Phase 1 Preliminary Risk Assessment - Desktop Study

Project: 2 Guildford Road, Chertsey, KT16 9BJ
Reference: 081/1
Prepared for: Ali Uddinl, Arkidraft Ltd
26 February 2026
Project number: 081/1

INTRODUCTION

Air & Flood Consultants Ltd has been commissioned by Arkidraft Ltd (the 'Client') to prepare a Phase 1 Preliminary Risk Assessment (PRA) comprising a desktop study of land contamination at 2 Guildford Road, Chertsey, KT16 9BJ (the 'Site'), in support of a planning application for change of use from office to residential.

Development Proposal

The Client proposes to submit a planning application for the change of use of the existing office building at 2 Guildford Road to a residential dwelling. The proposals do not involve basement construction or significant below-ground works.

Objective

The objective of this assessment is to undertake a Contaminated Land Preliminary Risk Assessment (PRA) comprising a desktop study review of existing information relating to the Site and surrounding area, in accordance with best practice and current planning guidance, including the National Planning Policy Framework (NPPF, 2025) and the Environment Agency's Land Contamination Risk Management (LCRM) guidance (2025).

Scope of Works

The scope of this desktop study comprises a review of the following information sources:

- British Geological Survey (BGS) online mapping data
- Environment Agency online mapping data
- Groundsure Insight environmental database report (Appendix B)
- Available historical Ordnance Survey mapping (Appendix C)
- Web-based Unexploded Ordnance (UXO) assessment
- Public Health England Radon mapping
- Web searches relating to the Site and surrounding area
- Google Earth imagery

A Conceptual Site Model (CSM) has been developed based on the findings of the desktop study, assessing potential risks using the source-pathway-receptor linkage approach.

No site walkover survey was undertaken as part of this assessment. This report is therefore based solely on desktop data sources, and the findings should be interpreted accordingly.

Constraints and Limitations

Air & Flood Consultants Ltd accepts no responsibility to other parties to whom this report, or any part thereof, is made known. Any such parties rely upon the report at their own risk.

Air & Flood Consultants Ltd has endeavoured to assess all information available during the preparation of this report. Should additional information become available which may affect the opinions expressed herein, Air & Flood Consultants reserves the right to review such information and, where warranted, to modify the findings and recommendations accordingly.

This report summarises information from a number of external sources and cannot offer guarantees or warranties for the completeness or accuracy of that information. Data from third parties has not been independently verified by Air & Flood Consultants Ltd unless otherwise stated.

The risks identified in this report are perceived risks based on information available at the time of writing. The actual risks associated with the Site can only be fully characterised following a physical investigation.

The conclusions of this study are not necessarily indicative of future conditions or operating practices at or adjacent to the Site.

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SOURCES OF INFORMATION

The information contained in this report is based on a review of readily available data pertaining to the Site and surrounding area.

Records Review

Key documents, datasets and websites reviewed as part of this assessment are detailed in Table below.

Document / Website	Author / Publisher	Date / Accessed
National Planning Policy Framework (NPPF)	Ministry of Housing, Communities & Local Government	2025
Land Contamination Risk Management (LCRM) Guidance	Environment Agency	2025
Flood Maps – https://flood-map-for-planning.service.gov.uk/	UK Government	26.02.2026
BGS Geology of Britain Viewer (Groundwater Mapping, Landfill Sites, Pollution Incidents, Reservoir Flood Map and Nitrate Vulnerable Zones) – https://mapapps.bgs.ac.uk/geologyofbritain	British Geological Survey	18.03.2026
BGS GeoIndex – Geology and Borehole Records – www.bgs.ac.uk/geoindex	British Geological Survey	18.03.2026
Public Health England Radon Map of UK – UKRadon.org	Public Health England	18.03.2026
Groundsure Insight Environmental Database Report	Groundsure Ltd	[DATE]
Historical Ordnance Survey Mapping	Groundsure Ltd	[DATE]
Proposed Development Plans	Arkidraft Ltd	2.2026
UXO Risk Maps	Zetica	18.03.2026
Google Maps & Google Earth	Google	18.03.2026
Runnymede Borough Council Strategic Flood Risk Assessment (SFRA) Level 1	Runnymede Borough Council	2018

SITE LOCATION AND DESCRIPTION

Site Location

The Site is located at 2 Guildford Road, Chertsey, KT16 9BJ, within the administrative boundary of Runnymede Borough Council. The Site is situated in a predominantly residential area of Chertsey, characterised by traditional semi-detached and terraced housing with small private gardens. Chertsey town centre lies a short distance to the north-east, with Chertsey Railway Station approximately 50 metres to the north.

The Site is centred at National Grid reference E: 503864; N: 166334 and the nearest postcode is KT16 9BJ. The approximate location of the Site is shown in Figure below.

Site Description

The Site comprises a parcel of previously developed brownfield land currently occupied by an office building. The existing building is a modest commercial structure set within a largely hard-surfaced plot. The site boundary is defined by existing residential properties and road frontage, and the site is well integrated within the surrounding urban fabric.

No site walkover survey was undertaken as part of this assessment. The site description is therefore based on a review of available aerial imagery, Ordnance Survey mapping and other desktop data sources. Google Earth imagery and Ordnance Survey mapping indicate that the Site is currently in active commercial use as an office, with associated hardstanding and parking to the rear.

Surrounding Land Use

The Site is located within an established residential and mixed-use urban area. Based on a review of current Ordnance Survey mapping and aerial imagery, the surrounding land uses are as follows:

- To the north: railway
- To the south: office properties, residential properties and small-scale gardens
- To the east: railway
- To the west: residential properties and small-scale gardens

The surrounding area is characterised by low-density residential development with no significant active industrial land uses immediately adjacent to the Site. The wider Chertsey area has, however, historically supported a range of commercial and light industrial activities, the implications of which are considered further in this report.

ENVIRONMENTAL SETTING

Geology

According to the BGS 1:50,000 Digital Map of Great Britain, the Site is underlain by superficial Kempton Park Gravel Formation deposits, comprising predominantly sand and gravel. The underlying bedrock geology is the Bagshot Formation, consisting of fine to medium-grained sands.

The nearest BGS borehole record identified in proximity to the Site (reference TQ06NW153, located approximately 180 metres to the south) records gravel and sand with occasional clay, with groundwater encountered at approximately 2 metres below ground level. No BGS borehole records are located directly on the Site. The borehole data is considered broadly representative of the likely subsurface conditions at the Site, though this should be confirmed by any future ground investigation works.

No artificial ground has been identified within or in close proximity to the Site based on available BGS mapping data, though the presence of made ground beneath the existing hardstanding and building footprint cannot be excluded given the brownfield nature of the Site.

Radon

Reference has been made to the Public Health England UK maps of radon potential and the environmental database report. The Site is characterised as falling within a lower radon potential area, where less than 1% of homes are estimated to be at or above the Action Level. On this basis, no radon protective measures are considered necessary for the proposed residential conversion. This should nonetheless be confirmed against the most current UKHSA radon mapping at detailed design stage.

Hydrogeology

The superficial Kempton Park Gravel Formation deposits underlying the Site are classified by the Environment Agency as a Principal Aquifer, with a high capacity for water storage and the potential to support water supply and river base flow at a strategic scale. The underlying Bagshot Formation bedrock is classified as a Secondary A Aquifer, comprising permeable strata capable of supporting localised water supplies and contributing base flow to surface watercourses.

Given the shallow groundwater levels indicated by nearby borehole data (approximately 2 metres below ground level), the groundwater sensitivity at this location is considered high. The Site does not appear to fall within a designated Groundwater Source Protection Zone (SPZ) based on available DEFRA MAGIC Map.

Hydrology

The Site is located within the catchment of the River Thames and in proximity to The Bourne, a minor watercourse flowing through the Chertsey area. No surface water features are identified as crossing the Site itself based on current OS mapping and aerial imagery. DEFRA Magic Map confirms that there are no Sites of Special Scientific Interest (SSSIs) or designated flood storage reservoirs in immediate proximity to the Site that would indicate a direct hydrological connection to environmentally sensitive receptors.

Ecology

Based on data from the environmental database report and DEFRA Magic Map, there are no SSSIs, National Nature Reserves, Special Areas of Conservation (SACs), Special Protection Areas (SPAs) or Areas of Outstanding Natural Beauty (AONBs) within 500 metres of the Site. The Site is not classified as falling within an environmentally sensitive designation. The Site is not identified as lying within a Nitrate Vulnerable Zone (NVZ).

Sensitivity

The sensitivity of each identified receptor has been assessed having regard to the environmental setting of the Site, the likelihood of pollutant linkages being present, and the potential consequences of those linkages materialising. The assessment approach is consistent with the guidance set out in the Environment Agency's Land Contamination Risk Management (LCRM) guidance (2025).

The Site sensitivity with respect to groundwater is classified as High, given that the Site is underlain by a Principal Aquifer with shallow groundwater levels indicated by available borehole data.

The Site sensitivity with respect to surface water is classified as High, given the proximity of The Bourne and the wider River Thames catchment, with surface water receptors located in the vicinity of the Site.

SITE HISTORY

Historical Development

The history of the Site has been assessed by reviewing available Ordnance Survey historical mapping, aerial imagery and the environmental database report. The historical plans reviewed comprise readily available records and may not capture all former uses; however, the information available to date is considered sufficient to support a preliminary assessment of contamination risk.

The historical development of the Site is summarised in Table below. Historical Ordnance Survey mapping is included at Appendix C.

Historical Site Uses

Survey Date & Source	Detail
1865-70 OS Mapping	The Site has no development or specific use. The wider area included residential dwellings, road infrastructure and small-scale commercial activity. The Chertsey Railway Station and associated railway infrastructure were present to the north-west of the Site.
1894-95 OS Mapping	The Site has no development or specific use. The wider area included residential dwellings, road infrastructure and small-scale commercial activity. The Chertsey Railway Station and associated railway infrastructure were present to the north-west of the Site.
1897-98 OS Mapping	The Site has no development or specific use. The wider area included residential dwellings, road infrastructure and small-scale commercial activity. The Chertsey Railway Station and associated railway infrastructure were present to the north-west of the Site.
1912 OS Mapping	The Site has no development or specific use. The wider area included residential dwellings, road infrastructure and small-scale commercial activity. The Chertsey Railway Station and associated railway infrastructure were present to the north-west of the Site.
1934-35 OS Mapping	The Site has no development or specific use. The wider area included residential dwellings, road infrastructure and small-scale commercial activity. The Chertsey Railway Station and associated railway infrastructure were present to the north-west of the Site.
1938 OS Mapping	The Site has no development or specific use. The wider area included residential dwellings, road infrastructure and small-scale commercial activity. The Chertsey Railway Station and associated railway infrastructure were present to the north-west of the Site.
1955-60 OS Mapping	The Site has no development or specific use. The wider area included residential dwellings, road infrastructure and small-scale commercial activity. The Chertsey Railway Station and associated railway infrastructure were present to the north-west of the Site.
1965-65 OS Mapping	The Site has no development or specific use. The wider area included residential dwellings, road infrastructure and small-scale commercial activity. The Chertsey Railway Station and associated railway infrastructure were present to the north-west of the Site.

1972-76 OS Mapping	The Site has no development or specific use. The surrounding area appear to have remained in predominantly residential and light commercial use. No significant industrial activity identified directly on the Site. Railway infrastructure remained to the north-east.
1973 OS Mapping	The Site has no development or specific use. The surrounding area appear to have remained in predominantly residential and light commercial use. Residential building to the north-west has been replaced with a car park. No significant industrial activity identified directly on the Site. Railway infrastructure remained to the north-east.
1980-81 OS Mapping	The Site has no development or specific use. The surrounding area appear to have remained in predominantly residential and light commercial use. No significant industrial activity identified directly on the Site. Two warehouses were established at previously coal yard site to the north of the railway.
1988-1992 OS Mapping	The Site has no development or specific use. The surrounding area has developed residential blocks of house (Floral House) to the west of the site. In overall, the surrounding area remained predominantly residential with some small-scale commercial uses.
1995 OS Mapping	The Site is occupied by an office building. The building to the south of the site was replaced. No significant changes to the surrounding land use pattern identified.
2001 OS Mapping	The Site is occupied by an office building. No significant changes to the surrounding land use pattern identified.
2010 OS Mapping	The Site is occupied by an office building. No significant changes to the surrounding land use pattern identified.
2022 OS Mapping	The Site is occupied by an office building. Residential development to the south-east of the site. No significant changes to the surrounding land use pattern identified.
2022 Aerial Imagery	The Site is occupied by an office building with associated hardstanding and car parking to the rear, consistent with current desktop observations. No significant changes identified.

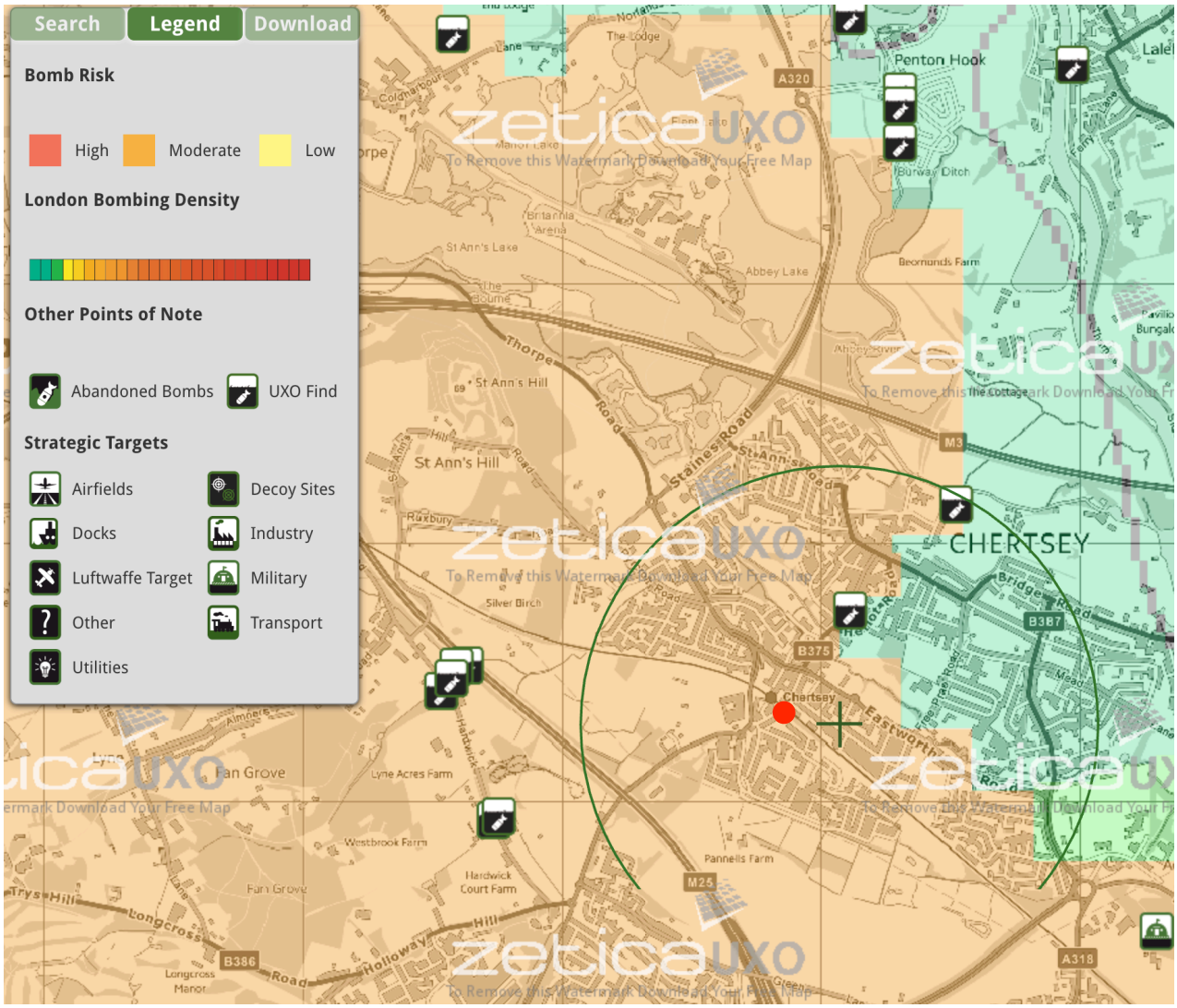
It should be noted that the historical mapping reviewed represents only those surveys available through the environmental database report and publicly accessible sources. The absence of a recorded use during any given period does not preclude the possibility that activities of potential contamination significance may have taken place.

The Site itself does not appear to have been associated with any significant industrial or potentially contaminative land uses during the periods reviewed. However, the wider Chertsey area has historically supported a range of commercial and light industrial activities, including railway infrastructure, small-scale engineering works and associated land uses, the potential off-site influence of which is considered further.

Unexploded Ordnance (UXO)

Given the Site's location in the wider Surrey and Greater London area, it is possible that the surrounding area may have been subject to bomb damage during the Second World War. A basic historical bomb record search has been undertaken for the vicinity of the Site using available web-based UXO risk mapping (Zetica).

A basic historical bomb record search was undertaken in the vicinity of the Site and this is illustrated in Figure below. The preliminary assessment indicates that there is a low to moderate probability of UXO being present in the area. This assessment should be used only as an indication of the possible presence of UXO and should not be relied upon as a definitive determination of presence or absence. Prior to any below-ground works, including site investigations, a detailed UXO risk assessment should be completed and any resulting recommendations implemented.



REVIEW OF ENVIRONMENTAL INFORMATION

Publicly Available Information

Information on potentially significant environmental issues and controls at the Site and surrounding area may be held on public records by regulatory authorities. This information has been sourced from the Environment Agency, Runnymede Borough Council and the environmental database report.

A summary of the publicly recorded information reviewed as part of this assessment is provided in Table below.

Publicly Recorded Information

Public Record	On-Site / Off-Site	Features
Landfill & Waste Sites (Local Authority & BGS)	On-Site	No records of current or historical landfills, or waste treatment, transfer or disposal sites have been identified within the Site boundary.
Landfill & Waste Sites (Local Authority & BGS)	Off-Site	No records of current or historical landfills, or waste treatment, transfer or disposal sites have been identified within 250 metres of the Site boundary.
Local Authority Searches	On-Site	No records of significant historical industrial activity have been identified directly on the Site. The Site appears to have been in commercial office use during the latter part of the 20th century and into the present day.
Local Authority Searches	Off-Site	Historical industrial and commercial land uses identified within 250 metres of the Site include: railway infrastructure associated with Chertsey Railway Station (approximately 50 metres to the north); small-scale commercial and light industrial uses in the wider Chertsey town centre area; and road infrastructure and associated maintenance activities in the surrounding urban area.
Environmental Permits (Environment Agency & Local Authority)	On-Site	No records of current or historical environmental permits or licences have been identified within the Site boundary.
Environmental Permits (Environment Agency & Local Authority)	Off-Site	No significant environmental permits have been identified within 250 metres of the Site. No pollution incidents of material significance to this assessment have been identified in immediate proximity to the Site.

Previous Ground Investigation Data

No previous ground investigation reports have been identified for the Site at 2 Guildford Road. The absence of prior investigation data means that subsurface conditions, including the nature and extent of any made ground, groundwater quality and the potential presence of ground gas, have not been characterised at this location.

In the absence of site-specific investigation data, the assessment of contamination risk in Preliminary Risk Assessment Section is based on the findings of the desktop study, the known geological and hydrogeological setting of the Site, and the historical land use review presented in Site History Section.

Ground Conditions and Ground Gas

No site-specific ground investigation data is available for 2 Guildford Road. Based on available BGS borehole data from approximately 180 metres to the south of the Site, the near-surface deposits are expected to comprise sand and gravel of the Kempton Park Gravel Formation, with groundwater encountered at approximately 2 metres below ground level.

Given the brownfield nature of the Site and the presence of an existing building with associated hardstanding, it is possible that localised made ground may be present beneath the existing surface, potentially containing construction and demolition materials. The presence of organic material within any made ground deposits cannot be excluded, which in turn raises the possibility of ground gas generation, albeit at likely low concentrations given the nature of the anticipated made ground.

The potential for ground gas is considered a low to moderate risk at this stage and should be assessed as part of any future Phase 2 site investigation.

PRELIMINARY RISK ASSESSMENT

Methodology

In accordance with the Environment Agency's Land Contamination Risk Management (LCRM) guidance (2025), a Preliminary Risk Assessment (PRA) has been formulated for the Site. A Conceptual Site Model (CSM) has been developed using potential source-pathway-receptor linkages, taking account of the likelihood of a pollution event occurring and the consequence of such an occurrence to identified receptors.

The presence of contamination as a potential hazard does not in itself constitute a risk. It is the exposure pathway and the quantity of contamination reaching the receptor that determines the effect. Where no complete pollutant linkage exists — that is, where source, pathway or receptor is absent — no unacceptable risk is considered to arise.

The risk classification applied to both likelihood and consequence is based on the methodology presented in Contaminated Land Risk Assessment: A Guide to Good Practice (CIRIA C552, 2001) and is consistent with the procedures outlined in the EA's LCRM guidance. Risk is assessed by considering:

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

The two classifications are combined to derive an overall risk estimation for each pollutant linkage, ranging from Very High Risk to Very Low Risk, as defined in Appendix D.

This PRA is based on the proposed change of use of the existing office building at 2 Guildford Road to a residential dwelling. Should the development proposals change materially, this risk assessment should be revised accordingly.

The results of the Preliminary Risk Assessment are presented in Appendix E.

CONCLUSIONS & RECOMMENDATIONS

Conclusions

Air & Flood Consultants Ltd has been commissioned by Arkidraft Ltd to prepare a Phase 1 Preliminary Risk Assessment comprising a desktop study of land contamination at 2 Guildford Road, Chertsey, KT16 9BJ, in support of a planning application for change of use from office to residential.

The proposed development comprises the change of use of the existing office building to a residential dwelling. The proposals do not involve basement construction or significant below-ground works.
The environmental sensitivity of the Site is assessed as High with respect to groundwater, given that the Site is underlain by a Principal Aquifer with shallow groundwater levels indicated by available borehole data. The environmental sensitivity with respect to surface water is similarly assessed as High, given the proximity of The Bourne and the wider River Thames catchment.

Based on the findings of this Phase 1 desktop study, the following potential pollutant linkages have been identified in the context of the proposed residential end use:

- Human Health The risk to future residents is considered low. The scheme does not include any garden or landscaped areas, so the principal residential exposure pathways are not complete.
- Controlled Waters The risk to groundwater is considered low. No significant on-site sources have been identified, and metals — the contaminants most likely to be present in residual Made Ground — are not a recognised risk driver for controlled waters at this site.
- Ecology The risk to ecological receptors is considered low. No designated or otherwise sensitive ecological receptors are present on site or within a distance that would support a plausible pollutant linkage.
- Buildings and Services The risk to buildings and services is considered low. Aggressive substances capable of attacking foundations or plastic and metal service pipes may be present in Made Ground, but concentrations are not expected to be material and can be addressed through standard concrete specification and service selection at detailed design.

The potential presence of contamination arising from the current and historical use of the Site is considered to pose a low risk to future residents via direct exposure in garden and amenity areas, gas accumulation beneath the proposed building, and potential impact on water supply infrastructure.

The potential impact from off-site contamination sources is assessed as low, given the absence of significant potential sources in immediate proximity to the Site.

The potential risk to groundworkers from site contamination is considered low, with residual risks readily mitigated through the use of standard personal protective equipment and appropriate site management procedures.

The potential risk from radon gas is assessed as low. No radon protective measures are considered necessary at this stage, though this should be confirmed at detailed design stage against current UKHSA mapping.
The potential risk posed by UXO is assessed as low to moderate.

Recommendations

Based on the findings of this assessment, the following recommendations are made:

- No significant risks are considered to exist in relation to the potential presence of elevated metal concentrations. The principal human health concern would be direct ingestion or inhalation of soil and dust through any landscaped or garden areas; however, as no such areas are proposed, these pathways will not be introduced.
- A Phase 2 Site Investigation is not considered to be needed.
- Development workers should wear appropriate PPE throughout all groundworks. If any significant Made Ground, or soil that is odorous, abnormally coloured or otherwise suspected to be contaminated, is encountered during the works, the risk assessment should be revisited to determine whether further investigation or remediation is required.
- Radon potential should be confirmed against current UKHSA mapping at detailed design stage, with protective measures incorporated if required.
- The conclusions of this Phase 1 report should be agreed with the Local Authority prior to any intrusive or development works.

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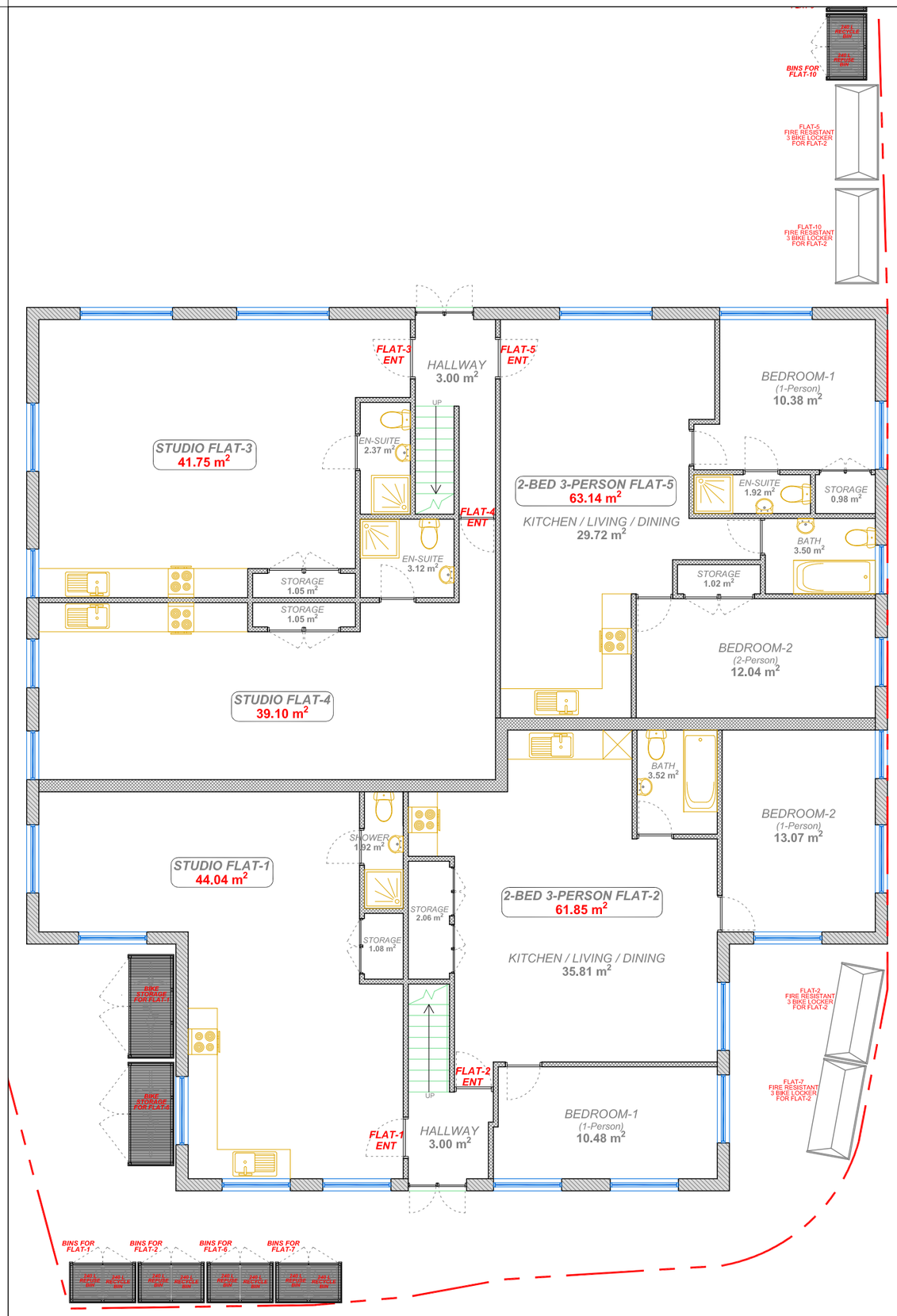
XIII. BRITISH GEOLOGICAL SURVEY. BGS Geology of Britain Viewer. Available at: https://mapapps.bgs.ac.uk/geologyofbritain

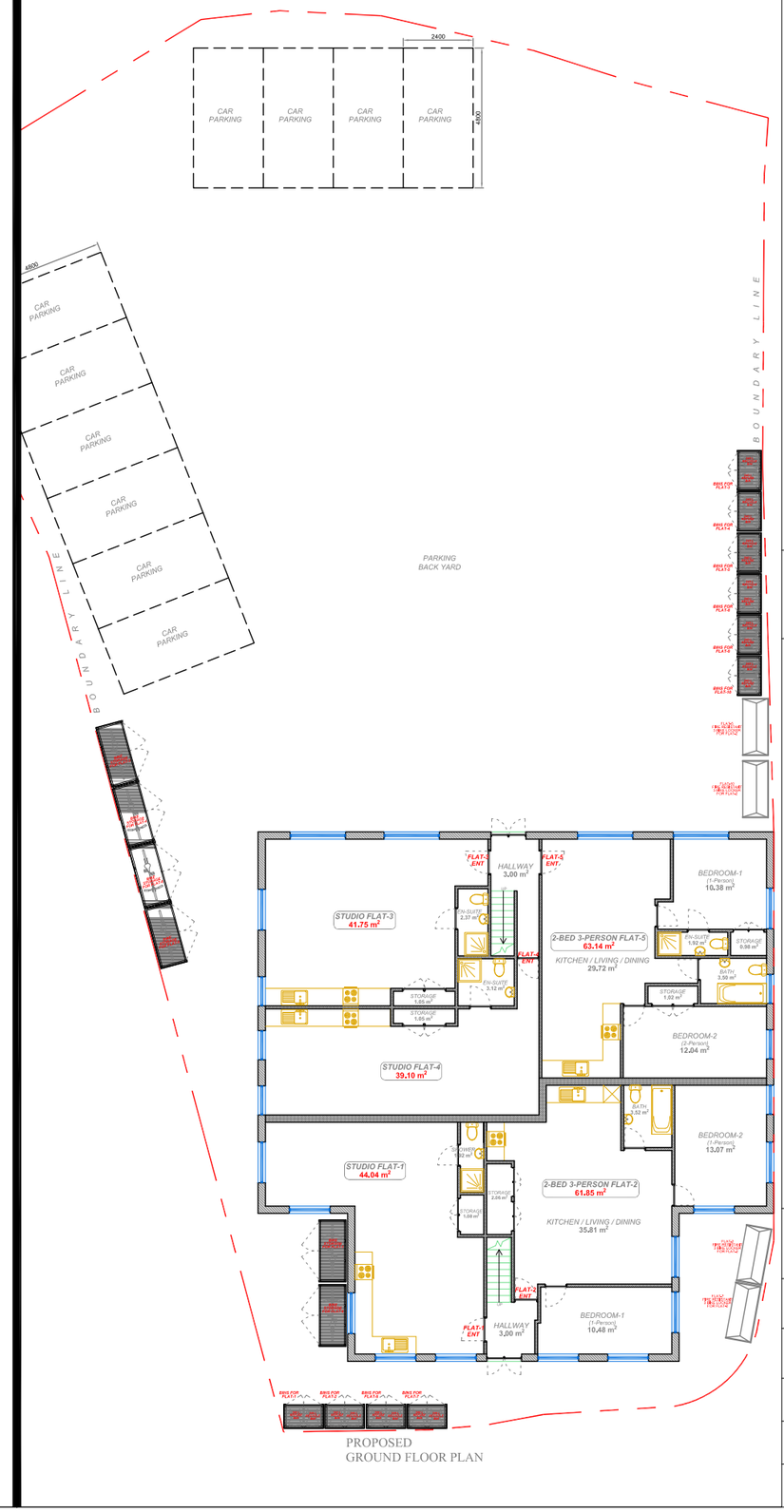
XIV. BRITISH GEOLOGICAL SURVEY. BGS GeoIndex – Geology and Borehole Records. Available at: www.bgs.ac.uk/geoindex

XV. ZETICA. UXO Risk Maps. Available at: https://www.zetica.com/

APPENDIX A – PROPOSED DEVELOPMENT DRAWINGS



PROPOSED



PROPOSED
GROUND FLOOR PLAN

NOTES

1. THIS DRAWING IS NOT FOR CONSTRUCTION.
2. ALL DIMENSION ARE IN MILLIMETERS.
3. ALL DIMENSIONS ARE TO BE CHECKED ON SITE AND THE ARCHITECT IS TO INFORM OF ANY DISCREPANCIES BEFORE CONSTRUCTION COMMENCES.
4. ALL REFERENCES TO DRAWINGS REFER TO CURRENT REVISION OF THAT DRAWING.

LIABILITY

NO LIABILITY IS ACCEPTED TO ANY THIRD PARTY RELYING ON INFORMATION CONTAINED IN THIS DRAWING.
CONTRACTORS MUST VERIFY ALL DIMENSIONS ON SITE BEFORE COMMENCING ANY WORK ON SITE OR PREPARING CONSTRUCTION DRAWINGS.

PARTY WALL

WORKS TO A PARTY WALL STRUCTURE OR WITHIN 3 METERS OF THE LINE OF JUNCTION WILL REQUIRE NOTICES SERVED UPON YOUR NEIGHBOUR(S).
WHERE DISPUTES ARISE, A PARTY WALL AWARD MAY NEED TO BE PREPARED PRIOR TO ANY WORKS COMMENCING ON SITE.

Scale 1:100@A3

0 1 2 3 4 6

Metre

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PROJECT:
2 GUILDFORD ROAD, CHERTSEY, KT16 9BJ

CLIENT:

DWG TITLE:
PROPOSED GROUNG FLOOR PLAN

DWG NO: 2GR/03

ISSUE: A

DRAWN BY: PL

DATE : 12-02-2026

APPENDIX D – RISK ASSESSMENT CLASSIFICATION METHODOLOGY

Overview

The Preliminary Risk Assessment presented in Section 7.0 of this report has been undertaken in accordance with the methodology set out in Contaminated Land Risk Assessment: A Guide to Good Practice (CIRIA C552, 2001) and is consistent with the procedures outlined in the Environment Agency's Land Contamination Risk Management (LCRM) guidance (2020).

Risk is assessed by evaluating two independent variables for each identified pollutant linkage:

- **Consequence (Severity)** — the magnitude of potential harm to an identified receptor, taking into account both the inherent severity of the hazard and the sensitivity of the receptor; and
- **Likelihood (Probability)** — the probability of a pollution event occurring, taking into account the presence of the hazard and receptor and the integrity of the exposure pathway.

The two variables are combined to derive an overall risk estimation for each pollutant linkage. Where no complete pollutant linkage exists — that is, where source, pathway or receptor is absent — no unacceptable risk is considered to arise and the linkage is not carried forward in the assessment.

Consequence (Severity) Classification

Severity Class	Definition
Severe	The hazard could cause death, serious injury, significant harm to controlled waters, or irreversible damage to a sensitive receptor.
Medium	The hazard could cause significant but reversible harm to human health or controlled waters, or moderate damage to a sensitive receptor.
Mild	The hazard could cause minor or short-term harm to human health or controlled waters, with limited or no lasting effect on the receptor.

Likelihood (Probability) Classification

Likelihood Class	Definition
High Likelihood	The pollution event is considered probable given the identified hazard and the integrity of the exposure pathway. There is strong evidence to suggest the linkage is active or likely to become active.
Low Likelihood	The pollution event is considered possible but not probable. Evidence suggests the linkage may be present but is not confirmed as active.
Unlikely	The pollution event is considered improbable. The hazard or pathway is present but conditions are such that a pollution event is not expected to occur under normal circumstances.

Risk Estimation Matrix

The consequence and likelihood classifications are combined using the matrix below to derive an overall risk estimation for each pollutant linkage, consistent with CIRIA C552 methodology.

	Severe	Medium	Mild
High Likelihood	Very High	High	Moderate
Low Likelihood	High	Moderate/Low	Low
Unlikely	Moderate	Low	Very Low

Risk Estimation Definitions and Required Actions

Risk Estimati	Definition	Likely Action Required
Very High	There is a high probability that severe harm could arise to a designated receptor from an identified hazard, or there is evidence that severe harm is currently	Urgent investigation and remediation required. Likely to result in significant environmental and financial liability to
High	Harm is likely to arise to a designated receptor from an identified hazard.	Urgent investigation required. Remediation works likely to be necessary in the short
Moderate	It is possible that harm could arise to a designated receptor from an identified hazard. It is either relatively unlikely that such harm would be severe, or if harm	Investigation normally required to clarify the risk and determine the extent of environmental liability. Some remedial
Moderate/Low	It is possible that harm could arise to a designated receptor from an identified hazard, but harm is unlikely to be severe and may be mild. The risk is at the lower	Limited investigation recommended to clarify the risk, depending on the sensitivity of the receptor. Remedial works, if
Low	It is possible that harm could arise to a designated receptor from an identified hazard, but it is likely that this harm, if realised, would at worst normally be mild.	Limited investigation may be recommended to clarify the risk, dependent on receptor sensitivity. Any
Very Low	There is a low possibility that harm could arise to a receptor. In the event of such harm being realised it is likely to be mild or minor.	No investigation considered necessary in most circumstances. Standard good practice construction measures are

References

Construction Industry Research and Information Association (CIRIA). 2001. *Contaminated Land Risk Assessment: A Guide to Good Practice.* CIRIA C552. London.

Environment Agency. 2020. Land Contamination Risk Management (LCRM) Guidance. Environment Agency. Bristol.

Department for Environment, Food & Rural Affairs (DEFRA). 2011. Guidelines for Environmental Risk Assessment and Management — Green Leaves III. London.

APPENDIX E - PRELIMINARY RISK ASSESSMENT

Preliminary Contamination Risk Assessment — 2 Guildford Road, Chertsey, Surrey, KT16 9BJ

Neighbouring former railway sidings / building (0.12 ha); proposed residential end use assumed. SPZ on-site — controlled-waters consequence elevated to Severe for all leaching linkages. Historic gasworks complex 46-99 m SE is the dominant off-site source. Probability / Consequence have been overridden from Library defaults where site-specific conditions warrant. Source: Groundsure Enviro+Geo Insight ref GS-B9F-3HU-8Q6-K7V (Apr 2026).

Linkage ID	Source	Pollutant	Pathway	Receptor	Probability	Consequence	Potential Risk	Comment / Justification
1	Made Ground (generic, undifferentiated fill)	Metals (As, Cd, Cr, Cu, Ni, Pb, Zn, Hg)	Direct contact (dermal) with contaminated soils	Future residents (adults & children)	Unlikely	Medium	Low	Based on the Groundsure maps (section 1 page 14) no industrial activity was present on site. Made Ground unlikely present across the site given no railway activity.
2	Made Ground (generic, undifferentiated fill)	Metals (As, Cd, Cr, Cu, Ni, Pb, Zn, Hg)	Ingestion of contaminated soil/dust (incl. hand-to-mouth)	Future residents (adults & children)	Unlikely	Medium	Low	Child hand-to-mouth is the dominant residential exposure pathway. No landscaping or garden areas are proposed.
3	Made Ground (generic, undifferentiated fill)	Metals (As, Cd, Cr, Cu, Ni, Pb, Zn, Hg)	Inhalation of contaminated dust	Construction, demolition & groundworkers	Unlikely	Mild	Very Low	Construction workers exposed during site clearance, demolition and foundation works. Unlikely to be within site boundary
6	Made Ground (generic, undifferentiated fill)	PAHs	Direct contact (dermal) with contaminated soils	Future residents (adults & children)	Unlikely	Medium	Low	PAHs expected from coal ash, clinker ballast, and tar-based hardstanding associated with railway use. Unlikely to be within site boundary
13	Made Ground (generic, undifferentiated fill)	Ground gas (CH4, CO2)	Accumulation of ground gas in confined spaces / buildings	Future residents (adults & children)	Unlikely	Medium	Low	Potential ground gas risk: site overlies/adjoins historic gasworks complex (46-99 m SE) and multiple gas holders. Organic fill in Made Ground is an additional potential source. However, given no basement proposed probability is unlikely
15	Made Ground (generic, undifferentiated fill)	Sulfates	Chemical attack on buried concrete & services	Buildings, services & water-supply pipes	Unlikely	Mild	Very Low	Sulfate attack on buried concrete — typical Made Ground concern.
42	Railway land & railway engineering works	TPH (diesel, lubricants)	Direct contact (dermal) with contaminated soils	Construction, demolition & groundworkers	Unlikely	Mild	Very Low	Diesel and lubricant spillages likely along historic sidings and around 1973-1982 works but not within close proximity to the site.
20	Gasworks, coke works & coal carbonisation plants	BTEX	Inhalation of soil vapours — indoor (vapour intrusion)	Future residents (adults & children)	Unlikely	Medium	Low	BTEX vapour intrusion risk attenuates rapidly with distance; 46 m lateral separation reduces probability, but shallow GW and made ground migration corridors warrant screening.
143	WW2 bombing / UXO risk	Unexploded ordnance	Physical hazard — direct contact / excavation	Construction, demolition & groundworkers	Low Likelihood	Severe	Moderate	WW2 bombing risk assessed as low for Chertsey (not a primary target), but railway infrastructure was a recognised target category. Recommend a detailed UXO risk assessment.