Desk Study Report

9-12 New College Parade
Finchley Road
London
NW3 5EP

Client	Brampton Investments LTD
Engineer	Stephen Davy Peter Smith Architects

J13299

October 2013

GEA Geotechnical & Environmental Associates

Document Control

Project title	9–12 New College Parade, Finchley Road, London, NW3 5EP	**Project ref**	J13299
Report prepared by	Louise Grimes		
Report checked and approved for issue by	Steve Branch BSc MSc CGeol FGS FRGS MIEnvSc		

Issue No	Status	Date	Approved for Issue
1	Final	31 October 2013	

This report has been issued by the GEA office indicated below. Any enquiries regarding the report should be directed to the office indicated or to Steve Branch in our Herts office.

☑	Hertfordshire	tel 01727 824666	mail@gea-ltd.co.uk
☐	Nottinghamshire	tel 01509 674888	midlands@gea-ltd.co.uk

CONTENTS

EXECUTIVE SUMMARY

This executive summary contains an overview of the key findings and conclusions. No reliance should be placed on any part of the executive summary until the whole of the report has been read. Other sections of the report may contain information that puts into context the findings that are summarised in the executive summary.

BRIEF

This report describes the findings of a desk study carried out by Geotechnical and Environmental Associates Ltd (GEA), on the instructions of Davy Smith Architects LTD, on behalf of Brampton Investments The purpose of the work has been to determine the history of the site, to assess the potential for contamination, and to provide preliminary information on foundation options with regard to redevelopment of the site through the construction of a five-storey residential building with commercial use at ground floor and basement levels.

DESK STUDY FINDINGS

The site has been occupied by the existing buildings since the early 20th Century. The 1872 map shows the site and surrounding area on the northern outskirts of extensive residential development and the site occupied part of a garden area apparently associated with Abbey Farm Lodge, with New College shown bounding the site to the southeast; New College had been constructed in 1850-51 as a college for Congregationalist ministers. By 1896 the site at this time formed part of the grounds of Northcourt, a mansion at 40 College Road that was built in 1880 and was subsequently gifted to a hospital charity, and a children's hospital occupied the building from 1904. By 1915 the existing terrace of buildings, of which the site forms a part, had been constructed along Finchley Road, on what had been part of the hospital grounds.

The New College building was demolished in 1934 and the 1935 map shows the former site of New College to have been redeveloped by the construction of a larger building, known as Northways.

The 1954 map shows that the former Children's Hospital had been converted into a Preliminary Training School for Nurses. The map shows the line of the underground railway which runs approximately 50m southwest of the site and that a few of the buildings along Finchley Road are marked as ruins, indicating that the area had suffered from World War II bomb damage.

CONTAMINATION RISK ASSESSMENT

On the basis of the desk study research, the risk of contamination at the site has been assessed as LOW. No potential sources of soil gas have been identified and a risk from soil gas is not, therefore, envisaged. A ground investigation should be undertaken to provide information to assist with the design of foundations and samples should be tested for the presence of contamination.

FOUNDATIONS

Spread foundations bearing in the London Clay may be appropriate, although the magnitude of imposed loads may be such that relatively large foundations may be required. Piled foundations may therefore be the most appropriate solution and consideration will need to be given to the effects of pile construction and loading on the nearby underground tunnels.

1.0 INTRODUCTION

Geotechnical and Environmental Associates (GEA) have been commissioned by Stephen Davy Peter Smith Architects, on behalf of Brampton Investments, to carry out a desk study at 9–12 New College Parade, Finchley Road, London, NW3 5EP.

1.1 Proposed Development

Consideration is being given to the proposed redevelopment of the site by the construction of a five-storey residential building with commercial use at ground floor and basement levels.

This report is specific to the proposed development and the advice herein should be reviewed if the development proposals are amended.

1.2 Purpose of Work

The principal technical objectives of the work carried out were as follows:

- to determine the history of the site and surrounding area, particularly with respect to any previous or present potentially contaminative uses;
- to research the geology of the site;
- to check records of data on groundwater, surface water and other publicly available environmental data; and
- to use the information obtained in the above searches to carry out a qualitative risk assessment with respect to subsurface contamination.

1.3 Scope of Work

In order to meet the above objectives, a desk study was carried out, comprising, in summary, the following activities:

- a review of readily available geological maps;
- a review of publicly available environmental data sourced from the Envirocheck database;
- a review of historical Ordnance Survey (OS) maps supplied by Envirocheck;
- a walkover survey of the site; and
- provision of a report presenting and interpreting the above data.

The report includes a contaminated land assessment which has been undertaken in accordance with the methodology presented in Contaminated Land Report (CLR) 11[1] and involves identifying, making decisions on, and taking appropriate action to deal with, land contamination in a way that is consistent with government policies and legislation within the United Kingdom. The risk assessment is thus divided into three stages comprising Preliminary Risk Assessment, Generic

1 *Model Procedures for the Management of Land Contamination* issued jointly by the Environment Agency and the Department for Environment, Food and Rural Affairs (DEFRA) Sept 2004

Quantitative Risk Assessment, and Site-Specific Risk Assessment.

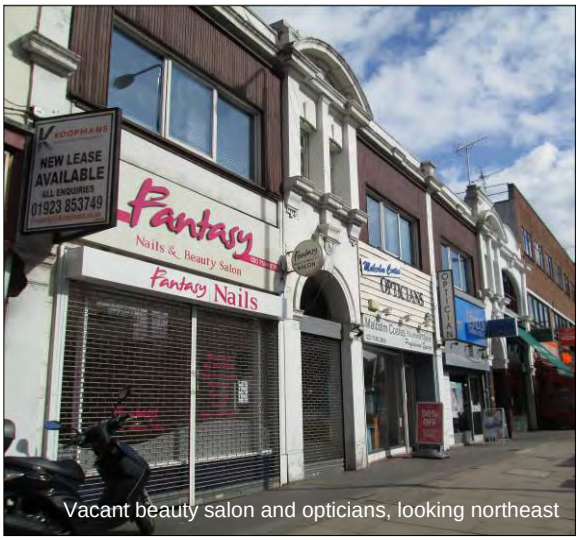
1.4 Limitations

The conclusions and recommendations made in this report are limited to those that can be made on the basis of the research carried out. The results of the research should be viewed in the context of the work that has been carried out and no liability can be accepted for matters outside the stated scope of the research. Any comments made on the basis of information obtained from third parties are given in good faith on the assumption that the information is accurate. No independent validation of third party information has been made by GEA.

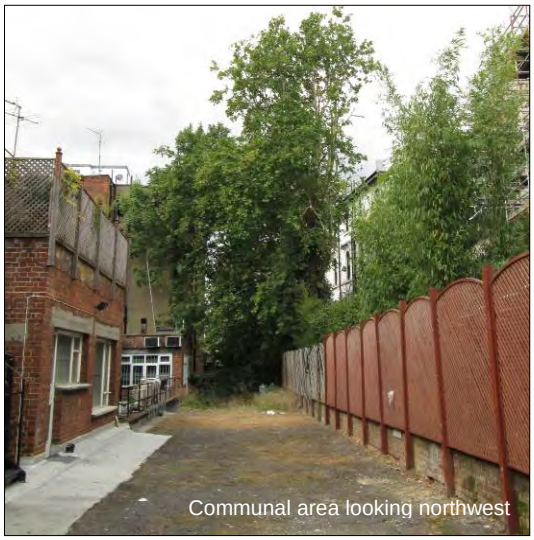
2.0 THE SITE

2.1 Site Description

The site is located approximately 200 m southeast of Finchley Road Underground Station and 200 m northwest of Swiss Cottage Underground Station. It is bordered to the northwest by No 13 New College Parade; a six-storey attached brick building with commercial units on the ground floor and residential use above. It is bordered to the southeast by No 8, a three-storey attached brick building with commercial units on the ground floor and possibly office / residential use on the upper two floors. The rear of the property is bounded by a Grade II listed building currently used as a Youth Hostel and new development of residential dwellings. It is unknown whether either of the adjoining properties has basements.

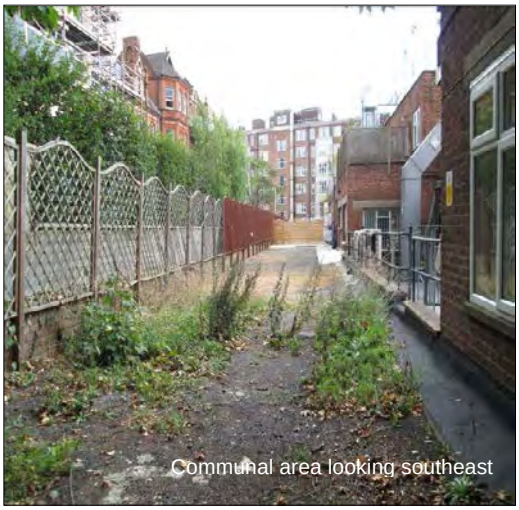


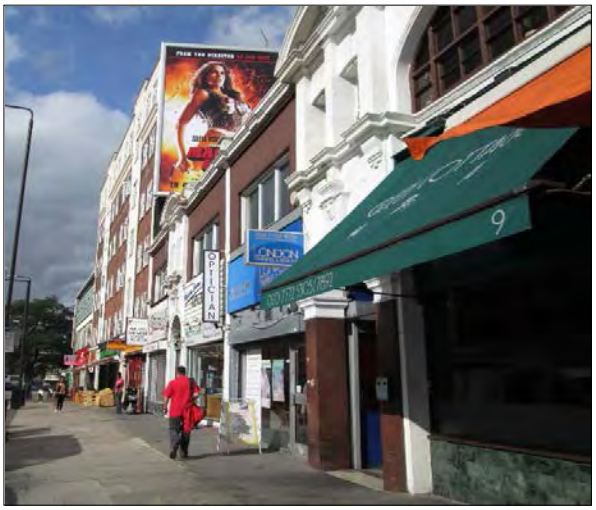
Vacant beauty salon and opticians, looking northeast


Communal area looking northwest

The site is roughly rectangular in shape, measuring approximately 25 m northwest to southeast and 15 m northeast to southwest and fronts onto Finchley Road to the southwest. It may additionally be located by National Grid Reference 526510, 184520.

The majority of the site is occupied by a two-storey stucco fronted brick building which at present is occupied by a mixture of commercial and office units. The ground floor level is divided into four separate commercial units, occupied by a beauty salon, opticians, restaurant and vacant beauty salon. Between the restaurant and operating beauty salon is a set of single doors, one leading below to the basement level presumably used as a kitchen to the restaurant and the other leading up into the office level.


Communal area looking southeast



Finchley Road slopes down towards the east and the site is on a number of different levels. The building is cut into the slope of the ground, such that it comprises two storeys with basement at the front and a single storey with double basement at the rear. At the front of the building is a paved pedestrian walkway and at the rear a communal concreted area approximately which is shared with the building to the southeast.

A petrol filling station is located about 50 m to the northwest of the site, fronting onto Finchley Road, and a vehicle maintenance garage, used as a Volvo Cars after-sales facility, is present at the eastern end of New College Parade.

Three semi-mature deciduous trees are present on neighbouring land to the northwest.

2.2 Site History

The site history has been researched by reference to historical Ordnance Survey (OS) maps sourced from the Envirocheck database.

The earliest historical map studied, dated 1850, shows the site to be on an undeveloped area of land between Finchley Road and Belsize Lane. The roads joined approximately 200 m northeast of site at the Junction Road Toll Gate. By 1872 the site and surrounding area were on the northern outskirts of extensive residential development and the site occupied part of a garden area apparently associated with Abbey Farm Lodge, with New College shown bounding the site to the southeast; New College had been constructed in 1850-51 as a college for Congregationalist ministers. By 1896 the surrounding area had undergone significant development and Finchley Road and Swiss Cottage Stations had been built; the site at this time formed part of the grounds of Northcourt, a mansion at 40 College Road that was built in 1880 for the businessman Samuel Palmer, who ran the London office of Huntley & Palmer Biscuits. Palmer died in 1903, and gifted the house to a hospital charity, and a children's hospital occupied the building from 1904. By 1915 the existing terrace of buildings, of which the site forms a part, had been constructed along Finchley Road, on what had been part of the hospital grounds.
The New College building was demolished in 1934 and the 1935 map shows the former site of New College to have been redeveloped by the construction of a larger building, known as Northways.

The 1954 map shows that the former Children's Hospital had been converted into a Preliminary Training School for Nurses. The map shows the line of the underground railway which runs approximately 50 m southwest of the site and that a few of the buildings along Finchley Road are marked as ruins, indicating that the area had suffered from World War II bomb damage.

At some time in the 1960s a garage was built about 80 m to the east of the site between the end of New College Parade and Northways; this appears to have been used for vehicle maintenance.

The site and surrounding area have since remained relatively unchanged since this time.

2.3 Other Information

A search of public registers and databases has been made via the Envirocheck database and relevant extracts from the search are appended. Full results of the search can be provided if required.

The search has revealed no records of any existing and historical landfill sites, waste management, treatment or disposal sites within 250 m of the site. There are no pollution incidents to controlled waters that relate directly to the site, or that are likely to have had any potentially detrimental impact. There are is one fuel station entry within 50 m of site.

The search has indicated that the site is located in an area where less than 1% of homes are affected by radon emissions; according to records held by the Health Protection Agency, and as such radon protection measures will not be required.

3.0 GROUND CONDITIONS

3.1 Soil Conditions

The British Geological Survey (BGS) map of the area (Sheet 256) indicates that the site is underlain by London Clay from the surface, which overlies a downwards sequence of Lambeth Group (sandy clays) overlying Thanet Sand (fine grained sands), which in turn overlies the Cretaceous Chalk. A cross section on the geological map indicates the London Clay to be approximately 65 m thick beneath the site.

BGS boreholes approximately 150 m north from site show after a moderate thickness of made ground London Clay was present and proved to the maximum depth investigated of 20.00 m.

A previous investigation conducted by GEA at 39 College Crescent, which adjoins the site to the northeast, generally confirmed the expected ground conditions in that, beneath a nominal thickness of made ground, London Clay was encountered.

The London Underground Ltd (LUL) Metropolitan Line runs beneath Finchley Road, roughly 10 m southwest of the site. An enquiry was made to LUL regarding the location of their assets close to the site of the previous investigation and their response is included in the appendix. LUL must be consulted prior to undertaking any works at this site, in order to ensure the safety of the railway.

3.2 Groundwater Conditions

The nearest surface water feature is listed in the Envirocheck Report as 309 m southeast of the site.

The site is not located within a Flood Zone as defined by the Environment Agency, and College Crescent has not been identified as a street at risk of surface water flooding within the London Borough of Camden.

The Environment Agency classifies the London Clay as Unproductive Strata (formerly Non Aquifer), i.e. not capable of providing useable quantities of water; however this classification may not take into account local geological variations within the sandier upper unit of the London Clay Formation. The site does not lie within a Source Protection Zone as designated by the Environment Agency.

Spring lines are present at the interface of the Bagshot Beds and the Claygate Member in the area of Hampstead Heath and, to a lesser extent, near the boundary between the Claygate Member and the underlying lowly permeable London Clay. These springs have been the source of a number of London's "lost" rivers, including the Tyburn and Westbourne. The Tyburn rose roughly 1 km north of the site and flowed southwards, passing approximately 40 m north- east of the site before continuing south-southeastwards towards Regents Park. The Tyburn is entirely covered and culverted and forms part of the sewerage system.

The Westbourne rose roughly 2 km north-west of site and flowed southwards, passing approximately 100 m north-west of the site before continuing south-westwards towards Paddington. The Westbourne is also entirely covered and culverted and forms part of the sewage system.

Groundwater within the London Clay beneath the site is considered to be dominated by fissure flow. Due to the very low permeability of the London Clay, any groundwater flow will be at very low rates. Published data for the permeability of the London Clay indicates the horizontal permeability to generally range between 1×10^{-10} m/s and 1×10^{-8} m/s, with an even lower vertical permeability. Without evidence to the contrary, groundwater flow beneath the site is anticipated to follow topographic contours toward the south.

The site lies outside the catchment of the Hampstead Heath chain of ponds.

On the adjacent site to the northeast groundwater seepages were encountered within the London Clay at a depth of 1.8 m (60.25 m OD) in one location and associated with claystones at depths of 12.4 m and 18.7 m (48.20 m OD and 43.35 m OD) elsewhere; subsequent monitoring of standpipes installed in the boreholes indicated groundwater at depths of between 0.2 m and 4.6 m (61.85 m OD and 56.20 m OD).

4.0 RISK ASSESSMENT

The proposed redevelopment of the site comprises demolition of the existing buildings and construction of a new five-storey building with a single basement, with commercial use at basement and ground floor levels, with residential use above.

The desk study research has indicated that the site has been occupied by the existing buildings prior to 1915.

4.1 Environmental Risks

Part IIA of the Environmental Protection Act 1990, which was inserted into that Act by Section 57 of the Environment Act 1995, provides the main regulatory regime for the identification and remediation of contaminated land. As part of the new regime local authorities are required to carry out inspections of their area to identify sites that may be contaminated. The determination of contaminated sites is based on a "suitable for use" approach which involves managing the risks posed by contaminated land by making risk-based decisions. This risk assessment is carried out on the basis of establishing one or more "pollution linkages"; a pollution linkage requires a source of contamination, a sensitive target or receptor that is at risk from the contamination and a pathway by which the contamination can travel from the source to the target.

Current guidance to Local Planning Authorities (LPAs)[2] also indicates the need for a risk assessment and requires that where development is proposed on land that may be affected by contamination, a risk assessment should be carried out for consideration by the LPA before the planning application is determined. Where unacceptable risks are identified proposals need to be made to address these risks as part of the development process. The guidance recognises the benefits of a phased approach and the desk study is the first phase in the process of investigating and identifying contamination to assist in the determination of a planning application.

4.1.1 Source

The desk study has not identified any potentially significant contaminative recent or historical land uses on the proposed development site by virtue of it having been occupied by the existing buildings since the early 20th Century.

There are no historical or existing landfill sites within 250 m of the site and therefore there is not a risk to the site from landfill gas.

The trade directories confirm the presence of a fuel station located 46 m north-west of the site, which represents a potential source of contamination as a result of spillages and leakages from buried fuel tanks.

4.1.2 Receptor

The site will continue to have a mixed commercial and residential end use following the redevelopment of the site and no new receptors will result. However, the residential end use, together with vegetation in garden areas is considered a high sensitivity end-use. Buried services are likely to come into contact with any contaminants present within the soils through which they pass and site workers are likely to come into direct contact with any contaminants present in the soil and through inhalation of vapours during basement excavation and construction.

[2] Planning Policy Statement 23 (2004) *Planning and Pollution Control* HMSO