

Hardman Structural Engineers

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Basement Impact Assessment

for

New development at 107-109 Hampstead Road

on behalf of

Monovan Construction Ltd

Ref: 983

Date: Feb 2012

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Brief

This report is intended to consider the hydrological and structural impact of creating a new basement structure on the site.

In preparing this report reference has been made to Arup's report entitled "hydro-geological report".

Description of Site

The site occupies a corner plot on the junction of Hampstead Road and Netley Street. There is a relatively recently constructed five storey building immediately adjacent to the site on Hampstead Road. This building has a basement. A row of three storey terraced properties immediately abuts the site on Netley Street.

The site was previously fully occupied by terraced properties.

The geological maps for the area indicate the site is on the boundary of London Clay, Lynch Hill Gravel and Langley Silt. The map also shows that artificial ground work has also taken place in the area probably associated with Euston Station.

The Environmental Agency maps illustrate the area of the site is not at risk of flooding from rivers or the sea.

The existing site, as well as neighbouring land is level, and does not include natural or manmade slopes. The site is not part of a wider hillside setting. The main line Euston station is around 250m away where cuttings for train lines are present. The development will not modify the levels in any way.

Site investigation

A site investigation was carried out on the site involving three boreholes. One borehole was taken down to a depth of 20m and the remaining two were taken down to a depth of 8m. The 20m deep borehole encountered made ground to 2m depth and stiff clay (London Clay) below extending the full depth of the borehole. The other two boreholes encountered very similar ground.

All the boreholes were found to be dry.

Trial pits were carried out to determine the existing footing details to the adjacent properties on Netley Street and Hampstead Road respectively. These indicated the following: the building to Netley Street is sat on a corbelled brick footing onto clay; the building to Hampstead Road is sat on a concrete strip footing founded below the

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proposed basement floor level. This footing projects onto the site of 107-109 Hampstead Road.

Proposed Development

The new building will form a six storey concrete framed structure with a basement. The lower two stories are for commercial use, the upper floors are for residential use. There will be a two storey section to the building fronting onto Hampstead Road.

The building will be founded on piled foundations into the underlying clay. The piles are to be continuous flight auger (CFA). Along the boundary with the existing building on Netley Street the piles will extend to ground floor level to form the retaining wall. No retaining wall is required along the boundary with the existing building on Hampstead Road as the existing building has a basement. Along the remaining site boundary on Netley Street temporary sheet piling will be used to allow formation of a reinforced concrete retaining wall. Along the remaining site boundary on Hampstead Road permanent sheet piling will be used to allow formation of a well between basement and ground floor level.

As the footprint of the new building matches the previous hard-standing area of the site the proposed development will not increase the overall surface water discharge from the site.

Excavations adjacent to the existing buildings and the site perimeter

Netley Street (building)

As stated above a continuous CFA piled wall will be installed along this boundary to minimise disruption to the adjacent property. A reinforced concrete capping beam will then provide a tie across the head of the piles and a springing point for temporary props to be installed until the buttressing ground floor slab is installed.

Reference should be made to previous attached reports on this matter entitled "HSE party wall document to No. 38 Netley Street" dated May 2010 and "HSE party wall document to No. 38 Netley Street" dated May 2010.

Hampstead Road (building)

As stated above piles will be installed at basement level to support the new six storey building. These will be kept away from the existing continuous strip footing for the wall to the adjacent building on Hampstead Road. Excavations for the new basement slab will not undermine the existing footing.

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Netley Street and Hampstead Road (public highway)

As stated above, the public highway will be protected by the use of temporary and permanent sheet piling along the site boundaries. Were temporary sheet piling is to be installed a reinforced concrete retaining wall will be constructed.

Overall Assessment

The site investigation did not encounter any groundwater extending down to 20m depth. The clay soils encountered will form a barrier to groundwater movement.

As the footprint of the new building matches the previous hard-standing area of the site the proposed development will not increase the overall surface water discharge from the site.

Design consideration has been given to the impact of the proposed basement construction on the neighbouring properties and land.

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