

From: Christopher Davies <Christopher.Davies@crawco.co.uk>
Sent: 19 July 2023 15:47
To: Subsidence <subsidence@crawco.co.uk>
Cc: MWA Arboriculture Office <Office@mwaarboriculture.co.uk>
Subject: SU2206135 - RE: S211 - HGY/2023/1685 - 154 Morley Avenue N22 - SU2206135

Hi Vicki

My responses below and I will send Technical Report separately:

SU2206135 LA want additional info S211 Cypress tree

- Would it be possible to ask, as interim and mitigating works, for the applicant to consider topping the Cypress tree:

Due to the proximity of the trees (the closest being only 1.6m distance) even substantial topping is unlikely to provide a remedy. Cypress species are commonly implicated at distance up to 5m and, based on the pruning recommendations in "Hortlink" and BRE IP7/06, the degree of crown volume reduction that would be required would significantly reduce any amenity value the trees may provide and the large topping cuts would be prone to decay. We therefore do not consider that "topping" is appropriate and that it would not provide a long-term effective remedy.

- Soil analysis report has been submitted showing shallow foundations, desiccation at depth, and dead Cupressaceae roots at depth

Live Cypress roots at were recovered from 0.7m, dead samples at 1.2m and 1.7m

Root ID

The samples you sent in relation to the above on 13/03/2023 have been examined. Their structures were referable as follows:

TH1, 0.7m		
4 no.	Examined root: a conifer - particularly like the family CUPRESSACEAE (cypresses ('macrocarpa', 'Leylandii' etc.), Thuja (Western Red Cedar), Junipers).	Alive, recently*.
1 no.	Although examined microscopically, this was found to be only a section of either twig, stem or sucker - NOT a root. Not identified.	
2 no.	Both samples revealed too few cells for microscopic identification.	
TH1, 1.2m		
3 no.	Examined root: the family CUPRESSACEAE (as listed above).	Dead*.
1 no.	Examined root: an herbaceous (non-woody) plant.	
3 no.	All pieces of BARK only - not enough material for identification.	
TH1, 1.7m		
2 no.	Examined root: the family CUPRESSACEAE (as listed above).	Dead*.
1 no.	A piece of BARK only, insufficient material for identification.	
3 no.	Unfortunately all with insufficient cells for identification.	

In respect of dead roots, we would comment as follows:

The root system of any tree will have parts that are healthy, ageing, infected/decaying or dead, the same way that these features appear in the above ground parts of the tree.

Roots can die during very dry weather. Roots recovered from beneath foundations, whether alive, recently alive, negative for starch or decayed indicate that the roots must have been alive when they

extended beneath the foundations. If root from a certain species are identified then that species becomes implicated as the roots must have been alive when they grew under the foundations.

Like the crown of a tree or shrub, death of the end of a branch/twig, or if it is pruned will stimulate secondary growth from further back, the same thing happens with roots, a dead end of a root will likely mean that other side roots further back will develop to take over the function of moisture extraction.

However, we are lacking:

- No BRE classification is given or photographs showing the cracks

Included within the Technical report:

CATEGORY

In structural terms the damage falls into Category 4 of Table 1, Building Research Establishment^[1] Digest 251, which describes it as “severe”.

Category 0	"negligible"	< 0.1mm
Category 1	"very slight"	0.1 - 1mm
Category 2	"slight"	>1 but < 5mm
Category 3	"moderate"	>5 but < 15mm
Category 4	"severe"	>15 but < 25mm
Category 5	"very severe"	>25 mm

Extract from Table 1, B.R.E. Digest 251
Classification of damage based on crack widths.

- No soil suction, shear vane, oedometer or filter paper test to accompany the soil analysis

Oedometer and other testing is not usually undertaken where there is no potential heave risk to assess, as in this case, the trees do not pre-date the building therefore there is no risk of adverse heave occurring after the trees are removed.

The sample shear vanes are included within the borehole log and range from 84-96kpa which confirms that the soil has adequate bearing capacity.

The soil laboratory tests clearly confirm that the onset of desiccation has occurred in the upper horizon beneath foundations (MC33% v LL 67% = less than 50% of Liquid Limit) with moisture contents being much closer to the Plastic Limit than the Liquid Limit at 1.7m and 2.7m, confirming the influence of root activity on moisture content. This is of note as the samples were taken during January, at a time of year when soil moisture deficits due to tree root activity would be at their lowest and we would expect significantly drier soil during summer months when roots are active.

- There are also no level monitoring results to show seasonal movement.

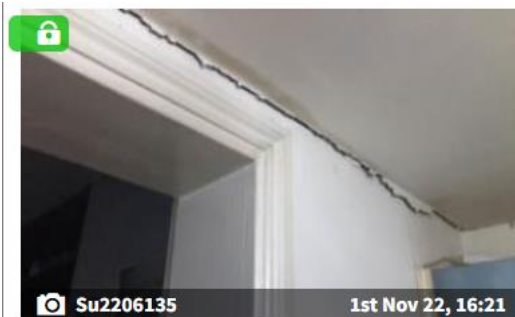
The damage was first noticed during August 2022, at a time of year when soil moisture deficits due to tree root activity would be reaching their peak. Due to the timing of the damage, the presence of Cypress roots and the abnormally dry condition of the soil in January, with no other likely causes, it is clear that, on the balance of probabilities, that the Cypress trees are the substantive and effective cause of the damage. Where the cause is clear, level monitoring is not instructed as a matter of course.

^[1] Building Research Establishment, Garston, Watford. Tel: 01923.674040

- Would it be possible also for a site visit to view and inspect the Cypress tree. There have been several objections via the Portal and we need to ensure that we fully investigate and address these.

Arrangement for a site visit can be arranged via Crawford & Co.

Photos of the damage not included within reports:



Kind Regards

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