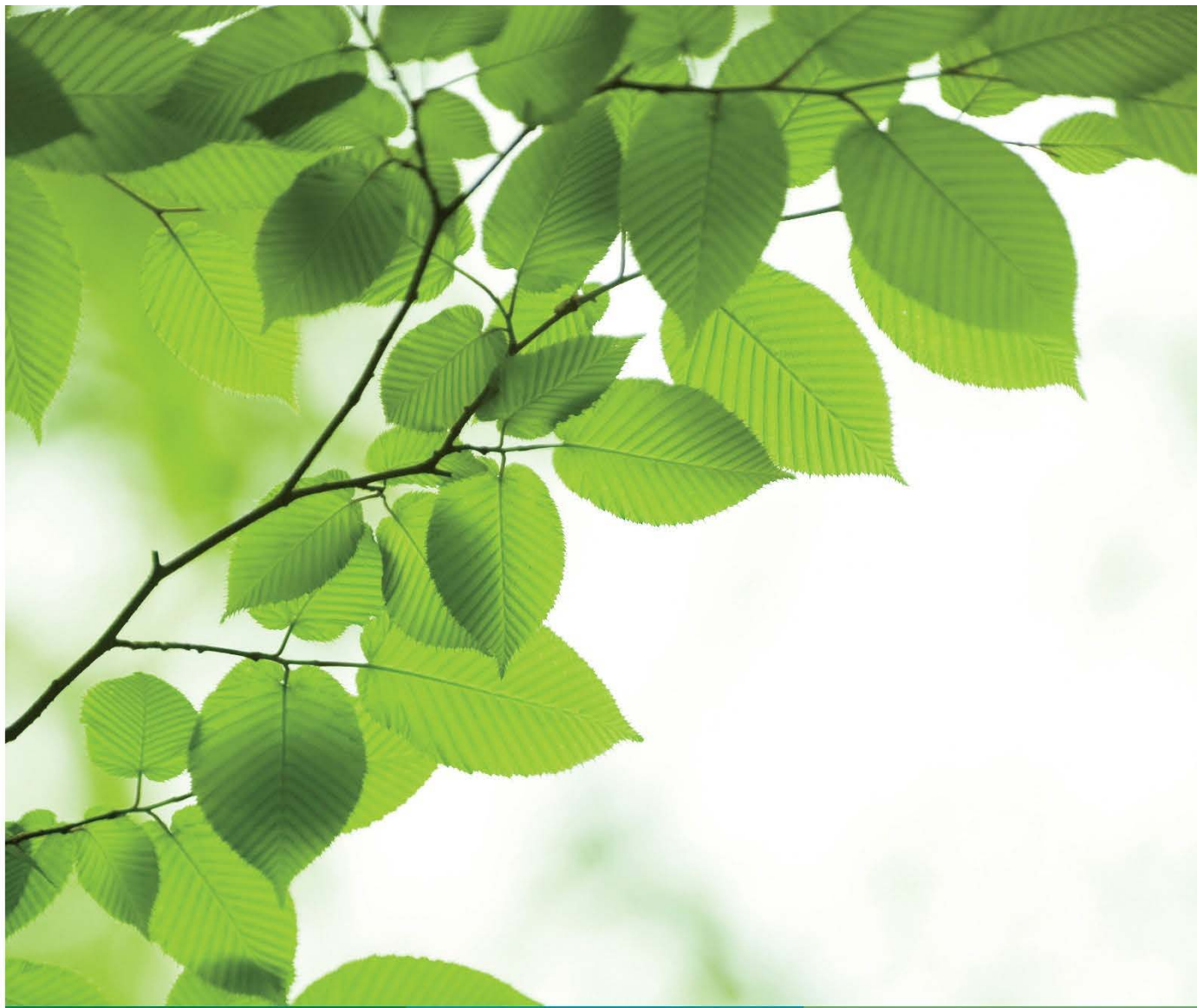




BS 5837:2012 Arboricultural Impact Assessment

Scotland Hall Road Recreation Ground, Manchester

Presented to Manchester City F.C. City in the Community Foundation

Issued: November 2019

Delta-Simons Project No. 18-1673.02



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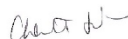
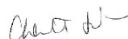


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Report Details

Client	Manchester City F.C. City in the Community Foundation
Report Title	BS 5837:2012 Arboricultural Impact Assessment
Site Address	Scotland Hall Road Recreation Ground, Manchester, M40 2RF
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Quality Assurance

Issue No.	Status	Issue Date	Comments	Author	Technical Review	Authorised
1.	Final	18 th November 2019				
				Peter Morrell Principal Arboriculturalist	Charlotte Sanderson- Lewis Associate and Ecology Team Leader	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 Manchester City F.C. City in the Community Foundation (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 at Scotland Hall Road Recreation Ground, Manchester, M40 2RF (hereafter referred to as 'the Site'). The assessment was undertaken in order to inform a planning application for the re-development of the existing park facilities into a Multi-Use Games Area (MUGA) and footpath within the current Site.

The aims of the AIA were to:

- ▲ Detail foreseeable tree related issues within this Report to inform the Local Planning Authority (LPA);
- ▲ 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 SJ 88227 99654, to the south-west of Failsworth in Manchester. The Site covers an area of approximately 0.41 hectares (ha) and comprises an irregularly shaped area with areas of tarmac hardstanding utilised as a sports pitch, grassed play areas, footpaths, and well-maintained grass areas. Scattered trees are present throughout the wider park and along the boundaries, with a community apple orchard at the north-eastern extent of the park. The park (and the Site) is located within a predominantly residential area. A railway runs adjacent to the southern boundary of the park at the base of an embankment. The Site did not support standing water at the time of the survey.

The Site layout and area surveyed is shown in Figure 1.

1.3 Proposed Development

It is understood from the drawing provided by Darnton B3 (drawing no. 13034-DB3-B01-XX-DR-A-90103A 20/09/19) that the proposed development comprises the construction of a new MUGA and associated footpath within the existing park (Drawing 1).

1.4 Site Visit, Data Collection and Tree Plans

Further to the completion of a Tree Survey of the Site, which took place on 9th November 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 fifteen individual trees (prefixed 'T') and fourteen groups 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 Figures 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 a 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, undertaken via an email request to the Planning Department at Manchester City Council, sent on 14th November 2019, indicates that no trees immediately adjacent to the Site are covered by Tree Preservation Orders (TPOs), or are within a Conservation Area.

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 carryout 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, 15 individual trees and 14 group of trees were surveyed for the purpose of this appraisal. The surveyed trees comprised a mixture of deciduous broadleaved trees including whitebeam, Portugal laurel, ash, hybrid black poplar, crack willow, pedunculate oak, sycamore, silver maple, common hawthorn, common alder, large-leaved lime, apple, silver birch, Leyland cypress, common hawthorn and walnut.

The trees on-Site range from young to mature, with sizes varying from small to large with heights of up to 22 m and maximum diametrical crown spreads of up to 12 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), four trees and two tree groups were categorised as high quality ('A'). Seven trees and six tree groups were assessed as moderate quality ('B'), and two trees and seven 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'	T14, T15, T21, T22, TG23, TG26	4 Trees 2 Tree Groups
	'B'	TG3, TG4, T5, T7, T11, T12, T13, TG16, T17, T19, TG20, TG24, TG27	7 Trees 6 Tree Groups
Those of a low quality that should not be considered a material constraint to development	'C'	TG1, TG2, TG6, TG8, T9, TG10, TG18, T25, T28, T29	3 Trees 6 Tree Groups
Those that should be removed for management reasons regardless of site proposals	'U'		
Totals			15 Trees & 14 Tree Groups

It is understood that the proposed development comprises the construction of a new MUGA and associated footpath within the existing park area.

Accordingly, the TCP has been overlaid on the development plan provided by Darnton B3 (drawing no. 13034-DB3-B01-XX-DR-A-90103A 20/09/19) in order to appraise the projected impacts that the development will potentially have on the off-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 part of one low quality tree. 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'			0
	'B'			0
Those of a low quality that should not be considered a material constraint to development	'C'			0
Those that should be removed for management reasons regardless of Site proposals	'U'			0
Totals				0

3.2 Projected Arboricultural Impacts

Whilst no trees are required to be removed to facilitate the proposed development, trees adjacent to the development footprint support canopies and root systems that extend into it, which may be impacted during the construction phase without mitigation in place.

4.0 Summary and Conclusions

The Site comprises an area of a park located in a residential area of Manchester, to the north-east of Withington. Nine individual trees and one group of trees were surveyed in respect of the proposed development within Scotland Hall Recreation Ground, all of which were off-Site. This will comprise the construction of a new MUGA and associated footpath at the Site in the central area of the existing park area.

Four trees and two tree groups were categorised as high quality. Seven trees and six tree groups were assessed as moderate quality, and three trees and six tree groups were categorised as low quality.

An evaluation of the proposed development in the context of the existing Site has indicated that it will not be necessary to remove any trees. However, the trees adjacent to the development footprint support canopies and root systems that extend into the development Site and, as such 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 an Arboricultural Method Statement should be produced to ensure that all trees are protected during the construction phase of the proposed development.

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 surrounding individual trees and tree groups.

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. 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 management pruning works for retained trees that are stated to be non-development related, as detailed in the TSS, are 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:

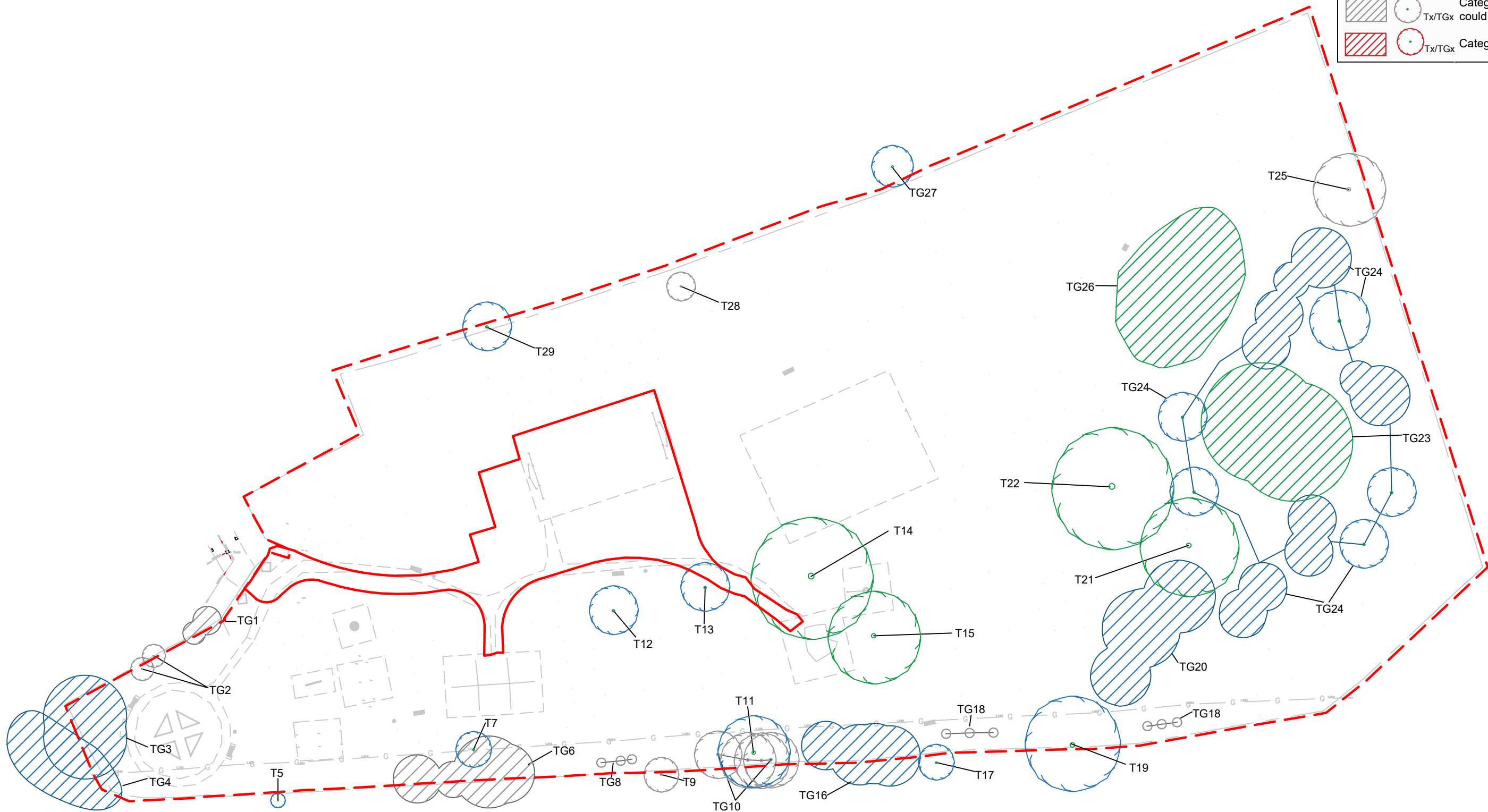
- △ THE PROTECTIVE FENCING MUST NOT BE MOVED
- △ NO PERSON SHALL ENTER THE CONSTRUCTION EXCLUSION ZONE
- △ NO MACHINE, PLANT OR VEHICLES SHALL ENTER THE EXCLUSION ZONE
- △ NO MATERIALS SHALL BE STORED IN THE EXCLUSION ZONE
- △ NO SPOIL SHALL BE DEPOSITED IN THE EXCLUSION ZONE
- △ NO EXCAVATION SHALL 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	
	Park Boundary
	Development Boundary
	Category A: High value retention most desirable
	Category B: Moderate value retention desirable
	Category C: Lower value could be retained
	Category U: For removal

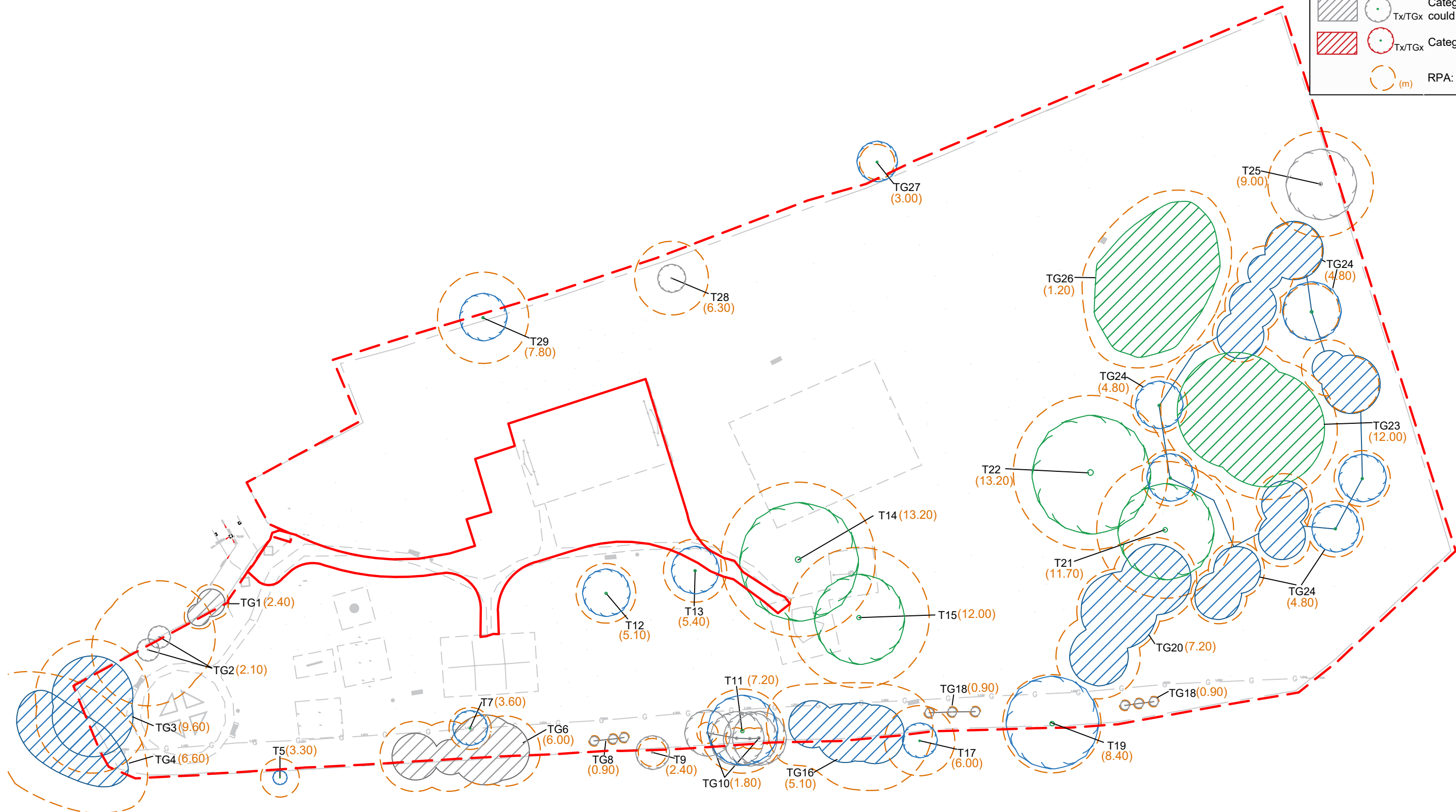


Site Plan Provided by Client

Figure 2 – Tree Constraints Plan

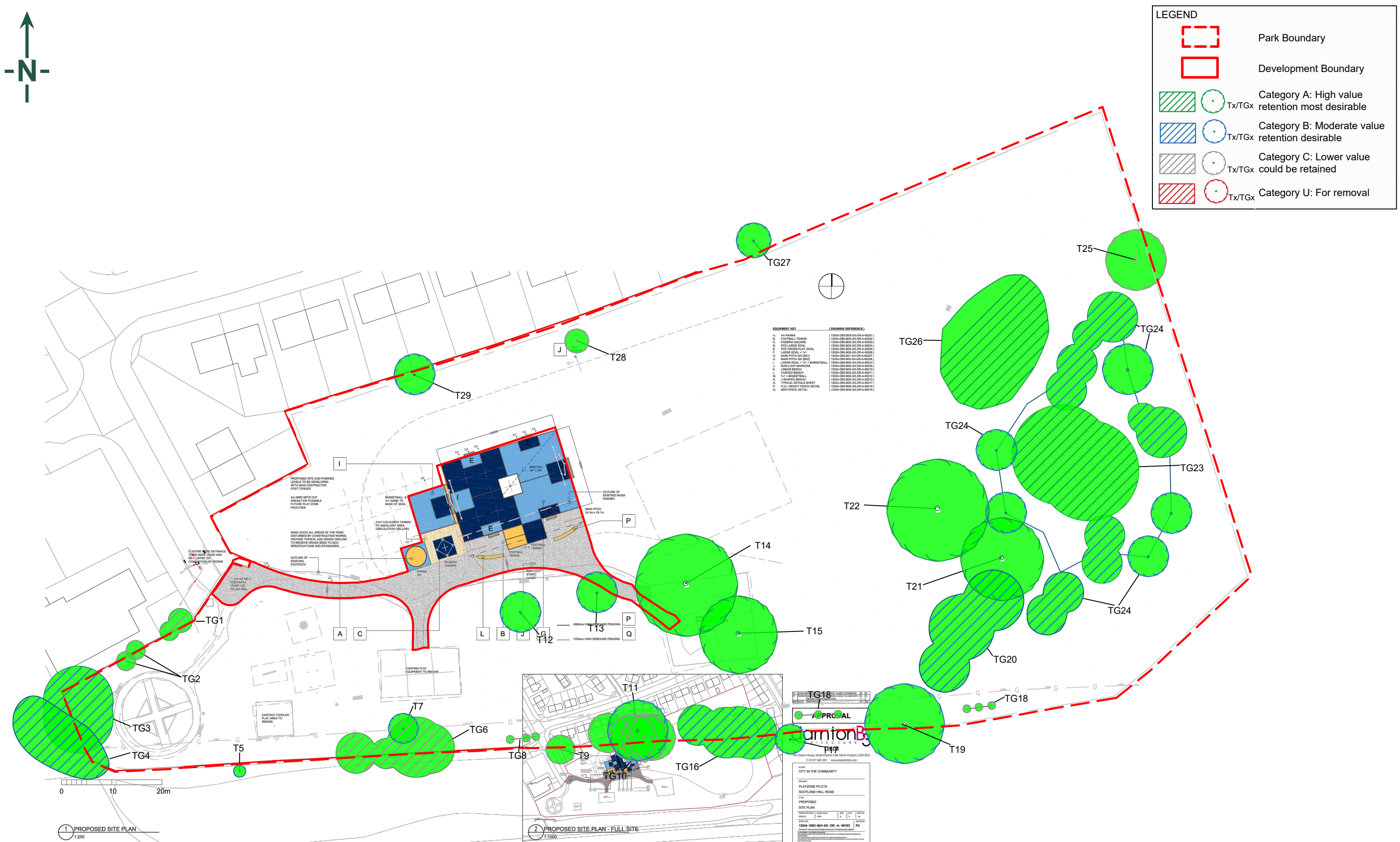


LEGEND	
	Park Boundary
	Development Boundary
	Category A: High value retention most desirable
	Category B: Moderate value retention desirable
	Category C: Lower value could be retained
	Category U: For removal
	RPA: Root Protection Area



Site Plan Provided by Client

Figure 3 – Tree Impact Plan



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 – 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	Whitebeam Portugal laurel	<i>Sorbus aria</i> <i>Prunus lusitanica</i>	SM	6	S/ MS	Est 200	0	3	3	3	3	Unable to access	Single and multiple stems, vertical. Whitebeam bifurcated at 2 m	Dense rounded canopies read as one.		F	20 - 40	C	2.4	
TG2	Ash	<i>Fraxinus excelsior</i>	Y	10	SM	Av 175	2	4	4	4	4	No obvious damage	Multiple stems from base, vertical.	Canopies read as one.		F	>40	C	2.1	
TG3	Hybrid black poplar	<i>Populus x canadensis</i>	SM	18	S	Av 800	4	8	10	8	6	No obvious damage	Single stems, vertical.	Open canopy. Scattered deadwood present		F	>40	B	9.6	
TG4	Crack willow	<i>Salix fragilis</i>	SM	16	S	Est 550	4	8	8	8	8	Unable to access	Single and multiple stems, vertical.	Open canopies. Minor deadwood	Scattered group on embankment with canopies that extend into the park	F	>40	B	6.6	
T5	Ash	<i>Fraxinus excelsior</i>	Y	7	2	Est 2 x 200	2	2	2	2	2	No obvious damage	Bifurcated at 1 m. Vertical. Included bark present.	Open and balanced		F	>40	B	3.3	
TG6	Ash	<i>Fraxinus excelsior</i>	SM	12	S	Av 500	2	8	8	8	8	No obvious damage	Single stems, vertical. Two trees with extensive bark damage	Canopies read as one. Scattered deadwood present.		F	>40	C	6.0	
T7	Midland hawthorn	<i>Crataegus laevigata</i>	M	6	MS	3 x 175	1	5	5	5	5	No obvious damage	Multi stemmed from base, vertical.	Dense rounded canopy. Pruning wounds from crown lift present.		F	20 - 40	B	3.6	
TG8	Pedunculate oak	<i>Quercus robur</i>	Y	4	5	75	1.5	.5	.5	.5	.5	No obvious damage	Single stems, vertical	Open and balanced	Tree supports present	F	>40	C	0.9	

T9	Sycamore	<i>Acer pseudoplatanus</i>	Y	7	S	20	3	3	3	3	No obvious damage	Single stem, vertical	Rounded canopy.	Suckered growth from base	F	>40	C	2.4	
TG10	Common hawthorn	<i>Cataegus monogyna</i>	Y/ SM	5	SM	Av 15	1	4	4	4	No obvious damage	Single and multiple stems, vertical	Canopies read as one. Minor deadwood		F	20-40	C	1.8	
T11	Sycamore	<i>Acer pseudoplatanus</i>	SM	6	S	600	4	8	8	8	No obvious damage	Single stem, vertical.	Rounded canopy. Scattered deadwood present.		F	>40	B	7.2	
T12	Whitebeam	<i>Sorbus aria</i>	SM	6	S	425	2	4	4	4	No obvious damage	Single stem, vertical. Occluded wound on trunk at 1 m.	Balanced, rounded canopy.		F	20-40	B	5.1	
T13	Silver maple	<i>Acer saccharinum</i>	SM	6	5	450	2	4	4	4	No obvious damage	Single stem, vertical.	Rounded canopy		G	>40	B	5.4	
T14	Hybrid black poplar	<i>Populus x canadensis</i>	SM	22	S	1100	4	10	10	8	No obvious damage	Single stem, vertical.	Open canopy. Minor deadwood		G	>40	A	13.2	
T15	Hybrid black poplar	<i>Populus x canadensis</i>	SM	21	S	1000	3	8	10	10	No obvious damage	Single stem, vertical. Wound from base to 1 m, occluding	Open canopy. Minor deadwood		F	>40	A	12.0	
TG16	Sycamore Common hawthorn	<i>Acer pseudoplatanus</i> <i>Cataegus monogyna</i>	SM	15	S/ MS	Av 425	2	8	8	8	No obvious damage	Single and multiple stems, vertical	Canopies read as one. Scattered deadwood. Vertical wound on one stem, occluding.		F	20-40	B	5.10	
T17	Sycamore	<i>Acer pseudoplatanus</i>	SM	14	S	Est 500	1	6	6	6	No obvious damage	Single stem, vertical.	Rounded canopy	Fencing impacting stem at base.	F	20-40	B	6.0	
TG18	Pedunculate oak	<i>Quercus robur</i>	Y	4	S	75	1	.5	.5	.5	No obvious damage	Single stems, vertical	Open and balanced	Tree supports present	F	>40	C	0.9	
T19	Ash	<i>Fraxinus excelsior</i>	SM	16	4	275 300 350 475	2	5	5	5	No obvious damage	Multi stemmed from base. Vertical. Bark damage at 1 m, occluding	Rounded and balanced		F	>40	B	8.4	
TG20	Sycamore	<i>Acer pseudoplatanus</i>	SM	Av 16	S	Av 600	2	7	7	7	No obvious damage	Single stem, vertical.	Rounded and balanced		F	>40	B	7.2	
T21	Crack willow	<i>Salix fragilis</i>	M	22	S	975	3	12	8	5	No obvious damage	Single stem, Leaning to the north.	Open, suppressed by surrounding trees. Scattered deadwood.		F	>40	A	11.7	
T22	Hybrid black poplar	<i>Populus x canadensis</i>	M	22	S	1100	3	12	10	8	No obvious damage	Single stem, vertical.	Open and balanced. Minor deadwood in crown		F	>40	A	13.2	

TG23	Crack willow	<i>Salix fragilis</i>	M	Av 22	S	Av 1000	1	1 2	12	12	12	No obvious damage	Single stem, vertical.	Balanced and rounded canopy, scattered deadwood		G	>40	A	12.0	
TG24	Ash Sycamore Common hawthorn Whitebeam Silver maple Common alder Silver birch Common walnut Large-leaved lime	<i>Fraxinus excelsior Acer pseudoplatanus Cataegus monogyna Sorbus aria Acer saccharinum Alnus glutinosa Betula pendula Juglans regia Tilia platyphyllos</i>	Y/ SM	Av 12	S/ SM	Av 400	1	5	5	5	5	No obvious damage	Single and multiple stems, vertical. Several trees with bark wounds to base.	Canopies rounded and read as one in places.		F	>40	B	4.8	
T25	Sycamore	<i>Acer pseudoplatanus</i>	SM	17	9	Av 300	1	8	8	8	8	No obvious damage	Multi stemmed from base, vertical.	Rounded canopy. Minor deadwood in crown		F	>40	C	9.0	
TG26	Apple	<i>Malus domestica</i>	Y	Av 4	1	Av 100	0	1	1	1	1	No obvious damage	Single stems, vertical.	Rounded, open canopies. Formative pruning occluding.	Community orchard. Supporting stakes present.	F	>40	A	1.2	
TG27	Leyland cypress	<i>X Cupressocyparis leylandii</i>	SM	Av 8	1	Est 250	3	2	2	2	2	Unable to access	Single stems. Vertical.	Conical canopies.	Linear group in of- Site garden	F	20- 40	B	3.0	
T28	Ash	<i>Fraxinus excelsior</i>	SM	7	1	525	3	3	5	2	1	No obvious signs of damage.	Single stem. Vertical. Pollarded at 4. Extensive bark damage on trunk.	Regrowth from cut branches.	<i>Inonotus hispidus</i> on main stem.	P	<20	C	6.3	Inspect every two years
T29	Leyland cypress	<i>X Cupressocyparis leylandii</i>	M	18	1	Est Av 650	3	4	4	4	4	Unable to access	Multi-stemmed at base. Vertical	Regrowth from cut branches.		F	20 - 40	C	7.8	

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.