Gloaming

Tree Surgery & Arboricultural Consultancy

Arboricultural Survey Report & Method Statement

at

76 Wharf Road
Crowle
DN17 4HU

for and on behalf of

Mrs Staniforth

July 2020

SUMMARY

This report is concerned with the arboricultural implications which may arise from the development proposals at the above address. The report and accompanying tree survey schedule are produced in accordance with the guiding principles of British Standard 5837 (2012) *'Trees in Relation to Construction – Recommendations'.*

The Root Protection Areas (RPA's) of all trees surveyed are calculated and recorded in the Tree Survey Schedule where they are expressed as m2 measurement and a radius measurement. If construction is proposed within these areas, special techniques must be employed and general guidance is contained herein.

The guidance contained within Section 3 - TREE PROTECTION – GENERAL should be adhered to completely throughout the development process. If the measures detailed in section 3 are adhered to completely, there should be no detrimental impact on the trees.

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INTRODUCTION

1.1 Author's Qualifications and Experience:

Gloaming Tree Surgery Limited is run by the Director and Consulting Arborist James Dyson BSc (Hons) Cert Arb (RFS) PTI.

James has worked in the arboricultural sector for over ten years. In 2005 he graduated from Harper Adams University with a BSc (Hons) Countryside and Environmental Management. James is accredited by the Arboricultural Association in Professional Tree Inspection and holds the Royal Forestry Society Certificate of Arboriculture.

James holds a suite of NPTC certificates of competency in tree surgery, has several years' experience as a lead Arborist and five years' experience working in Local Government as a Tree Officer.

1.2 Instructions and Brief:

A Tree Survey Schedule compliant with the guiding principles of British Standard 5837 (2012) *'Trees in Relation to Construction: Recommendations'* is contained in this report and all survey data is recorded in this Schedule. In addition to the survey data, guidance is given regarding the protection of trees during development work and generic methodologies are given regarding how any arboricultural constraints might be overcome or their impacts minimised.

1.3 Documents & Information Provided:

A 1:500 scale site survey plan is included within this report which indicates tree positions, canopy cover, root protection areas and tree retention categories.

1.4 Scope:

1.4.1 This report has been prepared for the sole use of the client. Any third party referring to this report or relying on the information contained herein does so entirely at his or her own risk.

1.4.2 Whilst every effort has been made to detect defects within the subject trees, no guarantee can be given as to the absolute safety or otherwise of any individual tree. The recommendations given are intended to reduce the likelihood of tree collapse but absolute safety is not a realistic goal; even apparently sound trees can fail. All recommendations are given in the context of the site's current usage; any change will dictate a further survey.

1.4.3 The findings and recommendations contained within this report are, assuming its recommendations are observed, valid for a period of twelve months from the date of survey. Trees are living organisms subject to change –

best practice dictates they are inspected on a regular basis for reasons of safety.

1.4.4 This report represents a survey and should not be construed to be a detailed tree inspection report. All recommendations are made in the context of the site's current usage; any change will dictate a further inspection.

1.4.5 Where trees were clad with ivy (*Hedera helix*) or where dense twig growth obscured the tree trunk, this was recorded in the Tree Survey Schedule. The inspection of such trees is impeded; ivy and twig growth should be removed and a further inspection carried out. The Retention Categories awarded to such trees can only be considered provisional.

1.4.6 Tree rooting characteristics and soils are both enormously variable as are their interactions. This makes attempts to quantify subsidence risk assessment impossible. No effort has been made to assess subsidence risk potential nor should any be construed.

1.4.7 The expertise of the author of this report is arboriculture, any non-arboricultural references made within this report are made as a lay person.

2 SITE VISIT AND OBSERVATIONS

***2.1 Site Visit*:** An unaccompanied site visit was carried out on the 3rd of July 2020 by James Dyson. The trees were surveyed visually from the ground. No drilling or excavation was carried out on this occasion. The weather at the time of the visit was clear and adequate for the purposes of the visit.

The site is part of the current garden of 76 Wharf Road. One tree, T2 Sycamore stands on the plot, T1 Horse Chestnut and T3 Holly stand in the gardens of 76 Wharf Road. The quality of the tree stock ranges from reasonable to poor.

2.2 Tree Survey Methodology: The survey was undertaken in accordance with the guiding principles of British Standard 5837 (2012) *'Trees in Relation to Construction: Recommendations'* and the trees were assessed objectively and without reference or influence being given to any proposed site layout. Using 'Visual Tree Assessment' (VTA) techniques the trees were surveyed from the ground. VTA is a methodology, employed by Arboriculturists, to evaluate the structural integrity of a tree, relying on observation of a trees biomechanical and physiological features; this is the method generally adopted and is appropriate in this instance. The trees surveyed are listed in the Tree Survey Schedule which is accompanied with an excerpt of the plan provided upon which the trees are numbered.

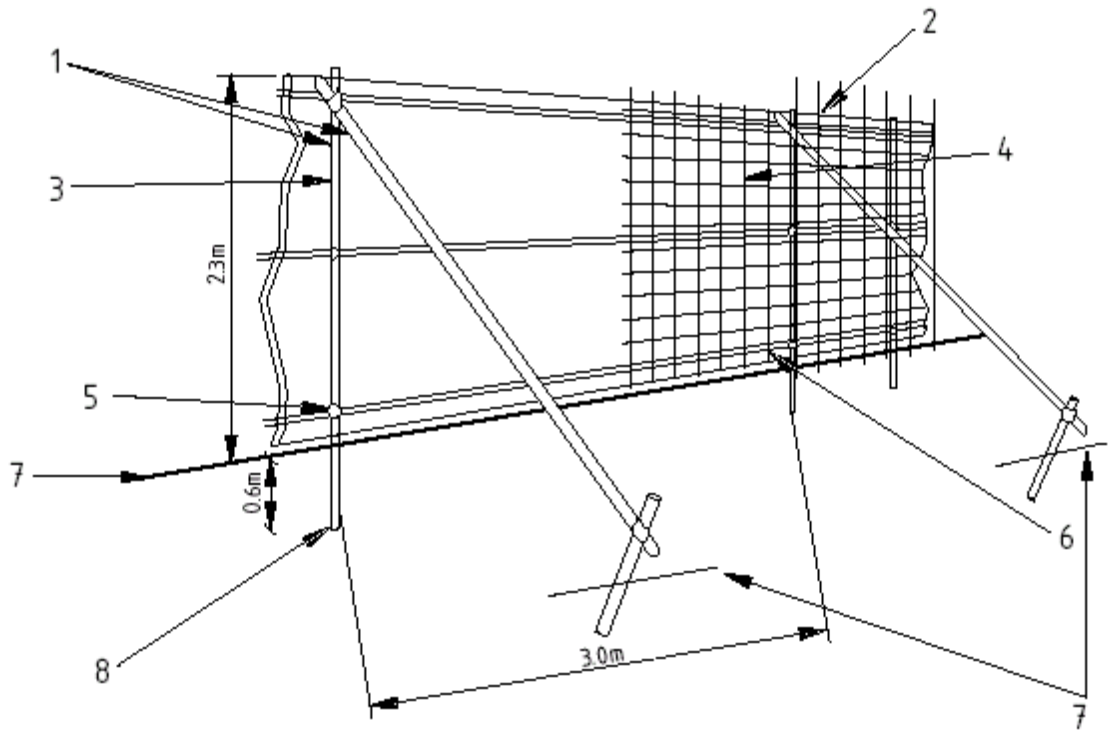
Shrubs, insignificant trees and those with a stem diameter of less than 75mm at 1.5m above ground level have been omitted from the survey.

3 TREE PROTECTION – GENERAL

3.1 Below Ground Constraints: to achieve any development various construction activities are required and great care and consideration needs to be given as to how such activity can proceed whilst avoiding damage to retained trees.
"Damage can occur as a result of direct impact between construction machinery and parts of a tree. Often greater damage and even destruction occurs quite invisibly due to the deformation of the soils in which the trees root. Soil stripping, trenching and compaction all have serious effects on trees and if such trees are to be successfully retained in the long term it is necessary to protect the soil during construction."
British Standard 5837 (2012) '*Trees in Relation to Construction:–Recommendations*'.

3.1.1 There is a direct proportional relationship between a tree's roots and its aerial parts and since the majority of tree roots occur in the upper 600m of the soil horizon this balance can easily be upset by even shallow excavation and/or soil compaction. Root damage can result in instability or premature decline which may not manifest for a number of years, often long after development has ceased. British Standard 3998 (2010) '*Recommendations for Tree Work*' states '*Older or larger trees are more vulnerable than younger or smaller ones, but in all cases the effects of root severance are detrimental*.'

3.1.2 In order to avoid damage to their roots, trees should be protected using protective barriers as are detailed in British Standard 5837 (2012) '*Trees in Relation to Construction: Recommendations*' and as illustrated in Figures 1 and 3. Such barriers should be erected around the RPA prior to the commencement of the demolition/construction activity; it must remain in situ and intact until completion. The area within these barriers should, with some exceptions (see 3.1.5 to 3.1.9) be considered sacrosanct, and no work should be permitted within them. In an effort to ensure any tree protective barriers remain during construction, it is further advised that they carry signage as per Figure 2 and that the Site Agent is briefed accordingly. On sites which are particularly 'tree sensitive' the Local Planning Authority (LPA) may apply conditions to a planning permission requiring arboricultural supervision.
Tree Protective Barriers should also be erected, prior to the commencement of construction, around those areas identified for soft landscaping/tree planting so as to protect the soil from compaction and denaturing.



1 Standard scaffold poles
2 Uprights to be driven into the ground
3 Panels secured to uprights with wire ties and where necessary standard scaffold clamps
4 Weldmesh wired to the uprights and horizontals
5 Standard clamps
6 Wire twisted and secured on inside face of fencing to avoid easy dismantling
7 Ground level
8 Approx. 0.6 m driven into the ground

Figure 1 - Tree Protection Barrier
BS5837 (2012) '*Trees in Relation to Construction: Recommendations*.

Figure 2 – Example Barrier Notice

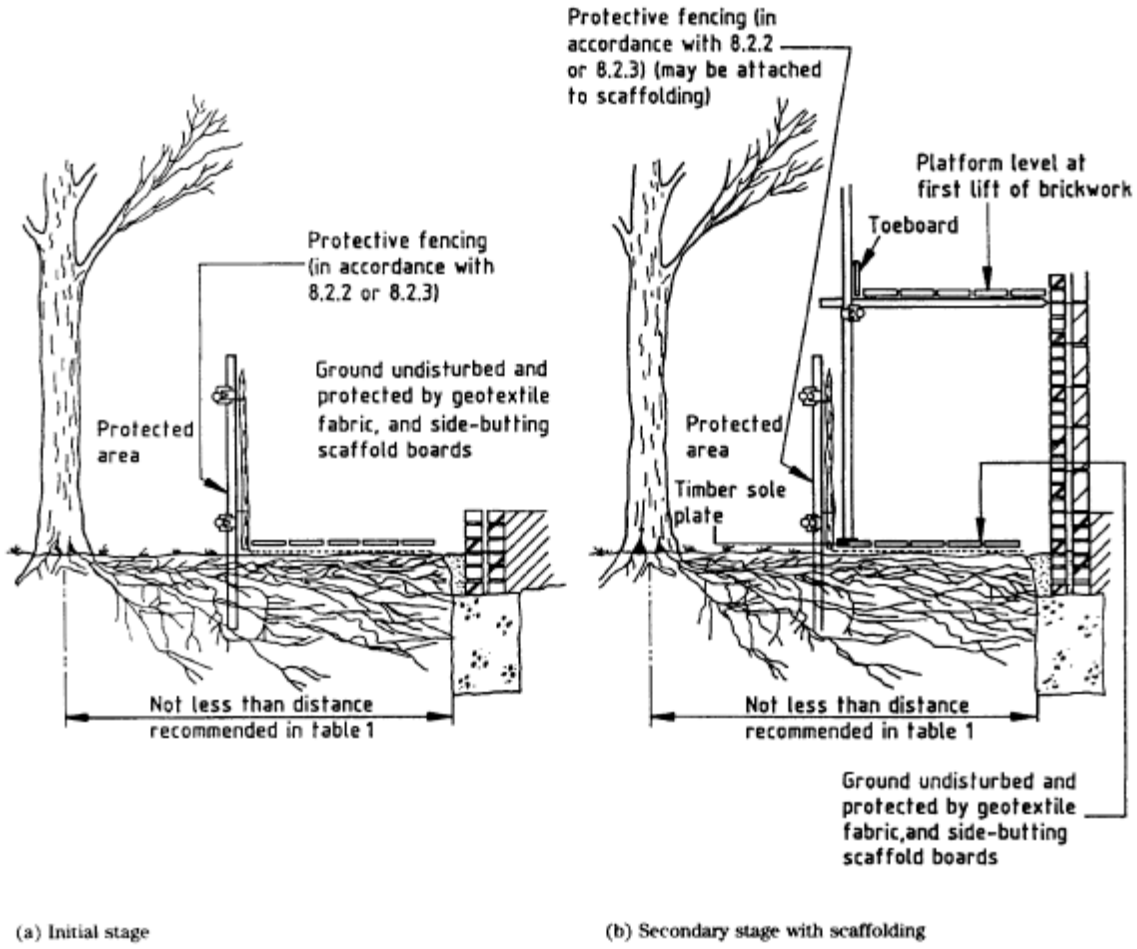


Figure 3 - Adapted Barrier Incorporating Temporary Ground Protection
British Standard 5837 (2012) '*Trees in Relation to Construction: Recommendations'*

3.1.3 Where space is required within the RPA to facilitate the erection of scaffold this can be satisfactorily achieved incorporating ground protection within the scaffold structure as illustrated in Figure 3 above.

3.1.4 In some instances it is possible to offset the RPA by up to 20% and this may afford more room to manoeuvre should such be necessary. Further advice from an Arboriculturist should be sought regarding the off-setting of RPA's.

3.1.5 In addition and in order to maximise a sites' development potential, it may be possible to employ special foundation design such as mini/micro pile and suspended beam or a cantilevered foundation. These designs enable construction within the RPA as they limit excavation to a minimum. The location of any mini piles would need to be flexible so as to avoid damage to major roots and the necessary excavation for the piles may need to be carried out by hand; the piles should be sleeved so as to contain concrete which contains 'tree-toxic' chemicals. In these circumstances a suspended floor slab will need to be incorporated and the void beneath should be externally vented so as not to inhibit gaseous exchange, in some instances i.e. where more than 20% of the RPA is to be covered, there will need to be provision for the redistribution of rainwater beneath the slab. Where pile foundations are to be employed, consideration needs to be given to the selection of the type of piling rig so as to avoid conflict with low, overhanging tree branches.

3.1.6 Hard Surfacing

New**:** It is permissible to construct hard surfacing for drives and paths within the RPA, however, it can have implications for tree roots. These implications can often be overcome and/or minimised by employing a 'no-dig' construction methods. These techniques result in structures which are load bearing and negate the need for deep excavation. Where any hard surface is to cover more than 20% of the RPA, the construction and the final wearing course must be porous so as to permit gaseous exchange and moisture percolation. Further advice of a structural engineer must be sought to design the final specification in accordance with these parameters, with the final design being agreed with an Arboriculturalist.

Existing: Where hard surfacing exists within the area defined as the RPA, it is acceptable to erect protective barriers at the extent of that hard surface, since the surface itself will afford protection to any tree roots beneath. However, where it is proposed to remove/regrade existing hard surfacing care must be taken to avoid collision between overhanging tree branches and passing construction traffic. It is advised that to minimise root disturbance the existing surface is broken and gathered for disposal using hand operated tools, any backfilling must utilise top quality top soil laid at approximately 50mm deep with a composted bark mulch laid over that to a maximum depth of 75mm; in the long term this approach brings a positive arboricultural impact.

3.1.7 Services – Details regarding the siting of underground services have not been made available, the following is given as general advice: Careful consideration must be given to the siting of underground services e.g. drains, electricity, gas etc. They should ideally not be sited within the RPA; where such is unavoidable; the trench must be hand dug and all roots greater than 25mm diameter must be carefully dug around and left intact. Any roots below this size, where they cannot be retained, must be cut cleanly with pruning tools. If the trench is to remain open for prolonged periods, especially in hot, dry weather, roots must be wrapped in damp hessian sacking to prevent desiccation. In order that they can assess any impact upon trees it is likely that the LPA will require the submission of details regarding service location and installation methodology prior to the granting of any planning consent.
Where drains are to be installed within the rooting zone, particular consideration must be given to their construction; compression joints are not wholly reliable and can allow root ingress.

3.1.8 Temporary Site Accommodation – Paragraph 9.3.2 of BS 5837 (2012) advises that in some circumstances it is appropriate to use site cabins as components of the tree protective barriers where they can serve as an effective means of protecting the soil from many of the construction related activities. Further advice from an Arboriculturist should be sought should this matter be of relevance or advantageous.

3.1.9 Temporary Site Access - In some instances it may be advantageous to access a site, either for pedestrians or machinery, through the RPA. BS5837 (2012) acknowledges this as a possibility and systems which dissipate any load applied, thus avoiding soil compaction and denaturing, are to be used. An engineer is to be consulted regarding the design of a temporary access with the final specification being agreed with an Arboriculturalist.

3.2 *Above Ground Constraints*: Consideration must also be given to the aerial parts of the tree in relation to any construction; particularly residential buildings. Conflict frequently arises where dwellings are placed close to trees giving rise to concerns relating to shade, falling debris such as leaves and twigs and from apprehension arising from a perceived threat of tree failure. These concerns can often be overcome, in part at least, by carefully ensuring adequate useable garden space is provided and is not dominated by trees and that principal windows face away from trees; in some instances, it may be appropriate to locate glazed panels into the roof structure. The LPA are likely to resist any proposal that results in built structures close to trees or that makes inadequate provision for their future growth. Usually, and particularly in the case of immature trees, the distances required to avoid conflict will be greater than those expressed as the RPA. It is however, equally important to note that issues arising from shade are often overstated and that some shade is not only tolerable but may be beneficial. It is also important to bear in mind that different

tree species cast different shade patterns depending upon juxtaposition, size, habit, canopy density, evergreen/deciduous.

The following guidance is given by the Building Research Establishment (BRE):
"*Tree locations are … important; deciduous species are best because they are leafless when solar gains are most valuable, while providing some shade in summer.*" (BR380 Page 69)
"*Deciduous trees give shade in summer but allow access to sunlight in winter*." (BR 209 page 22).
"*The question of whether trees … should be included in the* (solar gain*) *calculation depends upon the type of shade they produce. Normally, trees and shrubs need not be included, partly because their shapes are impossible to predict, and partly because the dappled shade of a tree is more pleasant than the deep shadow of a building. This applies especially to deciduous trees*." (BR209 page 13)

3.3 *Tree Constraints Plans & Protection Plans (TCP & TPP):* British Standard 5837 (2012) '*Trees in Relation to Construction: Recommendations'* advises as to the procedure by which trees on construction sites are best processed (See Appendix 5); it also states TCP's should be used to assist the design of an arboriculturally acceptable layout. A TCP is not intended to be submitted to the LPA, rather it is a tool to inform site layout; it is a graphical means of illustrating certain information e.g. tree canopies as they are in reality and the position/shape of any RPA (See 2.2.11 above). A TPP illustrates the positioning of protective barriers and can be of great assistance to on site personnel e.g. those erecting such barriers and those subsequently involved in the demolition/construction process. It is important, as is acknowledged in BS 5837, that TCP's and TPP's are produced by persons with experience and expertise of arboriculture; particularly tree root distribution.

4 OTHER CONSIDERATIONS

4.1 Trees Subject to Statutory Controls: The site does not fall within the boundaries of a conservation area. T1 Horse Chestnut and T2 Sycamore are protected by a TPO.

4.2 Trees and Wildlife**:** Trees play host to nesting birds many of which are protected by law. All British bat species are also protected and can be found in trees. Great care needs to be taken to avoid disturbance and consideration should be given to the timing of tree works in order to avoid disturbance. Where the presence of protected species is suspected, Natural England should be contacted for advice.

4.3 Implementation of Tree Works**:**
Gloaming Tree Surgery are appropriately qualified and experienced to undertake any potential remedial tree works. Further information is available on request.

4.4 New Planting: It is possible that any planning permission issued will carry a condition requiring new tree planting, particularly in instances where a proposal involves the removal of trees. Further advice is available upon request.

5 RECOMMENDATIONS

5.1 This report provides guidance for the design team and sets out the constraints relating to the trees on site. Tree survey and RPA detail can be found in the Tree Survey Schedule.

5.2 In an effort to ensure any issues are resolved from the outset it is recommended that a site visit is undertaken with the Local Authority's Planning Case Officer and Tree Officer to ensure that the approach for development and tree retention is suitable. Gloaming Tree Surgery would be happy to make representation at such a meeting.

5.3 T1 Horse Chestnut stands in the front garden of 76 Wharf Road, T2 Sycamore stands on the front boundary of the land adjacent to 76 Wharf Road (currently part of the front garden of 76) T3 Holly stands in the rear garden of 76 Wharf Road.

T1 Horse Chestnut does not belong to the client but its RPA extends into the building plot. The tree is in a very poor condition, it has failed to come into full leaf this year and is dying back considerably. A fungal bracket has been removed from the main stem by persons unknown. Given the trees condition and position overhanging a busy road, it should be removed to prevent potential full or partial collapse. The tree owner was informed of this at the time on site.

T2 Sycamore is in a poor condition. The tree is infected with what appears to be *Polyporus squamosus,* common name Dryads saddle fungus. Numerous fungal brackets can be seen on the main stem from 2m above ground level to 4m. This decay fungi often causes extensive decay and stem fracture. On this basis and due to the trees position overhanging a busy road, the tree requires removal on safety grounds.

T3 Holly is a small tree of limited visibility from the highway, its RPA falls outside of the development site.

No tree protection measures are necessary in this instance and the trees do not impose any constraint on the development.

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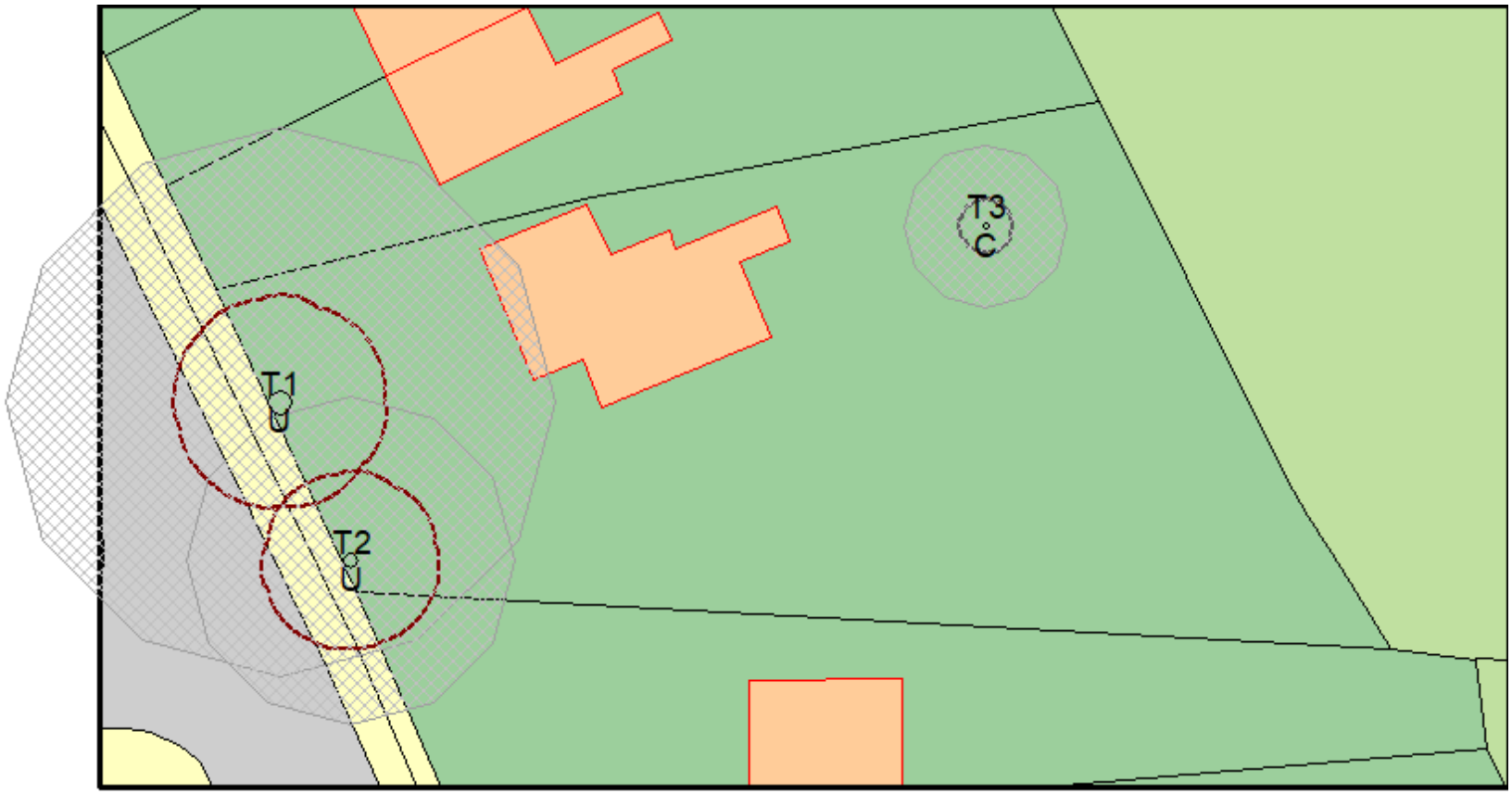
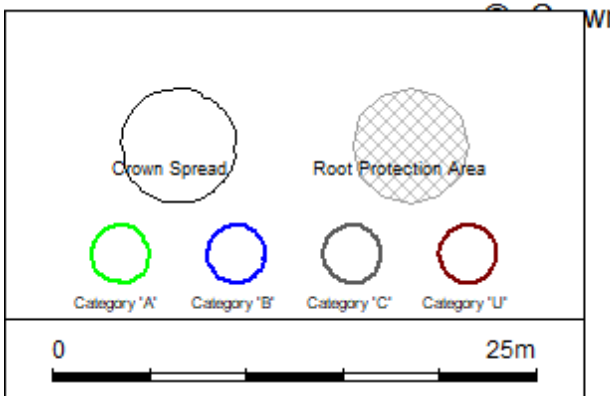
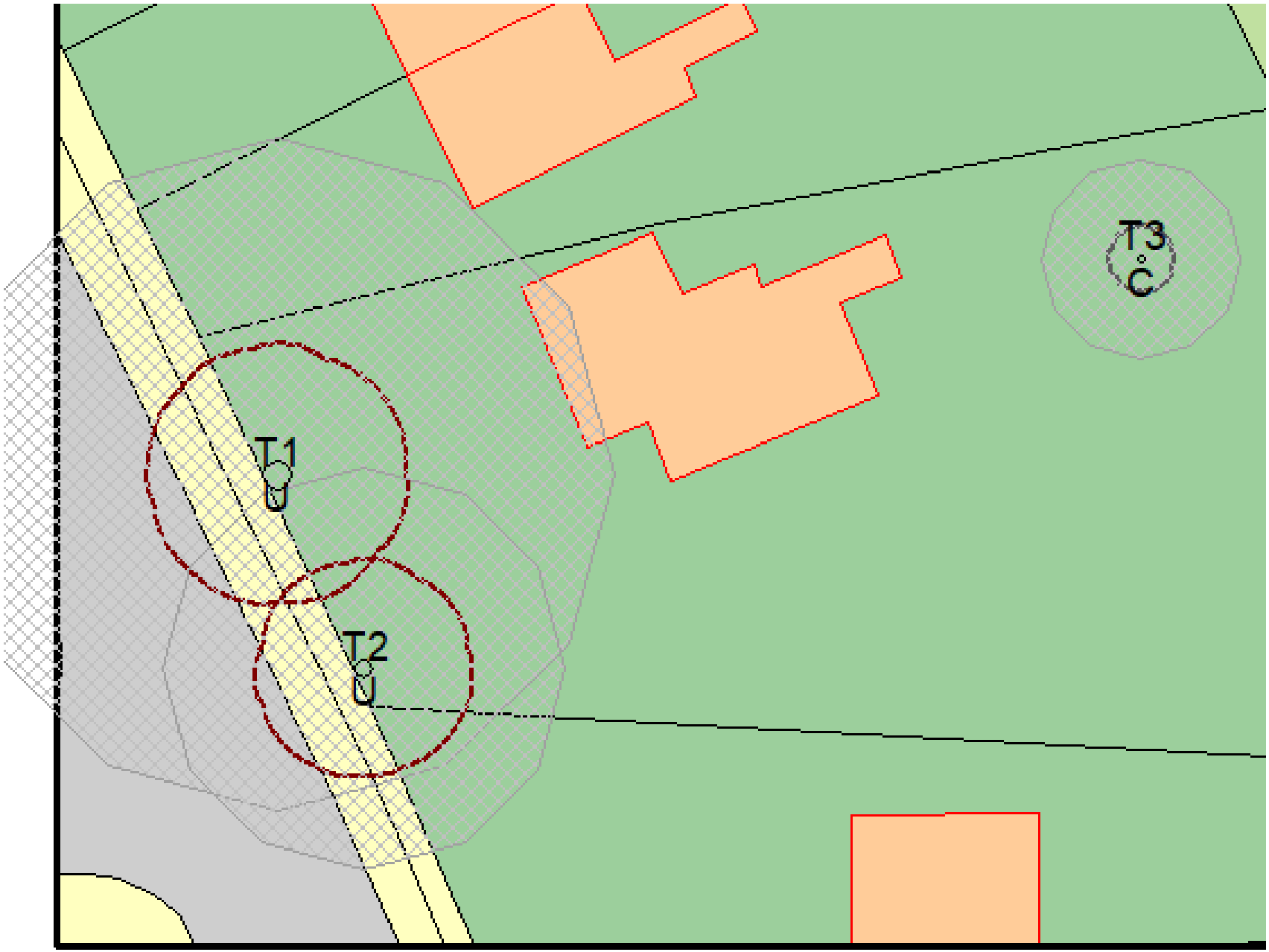
6 TREE SURVEY SCHEDULE

Tree No.	Species	Height (m)	Stem dia (mm)	Branch spread (m)	Age Class	Cond	Observations & Recs	Life Exp. (years)	Ret cat	RPA (m2)
T1	Horse Chestnut *(Aesculus hippocastanum)*	15	1350	6mN 6mE 6mS 6mW	Mature	D	Severe die-back in crown, tree is in decline. Numerous large cavities at previous pruning points. Large diameter deadwood, some of which over highway. Fungal decay in main stem (bracket absent)	Less than 10 years	U	824.6m2 (Circle with a radius of 16.2m)
T2	Sycamore *(Acer pseudoplatanus)*	14	750	5mN 5mE 5mS 5mW	Mature	D	*Polyporus squamosus* decay in main stem. Spares crown, some dieback evident. Large diameter dead wood contained in crown.	Less than 10 years	U	254.5m2 (Circle with a radius of 9m)
T3	Holly *(Ilex aquifolium)*	6	370	1.5mN 1.5mE 1.5mS 1.5mW	Semi-mature	B	Area of bark and cambium damage to main stem.	More than 40 years	C	61.9m2 (Circle with a radius of 4.4m)






T3
T1
T2

Appendix 1: Tree Survey Methodology

The survey was undertaken in accordance with the guiding principles of British Standard 5837 (2012) *'Trees in Relation to Construction: Recommendations'.* Information recorded in the survey includes:

Species – the species identification is based on visual observations and the common English name of what the tree appeared to be is listed first, with the botanical name after. In the case of groups only the principal species are recorded, other minor species may be omitted.

Tree Heights – are estimated in metres. Estimated mature heights are given in brackets. In the case of groups, the mean current height is recorded.

Stem Diameters – measured at 1.5 metres above ground and recorded in millimetres to the nearest 10mm. However, where the trunk of any tree breaks below 1.5 metres it is considered a multi-stemmed tree and, in accordance with British Standard 5837 (2012) '*Trees in Relation to Construction: Recommendations'* it is measured immediately above the root flare. In the case of groups of trees, the maximum diameter was recorded.

The ***Condition*** of the trees is based upon a preliminary assessment categorised thus:
A - Good
B - Fair
C - Poor
D - Very Poor/Dead
In the case of groups, the category awarded is that typical of the group.

Life Expectancy – estimated; i.e. less than 10 years, 10-20 years, 20-40 years, more than 40 years.

Age Class - Categorised as young, semi-mature, mature, over-mature, veteran.

Preliminary Recommendations – works required *regardless* of development proposals.

A ***Retention Category*** is given as follows which corresponds with Table 1 (See Appendix 2) of British Standard 5837 (2012), '*Trees in Relation to Construction: Recommendations* i.e.:

· **A** - Trees of a high quality and value, including public visual amenity value (Sub categories 1, 2, 3). It is usual for such trees to be retained unless the planning merits of a particular scheme or layout over-ride.

· **B** - Trees of moderate quality and value, including public visual amenity value (Sub categories 1, 2, 3). Such trees should be considered for retention.

· **C** - Trees with a stem diameter of less than 150mm or which are of low quality and value, including public visual amenity value (Sub categories 1, 2, 3). ***The retention of Category C trees should not be allowed to impose a constraint on development.***

· **U** - Trees in such a condition that they should be removed.

Root Protection Area (RPA) – In respect of all trees surveyed the RPA has been calculated and is given in the Tree Survey Schedule. The figures given represents the area surrounding the tree in m2.