



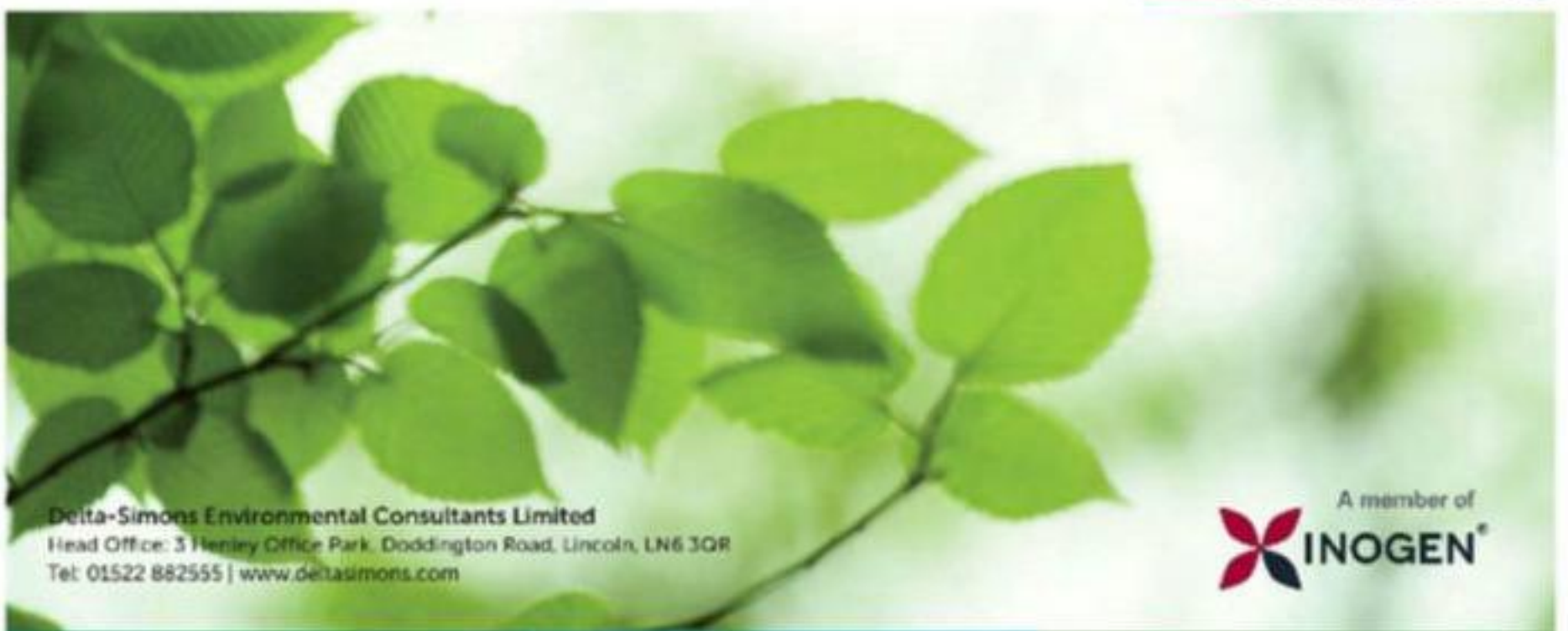
BS 5837:2012 Arboricultural Survey

Stanton's Yard, Havant

Presented to Tiger Developments

Issued: October 2018

Delta-Simons Project No. 18-0609.02



Delta-Simons Environmental Consultants Limited
Head Office: 3 Henley Office Park, Doddington Road, Lincoln, LN6 3QR
Tel: 01522 882555 | www.deltasimons.com



Report Details

Client	Tiger Developments
Report Title	Arboricultural Survey
Site Address	Stanton's Yard, Larchwood Avenue, Havant PO9 3QL
Project No.	18-0609.02
Delta-Simons Contact	Steven Kemp (steven.kemp@deltasimons.com)

Quality Assurance

Issue No.	Status	Issue Date	Comments	Author	Technical Review	Authorised
1	Final	11/10/2018		Steven Kemp Senior Arboriculturist	Joe Chanton Principal Ecologist	Joe Chanton Principal Ecologist

About us

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Specialising in Environment, Health & Safety and Sustainability, Delta-Simons provide support and advice within the property development, asset management, corporate and industrial markets. Operating from nine locations - Lincoln, Birmingham, Dublin, Durham, Leeds, London, Manchester, Norwich and Nottingham - we employ over 75 environmental professionals, bringing experience from across the private consultancy and public sector markets.

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Executive Summary

Purpose	Delta-Simons Environmental Consultants Ltd was instructed by Legge Consulting on behalf of Tiger Developments ('the Client'), to undertake a Tree Survey to BS 5837:2012 standard of an area of land situated to the west of Larchwood Avenue in Havant, Hampshire ('the Site'). The survey was undertaken on 1 st June 2018. The survey was undertaken to inform a planning application for a hotel development with associated parking at the Site.
Current Site Status	The Site comprises concrete hardstanding with colonising grassland and tall ruderal vegetation, surrounded by broadleaved woodland. The Site supported a radio mast and metal substation in the south-eastern corner.
Proposed Development	It is understood that the Site is to undergo redevelopment as a hotel. It is proposed that the south-western corner of the Site will comprise a hotel, with associated parking extending across the remaining extent of the Site. Vehicles will access the Site from Larchwood Avenue to the east.
Results	A total of nine tree groups were identified and assessed as part of the Tree Survey. The results of the desk search revealed that no trees on-Site or immediately adjacent to the Site are covered by Tree Preservation Orders (TPOs), or are within a Conservation Area.
Recommendations	<u>Recommendation 1 (Adequate Tree Protection)</u> Those trees identified within the proposed development plan for retention will need to be adequately protected during any approved development works. Measures to protect trees should follow the best practice principles set out in BS 5837: Trees in Relation to Design, Development and Construction (2012). Prior to any construction or development work proceeding, the Root Protection Area (RPAs) of individual trees to be retained should be marked out. Marking out should be completed by a competent person with arboricultural expertise. All trees retained on-Site and adjacent to the Site should be protected by barriers or ground protection around the calculated RPA, and as indicated on the Tree Constraints Plan (TCP) produced in association with this survey.
This Tree Survey Executive Summary is intended as a summary of the assessment of the Site based on information received by Delta-Simons at the time of production. This Executive Summary should be read in conjunction with the full Report.	

Table of Contents

1.0 INTRODUCTION.....	1
1.1 Purpose and Scope of the Survey.....	1
1.2 Site Description.....	1
1.3 Proposed Development.....	1
2.0 LEGISLATION.....	2
2.1 Trees.....	2
3.0 METHODOLOGY.....	3
3.1 Trees.....	3
3.2 Potential for Protected Species.....	5
3.3 Tree Plans and Tree Schedules.....	5
3.4 Root Protection Area.....	5
4.0 RESULTS.....	6
4.1 Data Search.....	6
4.2 Survey Details.....	6
4.3 Trees.....	6
4.3.1 Species and their Arrangement in the Landscape.....	6
4.3.2 Height and Significance in the Landscape.....	6
4.3.3 Age and Condition.....	6
4.3.4 Environmental Condition.....	7
4.4 Tree Schedule.....	8
5.0 TREE MANAGEMENT.....	11
5.1 Arboricultural Assessment.....	11
5.2 Recommendations.....	11
6.0 LIMITATIONS OF THE TREE SURVEY.....	14

Figures

Figure 1	Site Location Map
Figure 2	Tree Survey
Figure 3	Proposed Development Plan
Figure 4	Tree Constraints Plan

Appendices

Appendix I	References
Appendix II	Guidance on Assessing the Potential Suitability of Development Sites to Support Bats
Appendix III	Photographs

1.0 Introduction

1.1 Purpose and Scope of the Survey

Delta-Simons Environmental Consultants Ltd was instructed by Legge Consulting on behalf of Tiger Developments (the 'Client') to undertake an Arboricultural Survey to BS 5837:2012 standard. The survey was undertaken of land situated to the west of Larchwood Avenue in Havant, Hampshire (hereafter referred to as 'the Site'). The survey was undertaken on 1st May 2018. The Site location and the area surveyed are shown in Figure 1. The survey was undertaken in order to inform a planning application for a hotel development.

The aims of the Tree Survey were to:

- ▲ Identify the individual tree species present at the Site by means of visual inspection;
- ▲ To define the approximate age, condition and canopy spread of all individual mature trees identified and the value of these within the development;
- ▲ To identify any trees that present a risk to existing or proposed foundations or other structures that may be constructed on the Site and recommend actions to remove this risk; and
- ▲ Recommend tree management or mitigation measures where appropriate.

1.2 Site Description

The Site is centred at Ordnance Survey (OS) grid reference SU 69527 07592, to the north-west of Havant in Hampshire. The Site covers an area of 0.5 hectares (ha) and comprises concrete hardstanding with colonising grassland and tall ruderal vegetation, surrounded by broadleaved woodland. The Site supported a radio mast and metal substation in the south-eastern corner. The Site did not support standing water at the time of the survey.

The Site is situated on the north-western edge of Havant. Retail and commercial units occupy land to the north, east and south of the Site, with associated hardstanding car parks. Broadleaved woodland extends to the west of the Site and is bisected by the A3 motorway.

The Site layout and area surveyed is shown in Figure 2.

1.3 Proposed Development

It is understood that the Site is to undergo redevelopment as a hotel. From the drawing provided by the Client (Figure 3), it is proposed that the south-western corner of the Site will comprise a hotel, with associated parking extending across the remaining extent of the Site. Vehicles will access the Site from Larchwood Avenue to the east.

2.0 Legislation

2.1 Trees

Local planning authorities look upon trees as being highly beneficial to the locality. To ensure that any important specimens, or significant groups of trees are retained, they may place Tree Preservation Orders (TPOs) on them. In other situations, villages or whole districts may be classified as conservation areas. In these instances certain trees in the designated area will be protected. When trees are protected, legal procedures must be followed before any work is carried out.

When trees are protected by Preservation Orders, no work should be carried out on them without prior written consent from the Local Planning Authority (LPA). Once an application is made, the Authority personnel must inspect the trees, and make a decision within a statutory eight-week period as to whether work can go ahead. If no decision is made within the eight weeks period, the appellant can appeal to the Office of the Deputy Prime Minister for non-determination. If the Local Authority (LA) refuses the application the appellant still has the right to appeal.

If a tree protected by a Preservation Order is either killed or wilfully destroyed, the owners of the tree, and the contractor who did the work, can both be prosecuted. The fines for killing or wilfully destroying a tree can be high, i.e. the current maximum is £20,000 per tree, and there is an automatic requirement to re-plant. The current maximum for minor unlawful infringements, such as pruning, is £2,500.

Trees which are dead, dying, or dangerous are exempt from the legislation, although if such trees are removed, the onus on proving they fell into one of these categories lies with the tree owner. Whenever possible it is strongly recommended that the LA be given at least five days' notice before any work on such trees is carried out.

Trees in a conservation area that are already protected by a TPO are subject to the normal procedures and controls for any tree covered by such an Order.

Trees in a conservation area that are not protected by a TPO are protected by the provision in Section 211 of The Town and Country Planning Act (1990). These provisions require people to notify the LPA, using a 'section 211 notice', six weeks before carrying out certain works on such trees, unless an exception applies. The works may go ahead before the end of the six-week period if the LPA gives consent. This notice period gives the Authority an opportunity to consider whether to make an Order on the tree.

3.0 Methodology

The methodology set out below is a detailed summary of the suggested approach to tree assessment as described in British Standard 5837:2012. This Report has applied the methodology to all significant individual trees or groups of trees present at or near to the Site. Trees below 15 cm trunk diameter were generally excluded from the survey. All floral names follow the nomenclature of Stace (2010).

3.1 Trees

Trees have been broadly assessed based on guidance set out within the British Standard BS 5837:2012 Trees in Relation to Design, Development and Construction. This standard provides recommendations and guidance on the principles to be applied to achieve successful integration of development with trees, shrubs and hedgerows. Where development is to occur, the standard provides guidance on the approach needed to decide which trees are appropriate for retention, and the means for protecting these trees during the development (including demolition and construction works) and the means of incorporating trees into the developed landscape.

Trees on or adjacent to the Site have been divided into one of four categories (based on the cascade chart for tree quality assessment). These are classed as A, B, C or U (Section 4 of BS 5837) within Table 1. This gives an indication as to the tree's importance in relation to the Site, the local landscape and, also, the value and quality of the existing trees on-Site. This assists informal decisions 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 (see below).

Categories A, B and C cover trees that should be a material consideration in the development process, each with three further sub-categories (i, ii, iii) which are intended to reflect arboricultural, landscape and cultural (nature conservation) values. Category U trees may have no significant landscape value but it is not presumed that there is any overriding need to remove these unless stated otherwise in the description and recommendations. They are for this reason not considered as being significant within the planning process. In assigning trees to the A, B or C categories, the presence of any serious disease or tree-related hazard is 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 with a recommendation for work or even removal, even if they are otherwise of considerable value.

Category (A): Trees whose retention is most desirable and are 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:

- ▲ 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);
- ▲ Trees, or groups of trees, 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
- ▲ Trees or groups of significant conservation, historical, commemorative or other value (e.g. Veteran or wood-pasture trees).

Category (B): 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:

- ▲ 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;
- ▲ 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

Minor dead wood	-	5 cm to 10 cm in diameter.
Major dead wood	-	10 cm in diameter and above.

The survey was completed from ground level only. Aerial inspections were not undertaken. Evaluations of tree conditions given within this assessment apply to the date of survey and cannot be assumed to remain unchanged, and it may be necessary to review these within 24 months, in accordance with good arboricultural practice.

3.2 Potential for Protected Species

Potential bat roost locations are described within this Report using the methodology as that recommended by the Bat Conservation Trust (BCT), see Collins J. (ed) (2016) in references (Appendix I). Each tree of significant size assessed within this survey has also been assessed for the potential to provide roosts for bats and the table in Appendix II includes reference to this.

3.3 Tree Plans and Tree Schedules

The extent and positions of significant individual trees or groups of trees close to the Site are shown on the Arboricultural Survey Plan (Figure 2). The Root Protection Areas (RPA) of the key trees of value identified for, or recommend for retention have been marked within the Constraints Plan (Figure 4) using the RPAs provided in the Tree Schedule within Table 1.

A summary that includes the trees identified on or near to the Site is included in the Tree Assessment Report detailing information on each group of trees. This is also provided in Table 1. Within the summary table maximum RPAs (m²) for estimated tree diameters have been included where appropriate, as well as a calculated corresponding radius of the circle for that RPA. The RPAs are formulated as described below and assist when designing layouts in relation to trees.

3.4 Root Protection Area

Below ground constraints to development are represented by the root plate around a tree, which needs protecting in order for the tree to be incorporated into a proposed scheme without adverse harm to the tree or structural integrity of any proposed foundation structures.

This area is illustrated by the RPA and is calculated according to the formula set out in BS 5837:(2012). This area is equivalent to a circle with a radius 12 x the stem diameter for single stem trees or the basal diameter for trees with more than one stem arising less than 1.5 m above ground level.

$$\text{RPA (m}^2\text{)} = (\text{stem diameter (mm)} \times 12 / 1000)^2 \times 3.142$$

This figure should be capped to 707 m², that is, equivalent to a circle with a radius of 15 m, or a square with approximately 26 m sides

Taken from Table 2: Calculating the RPA, BS 5837 (2005).

4.0 Results

4.1 Data Search

The results of the desk search indicated that all trees within the proposed development Site are outside of any Conservation Area. No trees on-Site nor on land adjacent to the Site are covered by a TPO.

4.2 Survey Details

The tree inspection took the form of a walkover inspection completed by Steven Kemp NDFarb TechArborA on 1st May 2018. Each individual semi-mature or young tree of significance that could be impacted upon by any proposed development was identified and visually inspected and classified. The trees identified during the survey at the Site have been individually noted and identified within this Report and are shown in the Tree Survey Plan within Figure 2, and within the Photograph Section of this Report (Appendix III).

4.3 Trees

A total of nine tree groups have been identified and assessed as part of the tree survey. All trees surveyed with the exception of three Tree Groups (TG1, TG2 and TG3) were within the Site boundary.

4.3.1 Species and their Arrangement in the Landscape

There are a range of tree species on, and immediately adjacent to, the Site, with no dominant species. Common lime *Tilia europaea*, Norway maple *Acer platanoides*, Pedunculate oak *Quercus robur*, Sycamore *Acer pseudoplatanus*, field maple *Acer campestre*, silver birch *Betula pendula*, hazel *Corylus avellana*, alder *Alnus glutinosa*, ash *Fraxinus excelsior*, goat willow *Salix caprea*, aspen *Populus tremula*, cherry *Prunus* sp., hornbeam *Carpinus betulus*, and horse chestnut *Aesculus hippocastanum* are present in multiple numbers.

The distribution of the trees and tree groups across the Site is limited to being randomly dispersed within the western extent and along the northern and southern boundaries of the Site. Two groups of trees, adjacent to the eastern boundary and one group of trees adjacent to the southern boundary are also present off-Site, with canopies that extend into the Site.

4.3.2 Height and Significance in the Landscape

The trees comprising TG7, TG8 and TG9, at an average height of 12 m, are by their positions along the Site's northern boundary, highly visible when viewed from the commercial units to the north, offering a good screening in to and out of the Site. For this reason, these trees are placed within Category B (see Table 1).

Standing outside the eastern Site boundary, TG1 and TG2, at an average height of 11 m, are quite prominent within the commercial landscape when viewed from on-Site and contribute significantly to the street scene. For this reason, these trees are placed within Category B.

Standing outside the southern boundary, TG3, at an average height of 12 m, are highly visible when viewed from the north, offering good screening in to and out of the Site. For this reason, these trees are placed within Category B.

If retained, these trees will require protection measures to ensure no impact occurs as a result of any development.

4.3.3 Age and Condition

TG4, located within the southern boundary of the Site, are a group of self-set deciduous trees with little landscape value and a stem diameter of below 150 mm.

TG5 and TG6, located within the western extent of the Site, are mixed groups of young and semi-mature deciduous trees which are of low landscape value and offer only temporary screening benefit. A percentage of the trees within the group are suppressed, mostly self-set with an understorey of hazel and cherry. A percentage of the willow are in poor condition

All trees present within the Site are semi-mature or young. None of the trees within the Site boundary show signs of past management. All on-Site trees appear to be in fair condition.

4.3.4 Environmental Condition

Given the Site's former commercial use and the semi-mature age of the majority of the trees, it is surmised that no damage to the root system of boundary and on-Site trees has been sustained through any recent on-Site working practices. The trees on-Site and immediately adjacent to the Site are not in an exposed position, having been protected from prevailing winds by the surrounding buildings.

Groundwater conditions are not assessed to be a significant factor in present or future growth or health of trees since the generally flat Site appears to be well drained and this situation will probably improve further following completion of any development.

4.4 Tree Schedule

Table 1 – BS 5837:2012 Tree Schedule

Tree Number	Tree Species		Measurements				Crown (m)				Tree Condition					Management				
	Common Name	Latin Name	Maturity	Height (m)	Stems	Stem Diameter (mm)	Average Height	N	E	S	W	Roots	Stem	Crown	Comments	Structural	Life Expectancy (yrs)	Category	RPA (m)	Works
TG1	Common lime Norway maple	<i>Tilia europaea</i> <i>Acer platanoides</i>	SM	10 Av	1	400 Av	4	4	6	5	3	No visual signs of damage	Single stems. Vertical	Spreading. Mutually shared canopy		G	>40	B	4.80	
TG2	Common lime Pedunculate oak	<i>Tilia europaea</i> <i>Quercus robur</i>	SM	12 Av	1	330 Av	0	6	4	3	4	No visual signs of damage	Single stems. Vertical	Mutually shared canopy. Species suppressed in understorey		G	>40	B	3.90	
TG3	Sycamore Field maple Norway maple Silver birch Hazel	<i>Acer pseudoplatanus</i> <i>Acer campestre</i> <i>Acer platanoides</i> <i>Betula pendula</i> <i>Corylus avellana</i>	SM Y	12 Av	1	380 Av	1	6	6	3	3	No visual signs of damage	Single stems. Vertical	Mutually shared canopy	Group provides good screening from supermarket to the north	F	>20	B	4.50	
TG4	Alder Ash	<i>Alnus glutinosa</i> <i>Fraxinus excelsior</i>	Y	8 Av	1	130 Av	1	1	1	1	1	No visual signs of damage	Single stems. Vertical	Balanced	Group of self-set trees under 150 mm diameter at breast height	F	>20	C	1.50	
TG5	Goat willow Aspen Cherry Hazel Ash Silver birch Hornbeam Alder Horse chestnut	<i>Salix caprea</i> <i>Populus tremula</i> <i>Prunus</i> sp. <i>Corylus avellana</i> <i>Fraxinus excelsior</i> <i>Betula pendula</i> <i>Carpinus betulus</i> <i>Alnus glutinosa</i> <i>Aesculus hippocastanum</i>	SM Y	14 Av	1	400 Av	1	4	4	4	4	No visual signs of damage	Single stems, Vertical and leaning	Mutually shared canopy	Trees within group mutually suppressed. Mostly self-set with understorey of hazel and cherry. Percentage of willow in poor condition	F	>20	C	4.80	
TG6	Goat willow	<i>Salix caprea</i>	Y	6 Av	MS	230 Av	0	3	3	3	2	No visual signs of damage	Multi-stemmed. Vertical	Balanced	Self-set trees within hardstanding	F	>20	C	2.70	
TG7	Pedunculate oak Goat willow	<i>Quercus robur</i> <i>Salix caprea</i>	SM	12 Av	1	460	3	6	5	6	4	No visual signs of damage	Single stem. Vertical	Spreading	Understorey of willow and elder	G	>40	B	5.40	
TG8	Ash Goat willow	<i>Fraxinus excelsior</i> <i>Salix caprea</i>	SM	13 Av	1	480	2	5	5	5	5	No visual signs of damage	Single stem. Vertical	Spreading	Understorey of willow and elder	G	>40	B	5.70	

TG9	Goat willow Sycamore Common lime Ash	Salix caprea Acer pseudoplatanus Tilia europaea Fraxinus excelsior	SM Y	11 Av	1	320 Av	0	3	4	3	4	No visual signs of damage	Single stems. Vertical	Spreading	F	<20	B	3.90	
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Table 2 – Key to Tree Schedule

Measurements	Age – Class	Overall Condition	BS 5837 2005 : Cascade Chart for Quality Assessment/Retention Category	Symbols:
MS – Multi-stemmed	Y - Young	G – Good	A – High	< = less than
Ht - Height in metres	SM – Semi-Mature	F – Fair	B – Moderate	~ = approximately
Stem – Stem Diameter at 1.5m in mm	EM – Early-mature	P – Poor	C – Low	> = greater than
Crown – Crown spread in metres	M – Mature	D – Dead	R – Trees for Removal	
TD - Trunk division (height in metres)	V - Veteran Est Yrs – estimate of years remaining (>40 years; 20 –40 years; <20 years)		Sub-categories: 1 = mainly arboricultural values 2 = mainly landscape values 3 = mainly cultural values.	
RPA = Root Protection Area (equivalent to a circle with a radius 12 x the stem diameter for single stem trees and 10 x the basal diameter for trees with more than one stem arising below 1.5m above ground level).				

5.0 Tree Management

5.1 Arboricultural Assessment

Standing outside the eastern boundary of the Site are two tree groups, with low canopies that extend over the boundary and are located adjacent to the proposed access. The peripheral trees within these groups could be impacted by any proposed redevelopment.

Standing along the northern boundary are three groups of mixed deciduous trees adjacent to a retaining wall. The groups contain a small percentage of semi-mature trees of good form, with spreading canopies, that could be impacted by any proposed redevelopment. It may be possible to retain and incorporate certain trees within these groups into the landscaping scheme of the proposals.

It appears no management has taken place to the trees present on-Site. TG2, TG3, TG7, TG8 and TG9 would benefit from selective thinning of the understorey trees, which should extend the viability and general health of the remaining trees. To ensure that the root areas and canopy extremities of the individual trees and the tree groups that may be retained are not damaged, a Constraints Plan has been prepared to show the locations where protective fencing should be erected for any trees selected for retention (see Figure 4). Any tree surgery required is best carried out towards the conclusion of the development so that, if necessary, any known root damage can be corrected by the appropriate crown thinning to restore root /shoot balance.

None of the trees were found to support potential features suitable for roosting bats.

It is considered that the Site would benefit from native deciduous tree planting along the southern boundary to provide additional screening.

5.2 Recommendations

Recommendation 1 (Adequate Tree Protection)

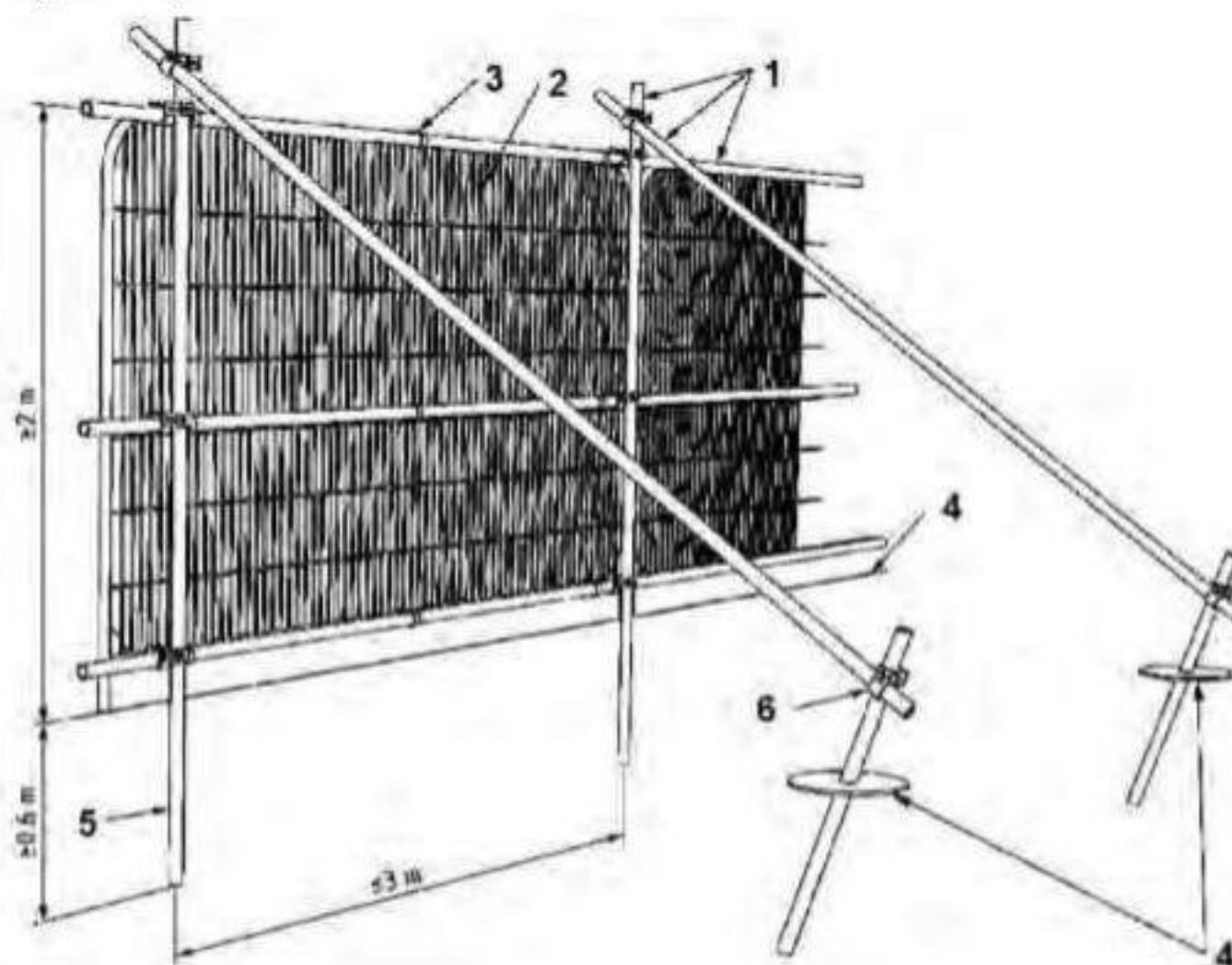
It has been identified that the trees comprising TG7, TG8 and TG9, standing along the northern boundary, will be affected by the reinstatement of the current, unstable retaining wall. In order to reinstate the retaining wall, works within the RPAs of these groups of trees will be necessary. Removal of the existing wall will be by hand and any trenches that are unstable will be hand dug to accommodate the new wall. Preferably, the new wall installation will be of a pre-cast concrete type that will comfortably fall within the footprint of the existing wall. Piling may be an option but will incur further investigation as it is believed that a drainage pipe is present within the trench area and piling may fracture the pipe. An Arboricultural Method Statement will be submitted and agreed by the LPA before any works within the RPA of the aforementioned trees can be completed.

Those trees identified within any development plan for retention will need to be adequately protected during any approved development works. As a general rule at this Site, measures to protect trees should follow the best practice principles set out in BS5837: Trees in Relation to Design, Development and Construction (2012). Prior to any construction or development work proceeding, the RPAs of individual trees to be retained should be marked out using the distances provided in the Table 1. Marking out should be completed by a person with arboricultural or horticultural expertise as individual trees will have root zones that may be affected by local conditions and allowances would need to be made to accommodate this.

The best practice principles have been broadly summarised below:

- ▲ All trees retained adjacent to the Site should be protected by barriers or ground protection around the calculated RPA and as indicated on any Tree Constraints Plan (TCP) that may be produced in association with the assessment;
- ▲ Any fencing required should be erected prior to commencement of construction and before demolition including erection of any temporary structures. Once set up fences should not be removed or altered without prior consultation with the arboricultural advisor;
- ▲ Arrangements should be made for an arboriculturist to supervise works and tree protection where trees are particularly vulnerable or sited close to access points; and

- ▲ Pre-development works may be undertaken prior to the installation of fencing with the agreement of the local planning authority;



1. Standard scaffold poles
2. Heavy Gauge 2m tall galvanised tube and weld mesh infill panels
3. Panels secured to uprights and cross members with wire ties
4. Ground Level
5. Uprights driven into ground until secure (up to 0.6m)
6. Standard scaffold clamps

- ▲ All tree works should follow best practice procedures as set out in BS 3998 (2010). All trees should be maintained in good condition on-Site and be inspected annually (where overall condition requires) or every two years and after any major storm events, with safety a priority;
- ▲ Fencing should be clearly visible and suitable for the location, type and proximity of construction activity;
- ▲ It may be appropriate on some sites to use temporary site offices as components of the protection barriers;
- ▲ Where it has been agreed and shown on a Tree Protection Plan, construction access may take place within the RPA if suitable ground protection measures are in place (e.g. existing surfaced car park areas). In other areas this may comprise single scaffold boards over a compressible layer laid onto geo-textile materials for pedestrian movements. Vehicular movements over the RPA will require the calculation of expected loading and may require the use of proprietary protection systems;
- ▲ Once areas around trees have been protected by fencing, any works on the remaining Site area may be commenced providing activities do not impinge on protected areas. Notices should be placed on fencing to indicate that operations are not permitted within the fenced area;
- ▲ Wide or tall loads etc should not come into contact with retained trees. Banksman should supervise transit of vehicles, jibs, booms etc where this is in close proximity to retained trees;

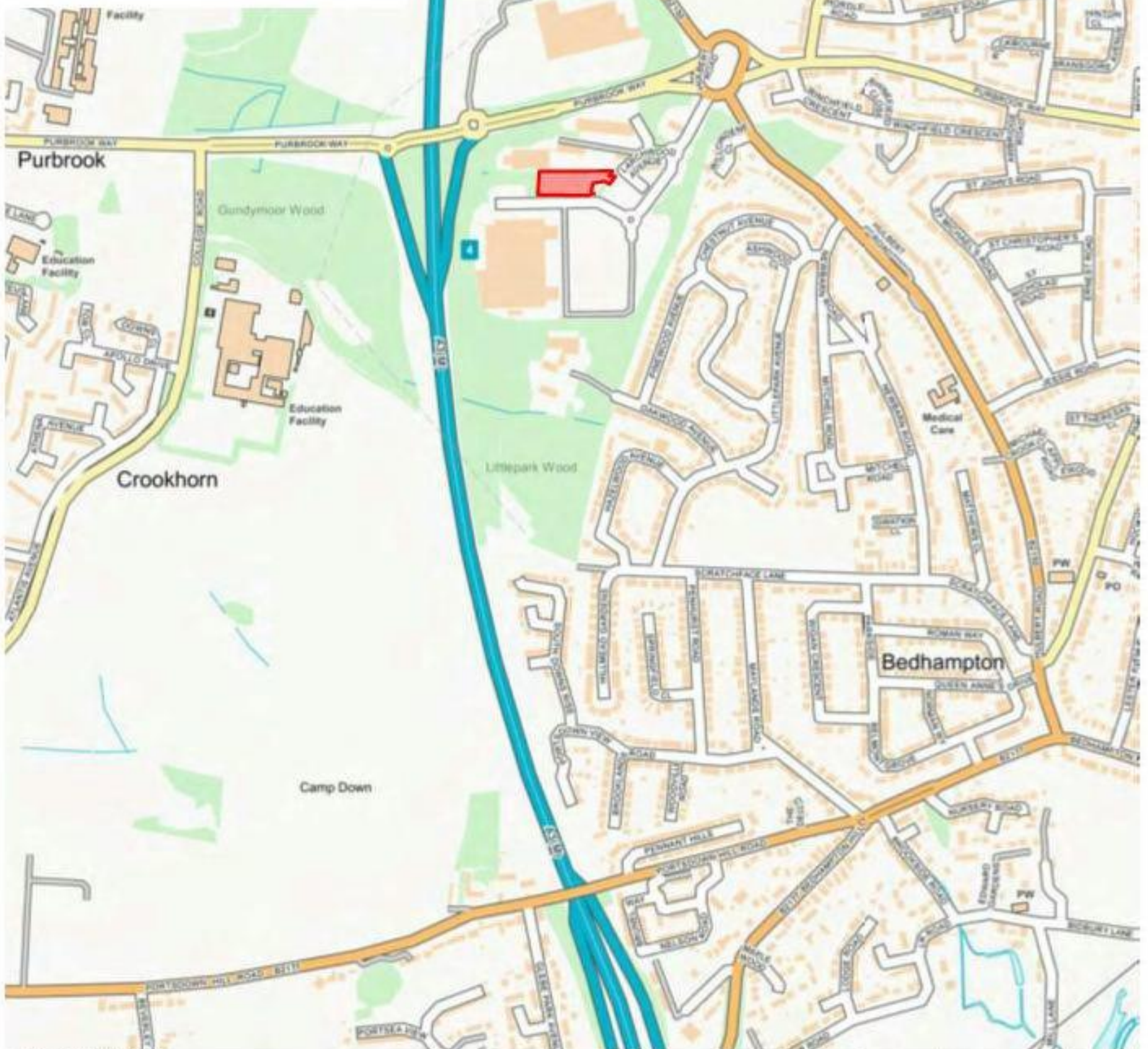
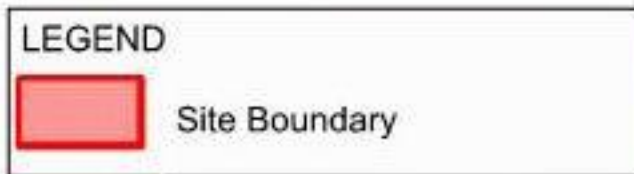
- ▲ Oil, bitumen, cement or other material that is potentially injurious to trees should not be stacked or discharged within 10 m of a tree bole. No concrete mixing should be done within 10 m of a tree. Allowance should be made for the slope of ground to prevent materials running towards the tree;
- ▲ No fires should be lit where flames are anticipated to extend to within 5 m of tree foliage, branches or trunk, taking into consideration wind direction and size of fire;
- ▲ Notice boards, telephone cables or other services should not be attached to any part of a retained tree;
- ▲ Where it is deemed necessary to operate a wide or tall load, plant bearing booms, jibs and counterweights or other such equipment, as part of construction works, and such equipment would have potential to cause injurious contact with crown material i.e. low branches and limbs, of retained trees within the RPA fencing, it is best advised that appropriate, but limited, tree surgery be carried out beforehand to remove any obvious problem branches. This is classed as 'Facilitation Pruning' within BS 5837 (2012). Any such pruning should be undertaken in accordance with a specification prepared by an arboriculturist;
- ▲ It is advised that a Pre-Commencement Site Meeting is held with contractors who are responsible for operating machinery, as described above, to firstly highlight the potential for damage occurring to tree crowns and to ensure that extra care is applied when manoeuvring machinery during such operations within close proximity to retained trees to avoid any contact;
- ▲ In the event of having caused any such branch or limb damage to retained trees it is strongly recommended that suitable tree surgery be carried out, in accordance with BS 3998 (2010) Recommendations for Tree Work, to correct the damage, upon completion of development; and
- ▲ All of the above precautionary measures should be applied to minimise the effect of any damage to long-term tree health and safety.

6.0 Limitations of the Tree Survey

The recommendations contained in this Report represent Delta-Simons' professional opinions, based upon the information referred to in Section 1.0 of this Report, exercising the duty of care required of an experienced Environmental Consultant.

This Report was prepared by Delta-Simons for the sole and exclusive use of the Client and for the specific purpose for which Delta-Simons was instructed as defined in Section 1.1 of this Report. Nothing contained in this Report shall be construed to give any rights or benefits to anyone other than the Client and Delta-Simons, and all duties and responsibilities undertaken are for the sole and exclusive benefit of the Client and not for the benefit of any other party. In particular, Delta-Simons does not intend, without its written consent, for this Report to be disseminated to anyone other than the Client or to be used or relied upon by anyone other than the Client. Use of the Report by any other person is unauthorised and such use is at the sole risk of the user. Anyone using or relying upon this Report, other than the Client, agrees by virtue of its use to indemnify and hold harmless Delta-Simons from and against all claims, losses and damages (of whatsoever nature and howsoever or whensoever arising), arising out of or resulting from the performance of the work by the Consultant.

Figure 1 - Site Location Map



Scale: 1 / 10,000 @ A4

Contains OS data ©, Crown Copyright and Database Right (2018)

Figure 2 - Tree Survey

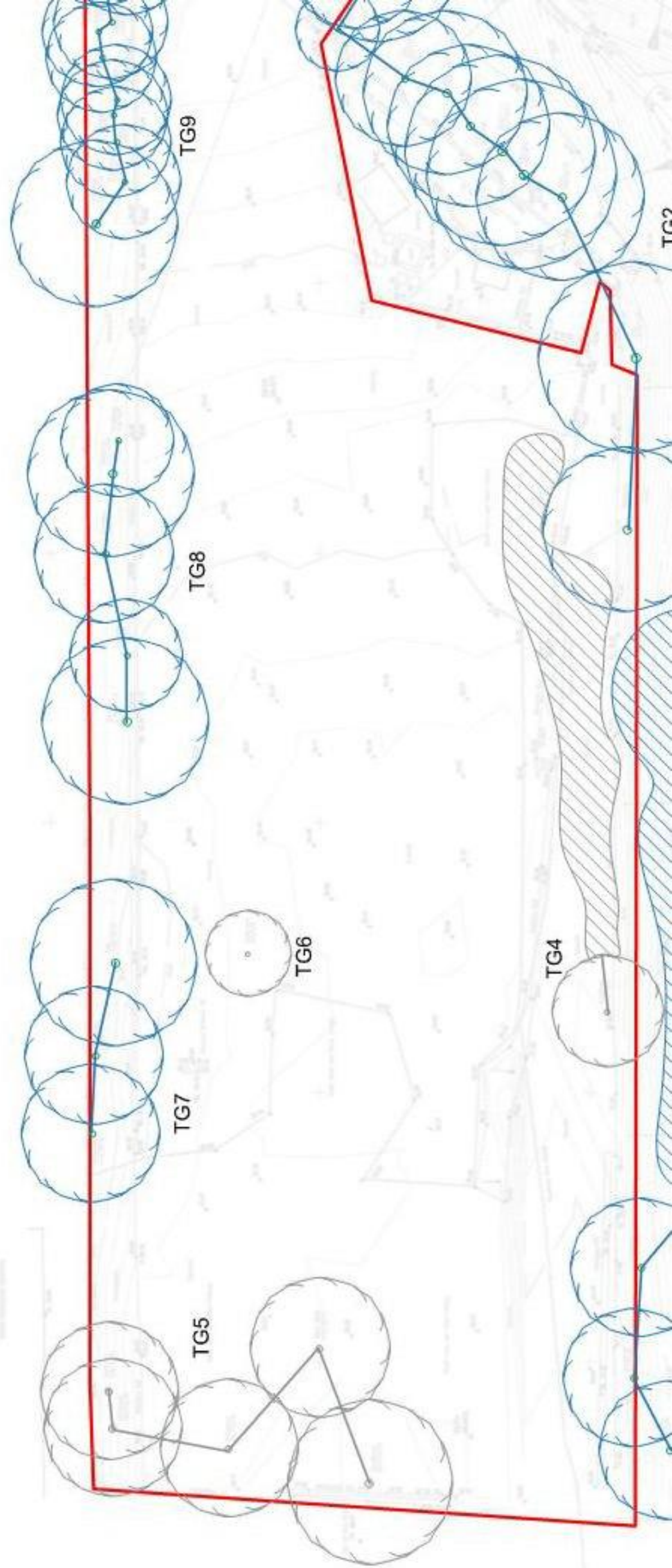
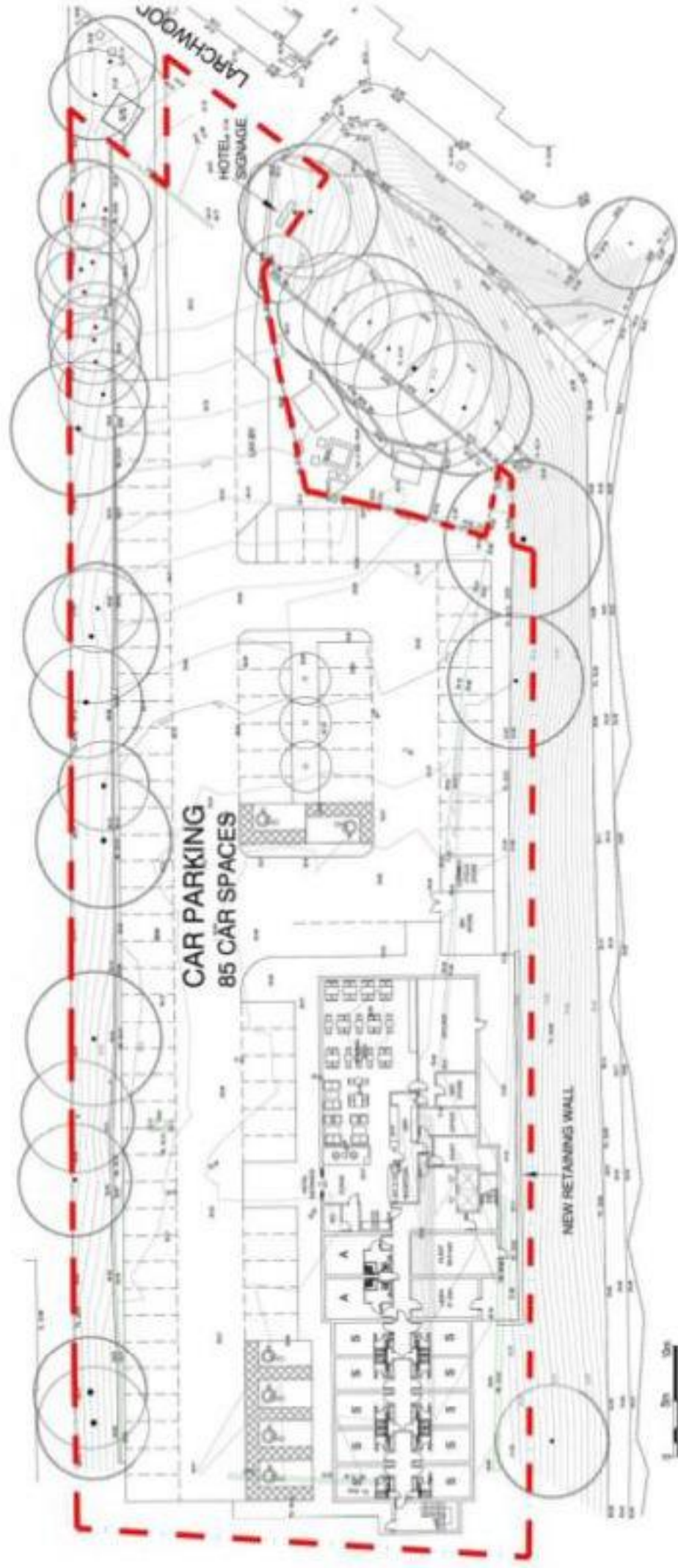


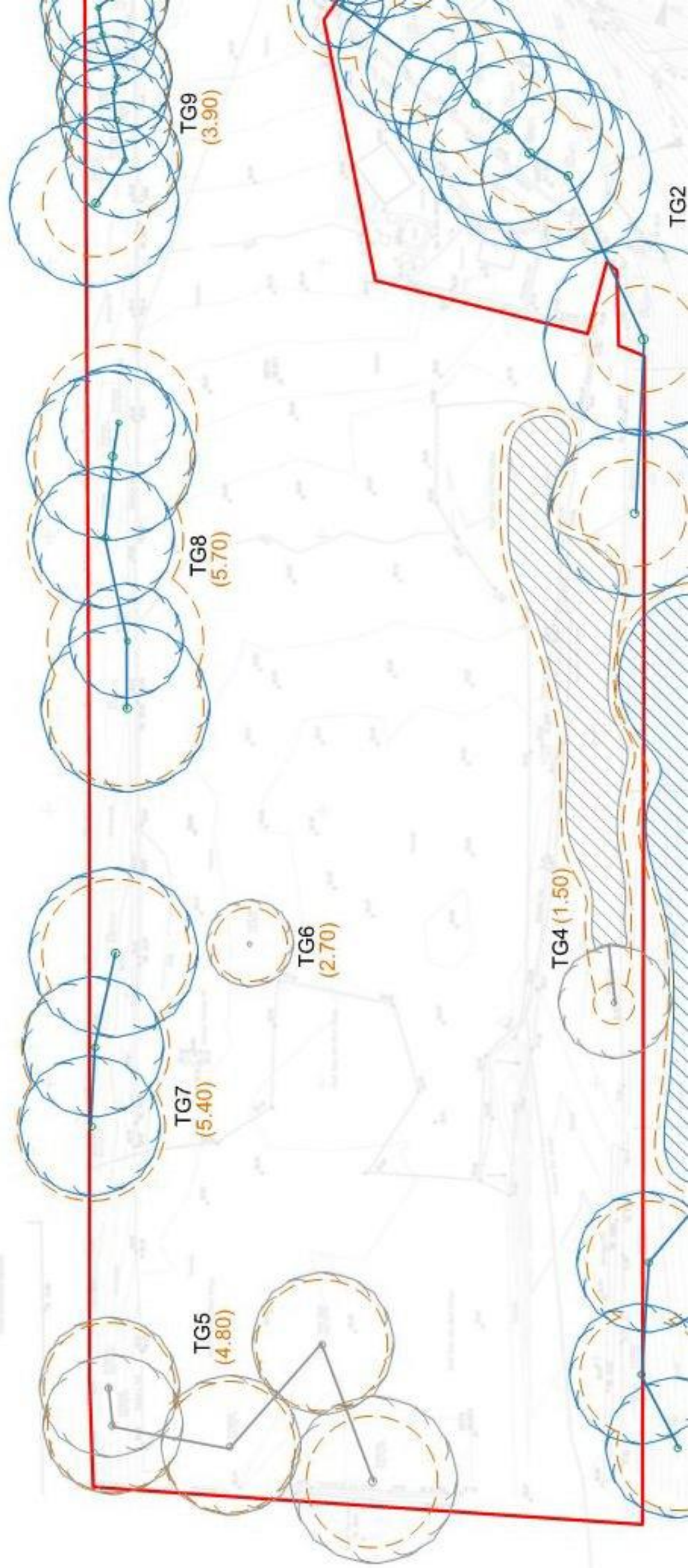
Figure 3 - Proposed Development Plan



Site Plan Provided by Client

 Environment - Health & Safety - Sustainability	TITLE: Proposed Development Plan Stanton's Yard Havant			PROJECT NO: 18-0609.02	
	DESIGNED BY: EN	SCALE: Not to Scale	DRAWN BY: SK	FIGURE NO: 1	FIGURE NO: 3
	DATE: 22 June 2018				

Figure 4 - Tree Constraints Plan



Appendix I - References

References

Collins, J. (ed.) (2016) Bat surveys for Professional Ecologists: Good practice guidelines (3rd edition). The Bat Conservation Trust, London.

Stace, C. (2010). *New Flora of the British Isles 3rd edition*. University Press, Cambridge.

BSI Publication BS 5837:2012 Trees in Relation to Design, Demolition and Construction – Recommendations.

BSI Publication BS 5837:2005 Trees in Relation to Construction - Recommendations.

Appendix II - Guidance on Assessing the Potential Suitability of Development Sites to Support Bats

Guidance on Assessing the Potential Suitability of Development Sites to Support Bats

(adapted from Collins, J. (ed)).

Suitability	Description	
	Roosting	Commuting and Foraging
Negligible	An inspected structure or tree which is considered to have no features of importance for roosting bats. No further constraints apply to the method or timing of proposed works.	Negligible habitat features on-Site to support commuting or foraging bats
Low	A structure with at least one or more features suitable to support opportunistic individual bats. However, inadequate space, shelter, protection and conditions, and the low suitability of surrounding habitats means that it is unlikely to be used as a maternity or hibernation roost site. A tree of adequate age and stature to support potential roosting features, however, either no features, or only features of limited potential recorded from the ground.	Habitat with potential to support low numbers of commuting bats due to its quality and connectivity. For example, a gappy hedgerow or unvegetated stream that is isolated from the surrounding landscape. Alternatively, suitable but isolated habitats suitable to support low numbers of foraging bats such as a lone tree or a patch of scrub.
Moderate	A structure or tree with one or more potential roost sites that are of adequate size, shelter and protection, with suitable conditions and surrounding habitat to support a bat roost not of high conservation status (with respect to roost type not individual species conservation status).	Linear habitat continuity connecting to the wider landscape offering potential to support commuting bats, such as rows of trees and scrub or linked back gardens. Habitat such as trees, scrub, grassland or a waterbody with connectivity to the wider landscape offering foraging opportunities for bats.
High	A structure or tree with one or more potential roost sites that are suitable for use by large numbers of bats on a regular basis and for long periods of time due to their size, shelter, protection, conditions and the surrounding habitat.	Continuous high-quality habitat with strong connectivity to the wider landscape that is likely to be used by commuting bats on a regular basis, such as flowing waterbodies, hedgerows, rows of trees and woodland edges. High quality habitat with strong connectivity to the wider landscape that is likely to be regularly used by foraging bats, such as broadleaved woodland, tree-lined watercourses and grazed parkland. Site is close to, and connected to, known roost sites

Appendix III – Photographs

Stanton's Yard, Havant

Delta-Simons Project No. 18-0609.02



Photograph 1 – TG1



Photograph 2 – TG2

Stanton's Yard, Havant

Delta-Simons Project No. 18-0609.02



Photograph 3 – TG3



Photograph 4 – TG4

Stanton's Yard, Havant

Delta-Simons Project No. 18-0609.02



Photograph 5 – TG5



Photograph 6 – TG6

Stanton's Yard, Havant

Delta-Simons Project No. 18-0609.02



Photograph 7 – TG7



Photograph 8 – TG8

Stanton's Yard, Havant

Delta-Simons Project No. 18-0609.02



Photograph 9 – TG9