TIER 1 CONTAMINATED LAND PRELIMINARY RISK ASSESSMENT

84 LOWER MORTLAKE ROAD, RICHMOND, TW9 2HS

REFERENCE: P1135/R1/V2

REPORT PREPARED FOR: WILLIAM GRANT & SONS DISTILLERS LIMITED

REPORT PREPARED BY: EPS CONSULTING

NOVEMBER 2023

PLANNING | DUE DILIGENCE | CONSTRUCTION

QUALITY ASSURANCE

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EXECUTIVE SUMMARY	
Site Address	84 Lower Mortlake Rd, Richmond, TW9 2HS
National Grid Reference	TQ1860175463
Current Site Use	Vacant former office building.
Proposed Development	Change of use from Class E Office to C3 Residential, including extension and refurbishment of existing building to provide 21 dwellings. The proposed basement will include a gym, vehicle parking, cycle store, storage pods, and an attenuation tank. No significant areas of soft landscaping are proposed.
Site History	Earliest mapping in 1866 shows terraced residential properties with gardens on site until 1959 when a single building (assumed to be office premises) was constructed. Partial demolition and extension to the building was noted in c. 1989 with the site largely reflecting present day mapping. The surrounding areas have generally been occupied by residential properties with several commercial / industrial uses in close vicinity. The nearest is 'Corporation Depot' c. 55m south-west which was demolished and replaced with residential and commercial properties on Tersha Street in c. 2003. Railway Sidings / Buildings (1895 – 1966), Electrical Substations (1974 – 1992), Barracks (1867) and Unspecified Tanks (165m) are all within 250m of the site.
Environmental Setting	**Geology and Hydrogeology** ▸ Superficial: Kempton Park Gravel Formation (Secondary A Aquifer); ▸ Bedrock: London Clay Formation (Unproductive); ▸ Two historical borehole records from BGS (ref. Borehole 1 and 2) are located on site with ground conditions indicated to comprise Made Ground to a maximum depth of 3.40mbgl, overlying Kempton Park Gravel Formation (Gravel and Sand) to c. 7.50mbgl, overlying London Clay Formation to >10.0mbgl (Firm to Stiff Clay). Groundwater encountered at 5.50mbgl rising to 5.20mbgl; and ▸ No active potable groundwater abstractions within 2km. **Hydrology** ▸ No surface waters within 500m of the site; and ▸ Situated within a WFD Surface Water Body Catchment draining into the Tidal River Thames. **Radon** ▸ Less than 1% of properties are affected by radon and therefore no radon protection measures are required for new buildings. **Sensitive Land Uses** ▸ Richmond Park, a Site of Special Scientific Interest (SSSI), Special Area of Conservation (SAC) and National Nature Reserve (NNR) is located c. 1.17km south-east of the site; and ▸ A conservation area is marked to the south-west on Crofton Terrace.

Conceptual Site Model (CSM)	**Potential "Active" Sources** **On site** ▶ **Made Ground** – Associated with the construction and demolition of historic buildings on site. **Off site** ▶ **Electricity substation** – closest 35m west (1974 – present day); ▶ **Corporation Depot** – 55m south-west (c. 1913 to c. 2003); ▶ **Railway sidings, depots and unspecified works** – closest 60m south-west (1895 – 1966); ▶ **Vehicle repair, testing and servicing** – nearest 70m north-east; ▶ **Dry cleaning** (c. 110m north-east); ▶ **Militia Barracks / Castlegate -** 130m north-east (1867 – c. 1913); ▶ **Timber Yard** - c. 140m southeast (1896 – c.1913); and ▶ **Unspecified Tanks –** closest c. 165m north-east (1916). **Potential Pathways** ▶ Migration of mobile contaminants on or off site via services, sewers and manmade conduits; ▶ Direct contact, ingestion and inhalation of contaminants on site; ▶ Migration of mobile contaminants into groundwater and transport into surface waters; and ▶ Migration of ground gas and vapours into buildings. **Potential Receptors** **Human Receptors** ▶ **Future site users**; and ▶ **Residents of adjacent properties**. **Controlled Water Receptors** ▶ **Secondary A Aquifer** within the superficial deposits**.**
Conclusions and Recommendations	Overall, the preliminary risk classification for onsite risks are considered to be: ▶ **Very low to low** in terms of human health; and ▶ **Very low** for controlled waters. The preliminary risk classification for off-site risks is considered to be: ▶ **Very low to low** in terms of human health. Further assessment of the potentially active contaminant/pollutant linkages is recommended to determine whether a significant risk is posed to human health based on the development proposal.

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APPENDICES

1.0 INTRODUCTION

1.1 Background

eps consulting (EPS) has been commissioned by William Grant & Sons Distillers Limited ('the Client') to undertake a Tier 1 Contaminated Land Preliminary Risk Assessment at 84 Lower Mortlake Rd, Richmond, TW9 2HS.

A Site Location Plan (ref. Figure 1) is presented within Appendix I.

1.2 Proposed Development

The proposed development comprises the change of use from Class E Office to C3 Residential, including extension and refurbishment of existing to provide 21 dwellings. The proposed basement will include a gym, vehicle parking, cycle store, storage pods, and an attenuation tank. No significant areas of soft landscaping are proposed.

A Proposed Development Plan (ref. Figure 2) is presented in Appendix I.

1.3 Objectives

The objective of this report is to assess information regarding the history of the site, and its environmental setting to determine whether there are any 'unacceptable' contaminated land risks. A Conceptual Site Model (CSM) will be developed to inform subsequent site investigations (if deemed required).

This report has been drafted in accordance with Land Contamination Risk Management (LCRM) guidance produced by the Environment Agency dated October 2020 (updated July 2023).

Although not part of the LCRM guidance detailed above, a geotechnical information was also requested to form part of the report, predominantly to support the design of Sustainable Drainage Systems (SuDs) for disposal of surface water.

1.4 Sources of Information

Background information was sought from the following sources:

- Groundsure: Enviro+Geo Insight (report reference: GS-ZJG-Z3G-3DD-BK8, dated 19th September 2023);
- Groundsure Insights: County Series Historical mapping dated 1865 to 2023 (report reference: GS-DCH-ADF-V2D-ZA6). A selection of historical maps pertinent to this report are reproduced in Section 3.1;

- Online planning records held by Royal Borough of Richmond Upon Thames (RBRuT);
- Environment Agency Groundwater Vulnerability Map;
- Radon: Guidance on protective measures for new buildings (BRE Document BR 211, 2015) and HPA Indicative Radon Atlas for England and Wales);
- British Geological Survey Online GeoIndex tool;
- Mobile CAD Surveying - Measured Building Survey (ref. 2664 – 01) dated November 2019;
- Wimshurst Pelleriti - Existing Layout Plans (ref. WP-0721-A) dated November 2020;
- Wimshurst Pelleriti - Extracted Proposed Development Plans (ref. 2022-07-29_WP-Independence House-Residential-Extracted Plans dated July 2022);
- RBRuT – Pre-application planning advice (ref. 22/P0270/PREAPP) dated 16th February 2023 provided with a request for a 'Land Contamination Assessment – Desk Study'; and
- RBRuT - 'Local Validation Checklist for all Applications' dated April 2021 (ref. Revised LBRuT Local Validation Checklist Version 2.1), confirming the above requirement for any new development or for buildings being converted for residential purposes within c. 50m of potential contaminated land.

1.5 Confidentiality

EPS has prepared this report solely for the use of the Client and those parties with whom a warranty agreement has been executed, or with whom an assignment has been agreed. Should any third party wish to use or rely upon the contents of the report, written approval must be sought from EPS. A charge may be levied against such approval.

1.6 Limitations

The full limitations of this report are presented in Appendix II and within EPS's fee proposal letter dated 14th September 2023 (ref. P1135/230914/P1).

2.0 SITE SETTING

2.1 Site Details

The site is approximately 0.08ha in size and is located at 84 Lower Mortlake Rd, Richmond, TW9 2HS (TQ1860175463) and is also known as Independence House. From the Topographical Survey provided by the Client the site is situated at between c. 6 and 7m above sea level. No levels were provided for the lower ground floor area understood to be previously used for vehicle parking.

2.2 Current Site Use

At the time of the walkover the site comprised a three/part four storey office (B1) building with a lower ground floor which was inaccessible. The building was vacant and had been stripped.

The rear area of the site was accessed via a double gate situated on Crofton Terrace. This external area comprised an asphalted car park / under-croft area with access via a roller shutter into the lower ground floor area. The lower ground floor area was not accessible at the time of the site visit with the roller shutter door bolted down.

Several inspection chamber covers, drains and overhead services were noted within the external car parking area. No bulk storage of fuels or chemical were noted.

Given the age of the buildings on site, it is likely that asbestos containing materials (ACM's) are present.

No visual or olfactory evidence of significant potential contamination was observed on site during the walkover.

2.3 Surrounding Area

The surrounding land uses are summarised below in Table 2.3.

Table 2.3 Summary of Surrounding Land Uses

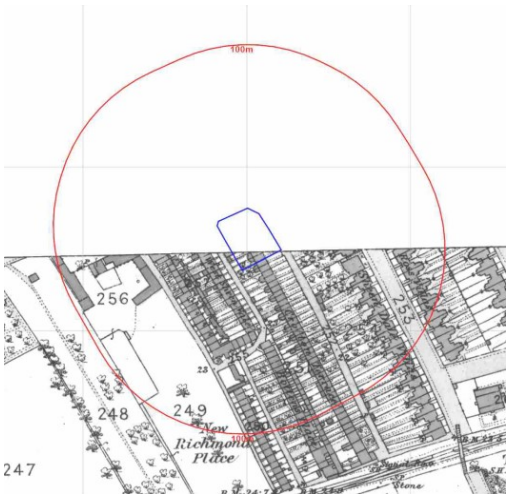
Direction	Land Use
North	Lower Mortlake Road (A316) with residential beyond.
East	Crofton Terrace with residential
South	Residential
West	West Sheen Vale with residential

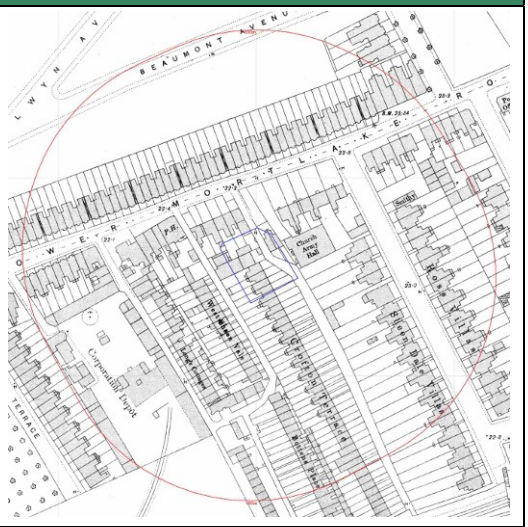
3.0 SITE HISTORY

3.1 On-Site Historical Development

A review of historical maps pertinent to the site are summarised in Table 3.1 below. The site boundary is represented by the blue polygon.

Table 3.1 Summary of Historical Land Uses

Map Edition	Historical Land Use	Map Extract
1866 to 1868 (partial coverage) (Scale 1:2,500)	'*Mortlake Road*' is marked to the north of the site. Terraced properties with associated gardens are present on site. An *'Infant School'* is also marked. The surrounding areas are partially developed with residential properties. '*Militia Barracks'* is marked c. 130m to the north-east and a *'pond'* c. 80m to the north. A railway line is marked c. 300m to the south.	
1896 (Scale 1:2,500 – note slight mis-mapping of site boundary)	Further residential development has taken place on site with the '*Infant School*' no longer marked. *'Corporation Depot'* is marked c. 55m to the south-west and a '*Nursery*' c. 250m to the north of the site. '*Militia Barracks*' now marked as '*Castlegate*'. A '*Timber Yard'* is marked c. 140m to the south-east beyond the railway. '*Pond*' no longer marked.	

Map Edition	Historical Land Use	Map Extract
1913 (Scale 1:2,500 - note slight mis-mapping of site boundary)	Significant residential development has taken place in the surrounding area. '*Militia Barracks*' and '*Castlegate*' are no longer marked. '*Tank*' is marked c. 250m north-east of the site adjacent to the '*Nursery*'.	
1959 (Scale 1:2,500)	A large building (assumed to be an office) resembling present day layout has been constructed on site. '*Goods Depot'* marked c. 150m to the south-east of the site and 'Works' c. 120m south-east. 'Tank' is no longer marked.	
1989-1991 (Scale 1:1.250)	Potential partial demolition and subsequent extension to the existing building is noted, most likely to comprise the extension to office space at first floor creating under-croft parking beneath. '*Electrical Substation'* marked c. 35m to the west on Lower Mortlake Road.	

Map Edition	Historical Land Use	Map Extract
2003 (Scale 1:1:250)	By 2003 mapping, the site largely reflects present day layout. '*Corporation Depot*' has been demolished and replaced with residential and commercial properties on Tersha Street. *'Electrical Substation'* still marked.	

A review of potentially contaminative land uses identified on historical Ordnance Survey maps and within the environmental database within a 250m radius of the site are summarised below as Table 3.2.

Table 3.2 Summary of Potentially Contaminative Off-Site Historical Land Uses within 250m

Surrounding Feature	Distance (m)	Dates	Direction
Corporation Depot	55	c. 1913 to c. 2003	South-West
Railway Sidings, Smithy, Depots and Unspecified Works	60 (nearest connecting Corporation Depot to railway line)	1895 - 1966	South-West, South and South-West
Militia Barracks	130	1867	North-East
Electricity Substations	30 (nearest)	1974 - 1992	West
Unspecified Tanks	165 (nearest)	1916	North-East

3.2 Recent Industrial Land Uses

A review of potentially contaminative recent industrial land uses identified within the environmental database within a 500m radius of the site are summarised below as Table 3.3.

Table 3.3 Summary of Potentially Contaminative Recent Industrial Land Uses within 500m

Company	Activity	Distance (m)	Direction
Electricity Substation (nearest)	Electrical Features	35	West
Kwik Fit	Vehicle Repair, Testing and Servicing	70	North-East
Tank and Works	Industrial Features	c. 200m	East
BP	Petrol Filling Station	440	North-East

3.3 Planning History

EPS has undertaken a review of recent online planning records held by RBRuT for the site. Three previous planning applications are listed as detailed further below:

- 20/3359/FUL - Extension of existing 4 storey Class E Office building to provide new entrance, enlarged office space and external terraces. Permission granted in February 2021;
- 02/1255 Infill of Part of the Undercroft to First Floor to provide Offices (B1) (Amendment to 01/2046/FUL). Permission granted in July 2022; and
- 01/2046/FUL Erection of Rear Extensions and Infill of Part of the Undercroft to provide additional office accommodation and re-siting of the refuse storage area. Permission was granted in March 2002.

Geological information from a site investigation undertaken at the site in 1986 (assumed to support the construction of the new structures marked on 1989 mapping) formed part of the Construction Method Statement for Planning Application ref. 20/3359/FUL approved in February 2021. Extracts from this site investigation are presented and discussed in Section 4 of this report.

4.0 ENVIRONMENTAL SETTING

4.1 Geology & Hydrogeology

The British Geological Survey (BGS) memoirs and geological maps with respect to the area indicates the site to be underlain by the following geological sequence:

Table 4.1 Summary of Geological and Hydrogeological Data

Geological Unit	Classification	Description	Aquifer Classification	Permeability	Vulnerability
Kempton Park Gravel Member	Superficial	Sand and Gravel	Secondary A	High to very high	Medium
London Clay Formation	Bedrock	Clay	Unproductive	Very low to low	Unproductive

As discussed in Section 3.4 of this report, two publicly available borehole records were drilled on site in 1986 and assumed to form part of the redevelopment works in the late 1980's. The two boreholes (ref. Borehole One and Borehole Two) plus a site investigation layout plan are presented in Figure 3 below.

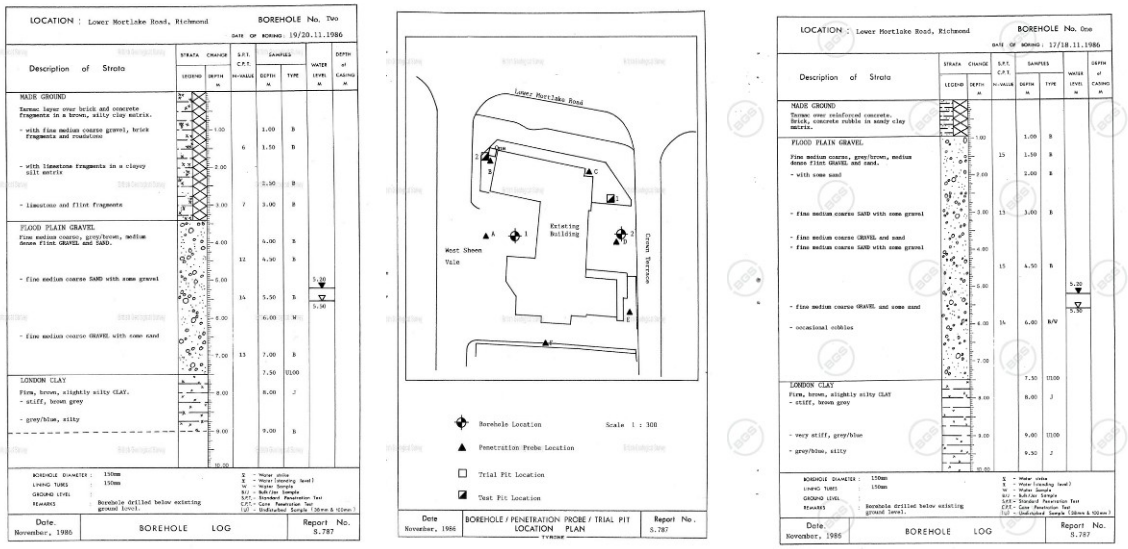


Figure 3 – Historical Borehole Records

Ground conditions identified in the historical records above are consistent with published geology detailed in Table 4.1, albeit these boreholes were probably undertaken at ground level opposed to the existing lower ground level on site.

Made Ground ranging between 1.00 and 3.40m in thickness was encountered above the Kempton Park Gravel Formation (sand and gravel) which persisted to a depth of c. 7.50mbgl, overlying firm to stiff London Clay Formation. Groundwater was encountered at a depth of 5.50mbgl rising to 5.20mbgl.

Historical boreholes indicate that shallow soakaways could be utilised on site subject to the confirmation of the following:

- Depth to Kempton Park Gravel Member from existing lower ground level;
- Soil descriptions;
- Soil infiltration test rates; and
- Static and peak groundwater levels.

The nearest active groundwater abstraction is recorded c. 800m west of the site and used for spray irrigation at Richmond Athletics Ground. No potable groundwater abstractions are situated within a 2km radius of the site and the site is not located within a groundwater source protection zone.

The soil leaching potential of the site is categorised is classified as intermediate. The risk of groundwater flooding on site is indicated to be high.

4.2 Ground Stability

Geotechnical data presented within the environmental data search identifies the following risks on site.

Table 4.3 Summary of Data Search Information

Hazard	Designation	Comments
Shrink-Swell Clay	Negligible	Ground conditions predominantly non-plastic due to the presence of KPG near surface.
Landslides	Very low	Slope instability problems are not likely to occur but consideration to potential problems of adjacent areas impacting on the site should always be considered.
Ground Dissolution	Negligible	Soluble rocks are either not thought to be present within the ground, or not prone to dissolution. Dissolution features are unlikely to be present.
Compressible Ground	Negligible	Compressible strata are not thought to occur.
Collapsible Deposits	Very Low	Deposits with the potential to collapse when loaded and saturated are unlikely to be present.
Running Sand	Very Low	Running sand conditions are unlikely. No identified constraints on land use due to running conditions unless water table rises rapidly.

4.3 Mining and Ground Workings

2no. records of surface ground workings are recorded c. 185m east of the site, both relating to the construction of railway cuttings in the late 1860's. No further records have been identified.

4.4 Unexploded Ordnance (UXO)

A review of online mapping (provided by Zetica) indicates that the site is located within a moderate bomb risk area. However, given that the Site has been developed post war, it is likely that this would provide some mitigation against encountering UXOs. This will be dependent on the type of foundations used to support the existing structure.

Given that the proposed development comprises conversion of the existing building only with no new breaking of ground, no further works are deemed to be required.

4.5 Hydrology

No surface waters are situated within 500m of the site. The Site is however, located within a WFD Surface Water Body Catchment draining into the Tidal River Thames, located c.1.20km from the site at the closest point. The highest risk of surface water flooding on site is 1 in 250 year, with a depth of between 0.3m and 1.0m. However, the majority of the site is indicated to have a negligible risk of flooding.

4.6 Radon Risk Potential

Based on data provided by the BGS and Public Health England, the site is indicated to be located within an area where less than 1% of properties are affected by radon. As such, no radon protection measures are required for new buildings.

4.7 Sensitive Land Uses

Richmond Park, a Site of Special Scientific Interest (SSSI), Special Area of Conservation (SAC) and National Nature Reserve (NNR), is located c. 1.17km south-east of the site. A conservation area is also marked to the south-west of the site on Crofton Terrace.

4.8 Site Sensitivity Assessment

The site is considered to be located within a **low-moderate** sensitivity setting for the following reasons:

- The site lies within an urban area with residential properties nearby;
- The underlying superficial geology (Kempton Park Gravel Member) is classified as a secondary A aquifer;
- The site is not located within a groundwater SPZ;
- The site is located within a WFD Surface Water Body Catchment draining into the Tidal River Thames, located c.1.2km from the site at the closest point; and
- The nearest ecologically sensitive sites are located c. 1.17km from the Site.

5.0 CONSULTATIONS

5.1 Local Authority Liaison

A chargeable service is offered by RBRuT for a search request of contaminated land records. However, this is unlikely to provide information beyond that included within the comprehensive environmental data search procured from Groundsure and has therefore not been purchased.

5.2 Landfill Sites and Waste Treatment Sites

No active / historical landfills or waste treatment sites are situated within 250m.

5.3 Regulatory Database

No sites are designed as 'Contaminated Land' under Part 2a of the Environmental Protection Act 1990 within 500m of the Site.

The following information has been obtained from a commercially available environmental database. The summary table below includes records not otherwise detailed in this report.

Table 5.1 Summary of Data

Activity	Distance from site (m)		Details
	0-249	250-500	
Licenced Pollutant Release	1	3	The closest active record (c. 110m north-east) relates to dry cleaning at a small retail premises. The remaining active record is for a BP Petrol Station c. 425m north-east.

No pollution incidents within 500m of the site are recorded.

6.0 CONCEPTUAL SITE MODEL (CSM)

6.1 Initial CSM

In accordance with Environment Agency, LCRM Published 8th October 2020 (updated July 2023) and BSI 10175 (Code of Practice for Investigation of Potentially Contaminated Land), EPS has developed an initial CSM to identify potential contamination sources, migration pathways and receptors within the study area.

6.2 Contaminant Sources

Based on the information presented in the above sections, the following on and off-site sources of potential contamination have been identified. Duplicate sources and those greater than 250m from the site have not been included as they are deemed to not pose a risk to the site.

On site

Potential sources of contamination identified on site include:

- **Made Ground** – Associated with the construction and demolition of historic buildings on site.

Off site

- **Electricity substation** – closest 35m west (1974 – present day);
- **Corporation Depot** – 55m south-west (c. 1913 to c. 2003);
- **Railway sidings, smithy, depots and unspecified works** – closest 60m south-west (1895 – 1966);
- **Vehicle repair, testing and servicing** – nearest 70m north-east;
- **Dry cleaning** (c. 110m north-east);
- **Militia Barracks / Castlegate -** 130m north-east (1867 – c. 1913);
- **Timber Yard** - c. 140m southeast (1896 – c.1913); and
- **Unspecified Tanks –** closest c. 165m north-east (1916).

6.3 Potential Pathways

Receptors may be potentially at risk from the identified potential sources of contamination via the following pathways:

- Migration of mobile contaminants on or off site via services, sewers and manmade conduits;
- Direct contact, ingestion and inhalation of contaminants on site;
- Migration of mobile contaminants into groundwater and transport into surface waters; and
- Migration of ground gas and vapours into buildings.

6.4 Potential Receptors

Human Receptors

- **Future site users**; and
- **Residents of adjacent properties**.

Controlled Waters

- **Secondary A Aquifer** contained within the Kempton Park Gravel Member**.**

6.5 Risk Assessment

CIRIA 552: Contaminated Land Risk Assessment 'A Guide to Good Practice' provides guidance on risk assessment taking into account factors such as severity of the potential harm that may arise from a successful pollutant linkage, potential magnitude of the hazard, and the sensitivity of the target receptor. Risk assessment is initially assessed by determining the severity of the potential hazard, which takes into account receptor sensitivity and the magnitude of the potential impact as detailed in Tables 6.1 and 6.2 below.

6.5.1 Severity

Table 6.1 Receptor Sensitivity

Category	Human sensitivity	Environmental sensitivity
Very Low	Ground workers	Non-sensitive water course
Low	Commercial / Industrial	Secondary Aquifer
Medium	Residential without plant uptake	Principal Aquifer / Sensitive Watercourse
High	Residential with plant uptake	Groundwater Source Protection Zone

Table 6.2 Magnitude of Impact

Category	Example
No Impact	No identified or potential pollutants present
Slight Impact	Minor leaks and spills from fuel infrastructure, inert landfills / Made Ground
Moderate Impact	Major leaks and spills from fuel infrastructure
Gross Impact	Heavily contaminated industrial sites, hazardous landfills

Severity is subsequently assessed considering the potential receptor and magnitude of impact as outlined within Table 6.3, overleaf.

Table 6.3 Determination of Level of Severity for Potential Hazards

	Receptor Sensitivity			
	Very Low	Low	Medium	High
No Impact	Minor	Minor	Minor	Minor
Slight Impact	Minor	Minor	Minor	Mild
Moderate Impact	Minor	Minor	Mild	Medium
Gross Impact	Minor	Mild	Medium	Severe

6.5.2 Likelihood

The likelihood of an event is assessed while considering the potential for presence of a contaminant, presence of receptor, and the substantiality of the pollutant pathway. Likelihood is broken down into four separate categories within the CSM as shown in Table 6.4 below:

Table 6.4 Definitions of Likelihood Categories

Category	Definition
Unlikely	Pollutant linkage may be present, but the circumstances under which harm would occur are improbable.
Low Likelihood	Pollutant linkage may be present, and there is a possibility of the risk occurring, although there is no certainty that it will do so.
Likely	Pollutant linkage may be present, and it is probable that the risk will occur over the long term.
High Likelihood	Pollutant linkage may be present, and risk is almost certain to occur in long term, or there is evidence of harm to the receptor.

6.5.3 Risk Rating

Table 6.5 demonstrates the methodology used to provide an overall risk rating within the preliminary CSM with respect to any potential sources of contamination that may affect the site. An overall risk rating is assigned to each potential contaminant considering the assessed likelihood and severity as determined using the methodologies within Tables 6.1 to 6.4:

Table 6.5 Level of Risk Rating for Hazard Definition

Likelihood	Severity			
	Minor	Mild	Medium	Severe
Unlikely	Very Low	Very Low	Low	Low / Moderate
Low Likelihood	Very Low	Low	Low / Moderate	Moderate
Likely	Low	Low / Moderate	Moderate	High
High Likelihood	Low / Moderate	Moderate	High	Very High

6.6 Conceptual Site Model

A site specific CSM has therefore been created using the above information and is provided on the following page.

Table 6.6 Conceptual Site Model

Source	Contaminant	Potential migration pathway	Potential Receptors	Likelihood of Occurrence	Severity	Overall Risk Rating	Active / Inactive
On-Site							
Made Ground associated with the demolition of historic buildings	Asbestos	Inhalation of fibres	Future site users Adjacent residents Construction Workers	**Unlikely**	**Minor**	**Very low**	**Inactive** - given that the site is underlain by either basement or hardstanding, no active pathway is present between the source and receptor.
	Heavy Metals & Metalloids PAHs TPH	Ingestion / Dermal contact with soils					
		Vertical and lateral migration	Superficial aquifer (Secondary A)	**Unlikely**	**Minor**	**Very low**	
	Ground gas generation (CH_4 and CO_2) should a significant thickness of Made Ground be present	Build up and inhalation of ground gases	Future Site Users Adjacent residents	**Low**	**Mild**	**Low**	**Active** – further assessment is required given the proposal for a gym and enclosed storage areas within the basement.

Source	Contaminant	Potential migration pathway	Potential Receptors	Likelihood of Occurrence	Severity	Overall Risk Rating	Active / Inactive
Off-Site							
Corporation Depot (55m south-west) **Railway sidings, depots and unspecified works** (60m south-west) **Vehicle repair, testing and servicing** (70m north-east)	PAH TPH	Lateral migration and vapour ingress into buildings	Future site users	**Low**	**Mild**	**Low**	**Active** – further assessment is required given the proposal for a gym and enclosed storage areas within the basement.
Militia Barracks / Castlegate (130m north-east) **Dry cleaning** (c. 110m north-east) **Timber Yard** (140m south-east) **Unspecified Tanks –** closest c. 165m north-east	PAH TPH Solvents	Lateral migration and vapour ingress into buildings	Future site users	**Low**	**Minor**	**Very low**	**Inactive** - Given the limited potential for significant contamination from these sources and distance from the site, it is not considered that an active linkage is present.

Electricity Substation (35m west)	PCB's	Lateral migration	Future site users	**Unlikely**	**Minor**	**Very low**	**Inactive** - Given the distance from the site and the limited mobility of PCB's, it is not considered that an active linkage is present.

7.0 CONCLUSIONS

EPS has utilised the available data to classify the site on the basis of its likely contaminated land liability in relation to the property development. The risk classification definitions are summarised below:

Table 7.1 Risk Classification

Risk	Definition
Very Low	Low likelihood that harm could arise to a receptor. Such harm is unlikely to be any worse than mild.
Low	There are unlikely to be significant contaminated land liabilities associated with the property. Such harm, at worst, would normally be relatively mild. Some limited site investigation maybe required.
Low-Moderate	There are unlikely to be significant contaminated land liabilities associated with the property with regard to the proposed use. However, issues may require further consideration via site investigation in the event of a future redevelopment of the site etc. Remediation works (if required) are likely to be limited in extent.
Moderate	Some potential contaminated land liabilities are likely to affect the property as a result of historical and/or current activities. The risks identified are unlikely to pose an immediate significant issue but the purchaser/developer may wish to make further enquiries of the vendor or undertake further environmental improvements. Redevelopment of the site will likely require further site investigation. Some remedial works maybe required in the long term.
High	Significant potential contaminated land liabilities have been identified at the property. Further assessment including intrusive ground investigation will be required to determine to level of risk and associated liability. Remediation works may be required in the short-term, but likely required in the long term.
Very High	Severe harm to a receptor may already be occurring, or a high likelihood severe harm will arise to a receptor, unless immediate remedial works / mitigation measures are undertaken. The risk if realised is likely to result in substantial liability. Urgent investigation required.

Overall Environmental Risk Assessment

Overall, the preliminary risk classification for onsite risks are considered to be:

- **Very low to low** in terms of human health; and
- **Very low** for controlled waters.

The preliminary risk classification for off-site risks is considered to be:

- **Very low to low** in terms of human health.

8.0 RECOMMENDATIONS

Further assessment of the potentially active contaminant/pollutant linkages is recommended to determine whether a significant risk is posed to human health based on the development proposal.

END OF REPORT

APPENDIX I

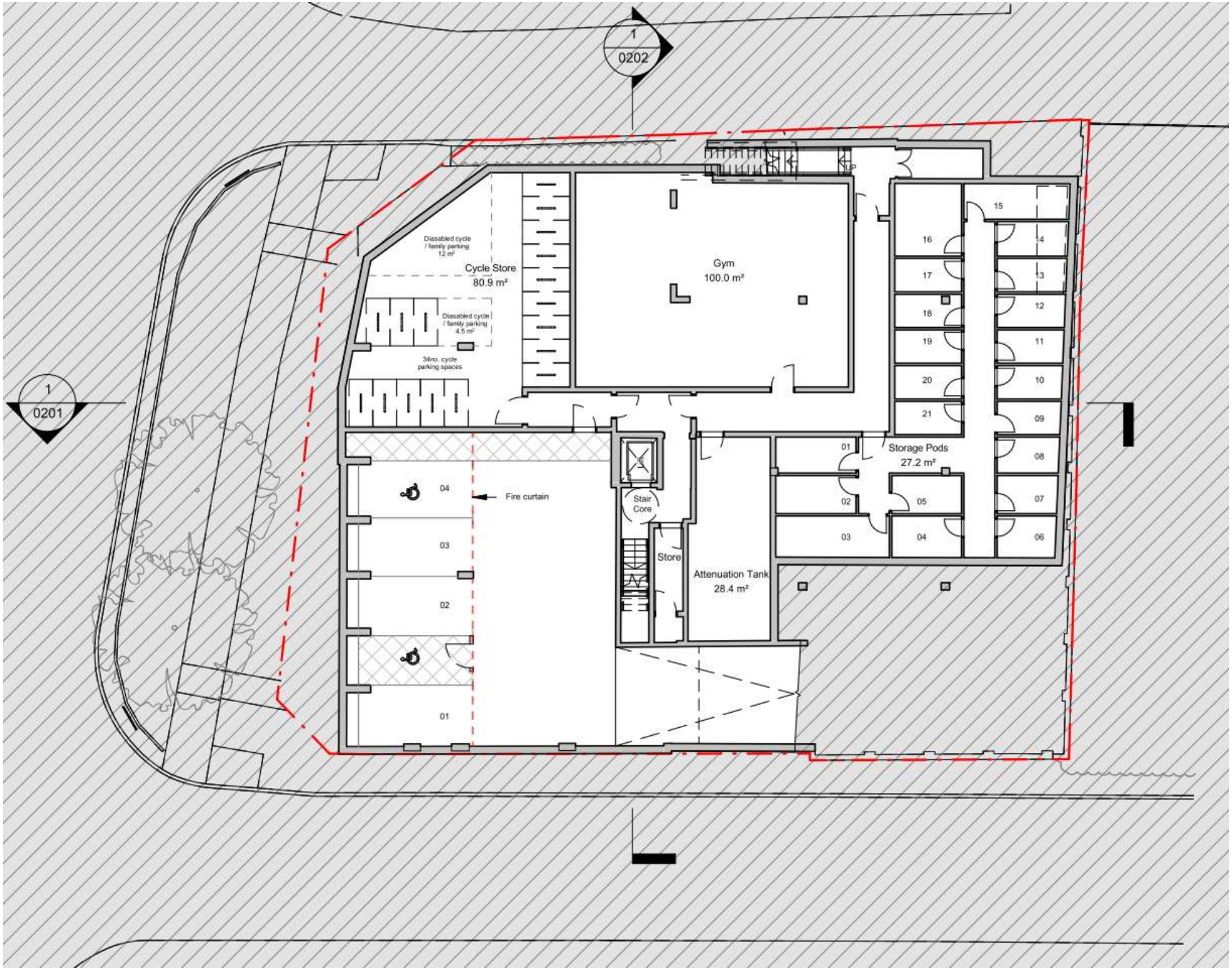
FIGURES

KEY:

eps consulting

Job No. & Title:	P1135 84 Lower Mortlake Rd, Richmond, TW9 2HS
Client:	William Grant & Sons Distillers Limited
Drawn by:	TC
Approved by:	SP
Date:	September 2023
Notes:	NOT DRAWN TO SCALE
Drawing Title:	Figure 1 Site Location Plan

KEY:



eps consulting

Job No. & Title:	P1135 84 Lower Mortlake Rd, Richmond, TW92HS
Client:	William Grant & Sons Distillers Limited
Drawn by:	TC
Approved by:	SP
Date:	November 2023
Notes:	NOT DRAWN TO SCALE
Drawing Title:	Figure 2 Proposed Development Plan (Basement Level only)

APPENDIX II – LIMITATIONS

1. This report and its findings should be considered in relation to the terms of reference and objectives agreed between EPS and the Client.

2. For the work, reliance has been placed on publicly available data obtained from the sources identified. The information is not necessarily exhaustive and further information relevant to the site may be available from other sources. When using the information, it has been assumed it is correct. No attempt has been made to verify the information.

3. This report has been produced in accordance with current UK policy and legislative requirements for land and groundwater contamination which are enforced by the local authority and the Environment Agency. Liabilities associated with land contamination are complex and requires advice from legal professionals.

4. During the site walkover reasonable effort has been made to obtain an overview of the site conditions. However, during the site walkover no attempt has been made to enter areas of the site that are unsafe or present a risk to health and safety, are locked, barricaded, overgrown, or the location of the area has not been made known or accessible.

5. Site sensitivity assessments have been made based on available information at the time of writing and are ultimately for the decision of the regulatory authorities.

6. The executive summary, conclusions and recommendations sections of the report provide an overview and guidance only and should not be specifically relied upon without considering the context of the report in full.

7. EPS cannot be held responsible for any use of the report or its contents for any purpose other than that for which it was prepared. The copyright in this report and other plans and documents prepared by EPS is owned by them and no such plans or documents may be reproduced, published or adapted without written consent. Complete copies of this may, however, be made and distributed by the Client as is expected in dealing with matters related to its commission. Should the Client pass copies of the report to other parties for information, the whole report should be copied, but no professional liability or warranties shall be extended to other parties by EPS in this connection without their explicit written agreement there to by EPS.

8. New information, revised practices or changes in legislation may necessitate the re-interpretation of the report, in whole or in part.

APPENDIX III

GLOSSARY

TERMS

AST	Above Ground Storage Tank
BGS	British Geological Survey
BSI	British Standards Institute
CSM	Conceptual Site Model
MBGL	Metres Below Ground Level
PAH	Poly Aromatic Hydrocarbon
PCB	Poly-Chlorinated Biphenyl
UST	Underground Storage Tank

APPENDIX IV

PHOTOGRAPHS

Photograph 1 – Front of site facing west from Crofton Terrace and Lower Mortlake Road

Photograph 2 – Vehicle access to rear of site from Crofton Terrace

Photograph 3 – Western boundary from West Sheen Vale

Photograph 4 – Rear car park area facing north with roller shutter door to lower ground floor (not accessible)

Photograph 5 – Rear car park and undercroft area facing east

Photograph 6 – Rear car park and undercroft area facing west

Photograph 7 – Ground floor area facing south-east

Photograph 8 – Ground floor area facing west