

Arboricultural Survey & Report

Impact Assessment & Method Statement in Support of Development

BS5837:2012 Trees in relation to Design, demolition and construction – Recommendations

CLIENT:	The Keen Partnership
SITE REF:	Site adjacent to 43 Upper Redlands Road
MWA REF:	DEV24017-1229 Rev02
MWA CONSULTANT:	Mark Bisley BSc Hons
REPORT DATE:	15/11/2024

Contents

1.0 Introduction

- (i) Components of Report
- (ii) Technical Synopsis

2.0 Scope and objectives

3.0 Site description

4.0 Development Proposal

5.0 BS 5837:2012 Tree Survey

6.0 Arboricultural Method Statements (AMS) – Heads-of-Terms

7.0 Conclusion and recommendations

Plans

MWA TPP 03 Tree Protection Plan

Appendices

- 1 Site Notice & Induction Hand-out
- 2 Tree Survey Schedule
- 3 Monitoring & Supervision - Form

1.0 Introduction

1.1 We are instructed by The Keen Partnership to undertake a tree survey in accordance with BS 5837:2012 'Trees in relation to design, demolition and construction- Recommendations'. The report is to discharge planning conditions for the Planning Permission issued in relation to Application No. 210308 on 10/12/2021 at land adjacent to 43 Upper Redlands Road, Reading, RG1 5JE.

1.2 The proposed development consists of the erection of a single detached dwellinghouse with associated access, parking and landscaping. The following plans have been supplied by the client:

- Proposed layout and sections (elevations) as PDF's
- Proposed layout and sections as a CAD file in .dwg format
- Topographical Survey
- LPA pre-app response November 2020

1.3 The site survey was undertaken on the 10th April 2018 and updated on the 14th November 2024. The following report is based upon the findings of those visits.

1.4 We have been provided with a digital file of the existing site and the proposed development.

1.5 Tree position was triangulated, where necessary, using a minimum of three reference points.

1.6 Components of Report

This report comprises the following elements:

- Baseline tree survey of trees that may be impacted by proposals
- Arboricultural Implication Assessment (AIA)
- Arboricultural Method Statement (AMS)
- Tree Protection Plan (TPP) plus shade illustration
- Tree Removal Plan (TRP)

1.7 Technical Synopsis

We have recorded trees requiring material consideration in relation to the proposed development where higher value trees can be successfully retained with a minimum of impact on the retained trees long-term health and condition.

- 1.8 The implantation of standard and specialised mitigations measures to the impact of development is limited have been agreed in principal although further site/task specific detail is likely to be required through the enforcement of planning conditions.

2.0 Scope & Objectives

- 2.1 This report has been commissioned by The Keen Partnership and the scope of the report reflects their instructions.
- 2.2 The scope of this report is limited to an appraisal of the existing trees on (and/or adjoining) the site and identification of the implications of development on retained trees.
- 2.3 The brief is to appraise the trees in relation to the proposed development of the site in accordance with British Standard 5837:2012 'Trees in relation to design, demolition and construction - Recommendations'.
- 2.4 To prepare clear recommendations supported by relevant plans and data in order to facilitate consideration of the Arboricultural implications by the Local Planning Authority.
- 2.5 To consider the development proposals, identify areas where there are arboricultural issues and to recommend possible solutions.
- 2.6 To consider additional information supplied, to identify arboricultural issues arising from this information and to recommend possible solutions.
- 2.7 This report is not a Tree Risk Management Report or a Hazard Analysis Report and its use as such is invalid.
- 2.8 The trees have been assessed from ground level only. Assessment of condition is based on a visual tree assessment (VTA). No detailed inspection of the upper crown has been carried out. No decay detection equipment (destructive or non-destructive) has been used to further assess the condition of the trees, which is beyond the scope of the survey. Any dangerous trees requiring further assessment on safety grounds will be identified.
- 2.9 Due to the changing nature of trees and other site circumstances this report and any recommendations made are limited to a 5-year period. Any alteration to the application site or any development proposals could change the current circumstances and may invalidate this report and any recommendations made. Should this be the case this report will require revision to reflect the development Proposals.
- 2.10 Trees are dynamic structures that can never be guaranteed 100% safe; even those in good condition can suffer damage under average conditions. Regular inspections can help to identify potential problems before they become acute.
- 2.11 A lack of recommended work does not imply that a tree is safe and likewise it should not be implied that a tree will be made safe following the completion of any recommended work.
- 2.12 Tree dimensions were measured using a combination of a Trupulse 200 Laser Range Finder, a Leica Disto Laser Rangefinder and a Richter Diameter tape. All instruments were used in accordance with appropriate user guides.
- 2.13 No soil samples were taken and no soils analysis was undertaken.

- 2.14 Any legal description or information given to MWA Arboriculture Ltd is believed to be accurate.
- 2.15 Where solutions to arboricultural problems are specified which require the usage of a third-party product e.g. no dig roadway construction. No liability is assumed for the performance or suitability of the product and specialist advice as to the suitability or installation of the product should be sought from the manufacturer or other specialist.
- 2.16 No responsibility is assumed by MWA Arboriculture Ltd for legal matters that may arise from this report, and the consultant shall not be required to give testimony or to attend court unless additional contractual arrangements are made.
- 2.17 Any alteration or deletion from this report shall invalidate it as a whole.

3.0 Site Description

- 3.1 The subject land comprises vacant plots and linked garden spaces within the development boundary outlined in red, below:



4.0 Development Proposal

- 4.1 The proposed development consists of the construction of a single detached 2/3 storey dwelling with associated parking. See below for layout:



5.0 Tree Survey

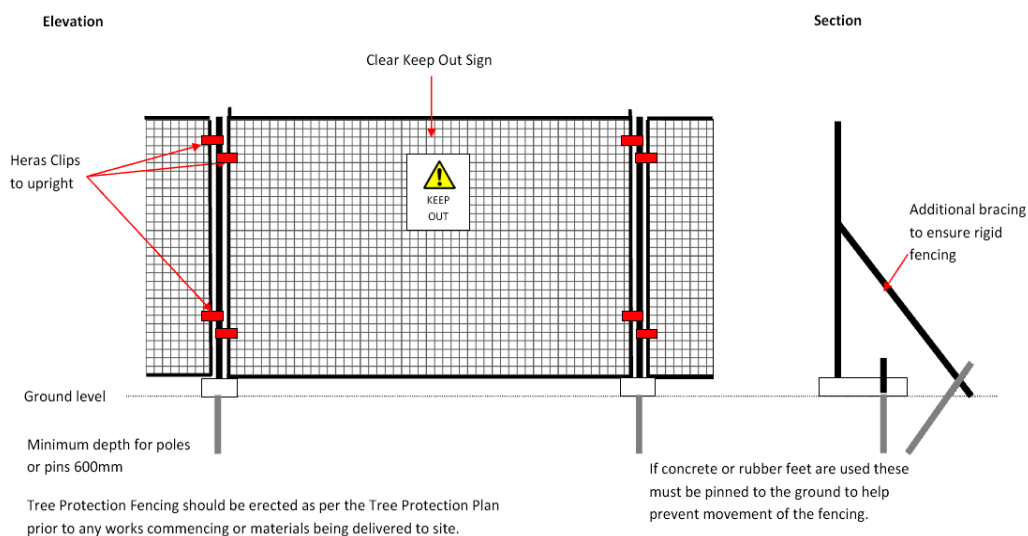
- 5.1 The survey of the trees was carried out on the 10th April 2018. This was updated on the 14th November 2024. Tree data is recorded in Table 1 with locations indicated on plans attached to this report.
- 5.2 Baseline data can be found in Appendix 2.

6.0 Arboricultural Method Statement

6.1 Tree Protection

- 6.2 We have indicated on the Tree Protection plan (MWA TPP 03) where we believe *Heras style fencing* should be installed. In other areas the trees are protected by existing fencing defining field boundaries and, in our opinion, this will be sufficient to protect the trees on site. Where additional fencing has been specified the fencing is to be strong enough to resist impacts and suitable to the degree of construction activity on the site and to be in accordance with that specified within BS5837:2012.
- 6.3 All fencing will be in place prior to any other development work (with the exception of necessary tree works) commencing on site. Such fencing will therefore be erected before any materials or machinery is brought onto site. Once erected the fences will not be moved or altered in any way without prior consultation with the Local Planning Authority other than for operations detailed in this report. If the fencing is damaged in any way it will be re-instated to its original condition before construction work can re-commence. Notices will be erected on the fencing stating 'Protected Area – No Operations within Fenced Area'. Protective fences shall be maintained in situ until all equipment, machinery and surplus materials have been removed from the site. Nothing will be stored or placed in any area fenced in accordance with this condition and the ground levels within those areas shall not be altered, nor shall any excavation be made other than those detailed in this report, without the written consent of the Local Planning Authority.
- 6.4 All protective fencing (except where specified above) is to be constructed in accordance with BS:5837 (2012) – specification reproduced below:

Tree Protection Fencing Specification





Heras with double clip system and bracing as per BS5837: 2012

6.5 Tree Pruning enabling works

6.6 Judicious pruning to raise crowns and reduce lateral overhang will be required prior to construction activity on the site and the scope of this work should be agreed, in detail, with the project arboriculturist, during the pre-start meeting. The LPA have indicated that a tree works would be permitted by default as a result of a planning consent thus removing the need for a separate s.211/1App prior to works commencing.

6.7 Tree pruning should accord with BS3998: 2010 'Tree Works'.

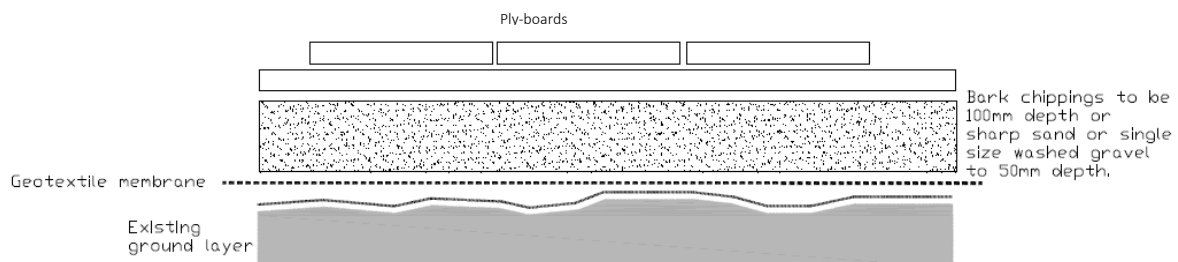
6.8 Schedule (preliminary) of enabling pruning and tree works:

Tree ID	Species	Details
T1	Apple	Remove
T2	Holly	Remove
T4	Tulip Tree	Raise crown height to the east to 5.0m (c.1.0-1.5m lift) See below for position of pruning point.
G1	Sycamore, Ash	Reduce the lateral overhand of northern most trees back to achieve a minimum 2.0m clearance from terrace.



6.9 Ground Protection

- 6.10 To protect the RPA of retained trees from the movements of heavy plant and machinery – Ground Protection should comprise, 18mm ply boards should be laid onto a geo-textile membrane and overlaid with a compressible layer (100mm), which in this case should be wood chippings or sharp sand.
- 6.11 To protect against pedestrian movements only - Ground Protection should comprise 18mm ply boards laid onto a geo textile membrane.
- 6.12 Ground protection should be installed prior to any demolition activity on the site and remain in place until practical completion of the demolition phase.



6.13 Installation of Services (Underground)

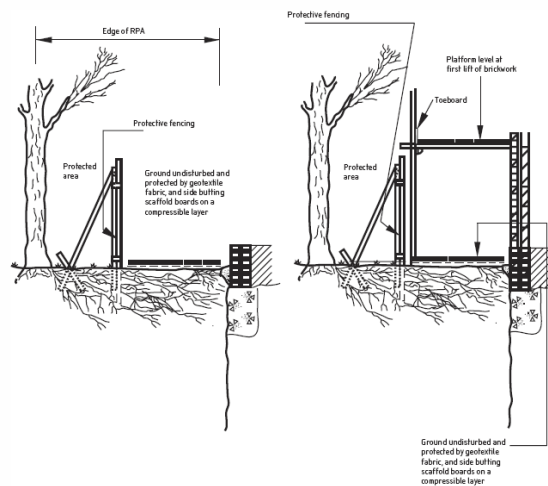
- 6.14 Trenching for the installation of underground services severs any roots present and may change the local soil hydrology in a way that adversely affects the health of the tree. For this reason, particular care should be taken in the routing and methods of installation of all underground services.
- 6.15 We understand new underground services connecting to the proposed dwelling fall outside of the RPA of higher value retained trees, however: should the location of underground services change and fall within the RPA of retained higher value trees the use of an Air-spade/suction excavation system will be employed to excavate without loss or damage of larger (>25.0mm diameter) roots thus allowing pipework/ducting to be routed below. Those roots smaller than 25mm in diameter may be pruned back, preferably to a side branch; using a proprietary cutting tool such as secateurs or a handsaw. Roots larger than 25mm in diameter will only be severed following consultation with an arboriculturist, as they may be essential to the tree's health and stability. Prior to backfilling with quality/screened top-soil, any hessian wrapping will be removed and retained roots should be surrounded with sharp sand (builders' sand will not be used because of its high salt content which is toxic to tree roots), or other loose granular fill, before soil or other material is replaced. This material will be free of contaminants and other foreign objects potentially injurious to tree roots.



6.16 Excavations accord with the general 'zoning' recommendations as set-out in NJUG 4.

6.27 Scaffolding in the RPA

6.28 Scaffolding which is to be erected within the RPA shall be done in accordance with the Standard as detailed below.



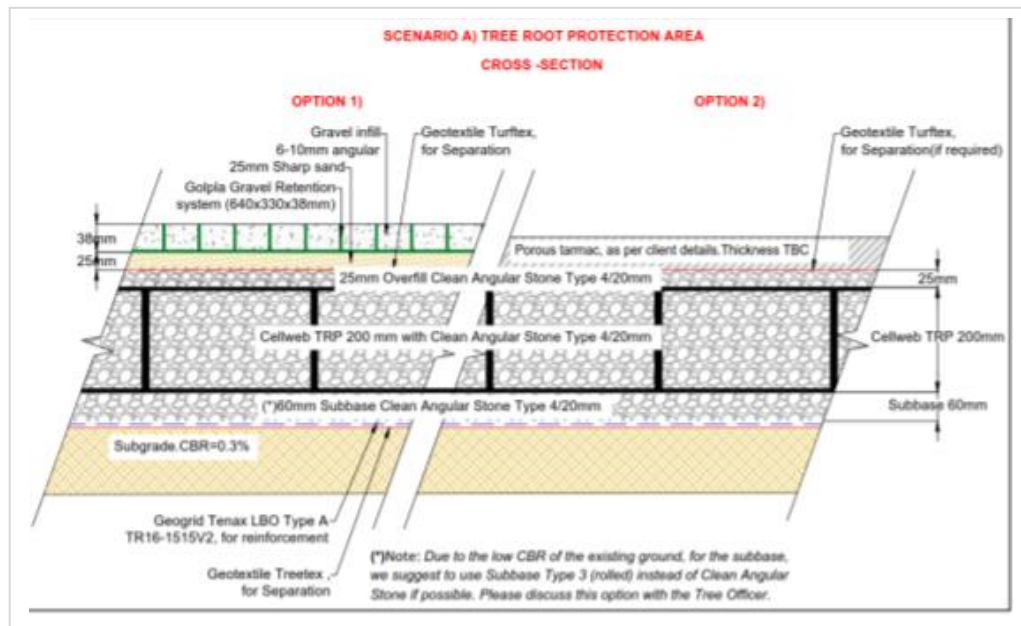
6.29 No-Dig Surface (Cellular Confinement System)

6.30 The use of Geosynthetics 'GOLPA' gravel retention system overlaying CELLWEB-TRP is proposed for both vehicular access/egress, turning and parking areas as defined on the TPP. The benefits of this system are (extract from Geosynthetics below):

- The only guaranteed cellular confinement system on the market
- Independently tested
- No dig solution
- Prevents sub soil compaction
- Complies with BS:5837:2012, Tree Preservation Orders (TPO's) and APN 12
- 100% success rate
- Full technical support from our Tree Root Protection Team
- Technical Recommendations from qualified Civil Engineers
- Continued water permeation and gaseous exchange
- Simple to install

6.31 Any existing surface (turf/gravel) will be removed, by hand, with levels augmented through use of an inert, granular sub-base over which a geo-textile membrane is to be laid. The Cell-web (likely 150mm based on vehicle weights/usage) will be installed with the Golpa system above as

the highly permeable but stable wearing layer. See below as an illustration. Adjustment of levels outside of the RPA can involve lowering of levels greater than 100mm. Timber edge supports secured with galvanised ground pins would be the preferred option to contain the installation.



6.32 The use of a permeable but temporary wearing layer above the Cellweb is likely to precede the installation of the Golpa system although it may be decided, once the scheme has been subject passed the manufacturers design process, that this may not be necessary.

6.33 The no-dig surface will be professionally designed by the manufacturer with the project engineer taking an overview in terms of levels and the design of ramps up/down to meet highway level.

6.34 Order of Events

Protective Fencing installation

Ground protection to be installed

Enabling tree works (felling and pruning)

Underground services to be installed

Install no-dig surface with agree temporary wearing layer

CONSTRUCTION PHASE TO COMMENCE

FINAL wearing layer to be installed to no-dig surface.

MONITORING AS PER SCHEDULE

PRACTICAL COMPLETION

SITE ANDSCAPING

6.35 Monitoring & Supervision

6.36 The sequencing of essential arboricultural supervision is detailed as follows:

Phase 1a – Pre start – relevant stakeholders to be made are of AMS and sequencing of works.

These include:

- Site Manager (TBC)
- Arboriculturist (D Williams – MWA Arboriculture Ltd)
- Engineer
- LPA tree officer

Phase 1b – Enabling works to be inspected/supervised by arboriculturist to include:

- Ground protection as per AMS/TPP
- Tree pruning/felling enabling works (in progress)
- Protective fencing/hoarding as per AMS/TPP
- No-Dig Surface installation

Phase 2 – Construction phase - prior to start an initial inspection and unscheduled monitoring visits (fortnightly)

- Position and specification of fencing/ground protection to be assessed
- Assessment for unauthorised encroachment in exclusion zones
- Trouble shooting with site manager
- A written record which includes a photographic record will be produced for site supervision visits and will be forwarded to the Local Planning Authority within 5 working days.

Phase 3 – Practical completion and Landscaping (hard and soft)

- Arboriculturist to meet with site manager
- Final wearing layer for no-dig (if not installed at enabling)
- Sign-off upon practical completion

7.0 Conclusion and recommendations

- 7.1 There are trees within the site which fall within the constraints of BS5837 (2012).
- 7.2 The impact of the proposed development has been assessed and in our professional opinion provided that the works take place in accordance with the method statements specified in this report the works will not be detrimental to the retained trees. Site specific method statements can cover final foundation design and installation and we encourage the LPA to allow this matter to be dealt with through planning condition.
- 7.3 All technical issues relating to arboriculture should be addressed to MWA Arboriculture Ltd in the first instance. MWA Arboriculture Ltd will liaise between the Local Planning Authority and any interested parties.
- 7.4 It is suggested that the development proceeds in accordance with the above recommendations with the use of condition(s) to ensure the appropriate methods of working are agreed and any necessary site supervision/enabling works are correctly sequenced prior to the commencement of construction work.

Appendix 1 – Site Notice

TREE PROTECTION AREA



INDUCTION HAND-OUT FOR ALL OPERTIVES

Copy to be kept visible at all times at the site entrance and staff compound



Precautions When Working Close to Trees



Damage to trees and may result in action by the Local Planning Authority such as a stop notice or prosecution.

- Works stipulated in the approved **Tree Protection Plan** and Arboricultural Report will be completed before other works on the site begin. No other tree pruning is permitted without written permission from the Project Arboriculturist.
- If required **Protective Fencing** is to be installed in accordance with the approved Tree Protection Plan before the start of any construction activities, including demolition or placing of site offices.
- **Protective Fencing** will remain in place until the end of the build unless approval for its removal is provided in writing by the Project Arboriculturist.
- If required **Ground Protection** is to be installed in accordance with the approved Tree Protection Plan before the start of any construction activities, including demolition or placing of site offices.
- **Ground Protection will remain in place** until the end of the build unless approval for its removal is provided in writing by the Project Arboriculturist.
- **Excavations within the Root Protection Areas of retained trees (RPAs)** must be conducted in **strict accordance with the AMS** and in accordance with site specific briefing provided by the Project Arboriculturist.
- Only those **underground services** shown in the approved plans will be routed through the RPA of retained trees without consultation with the Project Arboriculturist. (See above regarding excavation within RPAs.)
- **No storage of chemicals or other materials** is allowed within the RPA of retained trees irrespective of ground protection. Materials should not be stored uphill of retained trees or their RPAs.
- **No mixing of concrete or other potentially toxic materials** is permitted within the RPAs of retained trees.
- **No fires are permitted within RPAs or close to retained trees**, irrespective of local Council policy.
- **Banksman** will be used whenever plant is operating close to retained trees.
- **No plant may operate within the RPA of retained trees** without appropriate ground protection in place.
- Details for the **Project Arboriculturist** may be obtained from the Site Agent.



Appendix 2 – Tree Survey Schedule

Tree No.	Species	Ht (m)	No of stems	Dia. @ 1.5m (mm)	CS N (m)	CS E (m)	CS S (m)	CS W (m)	ER CY	Crown Ht	Age Class	Description & Recommendations	RPA (Radial)	BS Cat
T1	Apple	7.0	1	325 over ivy	3.5	3.5	3.5	2.0	<20	N/A	M	Low value tree in the context of the site. Remove to facilitate development.	3.90	C1
T2	Holly	5.0	1	210	2.0	2.0	2.0	2.0	20	N/A	EM	Low value tree in the context of the site. Retain if hard standing layout permits.	2.52	C1
T3	Silver Birch	13.0	1	360*	3.5	4.5	4.5	3.5	20	N/A	EM	Off-site tree – limited RPA overlap. Retain and protect as per AMS/ TPP	4.32	C1
T4	Tulip Tree	20.0	1	750 *	8.0	8.0	9.5	8.0	20-40	<4.0 E	M	Focal specimen tree with well-balanced form and no obvious structural defects. Minor crown lifting required on east side. Retain and protect as per AMS/ TPP	9.00	B1
T5	Holm Oak	8.0	1	240	4.0	4.0	4.0	4.0	20	N/A	SM	Semi-mature tree close to roadside boundary wall. Limited potential to mature given inevitable longer-term impacts on fabric of the wall. RETAIN.	2.88	C1
T6	Oak	5.5	1	200	4.0	4.0	4.0	4.0	20+	N/A	Y	Young tree with high growth potential. Tree could be lifted and transplanted. Remove to facilitate development. RETAIN.	2.40	C1
T7	Holly	6.0	M/S	100av	3.5	3.5	1.5	3.5	20	N/A	SM	Semi-mature multi-stemmed tree. RETAIN.	2.40*	C1
T8	Yew	11.0	2	460, 260	6.5	5.5	6.0	6.5	20+	0.0	M	Higher value tree with long-term contribution to the site. Retain and protect as per AMS/ TPP	5.93	B1

Tree No.	Species	Ht (m)	No of stems	Dia. @ 1.5m (mm)	CS N (m)	CS E (m)	CS S (m)	CS W (m)	ER CY	Crown Ht	Age Class	Description & Recommendations	RPA (Radial)	BS Cat
T9	Lime	15.0	1	670	5.0	6.0	7.0	6.0	20+	<3.0 E	EM	Evidence of pollarding at 4.5m with significant regrowth. Prominent tree. Retain and protect as per AMS/ TPP	8.04	B1
T10	Bay	10.0	M/S	300	5.5	6.0	5.0	5.0	20	<3.5 E	M	Chlorotic (yellowing) foliage indicating biotic/abiotic stress. RETAIN.	3.60	C1
T11	Apple	3.8	1	195	2.5	2.5	2.5	2.5	<20	N/A	EM	Poor tree with limited contribution in the context of the site. RETAIN.	2.34	C1
T12	Lime	8.0	1	720 *	3.0	3.0	3.0	3.0	20+	<1.0	M	Pollard points at 4-5m height with several years' regrowth plus basal epicormics growth. Prominent tree. RETAIN.	8.64	B1
T13	Birch	9.5	2	150, 115	3.0	3.0	3.0	3.0	<10	N/A	SM	Self-set twin stem tree close to boundary RETAIN.	2.27	C1
T15	Cedar	16.0*	1	440*	5	5	4	5	20+	<3.5 W	EM	Well-formed off-site tree. Retain and protect as per AMS/ TPP. RETAIN.	5.28	B1
G1	Sycamore, Ash	Max 15	M/S	Max 240	-	-	-	-	20+	N/A	EM	Linear group of self-set trees. Remove northern section to facilitate development.	2.88 nominal	B2

No.	Allocated sequential reference number - Tree ('T'), Group ('G'), Woodland ('W') or Hedge ('H') reference number - refer to plan and to numbered tags where applicable
Species:	Common name
Height:	In metres, to half nearest metre – where possible approximately 80% are measured using an electronic clinometer and the remainder estimated against the measured trees. In the case of Groups and Woodlands the measurement listed is that of the highest tree
Stem Diam.:	Stem diameter in millimetres, to nearest 10mm - measured and calculated as per Annex C of BS5837:2012. MS = multi-stemmed, TS = twin-stemmed
Branch Spread:	Crown radius measured (or estimated where considered appropriate) from the four cardinal points (north, east, south and west) to give an accurate visual representation of the crown
Crown Height:	Existing height above ground level, in metres, of first significant branch and direction of growth (e.g. 2.5-N) and of canopy at lowest point – to inform on crown to height ratio, potential for shading, etc.
Age Class:	Estimated age class - Y = young, SM = semi-mature, EM = early-mature, M = mature, PM = post-mature
ERCY:	Estimated Remaining Contribution - in years as per BS5837:2012 (i.e. <10, 10+, 20+, 40+)
BS Cat:	Category Grading - tree retention value listed as U, A, B or C - in accordance with BS5837:2012 Table 1
RPA Radius (m):	Root Protection Area Radius - in metres measured from the centre of the stem to the line of tree protection
* (Estimated Dimensions):	Where trees are located off-site, or are inaccessible for any other reason, and accurate measurements or other information cannot be taken then the information provided is estimated and is duly suffixed with a “#” symbol



Appendix 3 – Monitoring & Supervision - Form

Arboricultural Monitoring & Supervision Record

Site Address			
MWA Consultant			
Date of visit			
Also In attendance			
Purpose of Visit			
Monitoring	Supervision	Spot-Check	Meeting
Observations			
	As per AMS/TPP?	Breach?	S Manager aware?
Protective Fencing			
Ground protection			
Signage			
Storage			
Access/egress			
Tree Works			
Underground services			
Comments			
Signed:			
Dated:			



KEEP BLANK