

**Arboricultural Implications
Assessment
for a proposed development
at
Sevenoaks
101a High Street
Hampton
TW12 2SX
Rev B**

**Client: Holland Green Architecture
The Old Grammar School
Church Road
Thame
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Prepared by
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1.0 Introduction

1.1 Instruction

- 1.1.1 I am instructed by Holland Green Architecture to undertake an Arboricultural Survey at Sevenoaks 101a High Street Hampton. I am also instructed to assess the likely impact of development proposals and produce an Arboricultural Method Statement detailing how trees shall be protected from the proposed construction activity.
- 1.1.2 The proposals are for the demolition of existing house and outbuildings and erection of new eco family home, alongside associated works including driveway alterations and landscaping.

1.2 The Site

- 1.2.1 Sevenoaks 101a High Street Hampton is a detached suburban house with a single entrance driveway off High Street, leading to a parking/turning area at the front of the house. The property has a long front garden partly given over to the driveway entrance parking and a rear garden. The plot is L-shaped.
- 1.2.2 The site is located to the east of Hampton village centre, northwest of the River Thames at Hampton Court. The property is bordered by High Street to the east side and by the adjoining gardens of other residential properties on all other sides. The surrounding area is suburban, characterized by residential properties and small businesses.
- 1.2.3 The topography of the site is more or less level.
- 1.2.4 It has been established at the time of the survey that the property is covered by an old Tree Preservation Order potentially affecting some of the trees at the property (although the original trees may have died). If any works to protected trees are proposed, other than the removal of dead wood or the implementation of operations agreed as part of a formal planning consent, a formal application must be submitted and approved by the Local Planning Authority before such works can be carried out.
- 1.2.5 It has also been established that the property is situated within the Hampton Village Conservation Area (CA12). Under the provisions of the Town and Country Planning Act 1990 (Tree Regulations 2012) Section 211, any tree in excess of 75mm diameter (measured 1.5m from ground level), is protected. Prior to working any such tree in a Conservation Area (including pruning or felling), it is necessary to give a six week notice of intent to carry out the work to the Local Planning Authority.

1.3 Survey date

- 1.3.1 The trees at Sevenoaks 101 High Street Hampton were surveyed on Wednesday, July 17, 2024.

1.4 Scope and Purpose of the report

- 1.4.1 The tree survey and assessment of existing trees has been carried out in accordance with guidance contained within British Standard B.S. 5837:2012 'Trees in relation to design, demolition and construction - Recommendations' (hereafter referred to as B.S. 5837). The guidelines set out a structured assessment methodology to assist in determining which trees would be deemed either as being suitable or unsuitable for retention.
- 1.4.2 The purpose of this report therefore is therefore to firstly present the results of an assessment of the existing trees' arboricultural value, based on their current condition and quality and to secondly, provide an assessment of impact arising from the development of the site.
- 1.4.3 The report is designed to support a planning application for development proposals at the above site. The survey has therefore focused on any trees present within or bordering the site that may potentially be affected by the future proposals or will pose a constraint to any proposed development

1.5 Documents referred to

- 1.5.1 The tree survey and this report have been prepared with reference to the following documents:
- The existing site plan
 - The proposed site layout plan
 - The schedule of tree constraints (appendix 1)
 - The plan of tree constraints
 - The Arboricultural Method Statement (rev A) prepared by MACS dated 29/10/24 (see separate document)

2.0 Results

2.1 Results summary

- 2.1.1 Appendix 1 presents details of the individual trees and groups found during the assessment including heights, stem diameters and root protection areas (RPA's), crown spread (normally measured to cardinal points unless otherwise indicated), an indication of physiological and structural condition, age class, any appropriate management recommendations, estimated life expectancy and a BS5837 category of quality.
- 2.1.2 The survey has revealed that that of the 29 trees surveyed, 4 are category 'A'; 9 are category 'B'; 16 are category 'C' and 0 are category 'U'.

3.0 Arboricultural Impact Assessment

3.1 Overview of typical construction site activity

Development activity	Potential impact	Consequence	Mitigation
Delivery of materials to the site Plant machinery accessing the site	Soil compaction and erosion	Root damage and die back limiting the ability of the tree to take up water and nutrients	Create construction exclusion zones (CEZ's) by the erection of barrier fencing
Storage of materials on the site	Leachate from chemical based products contaminating soil	Roots die back and soil becomes contaminated inhibiting future root recovery	Provide a dedicated area for the storage of materials following delivery away from root protection areas.
Distribution of materials about the site	Damage to branches or bark due to careless handling	Wounding of the bark can lead to infection from wood decay pathogens	Erect barrier fencing that takes account of branch spread as well as roots
Foundation excavation for the walls	Severing of roots	Root damage and die back limiting the ability of the tree to take up water and nutrients. Crown die back Death of the tree	Where excavation is within the root protection areas (RPA's), use a lintel to bridge over roots if possible. Limit incursion as far as possible.
Mixing of cement, plaster, etc.	Leachate from chemical based products contaminating soil	Roots die back and soil becomes contaminated inhibiting future root recovery	Provide a dedicated area for mortar mixing (etc.) with a suitably thick plastic (impermeable) membrane to prevent chemicals leaching. Provide a spare reservoir of water close by to wash away spillages
Contractor parking	Soil compaction and erosion	Root damage and die back limiting the ability of the tree to take up water and nutrients	Provide dedicated area for contractor parking away from RPA's

3.2 Proposed tree works

3.2.1 The proposed development will result in the loss of 3 category 'C' trees (T22, T23 and T24) in order to implement the proposed design.

3.2.2 The three trees to be lost are Chusan palm and cabbage palm trees, non-native species that have little value in the landscape. Views of the trees are limited to the back garden alone and the trees make no significant contribution to the visual amenity of the conservation area.

3.2.3 There is no pruning work needed to facilitate the development.

3.3 Changes to soil levels

3.3.1 There are no other changes to soil levels proposed that would affect retained trees.

3.4 The Impact of Movement around the Site

- 3.4.1 The tree protection plan (see method statement) shows where fencing is to be erected prior to the commencement of works on the site.

The erection of protective fencing barriers and the recommended type of barrier is addressed in the Arboricultural Method Statement – section 3.2.

- 3.4.2 It is clear from the Impact Assessment plan that there are areas where the required working space is needed to manoeuvre vehicles and position plant machinery such as a crane, which overlap the RPA's of certain trees. In order to protect the roots and the soil surrounding these trees, ground protection mats are to be secured into position.

The installation of ground protection mats is outlined in the Arboricultural Method Statement – section 3.3

- 3.4.3 The proposed widening and resurfacing of the driveway has the potential to impact on nearby roots. In order to overcome this potential impact it is proposed to install the Root Bridge system (provided by Green Grid systems).
- 3.4.4 The installation of the Root Bridge product needs to be undertaken before the main construction work commences, in order to provide a suitably robust surface for construction traffic to operate across.
- 3.4.5 Root Bridge is a robust grid system that requires the insertion of small screw piles to support the weight of the grids. The actual insertion of these piles is acknowledged to cause a small amount of minor root damage, but this is minimal and the benefits provided by this product outweigh the disadvantage of this slight harm.

The installation of the Root bridge product is outlined in the Arboricultural Method Statement – section 3.5

3.5 The Impact of Demolition

- 3.5.1 The proposals require the demolition of the house and outbuildings before other works can begin on the site. The movement of plant machinery and the movement of hardcore arisings to a suitable holding area has the potential to cause soil compaction and branch damage.
- 3.5.2 The tree protection plan (see method statement) shows that there is plenty of working space well away from any RPA's for machinery to operate and for materials to be stored ready for disposal or upcycling as needed.

3.6 The Impact of Excavations

- 3.6.1 The excavation of the proposed foundations (including the proposed basement) for the replacement extension are to take place outside the RPA's of

any of the retained trees and will therefore have no effect on the wellbeing of those trees.

3.6.2 The section of the proposed building on the northwest side of the new structure is a first floor construction, cantilevering out across the RPA's of the limes (T20 and T21). Whilst this keeps the structure above ground level (thus avoiding any significant excavations), a single pad (1m x 1m x 0.8m deep) is to be constructed in order to provide the support for a column for the extension. B.S. 5837 provides advice in such circumstances.

3.6.3 The Standard states at 7.5.1 that

'The use of traditional strip foundations can result in extensive root loss and should be avoided. The insertion of specially engineered structures within RPA's may be justified if this enables retention of a good quality tree that would otherwise be lost (usually categories A or B). Designs for foundations that would minimize adverse impact on trees should include particular attention to existing level, proposed finished levels and cross sectional details. In order to arrive at a suitable solution, site specific and specialist advice regarding foundation design should be sought from the project arboriculturist and an engineer.'

3.6.4 The Standard goes on to state at 7.5.2 that

'Root damage may be minimised by using:

- *piles, with site investigation used to determine their optimal location whilst avoiding damage to roots important for the stability of the tree, by means of hand tools or compressed air soil displacement, to a minimum depth of 600mm;*
- *beams, laid at or above ground level, and cantilevered as necessary to avoid tree roots identified by site investigation.*

3.6.5 The position of the pad will be subject to a preliminary investigation of the soil to confirm that no major roots will be disturbed or damaged.

3.6.6 This means that soil will have to be removed using an air spade, a pneumatic lance that delivers a high pressure blast of air, sufficient to push aside soil particles and pebbles whilst leaving roots intact.

3.6.7 Provided no large roots over 25mm diameter are encountered, the pad can be constructed without further ado. This will include lining the sides of the excavated pit with a PVC liner to prevent chemical substrates from the concrete mix leaching into the surrounding soil whilst the concrete goes off.

3.6.8 Where small roots (below 25mm diameter) are encountered, these are to be cut cleanly using appropriate tools (i.e. secateurs or lopping shears) to minimise wounding. Root pruning should be undertaken under the supervision of an arboricultural professional.

- 3.6.9 If larger roots are encountered, the excavations are to be moved across to a suitable section free of roots, established by further removal of the soil using the air spade.
- 3.6.10 If the excavated pit is to be left for any longer period of time than a few hours then the sides of the pit are to be covered to prevent desiccation and to protect them from temperature changes. If the pit is to be left for several days or even longer, the excavated soil can be placed into plastic carrier bags that can be lowered back into the pit, to allow for easy removal at a later date, using an upper layer of soil or a suitably strong section of hardboard to cover it.
- 3.6.11 The excavation of service trenches is another site activity that can cause harm to root systems. However, in this instance, the existing infrastructure is to be connected to the new house close to the actual building and away from any RPA's, thereby avoiding any issues.
- 3.6.12 The proposals also include a number of landscape paths around the garden, many of which cross over RPA's. It is proposed that the paths are to be constructed onto a frame system (for support) that means excavations can be minimised. A cellular confinement product such as Cellweb by GeoSynthetics Ltd. would be ideal for this purpose.
- 3.6.13 The optimum thickness of the Cellweb product for a pedestrian pathway in these circumstances is 75mm, which (taking account of a turf layer typically 75mm deep) means the product will be flush with the surrounding soil. The product otherwise leaves roots undisturbed.
- 3.6.14 The top layer will remain above ground level (the depth depends on the nature of the final surface) but can easily be landscaped into the surrounding ground by providing a modest backfill of topsoil (no deeper than 250mm) at the edge, either as part of a shrubbery or with a turf layer covering it.

The installation of the no-dig system is addressed in the Arboricultural Method Statement – section 4.2.

3.7 The Impact of Construction Site Activities

- 3.7.1 The site working area will be established to the front of the property away from the RPA's of the retained trees. There is enough space about the site for this to be possible.
- 3.7.2 The Construction Method Statement acknowledges the need to respect the protection of trees and confirms that construction site activity will be undertaken in a manner that maintains the integrity of the protective fencing and ground protection measures.
- 3.7.3 Deliveries will be made by means of the existing driveway. Materials are to be set down at the front of the site where they can remain in situ until needed or moved to a more appropriate area or be brought under cover if necessary.

- 3.7.4 The driveway area at the front of the site is to be used for the storage of cement and plaster bags hazardous chemicals and petrochemical products and will also provide a suitable area for mortar mixing in line with COSHH regulations to ensure there is no detrimental effect on trees.

The mixing of cement and cleaning of tools is addressed in the Arboricultural Method Statement – section 3.7

3.8 Issues to be addressed by the Method Statement

3.8.1 The Method Statement will address the following issues

- Installation of protective fencing and ground protection
- Installation of the Root Bridge product
- Building site activities
- Cement mixing

3.9 Summary

- 3.9.1 The proposed demolition and construction works can be undertaken with no impact to the retained trees. Provided the trees are protected in accordance with the tree protection plan (see method statement) there is no reason the proposals would affect the trees. Full provision can be made for the protection of all trees to remain in order to ensure their continued viability following the completion of construction.



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Appendix 1 - Tree Survey Methodology

1. The ground level survey of the trees has been carried out in accordance with the criteria set out in Chapter 4 of B.S 5837. The survey has recorded information relating to all those trees within the site and those adjacent to the site which may be of influence on the proposals.
2. The purpose of this report is to modify the recommendation found in the tree constraints schedule for the future use of this site. Where applicable, trees with significant defects have been highlighted and appropriate remedial works have been recommended. However, this report should not be seen as a substitute for a full *Safety Survey* or *Management Plan* which are specifically designed to minimise risk and liability associated with the responsibility for trees. No climbed inspections or specialist decay detection were undertaken.
3. Evaluation of tree condition within the 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 as recommended by the National Trees Safety Group guidance ‘Common Sense Risk Management for Trees’.
4. Trees have been divided into one of four categories based on Table 1 of B.S.5837, ‘*Cascade chart for tree quality assessment*’. For a tree to qualify under any given category it should fall within the scope of that category’s definition.

Category U - Red	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 - Green	Those trees of the highest quality and value: in such a condition as to be able to make a substantial contribution (a minimum of 40 years is suggested).
Category B - Blue	Trees of moderate to high quality and value: in such a condition as to be able to make a significant contribution (a minimum of 20 years is suggested).
Category C - Grey	Trees of low quality and value: currently in adequate condition to remain until new planting could be established (a minimum of 10 years is suggested), or young trees with a stem diameter of below 150mm
Subcategory 1 concerns mainly arboricultural values, how good a specimen is in terms of form and physiological condition; the value of a tree as a component in a group or in a formal or semi-formal arboricultural feature such as an avenue.	
Subcategory 2 concerns mainly landscape values and considers the importance of a tree or group of trees as an arboricultural or landscape feature. Trees present in larger numbers, such as woodlands for example may attract a higher rating than they would as individuals because of their collective value.	
Subcategory 3 concerns mainly cultural values including conservation, historical, commemorative, or other value such as veteran or wood pasture.	

5. RPA's of single stemmed trees are calculated according to the following formula:
RPA radius = 12 x stem diameter (measured at 1.5m above ground level)
6. Where a tree has more than one stem, the equivalent single stem diameter is usually recorded. This is calculated by adding the squares of the stems and then finding the square root of the total. The radius of the RPA is then calculated by multiplying the equivalent stem diameter by 12 (ref B.S. 5837:2012 para 4.6.1). Where access is restricted an estimate of the stem diameter is provided and this is indicated in the appropriate column.

Appendix 2
Schedule of tree constraints

Tree no	Species	Height	Stem diameter	Crown spread				Physiological condition	Structural condition	Age	Observations/ Management recommendations	Life expectancy	Category
				North	South	East	West						
T1	Sycamore	6	440	4	1	2	2	F	P	M	Tree has been lopped with decay developing in the main stem	10 - 20	C
T2	Sycamore	20	650	6	6	6	5	G	G	M	Tree has been lopped in the past	40+	B1 + B2
T3	Flowering cherry	6	300	4	5	3	6	F	F	M		20 - 40	C
T4	Tulip tree	17	530	4	4	6	4	F	G	M		40+	B1 + B2
T5	Hornbeam	6	180	1	1	1	1	G	G	M		40+	C
T6	Holly	4	170	1	1	1	1	G	F	M		40+	C
T7	Common lime	23	650	4	4	4	3	G	G	M		40+	B1 + B2
T8	Sweet chestnut	20	790	6	5	3	3	G	G	M		40+	B1 + B2
T9	Lawson cypress	4	360	1	3	1	2	G	G	M	Tree has been lopped in the past	20 - 40	C
T10	Holly	4	190	1	2	2	1	G	G	M		40+	C
T11	Yew	4	210	1	1.5	1	2	G	G	M		40+	C
T12	Oak	22	940	7	8	6	3	G	G	M		40+	A1 + B2

Tree no	Species	Height	Stem diameter	Crown spread				Physiological condition	Structural condition	Age	Observations/ Management recommendations	Life expectancy	Category
				North	South	East	West						
T13	Oak	22	950	6	6	3	6	F	G	M	Bacterial ooze on lower west stem	40+	B1 + B2
T14	Bay	5	200 100	2	2	2	2	G	G	M		40+	C
T15	Oak	18	890	7	8	5	9	G	G	M		40+	B1 + B2
T16	Oak	23	890	4	4	5	5	G	G	M		40+	A1 + B2
T17	Oak	20	650	3	6	6	2	G	G	M		40+	B1 + B2
T18	Oak	19	870	2	2	2	2	G	F	M	Tree has been lopped in the past. Some decay developing at wound points	40+	B2
T19	Yew	5	230	3	3	3	3	G	G	M		40+	C
T20	Common lime	24	780	5	3	4	5	G	G	M		40+	A1 + B2
T21	Common lime	24	780	2	5	4	5	G	G	M		40+	A1 + B2
T22	Chusan palm	6	280	1	1	1	1	G	G	M		40+	C
T23	Cabbage palm	7	280	1	1	1	1	G	G	M		40+	C
T24	Cabbage palm	7	310 120 120	2	1	1	2	G	G	M		40+	C

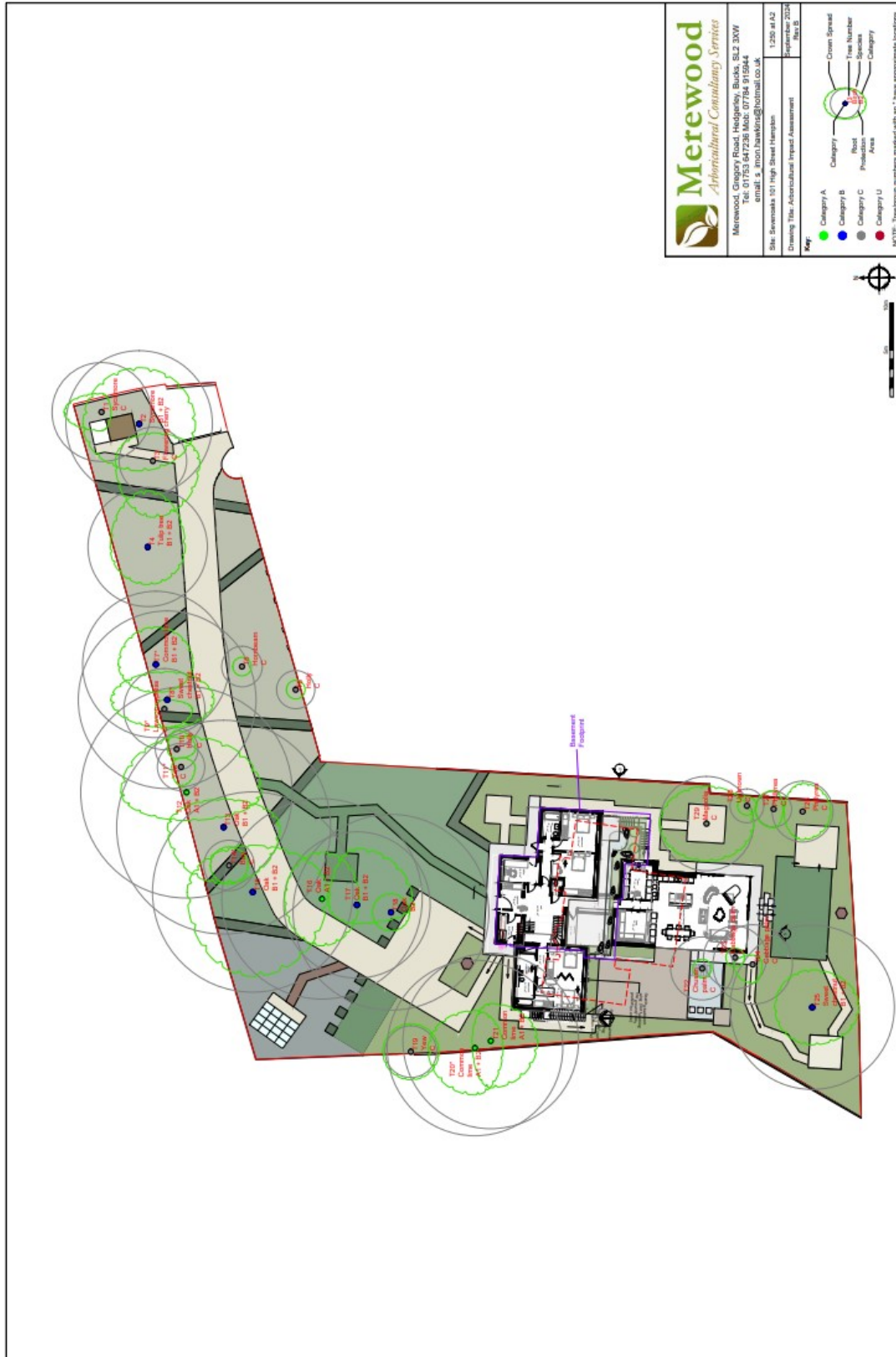
Tree no	Species	Height	Stem diameter	Crown spread				Physiological condition	Structural condition	Age	Observations/ Management recommendations	Life expectancy	Category
				North	South	East	West						
T25	Sweet chestnut	12	730	4	5	4	4	G	G	M		40+	B1 + B2
T26	Phillyrea	7	270	2	3	3	3	G	G	M		40+	C
T27	Phillyrea	7	160	2	1	2	2	G	G	M		40+	C
T28	Unknown	6	150	1	1	1	1	G	G	M		40+	C
T29	Magnolia	8	220 280 220	5	5	4	4	G	G	M		40+	C

Appendix 3 Plan of Tree Constraints



Merewood, Gregory Road, Heigdeney, Bucks, SL2 3BW Tel: 01753 647236 Mob: 07784 511584 email: s.wood@merewood.com	
Site: Sevenoaks 101 High Street Hampton	1:250 at A2
Drawing Title: Plan of Tree Constraints	July 2024
Key: <ul style="list-style-type: none"> ● Category A — Crown Spread ● Category B — Tree Number ● Category C — Root Protection Area ● Category U 	
NOTE: Tree/prop numbers marked with an * have approximate locations.	

Appendix 4 Impact Assessment Plan



Appendix 5

Qualifications and experience

- I am Simon Hawkins, proprietor of Merewood Arboricultural Consultancy Services.
- I hold the Level 6 Professional Diploma in Arboriculture. This is the highest level of award in the industry.
- I hold the National Diploma in Arboriculture which I attained in 1987. I have studied and practised Arboriculture for over 40 years, during which time I have been involved with both the private and public sector.
- I hold the LANTRA award for professional tree inspections
- I hold professional member status of the Arboricultural Association (M. Arbor A.), recognised as a higher vocational level within the industry.
- I have undertaken an intensive course in the principles and application of VTA Visual Tree Assessment. I have been assessed and found to have attained the advanced level of technical competence of a VTA Practitioner with Elite Training.
- I have over 18 years' experience working in the public sector, during which time I have dealt with all aspects of trees and development in the town planning context, within the inner city; in a greater London Borough; and in the Green Belt. Typically, I have worked with planners, developers, architects and other professionals in the construction industry in which I provide advice and assistance in dealing with arboricultural matters.
- I have appeared at numerous appeals, informal hearings and public enquiries to make formal representations. I have also appeared as an expert witness in court with regard to breaches of a Tree Preservations Order.