



PATRICK STILEMAN LTD

ARBORICULTURAL CONSULTANCY



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WRITTEN ARBORICULTURAL ADVICE

Site	26 Linksway, Northwood, Middlesex, HA6 2XB
Date (Rev A)	6 th May 2020
Date of site visit	12 th February 2020
Client	Aviva Wilford
Document ref	TI14012001 Rev A.

Introduction

1. Our client, Aviva Wilford, who lives at 26 Linksway, Northwood, has been informed by 360Globalnet, insurers for the property adjacent at 7 Rogers Ruff, that trees and shrubs under her ownership have caused damage to the insured's garage. Our client has been asked to remove all trees and shrubs in close proximity to the boundary opposite the house at 7 Rogers Ruff which have been assessed by an arboriculturist to be contributing to the damage.
2. Our client values the vegetation in question at the end of her garden, and does not wish to lose the screening that it provides.
3. Instruction. We are instructed to review the investigations undertaken, to carry out a site visit and to advise whether or not sufficient information has been provided to demonstrate that vegetation at 26 Linksway has caused damage to the building at 7 Rogers Ruff such that its removal as requested is necessary. We are to advise what action should be taken at this stage.
4. I undertook a site visit on 12th February 2020. I viewed the trees and shrubs from the garden of 26 Linksway only.
5. Caveat. I do not hold engineering qualifications. I have knowledge and experience of tree-related subsidence from an arboricultural perspective and advice that I give is on this basis.

6. Document status. This document has been prepared as preliminary written advice. It has not been addressed to the courts as an expert witness report compliant with Part 35 of the Civil Procedures Rules, and must not be used for this purpose.

Documents provided

7. I asked our client to request from 360Globalnet copies of all the technical investigations and reports which have informed the decision that vegetation at 26 Linksway should be removed. The request was made and the following information has been provided:
- A site investigation report dated 21st November 2019 prepared by Drainage Repair Company. This report included details of drainage, CCTV surveys of drains, foundation details, soil characteristics, and laboratory analysis of roots retrieved from trial pits.
 - Arboricultural Survey prepared by JCA Limited - JCA ref 067361337.

In addition to the formal reports listed above, I have been forwarded an email sent to Mr and Mrs Whitehead (owners of 7 Rogers Ruff) dated 30th December 2019 from Chris Whittle, Technical Claims Manager for 360Globalnet.

Summary of each document provided

Drainage Repair Company Report

8. This is an entirely factual document which does not provide any interpretation or opinion regarding the possible causes of damage to the building. It includes:
- A plan showing the position of three trial holes excavated, the position of drainage runs and inspection chambers.
 - Details of CCTV drainage surveys. These show that the foul drainage has pipe deformation of 5%-10% along two runs, and that along two other runs there are no visible defects. It shows that the storm water pipes are broken with a large displaced joint, debris and root ingress which resulted in the abandonment of the survey. The report recommends the replacement of pipework within the storm drains (Run 4 & Run 5).
 - Details of three trial holes which show the building's foundation depth to be 1.1 metres, a description of roots seen, and a field description of the soil.

- Summary of soil laboratory tests. Tests were carried out to soil taken from two trial pits only - TP1 and TP2 - both located along the northern side of the garage. There are no soil results from TP3 positioned close to the south-eastern corner of the garage. The results from TP1 and TP2 show that soil moisture content ranges from 22% - 24%. The results show that the plasticity index (the extent to which a soil can change in volume due to water content) is 41% between a depth of 2.0 & 2.5m in TP1, and is 36% between a depth of 1.5 and 2.0m in TP2.
- A summary from Richardson's Botanical Identification showing that in TP1 and in TP2 the roots identified (11 and 10 in number respectively) were of the *Carpinus* genus only, and that in TP3 two roots were 'similar in many ways' to *Ilex*, and that two roots were 'most referable' to *Prunus*.

Arboricultural Survey

9. Salient points that I take from the JCA Arboricultural Survey are as follows:

- In 1.2.2 the report confirms that it has been prepared in light of site investigations undertaken by others.
- In 1.3.2 this report describes the nature of damage to the building in the following terms '*Damage in the form of cracking has occurred primarily to the garage, where this adjoins the main building*'.
- In 3.3 the report sets out the soil properties taken from the lab results and concludes that: in TP1 the soil is of high shrinkability and is desiccated; and that soil taken from TP2 is of medium shrinkability and is desiccated. It confirms that no analysis is available for trial hole TP3.
- In 3.4 the report summarises the Richardson's root identification results.
- In Section 4 the report sets out that the legal status of trees was checked in October 2019 and that trees within the grounds of 7 Rogers Ruff (T1, G2, T4, T5, T6 and T7 are protected by a tree preservation order (TPO). In Section 7 it states that trees at 26 Linksway (G3 of the JCA survey) are not protected by a TPO.
- In Section 6 the report concludes that '*some subsidence damage has occurred as a result of drying shrinkage caused by vegetation within influencing distance of the property*'. It concludes that the mature hornbeam located at 7 Rogers Ruff (T1 of the JCA report) and that the tree group close to the boundary located at 26 Linksway (G3 of the JCA report) should be removed.

30th December email from Chris Whittle (Technical Claims Manager for 360Globalnet).

10. This email sent to the owners of 7 Rogers Ruff states:

- That 'significant issues' exist with the drainage around the garage. It states that although they remain of the view that vegetation is the cause of movement the defective drainage has the potential to be a contributory factor, and should be repaired.
- That the arborist has assessed trees T1 and G3 to be the most likely cause of movement to the garage - a position which is agreed with by the insurers.
- That T1 is protected by a TPO, but that G3 is not. Consent from the local authority is therefore required for the removal of T1, and that in order to persuade the council to allow this further evidence is required in the form of level monitoring. This is in the process of being put in hand, and that once sufficient evidence is available to implicate the tree an application shall be sent to the council for its removal.

Legal status of the trees

11. The London Borough of Hillingdon has a searchable GIS map on their website allowing the user to check TPOs, with helpful links enabling the user to download scanned copies of the relevant TPO documents. Using this I established that the advice in the JCA report that trees in their G3 are not protected by a TPO is not entirely correct.
12. TPO 95 (made in 1971) comprises twelve individual trees, three tree groups and one area - A1. The area element of the TPO includes 7 Rogers Ruff in its entirety, and the end section of the garden at 26 Linksway in which the whole of G3 is located. I have copied below an extract from the TPO plan which on which the dotted line shows the extent of Area A1. I have added a blue arrow to show the eastern extent by which A1 extends back into 26 Linksway.

Extract from TPO 95 plan. Blue arrow shows area A1 boundary extending into 26 Linksway



13. Being an 'area' designation TPO, only trees present at the time that it was made are protected by it. The TPO was made in 1971, so trees younger than 49 years are not protected. Of the trees that I surveyed close to the rear boundary of 26 Linksway the majority of trees are younger than this'. The oak tree (Tree PS3) has a stem diameter of 340mm and is most likely younger than 49 years. The hornbeam PS5 is a mature tree highly likely to be older than 49 years and is therefore protected by the TPO.

Details of trees close to the end (western) boundary of 26 Linksway

14. During my site visit I recorded information relating to individual trees and groups of trees close to the western boundary of 26 Linksway, adjacent to 7 Rogers Ruff. I have shown the indicative position of these on a Tree Location Plan which I have included on Page 10. To avoid numbering confusion with the JCA report I have prefixed each individual tree surveyed with the letters PS, and each tree / shrub group with the letters PSG. Relevant details are as follows:
15. **PSG1.** This group was not included in the JCA survey and is to the south of JCA G3 (refer to Tree Location Plan on Page 10). It comprises two slender, early-mature Lawson cypress trees with heights of approximately 16 metres in addition to smaller holly and hornbeam trees. The closest tree in PSG1 to the garage at 7 Rogers Ruff is 11 metres.

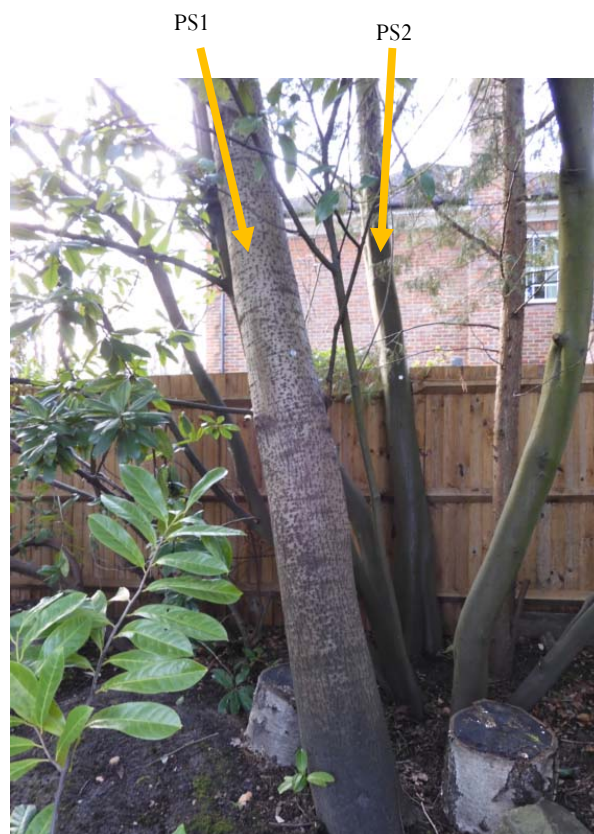
16. **PSG2.** This is a small group comprising rhododendron and cherry laurel shrubs with heights from 4-7 metres. The group provides some screening function though this is limited to a degree by the slightly gappy nature of the stems. The closest stems in PSG2 to the garage at 7 Rogers Ruff is approximately 4 metres.
17. **PSG3.** This group is directly opposite the garage at 7 Rogers Ruff and comprises holly, hazel, cherry laurel, and Lawson cypress. The component plants have heights ranging from 4 metres to 12 metres, predominantly with slender, upright stems. The group is largely made up of evergreen plants and provides useful year-round boundary screening.
18. **PS1.** This is an early-mature aspen with a height of 16 metres and stem diameter of 310mm. The stem has moderate lean and the crown pronounced asymmetry to the south-west over the driveway of 7 Rogers Ruff. The tree's stem is positioned 5.8 metres from the corner of the garage at 7 Rogers Ruff. I have tagged the tree with number 129.
19. **PS2.** This is a young, slender hornbeam with a stem diameter of 210mm and height of approximately 9 metres. The tree is growing partially through the boundary fence at a distance of 4.5m from the corner of the garage at 7 Rogers Ruff. I have tagged the tree with number 130.
20. **PS3.** This is an early-mature pedunculate oak tree with a height of 16 metres and stem diameter of 340mm. It is located at a distance of 4.2 metres from the garage at 7 Rogers Ruff. I have tagged the tree with number 131.
21. **PS4.** This is a young hornbeam with a height of 12 metres and slender stem with a diameter of 110mm. The tree is located 3.7 metres from the north-eastern corner of the garage at 7 Rogers Ruff. I have tagged the tree with number 132.
22. **PS5.** This is a mature hornbeam with a height of 10 metres. It has two stems from ground level with diameters of 340 and 320mm. The tree has basal damage apparently caused by a historic bonfire, and significant basal decay, with extensive colonization on its west side by the fungus *Kretzschmaria deusta*. The tree has a small canopy having been subjected to heavy past reduction, and is located at a distance of approximately 6 metres from the garage at 7 Rogers Ruff. I have tagged the tree with number 133.
23. **PS6.** This is an early-mature cherry plum positioned to the north of the JCA G3 boundary. The tree has a height of approximately 8 metres and has a small crown volume having been previously reduced. The tree is located approximately 8 metres from the garage. A tag has not been added.

Photographs

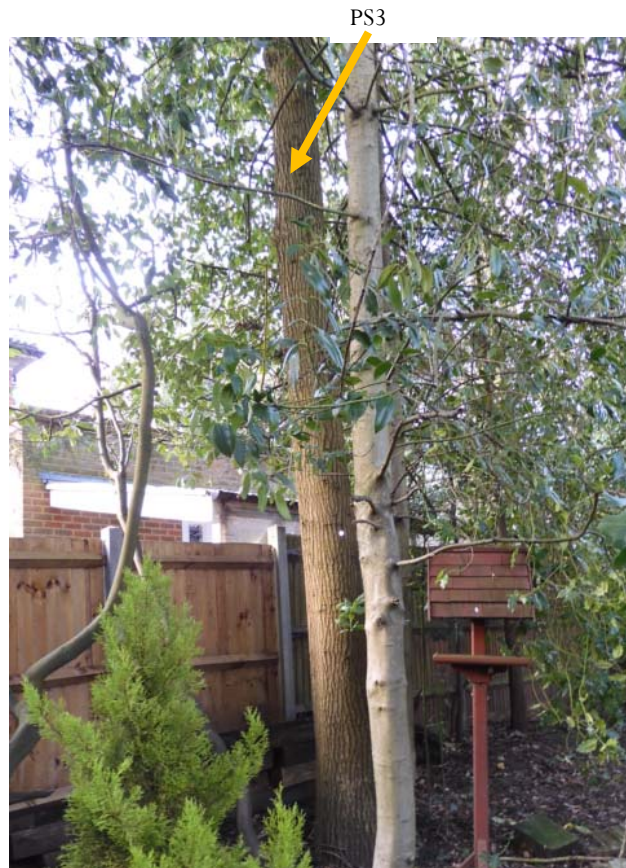
Photograph 1



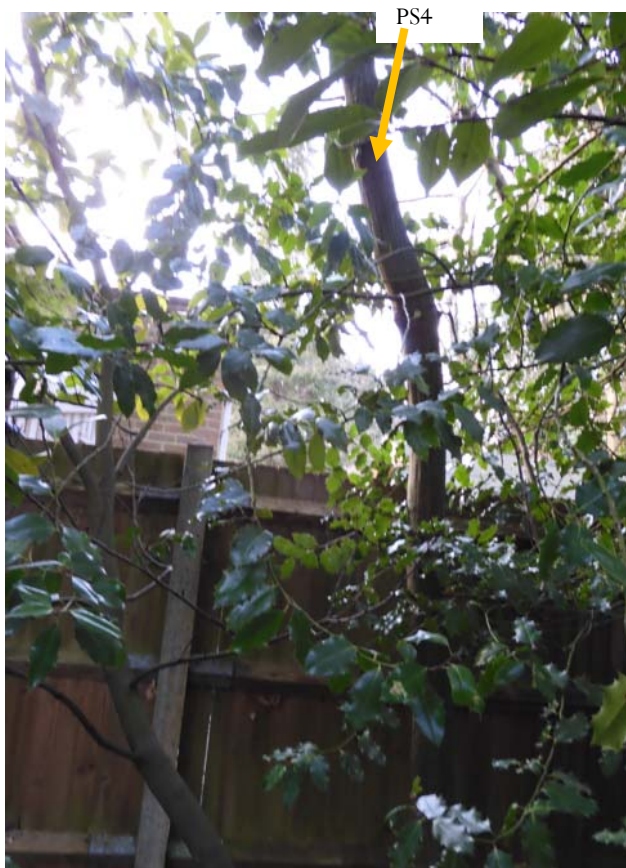
Photograph 2



Photograph 3



Photograph 4



Photograph 5

PS5



TREE LOCATION PLAN

SITE ADDRESS
26 Linksway, Northwood, Middlesex,
HA6 2XB

CLIENT
Aviva Wilford

JOB REF
T1140712001

DRAWING NO
T1140712001.01

DATE
06/05/2020

Patrick Stileman Ltd
9 Chestnut Drive, Berkhamsted, Herts,
HP4 2JL 01442 866112



KEY

● Approximate position of individual tree

○ Approximate extent of tree / shrub group

○ Approximate extent of tree group G3 shown on JCA Site Plan



Discussion

24. No engineering report has been provided in which the damage to the building or the mechanism of its cause has been described and assessed. The arboricultural report appears to be concluding the cause of damage; however it is not the role of an arboriculturist to determine the cause of damage to a building in the absence of an engineer, particularly with the limited information available at this stage.
25. The arboricultural report makes no mention of the broken drains, and does not explain why this has been ruled out as the cause. The likely influence of broken drains on the property should be considered by an engineer. Defective drains can be the cause of building damage, and this is acknowledged in Chris Whittle's email (see 10).
26. Soil samples have only been tested to determine their properties and moisture content from TP1 & TP2 - both on the northern side of the garage facing T1 of the JCA survey. T1 is a large, dominant hornbeam located at a distance of around 4 metres from the garage. Soil properties from TP3 on the southern side of the garage are not known.
27. The JCA report describes the soil samples from TP1 and TP2 as desiccated. There is no control trial pit away from the influence of trees in order to compare moisture content profiles, and the report does not set out how this conclusion was drawn. The JCA report does not describe the extent of desiccation, or the relevance of samples being taken during the autumn (samples were taken on 14th October). I accept that the water content is low; however this does not in itself prove desiccation in the absence of other information.
28. If the soil in TP1 and TP2 is desiccated as a consequence of vegetation I consider that the most likely cause of this would be the large, mature hornbeam (T1) within Rogers Ruff close to and directly opposite the garage. The root analysis samples from TP1 and TP2 largely support this proposition with all identified roots in these pits being hornbeam.
29. A small number of root samples were taken from TP3 on the southern side of the garage, and these were identified as probably holly and Prunus (a genus which includes cherry laurel). It is apparent that these roots will almost certainly originate from plants within JCA G3; however this in itself is not surprising and in isolation (particularly given the lack of soil information from TP3 and monitoring) this does not demonstrate that trees are the cause of damage.

30. Level monitoring is the most effective way of assessing the influence of vegetation. Undertaken over a period of time it assesses which parts of the building are moving, the direction and speed of movement. If continued regularly over the course of at least one full year the movement across seasons can be seen and this is most instructive for the determination of cause. In his email to the owners of 7 Rogers Ruff, Chris Whittle states that because T1 is protected by a TPO level monitoring shall be required to provide sufficient justification for its removal to the local authority. He states that level monitoring shall commence shortly. It seems entirely reasonable that these results should also be obtained to inform management of trees at 26 Linksway.
31. I do consider that damage to the garage as a consequence of tree influence is entirely plausible, and it is possible that trees at 26 Linksway could be a contributing factor. However, based on the information provided at this stage I consider that this has not been adequately demonstrated and that it is premature for demands to be made on our client for all vegetation close to their end boundary to be removed. Loss of all trees and shrubs highlighted in the JCA report as G3 would have a significantly detrimental effect on their privacy due to the loss of screening provided.
32. It is the case that the soil tests undertaken show that the soil has a significant clay content with moderate to high capacity for volumetric change as a consequence of changing moisture content. The aspen (PS1) and oak (PS3) are in close proximity to the garage structure. These trees are the largest within the group, with both having high future growth potential. Oak and aspen (poplar genus) are classified by the National House Building Council (NHBC) as having high water demand. It appears that whether or not they are contributing to damage now there would be an ever-increasing risk of them doing so in the future. Both trees provide limited contribution to the screen, do not have high amenity value, and I recommend that they are removed.
33. Trees PS2 and PS4 are young hornbeams in close proximity to the garage. Given the small crown size of these I consider it unlikely that they would be currently contributing to building damage if vegetation is the cause. However, the trees have high growth potential and the risk that they pose of causing damage would increase in the future if allowed to grow unchecked. These trees are very limited components of the screen and I recommend that they are also removed because of the long-term unsustainability of their location.
34. The mature hornbeam PS5 has a small crown as a consequence of past heavy reduction, and I consider it unlikely that it would be a contributory factor if vegetation is the cause of damage to the building. However, given the extent of basal decay I consider that there is a foreseeable hazard of its structural failure and I recommend that it be removed on the grounds of safety.

Recommendations

35. I recommend that the following trees are removed within the next three months:
- PS1 (tag 129) - aspen
 - PS2 (tag 130) - hornbeam
 - PS3 (tag 131) - pedunculate oak
 - PS4 (tag 132) - hornbeam
 - PS5 (tag 133) - hornbeam
36. I recommend that the groups PSG1, PSG2, and PSG3 are retained with no work undertaken to them at this stage.
37. Work should be undertaken by professional arboricultural contractors, ideally approved by the Arboricultural Association. <https://www.trees.org.uk/ARB-Approved-Contractor-Directory>.
38. PS5 is protected by the TPO and there is a slim chance that PS1 and PS3 are also protected by it (see 11-13). I do not consider that PS2 and PS4 are protected; however for the sake of openness, and for the avoidance of confusion I recommend that a TPO application is made to the London Borough of Hillingdon for all work recommended.

Conclusions

39. Insufficient evidence has been provided to adequately demonstrate that trees are the cause of damage to the garage at 7 Rogers Ruff. An engineer does not appear to have been consulted to describe the nature of damage or its cause, the significance of the broken drain has not been addressed, the nature of soil has been tested on one side of the garage only with no control trial pits away from the influence of trees for comparison, and no level monitoring has been undertaken.
40. I consider that if vegetation is the reason for damage, T1 of the JCA survey (within the grounds of 7 Rogers Ruff) is the most likely cause. There is a possibility that vegetation with JCA G3 is also a contributory factor; however if it is the most likely elements of this causing damage would be the aspen and oak (PS1 and PS3) which are the largest trees with highest water demand.

41. I consider that Tree PS1 - PS4 are in an unsustainable location given their species, high growth potential, close proximity to the structure, and known medium / high plasticity index of the soil. These trees contribute very little to the screen and I consider that it would be prudent to remove them regardless of what level monitoring results show. I do not consider it likely that PS5 would contribute to building damage given its small crown volume; however I recommend that this tree be removed due to its structural instability.
42. I do not consider that sufficient evidence has been provided at this stage to justify the removal of all vegetation within JCA G3. The shrubs and small trees within this group are relatively small with low growth potential, generally with low water demand, and are highly valued for their screening function.
43. If it is demonstrated that vegetation is the cause of building damage, I consider that the removal of JCA T1 and PS1 - PS5 could well be sufficient to provide building stability, with this comprising the loss of significant crown volume and leaf area. I recommend that, following the removal of these trees, monitoring is continued for sufficient time to establish if this has stabilized the building or not.

This completes my advice to date.

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