Concept Consultancy
Chartered Civil & Structural Consulting Engineers

Basement Impact Report

10 Greenaway Gardens, London, NW3 7DJ

Job No.: 2150
Client: Walter Silvestri
Date: October 2012

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1.0 INTRODUCTION

Concept Consultancy has been commissioned by Walter Silvestri to carry out a Basement Construction Management Plan for this site at, 10 Greenaway Gardens, London, NW3 7DJ. There are some internal renovation works to be carried out but this plan is solely for the construction an extension to the existing lower ground floor and the lowering of the existing lower ground floor.

2.0 Site Location

The site is located at 10, Greenaway Gardens, in the Borough of Camden, London NW3. It is approximately centered at National Grid Reference TQ 25734 85643. The site is roughly rectangular in shape and measures approximately 19.5m x 67.5m. The site presently contains a four-storey semi-detached residential building fronting onto Clifton Hill and a single storey detached residential building to the rear.

The site presently contains a 2-storey (above ground) detached residential building fronting onto Greenaway Gardens. There is a lower ground floor covering part of building footprint and loft conversion

The lower ground floor level is approximately 2.1m below street level and is constructed of load bearing masonry walls and timber floors. The pitched roof is of cut-timber construction.

The site slopes from the public road at the front of the building down to the rear garden. As such the rear of the building, the lower ground floor is level with rear garden.

2.1 Proposed Works

It is proposed to extend the existing lower ground floor at the front of the building to cover the full footprint of the building (as shown on Fig 1) This new area of the lower ground floor is to be set at a level of +17.48 (approx level with the top of the existing corbel of the external wall foundations). In addition to this the existing lower ground floor is to be lowered to the same level as the new lower ground floor area at the front.

As shown in Fig 2 the existing external walls of the building are founded at a depth approx. 300mm below the proposed lower ground floor level and therefore may require under pinning as the existing corbel at the bottom of the foundation will have to be removed. The existing internal walls are founded on an existing concrete underpin which is founded approx. 500mm above the proposed lower ground floor level. These walls shall be under pinned with a new concrete under pinning which shall extend to a depth approx. 1m below the proposed lower ground floor level.

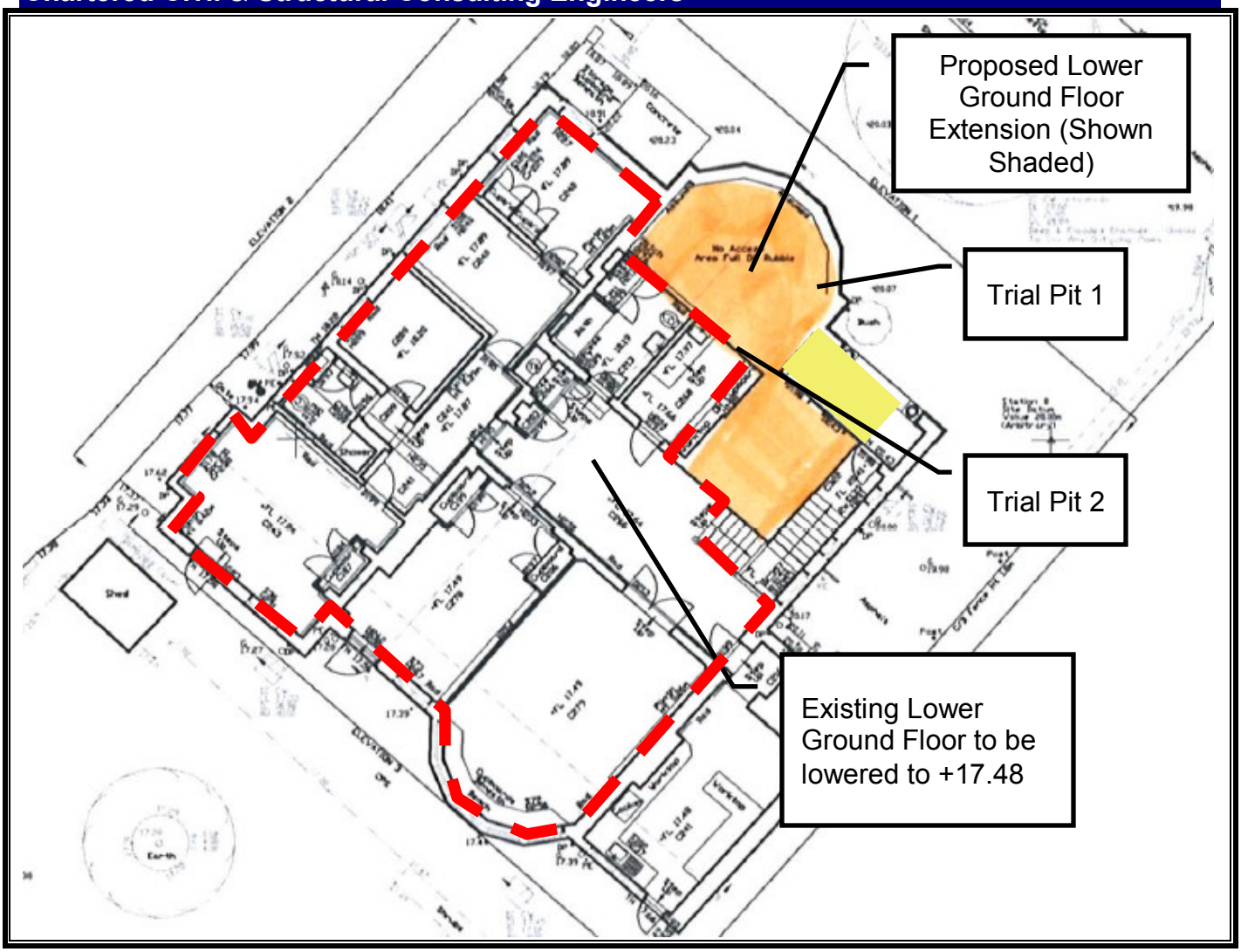


Fig 1: Lower Ground Floor Plan

The new concrete liner wall shall be constructed by locally excavating adjacent to the wall and utilizing the earthen banks on either side of the excavation as temporary props. Between the temporary earthen props the earth inside will be locally excavated in approx. 1m sections to allow the construction of a 1m wide section of retaining wall. This process shall be continued in a hit & miss pattern around the perimeter of the basement until all sections of wall have been completed and all of earth has been removed.

The existing timber floor joists of the ground floor are currently supported intermediately on a timber trimming beam. It is proposed to strengthen the existing ground floor joists in this area and remove the trimming beam to increase the head room. This will be carried out once all of the new retaining wall below has been completed.

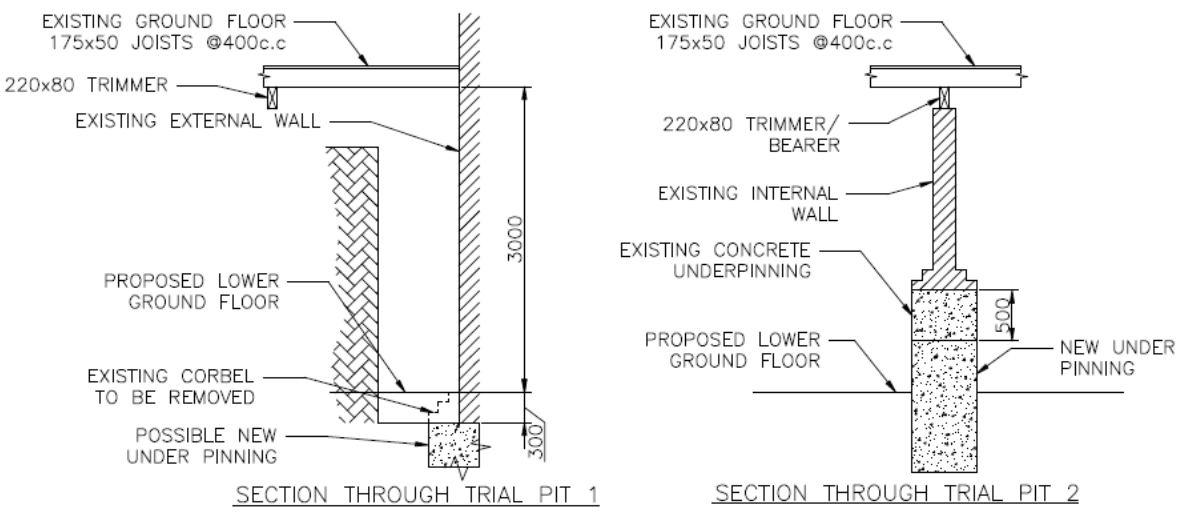


Fig 2 – Trial Pit Details

A reinforced concrete liner retaining wall (Fig 3) will be constructed for the full perimeter of the new floor plan. This will resist lateral loads from the existing retained earth to the front of the building along with surcharge loading from vehicles at ground level directly adjacent to the wall. The liner wall shall be tied into the new floor plate. This wall will have the added advantage of providing an additional waterproof barrier protecting the habitable space from water ingress from the driveway and retained earth

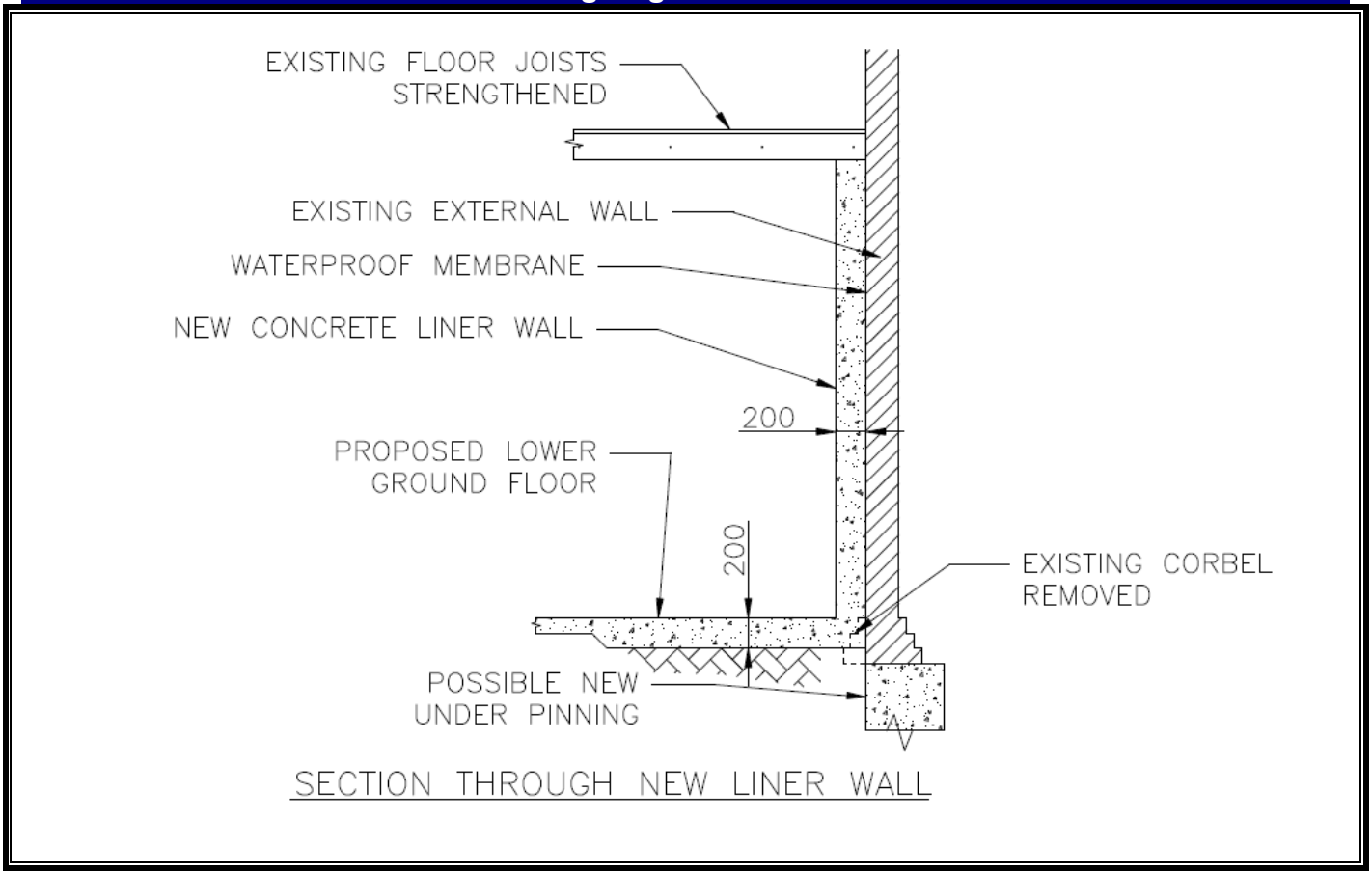


Fig 3 – Proposed Liner Wall Detail

3.0 Ground Conditions

3.1 Soil Conditions

The Geological Survey map of the area indicates that the site should be underlain by the London Clay Formation.

3.2 Groundwater Conditions

The Environmental Agency maps shows the site as being in area of “Unproductive Strata” which it defines as “rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow”.

3.3 Surface Water Features

No culvert, rivers and or other water bodies are known within the immediate vicinity of the site.

4.0 Screening

The following screening is based on a series of questions.

4.1 Surface Flow and Flooding Screening Assessment:

Question 1: As part of the proposed site drainage, will surface water flows (e.g. volume of rainfall and peak run-off) be materially changed from the existing route?

No. The current proposal is to re-use the existing storm water connections to the public sewer

Question 2: Will the proposed basement development result in a change in the proportion of hard surfaced / paved external areas?

No. The new basement will not affect the proportion of hard surfaced/paved areas as the footprint of the proposed basement covers an area; which is currently a hard surfaced & paved area.

Question 3: Will the proposed basement result in changes to the profile of the inflows (instantaneous and long-term) of surface water being received by adjacent properties or downstream watercourses?

No. The proposed basement will not alter surface water flows downstream as they will use existing connections to the sewer network. The area of the proposed building on plan is approximately the same as the existing.

Question 4: Will the proposed basement result in changes to the quality of surface water being received by adjacent properties or downstream watercourses?

No. The quality of the surface water will be unaltered that is discharged to the sewer.

Question 5: Is the site in an area known to be at risk from surface water flooding, such as Flood Risk Zones 2 and 3 as defined by the Environment Agency (mainly Pimlico and Victoria areas and sites close to the River Thames) or is it at risk from flooding, for example because the proposed basement is below the static water level of a nearby surface water feature?

No. The site is not within an area known to be at risk of flooding.

The above assessment has identified that there are no potential issues that need to be assessed

4.2 Groundwater Flow:

Question 1a: Is the site located directly above an aquifer?

No. The site is located in area designated as "Unproductive Strata" by the EA which they state are areas that "are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow".

Question 1b: Will the proposed basement extend beneath the water table surface?

No. The water table is below the level of the proposed basement.

Question 2: Is the site within 100m of a watercourse, well (used/disused) or potential spring line?

No. There is no known watercourse, spring or well within 100 m of the site.

Question 3: Will the proposed basement development result in a change in the proportion of hard surfaced /paved areas?

No. The new basement will not affect the proportion of hard surfaced/paved areas as the footprint of the proposed basement covers an area; which is currently a hard surfaced & paved area.

Question 4: As part of the site drainage, will more surface water (e.g. rainfall and run-off) than at present be discharged to the ground (e.g. via soakaways and/or SUDS)?

No. All surface water will be discharged to the sewer network through existing connections, replicating the existing arrangement. The volume of water is no greater than in the existing condition.

Question 5: Is the lowest point of the proposed excavation (allowing for any drainage and foundation space under the basement floor) close to, or lower than, the mean water level in any local pond or spring line?

No. There are no known local water features in the immediate vicinity of this site.

The above assessment has identified that there are no potential issues that need to be assessed

4.3 Slope Stability:

Question 1: Does the existing site include slopes, natural or manmade, greater than 7 degrees? (Approximately 1 in 8)

Yes. Overall the site slopes from front to back (approx. 1:23) but the slope is steeper between the front & back of the building, approx. 1:6.

Question 2: Will the proposed re-profiling of landscaping at site change slopes at the property boundary to more than 7 degrees? (Approximately 1 in 8)

No.

Question 3: Does the development neighbour land, including railway cuttings and the like, with a slope greater than 7degs? (Approximately 1 in 8)

No. The adjacent land is relatively level

Question 4: Is the site within a wider hillside setting in which the general slope is greater than 7degrees? (Approximately 1 in 8)

No. The site is located within a relatively level area.

Question 5: Is the London Clay the shallowest strata at the site?

No. London Clay is below a layer of superficial Made Ground.

Question 6: Will any tree/s be felled as part of the proposed development and/or are any works proposed within any tree protection zones where trees are to be retained?

No. There is an existing tree on the site boundary with the public road at the front of the property. It is not proposed to remove this tree.

Question 7: Is there a history of seasonal shrink-swell subsidence in the local area, and/or evidence of such effects at the site?

No. We have no evidence indicating any possible shrink-swell subsidence in the local area.

Question 8: Is the site within 100m of a watercourse or a potential spring line?

No. There is no known watercourse, spring or well within 100 m of the site.

Question 9: Is the site within an area of previously worked ground?

No.

Question 10: Is the site within an aquifer? If so, will the proposed basement extend beneath the water table such that dewatering may be required during construction?

No.

Question 11: Is the site within 5m of a highway or pedestrian right of way?

No. The proposed basement is approximately 10m from the Greenaway Gardens Road to the front of the existing house.

Question 12: Will the proposed basement significantly increase the differential depth of foundations relative to neighbouring properties?

No. The proposed lowest point of the basement will be approximately the same as the existing lower ground floor. Some minor local underpinning of existing internal walls will be required. This will be to a depth of approx. 1m below the existing foundation level.

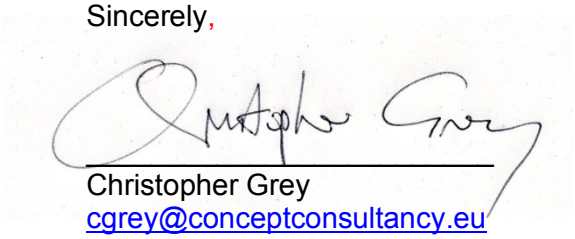
Question 13: Is the site over (or within the exclusion zone of) any tunnels, e.g. railway lines?

No. No existing London Underground Tunnels or overground railway lines are within 100m of the site.

The above assessment has identified that there are no potential issues that need to be assessed

Nothing further occurs.

Sincerely,



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