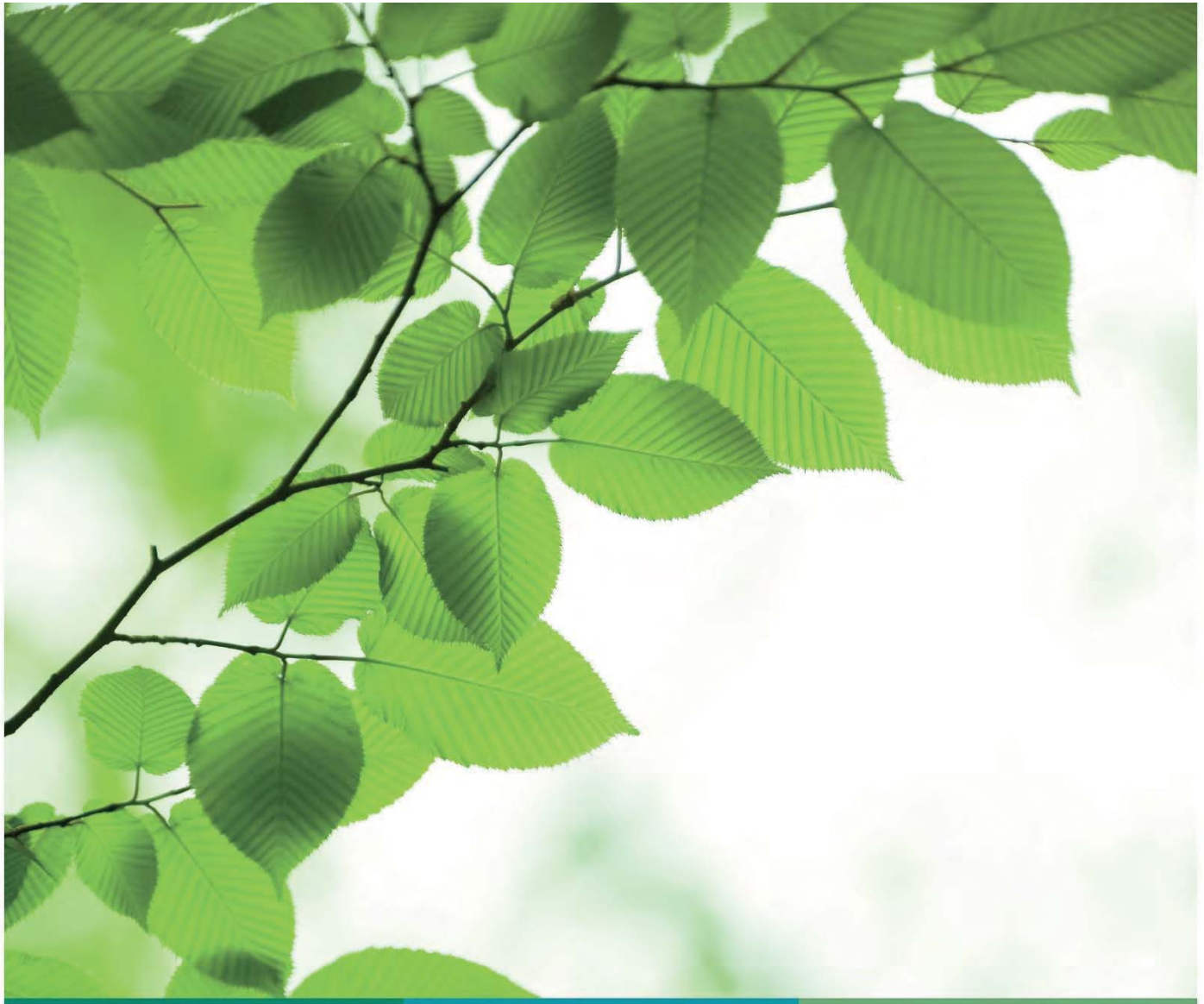




Preliminary Geo-Environmental Risk Assessment

Cadogan House, Rose Kiln Lane, Reading, RG2 0HP

Presented to Hillnic

Issued: September 2018

Delta-Simons Project No. 13-0223.05



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Report Details

Client	Hillnic
Report Title	Preliminary Risk Assessment
Site Address	Cadogan House, Rose Kiln Lane, Reading, RG2 0HP
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Quality Assurance

Issue No.	Status	Issue Date	Comments	Author	Technical Review	Authorised
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Specialising in Environment, Health & Safety and Sustainability, Delta-Simons provide support and advice within the property development, asset management, corporate and industrial markets. Operating from nine locations - Lincoln, Birmingham, Dublin, Durham, Leeds, London, Manchester, Norwich and Nottingham - we employ over 70 environmental professionals, bringing experience from across the private consultancy and public-sector markets.

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Executive Summary

Brief	Delta-Simons was instructed by Hillnic to prepare a Preliminary Risk Assessment of Cadogan House, Rose Kiln Lane, Reading, RG2 0HP. The purpose of the assessment is to identify environmental issues associated with soil and groundwater conditions that may affect the proposed change of use of the Site. The development involves the change of use of the existing office space on ground and first floors to 39 No. one-bedroom residential apartments. Although external areas are shown within the curtilage of the Site on the submitted development plan and the plans included within this report, these areas will not be subject to development, with the exception of the plant area to the west which will be removed. The existing car parking spaces to the east of the office building will remain as is.
Site Use & Surrounding Area	The Site is occupied by a two-storey building surrounded by small areas of amenity landscaping, and car parking in the east. It is understood the building was constructed in c2000 and is used as a data centre and offices. The construction comprises of brick walls over a steel frame with a slate pitched roof. Asbestos containing materials are assumed to be absent. The Site is surrounded by commercial offices and retail land uses.
Environmental Setting	The Site is likely underlain by a shallow depth of Made Ground over Alluvium (clay, silt, sand and gravel) and bedrock comprising the Seaford and Newhaven Chalk Formations (a Principal Aquifer). The nearest surface water feature is Holy Brook located approximately 50 m to the north-west of the Site. The River Kennett is located approximately 80 m to the south-east of the Site. The Site is considered to be located within a moderate to high environmental sensitivity setting.
Contamination Potential Sources	The Site was undeveloped open land until c1958, when two adjoining 'works' buildings are shown located across the northern side of the Site. By 1971, the Site has been completely redeveloped, with two buildings in the centre of the Site curtilage, labelled as 'works'. On a 1976 map edition, an 'electricity substation' and a 'tank' are labelled as being present along the eastern side of the works building. The electricity substation and tank are potential sources of contamination. It is noted, however, that neither of these features are located under or close to the position of the subject property itself (Cadogan House). As such, these features are only considered in the context of being 'off-Site' sources. A petrol station is located ~120 m off-Site to the south-west.
Development Considerations	Made Ground is likely to be present beneath the building, however, the risk posed to future residents is considered to be low as only a limited thickness of made ground is anticipated and there will not be an exposure pathway created by the change of use of the existing office building. The risk posed to construction workers and off-Site human receptors during the redevelopment of the Site is also considered to be low as there won't be any significant works which will 'break ground' (save for possible minor groundworks for new services). The risk posed by possible ground gases is considered low as it is anticipated that the Made Ground will be shallow and limited in extent. The identified off-Site sources of potential contamination do not present plausible pollutant linkages.

Recommendations	Based on the findings of this Preliminary Risk Assessment no further assessment of the risk from contaminated land is required prior to the proposed change of use. Should any future redevelopment of the Site be considered, then further assessment may be required to suit the context of the proposed end-use or form of development
This is intended as a summary only. Further detail and the limitations of the assessment is provided within the main body of the Report.	

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1.0 Introduction

1.1 Appointment

Delta-Simons Environmental Consultants Limited (“Delta-Simons”) was instructed by Hillnic (the “Client”) to prepare a Preliminary Risk Assessment of Cadogan House, Rose Kiln Lane, Reading, RG2 0HP (the “Site”).

1.2 Context & Purpose

The aim of this report is to identify environmental issues associated with soil and groundwater conditions that may affect the proposed change of use of the Site. This report is designed in accordance with ‘the Model Procedures for the Management of Land Contamination (CLR 11)’ and the relevant Planning Practice Guidance (Land Affected by Contamination) <https://www.gov.uk/guidance/land-affected-by-contamination>.

The development consists of a change of use of the building from office use to 19 No. one-bedroom apartments across the ground and first floors.

1.3 Scope of Works

- ▲ Review of the environmental setting of the Site, including the current use / status of the Site and surrounding area, and review of the geology, hydrogeology and hydrology;
- ▲ Review of the historical activities of the Site and surrounding area;
- ▲ Review of regulatory information relating to the Site;
- ▲ Review of the online planning records for the Site;
- ▲ Consult and review information from the Local Authority in relation to Part 2A of the 1990 Environmental Protection Act; and
- ▲ Develop an outline Conceptual Site Model and undertake a Preliminary Risk Assessment with respect to potential contamination focussed on the proposed end use of the Site.

In completing this Assessment, Delta-Simons has utilised the following data sources and third-party information:

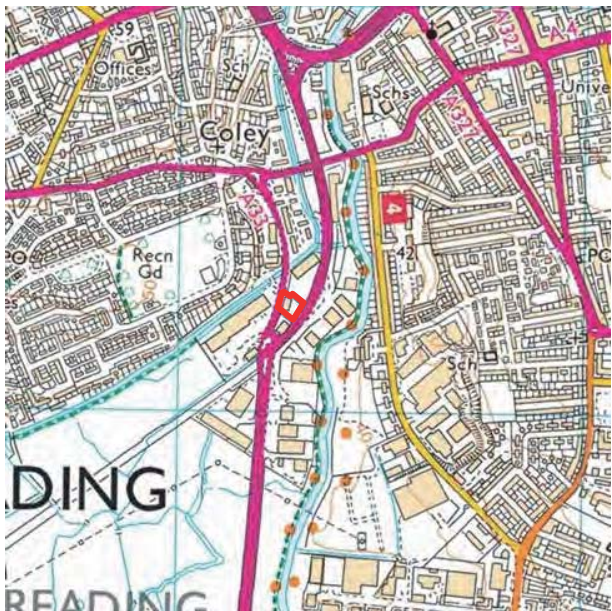
- ▲ Current and Historical Ordnance Survey (OS) maps;
- ▲ British Geological Survey (BGS) data;
- ▲ Environment Agency (EA) online data;
- ▲ A Landmark Envirocheck Report for the Site;
- ▲ Historical Maps included as part of the Envirocheck Report;
- ▲ Property Brochure by Strutt & Parker;
- ▲ Information provided by Reading Borough Council; and
- ▲ Information provided by building surveyors, Malcolm Hollis.

1.4 Limitations

The standard limitations associated with this assessment are presented in Appendix A.

2.0 Site Context & Data Review

2.1 Site information

 Contains OS data © , Crown Copyright and Database Right (2017)		 Bing maps	
Site Location		Site Layout	
Co-ordinates	Centred approximately at National Grid Reference 471280, 172260.	Elevation	38 - 40 m AOD
		Area	0.23 Ha
Site Location	The Site is located between Rose Kiln Lane and the A33, approximately 2.5 km to the south of Reading Town Centre.		
Current Site Use	The Site is occupied by a two-storey building surrounded by small areas of amenity landscaping, and car parking in the east. It is understood the building was constructed in c2000 and is used as a data centre and offices for Pulsant (an IT infrastructure services provider). The construction comprises of brick walls over a steel frame with a slate pitched roof. Asbestos containing materials are assumed to be absent. <i>The current land use, which has been on the Site since c2000 is not considered to present a potential contamination source.</i>		
Proposed Development Description	The development involves the change of use of the existing office space on ground and first floors to 39 No. one-bedroom apartments. Although external areas are shown within the curtilage of the Site on the submitted development plan and the plans included within this report, these areas will not be subject to development, with the exception of the plant area to the west which will be removed. The existing car parking spaces to the east of the office building will remain as is.		
Current Surrounding Area	North	Commercial offices.	
	East	The A33, beyond which is an industrial estate.	

	South	Commercial offices.
	West	Rose Kiln Lane, beyond which is Reading Link Retail Park. A BP petrol station is located approximately 120 m to the south-west of the Site
	<i>The petrol station is considered to represent a potential off-Site source of contamination.</i>	

2.2 Environmental Setting

Published Geology	From current British Geological Survey (BGS) online data, superficial deposits are indicated as being Alluvium (clay, silt, sand and gravel) beneath the Site. The bedrock comprises the Seaford and Newhaven Chalk Formations. From a borehole drilled approximately 30 m to the north-east of the Site in 1985 (identified on the BGS Geo Index website, ref: SU77SW777), the geology comprises Made Ground (concrete rubble, loose ash and hardcore gravel) to 0.2 metres below ground level (m bgl), over silty clay to 3.8 m bgl, over sandy gravel and gravelly sand to 13.5 m bgl, over Chalk.
Hydrogeology	The superficial deposits are classified by the EA as being a Secondary A Aquifer and the bedrock is classified as being a Principal Aquifer. The Site is not located within a groundwater Source Protection Zone. According to the Envirocheck Report (included as Appendix D), there are no groundwater abstraction records located within 1 km of the Site. From a borehole drilled close to the Site (as mentioned above) groundwater was encountered at 3.8 m bgl.
Hydrology	The nearest surface water feature is Holy Brook located approximately 50 m to the north-west of the Site. The River Kennett is located approximately 80 m to the south-east of the Site. According to the Envirocheck Report, there is one current licensed abstraction from surface water recorded within 1 km of the Site. It is located approximately 920 m to the north associated with a lake and pond throughflow at a shopping centre.
Coal Mining	Reference to the Coal Authority on-line viewer indicates that the Site is not with a Coal Mining Reporting Area, and is not within a Development High Risk Area. Consequently, a Coal Mining Risk Assessment (CMRA) is not required.
Radon Gas	The Site lies within an area where less than 1% of homes are above the National Radiological Protection Board (NRPB) recommended “action level” for radon. BRE211 (2007) indicates that no radon protective measures are necessary in the construction of new buildings at the Site.
Ecological Receptors	It is understood from information provided within the Envirocheck® Report, there are no statutory ecological receptors located within 500 m of the Site.
Environmental Sensitivity	The Site is considered to be located within a moderate to high environmental sensitivity setting.

2.3 Historical Use of the Site & Surrounding Area

Approach	The historical development of the Site and surrounding area has been assessed through a review of available historical OS maps and Google Earth historical satellite imagery. A summary of the key historical Site uses and developments in the surrounding area is presented below. Copies of pertinent historical maps are included as Appendix D.
Historical Features On-Site	The Site was undeveloped open land from the earliest map edition of 1879 up until c1958, when two adjoining long thin buildings are shown located across the northern side of the Site. These are labelled as 'works' on the 1963 map edition. By 1971, the Site has been completely redeveloped, with two buildings in the centre of the Site curtilage, labelled as 'works'. On the 1976 map edition, an electricity substation and a tank are labelled as being present along the eastern side of the works building. Between 1997 and 2012, the Site is developed into the current layout. <i>The electricity substation and tank dating back to the 1970's are potential sources of contamination. It is noted, however, that neither of these features are located under or close to the position of the subject property (Cadogan House). As such, these features are only considered in the context of being 'off-Site' sources.</i>
Potentially Contaminative Historical Features Off-Site	Potential sources of contamination identified in the surrounding area (within 250 m) include: ▲ Railway lines located approximately 10 m to the south-east of the Site, between circa 1912 and 1987; ▲ An unspecified works located approximately 20 m to the west of the Site, between circa 1963 and 1992; ▲ An unspecified works located approximately 30 m to the north-east of the Site, between circa 1958 and 1992; ▲ A preserve works located approximately 40 m to the south of the Site, from circa 1932, and a building in its location is part of an industrial estate by circa 1987; and ▲ A large factory located approximately 60 m to the north-west of the Site, between circa 1958 and 1992.

2.4 Environmental Database Review

Approach	The Landmark Envirocheck® Report provides a database of environmental information held by various statutory bodies including the EA, Local Authority (LA), Health & Safety Executive (HSE) and HPA amongst others. A full copy of the Envirocheck® Report is provided in Appendix C and the most relevant information is summarised below.
Features On-Site	From regulatory information listed in the Envirocheck® Report, there are no records of potential concern that relate directly to the Site.
Potentially Contaminative Features Off-Site	Pertinent entries included within the Landmark Envirocheck® Report located within 100 m from the Site include Situated within 100 m of the Site are entries associated with concrete products, timber manufacturers, car body repairers, meter manufacturers, car dealers, petrol filling station and building merchants. With the exception of the petrol filling station, these are not considered to represent potential off-Site sources of contamination.

Implications for Land Contamination Risk	<i>No potential sources of contamination have been identified at the Site from the regulatory information. A potential off-Site source of contamination has been identified that will be considered in the preliminary risk assessment.</i>
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2.5 Planning Review/Regulatory Enquiries

On-line Planning Portal	Reading Borough Council	Date Accessed	08/121/2017
Findings	Outline planning permission was granted on 10th January 1989 (reference: 88/TP/1255), however, no further information is on file. A reserved matters application was granted for a two storey B1 building (reference: 95/0127/RM). There were no planning conditions associated with contaminated land. There is one planning application for the Site listed (ref. 4/28981), which comprises an outline application for mixed use development comprising a non-food retailer, a car showroom, a public house/ restaurant, and hotel with associated access, car parking and community woodland. The application was received in November 1994 and approved in June 1997. <i>No additional potentially contaminative activities or other information pertinent to this assessment was identified from the historical planning records.</i>		
Part 2A of the Environmental Protection Act (EPA) 1990	Delta-Simons has been informed from the Environmental Department at Reading Borough Council that the Site is on their list of prioritised sites under Part 2A of the Environmental Protection Act 1990. Whilst they have not finalised the priority of all sites that are on their list, given the current commercial use, the Site is likely to be classified as a low priority. They also confirm that the Site is within a 500 m buffer zone of Waterloo Meadows landfill site. No further information is provided. A search via Google for “Waterloo Meadows landfill site” reveals a page from the Environment Agency website which details the wastes reportedly placed in the landfill. These are listed as follows: Inert: Waste which remains largely unaltered once buried such as glass, concrete, bricks, tiles, soil and stones. Industrial: Waste from a factory or industrial process. It excludes waste from mines, quarries and agricultural wastes. <i>Based on the nature of the fill material, this landfill site is not considered to be a possible source of ground gas impact to the Site.</i>		

3.0 Conceptual Site Model

3.1 Introduction

A Conceptual Site Model (CSM) represents the relationships between contaminant sources, pathways and receptors, to support the identification and assessment of Possible Pollutant Linkages (PPL).

3.2 Potential Contamination Sources

Identified potential contamination sources are presented in the following table:

Reference	Source	Location	Dates Present	Potential Associated Contaminants of Concern
S1	Historical demolition Made Ground	Site-wide	Post 1963 to present	Asbestos, heavy metals, PAHs
S2	Above ground tank (AST)	~20 m East	1976 to c2000	Diesel, heating oil
S3	Electricity substation	~20 m East	1976 to c2000	PCB
S4	Petrol Station	~120 m South-West	1995 to present	Diesel & petrol derived hydrocarbons

* Based on UK Department of the Environment Industry Profiles

3.3 Potential Receptors

Relevant potential receptors are considered to include:

- ▲ R1 - Construction workers during office conversion.
- ▲ R2 - Third parties (adjacent Site users and adjacent residents).
- ▲ R3 - Future Site users and maintenance workers.
- ▲ R4 – Holy Brook & River Kennet.
- ▲ R5 - The underlying aquifers.
- ▲ R6 - The Built Environment (the building and infrastructure / utilities).

3.4 Potential Pathways

The potential pathways are considered to be as follows:

- ▲ P1 - Direct contact, ingestion or inhalation of soil bound contaminants / dust during or following redevelopment.
- ▲ P2 - Inhalation of organic vapours associated with contamination.
- ▲ P3 - Migration of ground gas / vapours into on-site buildings causing asphyxiation or risk of explosion.
- ▲ P4 - Leaching of contamination into groundwater followed by migration of groundwater to the wider groundwater environment or discharge to surface waters.