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Arboricultural Consultant

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22 November 2010

Ms D. Hall,
GAB Robins UK Ltd
Ground Floor, Edward House
92/93 Edward Street,
Birmingham B1 2RA

Your ref: B1030964
Our ref: 2898

Dear Ms Hall,

13 Holland Street, Cambridge, CB4 3DL

I refer to your email of 18 November in which you request my recommendations on the management of the plane trees growing in the park on the opposite side of Carlyle Road to the above property. In addition to your brief summary, you have provided me with copies of the following reports:

Matlab Site Investigation Report dated 16 December 2008

Matlab Laboratory Report dated 29 January 2009

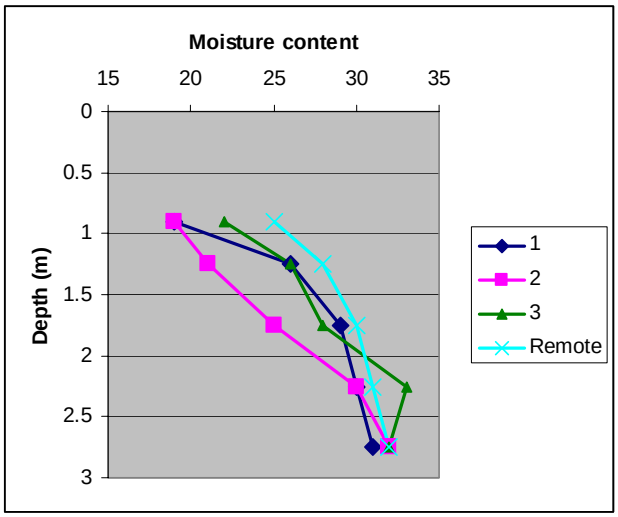
Geoserv level monitoring over period 09/06/08 to 17/08/09

Marishal Thompson Arboricultural report (page 2).

I have not visited the site, but have made use of 'Street view' in Google map' to observe the building and adjacent trees. My comments below are based on the above information.

1. From the Google Map 'Street view' I can appreciate the high amenity value of the plane trees along the edge of the park, and understand the opposition of local residents to their removal. It would appear that the views were taken before the trees were reduced by 30%, which you advise was in March 2009.

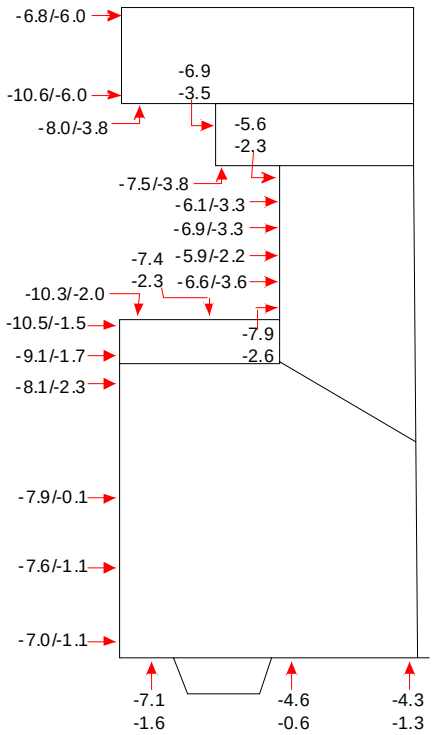
2. I find the soil investigations to be of very limited value. For ease of interpretation I show the moisture content profiles from the 4 boreholes in the graph below. The moisture content in borehole 2 is slightly below the other boreholes, with boreholes 1 and 3 only marginally drier than the remote hole. Possible desiccation in borehole 2 is corroborated by the elevated soil suction values between 1.0 and 2.0m. Suction values in the other boreholes show no evidence of desiccation. I understand that borehole 2 is on the rear corner of the house, and thus apparently in one of the areas of damage. The evidence of slight desiccation in this borehole is thus consistent with the trees as a cause of damage. The absence of evidence of desiccation in the other holes probably reflects the time of year of these investigations.



3. Even if there was some desiccation in December 2008, it does not assist in determining the effect of the crown reduction in March 2009

4. Far more useful information comes from the level monitoring. Unfortunately readings have only been taken intermittently, and I assume that there are no readings since 17/08/09. However, the readings in June 2008 were sufficiently early in the year for there to have been negligible soil drying, and thus record the position after full seasonal recovery. The readings on 20th October 2008 were taken soon after the normal time of maximum subsidence. The difference between these therefore shows the amount of seasonal subsidence in summer 2008. The readings on 17 August 2009 were slightly before the time of maximum subsidence, but provide a good indication of the amount of seasonal subsidence in 2009.

5. The plan below, derived from the Geoserv plan, shows the location of the levelling markers, and the amount of seasonal subsidence recorded in summer 2008 (first set of numbers) and summer 2009 (second set).



6. It is apparent from this that there was significant movement in summer 2008, particularly along the flank wall of the main house and front of the garage. Movements diminish progressively across the front elevation, and are reduced along the front elevation of rear section of the building. This distribution of movement is clearly consistent with the involvement of the plane trees as the cause of damage.

7. This distribution of movement, combined with the evidence of probable desiccation in borehole 2 and the presence of plane roots, confirms that the trees were the cause of the damage. The extent of movement, which was well in excess of 5mm on the parts closest to the trees, was sufficient to account for the damage.

8. The level monitoring is of even greater value in demonstrating the effect of the crown reduction in March 2009. It is clear that the movements in summer 2009 were considerably less than in 2008. In part this might be explained by the readings on 17/08/09 not recording the full extent of seasonal subsidence for that year. However, the summer of 2009 was generally drier than 2008 and therefore in most situations one should expect movements in 2009 to have been significantly greater. I therefore consider that the reduced movement in 2009 is highly significant and should be attributed to the reduction of the trees in the spring of that year.

9. It is known that the benefits of crown reduction will diminish as new foliage develops. Some benefit should usually last into the second summer (i.e. 2010). It is most regrettable that no level monitoring was undertaken during the past summer to determine the extent and distribution of any continuing movement, but they are likely to have been slightly greater than those recorded in 2009.

10. It is generally reckoned that foundation movements of less than 5mm are unlikely to cause damage. Obviously this depends on the distribution of the movements and the angular distortion which they cause. Buildings with pre-existing cracks are likely to be more vulnerable to continued movement of those cracks.

11. Although recorded movements in 2009 were considerably less than 5mm (except on the front of the garage), as the measurements were not taken at the ideal time of year and as movements are likely to have increased in 2010, in my opinion they are likely to have been in excess of 5mm during this past summer.

12. Even if they were reduced to an acceptable level in 2010, further pruning would be required during this winter to reduce the amount of regrowth. However, it is my opinion that significantly heavier crown reduction should be applied. I would doubt whether the 30% reduction applied in March 2009 would have been sufficient.

13. I have printed the 'Street view' pictures from Google map (attached), and show on these the approximate extent of reduction which would probably be required. However, before defining the extent of reduction, it would assist if the Council could send me current pictures of the trees so that I can appreciate the extent of reduction applied in 2009. I can then mark these pictures to show the extent of reduction which I consider would be required.

14. The initial reduction is likely to involve shortening all of the main branch structure, removing all of the foliage. Plane trees will of course produce new growth; the objective will be to creat a significantly smaller crown size. There will be a need for regular ongoing maintenance to ensure that the trees are maintained to a reduced size.

15. I appreciate that this will be detrimental to the appearance of the trees, and it is regrettable that it should be necessary. However, the alternative would be complete removal. The reduced crown size will at least retain much of the avenue effect.

16. If the trees are reduced it will be essential for the level monitoring to be continued to confirm the efficacy of the treatment. This should involve a further set of readings in April or early May (to check the full extent of recovery), and then further readings in late June, early August and mid-September. If the readings in June or August show unacceptable movements beginning to occur, further action could be taken immediately to stop any further development. However, I consider the risk of this to be very remote. Further reading in September 2012 can confirm that movements have not re-commenced.

17. Provided this action is taken, I can see no necessity for the property to be underpinned. In my opinion this treatment will be effective in abating any nuisance which the trees are causing.

I trust these initial comments are of assistance, and await receipt of the photos of the trees so that I can proscribe the pruning regime. In the meantime I enclose a note of my fees for production of this report (which includes any further work on the pruning regime).

Yours sincerely,

Dr P.G. Biddle OBE