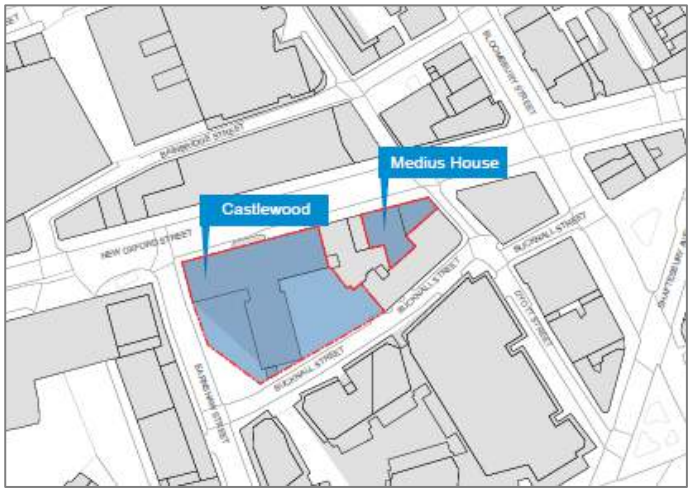

Medius House & Castlewood House, London

Geo-environmental Interpretative Report

GB Card & PARTNERS

Client:

Royal London Mutual Insurance Society

Job Reference:

GB332A-GIR-FEB-2019-REV1

Date:

February 2019

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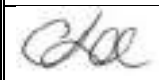
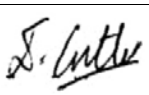
 Cathy C Lee Director *BSc MSc CEnv FGS MIEnvSc*	 Ian Cutler Associate *MEng CEng MICE*	 Cathy C Lee Director *BSc MSc CEnv FGS MIEnvSc*
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EXECUTIVE SUMMARY

Royal Mutual Insurance Society is proposing the redevelopment of a site comprising two multi-storey buildings known as Medius House (residential) and Castlewood House (commercial), which are located along New Oxford Street in central London. Based on the development proposals Medius House will be remodelled and extended, with two storeys to be added to the current structure. The ground floor of the building will be retained for predominantly retail use whilst affordable homes will be created in the floors above. It is proposed for Castlewood House to be demolished to allow construction of a new multi-storey mixed-use building comprising retail and office space.

Historical information suggests that Medius House was constructed some time between circa 1920 and 1940 as offices. Several small to medium sized commercial/industrial buildings housing a silver smith, currier and leather factory, leather and rug factory, furniture warehouse, zinc, lead and glass warehouse and offices were previously present at the site now occupied by Castlewood House. These buildings were demolished in the early 1950's and Castlewood House was constructed on the site.

The preliminary conceptual site mode based on the findings of the desk study noted a low risk to human health and the environment at the site of Medius House. This was primarily due to the fact that the building covers the entire plot footprint and that the basement slabs will be left intact, with negligible groundworks. A low to moderate risk was noted for the site of Castlewood House due to the potential for contamination of shallow soils from historical uses. A site investigation was recommended to confirm the identified risks.

An intrusive ground investigation was undertaken by LMB Geosolutions Limited in June 2018 comprising the drilling of 4 cable percussion boreholes extending to 47m below ground level (bgl) and 11 trial pits to approximately 2m bgl. Soil samples were obtained for chemical and geotechnical laboratory analysis and screening of soil headspace testing was undertaken using a photo-ionisation detector (PID). Gas and groundwater monitoring wells were installed in all boreholes and return monitoring visits were undertaken on 3 occasions over July and August 2018.

The investigation confirmed the ground conditions to comprise Made Ground ranging from approximately 1m to 2m thick overlying the Lynch Hill Gravel

deposits. The London Clay Formation and Lambeth Group were encountered, in turn, beneath the gravel. Standing groundwater levels within the Lynch Hill Gravel are approximately 3m to 4m bgl. Perched groundwater was also recorded within the London Clay Formation and Lambeth Group. No visual or olfactory signs of contamination were noted during the fieldworks.

Comparison of the soil sample results with Generic Assessment Criteria (GAC) for the protection of human health confirmed that no exceedances are noted. Asbestos was not found in any of the samples tested and organic contaminants were generally below the limit of laboratory detection. The site is therefore considered to pose a low risk to future site users based on the current development proposals. Should the development proposals change (for example, if private domestic gardens were to be incorporated) then the risks to site users would need to be reassessed.

Some slightly elevated soil leachate results are noted with respect to arsenic, copper, lead and nickel, though these are not considered to be significant. The presence of hardstanding across most of the site will limit the potential for future leaching of contaminants from the shallow soils.

The three rounds of gas monitoring have detected generally low concentrations of methane and carbon dioxide and low gas flow rates. Gas Screening Values (GSV) suggest that the site conforms to *Characteristic Situation 1* suggesting that gas protection measures are not necessary on the basis of the findings of the gas monitoring undertaken by LMB. PID readings were low (up to 9.3ppm measured in the boreholes) and no visual or olfactory evidence of contamination was noted during fieldwork.

Areas of soft landscaping at the Castlewood House site are likely to require a growth medium to support plant growth. This material should not be considered a waste and should be tested prior to import to confirm that it poses a low risk to human health and the environment.

Appropriate construction management procedures should be put in place during groundworks to prevent the generation of dusts. The use of upgraded water supply pipes is not considered likely to be required.

Should areas of suspected contamination be uncovered during the site redevelopment then the discovery strategy set out in Appendix D should be adhered to.

1. INTRODUCTION

GB Card and Partners (GBCP) has been commissioned by CBRE Limited (CBRE) on behalf of Royal Mutual Insurance Society (the "Client") to provide a *Geo-environmental Interpretative Report* for the site of Castlewood House and Medius House, located along New Oxford Street in central London. GBCP has previously undertaken a Desk Study Report[1] for the site in January 2014.

In June 20128, a ground investigation was undertaken by LMB Geosolutions Limited (LMB) and a *Factual Report* was prepared in August 2018[2]. Further to the site investigation, a *Generic Quantitative Risk Assessment* report[3] was produced in August 2018 also. The ground investigation was instructed by COWI UK Limited Consultant Engineers (COWI) on behalf of the Client. CBRE has subsequently instructed GBCP to undertake interpretation of the factual data obtained during the ground investigation to support the planning application for the site.

This report summarises the findings of the works undertaken by LMB and provides interpretation of the factual data in accordance with current best practice and industry standards. The report has been undertaken in accordance with Environment Agency Contaminated Land Report (CLR) 11[4].

[1] GB Card & Partners Limited (January 2017). *Castlewood House & Medius House, London. Ground Conditions and Contaminated Land Assessment. Desk Study Report*. Revision 4. Reference GB/332.
[2] LMB Geosolutions Ltd (August 2018). *Factual Report for Ground Investigation. Castlewood House & Medius House, London WC1A*.
[3] LMB Geosolutions Ltd (August 2018). *Generic Quantitative Risk Assessment. Castlewood House & Medius House*.
[4] Environment Agency (2004). *Model Procedures for the Management of Land Contamination*. Contaminated Land Report (CLR) 11.

2. SITE SETTING

The following sections provide a summary of the environmental setting of the site. Full details are provided in the Desk Study Report[1] which should be read in conjunction with this report.

2.1 Site location & description

The site comprises two buildings known as Medius House and Castlewood House, which are located at 63-69 New Oxford Street and 77-91 New Oxford Street, London WC1A 1DG respectively. Tottenham Court Road underground station is situated approximately 250m west of the site. The National Grid Reference for the site is 529980, 181390 (see Figure 1 below).

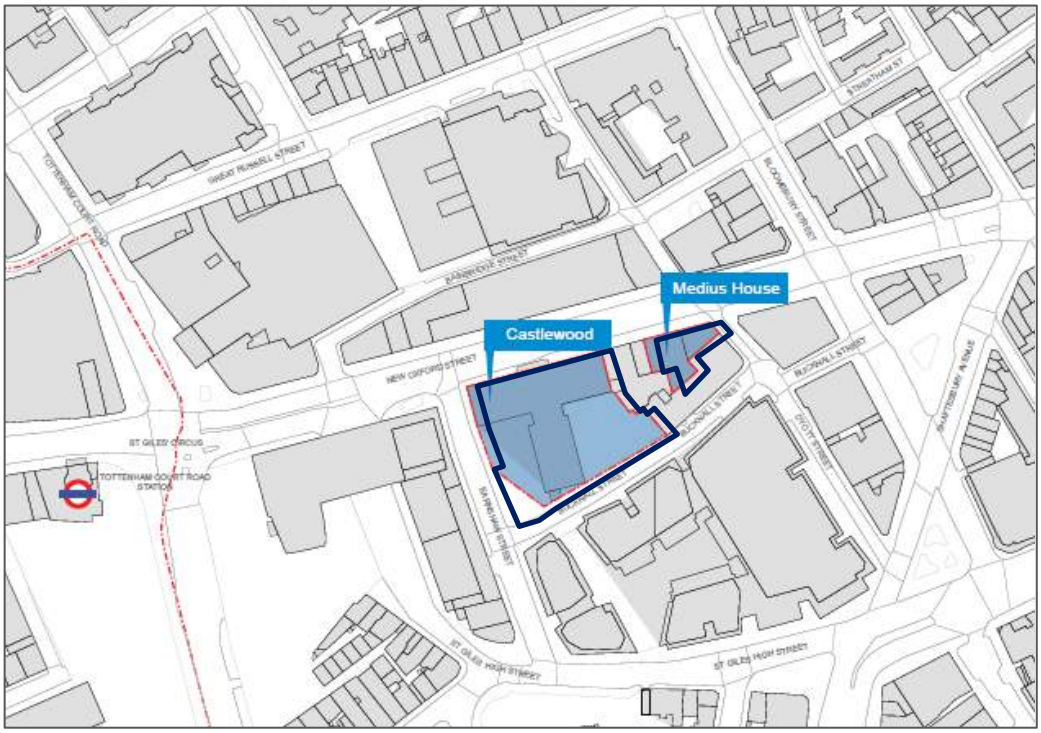

Figure 1: Site location

The site covers an area of approximately 0.3 hectares. Medius House is a five storey building with a small basement which houses a boiler, hot water tank and electricity meters. The building covers the entire footprint of the plot with no external areas of soft landscaping and/or hardstanding.

Castlewood House comprises a nine-storey T-shaped office building of brick clad construction and has a sub-basement and basement. During the walkover undertaken as part of the desk-based study, the sub-basement was occupied by offices, an electrical switch room and transformer room. The basement housed a storage room, boilers, water treatment systems, chiller room, a water tank and air handling unit. A former oil storage tank was also located in the basement, which at the time of the visit was filled with water.

An asphalt surfaced car park is situated to the rear of Castlewood House. On the western part of the site is a sunken courtyard, which predominantly comprises hardstanding and limited soft landscaping. Both the car park and the courtyard are set below the street level.

2.2 Proposed development

Gerald Eve, planning consultants on the scheme, have advised that the proposed scheme involves the demolition of the existing building at Castlewood House and construction of a replacement ten storey mixed use building, plus ground and two basement levels, including the provision of retail (Class A1 and/or A3) and office (Class B1) floor space. External alterations to Medius House including partial demolition, retention of existing façade and two floor extension to provide 20 affordable housing units (Class C3), together with associated highway improvements, public realm, landscaping, vehicular and cycle parking, bin storage and other associated works. The proposed development plans are provided in Appendix A.

2.3 Site history

Several commercial/industrial type buildings are shown to be present in the northern, southern and eastern parts of the Castlewood House site in 1875. A commercial type property also occupies the site of Medius House by this time. Historical building records obtained as part of the desk-based study suggest that the site of Castlewood House was previously occupied by a silver smith, currier and leather factory, leather and rug factory, furniture warehouse, zinc, lead and glass warehouse and offices.

Although not directly evident from the historical maps, information obtained from the Client indicates that Medius House was constructed between circa 1920 and 1940. Historical building records indicate that the site was used for offices.

By 1953, the site of Castlewood House is occupied by a single T-shaped building labelled as *Castlewood House* and in use as offices. No significant changes are evident on the site of Medius House. However, *ruins* are noted immediately to the east of Medius House, suggesting potential bomb damage in the vicinity of the site. No further changes are evident through the 1980's and 1990's.

2.4 Geology and hydrogeology

The British Geological Survey (BGS) map for this area of London[5] indicates that the site is underlain by superficial deposits of the Lynch Hill Gravel (consisting of sand and gravel with lenses of silt, clay or peat locally). BGS borehole records for the locality report the gravel to be in the region of 2.5m to 4m thick. Given the site's urban location Made Ground is likely to be present above the gravels.

The superficial deposits are underlain by the solid geology of the London Clay Formation, Lambeth Group and Thanet Sand Formation, with the Chalk present at depth. BGS borehole logs indicate that the London Clay Formation is encountered between approximately 4.5m and 7m below ground level (bgl) and is approximately 20m thick.

The Environment Agency (EA) classifies the Lynch Hill Gravel as a *Secondary A* aquifer. The underlying London Clay Formation is classified as *Unproductive Strata*. The London Clay Formation will act as an aquitard providing a degree of separation between the shallow gravel aquifer from the groundwater within the deeper aquifers of the Lambeth Group, Thanet Sands and the Chalk.

Regional groundwater flow direction within the shallow and deep aquifers is likely to be towards the River Thames in the south. The site is not located in a groundwater Source Protection Zone.

2.5 Surface water

The nearest river, the River Thames, is situated approximately 1km to the south-east of the site. The Thames Estuary in this area is a designated Marine Conservation Zone. A culvert is present approximately 570m east of the site.

[5] British Geological Survey. Sheet 256 North London.