

Arboricultural Assessment Report

Preliminary Report on Trees

For:	Client:	Oriel Services Limited
	Insurer:	Aviva
Site:	Policyholder:	Mr Chisolm
	Risk Address:	1 Swans Walk, Salterns Lane, Hayling Island, Hants, PO11 9TX
Refs:	OCA Ref:	54748
	Client Ref:	7334079
	Insurer Ref:	02SN603574

Survey By:	James Sadler		
Title:	Arboricultural Technician	Date:	27 August 2013
Report By:	John Hall		
Title:	Senior Consulting Arborist	Date:	30 August 2013



Consulting Arboriculturists

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1.0 Introduction & brief

- 1.1** OCA UK Limited has been instructed by Oriel Services Limited on behalf of the building insurers of 1 Swans Walk, Salterns Lane, Hayling Island, Hants, PO11 9TX (the insured property). We have been advised by Oriel Services Limited that the property has suffered differential movement and damage which is considered to have been caused by trees growing adjacent the property influencing soils beneath its foundations.
- 1.2** We have been instructed to undertake a survey of the vegetation growing adjacent the insured property, to provide our opinion as to whether, based on the available information any of this vegetation is likely to be influencing soil moisture levels beneath the foundations of the property and if so to provide recommendations as to what tree management could be implemented to effectively prevent damage continuing.
- 1.3** The vegetation growing adjacent the risk address has been surveyed from the ground using digital measuring devices and/or standard tape measures. All distances are measured to the nearest point of the risk address unless otherwise stated.

2.0 Limitations

- 2.1** Recommendations with respect to tree management are associated with the risk address as stated on the front cover of this report and following consultation with investigating engineers. The survey of trees and any other vegetation is associated with impacts on the risk address subject of this report. Matters of tree health, structural condition and/or of the safety of vegetation under third party control are specifically excluded. Third party land owners are strongly advised to seek their own professional advice as it relates to the health and stability of trees under their control.
- In relation to the possibility of heave damage, the owners of any trees within third party control must obtain their own advice in respect of the possibility of any damage to their own or any other structures outside of the control of the insurers of the risk address subject of this report from any soil heave.
- 2.2** Recommendations do not take account of any necessary permission (statutory or otherwise) that must be obtained before proceeding with any tree works.

3.0 Vegetation and subsidence of low rise buildings – property owner's guide

3.1 Soils, soil water and vegetation

All vegetation requires water to live and this water is substantially accessed from the soil within which the plants roots grow.

If the soil is classified as a clay soil then it will hold very much more water than sands, gravels and loam soils. During the summer as plants abstract water from the clay soil then the soil volume will “shrink” and “swell” as water is first removed and then added by summer rainfall.

In years in which rainfall during the summer is less than the total amount of water taken from the soil by plants then shrinkage will continue. This shrinkage may remove support from building foundations leading to cracking in the fabric of the building.

3.2 Vegetation management

The control of trees, shrubs and climbers by removal is a proven technique that controls total soil water loss thereby minimising soil shrinkage and allowing repairs to proceed.

If vegetation management works are carried out promptly then repairs can usually proceed very quickly and the duration and distress associated with the disruption that tree related subsidence brings can be minimised.

3.3 Third party liaison and statutory controls

Tree roots do not respect physical or property boundaries and can travel for many metres beyond the above ground “dripline” of the canopy of the vegetation.

The purpose of this report is to ascertain on a preliminary basis which vegetation is the most likely substantial and/or effective contributory cause of the damage witnessed to allow for liaison with third parties or with local administrative Councils as necessary.

You can learn more about tree related subsidence of low rise buildings by visiting:

www.oca-arb.co.uk/whatisSubsidence.htm

4.0 Summary of Engineer's Report

We have been provided with a copy of the Cunningham Lindsey Engineering Appraisal Report dated 19 June 2013 relating to damage at the insured property. The comments made below reference to this Report.

4.1 History and Timing of Damage

The Engineer states that the damage was rediscovered in 2011.

4.2 Description of damage and diagnosed mechanism of movement

The Engineer describes the main area of damage is to the rear left corner taking the form of cracks. The Engineer considers that this pattern of damage indicates mechanism of downwards movement to the rear left corner.

4.3 Engineers Assessment of the Category of Damage

The Engineer has determined that current damage at the insured property falls within Category 1 in accordance with Table 1 of the BRE Digest 251 – Assessment of damage in low-rise buildings.

4.4 Engineers Conclusion as to the Cause of Damage

The Engineer has concluded that the current damage has been caused by clay shrinkage subsidence. This has been caused by moisture abstraction by roots altering the moisture content of the clay subsoil resulting in volume changes, which in turn have affected the foundations.

5.0 Assessment of Site Investigations

We have been provided with a copy of the CET Safehouse Limited Site Investigation Report dated 02 July 2013 undertaken at the insured property. The comments made below reference to this Report.

5.1 Foundation Depth

A trial pit and borehole (TP/BH4) was excavated adjacent the rear left hand corner. This revealed foundations at this location to be constructed at a depth of 1000mm.

5.2 Soils

Soils beneath the foundations in Trial Pit / Borehole 4 are described as stiff, silty Clay to a depth of 1.5m, very stiff silty Clay to a depth of 3.3m, and medium silty fine and medium Sand to a depth of 5m. Samples of these soils were sent for laboratory testing. The results of these tests show that the underlying soils have plasticity indices ranging from 34% to 54% which means that they have a moderate to high potential for shrinkage.

5.3 Roots

Roots were noted throughout the trial pit and to a maximum depth of 3.1m in the borehole. Samples of these roots were tested using light microscopy techniques and have been formally identified as *Cupressaceae* spp and *Pinus* spp.

6.0 Adjacent Vegetation

During our vegetation survey, vegetation within third party ownership was noted. This vegetation was located within close proximity to the left elevation of the insured property and included a mature European Black Pine tree (T1), two semi-mature English Oak trees (T2 and T3), a group of semi-mature Holm Oak trees (G1), a group of early-mature Monterey Cypress trees (G2), and a group of early-mature English Oak trees (G3)

Details of the above vegetation are listed in the Tree Tables and their locations are shown on the Site Plan, both attached to this report.

7.0 Conclusions

Shrinkable clay soils have been encountered beneath the foundations of the insured property. These soils will be subject to volume changes dependent on their moisture content.

Roots relating to Cypress and Pine have been recovered during investigations.

With reference to the Pine roots recovered, given its size, species, and proximity to the location of the trial pit/borehole we consider that these roots have emanated from European Black Pine T1.

With reference to the Cypress roots recovered, during our survey no living trees relating to this were noted within the immediate vicinity. I note Monterey Cypress G2 to the left of the insured property but these trees appear to have been dead for some time. Although these trees are dead, they currently pose no health and safety issues. However, it is recommended that they be monitored on a regular basis.

No roots relating to Oak were recovered during investigations. However, given its size and proximity to the insured property, we consider that it is likely that roots from English Oak T2 have also extended beneath the depth of foundations.

Given the above we consider that European Black Pine T1 and English Oak T2 are the most significant vegetation in relation to soil drying beneath the insured property and as such are the material cause of the current subsidence damage.

8.0 Recommendations

We do not consider that pruning works will offer either an effective or sustainable means of controlling water use of European Black Pine T1 and English Oak T2. Therefore and in order to provide a long-term solution to the current subsidence damage, we recommend that European Black Pine T1 and English Oak T2 be removed.

No other vegetation has been implicated in the current damage. However, English Oak T3 and Holm Oak G1 have been noted as having the potential to cause vegetation related subsidence damage in the future.

8.1 Recommended vegetation management to address the current subsidence:

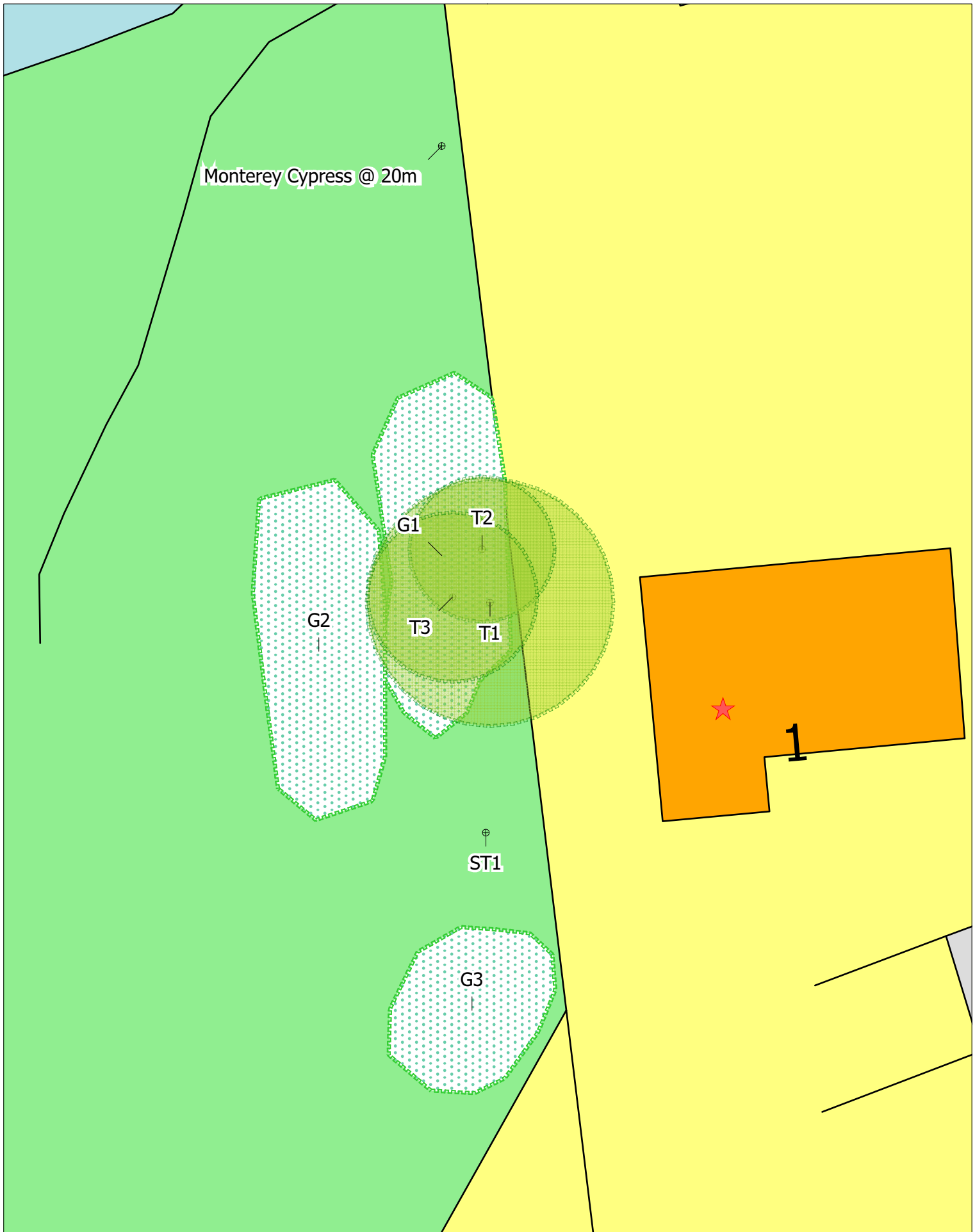
Tree No:	Species	Works Required
T1	European Black Pine	Fell to ground level as close as practicable
T2	English Oak	Fell to ground level and grind out the stump

8.2 Recommended vegetation management to address risk of future subsidence:

Tree No:	Species	Works Required
T3	English Oak	Fell to ground level and grind out the stump
G1	Holm Oak	Fell to ground level and grind out the stumps a section of G1 to a distance of 15m from the insured property

Age Class	YO – Young. SM – Semi-Mature. EM – Early Mature. MA – Mature. FM – Fully Mature. OM – Over Mature	Ownership	PH – Within boundary of risk address. P3P – Within boundary of third party properties.
Condition	G – Good. F – Fair. P – Poor. D – Dead, Dying or Dangerous		LA – Within land owned by a Local Authority. C3P – Commercial third party.
Stem Diameter	MS – Multi-stemmed tree		U – Within land of indeterminable ownership.

Tree No	Common Name	Age Class	Condition	Height (m)	Crown Spread (m)	Stem diam. (mm)	Dist to bldg (m)	Pruning history	Recommendation	Tree work constraints	Notes	Owner address	Owner
T1	European Black Pine	MA	F	12.4	10.2	670	7.5	No significant past tree works	Fell close to ground level (approx 50mm)	None		Land adjacent, 1 Swans Walk, Salterns Lane, Hayling Island, PO119TX	U
T2	English Oak	SM	F	6.8	6	230	8	No significant past tree works	Fell and grind stump	None		Land adjacent 1 Swans Walk, Salterns Lane, Hayling Island, PO119TX	U
T3	English Oak	SM	F	9.3	7	230	10.8	No significant past tree works	Future risk: fell and grind stump	None		Land adjacent 1 Swans Walk, Salterns Lane, Hayling Island, PO119TX	U
ST1	Stump	EM	D	0.01	0.01	600	7.6	Felled approx 6 yrs ago	No work required.	None		Land adjacent 1 Swans Walk, Salterns Lane, Hayling Island, PO119TX	U
G1	Holm Oak	SM	F	9.7	7	100	9.5	No significant past tree works	Future risk: fell and grind stump	None	Stem diameters range from 90mm-200mm. Fell to 15m.	Land adjacent 1 Swans Walk, Salterns Lane, Hayling Island, PO119TX	U
G2	Monterey Cypress	EM	D	15	8	300	20	No significant past tree works	No work required.	None	Diameter estimated due to dense understory. Trees are dead. Recommend regular inspection.	Land adjacent , 1 Swans Walk, Salterns Lane, Hayling Island, PO119TX	U
G3	English Oak	EM	F	15.5	14.8	300	17.6	No significant past tree works	No work required.	None	Stem diameter estimated due dense understory	Land adjacent , 1 Swans Walk, Salterns Lane, Hayling Island, PO119TX	U



Location: 1 Swans Walk, Salterns Lane, Hayling Island, PO119TX
Job Ref.: 54748
Survey Date: 29/08/2013
Scale: 1:200 @ A4

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Site Photographs



1. Vegetation to left of property



2. Monterey Cypress G2 to centre



3. European Pine T1