



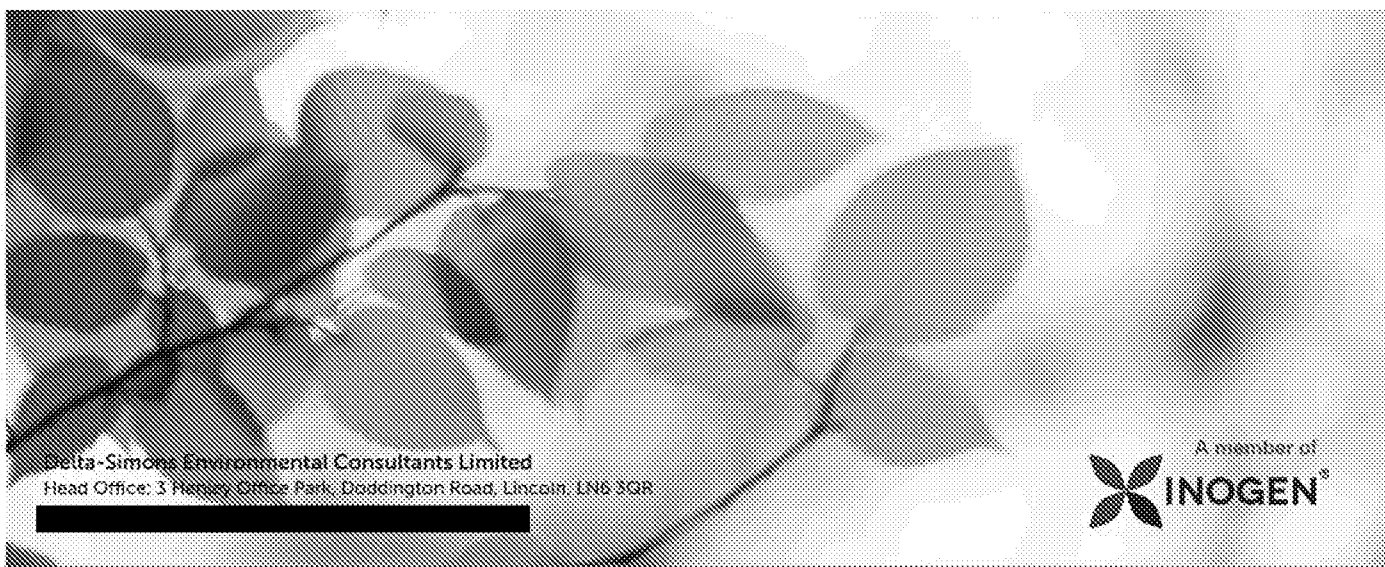
BS 5837:2012 Arboricultural Impact Assessment

DBN3 Norway Lane, Littlehampton

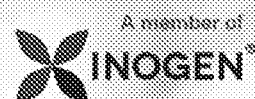
Presented to Gleave Partnership Ltd.

Issued: March 2019

Delta-Simons Project No. 19-0138.05



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Report Details

Client	Gleave Partnership Ltd.
Report Title	BS 5837:2012 Arboricultural Impact Assessment
Site Address	DBN3 Norway Lane, Littlehampton
Project No.	19-0138.05
Delta-Simons Contact	Pete Morrell [REDACTED]

Quality Assurance

Issue No.	Status	Issue Date	Comments	Author	Technical Review	Authorised
2.	Final	25th March 2019	[REDACTED]	Catherine Bywood Arboriculturalist	Pete Morrell Principal Arboriculturalist	Charlotte Sanderson-Lewis Associate and Ecology Team Leader

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1.0 Introduction

1.1 Purpose and Scope of the Survey

Delta-Simons Environmental Consultants Ltd was instructed by Gleave Partnership Ltd. (the 'Client') to produce an Arboricultural Impact Assessment (AIA) to British Standard (BS) 5837:2012. The AIA survey was undertaken of an area of land situated off Norway Lane to the north-east of Littlehampton in West Sussex (hereafter referred to as 'the Site'). The assessment was undertaken in order to inform a planning application for minor alterations of the Site layout.

The aims of the AIA were to:

- ▲ Detail foreseeable tree related issues within this Report to inform the Local Planning Authority (LPA); and
- ▲ Provide an initial analysis of the impacts that the proposed development is projected to have on trees both within the Site and, where considered pertinent and where practicable, on land immediately adjacent to its boundaries; and
- ▲ Provide guidance on suitable retained tree management and mitigation for projected losses, along with advice on appropriate tree protection measures in the context of the proposed development in accordance with current guidance.

1.2 Site Description

The Site is centred at Ordnance Survey (OS) grid reference TQ 03807 03535 off Norway Lane to the north-east of Littlehampton in West Sussex. The Site covers an area of 5.2 hectares (ha) and comprises three distribution warehouses (Body Shop Distribution Centre, Building 5 and Building 6, see Figure 3) surrounded by hardstanding. Buildings 5 and 6 were bordered by areas of introduced shrubs to the south. To the east and west of the Site were areas of amenity grassland and scattered trees. To the north of the Site were mixed scattered trees, beneath which was dense scrub and ruderal vegetation. The Site was surrounded on all aspects by a security fence. Topographically the Site was flat, and the Site did not support any standing water at the time of the survey.

The Site is situated within a largely urban setting with surrounding industrial, commercial and residential properties. Residential housing extended to the west and south-west. To the north was a railway line beyond which were large industrial sheds. To the east was a large pond (Waterbody 1) surrounded by grassland and broadleaved trees, with the A259 beyond. To the south of the Site was a large car park and Chinese style office building, and beyond this was a roundabout associated with the A259 and a large cemetery.

The Site layout is shown in Figure 2.

1.3 Proposed Development

It is understood that the proposed development comprises minor alterations to the internal access routes, including the widening of the road within the north of the Site and resurfacing works (Figure 3).

1.4 Site Visit, Data Collection and Tree Plans

Further to the completion of a Tree Survey of the Site, which took place on 4th February 2019, all tree data collected from the Site is set out in the attached tabulated Tree Survey Schedule (TSS) at Appendix B which, for ease of interpretation, should be read alongside the associated BS:5837:2012 Table 1 (as appended).

The survey identified 23 individual trees (prefixed 'T') and nine group of trees (prefixes 'TG'). The surveyed vegetation has been numbered accordingly on the Tree Constraints Plan (TCP) and Tree Impact Plan (TIP), as appended (see Figure 2 and Figure 3, respectively). The TCP details the existing Site with the readily definable tree constraints, whilst the TIP also has an overlay of the development proposals along with associated projected tree related impacts. The plans are based on topographical survey of the existing and proposed Site plans that were provided in electronic format by the Client, and for the purpose of this Report, it is assumed that these are accurate.

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 Tree Protection Order (TPO).

2.0 Legislation in Respect of Trees and Associated Wildlife

2.1 Tree Preservation Orders and Conservation Area Designations

The Town & Country Planning Act (1990) (the Act) and associated Regulations empower LPAs to protect trees in the interests of amenity by making TPOs. The Act also affords protection for trees of over 75 mm diameter that stand within the curtilage of a CA. Subject to certain exemptions, an application must be made to the LPA in question to carry out works upon or remove trees that are subject to a TPO, whilst six weeks' notice of intention must be given to carry out works upon or remove trees within a CA that are not protected by a TPO.

2.2 Protected Species

2.2.1 Nesting Birds

Nesting birds are afforded statutory protection under the Wildlife & Countryside Act (1981, as amended) and their potential presence should, therefore, be considered when trimming hedges, removing climbing plants and pruning and removing trees. The breeding period for nesting birds runs from March to late July, inclusive. Hedges provide valuable nesting sites for many birds and management should, therefore, be avoided during this period. Trees, hedges and ivy should be inspected for nests by a suitably qualified ecologist prior to pruning or removal, and any work likely to destroy or disturb active nests should be avoided until the young have fledged.

2.2.2 Bats

All bats and their roosts are protected under Section 9 of the WCA 1981 (as amended) and Annex IV of the Habitats and Species Regulations 2017.

It is an offence, either deliberately or recklessly, to destroy, damage or obstruct access to any bat roost, or to disturb a bat using such a place. It should be noted that a roost is protected whether or not bats are present and any activity or works affecting a roost, even when bats are absent, are likely to require a Natural England European Protected Species Licence.

2.3 Felling Licences

Subject to certain exemptions the Forestry Act (1967) requires that a 'Felling Licence' be obtained to remove growing trees amounting to more than five cubic metres of timber in a calendar quarter. Felling Licences are administered by the Forestry Commission and contravention of the associated controls can incur substantial penalties. A Felling Licence is, however, not required where tree removals are required for the purpose of implementing a development authorised by detailed (i.e. full) planning permission granted under the Act (1990).

3.0 The Tree Population

The Site is described in Section 1.0 of this Report.

As noted previously, 23 individual trees and nine groups of trees were surveyed for the purpose of this appraisal. The surveyed trees comprised predominantly deciduous broadleaved trees including multiple numbers of hawthorn *Crataegus monogyna*, horse chestnut *Aesculus hippocastanum*, pedunculate oak *Quercus robur*, Norway maple *Acer platanoides*, beech *Fagus sylvatica* and hazel *Corylus avellana* with small numbers of Leyland cypress *X Cupressocyparis leylandii* also present. The following species were represented as single specimens: Apple *malus* sp., crack willow *Salix fragilis*, cherry *Prunus* sp., Indian bean tree *Catalpa bignonioides*, plum *Prunus* sp., and silver birch *Betula pendula*.

The trees on-Site range from young to semi-mature, with sizes varying from small to large with heights of up to 12 m and maximum diametrical crown spreads of up to 7 m. Detailed tree dimensions and other pertinent information, such as structural defects and physiological deficiencies, are included in the TSS at Appendix B.

In respect to the TSS, it should be noted that tree quality is categorised within the existing Site context without taking any development proposals into account. However, recommendations for works included in the TSS takes both current Site usage into consideration and the proposed Site development where there are definable development related issues with regards to specific trees.

The TSS includes a column ('Cat. Grade') listing the trees' respective retention values, where they are rated either 'A', 'B', 'C' or 'U', as per BS5837:2012 Table 1 (Appendix B). 'A' category trees are those considered to be of 'high quality' and, accordingly, the most suitable for retention, whilst 'B' category trees are those considered to be of 'moderate quality'. As detailed in Table 1 (below), one tree was categorised as high quality (A), 21 trees and seven tree groups were categorised as moderate quality ('B'), and one tree and two tree groups were categorised as low quality ('C').

Table 1: BS5837-2012 Retention Categories of the Surveyed Trees

Tree Quality	Ret. Cats.	Tree/Group Numbers	Totals
Those of a moderate or high quality that should be afforded appropriate consideration in the context of development	'A'	T29	1 Tree
	'B'	T1, T5, T6, T7, T8, T9, T10, T11, T12, T14, T15, T16, T18, T19, T20, T23, T24, T26, T27, T30, T31 TG2, TG4, TG13, TG17, TG21, TG22, TG28	21 Trees 7 Tree Groups
Those of a low quality that should not be considered a material constraint to development	'C'	T3 TG25, TG32	1 Tree 2 Tree Groups
Those that should be removed for management reasons regardless of site proposals	'U'		
Totals			23 Trees and 9 Tree Groups

It is understood that the proposals comprise minor alterations to the internal access routes, including the widening of the road within the north of the Site and resurfacing works. Additional tree planting is proposed along the northern boundary.

Accordingly, the TCP has been overlaid on the development plan provided by Gleave Partnership Ltd. (March 2019) in order to appraise the projected impacts that the development will potentially have on the Site vegetation, as detailed on the TIP.

3.1 Projected Arboricultural Losses Relating to the Proposal

As detailed in Table 2, below, and on the TIP, implementation of the proposed development as it stands is projected to require the removal of eight individual trees and part of two tree groups comprising of six trees all of moderate quality. The remainder of on-Site trees are to be retained.

Table 2: Arboricultural Impacts of Proposed Development and Other Tree Removal Proposals

Tree Quality	Ret. Cats.	Removals necessary to implement development	Removals suggested for non-development related reasons	Total number of tree removals
Those of a moderate or high quality that should be afforded appropriate consideration in the context of development	'A'			
	'B'	T6, T12, T14, T16, T18, T19, T20, T24, T30 Three trees in TG13, Three trees in TG21		9 Trees Part of 2 Tree Groups – 6 trees in total
Those of a low quality that should not be considered a material constraint to development	'C'			
Those that should be removed for management reasons regardless of Site proposals	'U'			
Totals				9 Trees and 6 trees within 2 Tree Groups

3.2 Mitigation for Projected Tree Losses as Part of Site Landscaping

The planting of 14 trees comprising of a mixture of beech, pedunculate oak, field maple and small-leaved lime will be incorporated into the Site along the northern boundary and to the east to complement the retained trees to provide a screen for buildings to the south. The tree planting is projected to mitigate for the necessary development related tree losses (see Figure 4). Tree types and exact locations are to be determined at the detailed design stage.

4.0 Summary and Conclusions

The Site is situated within a largely urban setting in Littlehampton, West Sussex, with surrounding industrial, commercial and residential properties. Twenty-three individual trees and nine groups of trees were surveyed in respect of the proposed development of the Site. The development plan comprises minor alterations to the internal access routes, including the widening of the road within the north of the Site and resurfacing works. Additional tree planting is proposed along the northern boundary and in the east to complement retained trees and infill gaps.

One individual tree was allocated high retention value, 21 trees and seven tree groups have moderate retention value whilst one tree and two tree groups were allocated low retention value.

An evaluation of the proposed development in the context of the existing Site has indicated that it will be necessary to remove nine individual trees of moderate retention value and three trees within each of two tree groups also of moderate retention value. However, the provision of new tree planting is proposed at the northern extent of the Site that will fill in any gaps produced by the tree removals and will continue to provide screening of the Site from the north. It will in turn mitigate for the necessary development related tree losses.

In consideration of the above findings it is concluded that, from the details provided to date, the Site in question can be developed as proposed, whilst retaining the majority of individual trees and tree groups and, in turn improving the overall quality of the tree cover by additional tree planting. However, in order to ensure successful existing tree preservation, it is essential that the retained trees are protected in strict accordance with current Government guidance and the recommendations included herein.

5.0 Recommendations for Successful Tree Retention in the Context Of Development

5.1 Root Protection Areas and Construction Exclusion Zones

Adequate protection of the Root Protection Areas (RPAs) of retained trees during construction is essential to ensure their long-term viability. RPAs, which are calculated through a method provided in BS5837:2012, are ground areas that must be protected by temporary protective fencing (Specification given in Appendix C) as Construction Exclusion Zones (CEZs) throughout the development process, thereby keeping the trees' root zones free from disturbance, including compaction. Consequently, the RPA distances, as detailed in the TSS, and included on the TCP and TIP indicate the likely on-Site below-ground constraints in respect of tree roots, whilst assisting in planning for appropriate tree retention in relation to feasible development. In certain situations, such as at this Site, there is a limited degree of flexibility in the CEZ positioning, as discussed below.

The TSS includes two columns listing the RPAs of the individually surveyed trees and, where applicable, the largest of the trees in any surveyed groups as overall areas in square metres and as radial distances. The radial RPAs are indicated as blue coloured circles on the TCP and TIP. With regard to CEZs the design, materials and construction of the fencing should be appropriate for the intensity and type of site construction works, and should conform to at least section 6.2 of BS5837:2012, and should be secured by the imposition of a suitably worded planning condition. A default Temporary Protective Fencing Specification is included at Appendix C.

5.2 Underground Utilities

The installation of underground utilities in close proximity to trees can cause serious damage to their roots. As such, it is essential that utilities be routed outside RPAs unless there is no other available option, and specifics regarding these routes should be included as part of a detailed planning application. Where RPAs cannot be avoided then guidelines set out in the National Joint Utilities Group publication '*Volume 4: NJUG Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees (Issue 2) – Operatives Handbook*' should be followed (e.g. trenches of a very limited width to be hand dug or the use of directional drilling).

5.3 Arboricultural Method Statement and Tree Protection Plan

Government guidance recommends that, where considered practical by the LPA, an Arboricultural Method Statement (AMS) and a Tree Protection Plan (TPP) be prepared detailing mitigation for trees during the construction process (see Delta-Simons Arboricultural Method Statement DBN3 Norway Lane, Littlehampton, report reference 19-0138.05). Essentially, the AMS and TPP describe and detail the procedures, working methods and protective measures to be used in relation to retained trees in order to ensure that they are adequately protected during the construction process.

6.0 Other Recommendations

6.1 Non-Development Related Tree Works and Recommendations

Any general pruning works for management of retained trees that is stated to be non-development related, as detailed in the TSS, is recommended in accordance with prudent arboricultural management and should, therefore, be carried out regardless of any development proposals and potential changes in land usage associated with the Site. All tree works should be carried out in accordance with BS3998:2010 - Tree Work – Recommendations.

6.2 Tree Work Related Consents

No tree pruning nor removal works should commence on-Site until necessary consents have been obtained from the LPA.

6.3 Arboricultural Contractors

All tree works should be carried out by suitably qualified and experienced arboricultural contractors carrying appropriate public liability insurance cover and be implemented to the minimum current UK industry standards and in accordance with industry codes of practice. Only certificated personnel should, in accordance with The Control of Pesticides Regulations, apply any pesticides.

6.4 Contractors and Subsequently Identified Tree Defects

Tree contractors should be made aware that, should any significant tree defects become apparent during operations that would not have been immediately obvious to the surveyor, then such defects should be notified immediately to the Client and subsequently confirmed to the consultant within five working days.

6.5 New Tree Planting

All tree planting at the Site should be carried out in accordance with BS4428:1989 - Code of Practice for General Landscape Operations, BS3936-1:1992, Nursery Stock – Part 1: Specification for Trees and Shrubs and BS4043:1989, Transplanting Root-Balled Trees where applicable, or any ensuing superseding guidance where applicable.

6.6 Retained Tree Management

Any tree risk management appraisals and subsequent recommendations made in this report were based on observations and Site circumstances at the time of the survey. It should be noted that trees are dynamic living organisms with constantly changing structures, and even those evidently in good condition can succumb to damage and/or environmental stress. In this respect, it should be noted that, under the Occupiers' Liability Act (1957 & 1984), Site occupants have a duty of care to take reasonable steps to prevent or minimise the risk of personal injury and/or damage to property from any tree located within the curtilage of the land they occupy. It is accepted that these steps should normally include commissioning a qualified and experienced arboriculturist to survey their trees in order to identify any risk of harm to persons or damage to property that they may present and, where unacceptable risks are identified, taking suitable remedial action to negate those risks.

7.0 Limitations of the Arboricultural Impact Assessment

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 A – CEZ Warning Sign

CEZ Warning Sign

**– TREE PROTECTION AREA –
KEEP OUT!**

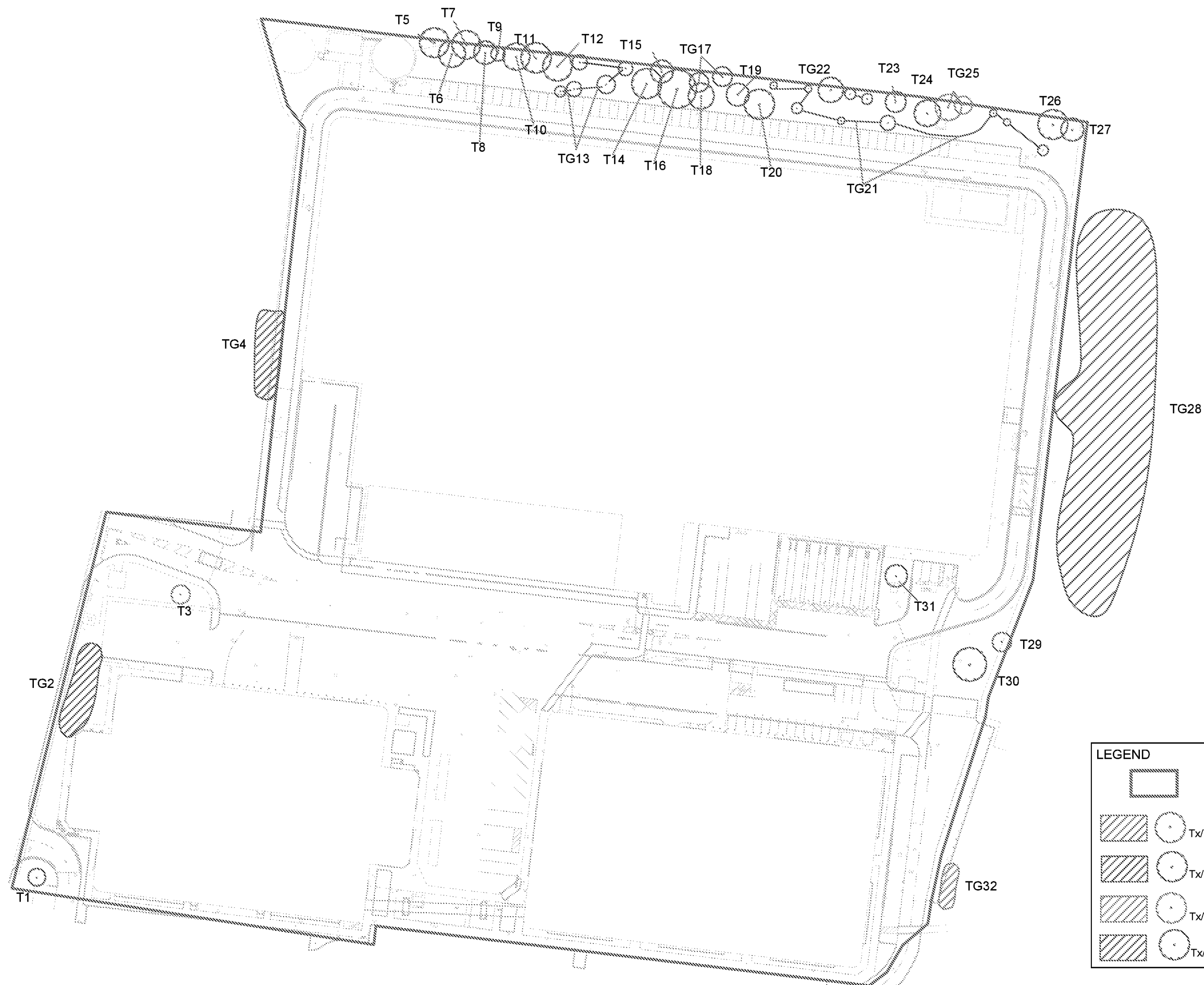
(TOWN & COUNTRY PLANNING ACT 1990)

THE TREES ENCLOSED BY THIS FENCE ARE PROTECTED BY PLANNING
CONDITIONS, THE CONTRAVENTION OF WHICH MAY LEAD TO CRIMINAL PROSECUTION.
THE FOLLOWING MUST BE OBSERVED BY ALL PERSONNEL:

- △ THE PROTECTIVE FENCING MUST NOT BE MOVED
- △ NO PERSON SHALL ENTER THE CONSTRUCTION EXCLUSION ZONE
- △ NO MACHINE, PLANT OR VEHICLES SHALL ENTER THE EXCLUSION ZONE
- △ NO MATERIALS SHALL BE STORED IN THE EXCLUSION ZONE
- △ NO SPOIL SHALL BE DEPOSITED IN THE EXCLUSION ZONE
- △ NO EXCAVATION SHALL OCCUR IN THE EXCLUSION ZONE
- △ NO FIRES SHALL BE LIT IN THE EXCLUSION ZONE

ANY INCURSION INTO THE EXCLUSION ZONE MUST BE WITH THE
WRITTEN PERMISSION OF THE LOCAL PLANNING AUTHORITY

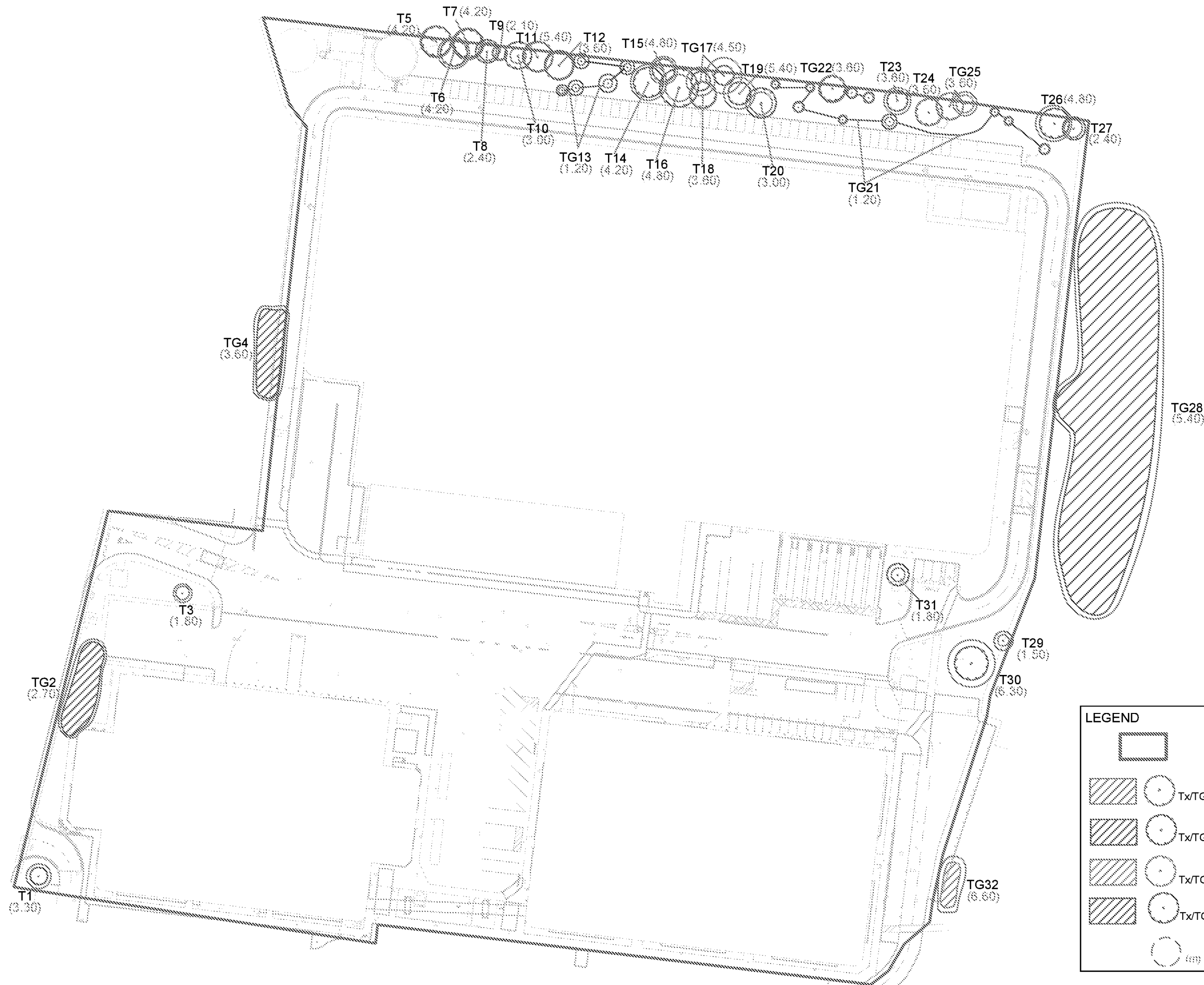
Figure 1 – Tree Survey



LEGEND	
	Site Boundary
Tx/TGx	Category A: High value retention most desirable
Tx/TGx	Category B: Moderate value retention desirable
Tx/TGx	Category C: Lower value could be retained
Tx/TGx	Category U: For removal

Site Plan Provided by Client

Figure 2 – Tree Constraints Plan



Site Plan Provided by Client

DRAWN BY: KD	SCALE: Not to Scale	PROJECT NO: 19-0138.05
CHECKED BY: PM	REVISION: 1	FIGURE NO: 2
DATE: 20 March 2019		

Figure 3 – Tree Impact Plan

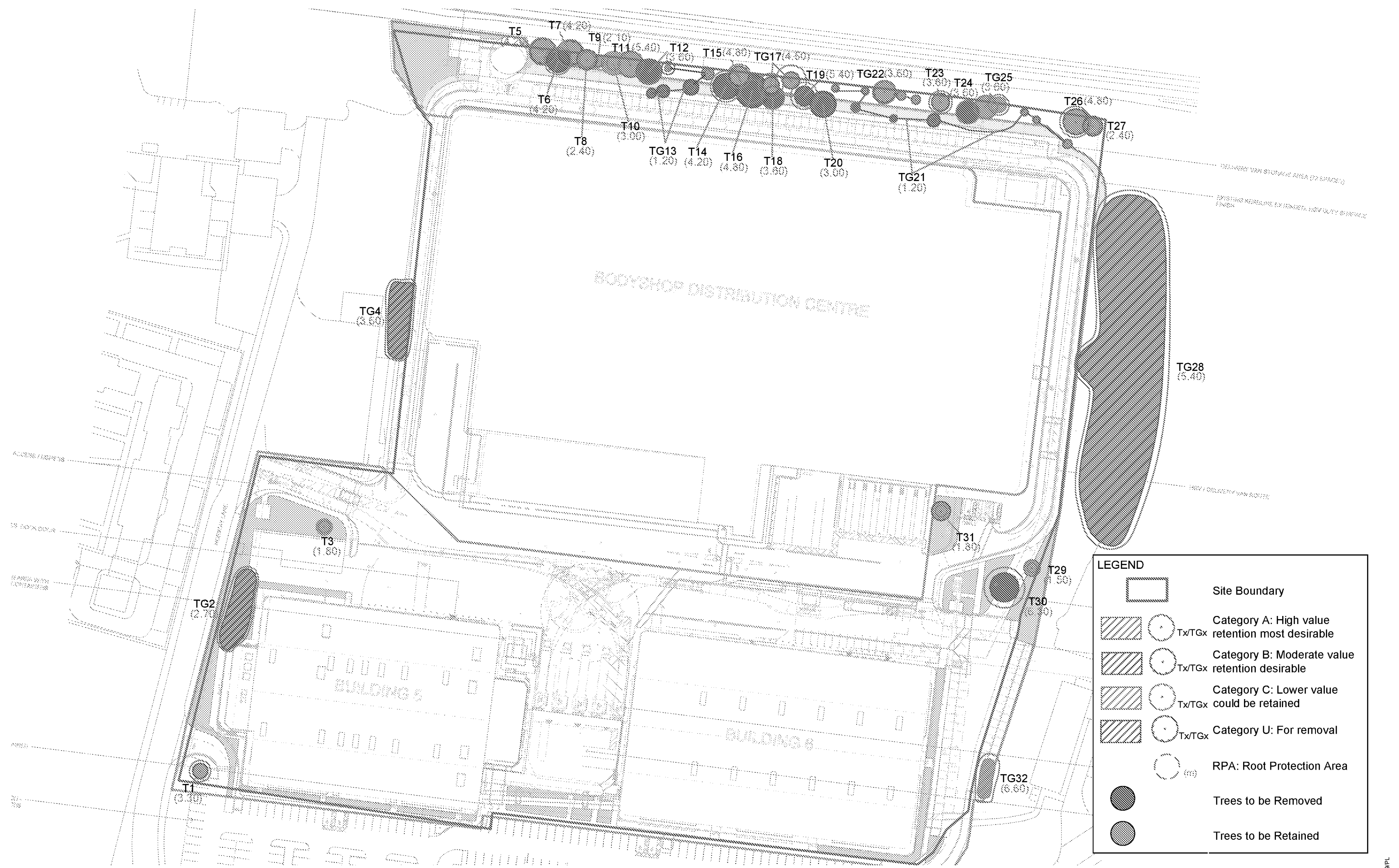
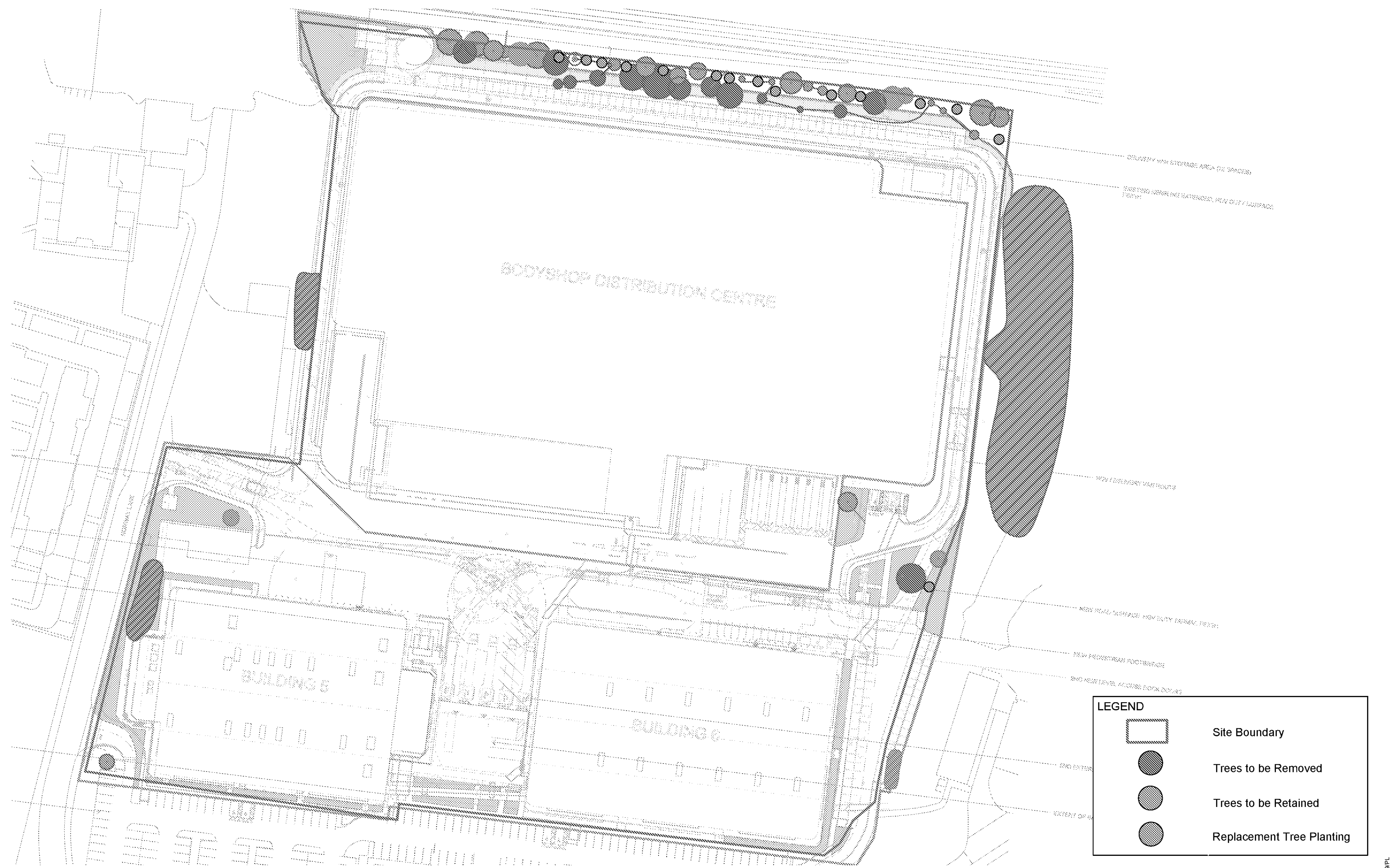


Figure 4 – Replacement Tree Planting Plan



LEGEND

Site Boundary

Trees to be Removed

Trees to be Retained

Replacement Tree Planting

Site Plan Provided by Client

Appendix A – References

References

BS4428:1989 - Code of Practice for General Landscape Operations. BSI British Standards, London

BS3936-1:1992, Nursery Stock – Part 1: Specification for Trees and Shrubs. BSI British Standards, London.

BS3998:2010 - Tree Work - Recommendations. BSI British Standards, London.

BS4043:1989 - Transplanting Root-Balled Trees. BSI British Standards, London.

BS5837:2012 - Trees in Relation to Design, Demolition and Construction – Recommendations. BSI, London.

National House Building Council (2008). NHBC Standards Chapter 4.2 - Building Near Trees. NHBC, Amersham.

National Joint Utilities Group (2007). Volume 4: NJUG Guidelines for the Planning,

Installation and Maintenance of Utility Apparatus in Proximity to Trees (Issue 2) – Operatives Handbook.

Appendix B – BS5837:2012 Tree Schedule

BS5837:2012 Tree Schedule

Table 1 - BS5837:2012 Tree Schedule for Arboricultural Impact Assessment

Tree Number	Tree Species		Measurements				Crown (m)					Tree Condition										Management
	Common Name	Latin Name	Maturity	Height (m)	Stems	Stem Diameter (mm)	Average	N	E	S	W	Roots	Stem	Crown	Comments	Structural	Life Expectancy (yrs)	Category	RPA (m)	Works		
T1	Silver birch	<i>Betula pendula</i>	SM	7	1	275	2	3	3	3	3	No obvious visual damage	Single stem. Vertical.	Balanced.		G	20-40	B	3.3			
TG2	Hawthorn	<i>Crataegus monogyna</i>	SM	6	1	AV 225	1	3	5	3	3	No obvious visual damage	Single stem. Vertical	Balanced. Read as one.		F	20-40	B	2.7			
T3	Apple	<i>Malus sp.</i>	SM	5	1	150	2	3	3	3	2	No obvious visual damage	Single stem. Vertical	Spreading. Scattered deadwood.	Bark damage on stem	F	20-40	C	1.8			
TG4	Leyland cypress	<i>X Cupressocyparis leylandii</i>	SM	8	1	Av 300	0	3	3	3	3	No obvious visual damage	Single stems. Vertical	Balanced. Reads as one.		G	20-40	B	3.6			
T5	Horse chestnut	<i>Aesculus hippocastanum</i>	SM	9	1	350	3	5	5	5	5	No obvious visual damage	Single stem. Vertical	Balanced.		G	20-40	B	4.2			
T6	Horse chestnut	<i>Aesculus hippocastanum</i>	SM	8	M S	350	0	3	5	5	5	No obvious visual damage	Multi-stemmed from base. Vertical	Balanced.		F	>40	B	4.2			
T7	Horse chestnut	<i>Aesculus hippocastanum</i>	SM	9	1	350	2	5	5	5	5	No obvious visual damage	Single stem. Vertical	Balanced.		G	>40	B	4.2			
T8	Norway maple	<i>Acer platanoides</i>	Y	9	1	200	1	3	3	3	1	No obvious visual damage	Single stem. Vertical	Slightly unbalanced		F	>40	B	2.4			
T9	Norway maple	<i>Acer platanoides</i>	Y	8	3	3 x 100	0	1	1	1	1	No obvious visual damage	Trifurcated at 0.5 m. Vertical	Balanced.		F	20-40	B	2.1			
T10	Horse chestnut	<i>Aesculus hippocastanum</i>	Y	8	3	150 100 175	1	4	4	4	4	No obvious visual damage	Single stem. Vertical	Balanced.		F	20-40	B	3.0			
T11	Horse chestnut	<i>Aesculus hippocastanum</i>	Y	9	4	150 300 250 150	1	5	5	5	5	No obvious visual damage	Single stem. Vertical	Balanced.		G	>40	B	5.4			

T12	Horse chestnut	<i>Aesculus hippocastanum</i>	Y	9	1	300	2	5	5	5	5	No obvious visual damage	Single stem. Vertical	Balanced.		F	>40	B	3.6	
TG13	Horse chestnut Pedunculate oak	<i>Aesculus hippocastanum</i> <i>Quercus robur</i>	Y	5	1	Av 100	1	1	1	1	1	No obvious visual damage	Single stems. Vertical	Balanced.	Tree guards present	F	>40	B	1.2	
T14	Horse chestnut	<i>Aesculus hippocastanum</i>	Y	5	1	300	0	5	5	5	5	No obvious visual damage	Single stem. Vertical	Balanced.	Trifurcated at 2 m	F	>40	B	4.2	
T15	Horse chestnut	<i>Aesculus hippocastanum</i>	Y	5	4	175 125 275 150	2	1	5	1	1	No obvious visual damage	Single stem. Vertical	Unbalanced.	Stubs present	F	>40	B	4.8	
T16	Horse chestnut	<i>Aesculus hippocastanum</i>	Y	5	1	400	1	3	3	6	3	No obvious visual damage	Single stem. Vertical	Spreading		G	>40	B	4.8	
TG17	Leyland cypress	<i>X</i> <i>Cupressocyparis leylandii</i>	Y	11	1	Est 375	0	3	3	3	3	No obvious visual damage	Single stem. Vertical	Balanced.		F	20-40	B	4.5	
T18	Horse chestnut	<i>Aesculus hippocastanum</i>	Y	9	1	300	1	4	4	4	4	No obvious visual damage	Single stem. Vertical	Balanced.		F	20-40	B	3.6	
T19	Horse chestnut	<i>Aesculus hippocastanum</i>	Y	8	1	450	0	6	6	6	6	No obvious visual damage	Single stem. Vertical	Spreading. Balanced.		G	>40	B	5.4	
T20	Horse chestnut	<i>Aesculus hippocastanum</i>	Y	6	1	250	0	3	3	3	3	No obvious visual damage	Single stem. Vertical	Balanced.		F	20-40	B	3.0	
TG21	Horse chestnut	<i>Aesculus hippocastanum</i>	Y	2	1	100	0	1	1	1	1	No obvious visual damage	Single stem. Vertical.	Balanced		G	>40	B	1.2	
TG22	Leyland cypress Beech Hazel	<i>X</i> <i>Cupressocyparis leylandii</i> <i>Fagus sylvatica</i> <i>Corylus avellana</i>	Y	8	1	Est 300	0	3	3	3	3	No obvious visual damage	Single stem. Vertical	Balanced.		F	20-40	B	3.6	
T23	Horse chestnut	<i>Aesculus hippocastanum</i>	Y	7	1	300	1	5	5	5	5	No obvious visual damage	Single stem. Vertical	Balanced.		F	>40	B	3.6	
T24	Horse chestnut	<i>Aesculus hippocastanum</i>	Y	8	1	300	1	5	3	5	3	No obvious visual damage	Single stem. Vertical	Slightly unbalanced		F	20-40	B	3.6	
TG25	Leyland cypress	<i>X</i> <i>Cupressocyparis leylandii</i>	Y	9	1	Av 300	1	1	2	1	1	No obvious visual damage	Single stems. Vertical	Suppressed by adjacent tree.		F	20-40	C	3.6	
T26	Horse chestnut	<i>Aesculus hippocastanum</i>	Y	8	3	250 325 250	0	5	5	5	5	No obvious visual damage	Trifurcated at 1.5 m. Vertical	Balanced		F	>40	B	4.8	

T27	Horse chestnut	<i>Aesculus hippocastanum</i>	Y	6	3	150 150 250	0	3	5	3	3	No obvious visual damage	Trifurcated at 1 m. Vertical	Balanced		F	>40	B	2.4	
TG28	London plane	<i>Platanus x acerifolia</i>	SM	11	1	Av 450	3	6	6	6	6	No obvious visual damage	Single stem. Vertical	Spreading. Scattered deadwood	Canopies read as one.	F	>40	B	5.4	
T29	Indian bean tree	<i>Catalpa bignonioides</i>	Y	7	1	125	2	3	3	3	3	No obvious visual damage	Single stem. Vertical	Spreading. Well balanced.	Memorial tree	F	>40	A	1.5	
T30	Cherry	<i>Prunus sp.</i>	SM	8	5	150 175 250 225 250	2	6	6	6	6	No obvious visual damage	Multi-stemmed from base	Spreading. Minor deadwood	Several branches removed. Stubs present	F	20-40	B	6.3	
T31	Plum	<i>Prunus Sp.</i>	SM	4	1	150	2	3	3	3	3	No obvious visual damage	Single stem. Vertical	Spreading. Well balanced.		F	>40	B	1.8	
TG32	Crack willow	<i>Salix fragilis</i>	M	12	M S	10 x 300	2	7	7	7	7	No obvious visual damage	Multi-stemmed from base Vertical	Crown lifted to 6 m, stubs present. Spreading. Occasional deadwood	Hazard beam present Low BRP	F	>40	C	6.6	

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	EM – Early-mature	F – Fair	B – Moderate	~ = approximately
Stem – Stem Diameter at 1.5m in mm	SM – Semi-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.	

Appendix C – Temporary Protective Fencing Specification

Temporary Protective Fencing Specification

Temporary Protective Fencing Specification

- ▲ **Construction Exclusion Zones (CEZs)**, enclosed by **Temporary Protective Fencing**, as detailed below and to be agreed with the Local Planning Authority (LPA), shall:
- ▲ Be retained in place throughout the development process, as specified in the 'Temporary Protective Fencing Construction' section below and detailed in BS5837:2012 ;
- ▲ Be sited in the area(s) defined by the Root Protection Areas or, if applicable, the CEZ, as detailed on the associated Tree Plan;
- ▲ Be erected prior to any construction, demolition or excavation works and remain in place for the duration of the project;
- ▲ Preclude any delivery of site accommodation and/or materials and/or plant machinery;
- ▲ Preclude all construction related activity, with the sole exception of specified arboricultural works and any other works to be carried out under supervision that have been agreed by all parties; and
- ▲ Preclude the storage of all development related materials and substances including fuels, oils, additives, cement and/or any other deleterious substance. Any incursion into CEZs must be by prior arrangement, following consultation with the LPA.

Temporary Protective Fencing Construction

- ▲ Temporary protective fencing panels shall be weldmesh "Heras" panels of at least 2.0 m in height;
- ▲ The panels shall butt together and be securely fixed to a scaffold framework, as per 3 to 5 below;
- ▲ The scaffold framework shall comprise of upright poles of at least 3.0 m in length driven no less than 0.6 m into the ground at maximum 3.0 m centres with horizontal and diagonal poles fixed to the uprights, as per 4 to 5 below;
- ▲ The two horizontal rail poles shall be attached to the uprights at heights of 0.6 and 1.8 m with 3 no. clamps to each joint;
- ▲ The diagonal scaffold pole struts be clamped to the top rail of the scaffold framework at a 45° angle and extend back into the CEZ and clamped to a 0.7 m length of scaffold tube that shall be driven no less than 0.5 m into the ground;
- ▲ No fixing shall be made to any tree and all possible precautions shall be taken to prevent damage to tree roots when locating posts;
- ▲ A 600 mm x 300 mm warning sign reading "TREE PROTECTION AREA KEEP OUT" (see Figure A, below) shall be fixed to every 10 m length of protective fencing; and
- ▲ On completion and prior to any demolition or construction works, site preparation, excavation or delivery of plant and materials, the LPA shall inspect and approve the Temporary Protective Fencing.