



CFA STRUCTURES LTD

STRUCTURAL CONSULTING ENGINEERS

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Our Ref: CFS19-242/HWF/LA

20th November 2019

For the attention of Mr A Sidida

49 Regent Road
Lostock
Bolton
BL6 4DL

Dear Sir,

RE: 49 REGENT ROAD, LOSTOCK, BOLTON

Further to your request to examine the garage/office annex at the above property we attended site on 12th November and report as follows:-

The building, comprising a garage at the front with an office and bathroom to the rear, is traditionally built in cavity wall construction. In the recent past, a new access road (Milldale Close) into a private development has been constructed and this runs past the left-hand side elevation of the garage. A hedge at the back of a service verge is present between the side wall of the garage and the kerb line to the access road and within the hedge there is a single semi-mature self seeded sycamore that is within 1m of the front left hand corner of the garage.

Internal inspection of the garage revealed that the slab to the garage section has heaved and cracked and further significant cracking was also recorded in the partition wall between the garage and the office area. Unfortunately, due to the presence of stored items, the internal face of the left-hand elevation (fronting onto the access road) could not be fully inspected. The dense hedge and sycamore tree also prevented clear inspection of the external elevation, but nominal cracking was noted at the front left-hand corner of the garage.

Based on the crack patterns and the heave in the slab it is considered that the most likely cause of the cracking and heave is the proximity of the sycamore tree. The damage may be a result of swelling/shrinkage of the clay under the foundations as a direct result of the tree roots affecting the moisture content within the clay, or maybe due to the mechanical forces set up from the expanding root ball of the tree.

On the evidence recorded, it is considered that these defects will only get worse with time as the tree continues to grow. Ideally, the tree should be removed to prevent further mechanical damage from expanding root ball, but this may cause further problems as the ground is likely to swell due to the absent tree no longer removing water from the clay.

Repair of the structure will be difficult without affecting the hedge and tree in the verge that are within the adjacent owner's land and furthermore, we understand that the sycamore may have a tree protection order on it.

Continued...

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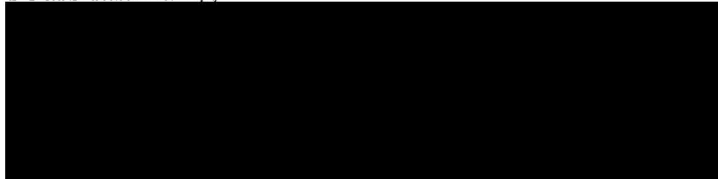
In order to repair the defects and provide a long-term solution to the current problems it is considered that the simple option would be to demolish the wall that fronts on to the verge and rebuild it off new foundations, deep enough to eliminate the effect of the tree roots. However, the deep excavations will be within the root protection zone and hence are likely to adversely affect or kill the tree. Furthermore, the slab within the garage will need to be taken up and replaced with a new slab incorporating a 150mm void beneath it. Therefore, new footings will be required on the opposite (right hand wall) to provide support to the new suspended floor and this may necessitate demolition of the right-hand wall to allow deeper footings to be cast.

Given the above, and assuming the tree is to be kept, the most robust solution would be to fully demolish the building and construct it off piled, shallow foundations that will minimize the disturbance to the tree roots. The construction can also be detailed to eliminate future problems that associated with continued tree and hedge growth.

We attach photographs of the current condition of the slab and walls for reference purposes.

We trust that this is adequate for your current needs but if you have any queries, please do not hesitate to contact us.

Yours faithfully,



Howard W Faulkner *B. Eng (Hons) C. Eng MI Struct E*
CARR FAULKNER STRUCTURES



Garage/Office Annex – Right-hand side elevation



Cracking over garage door (top left-hand corner)



Internal crack in the partition wall between garage/office and ceiling



Proximity of the sycamore tree to left-hand side wall.