

29/01/2016

Keith

I inspected the front boundary wall to 75 Flask Walk yesterday morning, as requested.

The wall to the left of the front garden gateway was seen to be a low retaining wall of approx 700mm height, rendered solid masonry with concrete or stone copings and iron railings fixed to the top. It retains soil and a 6-foot broad-leafed hedge.

A taller retaining wall to the western end of this retains a greater depth of soil, the wall being an estimated 1.5-1.7m tall, supporting soil and a raised paved garden area and lattice trellis. This wall appeared again to be of rendered and painted masonry, but without coping stones or railings. To the face of the wall was seen three evenly spaced tie rods and S-plates at approximately 700mm above the pavement/wall base level.

The walls were seen to be significantly distorted having rotated away from the retained earth, towards the pavement. Despite the distortion the low wall does not appear to be in noticeable distress. The tie rods to the taller wall appear likely to have improved this wall's retaining capacity, although the greater height equates to greater forces, and so some stress cracking was visible, and some associated deterioration in the render, at the joint with the low wall, and vertically through the central tie-rod location.

Notwithstanding the obvious significant structural movement, the overall condition does not suggest a likely recent failure, rather that the movement is progressive in the face of continuously applied load from the retained earth. It might therefore be judged that the wall could be repaired and a watching-brief approach be adopted to ensure that no rapidly appearing distress occurs that could indicate a potential for local collapse. However it must be noted that it is likely that pragmatic crack repairs would not improve the structural performance of the wall nor significantly improve longevity, although it will improve the durability of the wall by reducing weathering deterioration. The nature of the defect and the unknown capacity to continue to resist the load can not be quantified, as such it would not be possible to guarantee the longevity of the wall, nor would any repairs be a guarantee of durability against failure at a point in the future. In view of this position, the local authorities may have the right to demand that the wall is reconstructed to preserve public health and safety.

In the event of a rebuilt, I believe that it would be possible to drive in trench sheets behind the wall, which can be propped with rakers down onto the pavement temporarily. This should allow the wall to be pulled down and a newly-designed wall constructed in its place, whilst holding back the soil and preserving the planting. This wall would likely take the form of a reinforced concrete hollow-block wall off a mass concrete strip foundation, with waterproofing behind, painted rendered face and coping stones on top. The original iron railing ought to be possible to be preserved and reinstated.

The taller part of the wall may require a poured reinforced concrete construction due to its greater retaining force.

Whilst the pragmatic repair and review approach would be more appropriate when dealing with a defective wall leaning into private property, our recommendation would be that a reconstruction would be a more acceptable solution to concerns likely to be expressed to the local authority.

We would be happy to provide designs for replacement structures or to specify repairs in accordance with what is the preferred action.

Regards
Paul

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