



Consulting Structural Engineers & Building Surveyors

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02 February 2024

Dear All,

**Re: Site visit and structural appraisal in relation to the above property address;**

Further to our recent re-visit to your property, we write to advise our findings. We have reviewed the technical evidence you sent us and revisited the property. Firstly, we would say that the damage generally does not appear significantly different than when we last saw it in December 2022. We note that level monitoring has been undertaken between September 2019 and October 2023. It is very unfortunate that no readings were taken between October 2021 and May 2023, as in this "missed" period ensued a particularly hot summer (2022) in which there were record episodes of clay subsidence reported and recorded. We feel sure that movement during this period would have been much greater than shown on the levelling results which are therefore misleading. There will undoubtedly be further record-breaking hot summers given the way climate change is rapidly progressing.

Even so, the monitoring shows summer subsidence occurring at various points across the frontage of the building, to various degrees (not just the steps). Also, at station 2 (middle of right-hand flank wall) the graph shows that it is recently stable, but this is not necessarily the case at all. Reference to the readings themselves shows that the monitoring station could not be read on the last two visits as it is missing (following the installation of a pipe of some sort). Furthermore, the readings are all taken relative to point 1 (rear of right-hand flank wall) rather than a deep datum. Point 1 is



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therefore assumed to be stable, which may not be the case at all (it is noted that the nearby point 2 has not shown stability historically). It would have produced much more powerful and irrefutable evidence if the complete building had been continuously monitored relative to a deep datum, without having missed the crucial 2022 summer. The monitoring evidence available is poor and open to dispute / debate as to what it shows. There can be little doubt however, that it shows there is an ongoing problem to some degree.

We cannot see from the documentation provided on what basis Crawford have said that root barrier would destabilise the Beech tree. A root barrier seems to have been a valid option according to the Arboriculturist, and in our view it would be unlikely to destabilise the tree if it were far enough away from it – as close as possible to the main building at lower ground level. We are not Arboriculturists, however, or experts in tree stability. It would be for Arboricultural experts to consider this matter.

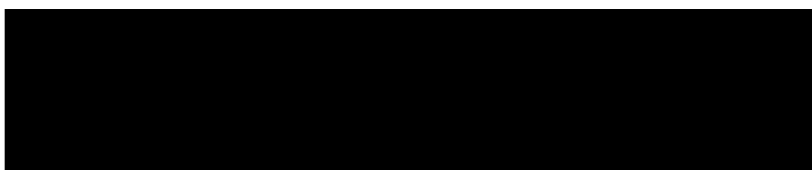
We have not seen any details of the proposed piling scheme, but our concern with piling in principal is that (unless it is completed to the entire property as a piled raft – which would be extraordinarily expensive) it results in a “hard spot” in the piled areas, resulting in differential movement between piled and non-piled areas of the foundation. Also, it does nothing to mitigate against the roots which are present beneath the lower ground floor of the building, so even if the walls are stabilised by piling, the floors will still subside. We would not offer a Certificate of structural Adequacy (for example) on a partially-piled external wall solution here, and we would advise any potential flat-buyer we were acting for, to walk away if such a solution were adopted (even if backed by a Certificate of structural Adequacy from the designing engineer). It is far better in our view for the roots beneath the building to be killed – either by tree removal or by a root barrier.

We note from Crawford’s report of the 4<sup>th</sup> December 2023 that they estimate the total cost (including internal and external piling and party wall matters) at £130k + vat but this does not tally with their figures of £100k + vat (internal piling), £87k + vat (external piling), and £16k + vat (superstructure repairs). Nevertheless, they do say they are going back to Optera for revised pricing so these figures will all be reviewed once that revised pricing is obtained. Hopefully, you will then be provided with a detailed priced schedule of repairs which we can review if you wish

us to. Repairs would need to include extensive work to external works – in particular badly damaged retaining and boundary garden walls.

We see that Crawford made an application to fell the beech tree on the 7<sup>th</sup> December last year. We have noted that the list of supporting documents did not include our site investigation report of the 3<sup>rd</sup> February last year (the only one to include information on the main house foundation – showing beech roots in shrinkable clay to 2.2m below the footing), and also no mention was made of the disease noted to the tree. Indeed, the application specifically (and incorrectly) states that the tree is not diseased. It also fails to note the damage the tree's roots are doing to the retaining walls and paths – by physical growth of the roots against these structures. This is an important point we believe, as it poses a health and safety hazard and is *direct* damage.

We hope that we have adequately responded to your enquiry although should you have any queries please feel free to contact us. Finally, may we take this opportunity to thank you for your instructions in this matter.



Bob Gibson, BSc., FFPWS

Subsidence Consultant (Structural Engineer & Building Surveyor)