



KEITH ROLLESTON ASSOCIATES

Sam de Frates,
The Beachwalk Retreat,
North Street
Marazion,
Cornwall,
TR17 0ED

Ref 4300

24/5/23

Dear Sam,

The Beachwalk Retreat - structural assessment of leaning wall.

I visited the property on 17/8/23, inspected and measured the wall carefully and now make the following observations.

The wall is made from random local stone with an earth hearting. This is not a robust form of construction and due to the inevitable cracks that have appeared over time, plants have been able to gain a foothold and the wall has suffered from vegetation growth with the roots penetrating the hearting and enlarging the cracks in many places. This has allowed further water penetration and plant growth. Most of the plant growth had been removed at the time of my visit but the damage to the wall had not been repaired so there is still an ongoing water penetration problem.

The wall shows a significant lean towards the road along almost the whole length of the wall which appears to originate with movement of the foundation (if any exists) rather than as a distortion within the wall itself. My calculations show that the current lean is 80% of the amount that would cause the wall to fall due to its own weight alone (currently 117 mm at the top with a theoretical stability limit of 146 mm). The point of collapse is likely to be a lower angle of lean than this however, due to the wall's construction type and the vegetation damage. This could stress the outer lower section of the wall locally beyond its capacity and cause a local failure which would trigger a section to fall. To this must be added wind loads and potential minor accidental loads from vehicles.

The situation is exacerbated by the fact that the more the wall leans, the greater the forces become which are causing the lean, so the rate of change of the lean will increase.

My conclusion therefore is that whilst the wall is not currently a "dangerous structure" which would attract a notice from the local authority Building Regulation body, it could rapidly develop into one, so measures should be taken in the fairly short term to remediate the

KR_A

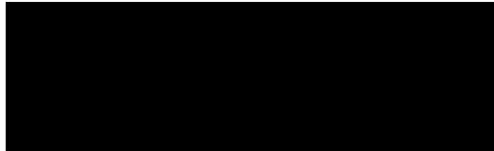


KEITH ROLLESTON ASSOCIATES

problem. I can see no way of recovering the existing structure so the initial step must be one of demolition. By “fairly short term” I mean before the bad winter weather sets in.

Following demolition the wall might be rebuilt in a more robust form - i.e. without the earth core and possibly re using the recovered stone, wholly or as a facing - or replaced with fencing etc. This will depend on the Planning Authority and any restrictions which might be in place, budget and personal preference, all of which are beyond the scope of this report and outside my sphere of expertise.

Yours sincerely,



Eur.Ing. K.J.Rolleston
B.Tech.(Hons).,C.Eng.,M.I.C.E.

