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Homebuyer's report on a single Leyland cypress tree at xxxx

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Client: xxxx

Instruction: Survey & report on a single conifer tree in relation to the building at xxxx in order to support a mortgage application.

Regulatory framework: This survey has been carried out according to HSE SIM 01/2007/05 (HSE, 2007) & Common sense risk management of trees (Forestry Commission, 2011).

Techniques: Visual Tree Assessment (VTA; Lonsdale, 1999), desk-based enquiries (TPO / CA status, geological survey, mapping), basic heave / subsidence assessment (Biddle, 2008).

Limitations: 1. The contents are intended for the sole use of the client. It is also understood that the document will be shared with his / her insurers, mortgage lenders and the property vendor. No liability is accepted for their use by any other parties to advance an argument or claim (including legal or financial) without prior consent. 2. No liability is accepted for defects hidden from view by soil, vegetation or other obstacles to access. 3. Formal assessment of topography, drainage, service conduits, & soil conditions have not been made and are beyond the scope of this report. 4. Specific laboratory investigations of soil properties (plasticity index, moisture content, soil suction pressure) have not been made and are beyond the scope of this report. 5. This report considers only the potential for the tree to cause damage to the building at xxxx under normally expected weather conditions. No liability for damage arising from any other source or mechanism is accepted. 6. Specific information relating to the age of the house, foundation construction and the findings of a recently conducted building survey were not available. All comments are based on the assumption that no subsidence or damage consistent with soil movement has occurred to date. This report will be invalid if a history of such damage at this or surrounding properties has not been made known to the surveyor. 7. This report considers risk mitigation measures, as opposed to risk elimination. Thus, if the tree is retained, a level of risk will remain. 8. It is understood that any risks associated with these limitations are accepted by the clients.

Weather conditions: sunny, wind force 4. **Access conditions:** Access was unhindered.

Validity: Plants are biological organisms & change with time. Assessment remains valid for 36 months from the date of inspection, or until a major storm (Wind Force 6 +) is experienced.

Background information: The property stands within the.

Situation:

Building description:	brick under tile terraced house constructed c. 1989.
Garage:	none.
Building orientation:	frontage faces west.
Garden orientation:	rear garden faces east.
Foundation type:	unknown. Assumed to be concrete strip footings in accordance with NHBC Regulations.
Subsidence damage:	none reported. None visible by visual inspection.
Building survey report:	available (xxxx Ltd, dated 01/07/2016. No subsidence damage reported.
Soil type:	Free draining slightly acid loam of low fertility (LANDIS, 2016).
Surface deposit:	Variable made ground, top soils and brown clays over sands and gravels of the Kempton Park Gravels formation to a depth of approximately 6m (BGS, 2016; Borehole scan xxxx). Soil plasticity at foundation depth is taken to be low (Modified Plasticity Index <20%).

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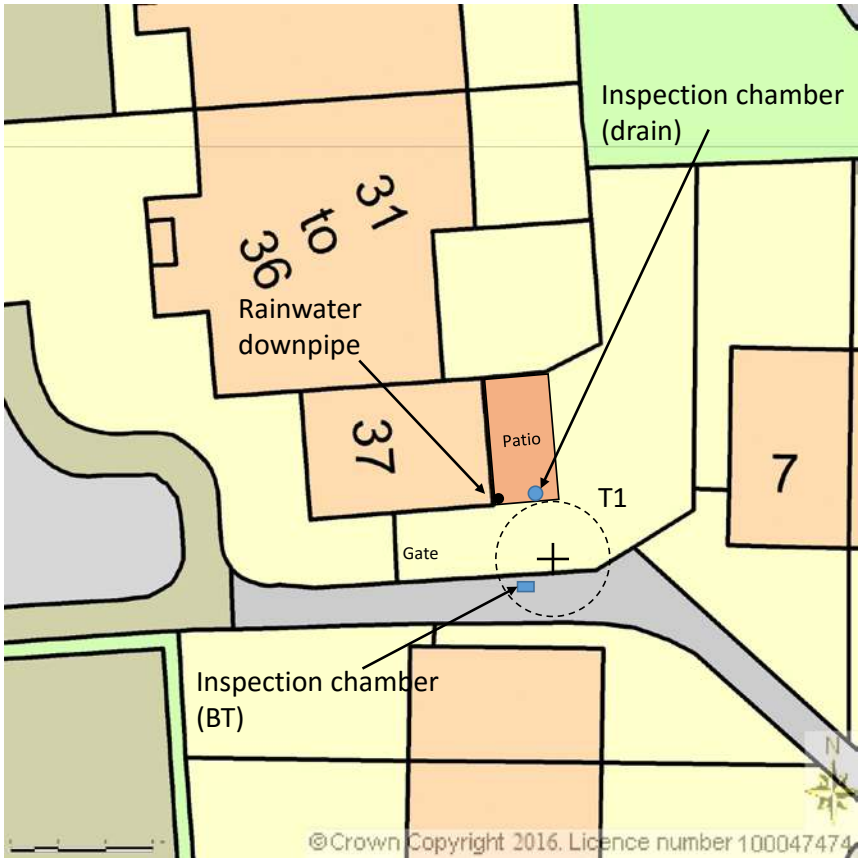
Underlying geology:	Blue London clay (BGS 2016).
Surface topography:	The property stands on a level site at an elevation of 25m near central xxxx. Urban development extends south from xxxx along the valley of the R. Lea to the east (elevation 20-25m). The New River flows from the north to the south at an elevation of around 30m some 1km to the west. Further to the west, ground rises to a series of low undulating hills reaching 87m some 3.5km away (OS Maps, 2016).
Elevation:	25m. (Ordnance Survey 2016)
Wind exposure:	Prevailing winds are generally moderate in this region. Topographical features confer little shelter from prevailing south-westerly winds. Airflow around buildings can be expected to be turbulent but the low height of the tree with respect to nearby three-storey buildings is likely to limit exposure.

Site plan:



Homebuyer's report

Date:	20/07/2016	Site:		Conditions:	Sunny, wind force 4	Surveyor:	R J Wilson

Client:	

Assessment

Ref. No.	Tree Species	Scientific name	Age class	Height (m)	Crown height (m)	Average crown spread (m)	D1 (m)	D2 (m)	D3 (m)	D4 (m)	Life expectancy	NHBC max height (m)	NHBC water demand class	Vigour	Vitality	Subsidence Risk Factor	Heave risk assessment (if removed)	Other relevant risks
1	Leyland cypress "Castlewellan Gold"	X Cupressocyparis leylandii "Castlewellan Gold"	Mature	6	3	2	2.3	1.8	3.9	-	20+ yrs	20	High	High - vigorous species with moderate growth potential in this location	Moderate - low fertility soil, restricted moisture availability, shaded between buildings	Insignificant (SRF in range 17-72)	Low (small tree, planted after building constructed)	Minimal provided crown of tree maintained with regular pruning. Some risk that if tree not controlled, surface roots could damage surface of patio or could, conceivably, penetrate underground service conduits; branches could contact house if growth left unchecked.

Tree Numbering:

Trees identified by individual tags are listed according to their tag numbers

Trees not tagged are prefixed with the letter 'N'

New plantings (less than five years in situ) are prefixed with the letter 'P'

'Groups are prefixed with the letter 'G'

Distances to:

D1 - drain inspection cover.

D2 - patio.

D3 - SE corner of house

D4 -

Subsidence Risk Factor (Biddle, 1998):

0-100 Insignificant

100-140 Low

141-200 Moderate

>200 High

Upside based on max height likely for site and highly shrinkable soil; downside based on actual height and likely soil plasticity at site.

Heave risk assessment (Biddle 1998):

Upside based on maximm height likely for site and highly shrinkable soil; downside based on actual height and likely soil plasticity at site.

Analysis of heave & subsidence risk:

- Water demand class: High (NHBC 4.2) – high risk.
- Highly vigorous species with large growth potential under ideal conditions but with greatly reduced potential in this location; small example of species – low to moderate risk
- Zone of influence: 15m (based on likely max height of 12m in this location NHBC 4.2) – high risk; Root spread – shallow but exploitative (Biddle, 1998) – high risk.
- Tree to building distance in 50% of subsidence cases involving Cupressus sp.: 2m (Mercer, Reeves & O'Callaghan 2011) – low risk.
- Assumed house foundations sufficient. (Recommended depth 1.5m, NHBC 4.2) – low risk.
- Approximate age of tree: 25 years (non-native species, amenity planting after construction). Tree is single-stemmed and has been extensively pruned – risk reduced.
- Moderate further growth potential; low fertility soil, restricted moisture availability – risk reduced.
- Deep sands and gravels to well below foundation depth – low risk.

Calculated subsidence risk factor: **INSIGNIFICANT**

Calculated heave risk if tree removed: **LOW** (type of movement: Recovery)

Other risks:

Direct damage to foundations and structures:

- Direct damage is usually associated with structural roots which typically end at a distance equal to the un-pruned crown radius but which can extend further. Roots could conceivably spread wide enough to affect the stability of the patio. Regular maintenance of the tree at its current size with regular pruning will significantly reduce the risk of direct damage.
- The tree is currently not large enough to make contact with the flank wall of the house but could do so if future growth unchecked.
- The tree is in good structural condition with a low risk of wind-throw or of branches failing.

Damage to service conduits:

- Tree roots can distort, fracture or block drains and service conduits. Two inspection chamber covers were noted in close proximity to T1. Dry soil conditions will promote exploitation of drains and other conduits by the tree which should be managed by regular crown pruning to maintain the current size.

Seasonal and other nuisance:

- Leyland cypress is evergreen so leaf litter in gutters and on hard surfaces can be expected to be minimal.
- Minor deadwood is often shed as a normal physiological activity of all healthy trees. None was observed but this may be simply removed as it arises.
- Satellite and TV aerial reception can be affected by trees in close proximity to receiving equipment. Provided the crowns of retained trees are maintained with regular pruning this is unlikely to cause a nuisance.
- The lower branches of T1 have been removed to create adequate clearance over the adjacent footpath (statutory clearance is 2.5m). This should be maintained with regular pruning.

Recommendations:

- Tree size should be maintained at current dimensions with regular pruning beginning July-September 2018 and repeated every 2 years thereafter.
- Clearance of 2.5m over adjacent footpath should be maintained.
- The tree may be safely removed, if you so wish.
- Tree work should be carried out by suitable qualified, equipped and insured arboriculturists in accordance with the requirements of BS3998:2010.

References:

Biddle, P. G. (1998). Tree Root Damage to Buildings. Willowmead Publishing Ltd., Wantage, UK.

British Geological Survey (2016). Geology of Britain Viewer 1:50,000. BGS, Keyworth, Nottingham. http://mapapps.bgs.ac.uk/geologyofbritain/home.html

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LandIS (Land information system; Soilscape viewer, 2016). Cranfield University. http://www.landis.org.uk/index.cfm

Mercer, G., Reeves, A. & O'Callaghan, D.O. (2011). The relationship between trees, distance to buildings and subsidence events on shrinkable clay soil. Arb. J., 33, 229-245.

NHBC Chapter 4.2 (2007). National House Building Council, Amersham Bucks.

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