Our Ref: 11220G/AP/03

Your Ref:

Date: 27th March 2023

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Dear Sir or Madam,

Re: Contamination assessment at High Street, Uxbridge

Introduction

Further to instructions received from DNA Uxbridge Ltd, the following provides a contamination assessment based on our review and interpretation of an investigation carried out by others. We have produced this letter in support of the planning application to the London Borough of Hillingdon.

This letter report has been produced for the benefit of DNA Uxbridge Ltd and JPP will not accept liability for the third-party use of the information herein without prior reliance agreed. This report is valid for 6 years from the date of issue however any significant changes to the proposals or followed legislation and guidance within this time could dictate review of our findings and recommendations.

Interpretations and recommendations within this report are based upon information drawn from the Ground Engineering Factual Report on a Ground Investigation (reference C14143) dated June 2017. This report should be read in conjunction with the aforementioned report. We do not accept liability or guarantee the authenticity or reliability of the information obtained or provided by others. There is a potential for ground conditions to vary from those encountered during previous investigations and may differ where not exposed by previous investigations.

Existing site

The majority of the site forms part of an existing 3 storey building comprising various commercial premises. There is a courtyard/service yard present in the centre of the building. There is a single level basement public car park that extends beneath the majority of the building and subject site.

Proposed site

It is proposed for the Demolition of the existing buildings and comprehensive redevelopment of the site to provide a mixed use development comprising hotel (Class C2), co-Living (Class Sui Generis) and replacement

commercial floorspace (Class E) alongside open space, landscaping and public realm improvements, basement parking and refuse storage.

Site geology

The underlying geology of the site is superficial deposits of the Lynch Hill Gravel over bedrock consisting of the London Clay over the Lambeth Group over the Undifferentiated Seaford and Newhaven Chalk Formation of the White Chalk Subgroup.

Site Hydrogeology and hydrology

The site is not located within a Source Protection Zone (SPZ) and below are the aquifer designations for the superficial and bedrock present underlying site.

Superficial Aquifer Designation	Unproductive Strata	Secondary (undifferentiated)	Secondary B	Secondary A	Principal
Lynch Hill Gravel		✓			

Table 1

Bedrock Aquifer Designation	Unproductive Strata	Secondary (undifferentiated)	Secondary B	Secondary A	Principal
London Clay	✓				
Lambeth Group				✓	
Seaford and Newhaven Chalk					✓

Table 2

Reference to the publicly available flood maps show there is no risk of flooding from rivers, seas or reservoirs. However, there is a low risk from surface water flooding.

A review of the British Geological Hydrogeological mapping indicates that groundwater within the bedrock is present at approximately 18m below ground level.

Site history

The publicly available historic mapping from the late 1800s indicates the site has been a yard area with some small industrial buildings present. By the 1960 historic map, some buildings have been demolished for the construction of the road to the north and west of the site. The 1963-73 map shows the vast majority of the buildings on site have been demolished and the site is noted as 'George Yard'. The 1975 map indicates there is an electricity substation present and by the 1988 map, the present-day building on site has been constructed with courtyard area in the centre of the site.

Preliminary conceptual model

The following provides a written representation of the Conceptual Model for the site considering the Sources, Pathways and Receptors and the derived risk.

Pollutant Linkage Summary					
Sources of Contamination	**Receptors**		**Exposure Pathways**		**Risk**
		Identified		**Present**	
Historic and present buildings on site indicating there will be some made ground present which could have the following potential contaminants present: Metals, inorganics, polycyclic aromatic hydrocarbons, TPHs and asbestos as well as ground gases	**Human Health**				
	Future site occupants and the public	*Yes*	*Ingestion* *Inhalation* *Absorption* *Consumption (via vegetables)*	*Yes* *Yes* *Yes* *No*	*Low-Medium*
	Construction operatives and maintenance workers	*Yes*	*Ingestion* *Inhalation* *Absorption* *Consumption (via vegetables)*	*Yes* *Yes* *Yes* *No*	*Low-Medium*
	Controlled Waters				
	Groundwater	*Yes*	*Leaching* *Run-off* *Saturation*	*Yes* *No* *No*	*Low-Medium*
	Surface Water	*No*	*Leaching* *Run-off* *Saturation*	*Yes* *Yes* *No*	-
	Drinking Water	*No*	*Leaching* *Run-off* *Saturation*	- - -	-
	Building Materials	*Yes*	*Chemical attack*	*Yes*	*Low-Medium*
	Plants	*Yes*	*Phytotoxicity*	*Yes*	*Low*
Table 3					

Ground Investigation

A single 40m deep cable percussive was drilled by Ground Engineering within the basement carpark in April 2017 with a 28m and 4.5m deep standpipe installation. Four Window sampler boreholes were also drilled within the basement carpark to a maximum depth of 9.45m.

Groundwater and gas monitoring were also completed in May 2017 with four weekly site visits.

Geo-environmental laboratory testing

On the basis that the site is a current and proposed commercial development, the commercial screening values are considered the most appropriate model for exposure following CLEA and the associated guideline values have been adopted for our Tier 1 Screening. These are considered to be screening values by which any exceedance should be further considered as to whether it presents a potentially unacceptable risk of harm to receptors identified by our conceptual model. We have directly compared the measured concentrations with the screening values for Tier 1 Screening.

Screening values adopted for our risk assessment are sourced from current guidance including Category 4 Screening Levels C4SL from DEFRA, Suitable 4 Use Levels S4ULs from LQM CIEH and Atkins ATRISK SSV (subscription to derived using CLEA Software) limits.

Five soil samples comprising two made ground samples and three natural samples were tested for the presence of asbestos, metals, metalloids, inorganics, PAHs and TPH, two samples were also tested for full WAC leachate and solid suites.

Two groundwater samples were also taken and testing for metals, metalloids, PAHs and TPHs.

Geo-environmental laboratory results

No asbestos was detected in any of the samples tested.

No metals, metalloids, inorganics or PAHs were present above the commercial screening values and it should be noted that the results are also all below the more stringent residential (with plant uptake) screening values.

In regards to the testing for TPH, in a single made ground sample, there were some marginally elevated concentrations above detection limits. Again, these results fall well below commercial screening values.

Gas & groundwater monitoring results

Four weekly ground gas and groundwater monitoring visits were completed after the completion of the ground investigation.

The geo-environmental laboratory testing of the two groundwater samples (one from the shallow installation and one sample from the deep installation) indicated there were no metals, metalloids, PAHs and TPHs contamination present above the EQS water quality thresholds. Below is a table summarising the recorded groundwater level on site.

Summary of groundwater monitoring results	
Monitoring Well & depth	**Water level range (m bgl)**
BH01 @ 4.50m	3.68-3.95
BH01 @ 28.0m	10.86-10.96

Table 4

The ground gas results can be summarised in the table below

Summary of ground gas monitoring results							
Monitoring Well & depth	**Methane % range**	**Carbon Dioxide % range**	**Oxygen %**	**Flow rate l/hr range**	**Borehole pressure range mb**	**VOCs (ppm)**	**Atmospheric pressure**
BH01 @ 4.50m	<0.1	0.5-1.6	18.0-18.5	<0.1	<0.1	0.2-0.9	1012-1017
BH01 @ 28.0m	<0.1	--	--	--	--	--	1012-1017
Table 5							

During the gas monitoring no methane was detected and the maximum concentration of 1.6% of carbon dioxide was detected with a maximum flow recorded was <0.1%. The above results give a gas screening value (GSV) of 0.00016 for the site which corresponds with characteristic situation 1 (CS1) and therefore no specific requirements are required to mitigate gas risk at this stage as the hazard potential is considered very low.

Marginal readings of VOC were detected by the photo-ionisation detector (PID) in the range of 0.2-0.9ppm. It is now known what compound these readings potentially relate to however these are considered negligible and not concentrations of concern. In addition, groundwater samples tested did not record any elevated concentrations of petroleum hydrocarbons and no DNAPL or LNAPL were detected by the interface meter.

Conclusion and recommendations

Based on conditions encountered by Ground Engineering and laboratory testing together with our quantitative assessment, the ground conditions do not present an unacceptable risk of harm to identified receptors with an overall derived low risk for each of the receptors identified by our conceptual model.

In areas of soft landscaping at ground level, any made ground should be removed to a prudent depth of 300mm and the importation of a topsoil material should be considered as a suitable growth medium.

Therefore, at this stage, no further action is required subject to comments from the London Borough of Hillingdon contaminated land officer.

Should any conditions be exposed during further investigations or the course of the development works that could suggest contaminated soils from visual or olfactory evidence, we should be consulted to determine the most appropriate course of action.

Yours sincerely,

Anthony Paton BSc (Hons) MSc MIEnvSc FGS
Director