

Tree survey and report

84 Leicester Road
Hinckley
LE10 1LT



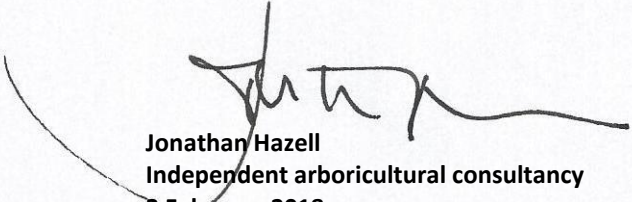
Report number 390 prepared by:



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1 Report limitations

- 1.1 I write as an arboriculturist; I have no technical engineering competence. My career in practical arboriculture began as a forestry graduate with the local authority tree gang in Ealing in 1980. A range of roles in the public, charity and commercial sectors followed and in October 2011 I established my own arboricultural consultancy practice, a detailed c.v. can be found at www.jhazell.com.
- 1.2 My report represents the analysis of my arboricultural observations following an external assessment of the trees from ground level only. No samples were collected for analysis, and no decay detection devices (such as an increment borer, a micro-resistance recording drill or sonic tomograph) were used during my assessment.
- 1.3 Trees are living organisms and their condition may have changed after I left the site for any one of a variety of reasons, including for example, but not limited to:
 - a natural consequence of their pattern of growth, and/or
 - a response to changes in neighbouring trees and shrubs, from whatever cause, and/or
 - in response to the weather, either an extreme event or a prolonged spell of consistent weather, and/or
 - a consequence of infection or infestation, and/or
 - a consequence of a pollution incident, and/or
 - a response to changes in soil condition or structure.
- 1.4 My conclusions, and any recommendations flowing from those conclusions, relate to the conditions that I found at the time of the assessment, and are valid for
 - no more than two years from the date of that assessment, or
 - until such time as any work is carried out at the site, either in accordance with the remedial action prescribed or for other reasons which may be outside my control, or
 - until the site is re-surveyed whichever is the sooner.
- 1.5 My report it is not, nor should be taken to be, a thorough assessment of the health and condition of the trees on or adjacent to the site: if such an assessment is required then it is recommended that a separate tree inspection be carried out to comply with the land owner's overall duty of care and to satisfy health and safety requirements.

2 Introduction

- 2.1 My client is Paul Morris of Merrywell Properties Ltd., 1 Lovelace Close, Sibson, Nuneaton, CV13 6LH.
- 2.2 My agreed brief was to:
 - carry out a tree survey at 84 Leicester Road, Hinckley, LE10 1LT as per your email of 15 February, and
 - prepare an arboricultural impact assessment, tree constraints plan and tree protection plan in accordance with BS 5837:2012 Trees in relation to design, demolition and construction – Recommendations.
- 2.3 I was instructed to proceed in an email of 15 February 2016.
- 2.4 The proposal as shown on the site drawings is to continue to develop the plot, with seven new residential units and the associated infrastructure.
- 2.5 There are three trees to the rear boundary of the plot that are subject of a Tree Preservation Order: a sycamore on the western side, an ash in the centre and an oak on the eastern side.
- 2.6 According to a conversation with my client the topsoil is a narrow band of clay capping a band of sand and gravel across the whole site, and the water table is at a consistent 4.3 m below ground level.



2.7 In this report:

- Conservation Area is abbreviated to CA
- Construction Exclusion Zone is abbreviated to CEZ
- diameter at breast height, 1.5 m above ground, is abbreviated to dbh
- Root Protection Area is abbreviated to RPA
- Tree Preservation Order is abbreviated to TPO

2.8 Particular terms that I use in this report have the following meanings:

- site drawing is used to mean all the information that has been made available to me concerning the proposed development, in whatever format
- work activity is given the widest possible definition, to capture and embrace any activity associated with the proposed development, be that construction, demolition, enabling works, laying or re-locating services, temporary works and so on

3 The trees

3.1 I visited the site by appointment on Monday 20 February 2017.

3.2 On the northern boundary of the plot, to the rear gardens of Island Close, there were a number of mature broadleaved trees, as well as some newly planted Leyland cypress hedging and specimen broadleaved trees. To the west of the site boundary the mature sycamore was covered by TPO; one of the three ash trees in the centre of the site boundary was included in the TPO (but it is not clear which of the three trees is referred to); the final tree within the garden included in the TPO was the oak tree.

3.3 The sycamore had a dbh of 500 mm, and so an RPA of 6.00 m in radius, an area of 113 m²: the tree was in the range of 10 – 12 m tall, crown spread to the east was around 4 m, to the south (into the site) the spread was some 2 m and to the west the spread was approximately 3.5 m, see photo 1 In Appendix 1. The stem forked at around 4 m to give two co-dominant stems, there was ivy to around 6 m. Beneath the tree to the west was a patch of broadleaved scrub, primarily hawthorn growing to around 4 – 6 m tall, all smothered in ivy.

3.4 There were three ash trees close together in the centre of the boundary, only one of which is covered by the TPO, see photo 2. One tree was close to the boundary fence with the Island Close property, the two others were at a similar distance from the boundary fence either side of this tree in a triangular pattern. Two of the trees were in the height range of 10 – 12 m. According to the neighbours in Island Close the trees dropped frequently dead wood into their garden.

3.5 The tree closest to the boundary fence with the Island Close property had a dbh of 300 + mm: there were holly and hawthorn developing beneath the crown.

3.6 The tree to the west showed a narrow fork at 3 m with co-dominant stems, ivy had been severed but was still clinging, dead, to the stem. The tree's crown radial spread was a uniform 2 m.

3.7 The tree on the east of the group had the largest dbh of 400 mm, and so an RPA of 4.8 m in radius, an area of 72 m²: the tree's height was in the range 8 – 10 m tall, the crown spread was eccentric, some 5 m to the east, 2 m to the south and little if any development to the west because of the neighbouring trees. The tree was of poor overall form with no obvious leader, and there was ivy into the lower crown, to about 4 m.

3.8 The third tree, the oak, had a dbh of 475 mm, and so an RPA of 5.7 m radius, an area of 102 m²: the tree's height was in the range of 10 – 12 m, radial crown spread to the east was around 5 m, to the south some 3 m only. A significant limb had developed on the eastern side of the stem at around 1.2 m. The tree was smothered by ivy to mid-crown, dead wood and stubs were evident in the crown that could be assessed.

3.9 Under Table 1 Cascade chart for tree quality assessment of BS 5837 I placed all three trees in Category B1:



Category B: Trees of moderate quality with an estimated remaining life expectancy of at least 20 years.

Subcategory 1: Trees that might be included in the high category, but are downgraded because of impaired condition (e.g. presence of significant though remediable defects, including unsympathetic past management and storm damage), such that they are unlikely to be suitable for retention beyond 40 years; or trees lacking the special quality necessary to merit the category A designation

4 Arboricultural impact assessment

4.1 The impact upon the mature trees along the boundary will be neutral to positive: if the trees are to be retained in harmony with the new development then it is likely that some remedial pruning work will be required. Prior to the development taking place I believe that it would be prudent to consider the following:

- severing the ivy growing on all the retained trees, and once it has died and dried it should be stripped from the trees' stems and crowns, and
- pruning to lift the canopies and to reduce the crown spreads to provide adequate clearance for work activity, and
- removing any dead wood and stubs from the crowns of the retained trees.

4.2 If such work were to be required then it would be appropriate to engage a competent arboricultural contractor, such as an Approved Contractor of the Arboricultural Association, (<http://goo.gl/KRE0sN>) to undertake the work against a specification prepared by a competent arboricultural consultant.

5 Arboricultural method statement

5.1 BS 5837 defines the AMS at Clause 3.2 as:

methodology for the implementation of any aspect of development that is within the root protection area, or has the potential to result in loss of or damage to a tree to be retained

5.2 Damage to the retained trees' roots and the soil volumes they occupy may arise from:

- excavations, for foundations, roadways or paths for example, or
- the need to remove or install service connections and infrastructure, or
- the passage of site traffic, or
- the accidental spillage of toxic substances.

5.3 Damage to the retained trees' stems and canopies may arise from:

- accidental collisions caused by site traffic, or
- the need to erect scaffolding outside the building line to construct the development, or
- the need to allow space for crane or jib movements, or
- the encroachment of the retained tree's canopy upon the new development.

5.4 The AMS is required because a tree's roots are alive and serve two distinct purposes:

- to take up the moisture and the range of nutrients from the soil (generally dissolved or in suspension) that will allow the tree to grow, and
- to securely anchor the tree in the ground.

5.5 Roots are found at relatively shallow depths where they can access the oxygen and water held in the voids between the soil particles, allowing the take up the moisture and nutrients to take place. In consequence, soil compaction will have a negative impact as it will deny the roots the access to the oxygen and water that they need to survive and to allow the tree to thrive. Therefore, any tree roots that are at risk from work activity will require protection from damage throughout the term of the development.

5.6 Two generic control measures exist:



- to prevent access to those areas of soil where trees' roots may be found, or
 - to protect those areas of soil where trees' roots may be found from compaction.
- 5.7 On this site the ideal control measure to protect the retained trees from damage during the work activity for plots 5, 6 and 7 would be the creation of a temporary CEZ to protect their stems and crowns from accidental damage. The fence should be made up from 2m tall welded mesh panels, such as Heras Readyfence or similar, which are generally 3.5 m wide, on concrete feet. The panels should be joined together using two couplers, installed so that they can only be removed from inside the fence; the couplers should be at least 1 m apart. The panels should be supported on the inner side by stabilizer struts, which should normally be attached to a base plate secured with ground pins (see Figure 3a of BS5837 in Appendix 2 below).
- 5.8 The alignment should be as indicated on the tree protection plan in Appendix 3 (which is not to scale) as a dashed blue line and defined by the radius of the RPA from the centre of the tree for the sycamore to the west and the oak to the east. The temporary barrier fence should be tied-in securely to the existing boundary fence.
- 5.9 To offer the maximum protection to the retained trees the CEZ should remain *in situ* without breach until the development has been completed. The need to breach the CEZ may arise when erecting boundary fences between the plots for example, but the breach should not be made without the consent of the project arboriculturist and the breach should be made good as soon as practicable.
- 5.10 To ascertain the presence / absence of tree roots to the idealised foundation depth along the alignment of the foundation for the garage to plot 7 the topsoil must be excavated with care in accordance with the guidance in BS 5837:
- 7.2.1 To avoid damage to tree roots, existing ground levels should be retained within the RPA. Intrusion into soil (other than for piling) within the RPA is generally not acceptable, and topsoil within it should be retained *in situ*. However, limited manual excavation within the RPA might be acceptable, subject to justification. Such excavation should be undertaken carefully, using hand-held tools and preferably by compressed air soil displacement.
- 5.11 As the extent of the tree's roots is little more than conjecture the excavation for the foundations of the extension should be carefully carried out with hand-held tools and preferably by compressed air soil displacement, rather than by machine. The arising spoil should be stacked on ground protection measures conveniently located close to where the ground has been broken.
- 5.12 Any tree roots that are exposed during the excavation should be treated in accordance with the following details from BS 5837:
- 7.2.2 Roots, whilst exposed, should immediately be wrapped or covered to prevent desiccation and to protect them from rapid temperature changes. Any wrapping should be removed prior to backfilling, which should take place as soon as possible.
- 7.2.3 Roots smaller than 25 mm diameter may be pruned back, making a clean cut with a suitable sharp tool (e.g. bypass secateurs or handsaw), except where they occur in clumps. Roots occurring in clumps or of 25 mm diameter and over should be severed only following consultation with an arboriculturist, as such roots might be essential to the tree's health and stability.
- 7.2.4 Prior to backfilling, retained roots should be surrounded with topsoil or uncompacted sharp sand (builders' sand should not be used because of its high salt content, which is toxic to tree roots), or other loose inert granular fill, before soil or other suitable material is replaced. This material should be free of contaminants and other foreign objects potentially injurious to tree roots.
- 5.13 Depending upon the findings of the excavation the design of the foundations for the rear elevation of the garage may need to be reconsidered. A conventional trench fill foundation may not be acceptable if there are a large number of tree roots present, and an alternative foundation design using piers or piles and beams may be more appropriate to allow the tree to be retained.



6 Conclusions

- 6.1 To provide an attractive backdrop to the proposed development the mature trees along the boundary should, in my opinion, be retained, and the site drawings show that the trees have been included in the rear gardens of plots 5, 6 and 7.
- 6.2 As three of the trees are included with in a TPO the consent of the local planning authority should be sought for the following tree works to be completed, before work activity commences:
- the ivy growing on all the retained trees should be severed and stripped, and
 - the canopies should be lifted and reduced to provide adequate clearance for work activity, and
 - any dead wood and stubs should be removed.
- 6.3 Once the tree work has been completed then a single line of braced barrier fencing should be erected to protect the trees from accidental damage, the fence should be to the specification given above and illustrated in Appendix 2, and the fence should be aligned as per the tree protection plan in Appendix 3.
- 6.4 The CEZ should remain *in situ* until the development has been completed and should not be broken without the consent of the project arboriculturist.

7 Recommendations

- 7.1 I recommend that:
- 7.1.1 the trees along the northern boundary be retained, and
 - 7.1.2 consent be gained for remedial tree works, and
 - 7.1.3 a CEZ be erected that will protect the trees from accidental damage during work activity.



Appendix 1: site photos



Photo 1: the sycamore tree





Photo 2: the three ash trees



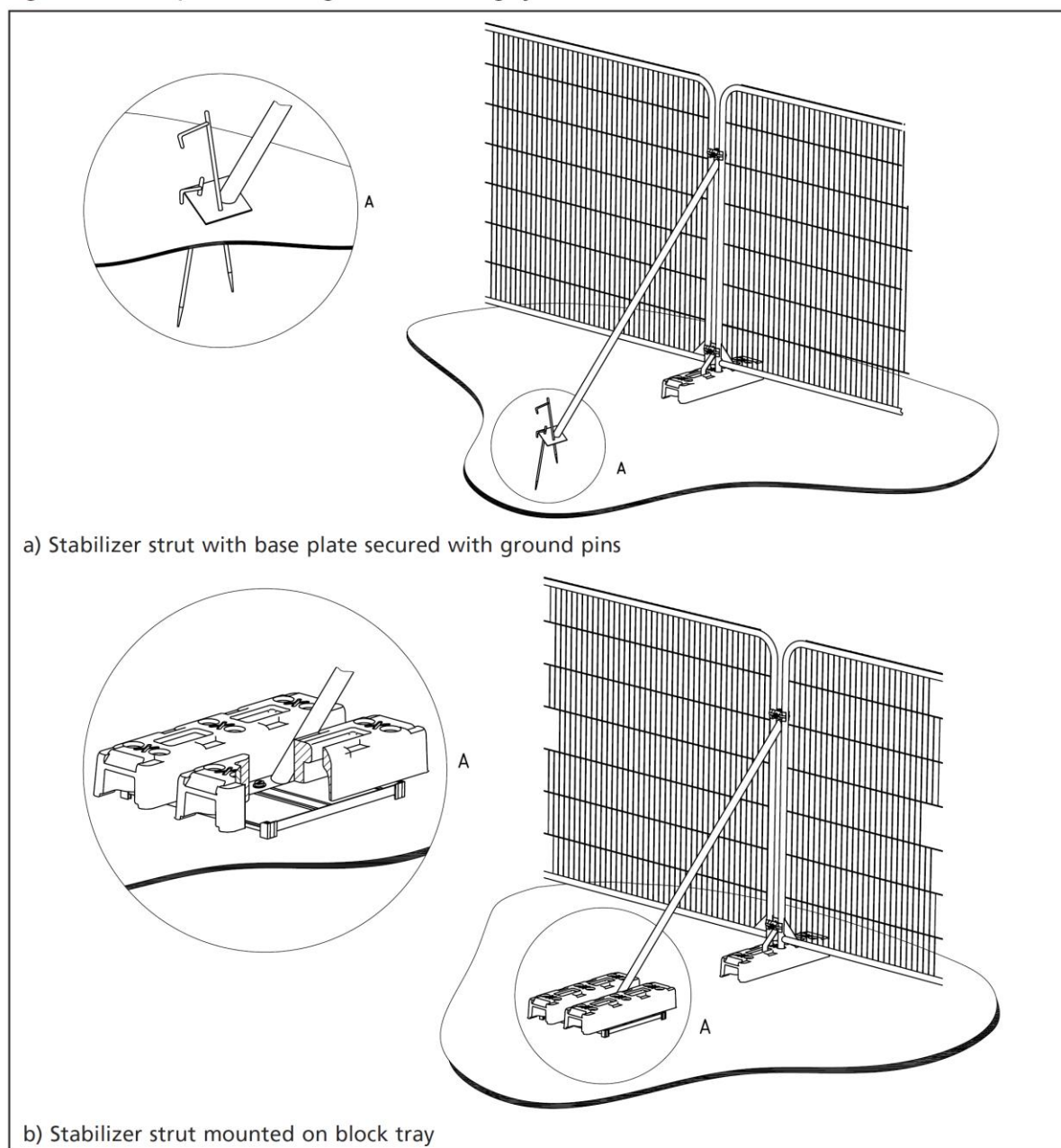


Photo 3: the oak tree

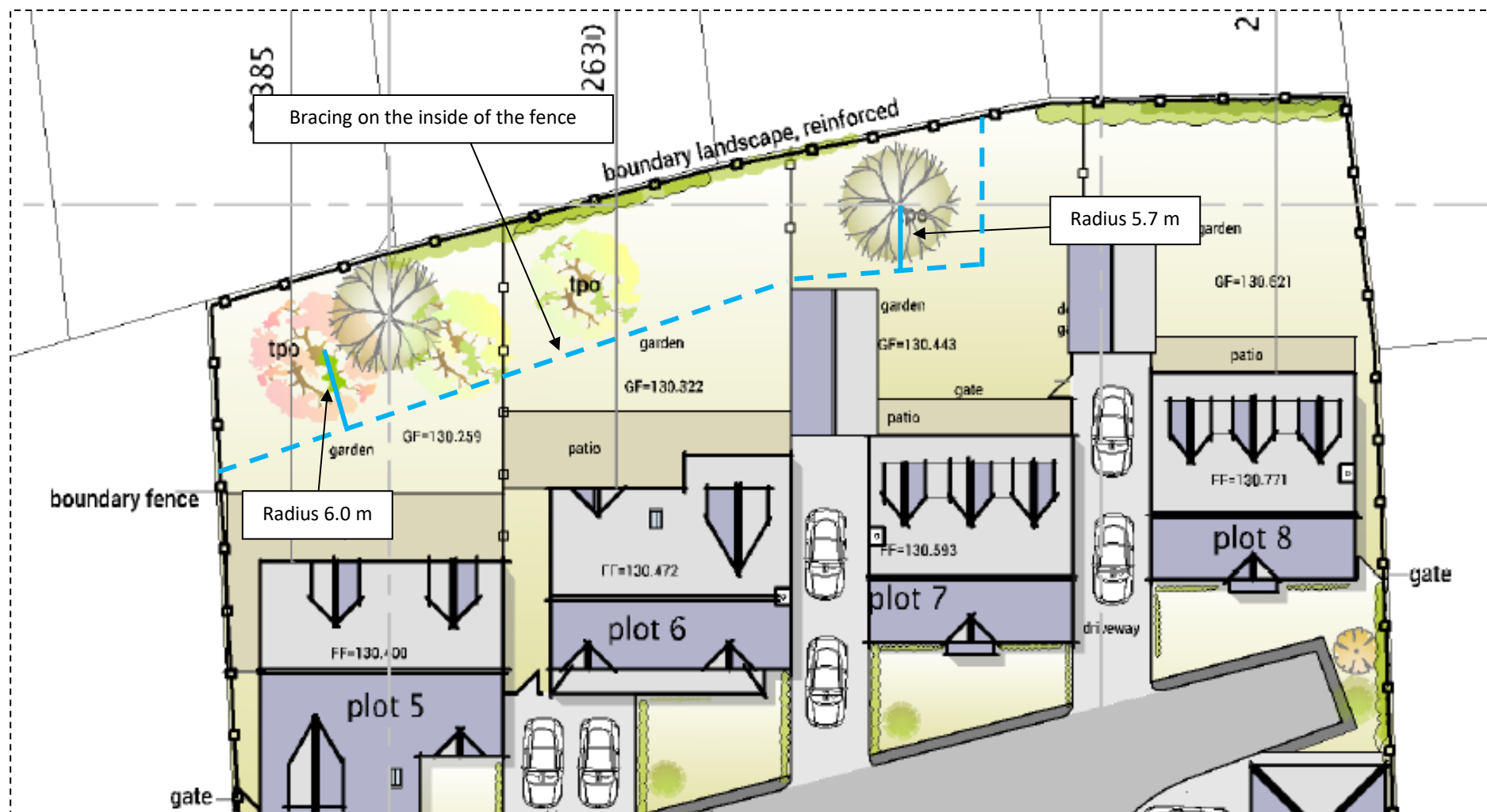


Appendix 2: the barrier fence specification from BS 5837

Figure 3 Examples of above-ground stabilizing systems



Appendix 3: the tree protection plan



Tree protection plan – indicative, not to scale

