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24th November 2022
Project Number: 5018687

EA – Chertsey Lockhouse, Conservatory foundations

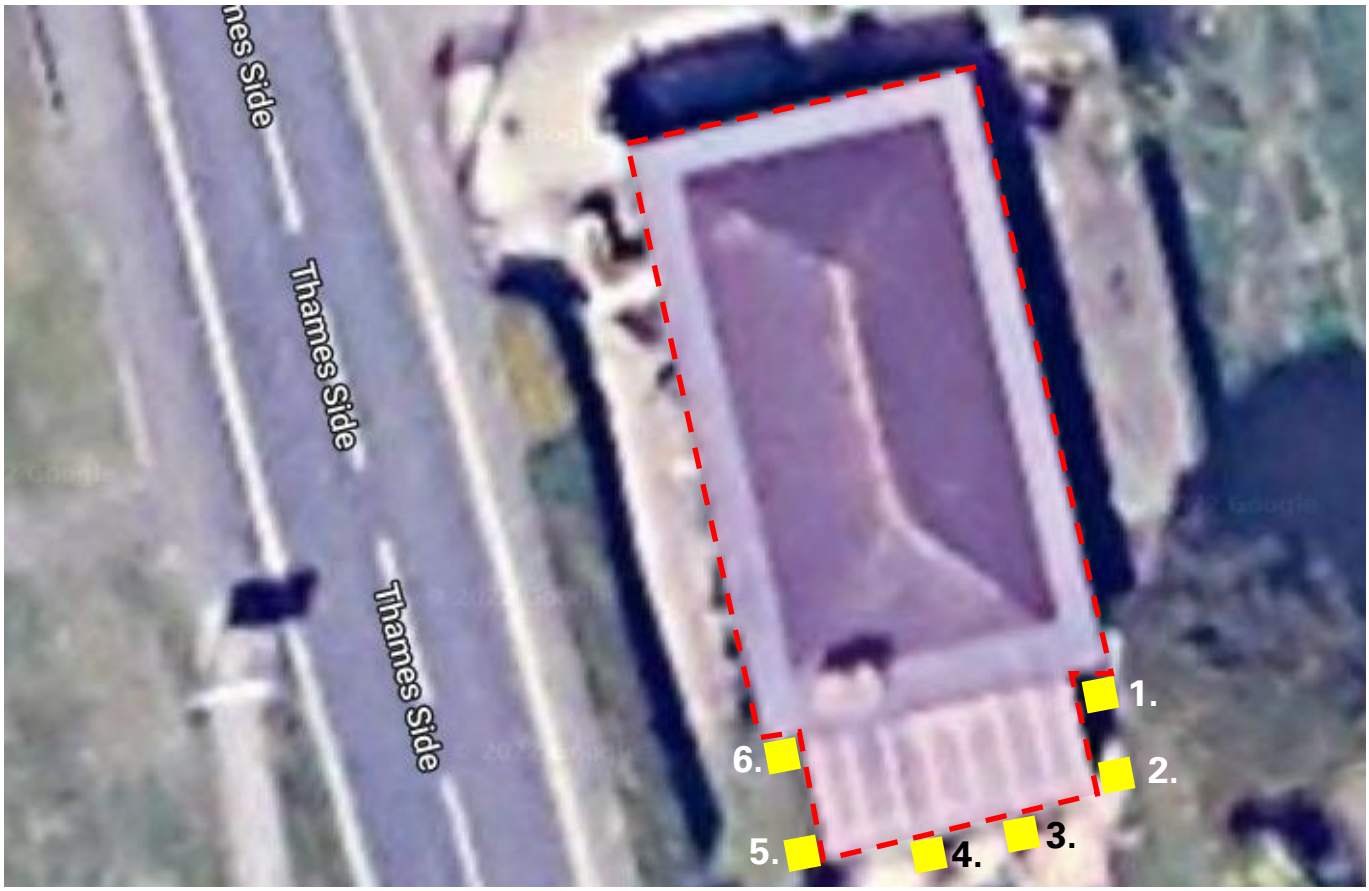
Kathryn Forster, Environment Agency
Kings Meadow House,
Kings Meadow Road
READING
Berkshire
RG1 8DG

Dear Kathryn,

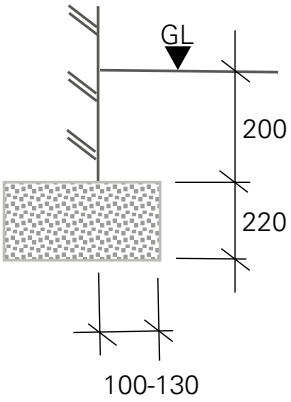
CHERTSEY LOCK HOUSE, KT16 8LD – TRIAL PIT FOUNDATION INSPECTION OF CONSERVATORY – STRUCTUCTURAL ENGINEERING SUMMARY

Please see details and description below for our summary of the findings from the trial pit inspection carried out to the perimeter of the conservatory at the above address.

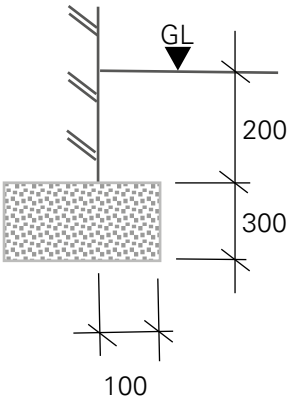
Trial pit location plan and numbering:



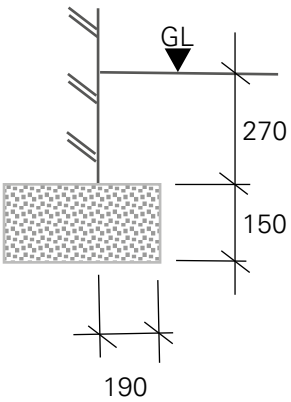
Trial pit 1



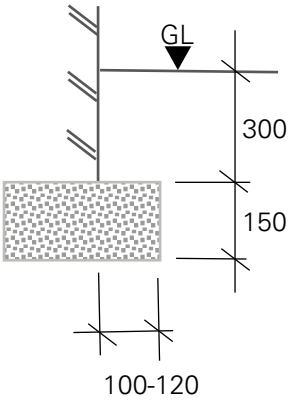
Trial pit 2



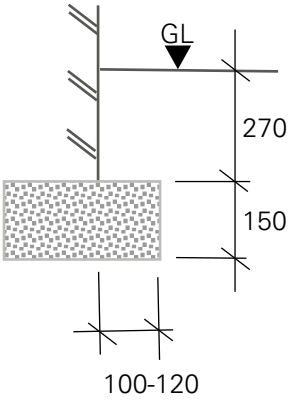
Trial pit 3



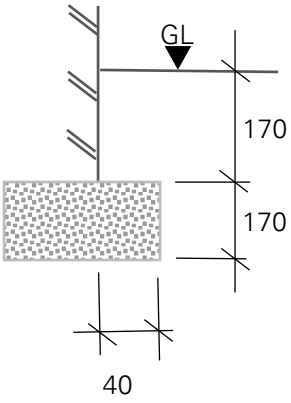
Trial pit 4



Trial pit 5



Trial pit 6



Conclusions and Recommendations:

It is concluded that, from the trial pit excavations, the existing foundations were determined to be simple shallow mass concrete filled trenches beneath the external wall line. With consideration of the assumed external wall thickness, and the length of the outstand of the concrete edge from the wall face, the overall width of the foundation is assumed to be 300 - 400mm (although this is not confirmed). The foundations are assumed to be fully unreinforced.

It is concluded that, due to the varying and simple nature of the concrete foundations of the conservatory, with different thicknesses and outstands of concrete observed, that the construction was not necessarily carried out by a professional builder. The concrete may also have been site mixed, and therefore of varying strength and constituents.

It is concluded that, from inspection of the ground conditions beneath the foundations, the existing upper layer of the soil is Alluvium deposits of Clay, silt, sand and gravel, as is presented with the British Geological Survey (BGS) data held for the site. This type of ground condition would be suitable for simple shallow foundations, although due to the high water table which may exist next to the river, it is recommended that a Geotechnical Engineer is commissioned to carry out a detailed survey of the site and material testing of collected soil samples, to inform any new foundation design.

It is recommended that, should a new conservatory be constructed, then the existing foundations should be fully excavated and broken up, and should not be re-used in an altered modern construction, as the foundation capacity cannot be accurately determined.

It is recommended that, if repairs only to the building fabric and envelope are to be carried out, then the existing foundations can remain to support the existing or very similar structural loadings. (i.e. the building materials should be kept identical, and the thicknesses and mass of any materials should be kept identical). Due to the simple nature of the foundations, it is to be noted that a similar degree of minor settlement and movement as currently observed may continue to occur in the future, following any repair works to the conservatory structure.

It is recommended that, a heavy or solid roof structure is to be avoided as this may cause further settlement to occur.

It is recommended that, significant alterations to the framework and loading of the long elevation is avoided, as this may change the existing load path in this area, and may also cause further settlement to occur.

Yours sincerely

Matthew Smith..

Matthew A Smith CEng MIStructE
Associate, Civil & Structural Engineering
For Ridge and Partners LLP