RgA Roger Gulhane & Associates
STRUCTURAL CONSULTANTS
Roger Gulhane CEng.MICE
Chartered Civil Engineer
Structural Calculations & Reports • Surveys • Onsite Advice

Re : Lower Ground Floor, 9 St. George's Terrace, London NW1 9XH

The proposal is for a lower ground floor extension under the garden at the property for which there has been a detailed site investigation by Chelmer Consulting Service, evaluation of the variable nature of the garden soil and recommendations for the design parameters to be used for groundwater, earth pressures and retaining pressures to be considered and used.

The ground to be excavated is substantially made ground with the base slab and foundations being into weathered London Clay, but overall the excavation will not be significantly below the existing Lower Ground Floor of the main terraced property, the made ground being nearly a storey height against the rear wall of the Mews properties behind. The removal of this will eliminate the present earth pressure on these properties and the risk of penetrating damp which has clearly been a past problem from the added brick and block skins that can be seen against the Mews. Because of the depth of this made ground, the underpinning of the Mews rear wall is not of significant height and requires only normal construction methods.

The Chelmer Report (the Report) draws particular attention to the cross slope and different levels of ground across the rear gardens. This has been taken account of by incorporating the roof deck and ground floor as structural props across the site and using steel posts on the downslope side to ensure stiffness and together with the steel capping on each side, prestressing is incorporated to effectively eliminate the risk of ground movement affecting the adjoining gardens.

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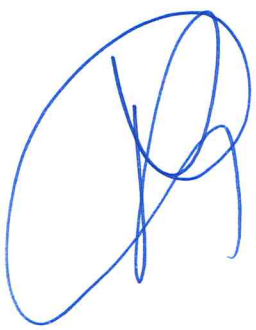
The Report in discussing design earth pressures advocates an 'increased earth pressure coefficient, to allow for the slope to the west of the lower ground floor extension's walls.' The 50% increase adopted in the design is conservative.

The Report also gives recommendations with respect to water pressures on the walls and floor slab, but acknowledges the possibility of providing weepholes and drainage to deal with this. A full drainage membrane is detailed to minimise water pressures, risk of damp penetration and uplift on the ground slab which is also suspended as is advised NHBC good practice in circumstances were foundations are at depth below the ground, and the concrete ground floor is not rigidly attached at the edges to isolate against upward forces on the Party Walls.

An evaluation of the existing hard surfacing and the proposed is that there is not a nett increase into the public sewage system and so not an increased risk of storm flooding. The runoff from the roof garden is as recommended to the rear courtyard and in the design and it is noted that the Suds evaluation as a planning condition was set aside. But there is incorporated under the new floor, storage capacity for rainwater runoff and soakaway provision through drainage to the lower front of the property as 'channelled flow' as identified as a normal consequence of service trenches existing.

The Report refers to this development as a 'garden extension', not a basement because it is wholly external to the existing building, with the only construction under being under the rebuilt boundary garden wall on the downslope side. This wall was rebuilt by the present owner in anticipation of the lowering of the garden and a trial pit has verified its construction on a concrete strip footing.



The form of construction using precast materials and steel posts, and method of installation proposed is as normal for open ground excavation and tunnelling, it proceeding towards the rear in short lengths with the ground to the sides of the Adjoining Properties being progressively propped and secured with the permanent structure as a frame without the need for elaborate temporary works and subsequent transfer of loads to permanent structure.

I confirm that: 1. The Detailed Basement Construction Plan prepared by Ecos Maclean Ltd, dated 14 June 2018 sets out, as required, the steps taken to incorporate the detailed measures set out in The Agreement at 2.9 Detailed Basement Construction Plan sub-clauses (ii)-(vi) with respect to the design.

2. The Construction Management Plan prepared by the Contractor, MK Contracting (Chertsey) Ltd sets out the measures for ameliorating and monitoring construction traffic as required by sub-clause (vii) of The Agreement

3. The Building Owner and the Adjoining Owners have appointed Party Wall Surveyors to prepare detailed structural appraisals and conditions survey of all Adjoining Properties as required by sub-clause (1) of The Agreement

Signed

Dated 22nd June 2018

Roger Gulhane CEng.MICE

Chartered civil engineer.

Appointed "Certifying Engineer" As Approved LB Camden.