined root space adjacent to an existing building or other solid structure that would restrict root growth in that direction, the RPA has been adjusted accordingly (see Figure 2).
- 3.2.9** The RPA for tree groups is calculated using the stem diameter of the largest tree within the group. The RPA radius is calculated as per Section 3.2.7 and then used to define the RPA by following the outline of the group's extent.
- 3.2.10** Where the calculated RPA exceeds 707m², it has been capped at this figure, as per BS5837:2012. This is equivalent to a circle with a radius of 15m or a square with approximately 26m sides.

Date of Survey

- 3.2.11** The site was visited and the survey undertaken on 31st May 2017 by Iain Waddell Tech Cert (ArborA), Dip Arb L6 (ABC), TechArborA

Weather Conditions

- 3.2.12** The weather conditions at the time of survey were dry and clear. Deciduous trees were in full leaf.

4. Results

4.1 Desk Study

4.1.1 It was confirmed on 7th July 2017 on the London Borough of Richmond upon Thames Council's website that no trees within the site or immediately adjacent to the site boundaries are located within a Conservation Area. Confirmation of whether any trees are covered by a Tree Preservation Order has been requested and a reply has not yet been received.

4.1.2 Under the Town and Country Planning (Tree Preservation) (England) Regulations 2012 it is prohibited to cut down, top, lop, uproot, wilfully damage or wilfully destroy; or cause or permit the cutting down, topping, lopping, uprooting, wilful damage or wilful destruction of any tree, or group of trees, subject to a TPO or that is located within a Conservation Area except with the consent of the local authority.

4.2 Tree Survey

4.2.1 A total of 28 significant individual trees and six groups of trees located within or immediately adjacent to the site boundary were recorded during the survey. There was a number of young trees scattered thorough out the site which had a stem diameter of less than 75mm, these trees were not recorded or included within this report as they fall below the criteria outlined in section 3.2.1. A breakdown of categories can be found in Table 4. The locations of all trees, RPAs, retention categories and reference numbers are shown on Figure 2. A detailed description of each tree is given in the Tree Schedule in Appendix 1.

Table 2: Number of significant trees allocated to each retention category.

Tree Category	Number of Trees	Tree Numbers	Number of Groups	Group numbers	Total
A	1	T11	-	-	1
B	16	T3, T6, T7, T8, T9, T10, T12, T13, T14, T15, T16, T17, T19, T20, T21, T22	1	G3	17
C	7	T1, T2, T4, T5, T18, T23, T25	5	G1, G2, G4, G5, G6	12
U	4	T24, T26, T27, T28	-	-	4
Total	28		6		34

Root Protection Areas (RPAs)

4.2.2 The RPAs for the trees and groups surveyed can be seen in Figure 2. The actual RPAs, in m², for the individual trees surveyed are shown in Appendix 1.

5. Arboricultural Impact Assessment (AIA)

5.1 Introduction

5.1.1 The purpose of the AIA is to assess the likely impact of the proposed development on the existing trees on site and to determine which trees are to be removed or retained during the construction phase.

5.1.2 The protection of retained trees is paramount to their survival during the development process and their consequent long term contribution to the site. The Root Protection Areas (RPAs) identified in the arboricultural survey and Tree Constraints Plan (TCP) should remain protected throughout the development to avoid potential damage, such as:

- Soil compaction;
- Root severance due to excavation;
- Soil coverage with impermeable material;
- Alterations in ground level;
- Leaks and spillages from stored materials; and
- Vehicle and heavy plant collision.

5.2 Documents

5.2.1 This assessment has been based on documents produced by Mackenzie Wheeler. The details of these documents can be seen in Table 5.

Table 3: Documents upon which this assessment has been based

Originator	Reference No.	Title
Mackenzie Wheeler	1284/SK23/PG15-08-17	Site Option 5

5.3 Tree Removals

5.3.1 A total of three trees and three groups of trees require removal as part of this development. The four category U trees will be removed as part of good arboricultural management. A breakdown of the associated categories assigned to these specimens can be seen in Table 6 and the species of tree to be removed in Table 7.

Table 4: Number of trees to be removed within each retention category

Removal	Tree Category			
	A	B	C	U
Number of Trees	-	1	2	4
Number of Groups	-	1	2	-
Total	-	2	4	4

Table 5: Details of trees to be removed

Tree Number	Species	Category	Reason
T1	field maple; <i>Acer campestre</i>	C1	To facilitate development
T2	small-leaved lime; <i>Tilia cordata</i>	C1	To facilitate development
T3	wild cherry; <i>Prunus avium</i>	B1	To facilitate development
T24	Eucalyptus <i>Eucalyptus: gunii</i>	U	As part of good arboricultural management
T26	Yew: <i>Taxus baccata</i>	U	As part of good arboricultural management
T27	Snakebark maples : <i>Acer capillipes</i>	U	As part of good arboricultural management
T28	Grab apple <i>Malus sylvestris</i>	U	As part of good arboricultural management
G1	small-leaved lime; <i>Tilia cordata</i> ; wild cherry; <i>Prunus avium</i> ; apple; <i>Malus domestica</i> ; horse chestnut; <i>Aesculus hippocastanum</i> , silver birch; <i>Betula pendula</i> ; hornbeam; <i>Carpinus betulus</i>	C1	To facilitate development
G2	hawthorn; <i>Crataegous monogyna</i> , pedunculate oak; <i>Quercus robur</i>	C1	To facilitate development
G3	pedunculate oak; <i>Quercus robur</i>	B1	To facilitate development

5.4 Trees to be Retained

- 5.4.1 Of the trees surveyed 21 trees and three groups of trees are to be retained and protected throughout development.
- 5.4.2 The RPAs of the retained trees should be protected by fencing to the specification laid out in BS5837:2012 '*Trees in Relation to Design, Demolition and Construction - Recommendations*'. An illustrated example of this fencing can be seen in Appendix 3. The area protected by the fencing shall be known as the Construction Exclusion Zone (CEZ).

Shading

- 5.4.3 The majority of the retained trees are located around the perimeter of the site away from new buildings. Consequently, there will not be a significant effect from shading caused by the retained trees and levels of daylight and sunlight reaching the new buildings will be acceptable.
- 5.4.4 Trees can cause problems from shading particularly where there are rooms which require natural light. Proposed buildings should take into account existing trees early in the design stage, particularly their ultimate size and density of foliage, and the effect that these will have on the availability of light. Open spaces such as gardens and sitting areas should be designed to meet the normal requirement for direct sunlight for at least a part of the day.
- 5.4.5 In urban areas, shading can be desirable to reduce excessive solar heating or glare and to provide shelter and comfort during hot weather. The combination of shading, wind speed and evapo-transpiration effects of trees can be combined with building design and landscaped spaces to provide local microclimatic benefits.

5.5 Trees Works

- 5.5.1 Prior to the erection of protective fencing, there are four trees which, in order to maintain their health and future structural integrity, require some maintenance works. All tree work is to be undertaken in accordance with the British Standard BS3998:2010 Recommendations for Tree Work (BS3998:2010). Full details of all trees requiring work are given in Table 8.

Table 6: Schedule of tree works for on-site trees

Tree No.	Species	Works	Category
T6	Lombardy poplar; <i>Populus nigra</i> 'Italica'	Remove deadwood from the crown	B1
T8	Pedunculate oak; <i>Quercus robur</i>	Treat Oak Processionary Moth, remove deadwood and tyre swing from dead branch	B1
T11	Pedunculate oak; <i>Quercus robur</i>	Sever ivy	A1
T12	Pedunculate oak; <i>Quercus robur</i>	Sever ivy, treat Oak Processionary Moth	B1

- 5.5.2 Oak Processionary Moth is a notifiable pest and should be reported to the Forestry Commission. It can cause significant defoliation on infected trees and tiny hairs from its body can cause irritation to skin in people and animals. Removal of the pest should be carried out by

experienced pest controllers once the sighting has been verified by the Forestry Commission. Further information can be found on the Forestry Commission website.

5.6 Construction Work within RPAs

5.6.1 No construction work is required within the RPAs of the retained trees for this development.

5.7 Services and Utilities

5.7.1 Detailed drawings of underground services are not available at this time. Therefore it is not possible to identify any specific potential impacts associated with the site at this stage.

5.7.2 Where existing services situated within RPAs require upgrading, care must be taken to minimise any disturbance, and where feasible trenchless techniques are to be employed, and only where necessary should manual excavation be considered.

5.7.3 If new services are to be introduced into the site they should be located outside of the RPAs where they will not interfere with tree roots. Final positions of any proposed services should be verified and approved by an arboricultural consultant and the Local Authority Tree Officer before implementation.

5.7.4 If service installation is required within RPAs then the guidelines within National Joint Utilities Group publication '*Guidelines for the planning, installation and maintenance of utility services in proximity to trees*' (NJUG 4, 2007) should be adhered to.

5.8 Post Development Management

5.8.1 Post development there will be a significant change in the use of the site with considerably more people coming into close contact with the trees, the retained trees and any new trees planted as part of the final landscaping scheme should be subject to some form of tree management system. Guidance on the level of tree management required can be found in the National Tree Safety Group publication, '*Common sense risk management of trees*' (NTSG, 2011).

5.9 New Planting

5.9.1 Local government authorities produce local plans and supporting documents which often include area action plans and policies on trees within defined areas. These should be consulted during the landscaping design process. Where appropriate, the design of new tree planting projects should be informed by the responses to community consultation and local interest groups.

5.9.2 Trees can be large and long lived features in the landscape. Their health, life expectancy and safety are affected by various environmental factors whilst their presence in the landscape can influence their own surrounding environment.

5.9.3 Well-informed planting aims to maximise the benefits of trees whilst minimising or mitigating any adverse effects new trees may pose. This can be achieved through careful choice of tree species, planting location and considering the future context of the planting. Trees make a significant contribution to ecosystem services and this should be taken into account in the design of new tree planting projects.

-
- 5.9.4** Detailed landscaping plans are not currently available, although indications are that new tree planting will be implemented as part of the development. As the scheme is for a new Free School, the locations of new trees should be carefully considered so that teaching activities are not constrained by the presence of trees.
- 5.9.5** The existing treescape is dominated by Norway maple (*Acer platanoides*) and Lawson's cypress (*Chamaecyparis lawsonia*) so introducing new species will enhance the ecological value of the site. Suitable species might include one-leaved ash (*Fraxinus excelsior* 'Diversifolia'), Princeton elm (*Ulmus Americana* 'Princeton') or Swedish upright aspen (*Populus tremula* 'Erecta').
- 5.9.6** Guidance on how newly planted trees can be successfully grown and planted and flourish in their environment without excessive maintenance can be found in British Standard BS8545:2014 " *Trees: from nursery to independence in the landscape - Recommendations*" (BS8545:2014).
- 5.10 Conclusion**
- 5.10.1** The development will result in the removal of three trees and three groups of trees from the site. However, four of these are Category C arboricultural features and the majority of trees on the site will be retained. Therefore these removals should not have a significant detrimental effect on the arboricultural value of the site.
- 5.10.2** There should be no harm caused to any trees planned for retention by these proposals subject to the erection of protective fencing furnished with tree protection notices (see Appendix 4) and the creation of a Construction Exclusion Zone.
- 5.10.3** Where underground services are to be installed trenchless techniques should be employed. Where they cannot be avoided, 'hand-dig' excavations or the use of compressed air to excavate should be utilised.
- 5.10.4** It is recommended that an Arboricultural Method Statement (AMS) is produced detailing in full how the retained trees are to be protected during the development works. The AMS should be conditioned as part of approval for the proposed development and will be submitted for approval by the Local Planning Authority Tree Officer in order to discharge the condition at a later date.

6. Bibliography

- 6.1.1 British Standards Institution (2012) BS5837:2012 *Trees in Relation to Design, Demolition and Construction - Recommendations*. BSI, London.
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Appendix 1 - Tree Schedule

Tree/ Group No.	Species	Height (m)	Stem Diameter (mm)	Canopy Spread (m)				Height of Lowest Limb and Direction (m)	Crown Clearance (m)	Age Class	Estimated Remaining Contribution (years)	Condition		Comments	Preliminary Management Recommendations	BS Category	RPA (m ²)
				N	E	S	W					Physiology	Structure				
T1	field maple; <i>Acer campestre</i>	7	350	4	4	4	4	0.5N	0.5	Mature	10-20	Good	Fair	Included unions on stem, poor past management	-	C1	55
T2	small-leaved lime; <i>Tilia cordata</i>	5	100	1	1	1	1	2N	2	Young	10-20	Good	Fair	-	-	C1	5
T3	wild cherry; <i>Prunus avium</i>	7	23	4	4	4	4	2E	2	Middle-aged	20-40	Good	Good	-	-	B1	0
T4	ash; <i>Fraxinus excelsior</i>	4	100	1	1	1	1	0.5S	0.5	Young	10-20	Good	Good	On Network Rail land	-	C1	5
T5	Monterey cypress; <i>Cupressus macrocarpa</i>	4.5	24	2.5	2.5	2.5	2.5	2N	2	Middle-aged	10-20	Good	Fair	Stem is on a lean to the north	-	C1	0
T6	Lombardy poplar; <i>Populus nigra 'Italica'</i>	19	510	3	3	3	3	4S	8	Mature	20-40	Good	Good	Minor deadwood in crown, stem has lean to the east on property	Remove the deadwood from crown	B1	118
T7	Lombardy poplar; <i>Populus nigra 'Italica'</i>	23	650	3.5	3.5	3.5	3.5	5N	8	Mature	20-40	Good	Good	On neighbouring land. Minor deadwood in crown. Estimated stem diameter	-	B1	191
T8	pedunculate oak; <i>Quercus robur</i>	8	400	5	5	5	5	2.5S	3	Mature	20-40	Good	Fair	Oak Processionary Moth on stem 3x nests, minor deadwood in crown	Treat Oak Processionary Moth, remove deadwood and tyre swing from dead branch	B1	72
T9	pedunculate oak; <i>Quercus robur</i>	10	420, 380, 400	6	6	6	6	1.5E	3	Mature	20-40	Good	Fair	Ivy on stem, minor deadwood	-	B1	218
T10	pedunculate oak; <i>Quercus robur</i>	9	600	6	6	6	6	2S	3	Mature	20-40	Good	Fair	Ivy on stem	-	B1	163
T11	pedunculate oak; <i>Quercus robur</i>	17	700	7	7	7	7	4E	5	Mature	> 40	Good	Good	Ivy on stem to half height, estimated stem diameter due to ivy, No Oak Processionary Moth visible at time of survey but full access around the tree was not possible.	Sever ivy	A1	222
T12	pedunculate oak; <i>Quercus robur</i>	15	650	8	8	8	8	2W	2	Mature	20-40	Good	Fair	Estimated stem diameter due to ivy and rubbish at base. Thick ivy to half height. One Oak Processionary Moth nest at mid height in crown.	Sever ivy, treat Oak Processionary Moth	B1	191
T13	Norway maple; <i>Acer platanoides</i>	7	360	4	4	4	4	2S	2	Middle-aged	20-40	Good	Good	-	-	B1	59

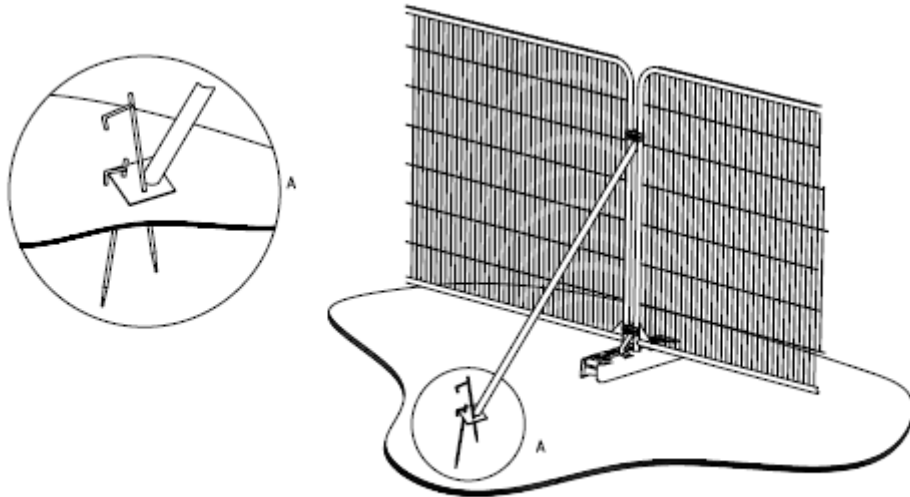
Tree/ Group No.	Species	Height (m)	Stem Diameter (mm)	Canopy Spread (m)				Height of Lowest Limb and Direction (m)	Crown Clearance (m)	Age Class	Estimated Remaining Contribution (years)	Condition		Comments	Preliminary Management Recommendations	BS Category	RPA (m ²)
				N	E	S	W					Physiology	Structure				
T14	Norway maple; Acer platanoides	7	400	4	4	4	4	2S	2	Middle-aged	20-40	Good	Good	-	-	B1	72
T15	Norway maple; Acer platanoides	7	360	4	4	4	4	2E	2	Middle-aged	20-40	Good	Good	-	-	B1	59
T16	Norway maple; Acer platanoides	7	350	4	4	4	4	2N	2	Middle-aged	20-40	Good	Good	-	-	B1	55
T17	Norway maple; Acer platanoides	7	330	3.5	3.5	3.5	3.5	2E	2	Middle-aged	20-40	Good	Good	-	-	B1	49
T18	Norway maple; Acer platanoides	9	450	4	4	4	4	2W	None		10-20	Good	Poor	Old stem damage with cavity 2m in height	-	C1	92
T19	Norway maple; Acer platanoides	10	390	4.5	4.5	4.5	4.5	2N	2	Middle-aged	20-40	Good	Good	-	-	B1	69
T20	Norway maple; Acer platanoides	10	405	4.5	4.5	4.5	4.5	2E	2	Middle-aged	20-40	Good	Good	-	-	B1	74
T21	Norway maple; Acer platanoides	10	380	4.5	4.5	4.5	4.5	2E	2	Mature	20-40	Good	Good	-	-	B1	65
T22	Norway maple; Acer platanoides	9	370	4	4	4	4	2E	2	Middle-aged	20-40	Good	Fair	Included union at 2m	-	B1	62
T23	Yew: <i>Taxus baccata</i>	6	200	3	3	3	3	0.5E	0.5	Middle-aged	10-20	Fair	Fair	-	-	C1	23
T24	Eucalyptus <i>Eucalyptus: gunii</i>	18	700	6	6	6	6	3S	3	Mature	10	Good	poor	Ganoderma sp at the eastern base	-	U	222
T25	Lawsons cypress cultivar	5	170	1.5	1.5	1.5	1.5	1E	0.5	Middle-aged	10-20	Fair	Fair	-	-	C1	10
T26	Yew: <i>Taxus baccata</i>	2.5	120	1	1	1	1	0.5E	0.5	Middle-aged	10-20	Good	poor	-	-	U	6
T27	Snakebark maples <i>Acer capillipes</i>	5.5	220	3.5	3.5	3.5	3.5	1.5S	2	Middle-aged	10-20	Good	poor	-	-	U	25
T28	Grab apple <i>Malus sylvestris</i>	3	100	2.5	2.5	2.5	2.5	1S	2	Middle-aged	10-20	Good	poor	-	-	U	5
G1	small-leaved lime; <i>Tilia cordata</i> ; cherry; <i>Prunus sp.</i> ; apple; <i>Malus domestica</i> ; horse chestnut; <i>Aesculus hippocastanum</i> , silver birch; <i>Betula pendula</i> ; hornbeam; <i>Carpinus betulus</i>	5	150	2	2	2	2	2	1	Young	10-20	Good	Fair	Stems have old bark damage on them	-	C1	-

Tree/ Group No.	Species	Height (m)	Stem Diameter (mm)	Canopy Spread (m)				Height of Lowest Limb and Direction (m)	Crown Clearance (m)	Age Class	Estimated Remaining Contribution (years)	Condition		Comments	Preliminary Management Recommendations	BS Category	RPA (m ²)
				N	E	S	W					Physiology	Structure				
G2	hawthorn; Crataegus monogyna; pedunculate oak; Quercus robur	5	160	3.5	3.5	3.5	3.5	3.5	1	Young	10-20	Good	Fair	Group of Hawthorne oak, unmanaged, roadside	-	C1	-
G3	pedunculate oak; Quercus robur	10	350	5	5	5	5	5	3	Mature	20-40	Good	Fair	Multi stemmed trees, minor deadwood, No Oak Processionary Moth viable at time of survey	-	B1	-
G4	hawthorn; Crataegus monogyna; false acacia; Robinia pseudoacacia; sycamore; Acer pseudoplatanus; English oak; Quercus robur	10	250	3	3	3	3	3	0	Middle-aged	10-20	Fair	Fair	-	-	C1	-
G5	wild cherry Prunus avium; hawthorn; Crataegus monogyna	7	250	4	4	4	4	4	0	Middle-aged	10-20	Good	Fair	Ivy on stems	-	C1	-
G6	Lawson's cypress; Chamaecyparis lawsoniana	18	550	3	3	3	3	3	2	Mature	10-20	Fair	Fair	Thinning crowns, deadwood in crowns, broken hung up branches	-	C1	-

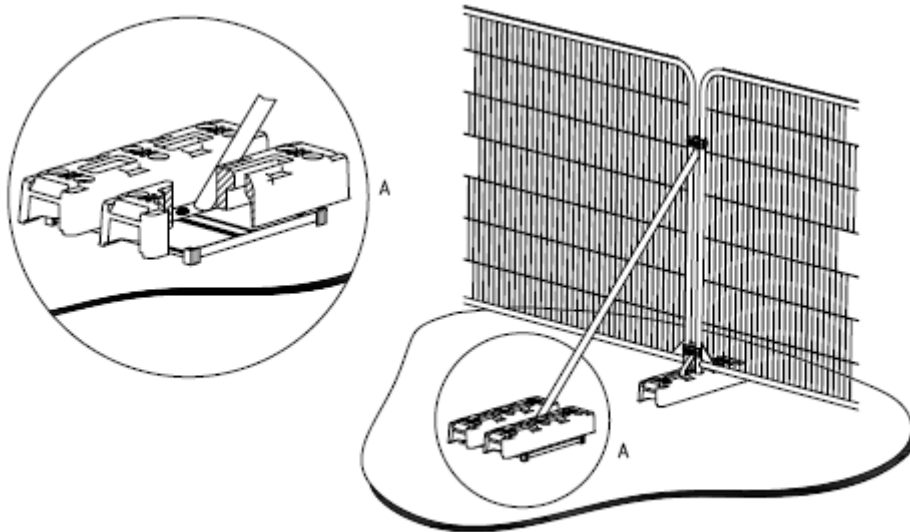
Appendix 2 - Table of Quality Assessment

Category and definition	Criteria (including subcategories where appropriate)			Identification on plan
Trees unsuitable for retention (see Note)				
Category U Those in such a condition that they cannot be retained as living trees in the context of the current land use for longer than 10 years	<ul style="list-style-type: none"> Trees that have serious, irremediable, structural defects, such that their early loss is expected due to collapse, including those that will become unviable after removal of other category U trees (e.g. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning) Trees that are dead or are showing signs of significant, immediate and irreversible overall decline Trees infected with pathogens of significance to the health and/or safety of other trees nearby, or very low quality trees suppressing adjacent trees of better quality NOTE Category U trees can have existing or potential conservation value which might be desirable to preserve			DARK RED
	1 Mainly arboricultural values	2 Mainly landscape values	3 Mainly cultural values, including conservation	
Trees to be considered for retention				
Category A Trees of high quality with an estimated remaining life expectancy of at least 40 years	Trees that are particularly good examples of their species, especially if rare or unusual; or those that are essential components of groups or of formal or semi-formal arboricultural features (e.g. the dominant and/or principle trees within an avenue)	Trees, groups or woodlands of particular visual importance as arboricultural and/or landscape features	Trees, groups or woodlands of significant conservation, historical commemorative or other value (e.g. veteran trees or wood-pasture)	LIGHT GREEN
Category B Trees of moderate quality with an estimated remaining life expectancy of at least 20 years	Trees that might be included in category A, but are downgraded because of impaired condition (e.g. presence of significant though remediable defects, including unsympathetic past management and storm damage), such that they are unlikely to be suitable for retention for beyond 40 years; or trees lacking the special quality necessary to merit the category A designation	Trees present in numbers, usually growing as groups or woodlands, such that they attract a higher collective rating than they might as individuals; or trees occurring as collectives but situated so as to make little visual contribution to the wider locality	Trees with material conservation or other cultural value	MID BLUE
Category C Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150mm	Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories	Trees present in groups or woodlands, but without this conferring on them significantly greater landscape value; and/or trees offering low or only temporary/transient landscape benefits	Trees with no material conservation or other cultural value	GREY

Appendix 3 - Example of Protective Fencing



a) Stabilizer strut with base plate secured with ground pins



b) Stabilizer strut mounted on block tray

Appendix 4 - Tree Protection Notice



TREE PROTECTION AREA KEEP OUT!

THE FOLLOWING **MUST** BE OBSERVED BY ALL PERSONS:

- THE PROTECTIVE FENCING MUST NOT BE REMOVED
- NO PERSON SHALL ENTER THE PROTECTED AREA
- NO MACHINE OR PLANT SHALL ENTER THE PROTECTED AREA
- NO MATERIALS SHALL BE STORED IN THE PROTECTED AREA
- NO SPOIL SHALL BE DEPOSITED IN THE PROTECTED AREA
- NO EXCAVATIONS SHALL OCCUR IN THE PROTECTED AREA

**ANY INCURSION INTO THE PROTECTED AREA MUST BE WITH THE WRITTEN
CONSENT OF THE LOCAL PLANNING AUTHORITY FOLLOWING
CONSULTATION WITH AN ARBORICULTURAL CONSULTANT**