S973-J1-PPP-1

REPORT

on trees in relation to

Ickenham United Reformed Church,
Swakeleys Road, Ickenham, UB10 8BE

For

Keith Holland

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View of the tree from Swakeleys Road

John Cromar, Dip. Arb. (RFS), F.Arbor A.

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Contents

1 Instructions

1.1 Outline

My instructions were received by email on 5 October 2022 from Keith Holland, Ickenham United Reformed Church, Swakeleys Road, Ickenham, UB10 8BE. I consider that they are in essence to report on the risk of a single tree, an English oak, causing damage by root-generated subsidence (indirect damage) to an adjoining property.

1.2 Insurance provider viewing

I am aware that an insurance provider may be shown this report and may choose to rely upon it.

2 Qualifications and received information

2.1 Qualifications

My name is John Charles Michael Cromar. I hold the Professional Diploma in Arboriculture. I am a Fellow of the Arboricultural Association. I have over thirty years' experience in arboriculture.

2.2 Subsoil

According to British Geological Survey data, the subsoil underlying the site is:
Lambeth Group - Clay, silt and sand. This has not been verified by on-site sampling. My experience from the locality with such a material is that this typically has a plasticity index of between 20 and 30%, occasionally higher.

2.3 Tree Preservation Orders

Tree Preservation Order restrictions may apply and therefore a formal application for consent should be made to the local planning authority, and consent obtained before carrying out any tree work to any such protected trees.

3 Site visit

I visited the property on 22 November 2022. Weather conditions were good; they permitted adequate inspection.

3.1 Survey method

I used a tree mallet, spade, diameter tape, laser range-finder, pocket retractable tape, binoculars, scaling pole, tree data recording software, pen, pencil and paper. No trees were climbed: inspection was from ground level.

3.2 Appraisal identification

My appraisals of observations, discussions and other data are italicised below, in each relevant section and paragraph. This emphasises the clear separation between data and opinion to assist the end-users : client, and any insurer or mortgage provider.

4 Discussion

4.1 Mechanism

A consideration of the matter of trees and the subsidence of buildings requires some discussion of the processes involved.

Transpiration is the process by which water is lost to the atmosphere from living plants. This process demands water uptake from the soil into the roots, from where it passes into the vessels of the plant, and is conducted to various parts of the plant and is finally lost to the plant mainly through pores in the leaves.

This process can dry clay soils so that they shrink and allow foundations resting on them to sink or move. (This can be termed 'indirect damage'). There is a higher risk of this happening in very low rainfall periods. The buildings constructed on those footings may then crack.

Removal of trees involved in subsidence almost always arrests further cracking, whereafter the previously dried clay will, usually fairly rapidly (i.e. within a season or two) return to its normal proportions by the natural action of rainfall, and consequently will lift the footings back to the position they were in prior to the damage, thus closing or nearly closing the cracks. Redecoration internally is often all that is then required.

Conversely, what may be termed 'direct damage' is caused by physical pressure of parts of a tree, such as roots or trunk, on a structure, and this can occur on any soil type.

4.2 Pruning

A *very regular* pruning regime to trees near buildings on clay soils *over an extended time and at close intervals* may reduce both the likelihood of damage and limit the scale of damage if it does occur. English oak in this part of the country are usually of high vitality, able to regenerate new leaves very quickly and in considerable density and numbers. This means that although transpiration will be reduced temporarily by a *severe* pruning, it will very rapidly recover as new leaves grow, which can in summer be a matter of a very few weeks. Research has demonstrated that a 50% loss of leaf does not reduce the water uptake by as much as 50% as remaining leaves generally transpire greater amounts than previously.

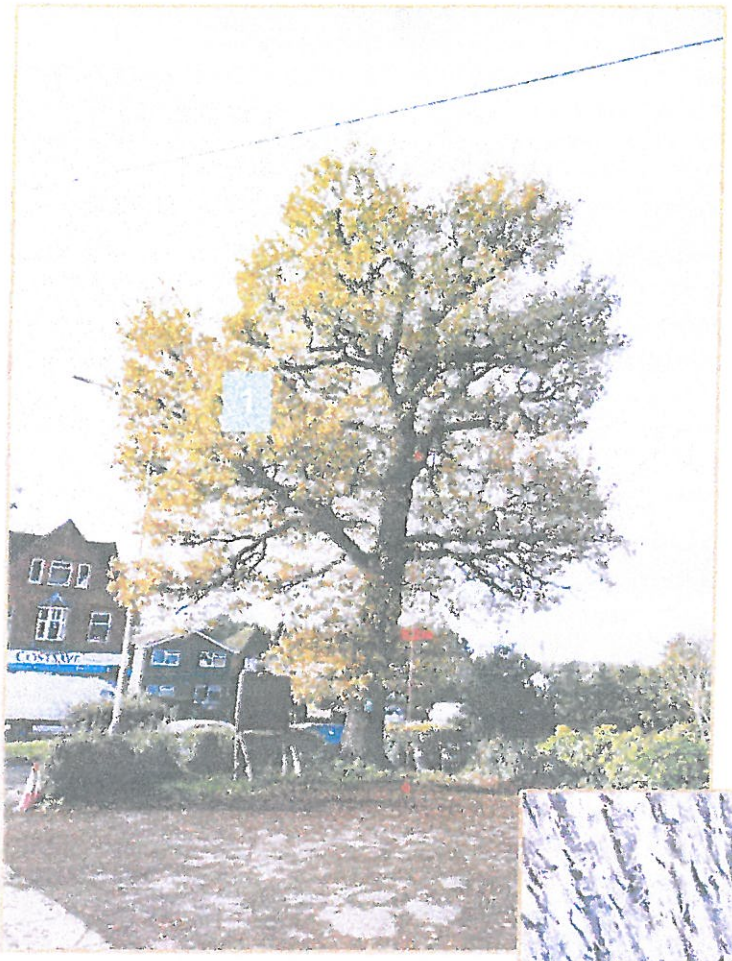
'Hortlink' project 212 'Controlling Water Use of Trees to Alleviate Subsidence Risk' (2004) established that the reduction in water use following heavy pruning of trees is lost after two seasons.

5 Tree data - brief observation and appraisal notes

Please read in conjunction with the sketch plan S973-J1-P appended.

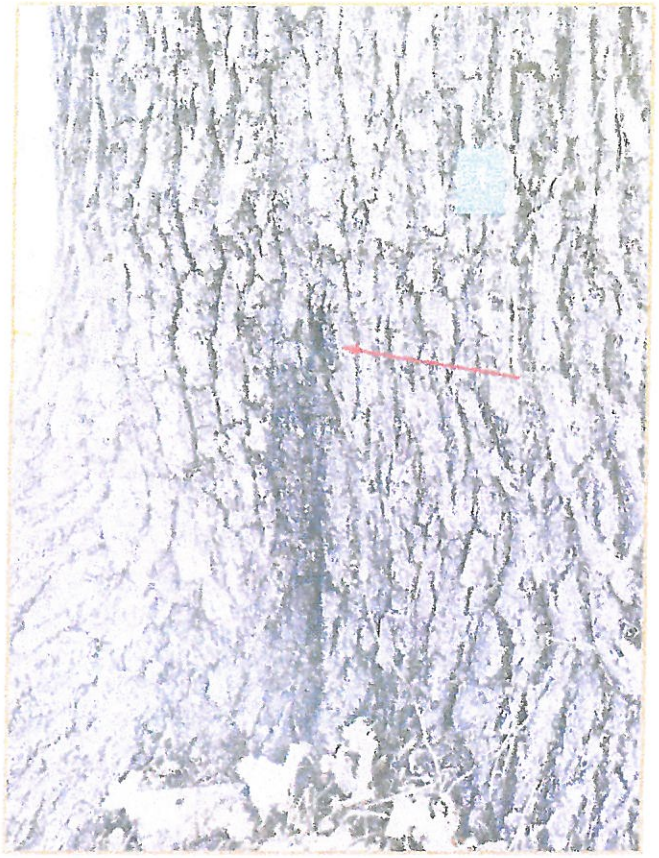
Tree number	Tree type	Height (m)	Stem diameters (mm)	Proximity (m)	Comments	Action description	Reason	Cost - £
1	English oak	15	1030	12	A tap test for the sonority typically associated with decay in trees was carried out in the basal area; nothing abnormal was detected beyond a little bark death noted on the south side of the tree but this does not appear to be associated with any deterioration of mechanically significant parts but should of cause be monitored in the course of future inspections. A single partially dried bark exudation was noted on the western side of the tree at around 400 mm above ground level. Bark exudation can be an indication of Acute Oak Decline (AOD). This 'stem bleed' was an isolated instance, apparently of some age, and I do not attach significance to it. A future increase in the numbers of exudations could be a cause for concern.	Reduce to height of 13m and spread of 13m. Pruning cuts to be limited to a diameter of no greater than 100mm	Precaution	1000

6 Photos



View of tree from the north-east

View of base of tree from the south; area of dead bark arrowed



View of base of tree from the west: old exudation arrowed

7 Further appraisal and comment

7.1

I have no specific details of the investigation of any previous damage to the adjoining dwelling no. 40. The tree is sited at a range from this structure, whereat, given the right predisposing factors such as a shrinkable subsoil below shallow footings, some soil drying could occur near or under the footings, with consequent cracking. I assume these to be a typical depth for the age of the property, which appears to have been built in the 1930s. In the circumstances, the pruning that has been carried out to date which appears to consist of regular reduction in height and spread, is considered appropriate, given the lack of background information, and hence the necessary lack of a clear objective. The last pruning was apparently carried out 3 to 4 years ago.

7.2

The work suggested cannot and should not be interpreted as a guarantee that the tree will never cause significant soil drying near the structure.

7.3

Full details of any previous occurrence or claim of damage to no. 40 if provided might give a basis upon which a fuller analysis of causation might be made with consequent adjustment to recommendations for tree maintenance.

8 Conclusions

No particular concerns in connection with tree 1 providing the recommended tree work is carried out. Shortening the pruning-repeat cycle of the tree to every two years would probably assist in generally reducing its soil drying further.

Dated: 8th December 2022

Signed:

John C. M. Cromar, Dip Arb (RFS), FArborA

9 General information

9.1 Further inspections

- A basic annual inspection should be carried out by the landowner.
- Re-inspect using a properly qualified arboriculturist, such as a Fellow of the Arboricultural Association within three years of the date of this report. This should be sooner if there is cause to consider an earlier re-inspection would be prudent; for example if obvious deterioration, gale or other damage has taken place, or fungal fruiting bodies (mushrooms or bracket-type) appear on or close to the tree.

9.2 Tree work

Any tree work should be carried out to BS 3998:2010 'Tree Work - Recommendations'.

10 Notes and limitations

10.1 Copyright

Copyright is retained by the writer. This is a report for the sole use of the client(s) named above. It may be copied and used by the client in connection with the above instruction only. Its reproduction or use in whole or in part by anyone else without the written consent of the writer is expressly forbidden.

The appended schedule of tree work, and the plan, may be reproduced to contractors for the sole purpose of tendering.

10.2 Client-supplied information

No information supplied by the client has been checked.

10.3 Material alterations

This report will be null and void if the property on which advice is sought is structurally altered in any way, or if soil levels are reduced.

10.4 Below-ground investigation

No below-ground level investigations were carried out.

10.5 Drains

No drain covers were lifted in the course of inspection; drain runs if marked are accordingly notional, and no assessment of risk to drain runs is made. It should be noted that risk of damage by tree roots is largely dependent on the condition of the *drain*; new drains laid to modern specifications are seldom damaged in any way by tree roots. Old and defective drains may leak into the soil that surrounds them. This provides a moisture rich area into which tree roots will be attracted if there are trees in the vicinity. Thereafter these roots may proliferate and grow into the faulty drain itself and may block it. A drain survey by a drain inspection firm, for example using CCTV, may be needed to establish present condition of drains.

If roots are noted inside a drain, it will sometimes be easy to link this to adjacent trees shrubs or hedges, but formal root identification may be necessary. Proper repair of the drain usually completely prevents a reoccurrence of the problem. It is not by any means always necessary to remove an 'offending' tree or shrub.

11 Schedule- Ickenham United Reformed Church, Swakeleys Road, Ickenham, UB10 8BE

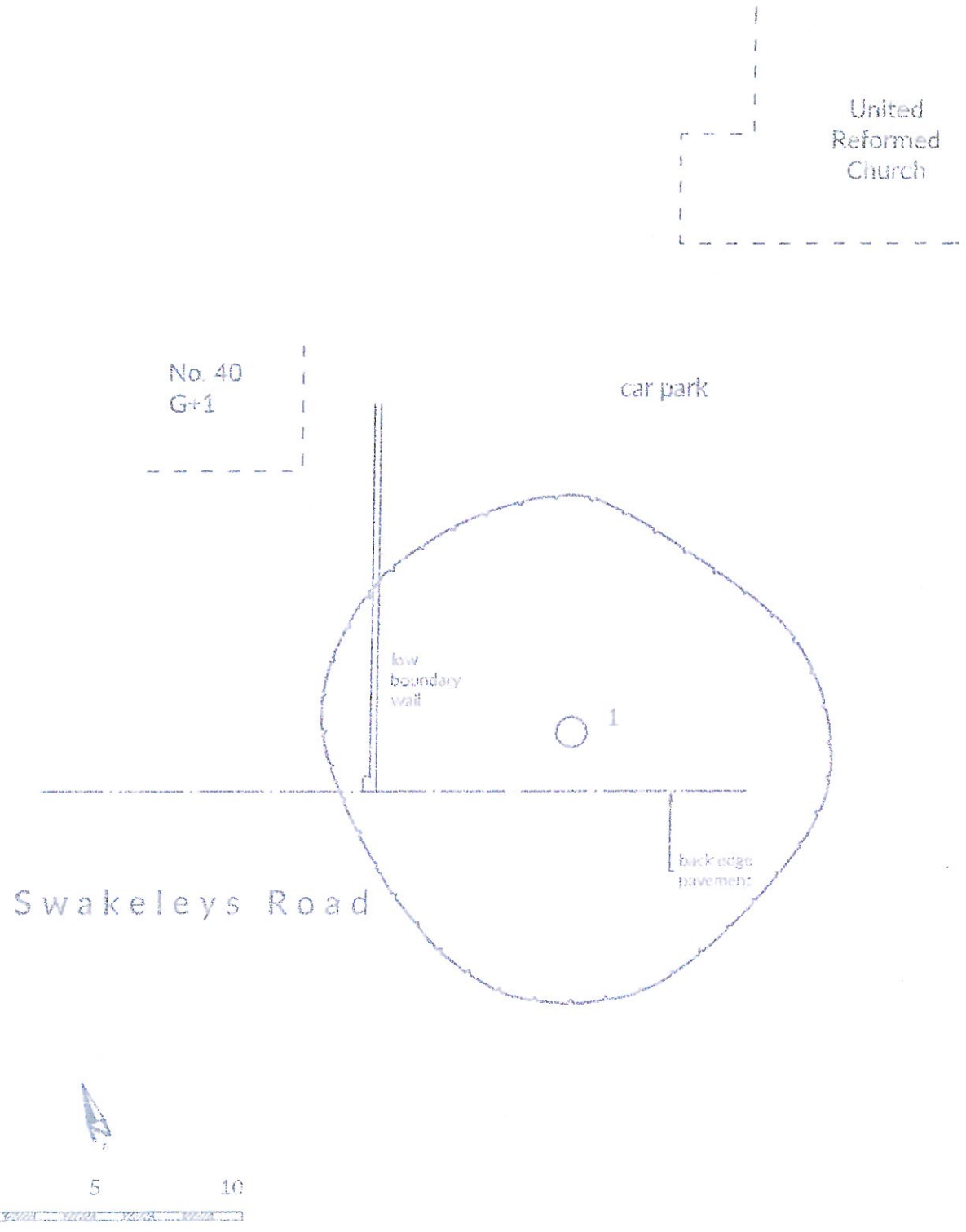
Please read in conjunction with appended plan ref: S973-J1-P v1

Tree number	Tree type	Height (m)	Stem diameters (mm)	Proximity (m)	Action description
1	English oak	15	1030	12	Reduce to height of 13m and spread of 13m. Pruning cuts to be limited to a diameter of no greater than 100mm

NOTES:

- All tree work should be carried out to BS 3998:2010 'Tree Work – Recommendations'.
- The Wildlife and Countryside Act 1981 protects (with certain exceptions) all birds and their nests. It is an offence to destroy such nests or take or injure such birds in the course of tree works operations.
- If a tree is a bat-roost, a licence to work on the tree must first be obtained from the relevant Statutory Nature Conservation Organization (in England: Natural England[1].) Acting without a licence is likely to be justifiable only in acute emergencies threatening human life and where all other legally available options such as footpath diversion, fencing and warning signs cannot be applied.
- 'Crown cleaning' – an umbrella term now covered by several separate sections in BS3998:2010 – should be understood to mean:
  - removal of foreign objects (section 7.13)
  - removal of ivy to the extent needed to facilitate inspection (section 7.12), typically trimming back (e.g. with a hedge cutter or secateurs) to near the line of the trunk or branches, and/or removing selected stems so that the structure of the tree can be seen sufficiently
  - with respect to dead wood (which can be an important ecological feature): if safe to do so, shortening and retaining, thus preserving some resource for invertebrates, etc. (section 7.3.2)

[1] Natural England can be contacted on 0300 060 3900. Their website is: https://www.gov.uk/government/organisations/natural-england



Plan drawn to approx. scale 1:200 @ A4

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