

RMTTree Consultancy Ltd



BS5837:2012 Arboricultural Survey Implications Assessment & Arboricultural Method Statement

**Site Address:
7 Elvetham Road
Fleet
GU51 4QL**

Robert Toll
HND Urban Forestry - ND Forestry - MArborA

Ref: RMT456
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PRO2239

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1. Direction

- 1.1** To undertake an inspection of trees that are on or adjacent to 7 Elvetham Road, Fleet, GU51 4QL in accordance with British Standard 5837:2012 Trees in relation to design, demolition and construction – Recommendations.

Figure 1 – 7 Elvetham Road, Fleet, GU51 4QL



Image courtesy of Google Map Data © 2019

2. Purpose of this report

- 2.1** This report provides clarification of the above and below ground arboricultural constraints to inform the site layout design relating to the proposed development on land at 7 Elvetham Road, Fleet, GU51 4QL.

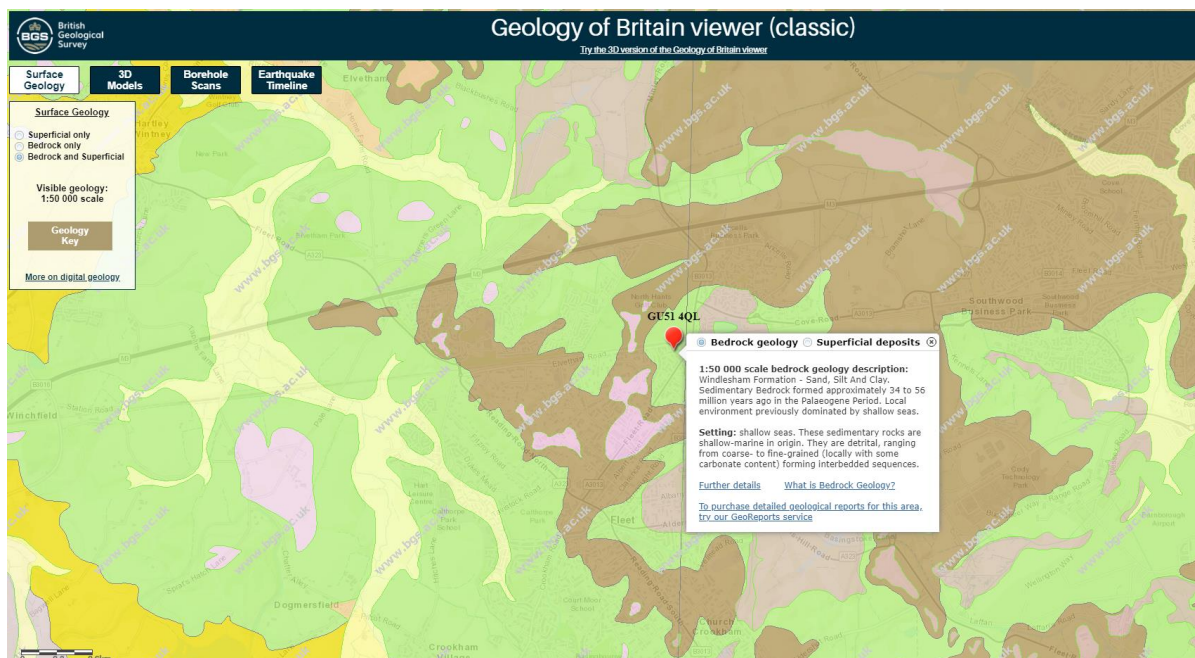
3 Limitations

- 3.1** The survey was carried out from ground level using my observations of the trees.
- 3.2** A topographical survey has been supplied prior to the survey being undertaken.
- 3.3** All measurements taken to calculate root protection areas and canopy spreads have been measured wherever possible.
- 3.4** Due to the Covid-19 pandemic, the requirements for social distancing have restricted access to observe trees and take measurements.
- 3.5** Where it has not been possible to access certain areas, dimensions have been estimated.

4 Soil Assessment

- 4.1 No soil assessments have been undertaken however a check the British Geological Survey gives the soil type as Windlesham Formation - Sand, Silt and Clay. This means that the underlying soil could be shrinkable and as such foundations should be deepened. If further assessments are undertaken that show that there is shrinkable clay, then foundations to must be designed in accordance with the guidance within the National House Building Council's Standards Chapter 4.2 Building near trees.

Figure 2 – The British Geological Survey indicates that the soil make up at 7 Elvetham Road, Fleet, GU51 4QL is potentially shrinkable Windlesham Formation - Sand, Silt and Clay.



5 Site Description

- 5.1** The property consists of a two-storey brick building, which was formerly a nursing home. To the front of the building is a tarmac car park with Elvetham Road to the north, an offsite tarmac access road to the east and an offsite raised planting area to the west. The rear of the building is a grassed garden with several wooden outbuildings. To the east of the garden are residential properties and to the west is the continuation of the previously detailed raised planting area along with residential properties. To the south of the site are residential properties.

6 Legal Restrictions

- 6.1** The local planning authority (LPA) has not been contacted to ascertain whether the trees on or adjacent to the site are protected by Tree Preservation Orders (TPO) or if they are within a Conservation Order.
- 6.2** A check on the Hart District Council website indicates that there is no statutory protection covering the surveyed trees.

7 Proposal

- 7.1** Construction of a two-storey building following demolition of the existing building.

8 Background

Tree categorisation

- 8.1** A total of eleven trees and two groups have been surveyed. At the time of inspection one tree and one group were considered to be category B and moderate value. The remaining trees and groups were considered to be category C and of low value.
- 8.2** All trees were categorised in accordance with British Standard 5837:2012 - see appendix 1.
- 8.3** In general category C category trees and groups should not be considered a material constraint to development.
- 8.4** It was noted that there are other trees that are located on or adjacent to 7 Elvetham Road, Fleet, GU51 4QL but they have not been included within this report. This is because it is deemed that they are:
- far enough from the area proposed for development that they will not be affected;
 - they will be adequately protected by the tree protection measures afforded to the surveyed trees;
 - they are specimens of limited significance;

Canopy spreads

- 8.5** The canopy spreads have been measured from ground level using a laser measure and visual assessment.

Measurements

- 8.6** Wherever possible all diameter at breast height measurements have been measured using a DBH tape. Where it has not been possible access the stems at 1.5m above ground level due such things as dense Ivy, trees being offsite or the tree being inaccessible, an estimated measurement has been taken. All estimated measurements include the word “estimated” or the abbreviation “est”.

Root protection area (RPA) definition

- 8.7** 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 are treated as a priority.

(British Standard 5837:2012 – Trees in relation to design, demolition and construction – Recommendations – The British Standard Institute 2012).

- 8.8** Section 4.6.2 of BS5837:2012 states the following:

The RPA of each tree should initially be plotted as a circle centred on the base of the stem. Where pre-existing site conditions or other factors indicate that rooting has occurred asymmetrically, a polygon of equivalent area should be produced. Modifications to the shape of the RPA should reflect a soundly based arboricultural assessment of likely root distribution.

(British Standard 5837:2012 – Trees in relation to design, demolition and construction – Recommendations – The British Standard Institute 2012).

- 8.9** The RPAs of trees T2, T3, T4 and group G6 have been offset to demonstrate a more probable root morphology as shown at **Appendix 3**. This is because of the foundations of the existing building at 7 Elvetham Road are considered to be a barrier to significant root development.

9 Arboricultural Implications Assessment

Access facilitation works

- 9.1** Tree T12 will require removal to facilitate development. Tree T12 is a small and unremarkable specimen which has minimal wider landscape value.
- 9.2** To provide adequate clearances from the western elevation of the new building, it will be necessary to reduce the eastern canopies of trees T4, T5, T7, T8 and T9 and group G6. These works look to provide a clearance of 2m from the fabric of the new building.
- 9.3** Trees T1 and T2 will require crown lifting works to provide 5m clearance of the car park. It is considered that regardless of whether development was proposed, these works would be required to allow access to the car park. The works will remove small diameter branches. It is considered that trees T1 and T2 are small and unremarkable specimens of low quality so these works should not be a constraint on development.

Tree protection fencing

- 9.4** Tree protection fencing will be required throughout the construction process to restrict construction access within the RPAs of trees and groups T1 – T12. The areas to be protected by the tree protection barriers can be seen as blue lines on the accompanying Tree Protection Plan at **Appendix 4**.
- 9.5** Tree protection fencing will consist of a scaffold framework, well braced to resist impacts, with vertical tubes spaced at a maximum intervals of 3m. Onto this, weld mesh panels or 2m high shuttering board will be securely fixed with wire or scaffold clamps.
- 9.6** Un-braced weld mesh panels on unsecured rubber or concrete feet will not be used as these are not resistant to impact and are too easily removed by site operatives. An alternative system of bracing which does not require a scaffold framework may be practical however this will need the written consent of the local planning authority.
- 9.7** A notice will be attached to the fencing which says 'Tree Protection Area. Keep Out!'

Ground protection

- 9.8** It has been stated above, the RPA is a sacrosanct area of ground where encroachment by construction activities should be avoided wherever possible. In the case of trees and group G6 – T10 there will be a requirement for construction access within their RPAs to facilitate construction access. Where it is considered that the construction working space or temporary access is justified within the RPA of trees and group G6 – T10, this will be facilitated by a set-back in the alignment of the tree protection barrier and suitable ground protection will be installed. Areas to be protected with ground have been shown as orange hatching at **Appendix 4**.
- 9.9** In all cases the objective should be to avoid compaction of the soil, which can arise from the single passage of a heavy vehicle or continual pedestrian movement over the same area, especially in wet conditions. Compaction of the soil can impair root development and function leading to a decline in the physiological and structural condition of the tree.

Removal of foundations adjacent to the RPAs of trees T2 – T5

- 9.10** The removal of the foundations adjacent to the RPAs of trees T2 – T5 will take place outside of the RPA because there will be no significant root development under the existing building. There is however a risk of damage occurring to the adjacent rooting area when the north-eastern section of the foundations are removed.
- 9.11** To avoid damage to the rooting area the removal of north-eastern foundations will be undertaken using a bucket excavator and under the supervision of the appointed arboricultural consultant.

Surface renewal within the RPAs of trees T1 and T2

- 9.12** The surface of the existing car park will be resurfaced as part of the development. To avoid damaging roots that may be under the existing surface, it is recommended that the existing asphalt is broken up and removed using hand tools. The subbase will be retained, and the new surface will be laid. This will minimise the risk of damaging roots that may be growing under the surface.

Minor overlap into RPA by the proposed building

- 9.13** A small section of proposed building will overlap into the outer RPA of tree T8 by circa 6.7m². This area of the RPA is on the outer edge of the RPA so it is anticipated that it will remove small diameter roots only. There is considered to be areas of soft landscaping to the south and west of the tree which will offset the loss in this area. To minimise the root disturbance, the trench will be excavated under the supervision of the arboriculturalist and using hand tools or compressed air (Airscape).

Areas for site compounds, storage and mixing

- 9.14** Site compounds will be located away from trees wherever possible and ideally 2m from any protective barriers. If it is possible they will not be sited under tree canopy spreads or within RPAs.
- 9.15** On this occasion it is proposed to utilise the existing car park.

Services

- 9.16** The proposed layout of incoming services is not yet established but they should be installed outside root protection areas wherever possible.
- 9.17** There is considered to be adequate space for new services to be installed outside of RPAs.

10 Arboricultural Method Statement

Access facilitation works

- 10.1** The agreed pruning works and single tree removal will be carried out as preliminary works as detailed at **Appendix 2**. These works will be carried out by suitably qualified arborists to the standards set out in BS3998: 2010 Tree works – recommendations. Heavy machinery must not be used on unprotected ground.

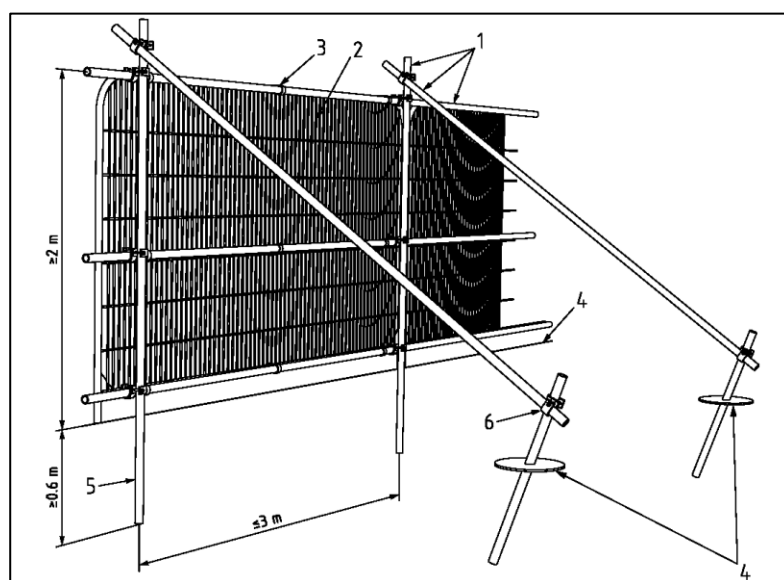
Pre-commencement meeting

- 10.2** Prior to the commencement of development all tree protection will be erected, and a site meeting will be held between the appointed building contractors, the appointed arboriculturalist and local authority Tree Officer as detailed at **Appendix 5**. This meeting will ensure that the position of the tree protection is correct and methods of protecting trees are understood.

Protective barriers/fencing

- 10.3** All tree protection barriers will be erected in the positions shown at **Appendix 4** and in accordance with the specifications detailed in Figures 3, 4 and 5.

Figure 3 – Default specification for protective barrier

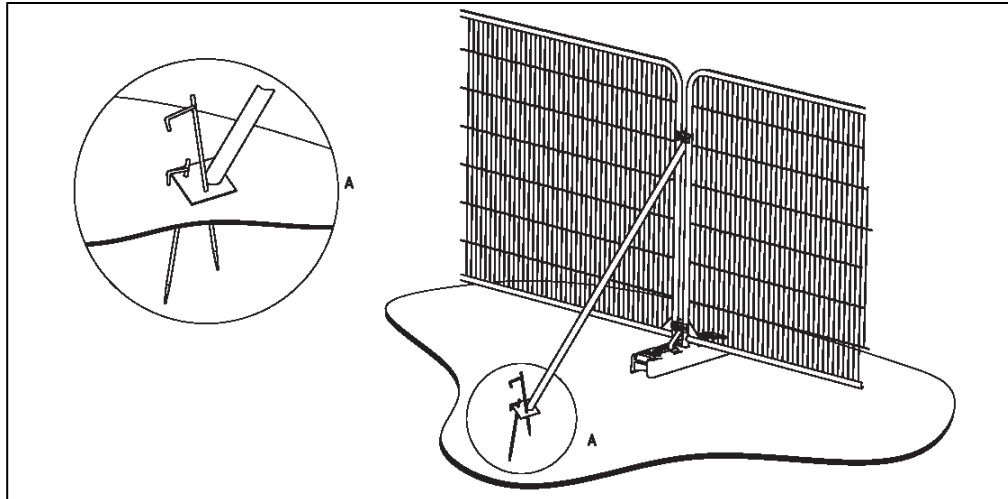


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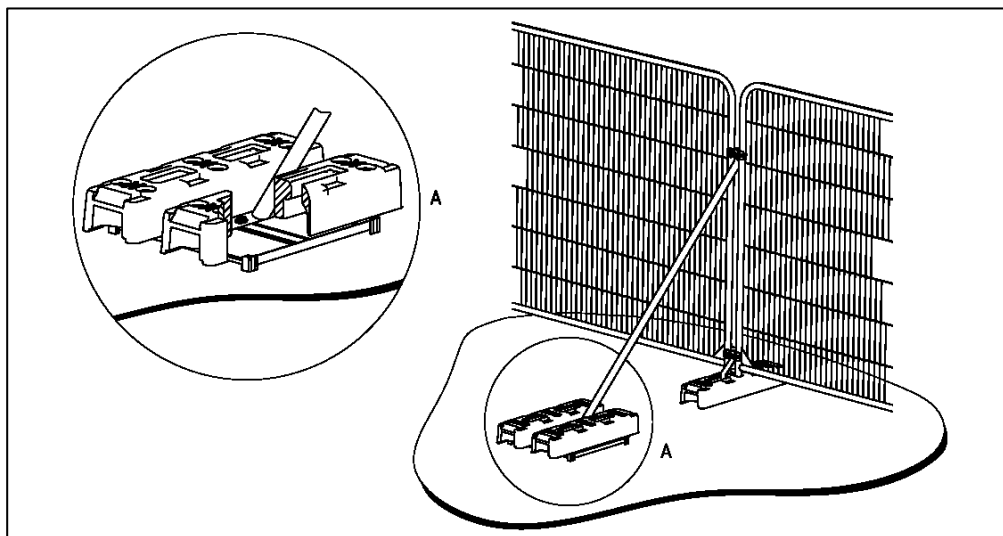
1. Standard scaffold poles
2. Heavy gauge 2m tall galvanized tube and welded mesh infill panels
3. Panels secured to uprights and cross-members with wire ties
4. Ground level
5. Uprights driven into the ground until secure (minimum depth 0.6m)
6. Standard scaffold clamps

Image taken from British Standard 5837:2012 – Trees in relation to design, demolition and construction - Recommendations

Figure 4 and 5 – Examples of above-ground stabilizing systems



a) Stabilizer strut with base plate secured with ground pins



b) Stabilizer strut mounted on block tray

Image taken from British Standard 5837:2012 – Trees in relation to design, demolition and construction – Recommendations.

Warning signs

10.4 All weather notices will be attached to the tree protection fencing.

Figure 6 – Examples of tree protection warning sign



Specification of temporary ground protection within RPAs

10.5 A permeable geotextile such as Terram will be laid and onto this will be placed treated timber (100 mm x 80 mm) at spacings of no more than 1m. The area between the timber bearers will be filled with a compressible material such as woodchips and will then be covered by 20 mm thick marine ply which will be screwed down onto the timber (Figures 7 and 8). The plywood may need to be coated with a non-slip paint.

Figure 7 – Specification for ply board ground protection

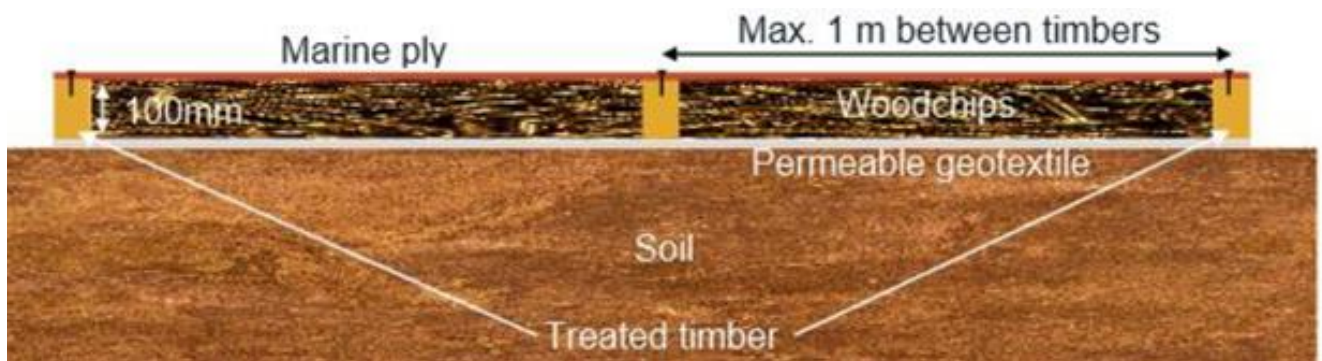


Figure 8 – Plywood sheeting used as ground protection.



10.6 Single thickness of scaffold boards placed on top of driven scaffold frame to form a suspended walkway as shown at Figure 9

Figure 9 – Specification for scaffold ground protection.



10.7 Development can commence in accordance with the planning consent.

Excavations within the RPA of tree T8

10.8 The appointed arboriculturalist will be invited to site to supervise. The excavations will be carried using hand tools or compressed air excavation (Airscape). If roots over 25mm diameter are exposed, then they will be pruned back to the edge of the trench. Prior to pouring concrete the western edge of the trench will be lined with polythene or another permeable membrane to avoid leaching of caustic materials.

Removal of the foundations adjacent to the RPAs of T1 – T4

10.9 The appointed arboriculturalist will be invited to site to oversee the removal as it is detailed at **Appendix 5**.

10.10 The western sections of the foundations, shown at **Appendix 4** as light blue hatching, will be removed by extracting them in a southerly direction using an excavator. Care will be taken not to damage any large diameter roots (25mm dia or greater) that may have grown parallel to the foundation.

Surface removal and renewal within the RPAs of trees T1 and T2





10.11 The section of asphalt within the RPAs of trees T1 and T2, as shown as light blue hatching at **Appendix 4**, will be removed using hand tools to top of the subbase. The removal will start closest to the trees, moving away until clear. The new asphalt surface will be laid onto this.

10.12 Following completion of all development the tree protection can be dismantled to allow landscaping works to take place.

11 Conclusions

- 11.1** A total of eleven trees and two groups have been surveyed. At the time of inspection one tree and one group were considered to be category B and moderate value. The remaining trees and groups were considered to be category C and of low value.
- 11.2** The proposed development requires the removal of one category C tree T13.
- 11.3** Crown lifting works will be required to trees T1 and T2 to provide adequate clearances over the car park.
- 11.4** Reduction works will be required to the eastern canopies of trees T4, T5, T7, t8 and T10 and group G6 to provide adequate clearances from the new building.
- 11.5** The trees to be retained will be protected during development and methods for ensuring their protection have been described.

Appendix 1 – British Standard 5837:2012 tree categorisation chart

TREES UNSUITABLE FOR RETENTION				
CATEGORY AND DEFINITIONS	CRITERIA			IDENTIFICATION ON PLAN
Category U Those 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	<ul style="list-style-type: none">• 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 (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. <i>NOTE Category U trees can have existing or potential conservation value which it might be desirable to preserve; see 4.5 of BS5837:2012</i>			RED  RGB 127.000.000
TREES TO BE CONSIDERED FOR RETENTION				
CATEGORY AND DEFINITIONS	CRITERIA - SUBCATEGORIES			IDENTIFICATION ON PLAN
	1 Mainly arboricultural values	2 Mainly landscape values	3 Mainly cultural values, including conservation	
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 formal or semi-formal arboricultural features (e.g. the dominant and/or principal 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  RGB 000.255.000
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  RGB 000.000.255
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 150 mm	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 collective landscape value; and/or trees offering low or only temporary/transient landscape benefits.	Trees with no material conservation or other cultural value.	GREY  RGB 091.091.091

Appendix 2 - Tree survey schedule

Tree No.	Species	Height (m)	Trunk dia. at 1.5m	Canopy Spread	Crown Height (m)	Age Class	Physiological Condition	Structural Condition	Comments/ Recommendations	Useful Life Expect	BS5837 grade	Root Protection Area	
												Radius	RPA Area
T1	Norway Maple (<i>Acer platanoides</i>)	10.5m	280mm 230mm est	N3.5m E6m S4m W4m	2.5m	Semi mature	Good	Fair	Offsite tree. Works required for development: Crown lift to provide 5m clearance over the car park.	20+	C	4.3m	59.4m ²
T2	Goat Willow (<i>Salix caprea</i>)	10m	300mm 300mm est	N5.5m E5m S3m W4.5m	2m	Early mature	Good	Fair	Offsite tree. Works required for development: Crown lift to provide 5m clearance over the car park.	10+	C	5.1m	81.4m ²
T3	Rowan (<i>Sorbus aucuparia</i>)	6m	175mm est	N1.5m E1.5m S1.5m W1.5m	6m	Semi mature	Good	Good	Offsite tree.	20+	C	2.1m	13.9m ²
T4	Goat Willow (<i>Salix caprea</i>)	12m	500mm est @500mm	N4m E5m S6m W6m	6m	Mature	Good	Fair	Offsite tree. Works required for development: Reduce eastern canopy spread to provide 2m clearance from the proposed building.	10+	C	6.0m	113.1m ²
T5	Sycamore (<i>Acer pseudoplatanus</i>)	12m	150mm 280mm est	N4m E4m S4m W4m	6m	Semi mature	Good	Good	Offsite tree. Works required for development: Reduce eastern canopy spread to provide 2m clearance from the proposed building.	20+	C	3.8m	45.6m ²

Tree No.	Species	Height (m)	Trunk dia. at 1.5m	Canopy Spread	Crown Height (m)	Age Class	Physiological Condition	Structural Condition	Comments/ Recommendations	Useful Life Expect	BS5837 grade	Root Protection Area	
												Radius	RPA Area
G6	Sycamore (<i>Acer pseudoplatanus</i>)	14m	Max 200mm est	N4m E4m S4m W4m	5m	Semi mature	Good	Good	Offsite group. Works required for development: Reduce eastern canopy spreads to provide 2m clearance from the proposed building.	20+	C	2.4m	18.1m²
T7	Sycamore (<i>Acer pseudoplatanus</i>)	10m	110mm est	N3.5m E3.5m S3.5m W3.5m	4m	Young	Good	Good	Offsite tree. Works required for development: Reduce eastern canopy spread to provide 2m clearance from the proposed building.	20+	C	1.3m	5.5m²
T8	Lawson Cypress (<i>Chamaecyparis lawsoniana</i>)	18m	450mm est	N3m E3m S3m W3m	2m	Early mature	Good	Good	Offsite tree. Works required for development: Reduce eastern canopy spread to provide 2m clearance from the proposed building.	20+	B	5.4m	91.6m²
T9	Lawson Cypress (<i>Chamaecyparis lawsoniana</i>)	12m	250mm est	N2.5m E2.5m S2.5m W2.5m	2m	Early mature	Good	Good	Offsite tree.	20+	C	3.0m	28.3m²
T10	Silver Birch (<i>Betula pendula</i>)	14m	325mm 250mm est	N5m E5m S5m W5m	8m	Early mature	Good	Good	Offsite tree.	20+	C	4.9m	76.1m²
G11	Common Beech (<i>Fagus sylvatica</i>)	17m	Max 200mm est	N4m E4m S4m W4m	2.5m	Early mature	Good	Good	Offsite group.	40+	B	2.4m	18.1m²

Tree No.	Species	Height (m)	Trunk dia. at 1.5m	Canopy Spread	Crown Height (m)	Age Class	Physiological Condition	Structural Condition	Comments/ Recommendations	Useful Life Expect	BS5837 grade	Root Protection Area	
												Radius	RPA Area
T12	Common Beech (<i>Fagus sylvatica</i>)	11m	275mm est	N4m E4m S4m W4m	2m	Semi mature	Good	Good	Offsite tree.	20+	C	3.3m	34.2m ²
T13	Lawson Cypress Ellwoodii (<i>Chamaecyparis lawsoniana</i> <i>Ellwoodii</i>)	12m	200mm 200mm est	N2m E2m S2m W2m	1.5m	Early mature	Good	Good	Works required for development: Remove tree.	20+	C	3.4m	36.2m ²

Tree constraints plan (TCP) showing retained trees, tree numbers, root protection areas (magenta circles/polygons) and canopy spreads (green lines). The plan has been provided separately as a PDF at a scale of 1: 200 @ A2.

The site plan shows Elvetham Road at the top. The central area contains several buildings and grassy spaces. Key points of interest are marked with dots and labeled: T1C, T2C, T3C, T4C, T5C, T7C, T8B, T9C, T10C, T12C, T13C, G6C, and G1B. A north arrow is located in the bottom right corner, pointing towards the top of the page. A scale bar is provided in the bottom left corner, indicating distances of 0, 10, 20, and 30 meters. The plan also shows various other features such as walls, fences, and smaller structures.

Tree protection plan (TPP) showing retained trees, tree numbers, root protection areas (magenta circles/polygons) and canopy spreads (green lines). The location of protective fencing is shown as blue lines, ground protection as orange hatching, sensitive demolition as light blue hatching and sensitive excavation as red hatching. The plan has been provided separately as a PDF at a scale of 1: 200 @ A2.


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Appendix 5 – Arboricultural site supervision schedule

Activity	Supervision Required
Pre-commencement meeting between the local authority arboricultural officer, the appointed arboricultural consultant and the appointed building contractor.	✓
During demolition of the foundations adjacent to the foundations of trees T4, T5, T7, T8 and T19, and group G6.	✓
During removal of the asphalt surface within the RPAs of trees T1 and T2.	✓
During excavations within the RPA of tree T8.	✓
At any time that there are conflict issues with the agreed tree protection.	✓
8 weekly visits by the appointed arboricultural consultant to assess the tree protection and advise on any arboricultural issues that have arisen.	✓

Following every visit, the appointed arboriculturalist will fill out the site monitoring form which is shown at **Appendix 6** and this will be forwarded to the LPA.

Appendix 6 – Site monitoring form

RMTTree Consultancy Ltd 			
Site Monitoring Form			
Date of Visit		Site	
Consultant in Attendance			
Observations/Status of Tree Protection/Comments:			
Recommendations (if necessary):			
Date of Next Visit		Signature	

Appendix 7 – Qualifications and experience

Robert Toll has been working with trees since 2004 when he completed his studies.

In 2000 he began his studies at Riseholme College, Lincoln where achieved a pass with merit in Forestry at National Diploma level. In 2002 he attended Moulton College in Northampton where he gained a Level Five Higher National Diploma in Urban Forestry with merit.

In 2004 Robert began work as a temporary tree inspector at Northampton Borough Council, undertaking inspections of trees in response to enquiries from the public. After 4 months Robert took up a permanent tree inspector role at Coventry City Council which predominantly involved undertaking safety inspections of trees on school sites.

In 2006 Robert moved to Warwick District Council to take up a temporary post of Tree Protection Officer which involved reviewing old area tree preservation orders and identifying those trees which were considered worthy of protection under new specific orders. He also streamlined the council procedure for making new tree preservation orders, cutting the time from making to serving from up to 2 weeks to within 2 hours.

In 2008 Robert moved to Hart District Council, Hampshire to take up the role of Tree Officer within the planning department. This role included determining works trees applications, commenting on planning proposals, liaising with the public and providing arboricultural advice to other departments within the Council.

Between 2014 and 2016 Robert took up the role of Tree Officer at Elmbridge Borough Council, Surrey, once again carrying out tasks such as determining works trees applications, commenting on planning proposals and liaising with the public. While at Elmbridge Borough Council he passed the Arboricultural Association's Professional Tree Inspection course.

Since leaving local authority employment Robert has provided locum arboricultural assistance to several local authorities including Elmbridge Borough Council, Woking Borough Council, Test Valley Borough Council, Epsom and Ewell Borough Council and Rushmoor Borough Council.

Robert is a professional member of the Arboricultural Association.