Courtney Smith

CHARTERED LOSS ADJUSTERS

lease reply to : A J Westgate

Date : 13 June 2019

Our ref : [redacted]

Your ref :

Dear Mr Haba

Woodstock Priory Court Management Ltd
83 Priory Road, London, NW6 3NL
Subsidence

We are the Loss Adjusters instructed on behalf of Aviva with regard to a Subsidence damage claim on 83 Priory Road.

We understand that you are the Freeholder of 85 Priory Road and the following letter confirms details of works required to trees in the front garden of your property these trees having been indicted as part of the cause of the damage to 83 Priory Road.

Following receipt of a Report from John Cromars Arboricultural Company Ltd, copy attached for your reference it is considered that trees on your land and also within the front garden of No 81 have had an effect upon the foundations of No 83.

The Lime tree in the front garden of 81 is apparently being taken down fairly soon but you will note that the suggestion is for pollarding of trees T3, T4 and T5 which are located on your land.

We confirm the purpose of this letter is in the first instance to respectfully request that you undertake the works noted in the arboricultural company Ltd's Report to mitigate the damage which is occurring at No 83. Monitoring of the situation has confirmed seasonal movement which is as a result of the effects of the tree roots.

Also, our Principals reserve the right to recover from you (your Liability Insurers) any costs incurred in rectifying the damage caused by the roots of the trees.

Cont'd....

[redacted]

Cont'd....

We confirm this letter is made on behalf of Insurers and not at the instigation of the owners of 83 Priory Road.

We recommend you seek the services of an insurance backed tree surgeon and request them to check with the Local Authority that there are no restrictions to undertake any tree works.

Should you wish to seek a second opinion we look forward to that detail in due course.

If you are not the legal owners of this property could you please advise who is if you have that knowledge.

We look forward to hearing from you within the next 28 days of the date of this letter to confirm the course of action you are proposing to take.

Should you have any queries please do not hesitate to contact the writer.

Yours faithfully

[redacted]

1-38-4825

REPORT

on trees in relation to
83 Priory Road, London NW6 3NL
for Redbourne Consultants

[redacted]

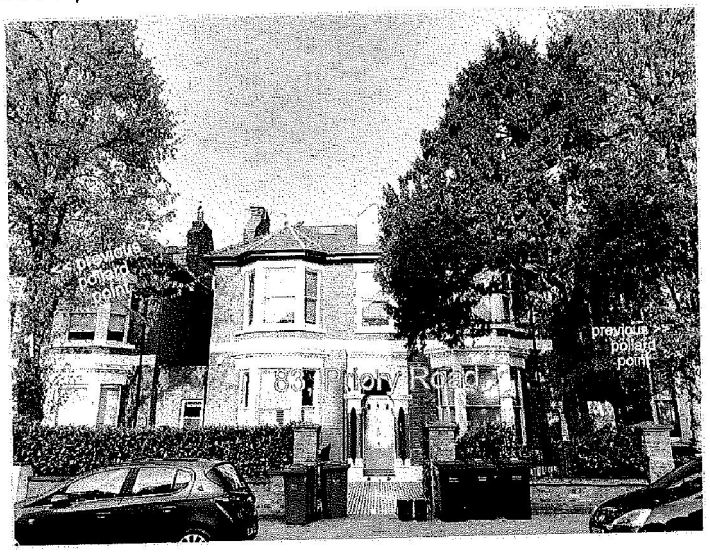
on behalf of Woodstock Priory Court Management Ltd and their insurers
via: Courtney Smith

[redacted]

INSURED: Woodstock Priory Court Management Ltd
(7th May 2019)

JOHN CROMAR'S
ARBORICULTURAL
COMPANY LIMITED

[redacted]



John Cromar, Dip. Arb. (RFS), F. Arbor. A.
Registered Consultant of the Arboricultural Association

[redacted]

1 Introduction and instructions

This is a tree and building subsidence matter. I am instructed by Redbourne Consultants on behalf of Woodstock Priory Court Management Ltd and their insurers. I consider my instructions in essence to be to report on the applicability of tree pruning or removal to control a reported subsidence problem at 83 Priory Road, London NW6 3NL. Accordingly, I visited the property on 24th April, 2019 in order to carry out an inspection.

2 Report limitations

2.1 Client use

This is a report for the sole use in connection with the above matter only of the client named above and the client's professional advisors. It may be copied and used by the client. 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, without the written consent of the writer, be reproduced to contractors for the sole purpose of tendering.***

2.2 Preliminary nature

This report is preliminary in nature in that further investigations may be identified as necessary in order to reach firm conclusions and/or recommendation(s) for action.

2.3 Not a full safety survey

This is primarily an arboricultural report. Whilst comments relating to matters involving built structures or soil data may appear, any opinion thus expressed should be viewed as qualified, and confirmation from an appropriately qualified professional sought. Such points are usually clearly identified within the body of the report.

This is ***not a full arboricultural safety survey***. This can be supplied but will be subject to a further fee. Where matters of tree condition with a safety implication are noted during an inspection they will of course appear in the report.

2.4 Tree management recommendations

It will be appreciated, and deemed to be accepted by the client, that the formulation of recommendations for the management of trees will be guided by:

1. the need to address reasons for damage;
2. the cost-benefit analysis (cost being in terms of amenity), of tree work that would remove all risk of tree related damage; and
3. the arboricultural considerations—safety, good practice and aesthetics.

2.5 External sources

The client is also deemed to have accepted the limitations placed upon any recommendations by the sources quoted at 3 and 4 below and, especially in view of the inherent uncertainties of climate to accept recommendations in respect of indirect damage as formulated to reduce risk rather than as a guarantee of zero risk. Where sources are limited by externally imposed time or cost restraints this will be identified in the report and may lead to an incomplete quantification of risk. No responsibility can be accepted for the consequences in such a case.

2.6 Re-inspection timescale

Conclusions and recommendations in respect of trees retained on site are valid for a period of three years from the date of inspection, after which a re-inspection is recommended. This is important if new risks such as from trees growing from wind-sown seeds are to be identified, and risks that may be developing as a result of changes to the site, e.g. trees that start to grow at an increased rate due to alterations in immediate environs.

3 Sources and Documents

3.1 Documents supplied

A ground level external inspection was made. Documents supplied and to hand are as follows:

Soil condition report	**Meridian Soils Limited**
Root analysis report	**Richardson's Botanical Identifications**
Consulting engineer	**Redbourne Consultants**
Consulting engineer report type	**Interpretive**
Description of damage	**Redbourne Consultants**
Geotechnical report	**Meridian Soils Limited**
Monitoring records	**RC Crack Monitoring Services**
Loss adjusters	**Courtney Smith**
Neighbour's Tree Report	**MWA Arboriculture Ltd**

3.2 Matters reported by documents

Cracking			Dwelling built c. Victorian/early Edwardian period Extensions built c. *No report received* Cracking to retaining walls of lightwells
Date of onset			*No report received*
Footings/Soil	TP1	A - 0.05 B- 0.47	Shingle capping over concrete over made ground. Made ground extends below footings
	TP2	A- 0.05 B-0.40	Shingle capping over concrete over made ground. Made ground extends below footings
	BH1	5.00	Made ground overlying clay.
	BH2	5.00	Made ground overlying clay.
P.I. range	All		37-50%
Desiccation	BH1	5.00	Report received states there does not appear to be any sign of significant desiccation. (Date of investigation 14.02.2019.) Borehole dry and open on completion
	BH2	5.00	Report received states there is possible significant desiccation around 1m below ground level. (Date of investigation 14.02.2019.) Borehole dry and open on completion

Roots	**TP1A, u/s footing - R.1**		
	15 no.	Examined root: TILIA (Lime).	Alive, recently*.
	7 no.	Examined root: PRUNUS species (Cherries, Plums and Damsons, Almonds, Peaches and Apricots, Blackthorn/Sloe, as well as the shrubby Cherry-laurel and Portugal-laurel).	Alive, recently*.
	7 no.	Unfortunately all with insufficient cells for identification.	
	TP1B, u/s footing - R.2		
	22 no.	Examined root: TILIA (Lime).	Alive, recently*.
	5 no.	Examined root: an herbaceous (non-woody) plant.	
	BH1, 1.00m - R.3		
	1 no.	Examined root: TILIA (Lime).	Alive, recently*.
	TP2A, u/s footing - R.1		
	42 no.	Examined root: TILIA (Lime).	Alive, recently*.
	TP2B, u/s footing - R.2		
	4 no.	Examined root: TILIA (Lime).	Dead*.
	10 no.	Unfortunately all with insufficient cells for identification.	
	BH2, 1.00m - R.3		
	2 no.	Examined root: TILIA (Lime).	Alive, recently*.
	13 no.	Unfortunately all with insufficient cells for identification.	
	BH1	To 5.0	
		0.05	Abundant fine and fibrous roots.
		0.47	Abundant fine and fibrous roots.
		1.00	Occasional fine and fibrous roots.
	BH1	To 5.0	
		0.05	Abundant fine to coarse roots.
		0.40	Fine and fibrous roots.
		1.00	Fine and fibrous roots.
Drains			No report received.
Monitoring			Records to hand for period: 21.01.2019 to 12.03.2019

4 Appraisal

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. 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 Footings

The footings were not noted to be particularly shallow. On heavily-worked agricultural clay soils, obvious cracking related to drying can open up to a metre or perhaps more in depth during droughts, but this depth of cracking is rarely seen in other circumstances. I therefore consider it more likely that damage by soil drying involved the roots of vegetation. An impermeable cap covered the trial pit locations TP1 and TP2 and these were, naturally enough, adjacent to the footings. This would have effectively retarded or prevented simple evaporation. It can therefore safely be concluded that a root system would be needed to cause any soil drying below the footings.

4.3 State of borehole

The boreholes are reported to have been dry and open on completion, suggesting that drain failure is unlikely to be significant in the damage. I will of course defer to the structural professionals on all purely structural matters.

4.4 State of borehole

Made ground was noted in borehole 1 extending below footing level by 0.93m. Movements can occur in such material allowing foundations founded in it to sink. Such movements are typically associated with saturation of the soil, but can occur unpredictably under other conditions. I will of course defer to the appropriate professionals on all purely structural and geotechnical matters.

4.5 Filter paper suction test profile

The filter paper suction test profile indicates no elevated suctions at the time of testing in BH1; marginally elevated suctions in BH2. It should be noted however that the samples were taken at a time of year when subsoil is typically at its wettest. It does not rule out desiccation at other times of year.

4.6 Root identification

The root identification indicates that vegetation near the property (lime trees) has developed roots close to or under the footings. Questions therefore arise over how such vegetation could be managed in order to reduce soil drying near the footings.

	RC REF:	TEMP	2.5	9
	1777/18	DATE	21.03.19	12.03.19
No:	POSITION	KW	INIT RDG	RDG/DIF
1y	Front left hand light - well On left hand wall	2.8	51.33	51.24 -0.09
2x	Front left hand light - well On left hand wall	3.5	56.22	55.32 -0.90
3y	Front right hand light - well Horizontal on front wall	2.0	51.28	50.96 -0.32
4y	Front right hand light - well Horizontal on front wall	2.9	78.49	77.54 -0.95

4.7 Monitoring

Monitoring confirms that cracks have closed significantly. The range of movement observed (highlighted) is in excess of what might be expected from purely thermal movements. Such closure is confirmatory of a seasonal

pattern of damage typical of the involvement of vegetation : cracks typically open in summer and close in winter.

4.8 Pruning

Pruning to trees to reduce soil drying near buildings is generally unreliable unless repeated frequently. It is most likely to be effective when there is considerable separation between the affected building and the tree. This is not the case here. A *very regular* pruning regime to trees near buildings *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. Common lime trees in this part of the country are usually of high vitality, and are also inherently vigorous trees, being hybrids, 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. A single heavy pruning will not succeed in my view in remedying the situation reliably. Sometimes a single pruning may be followed by a period of normal or wet weather, which may allow more credit to be given to the pruning as having effected a 'cure' than is strictly due. '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. In this case both tree 1 and trees 3, 4, 5 are neglected pollards. The trees all seem to have last been truly pollarded around or just after major drought years 1995/1996.

4.9 Pollarding

In view of all the above, I consider that maintaining certain lime trees on a bi-annual basis as pollards is likely to be successful in controlling soil drying close to the trees. From the environmental perspective, retention of large crowns of trees is very desirable. There are now good data to show that large trees have a significant cooling effect in cities. Sizeable parts of our population (the very old, the very young and the infirm) are especially sensitive to the effects of high summer temperatures. Trees also intercept particulates effectively. The retention of large trees is thus now a human health issue, pressingly so in cities. It requires wider recognition and calls strongly for a flexibility of approach in resolving structural damage issues, and certainly requires local authorities and central government to promptly find methods for maintaining strategically effective canopy cover in our large towns and cities, whilst accepting the legal rights of individual parties to find remedies via the courts.

4.10 Heave

Trees certainly do not pre-date the structure. Heave, as far as tree/building relationships are concerned, is the (usually upward) movement of structures founded on clay soils, this becoming of general relevance when damage also occurs, when clay soil absorbs moisture after it has been desiccated, often by tree roots. Such desiccation can cause problems if trees that have caused the desiccation are removed, as swelling of the subsoil can occur,

forcing some structures upward. Heave can only occur in certain fairly precise circumstances. For there to be even a potential for heave, an adjacent building (in whole or in part) must at least postdate the tree or have been previously distorted by the action of the tree, then patched and repaired, perhaps over many years, and there must be a significant persistent moisture deficit in a shrinkable soil below the property. Heave consequent to tree removal is not considered a significant threat in this case

4.11 Statutory constraints

Conservation Area restrictions do apply and therefore a formal notification of intent should be given to the local planning authority and the notification period allowed to expire, before carrying out work to any such protected trees.

Tree Preservation Order may apply and therefore a check should always be made with the local planning authority, and consent obtained before carrying out any tree work.

5 Conclusions

Prospects for control by vegetation management are good if the vegetation assessed to be involved can be removed: somewhat less certainty applies in the case of re-implementation of pollarding.

Further information is needed via crack monitoring in order to determine the response of the structures to any tree control measures.

6 Recommendations/Summary

Please read in conjunction with the plan 1-38-4825/P. All dimensions are approximate and are in metres/millimetres.

Tree number	Tree type	Height	Stem diameters	Proximity	Comments	Now	Repeat (Y/N +any repeat in years)	Reason	Cost - £
1	common lime	12	400	4.3	History of containment pruning to a reasonable standard. Pollarded to around 5.5m+GL last c.1995. Sited very close to dividing wall.	Y	2	Suspect	850
2	English yew	9.5	530	1.5	Noted to have been pruned to a good standard. Typically a very 'low risk' species with regard to cohesive soil drying and structures.				
3	common lime	11	<350	3.7	Pollarded to 3m last c.1995.	Y	2	Suspect	1250
4	common lime	11	<350	4.3		Y	2	Suspect	
5	common lime	11	<350	5.5		Y	2	Suspect	

Proximity is the distance from the specified property or structure.
Cost is solely a guide to industry charges; it is neither a quote nor an estimate.

6.1 Tree work standards

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

7 General

All trees growing close to life and property require regular inspection and sometimes maintenance to minimise conflict between the arboreal and human spheres of existence. This should be carried out yearly by a properly qualified arboriculturist, such as a Fellow of the Arboricultural Association, or registered consultant of that body.

8 Signature

Date of completion: 7th May 2019

Signed:

[redacted]

John C. M. Cromar, Dip. Arb. (RFS), F. Arbor. A., RCArborA
on behalf of John Cromar's Arboricultural Company Limited.

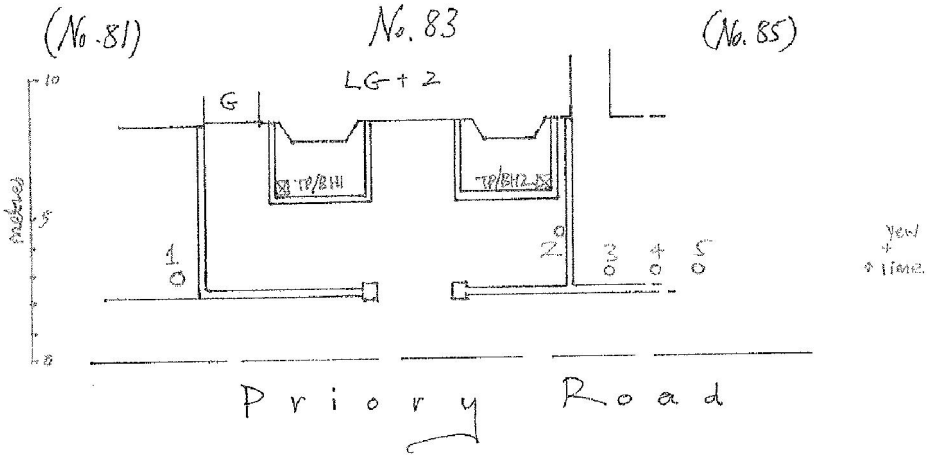
9 Schedule - 83 Priory Road, London NW6 3NL

Please read in conjunction with appended plan. Please note that this a provisional schedule of works considered necessary if vegetation control alone is adopted as a remedial measure. Trees outside the curtilage of the property are included. ***As applicable, the consent to, or acquiescence to, and communication of the timing of the recommended remedial works, as far as the relevant owner(s) is / are concerned, should be checked before any such trees are actually treated.***

Tree number	Tree type	Height	Stem diameters	Proximity	Comments
1	common lime	12	400	4.3	Pollard to around 5.5m+GL.
3	common lime	11	<350	3.7	Pollard to 3m+GL.
4	common lime	11	<350	4.3	
5	common lime	11	<350	5.5	

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 0845 601 4523.) Acting without a licence is likely to be justifiable only in acute emergencies threatening human life and where all other legally available option 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. Dead wood can be an important ecological feature. Treatment of dead wood under 'crown cleaning' shall mean (section 7.3.2); shorten and retain if safe to do so, thus retaining some resource for invertebrates, etc.



JOHN CROMAR'S
ARBORICULTURAL
COMPANY
LIMITED

Trees in relation to
83 Priory Road,
London NW6 3NT.
ref: 1-382-4825/P

[redacted]