Trees and Development

Site: Land off West Street, Barnsley, S70 5PG

Ref: 10073 / A1

Client: Mr C Smith

Agent: Mr B Carrick

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EXECUTIVE SUMMARY

This report has been produced in accordance with British Standard 5837: 2005 *'Trees in Relation to Construction - Recommendations'* (hereafter; BS5837) and is to inform the client of the realistic arboricultural considerations at site. Furthermore it is intended to inform the design of a suitable and satisfactory proposal taking account of the site's realistic arboricultural constraints.

All trees within impacting distance of the proposed construction processes have been surveyed in accordance with BS5837 and are considered upon as part of this report. The ultimate objective is to systematically assess the proposal and provide suitable recommendations regarding the potential impact on trees and vice versa.

The client proposes a mixed residential development, this will also include alteration of the access and amenity of the site. The arboriculture implications arising as a result of said proposal, following our objective assessment, are summarised as follows -

In relation to the proposed scheme provided by the client (Plan Ref - Job No. 1:09:8128, Dwg No. 02, Date: June 2008), which is subject of the outline planning application, the trees along the frontage of the site would need to be removed. The removal of said trees would require the implementation of a landscape scheme integrating suitably selected and planted replacement trees.

As the proposed development involves construction processes in close proximity to some retained trees, adequate provisions would need to be implemented in order to protect the trees and their existing growing environment to the fullest standard.

In conjunction with the proposed scheme, and providing well delivered mitigation for tree removal is implemented, there would be no significant impact on the amenity contribution of the site as a direct result of the proposal.

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1. INTRODUCTION

1.1 **Instruction:** this report has been prepared on the instruction of Mr B Carrick on behalf of Mr C Smith (hereafter; client) in respect of an outline planning application on the land at West Street, Barnsley, S70 5PG (hereafter; site). It is therefore produced in accordance with British Standard 5837: 2005 '*Trees in relation to construction - Recommendations'* (hereafter; BS5837).

1.2 **Scope of this report:** This report has been produced in accordance with BS5837 and is intended to demonstrate how trees have been properly considered in relation to the proposed scheme. The objective is to systematically assess and provide suitable recommendations regarding the proposal's potential impact on trees and vice versa.

1.2 Following instruction the consultant visited the site on Thursday, 04 March 2010. Pursuant to the agreed brief a site assessment and a BS5837 tree survey were carried out; all trees within impacting distance of the proposed construction processes were surveyed.

1.3 This report is subject to caveat at Appendix I and constitutes the findings of the preliminary site assessment, appraisal of the proposed scheme and associated arboricultural recommendations.

1.4 The BS5837 tree survey data and tree constraints illustrations (in plan format) can be found as appended.

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2. SITE & APPLICATION INFORMATION

2.1 The site currently comprises an open patch of fenced off unused land. Access is available onto the site directly off West Street, however, no established access is available around the site thereafter.

2.2 **Proposal:** A development scheme is being explored by the client which includes the construction of a small number of mixed design residential buildings. The proposal also includes the integration of new access routes and amenity space.

2.3 The site requires arboricultural consideration due to the presence of trees on and abutting the site boundary; said trees are within impacting distance of the proposed construction.

2.4 The objective assessment resulted in BS5837 categories of 'B' and 'C' being attributed to the individual trees. The majority of the trees provide little individual contribution and display inherent, long term structural defects. However, some trees are more noteworthy and provide both an individual and collective contribution to the site. All of the site's trees have varied remaining contributions. Broadly, the 'B' trees are worthy of consideration in relation to the proposal whilst 'C' trees should not constrain a proposal.

2.5 The survey data and site observations have been used to illustrate the site's arboricultural restrictions in the form of a TCP; at Appendix IV.

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4. ARBORICULTURAL IMPLICATIONS ASSESSMENT (AIA)

4.1 The following information, as with the prior contents of this report, should be read in conjunction with the tree data table and 10073/TCP/01 (as appended).

4.2 The following recommendations are based around the proposed scheme provided by the client (Plan Ref - Job No. 1:09:8128, Dwg No. 02, Date: June 2008) which is the subject of the outline planning application.

4.3 Below Ground Constraints

4.3.1 A number of the site's trees ('R': T13, 'C': T1, T4, T5, T11 and T12, 'B': T2, T3 and T67-T10) should be removed owing to either direct conflicts, encroachment or anticipated conflicts arising between trees and structures. Said trees are of mixed quality with many displaying little by the way of an anticipated future contribution. Additionally, the moderate quality trees are currently fairly small scale, hence their current contribution is limited. The trees as a collective, either due to their curtailed future contribution and/or small scale, make a limited contribution to the surrounding area. Replacement planting, on a suitable scale integrated into a well delivered landscape scheme, will far exceed the current amenity provided and for a longer term.

4.3.2 It would be suitable to install protective barrier fencing (hereafter; PBF) to exclude the development processes from the RPAs of retained trees. A specification for PBF would be summarised within an AMS as 'PBF specification' and illustrated on a TPP; this could be carried out as part of planning conditions in relation to the final detailed site layout.

4.4 Above Ground Constraints & Future Pressured for Tree Works

4.4.1 Whilst no direct conflict is anticipated, some minor (pre-emptive) pruning works will ensure prolonged clearance from trees, i.e. T14, during and after construction completion. Minor crown lifting and lateral reduction works would convey no significant alteration to the amenity contribution of the trees.

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4.4.2 It would probably be a pertinent use of the council's authority to make the high quality retained trees and any specimen replacement planting the subject of a tree preservation order. This will ensure adequate protection is afforded to the valuable amenity assets present on the site without being over prescriptive and without the need for unnecessary complexities in conditioning the consent.

4.4.3 Once a preservation order is in situ, there is no argument for the council to consent any request for tree works not pursuant under s.198 (6) of the Town and Country Planning Act. The leaf litter and minor twig debris is not oppressively burdensome to cope with and does not render the proposed construction or its associated annexes unsafe.

4.5 Replacement Planting

4.5.1 One poor quality tree, five low quality trees and seven moderate quality trees would be removed in order to facilitate the current proposal, however, suitably implemented replacement planting will afford the site and wider community a significantly increased amenity contribution.

4.5.2 The replanting of suitably selected species, correctly planted in an appropriate location relative to the spatial constraints of the site, will provide a far superior amenity contribution and provide it for a longer term, with less maintenance than those trees being removed; a remove:replace ratio of 1:2 would be suitable.

4.5.3 Suitable locations would surround both the shared amenity space and the private gardens with a mixture of small and medium scale trees. The selection of health and suitable specimens, in order to promote and enhance biodiversity, continuity of tree cover and suit the spatial constraints of the site, should favour species such as *Sorbus ssp.* (e.g. Rowan), *Betula* (e.g. *ermanii*), *Acer* (e.g. *campestre*) and possibly *Strawberry Tree, Turkish Hazel, Hornbeam or Judas Tree*.

4.5.3 A detailed specification would be included with the landscape scheme outlining species, stock selection, locations, volume, planting process and maintenance. This would be summarised within an AMS as 'planting specification' and could be carried out as part of planning conditions in relation to the final and detailed site layout.

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5. CONCLUSIONS

5.1 All trees on site have been subject to a detailed inspection and their potential conflicts with the outline proposals addressed in this AIA. In the view of an independent arboricultural consultant all reasonable concerns arising from the consultant's assessment can been satisfied to the fullest standard.

5.2 The objective assessment has resulted in the recommendations for tree protection and mitigation should the scheme be progressed.

5.3 On completion of the final designs, a revised AIA is to be supported by an AMS and a TPP, in order cement BS5837's guidelines, the retention and protection of good quality trees and the recommendations of this AIA.

This concludes our advice.

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Appendix I

Caveat

Any and all information supplied to Indigo Surveys Ltd by/on behalf of the client is assumed to be accurate unless otherwise informed. | This report is limited to the observations made on the date of inspection as detailed herein and any deletion, editing or alteration will result in the report being null and void in its entirety. | This report in its entirety may be deemed null and void if remedial works are undertaken on any area of the site, on or after the date of the survey. | No liability is assumed by the author or by Indigo Surveys Ltd for any misuse, misinterpretation or misrepresentation of this report. | This report is not valid in adverse or unpredictable weather conditions or for any failure due to 'force majeure' or unpredictable events. | No responsibility is assumed either by the author of this report or by Indigo Surveys Ltd for any legal matters that may arise as a consequence. | Neither the author nor Indigo Surveys Ltd will be required to attend court or give testimony as part of this agreement. | The responsibility for any works undertaken on the basis of the recommendations of this report does not form part of this agreement.

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Appendix II

Terms and Definitions

"Arboriculturist" - person who has, through relevant education, training and experience, gained recognized qualifications and expertise in the field of trees in relation to construction.

"Land survey" - an accurately measured land survey (also known as a topographical survey) should be undertaken showing all relevant existing site features.

"Tree survey" - should be undertaken by an arboriculturist and should record the information about trees on a site independently of and prior to and specific design for development. The results of a tree survey should be included in the preparation of a tree constraints plan, which should be used to assist with the site design.

"Tree categorization method" - should be applied by an arboriculturist and is to identify the quality and value of the existing tree stock, allowing informed decisions to be made concerning which trees should be removed or retained should development occur.

"Tree constraints plan (TCP)" - an accordingly scaled plan prepared by an arboriculturist for the purposes of layout design showing the tree stem, crown spread, root protection area and unique identification number.

"Root protection area (RPA)" - layout design tool indicating the area surrounding a tree that contains sufficient rooting to ensure the survival of the tree, shown on the TCP in m^2. The radius is calculated as a function of the tree stem diameter; x12 at 1.5m from ground level for single trees, and x10 at ground level for multiple stemmed trees. An arboriculturist may change the shape of an RPA but not reduce its area.

"Arboricultural implications assessment (AIA)" - study, undertaken by an arboriculturist, to identify, evaluate and possibly mitigate the extent of direct and indirect impacts on existing trees that may arise as a result of the implementation of any site layout proposal.

"Arboricultural method statement (AMS)" - methodology for the implementation of any aspect of development that has the potential to result in loss of or damage to a tree.

"Tree protection plan (TPP)" - an accordingly scaled plan prepared by an arboriculturist showing the finalized layout proposals detailed within the AMS, which can be shown graphically.

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Appendix III

Data Table

As appended (BS5837 Tree Survey Key & Table)

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TREE SURVEY IN ACCORDANCE WITH BRITISH STANDARD 5837:2005 'TREES IN RELATION TO CONSTRUCTION - RECOMMENDATIONS'

FIELD KEY:		
TPO/CA	-	As applicable: presence of Tree Preservation Orders (TPO) / site location within a Conservation Area (CA) & date checked;
TREE REF. #	-	Tree reference number: tag or plan number (T - individual tree, G - group of trees/shrubs, H - hedge);
SPECIES	-	Genus, species and/or common name;
AGE	-	Age classification (Y - young, EM - early mature, M - mature, LM - late mature, OM - over mature);
HEIGHT (in m)	-	Approximate height of tree in metres;
CANOPY (in m) N - S - E - W	-	Approximate branch spread in metres of the four principal compass points;
STEM (in mm)	-	Stem diameter in millimetres: measured at 1.5 metres above ground level for single stem trees and ground level for multi-stemmed trees;
RPA (in m²)	-	Root Protection Area: calculated as a function of the STEM measurement (single stem/multiple stem variant, as outlined within BS5837);
CLEARANCE (in m)	-	Height in metres of crown clearance above the adjacent ground level;
VITALITY	-	A measure of physiological condition typically gauged from annual extension growth (normal, poor, dead);
NOTES	-	Structural and physiological condition observations;
ESTIMATED REMAINING CONTRIBUTION	-	Approximate number of years the tree will continue to make a contribution without the need for oppressive arboricultural intervention, categorised in years as <10, 10-20, 20-40 and >40;
BS CAT.	-	BS5837 tree quality assessment category: resulting from structural/physiological condition and remaining contribution (approximate useful life expectancy);
	-	Standard retention category **R**: in such a condition that any existing value would be lost within 10 years;
	-	Standard retention category **A**: high quality and value, in such a condition as to be able to make substantial contribution of 40+ years;
	-	Standard retention category **B**: moderate quality and value, in such a condition as to make a significant contribution of 20+ years;
	-	Standard retention category **C**: low quality and value, currently in adequate condition to remain until new planting could be established 10+ years;
	-	Standard retention sub-category, mainly due to: **1**- Arboricultural values, **2**- Landscape values, **3**- Cultural values, including conservation;
MANAGEMENT	-	Preliminary management recommendations (as appropriate);
' * '	-	Within the survey schedule denotes an estimate

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TREE SURVEY IN ACCORDANCE WITH BRITISH STANDARD 5837:2005 'TREES IN RELATION TO CONSTRUCTION - RECOMMENDATIONS'

SITE: Land at West Street, Barnsley, S70 5PG ***ARBOR CONSULTANT:*** A. Turnbull MArborA

CLIENT: Mr C Smith ***SURVEY DATE:*** 4 Mar 2010

TREE REF. #	SPECIES	AGE	HEIGHT (in m)	CANOPY (in m) N - S - E - W				DBH (in mm)	RPA (in m²)	CLEARANCE (in m)	VITALITY	NOTES	BS CAT.	MANAGEMENT
T1	Maple; *Acer ssp., Aceraceae*	Y	10	1.5	1.5	1.5	1.5	170	13.1	3	Normal	Single stem, branch removal at base has decay pocket.	C 2	
T2	Maple; *Acer ssp., Aceraceae*	EM	12	2	4	3.5	2.5	260	30.6	2.5	Normal		B 2	
T3	Maple; *Acer ssp., Aceraceae*	EM	13	4.5	4	2.5	3	240	26.1	2.5	Normal	Single stem with suckering.	B 2	
T4	Maple; *Acer ssp., Aceraceae*	Y	8	2.5	2	2	1.5	120	6.5	3	Normal	Strimmer damage, unbalanced crown growth.	C 2	
T5	Maple; *Acer ssp., Aceraceae*	EM	12	5	4.5	4.5	5	450	63.6	3.5	Normal	Co-dominant at base tight union and inclusion with previous branch removal, wound only partially occluded.	C 2	
T6	Maple; *Acer ssp., Aceraceae*	Y / EM	11	3	3	1	3	210	20.0	2.5	Normal		B 2	
T7	Maple; *Acer ssp., Aceraceae*	EM	12	5	5	4	5	460	66.5	2.5	Normal	Raised roots and minor basal cavities. Co-dominant at 0.25m, included and internal flattening of stems.	B 2	
T8	Maple; *Acer ssp., Aceraceae*	EM	11	4.5	3	4	2	260	30.6	2.5	Normal	Poor previous pruning at 1.5m.	B 2	
T9	Maple; *Acer ssp., Aceraceae*	Y / EM	9	4	1	2	3	210	20.0	5	Normal	Single stem, unbalanced crown, previous pruning to clear road.	B 2	
T10	Maple; *Acer ssp., Aceraceae*	Y / EM	10	4	2	1	3.5	440	60.8	2.5	Normal	Co-dominant at base.	B 2	
T11	Maple; *Acer ssp., Aceraceae*	Y / EM	11	1	4	4.5	5	370	43.0	2	Normal	Co-dominant at base, tight included fork, minor, cabity development at 0.5m.	C 2	
T12	Maple; *Acer ssp., Aceraceae*	M	11	7	7	6	7	300	28.3	0	Normal	Multiple stems and suckers/regen. away from body of stem, deadwood and dead limbs.	C 3	
T13	Maple; *Acer ssp., Aceraceae*	M	6	1.5	2.5	2	2	400	50.3	0	Normal	Regenerative growth from base of felled tree, suckers form crown.	R	Remove.
T14	Maple; *Acer ssp., Aceraceae*	EM	13	5.5	5	6	6	340	52.3	2	Normal	Single stem on uneven ground, near retaining wall.	B 2	
T15	Maple; *Acer ssp., Aceraceae*	EM	13	3	4	2	4	310	43.5	2.5	Normal	Single stem on uneven ground, near retaining wall and suckers at base.	B 2	
T16	Maple; *Acer ssp., Aceraceae*	EM	11	1	3	3	3	230	23.9	3	Normal	Single stem on uneven ground, near retaining wall.	B 2	
T17	Ash; *Fraxinus ssp., Oleaceae*	M	13	5.5	6	5.5	4	720	162.9	0	Normal	Included multiple stemmed tree at base, self grafted stems at base.	B 2	

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Appendix IV

Tree Constraints Plan

As appended (TCP/10073/01)

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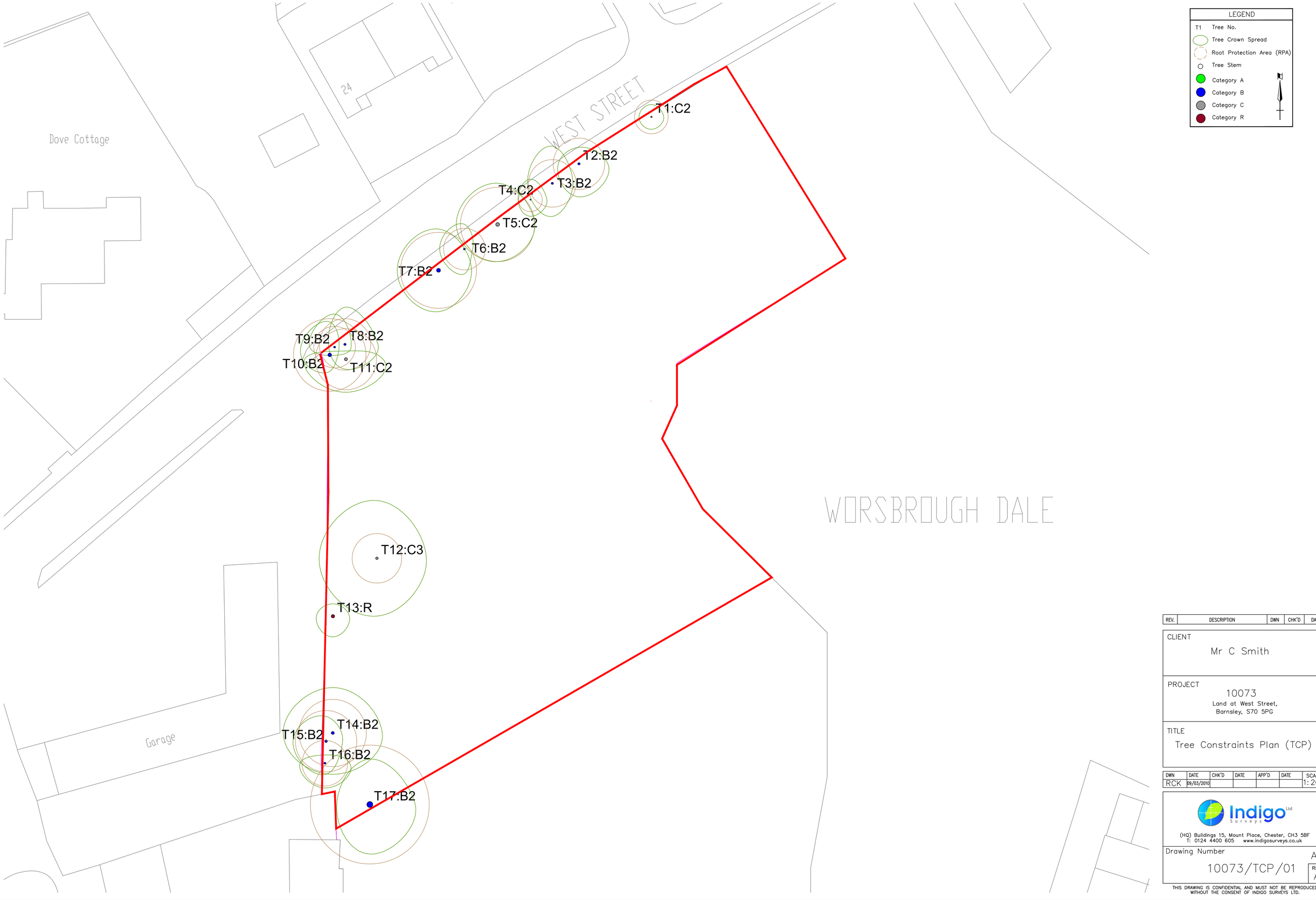

REV.	DESCRIPTION	DWN	CHK'D	DATE

CLIENT

Mr C Smith

PROJECT

10073

Land at West Street,
Barnsley, S70 5PG

TITLE

Tree Constraints Plan (TCP)

DWN	DATE	CHK'D	DATE	APP'D	DATE	SCALE
RCK	09/03/2010					1: 200

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10073/TCP/01 REV. A

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