

Arboricultural Implication Assessment

Preliminary Report on Trees

For:	Client:	Prudential Assurance	
	Agent:	Cunningham Lindsey (Wolverhampton)	
Site:	Homeowner:	Mr Butt	
	Address:	50 Lea Green Lane Wythall Birmingham W Midlands B47 6HN	
Refs:	OCA Ref:	37014	
	Client Ref:	12749024/01	
	Agent Ref:	2446379	
Survey:	Date:	15 th February 2007	
Report By:	Helen Sullivan		Date: 23 rd February 2007

Goodlass House, Goodlass Road, Speke, Liverpool L24 9HJ
 Tel.No: 0151 485 7200 Fax.No: 0151 485 7171

4 The Courtyards, Phoenix Square, Severalls Park, Wyncolls Road, Colchester, Essex CO4 9PE
 Tel.No: 01206 751626 Fax.No: 01206 855751

Unit 6, Parkside, 15 Headley Road, Woodley, Reading, Berkshire RG5 4JB
 Tel.No: 0118 901 4646 Fax.No: 0118 901 4458

Email: info@oca-arb.co.uk www.oca-arb.co.uk

History and Timing of Damage:

We are advised that damage appeared suddenly during summer 2005. A builder was asked to inspect the damage, reporting it may be subsidence related and that insurers should be notified.

Engineers Description of damage and diagnosed mechanism of movement:

The main area of damage is to the right hand flank of the front right flank of the front right hand extension and takes the form of tapering diagonal cracks externally and internally. The level of damage is classified as category 3 in accordance with BRE Digest 251-“Assessment of damage in low-rise buildings” (1995).

The pattern of damage indicates a mechanism of downwards movement to the right hand side.

Review of Site Investigations:

Excavation in Trial Pit 1 to the front right hand corner of the single storey elevation revealed that foundations extend to a depth of 1000mm. Beyond this depth the ground is described as a very stiff, mid-brown, mottled grey, very silty clay.

Excavation in Trial Pit 2 to the right hand side of the main building elevation revealed that foundations extend to a depth of 1000mm. Beyond this depth the ground is described as a very stiff, mid-brown, mottled grey, sandy, very silty clay.

Modified Plasticity Indices range between 12% and 39% between both Trial Pit/Borehole 1 and 2 to the right hand side of the property. The soil is classified as being of low to medium plasticity (NHBC 4.2 (1999)) i.e. it is capable of significant volume change.

The soils analysis results clearly demonstrate desiccation in both Trial Pit/Borehole 1 and 2 underside of foundations. In particular the Moisture Content of the soil is below that of the Plastic Limit, which results in a negative Liquidity Index. Also the observed Moisture Content Profile displays a characteristic bulge with depth in Trial Pit 2.

Roots were observed in Trial Pit 1 and to a depth of 1400mm and to a depth of 2500mm in Trial Pit 2. Samples of these roots were taken from both trial pits. These samples were formally identified as having emanated from *Quercus* (Oak).

The integrity of the drainage system is confirmed by shear vane analysis of the soils which are classified as stiff indicating that the soils are capable of withstanding the load applied and that damage cannot be attributed to damaged or leaking drains.

Cause of damage:

We are advised by Chartered Engineers that based on the evidence detailed above, in their professional opinion the damage to the property has occurred due to clay shrinkage subsidence. This has been exacerbated by moisture abstraction by roots altering the moisture content of the clay subsoil resulting in volume changes, which in turn have affected the stability of foundations.

Engineers consider that the damage will not progress if appropriate measures are taken to remove the cause.

NB: Recommendations with respect to tree felling are associated only with the risk address following consultation with engineers who must consider the issue of ground heave following tree removal. The owners of trees in third party control must obtain their own advice in respect of the possibility of any damage to their own structure or any other structure outside the control of our client or their insured.

General Observations and Opinion:

The timing, type and mechanism of damage and the description of subsoil as clay are all consistent with vegetation related clay subsidence.

Investigations have revealed that foundations of the damaged property bear onto clay soils of low to medium plasticity i.e. soil capable of significant volume change.

Soils analysis indicates desiccation underside of foundations. In particular the Moisture Content of the soil is below that of the Plastic Limit, which results in a negative Liquidity Index. Also the observed Moisture Content Profile displays a characteristic bulge with depth in Trial Pit 2.

Roots emanating from *Quercus* (Oak) were identified underside of foundations. Taking into account all the available evidence and following our survey of the site it is our opinion that these roots emanate from the Oak tree (T1) as indicated on our plan.

Cypress roots have been identified and associated with subsidence claims at distances of up to 20m (Cutler & Richardson, 1989) however, in the majority of cases the damage occurred when the trees were in close proximity to the property.

In this instance we consider that removal of the Oak tree (T1 and the group of Cypress trees G1) will be sufficient to mitigate in the current subsidence event.

Recommended vegetation management to address the current subsidence:

No:	Species	Works Required	Ownership	*Est.Cost of Tree works
T1	Oak	Fell to ground level and treat stump to prevent re-growth	3P	£750.00
G1	Cypress	Fell to ground level	3P	£350.00

* Estimated cost of tree works should not be regarded as a firm quotation.

We have made enquiries with the local authority to determine if any statutory controls exist in respect of the trees implicated. We are currently awaiting their response.

Recommended vegetation management to address risk of future subsidence:

We do not consider any vegetation to present an imminent foreseeable risk of future subsidence.

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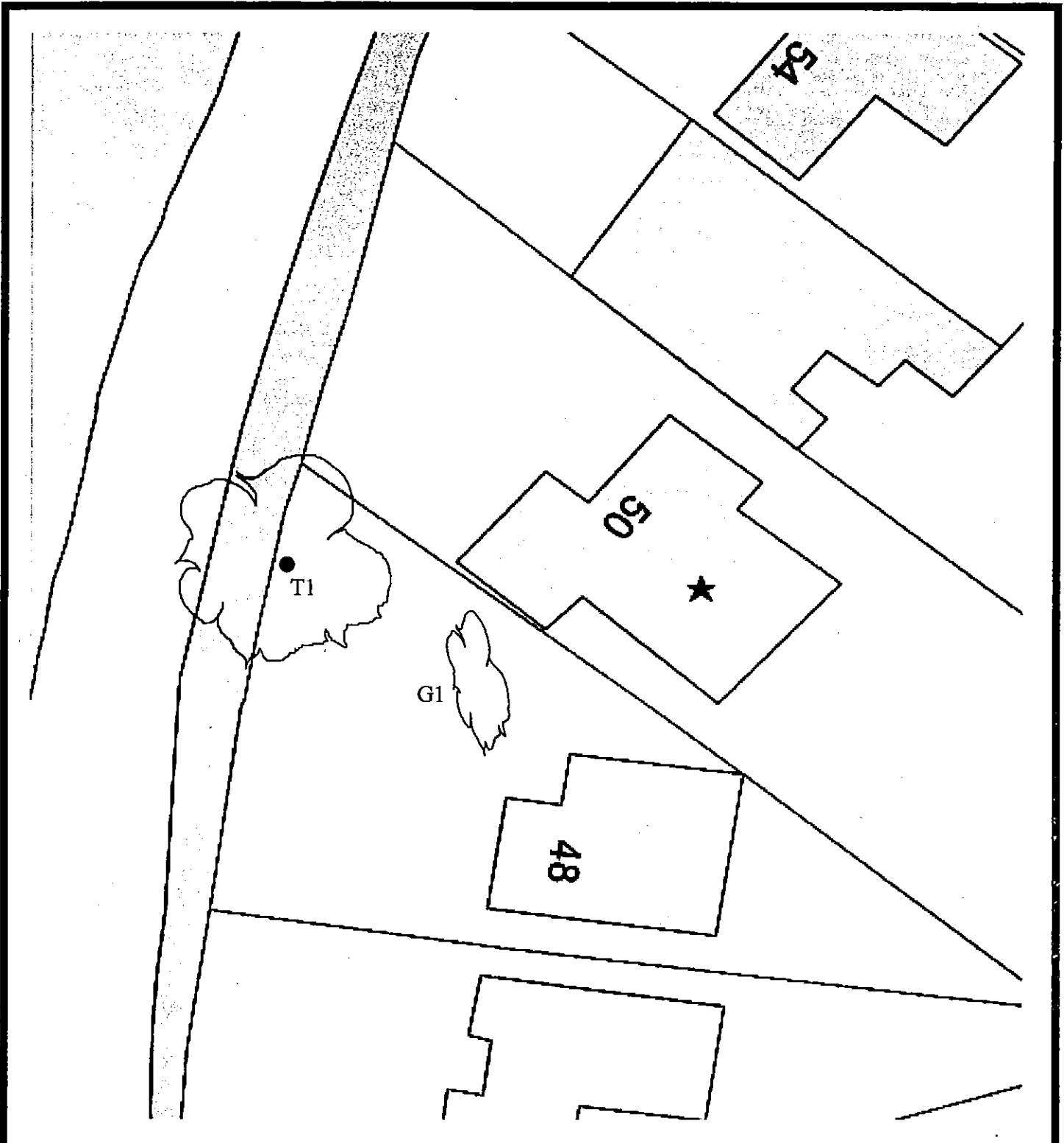
Vegetation Survey

Age Class	Y-Young / EM-Early Mature / M-Mature / FM-Fully Mature / OM-Over Mature
Condition	A - Good / B - Minor problems / C - Major problems / D - Dead / Dying / Dangerous
Height / Crown Spread / Dimensions	Approximate measurements
Owner	(PH) Within property boundary / (3) 3rd Party / (LA) Local Authority / (U) Unknown
Vegetation	(T) Tree / (G) Group / (W) Woodland / (H) Hedge / (S) Shrub / (C) Climber / (St) Stump


The trees have been assessed from ground level

Tree No.	Species	Age Class	Cond.	Height (m)	Crown Spread (m)	Diam. (mm)	Dist.to bldg (m)	Owner
G1	Cypress	EM	B	3.0	-	100	0.75	3P
Comments:								

Tree No.	Species	Age Class	Cond.	Height (m)	Crown Spread (m)	Diam. (mm)	Dist.to bldg (m)	Owner
T1	Oak	EM	B	12.7	10.0	450	9.0	3P
Comments:								



(NB: This plan may not be a comprehensive record of site features.)

<p>Address: 50 Lea Green Lane, Wythall, Birmingham, W Midlands, B47 6HN</p>	<p>Scale: Not To Scale Drawn Date: Feb.2007</p>	 <p>OCA UK Limited Consulting Arboriculturists</p>
<p>Client: Prudential Assurance</p>	<p>Goodlass House Goodlass Road, Speke Liverpool L24 9HJ Tel.No: 0151 485 7200 Fax No: 0151 485 7171</p>	
<p>Ref: 37014/ 2446379/ Butt</p>		