

23th May 2022

Your ref:

Our ref: J21179A/AT/1



GEA

Widbury Barn
Widbury Hill
Ware SG12 7QE

01727 824666
mail@gea-ltd.co.uk
www.gea-ltd.co.uk

Dave Oberoi-Morris
Constructure
Unit 18
New Concordia Wharf
London
SE1 2BB

Dear Dave

Re: 5 THE GROVE, LONDON N6 6JU – PROPOSED SWIMMING POOL CONSTRUCTION – GROUND MOVEMENTS

Further to your request and in response to comments raised by Campbell Reith as part of the London Borough of Camden's review of the planning documents submitted for the proposed development, we have reviewed the proposals and our previous report and provide the following further clarification with respect to the requirement to have a ground movement assessment completed for the proposed swimming pool excavation.

Our previous report (reference J21179 Rev 1, dated 26th August, 2021) states the following;

"It is understood that it is currently proposed to carry out the swimming pool excavation as an open cut. This should be feasible but it should be noted that slopes within Bagshot Formation can be problematic due to the inconsistent nature of the soil, which often contains lenses or layers of sand interbedded with clays which can give rise to inconsistent groundwater tables and changes in pore water pressures, which can lead to various stability problems. In addition at this site the made ground extends to depths of between 1.30 m and 2.00 m. Whilst it is possible that a slope angle of about 60 degrees could be adopted for the clay of Bagshot Formation, in view of the presence of a significant thickness of made ground over the soil and the variability of the Bagshot Formation an angle of about 30 degrees may be more appropriate, unless the slope face is strutted. Precautions should be taken to protect the slopes during periods of rainfall to minimise instability. A check has been carried out which has indicated that a line at an angle of 45 from the base of the footings of the surrounding structures does not intersect the proposed slope and therefore the excavation of the open cut excavation should not impact the stability of the surrounding structures. A ground movement assessment is, therefore, not considered to be required."

Provided that the slope angle during construction is consistent with the figures provided above, the excavation should remain stable and will not extend up to the listed retaining walls. Additionally, the loads of the swimming pool will not have an impact on the foundations or loading of the listed retaining walls as a line drawn at 45 degrees from the base of the swimming pool excavation does not intersect any of the existing walls or foundations. Additionally, a line drawn at 45 degrees from the base of the footings for each of the retaining walls does not intersect the slope of the excavation and therefore any movements within the excavation will not have an effect on the retaining walls and the loads of the walls will not contribute to movement within the slopes of the excavation.

Published information¹ on observations made of excavations in a sand or firm to stiff clay, have indicated that the movement around an excavation reduces to zero at a distance equal to twice the depth of the excavation. In this case, where the excavation is to extend to a depth of 3.00 m, movements are expected to reduce to zero at a distance of 6.00 m from the edge of the excavation. None of the retaining walls fall within this area.

Geotechnical & Environmental Associates

Registered office 3 Brook Business Centre, Uxbridge UB8 2FX
Registered in England No 4585616

Also in Nottingham (01509 674888)

Steve Branch BSc MSc CGeol FGS FRGS
Mike Plimmer BSc MSc CGeol CSci FGS MIEEnvSc
Martin Cooper BEng CEng MICE FGS
Juliet Fuller BSc MSc DIC FGS
Matthew Penfold MSc MSc CGeol DIC FGS

Company Secretary: Penny Piddington

As a result of the above, it has been concluded that the swimming pool excavation will not have a significant impact on the nearby listed retaining walls and no other sensitive structures are present within the vicinity that require consideration. Therefore a ground movement assessment is not considered to be required to determine the extent of movements occurring as a result of the development.

We trust that we have provided sufficient information but will of course be pleased to assist further if required.

Yours sincerely

GEOTECHNICAL & ENVIROMENTAL ASSOCIATES

A handwritten signature in black ink, appearing to read 'A Taylor', written in a cursive style.

Alex Taylor

Encs

ⁱ Peck, R B (1969) *Deep excavations and tunnelling in soft ground*. State-of-the-Art Report. Proc 7th Int Conf SMFE, Mexico 225-290