1A ST LEONARDS ROAD

EAST SHEEN, LONDON, SW14 7LY

PHASE 1:
ENVIRONMENTAL RISK ASSESSMENT

FOR

TJ SIMMONS & CO LTD

August 2016

Our Ref: HLEL45347/001R

RPS Health, Safety & Environment
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Project Reference:	HLEL45347	
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This report has been prepared in the RPS Group Quality Management System to British Standard EN ISO 9001:2008

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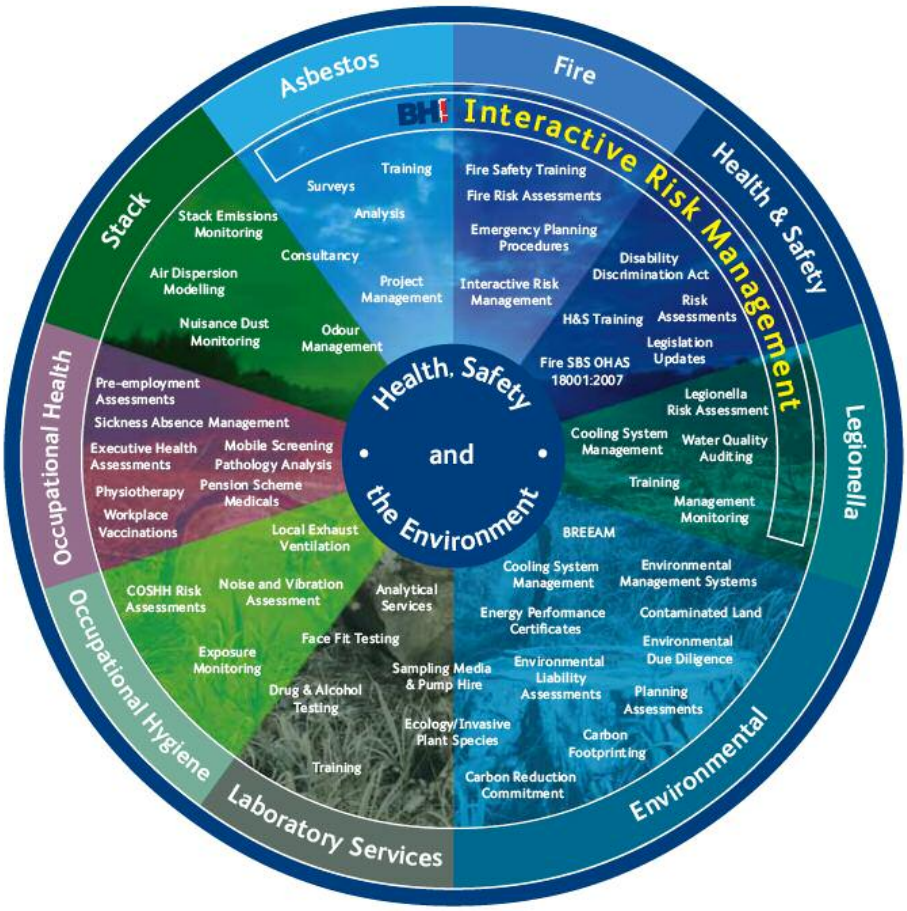
RPS Health, Safety & Environment (London office) is certified to Environmental Management Standard ISO 14001.



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EXECUTIVE SUMMARY

Overall Summary:

The site is considered to be suitable for its proposed use from a ground contamination perspective.

Section Summary:

Section	Summary
Site Details	*Area: 0.03ha* *NGR: TQ 204 755* *Current use: Warehouse* *Proposed use: Change of use to residential*
Site History	*The site comprised undeveloped land from c.1869 to c.1913 when two small unspecified structures were developed on site. The site was redeveloped to comprise two unspecified buildings (likely commercial / light industrial) by 1933. The current site layout comprising a warehouse building was developed c.1987.* *Surrounding land uses comprised predominantly residential properties and undeveloped land from the late 1890s until the 1950s. By c.1951 a Cosmetic Works (1951 to recent) was located 10m west (currently a warehouse utilised for storage by an events company), a Garage (1951 to 1965) was located 20m northeast, a Furnishing Works (1951 to 2002) was located 75m north and an Engineering Works (1951 to recent) was located 90m southeast of the site. Further commercial and industrial land uses were developed from 100m of the site in the 1950s.*
Environmental Setting	*The site is located in a mixed residential and commercial area. RPS has been advised that the site is proposed to be converted for a residential end use. Future site users are considered to be potentially sensitive receptors to contamination (if present) beneath the site, however the sensitivity of future residents will be reduced by the absence of soft landscaped areas / residential gardens.* *The site overlies a Secondary A Aquifer relating to the Kempton Park Gravel deposits which are further underlain by Unproductive Stratum relating to the London Clay Formation. Further Secondary A Aquifers relating to the Lambeth Group Formation and Thanet Sand Formation are located below the Clay and a Principal Aquifer relating to the Chalk Group is located at depth. The site is not located within a groundwater Source Protection Zone and no potable groundwater*

Section	Summary
	abstractions are located within 2km of the site. *The nearest surface water feature is a culvert located 250m north of the site. The River Thames, located 500m north of the site, is classified as 'good' chemical quality. Given their distance from the site the surface water features are not considered to be vulnerable receptors.* *Overall, the site is within a low to moderate sensitivity setting and is proposed for a sensitive end use.*
Regulatory Consultations	*The Environmental Health Department at London Borough of Richmond upon Thames advised that the site has not been identified for further assessment under the Councils Contaminated Land Inspection Strategy.*
Risk Assessment	*There is the potential for a degree of contamination to be present beneath the site as a result of its current and historical use as a warehouse and also the potential for the migration on to the site of off-site contamination (if present) from the former Works located 10m to the west. However, onsite land uses have been small scale in nature and are considered unlikely to have given rise to significant contamination beneath the site and the presence of hardstanding and building cover on site will also have reduced the potential for the leaching of any historical spillages/leakages of contaminants into the underlying ground or shallow groundwater.* *Furthermore, RPS understands that the predominant building cover and hardstanding is proposed to remain and that no ground break or areas of soft landscaping are proposed. This will significantly limit the potential for future site users to come into contact with any residual contamination (if present) beneath the site by severing the dermal contact and ingestion pathways.* *Sensitive groundwater resources situated at depth beneath the site will be offered a significant degree of protection by the presence of low permeability London Clay underlying the site.* *Overall, the site is considered to be suitable for its proposed use from a ground contamination perspective.*
Recommendations & Costings	*No further work is required to ground conditions / contamination at the site, based on its current use and form.*

Note:

- *Given the proposed change of use of the site, a formal Refurbishment Asbestos Survey should also be conducted prior to any work commencing.*
- *Air conditioning on site contains ozone depleting substances. The use of such substances has been restricted under the Environmental Protection (Controls on Ozone-Depleting Substances) (Amendment) Regulations 2008. RPS therefore considers that it would be prudent to arrange the removal of any banned substances if necessary.*

1 INTRODUCTION

RPS Health, Safety & Environment (RPS) was commissioned by *James Lloyd Associated Limited* on behalf of ***TJ Simmons & Co Ltd*** to undertake an environmental review of *1A St Leonards Road, East Sheen, London, SW14 7LY* in relation to the change of use of the site.

The principal aim of the review was to determine whether there was the potential for contamination to be present, which could impact future site uses/occupiers and the wider environment, significantly constrain the proposed use of the site or affect the development process. The site's suitability for its proposed use has been determined in accordance with the guidance outlined in the National Planning Policy Framework.

The environmental review comprised:

i) a site inspection;
ii) a review of the historical land uses to assess the potential for ground contamination;
iii) a review of the environmental setting to assess the sensitivity of the surrounding area to contamination/pollution;
iv) consultation with the regulatory authorities to establish whether any significant environmental issues have been recorded, which may impact on the site;
v) qualitative environmental risk assessment of the site's current and proposed use; and
vi) a review of existing relevant reports (if supplied).

The environmental risk assessment presented within this report has been prepared having regard to the *contaminant-pathway-receptor* model introduced under Part 2A of the Environmental Protection Act 1990, and associated guidance on contaminated land published by the *Department of Environment, Food and Rural Affairs* [and its predecessors]. The methodology is essentially a qualitative assessment, based on the identification and evaluation of potential 'contaminant-pathway-receptor contaminant linkages'. On the basis of this risk assessment, consideration has been given to the potential for the site to be designated as 'contaminated land' (under the local authority contaminated land inspection strategy) as defined in Part 2A of the Environmental Protection Act 1990. See Appendix C for further details of the Environmental Protection Act 1990 and the risk assessment process.

The scope of the report is in general accordance with:

- British Standard requirements for the *'Investigation of potentially contaminated sites - Code of practice' (ref. BS10175:2011)*;

- '*Model Procedures for the Management of Land Contamination' - Contaminated Land Report (CLR) 11*;
- *National Planning Policy Framework (2012)*; and
- *DEFRA Environmental Protection Act 1990: Part 2A - Contaminated Land Statutory Guidance (2012).*

Where appropriate, consideration has also been given to the following:

- The potential for environmental liabilities to occur under other associated regimes, for example the Water Resources Act 1991 and the Environmental Damage Regulations 2009; and
- Key constraints on site redevelopment (if proposed), including the impact of other environmental issues (e.g. asbestos, flooding, ecology).

Details of the limitations of this type of assessment are described in Appendix D.

2 LAND USE

2.1 Site Inspection

This section of the report is based upon observations made during a site visit on the 9th August 2016. The site location and site boundary plans are shown in Appendix A. Selected photos are shown in Appendix B.

RPS understands that the site is proposed for a change of use to a residential end use without landscaped areas.

General view of the site. For further photos see Appendix B.

2.1.1 The Site

Section	Description
Background:	The site is located within the Mortlake district of the London Borough of Richmond upon Thames at National Grid Reference TQ 204 755. It is roughly rectangular in shape and occupies an area of approximately 0.03ha.
Site Layout & Activity / Operations:	The site comprised a two storey warehouse building currently occupied by *TJ Simmons & Co Limited* (tiling contractors) and utilised as offices and storage space. The building comprised ground floor office accommodation in the northwest corner of the building with the remainder comprising a two storey warehouse. The site representative reported that the warehouse area formerly comprised a first floor showroom the remnants of which can still be seen above the office area (see Photo 1 in Appendix B). The warehouse was utilised for the storage of tools and tiles. One electric forklift truck was present in the warehouse at the time of the site walkover. The site comprised 95% building cover with an external border on the eastern, southern and western boundary of the site. The external area comprised block paving to the east leading to a side door, gravel to the south and concrete hardstanding to the west.

Section	Description
	Access to the building was via an access road of St Leonards Road. The topography of the site was level.
Building Structure(s):	The building on the site was of steel framed construction with brick facades to approximately one metre above ground level and metal cladding above extending to the roof (see Photo 2 in Appendix B).
Surface Cover:	The site comprised 95% building cover with external areas laid to brick paving, concrete hardstanding and gravel. Internal floorings comprised covered concrete.
Drainage:	Manholes and surface water drains were noted at the front of the onsite building (see Photo 3 in Appendix B). No drainage plans were provided to RPS as part of this assessment, however given the site's location it is likely surface water enters the main drainage network with foul water discharged via the local sewerage network.
Storage / Tanks:	No bulk storage tanks were noted to be present at the site at the time of the walkover.
Waste:	A skip, containing material most likely from the removal of the first floor area in the warehouse, was located externally to the unit at the time of the site walkover (see Photo 4 in Appendix B) and the site representative reported that the skip would be collected by a licensed waste contractor.
Air Emissions:	Two air conditioning units were located on the eastern and western side of the building and were noted to comprise R22 which is an ozone depleting substance.
Electricity Transformers:	No electricity substations or transformers were observed on site.
Visual Evidence of Contamination:	No visual or olfactory evidence of contamination was noted on site during the walkover survey.
Statutory Nuisance:	RPS is not aware of any complaints relating to the site.
Other Issues:	No asbestos survey report was provided to RPS as part of this assessment. No *Japanese Knotweed* or *Giant Hogweed* (invasive plant species) were readily identified on or adjacent to the site at the time of the survey. *(It should be noted that the identification can be limited by the seasons and in areas of dense vegetation growth).*

2.1.2 The Surrounding Area

The site is located in an area of mixed commercial and residential land uses. At the time of the site inspection, neighbouring land consisted of the following:

Direction	Description
North:	Residential properties with gardens and the access road from St Leonards Road.
East:	Car parking and the rear entrance of offices occupied by *Dental Hygiene Centre* and *CJR Contracts* (interior design company*).*
South:	Car parking and office accommodation occupied by a *Health Centre, Library and Citizen Advice Bureau.*
West:	Car parking and warehouse occupied by *Richmond Events* (business events company) with residential properties with gardens beyond.

2.2 Site History

2.2.1 Historical Map Review

The following review is based on past editions of readily available Ordnance Survey (OS) maps. These include scales of 1:1,250, 1:2,500 and 1:10,000 dated 1865 to 2014. Extracts from selected historical maps are given in Appendix A.

On-site Land Use and Features	Dates
The site comprised parkland.	1865 – c.1895
Then the site comprised undeveloped land with a small unspecified building located in the southwest corner of the site, extending offsite.	1895 – c.1913
Then two small unspecified structures were developed in the centre and northwest of the site.	1913 – c.1933
Then the site was redeveloped with an unspecified building (likely commercial / light industrial) in the northwest corner of the site (extending offsite to the west) and an unspecified building (likely commercial / light industrial) in the centre to west of the site.	1933 – c.1987
Then the site was redeveloped to comprise one unspecified building (likely commercial / light industrial) representing the current site layout.	1987 – Present

Surrounding Land Uses (250m radius)	Orientation	Distance	Dates	
			From	To
St Leonards Works (Cosmetics) *Then* Works	West	10m	1951 1987	1987 Recent
Garage	Northeast	20m	1951	1965
Parkside Works (Furnishings) / Works	North	75m	1951	2002
Hampton Works / Engineering Works	Southeast	90m	1951	Recent
Garages (likely personal vehicle garages)	South	90m	1951	1967
Smithy	South	110m	1896	1898
Motor Engineering Works	Southwest	130m	1951	1984
Garages (likely personal vehicle garages)	Southwest	130m	1951	1967
Timber Yard	North	150m	1951	Recent
Milk Depot *Then* Garage and Motor Repair Works	Southwest	160m	1951 1965	1965 1984
Motor Engineering Works	Southwest	170m	1951	1984
Store Rooms	Northeast	180m	1951	1992
Engineering Works / Works	East	180m	1951	2014
Railway Line and Station	North	200m	1869	Present
Garages (likely personal vehicle garages)	South	200m	1951	1965
Garage	Northeast	230m	1951	Recent

2.2.2 Site Planning History

Relevant planning records for the site, obtained from the London Borough of Richmond upon Thames Council Planning Department are summarised as follows:

- 82/0316. Demolition of existing buildings and erection of a prefabricated building for storage / packaging use with ancillary offices and loading bay. Permission granted November 1982. No documents were available for review in regards to this application.

- 98/0712. Change of use of prefabricated building from storage / packaging use to Scout Hall. Permission granted August 1998. A decision notice was available to review and confirmed no contaminated land conditions were attached to this application.

3 ENVIRONMENTAL SETTING, REGULATORY CONSULTATIONS & ADDITIONAL INFORMATION

3.1 Geology & Hydrogeology

Based on British Geological Survey mapping (1:50,000-scale) and the Environment Agency's Groundwater Vulnerability mapping (1:100,000-scale), the stratigraphic sequence and aquifer classifications beneath the site are as follows:

Strata	Age	Description & approximate thickness	Aquifer Classification
Kempton Park Gravel Deposits	*Quaternary*	These deposits generally comprise gravel, sandy and clayey in part, likely to be a few metres in thickness beneath the site.	Secondary A Aquifer
London Clay Formation	*Palaeogene*	This formation generally comprises undivided clay silty in part, likely to be in excess of 50m in thickness beneath the site.	Unproductive Stratum
Lambeth Group Formation	*Palaeogene*	This formation generally comprises clay mottled in part with beds of sand and shelly clay. Likely to be approximately 20m in thickness beneath the site.	Secondary A Aquifer
Thanet Sand Formation	*Palaeogene*	This formation generally comprises fine grained sand, likely to be approximately 10m in thickness beneath the site.	Secondary A Aquifer
Chalk Group	*Cretaceous*	This group generally comprise white chalk, likely to be of significant thickness beneath the site.	Principal

BGS borehole log ref.TQ27NW849 located 30m southwest of the site indicates the presence of fill (comprising tarmac, bricks and soil) to 0.80m bgl (meters below ground level). This is underlain by medium dense brown silty fine medium and coarse sand to 2.20m bgl, followed by medium dense to very dense sandy fine, medium and coarse gravel to 7.50m bgl. Stiff fissured grey silty clay was subsequently identified to the base of the borehole at 11m bgl.

Made Ground is likely to be present across the site as a result of past construction and/or demolition activities. No site investigation reports have been reviewed to verify this.

The site is located above a Secondary A Aquifer relating to the Kempton Park Gravel Deposits. These deposits are formed of permeable layers capable of supporting water supplies at a local scale, in some cases forming an important source of base flow to rivers.

This is underlain by Unproductive Stratum relating to the London Clay Formation. These formations have a low permeability and have negligible significance for water supply or base flow.

This is further underlain by Secondary A Aquifers relating to the Lambeth Group Formation and Thanet Sand Formation.

Beneath this is a Principal Aquifer relating to the Chalk Group. These formations provide a high level of water storage and may support water supply and / or river base flow on a strategic scale.

According to Environment Agency data, the site is not located in a groundwater Source Protection Zone.

3.2 Water

3.2.1 Surface Water

Under the Water Framework Directive, the Environment Agency identifies one watercourse within 1km of the site which is classified within the local River Basin Management Plan. The watercourse is the River Thames located 500m north of the site. The River Thames has been classified as having 'good' chemical quality and 'moderate potential' ecological quality.

The nearest surface water feature to the site is a culvert located 250m northwest of the site.

3.2.2 Fluvial / Tidal Flood Risk

According to the Environment Agency flood map, the site is not located within an indicative fluvial floodplain.

3.2.3 Water Abstractions

Information provided by the Environment Agency indicates that there are no records of current licensed groundwater abstractions or surface water abstractions within 2km of the site.

3.3 Sensitive Sites / Designated Protected Areas

Natural England data indicates that there are no SSSIs, SPAs, SACs, RAMSAR, Nature Reserves or other protected / sensitive environmental areas within 1km of the site.

3.4 Landfills and Waste Sites

Data provided by the Environment Agency, Local Authority and British Geological Survey indicates that there are no recorded licensed or known historical landfill sites or licensed waste treatment / transfer sites located within 500m of the site.

3.5 Local Authority Search Responses / Consultations

The Environmental Health Department at London Borough of Richmond upon Thames was consulted regarding any known contamination issues at the site. The Council advised as follows:

- The site has not been identified as 'Contaminated Land' under Part IIA of the Environmental Protection Act 1990.
- The site has not been identified by the Council for further assessment under their Contaminated Land Inspection Strategy, and the Council is not considering taking any action on a formal or informal basis.
- If the site were to be redeveloped depending on the specifics of the application a site investigation is likely to be required given the subject site's industrial past. (*RPS notes that the site is not proposed for redevelopment and instead is proposed for a change of use to a residential end use. No ground break is proposed as part of the work).*
- The Council's records indicate the works historically located 10m to the west of the site comprised a Timber Products Manufacturing Works in 1909 for the Manufacture of Cricket Balls. Following which from 1950 to 2004 the area comprised a Cosmetics and Toiletries Manufacturing Works. This area has been identified as a low priority for further assessment under the Councils Contaminated Land Inspection Strategy.

3.6 Pollution Incidents

Environment Agency data indicates that there are no records of 'major' or 'significant' pollution incidents within 500m of the site.

3.7 Authorised Processes

3.7.1 Environmental Permits

Environment Agency and Local Authority data indicates that there are six active processes regulated by an Environmental Permit (under the Environmental Permitting Regulations 2010) within 500m of the subject site. These are outlined in the table below:

Licence Holder	Permitted Activity	Approx. Distance and Direction from Site
Texaco, Mortlake Service Station	Petrol Vapour Recovery	130m North
Express Dry Cleaners	Dry Cleaning	160m South
Royal Dry Cleaners	Dry Cleaning	345m Southwest
Budweiser Stag Brewing Co	Animal Vegetable and Food Treating	395m North
Hamlyns	Dry Cleaning	455m East
BM Lifestyle	Dry Cleaning	470m Northeast

3.7.2 COMAH Sites

There are no records of any operations under the Control of Major Accident Hazards (COMAH) within 500m of the site.

3.8 Radon

According to the Indicative Atlas of Radon in England and Wales published by the Health Protection Agency (part of Public Health England) and the British Geological Survey, the site is not located in an area at risk from radon gas.

3.9 Coal Authority

The site is not located in an area potentially affected by coal mining activities.

4 ENVIRONMENTAL RISK ASSESSMENT

4.1 Background

This Risk Assessment consists of an appraisal of the *contaminant-pathway-receptor* 'contaminant linkages' which is central to the approach used to determine the existence of 'contaminated land' according to the definition set out under Part 2A of the Environmental Protection Act 1990. For a risk to exist (under Part 2A), all three of the following components must be present to facilitate a potential 'pollutant linkage'.

- ***Contaminant*** *referring to the source of contamination (Hazard).*
- ***Pathway*** *for the contaminant to move/migrate to receptor(s).*
- ***Receptor*** *(Target) that could be affected by the contaminant(s).*

Receptors include human beings, other living organisms, crops, controlled waters and buildings / structures. The assessment includes a qualitative review for the 'significant possibility of significant harm' (SPOSH). The mere presence of a contaminant source / hazard at a site does not mean that there will necessarily be attendant risks or that the site will be designated as 'contaminated land'. For further details see Appendix C.

In addition, the assessment includes consideration of redevelopment constraints, the site's '*suitability for use'* and the perception by any future purchasers regarding the potential impact on investment value/saleability.

The Risk Assessment comprises three sections:

Section 4.2: A summary of current and historical land use and environmental sensitivity information demonstrated as a tabular *Conceptual Model* with *Contaminant*, *Pathway* and *Receptor* components (in accordance with *Model Procedures for the Management of Land Contamination' - Contaminated Land Report (CLR) 11).*

Section 4.3: An assessment of Overall Risk compiling the findings of Section 4.2, together with the likelihood of occurrence and its commercial impact. This risk is assessed in relation to 'Ground Contamination' and 'Other Environmental Issues', and has been classified under three categories (see below):

Section 4.4: Details of notable environmental issues and key operational issues (outside ground contamination aspects) are highlighted in this section.

- ***Low risk -*** *it is considered unlikely that issues within the category will give rise to significant harm or a liability/cost for the owner of the site.*
- ***Moderate risk -*** *it is possible, but not certain that issues within the category will give rise to significant harm or a liability/cost for the owner of the site.*
- ***High risk -*** *there is a high potential that issues within the category will give rise to significant harm or a liability/cost for the owner of the site.*

4.2 Conceptual Model

Source: *(Land Use)*

The site is currently occupied by a tiling contractor and used for the storage of tiles and equipment. RPS is not aware of any contaminative activities currently taking place at the site.

Historically the site comprised predominantly undeveloped land from c.1865 to 1913 when two small unspecified structures were developed on site. The site was redeveloped to comprise two unspecified buildings (likely commercial / light industrial) by 1933. The current site layout was developed c.1987.

Planning records indicate the site was redeveloped post 1982 to a storage/packaging warehouse with associated offices and loading bays and remained as such until at least 1998.

Potentially contaminative sources identified in the surrounding area include a Works (1951 to 2004) located 10m to the west (currently utilised as a warehouse for a events company). The Environmental Health Department at the London Borough of Richmond upon Thames further indicated that this area included a Timber Products Manufacturing Works in 1909 and from 1950 to 2004 the area comprised a Cosmetics and Toiletries Manufacturing Works. In addition, a Garage (1951 to 1965) was located 20m northeast, a Furnishing Works (1951 to 2002) was located 75m north and an Engineering works (1951 to recent) was located 90m southeast of the site. Further industrial land uses were located from 100m of the site. The majority of these land uses have since been redeveloped.

Overall, given the historical industrial uses in the surrounding area the likelihood of significant contamination existing beneath the site is considered to be low to moderate.

Pathways:

The site currently comprises predominant hardstanding and building cover (with the exception of a small external area of gravel) which will afford a significant degree of protection to current and future site users from any contamination (if present) i.e. only the potential inhalation pathway will be present.

RPS has been advised that the site is proposed for conversion to a residential end use with no ground break or areas of soft landscaping proposed. Therefore no new potential pathways will be introduced.

The underlying sand and gravel deposits as well as any permeable Made Ground could facilitate the vertical/lateral migration of any contamination or ground gas (if present) beneath the site. However, the low permeability London Clay formation will reduce the potential for vertical migration of contamination (if present) to deeper groundwater resources set out in Section 3.1. The hardstanding / building cover at

the site will reduce the potential for infiltration and subsequent leaching of any contamination (if present).

Receptors: *(Environmental Sensitivity)*

The site is currently commercial in use and comprises complete building and hardstanding cover (with the exception of a small area of gravel along the boundary of the site). It is proposed for conversion to a residential end use with no ground break and no areas of soft landscaping proposed as part of the conversion works. The site is situated in a mixed commercial and residential setting with the nearest residential properties (with private gardens) located adjacent to the north of the site.

The site overlies a Secondary Aquifer relating to the Kempton Park Gravel deposits. This is underlain by an Unproductive Stratum relating to the London Clay Formation, which due to its low permeability will offer a significant degree of protection to deeper groundwater resources set out in Section 3.1. Furthermore, the site is not located within a groundwater Source Protection Zone and no potable water abstractions are located within 2km of the site.

The River Thames (tidal), located approximately 500m to the north at its closest point, has been classified as having 'moderate potential' ecological quality and 'good' chemical quality. The nearest surface water feature is a culvert located 250m northwest of the site. Given their substantial distances from the site, these are not considered to be vulnerable receptors.

Overall, taking into account the sensitive end use of the site the sensitivity of the environmental setting is considered to be moderate.

Note: Operational health and safety issues are beyond the remit of this report.

4.3 Overall Risk

Risk Assessment:

There is the potential for a degree of contamination to be present beneath the site as a result of its current and historical use as a warehouse and also the potential for the migration on to the site of off-site contamination (if present) from the former Works located 10m to the west. However, onsite land uses have been small scale in nature and are considered unlikely to have given rise to significant contamination beneath the site and the presence of hardstanding and building cover on site will also have reduced the potential for the leaching of any historical spillages/leakages of contaminants into the underlying ground or shallow groundwater.

Furthermore, RPS understands that the predominant building cover and hardstanding is proposed

to remain and that no ground break or areas of soft landscaping are proposed. This will significantly limit the potential for future site users to come into contact with any residual contamination (if present) beneath the site by severing the dermal contact and ingestion pathways.

Sensitive groundwater resources situated at depth beneath the site will be offered a significant degree of protection by the presence of low permeability London Clay underlying the site.

The Environmental Health Department advised that the Council have not identified the site for further assessment under their Contaminated Land Inspection Strategy.

Overall, the site is considered to be suitable for its proposed use from a ground contamination perspective.

4.4 Other Environmental Issues:

Environmental Issues:
Given the buildings age it is possible for asbestos to be present on the site. R22 which is an ozone depleting substance was noted in the air conditioning units on site.

5 CONCLUSIONS & RECOMMENDATIONS

5.1 Conclusions

The following conclusions have been drawn from the observations recorded and the information collated and reviewed as part of this Risk Assessment:

Overall the site is considered to be suitable for its proposed use from a ground contamination perspective.

5.2 Risk Management Recommendations

5.2.1 Ground Contamination

No further work is required relating to ground conditions / contamination at the site, based on its proposed use.

5.2.2 Other Environmental Considerations

We recommend the following actions to reduce or clarify other potential environmental risks at the site:

- Given the proposed change of use of the site, a formal Refurbishment Asbestos Survey should also be conducted prior to any work commencing.
- Air conditioning on site contains ozone depleting substances. The use of such substances has been restricted under the Environmental Protection (Controls on Ozone-Depleting Substances) (Amendment) Regulations 2008. RPS therefore considers that it would be prudent to arrange the removal of any banned substances if necessary.

APPENDIX A

Figures

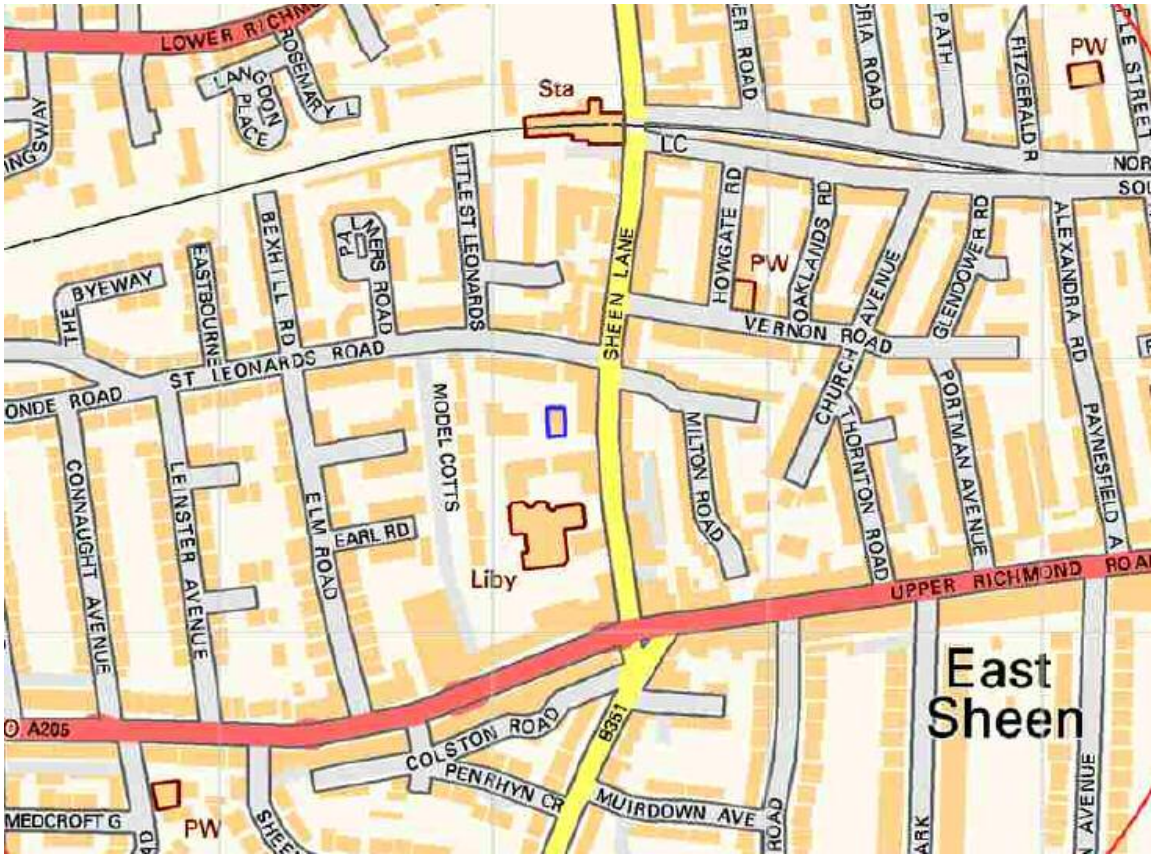

Figure 1: Site Location Plan

Map Date: Current

Scale: Not to scale

RPS
35 New Bridge Street
London
EC4V 6BW

☎ 020-7280-3240
www.rpsgroup.com

Figure 2: Site Boundary Plan

Map Date: Current

Scale: Not to scale

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35 New Bridge Street
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Figure 3: Aerial Photo

Map Date: Current

Scale: Not to scale

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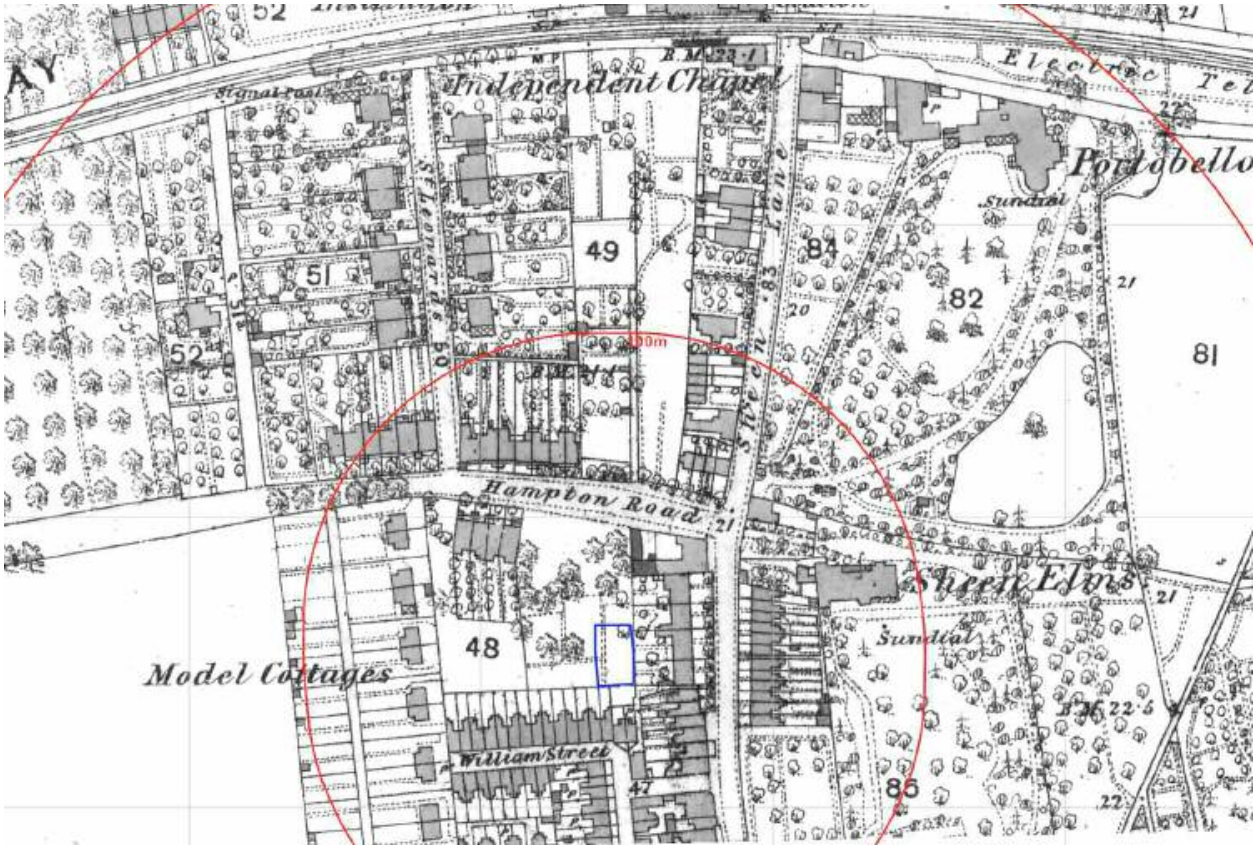

Figure 5: Historical Map Extract

Map Date: 1869

Scale: Not to scale

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London
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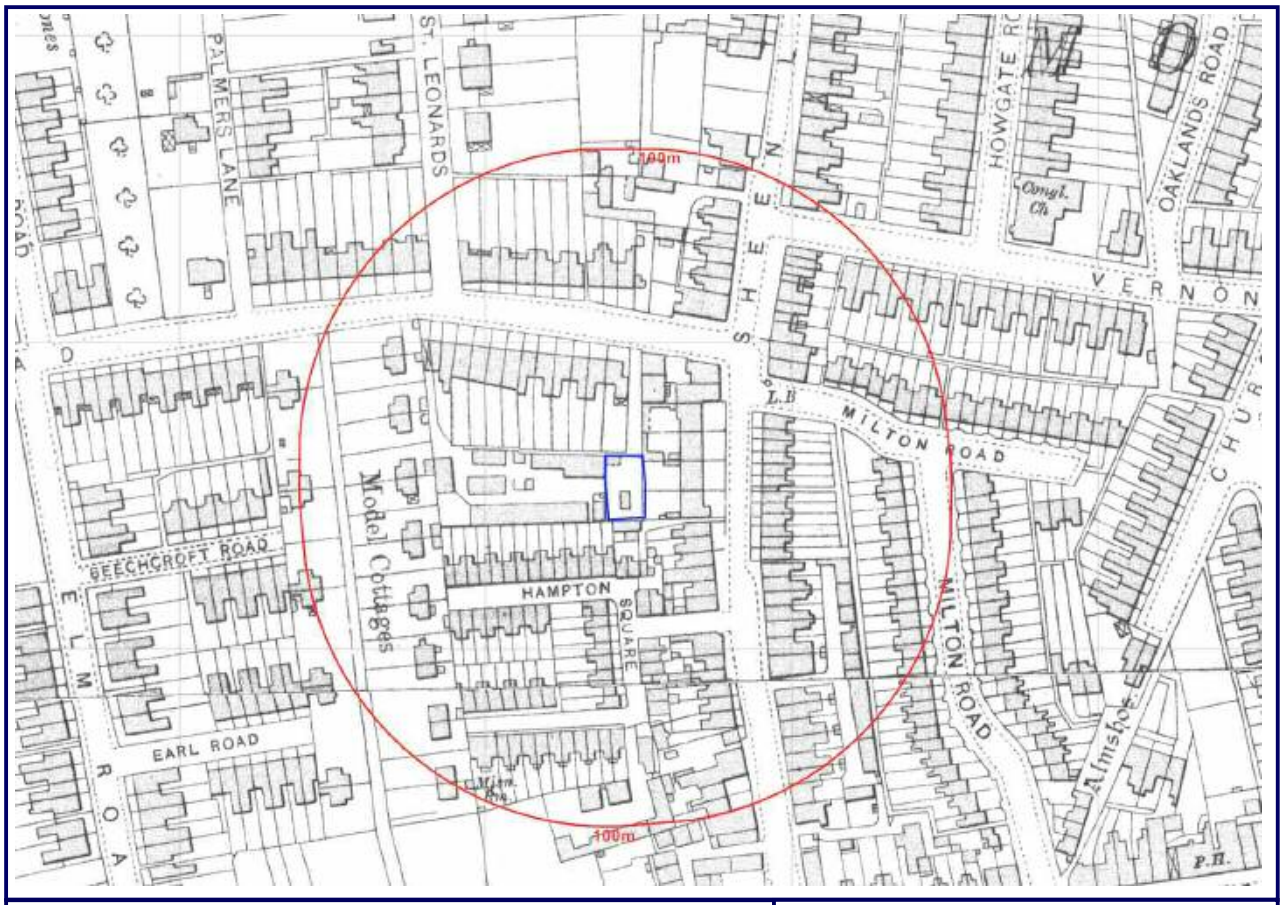

Figure 6: Historical Map Extract

Map Date: 1913

Scale: Not to scale

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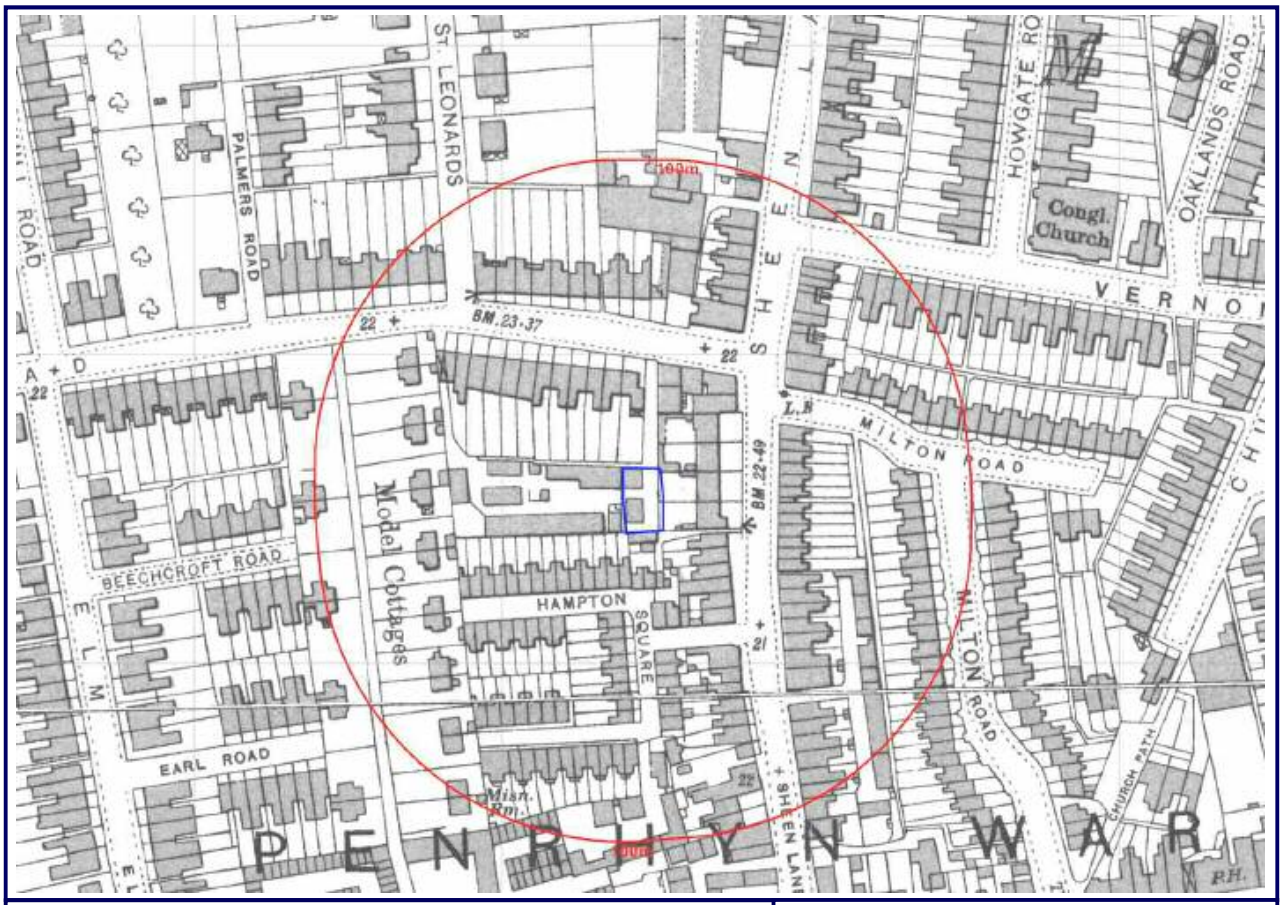

Figure 7: Historical Map Extract

Map Date: 1933

Scale: Not to scale

RPS
35 New Bridge Street
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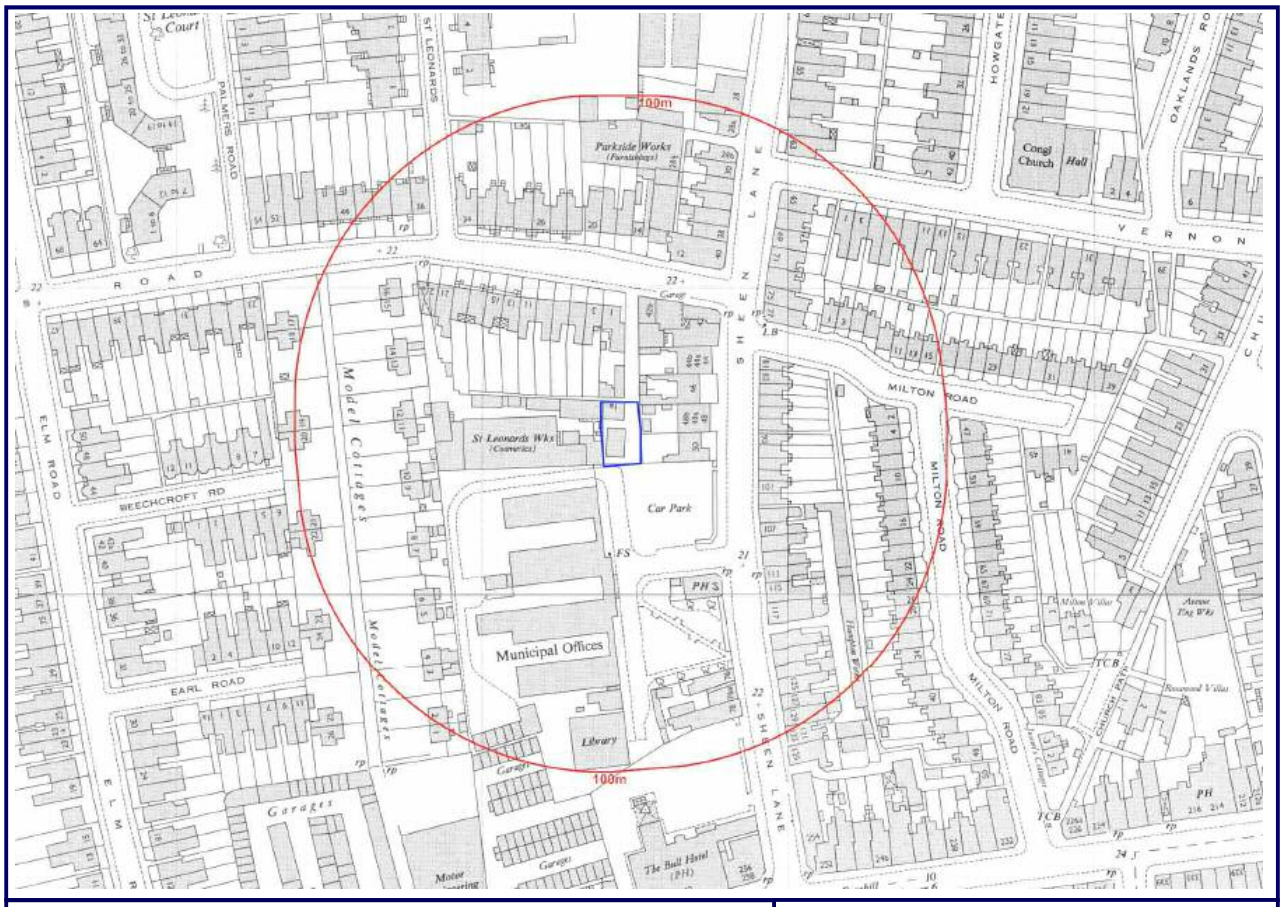

Figure 8: Historical Map Extract

Map Date: 1951

Scale: Not to scale

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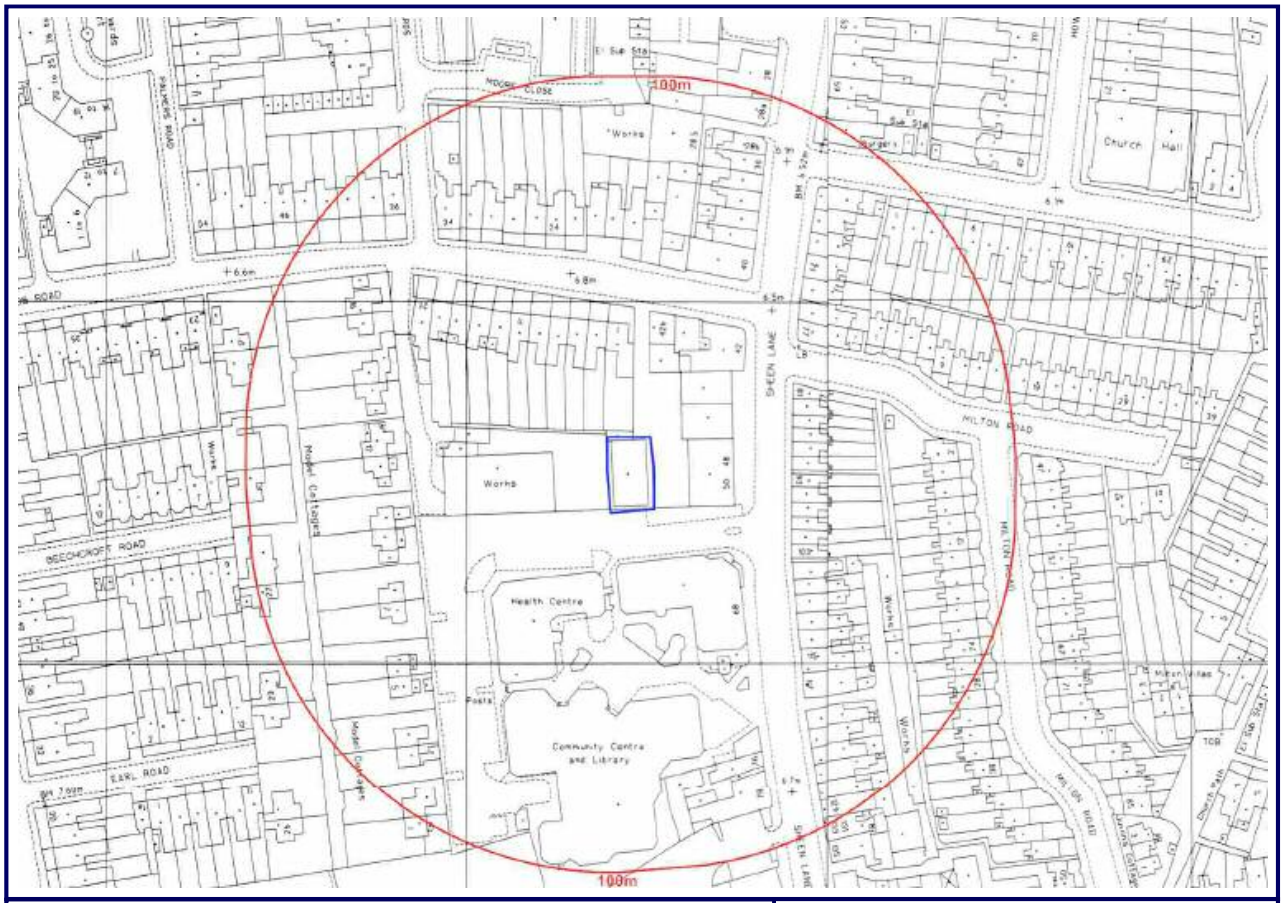

Figure 9: Historical Map Extract

Map Date: 1991

Scale: Not to scale

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APPENDIX B

Photographs

Photo 1: Warehouse area with forklift truck and ladder to former first floor show rooms.

Photo 2: Front view of the site building with brick and metal cladding façade and external border.

Photo 3: Surface water drain and manhole covers noted to the front of the onsite building.

Photo 4: Skip located to the front of the onsite building.

APPENDIX C

Background to Part 2A (The Contaminated Land Regime)

Contaminated Land Definition

Under Section 57 of the Environmental Act 1995, Part 2A was inserted into the Environmental Protection Act 1990 to include provisions for the management of contaminated land.

Subsequent regulations were first implemented in England in April 2000, Scotland in July 2000 and Wales in July 2001[1], providing a definition of 'contaminated land' and setting out the nature of liabilities that can be incurred by owners of contaminated land and groundwater.

According to the Act, contaminated land is defined as 'any land which appears to the local authority in whose area the land is situated to be in such a condition, by reason of substances in, on or under the land that:

a) *significant harm* is being caused or there is a *significant possibility* of such harm being caused; or
b) *significant pollution* of controlled waters[2] is being caused or there is a significant possibility of such pollution being caused[3],

The guidance on determining whether a particular possibility is significant is based on the principles of risk assessment and in particular on considerations of the magnitude or consequences of the different types of significant harm caused. The term 'possibility of significant harm being caused' should be taken, as referring to a measure of the probability, or frequency, of the occurrence of circumstances that could lead to significant harm being caused.

The following situations are defined where harm is to be regarded as significant:

i. Chronic or acute toxic effect, serious injury or death to humans
ii. Irreversible or other adverse harm to the ecological system
iii. Substantial damage to, or failure of, buildings
iv. Disease, other physical damage or death of livestock or crops
v. The pollution of controlled waters[4].

[1] In England by The Contaminated Land (England) Regulations 2000, updated by The Contaminated Land (England) (Amendment) Regulations 2012; in Scotland by The Contaminated Land (Scotland) Regulations 2000, updated by the Contaminated Land (Scotland) Regulations 2005; and in Wales by The Contaminated Land (Wales) Regulations 2001, updated by the Contaminated Land (Wales) Regulations 2006.

[2] In Scotland the term "controlled water" has been updated to "water environment" under the Contaminated Land (Scotland) Regulations 2005 in line with the Water Environment and Water Services (Scotland) Act 2003.

[3] The definition was amended in 2012 by implementation of the Water Act 2003.

[4] Groundwater in this context does not include waters within underground strata but above the saturated zone.

With regard to radioactivity, contaminated land is defined as 'any land which appears to be in such a condition, by reason of substances in, on or under the land that harm is being caused, or there is a *significant possibility of such harm being caused*[5]'.

The Risk Assessment Methodology

Risk assessment is the process of collating known information on a hazard or set of hazards in order to estimate actual or potential risks to receptors. The receptor may be humans, a water resource, a sensitive local ecosystem or future construction materials. Receptors can be connected with the hazard via one or several exposure pathways (e.g. the pathway of direct contact). Risks are generally managed by isolating or removing the hazard, isolating the receptor, or by intercepting the exposure pathway. Without the three essential components of a source (hazard), pathway and receptor, there can be no risk. Thus, the mere presence of a hazard at a site does not mean that there will necessarily be attendant risks.

The Risk Assessment

By considering where a viable pathway exists which connects a source with a receptor, this assessment will identify where pollutant linkages may exist. A pollutant linkage is the term used by the DEFRA in their standard procedure on risk assessment. If there is no pollutant linkage, then there is no risk. Therefore, only where a viable pollutant linkage is established does this assessment go on to consider the level of risk. Risk should be based on a consideration of both:

- The likelihood of an event (probability) - takes into account both the presence of the hazard and receptor and the integrity of the pathway.
- The severity of the potential consequence - takes into account both the potential severity of the hazard and the sensitivity of the receptor.

For further information please see the Contaminated Land section on the DEFRA website (www.defra.gov.uk).

[5] The Radioactive Contaminated Land (Modification of Enactments) (England) Regulations 2006 and Contaminated Land (Wales) Regulations 2006.

APPENDIX D

General Notes

RPS HEALTH, SAFETY & ENVIRONMENT

Phase 1 - Environmental Risk Assessment / Desk Study Environmental Review

General Notes

1. A "desk study" means that no site visits have been carried out as any part thereof, unless otherwise specified.
2. This report provides available factual data for the site obtained only from the sources described in the text and related to the site on the basis of the location information provided by the Client.
3. The desk study information is not necessarily exhaustive and further information relevant to the site may be available from other sources.
4. The accuracy of maps cannot be guaranteed and it should be recognised that different conditions on site may have existed between and subsequent to the various map surveys.
5. No sampling or analysis has been undertaken in relation to this desk study.
6. Any borehole data from British Geological Survey sources is included on the basis that: "The British Geological Survey accept no responsibility for omissions or misinterpretation of the data from their Data Bank as this may be old or obtained from non-BGS sources and may not represent current interpretation".
7. Where any data supplied by the Client or from other sources, including that from previous site investigations, have been used it has been assumed that the information is correct. No responsibility can be accepted by RPS for inaccuracies in the data supplied by any other party.
8. This report is prepared and written in the context of an agreed scope of work and should not be used in a different context. Furthermore, new information, improved practices and changes in legislation may necessitate a re-interpretation of the report in whole or in part after its original submission.
9. The copyright in the written materials shall remain the property of the RPS Company but with a royalty-free perpetual licence to the Client deemed to be granted on payment in full to the RPS Company by the Client of the outstanding amounts.
10. The report is provided for sole use by the Client and is confidential to them, their professional advisors, no responsibility whatsoever for the contents of the report will be accepted to any person other than the Client. [Unless otherwise agreed]
11. These terms apply in addition to the RPS HSED "Standard Terms & Conditions" (or in addition to another written contract which may be in place instead thereof) unless specifically agreed in writing. (In the event of a conflict between these terms and the said Standard Terms & Conditions the said Standard Terms & Conditions shall prevail.) In the absence of such a written contract the Standard Terms & Conditions will apply.