

PRELIMINARY RISK ASSESSMENT

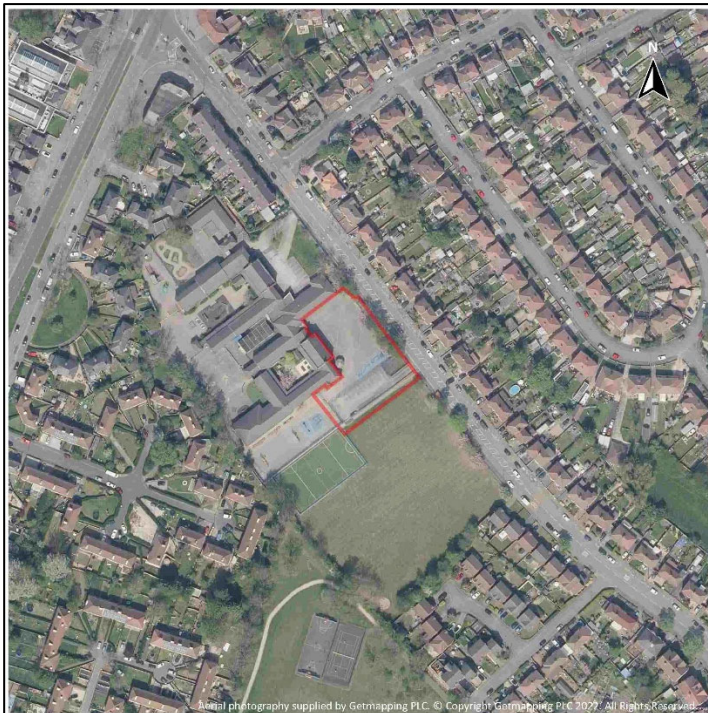
(PHASE 1 DESK STUDY)

Report 1406: Rev 0

8th September 2022

PROPOSED DEVELOPMENT:

**NEW MOSTON PRIMARY SCHOOL, MOSTON LANE EAST
MANCHESTER M40 3QJ**



Client: CONLON CONSTRUCTION LTD Charnley Fold Lane Bamber Bridge Preston PR5 6BE On behalf of MANCHESTER CITY COUNCIL	Architect: CASSIDY + ASHTON 7, East Cliff Preston PR1 3JE
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1.0 INTRODUCTION

A new kitchen extension and car park extension are proposed at New Moston Primary School, Moston Lane East, Manchester M40 3QJ.

G7 Geotech Ltd have been instructed by Conlon Construction Ltd, to undertake a Preliminary Risk Assessment (Phase 1 Desk Study) with the aim of addressing the first part of a proposed pre-commencement Planning Condition dated 15th July 2022 attached to Application 133828/VO/2022; the Planning Authority being Manchester City Council.

We have been provided with an existing Letter Report on Ground Investigation by Amey and WYG Environment, dated 21st July 2015. This existing report describes intrusive ground investigations undertaken including ground contamination laboratory testing.

This Preliminary Risk Assessment is therefore a retrospective report undertaken after the Site Investigation had been completed and reported. This current report therefore includes some conclusions in relation to the work already undertaken by Amey / WYG Environmental.

We have made enquiries with Manchester City Council Environmental Protection Officer and would propose that the 2015 report should be considered sufficient to satisfy the pre-commencement requirement for a Site Investigation Report.

This PRA and the existing Letter Report on Ground Investigation will therefore form the basis for a Remediation Strategy (1406A / AW) issued concurrently with this PRA report.

This report presents the findings of our review of commercially available databases and historical maps and includes a preliminary ground contamination assessment with tabulated conceptual model.

2.0 SITE DESCRIPTION

New Moston Primary School is situated on the south west side of Moston Lane East, Manchester M40 3QJ. National grid reference 389189E 402539N is presented on the appended databases and maps and has been derived within the irregular 'L' shaped site which has maximum dimensions of about 63m [NW-SE] by 50m [SW-NE]. The site area is about 0.25 hectares.

The majority of the site comprises tarmac surfaced playground and car park. The existing school forms the north west and western boundaries, where the proposed kitchen extension will be situated. The north eastern boundary is defined by a steel post and wire mesh fence and low height retaining wall and there is a row of mature / semi-mature trees along the boundary, including Birch and Oak plus other unknown species. The fence continues inside the site delineating the existing tarmac surfaced car park which is accessed via a tarmac surfaced access ramp off Moston Lane East. The car park extension will be along the south eastern side of the site where the boundary is open to the adjacent playing fields.

The surrounding natural topography is generally relatively flat and the site area itself is sensibly level apart from the gentle ramp into the car park off Moston Lane East.

The current site features are shown on the appended plans and photographs. The aerial photograph on the front cover was captured in April 2019, since when there have been no significant changes.

3.0 SITE HISTORY

Historical maps were obtained from Groundsure to provide a basis for this summary of the history and usage of the site and surrounding land. Internet sources have also been used. The gradual development of the site and surrounding area can be seen on the historical maps (shown in Appendix B). The following table summarises the site history.

Site History		
Map Date	Site	Surrounding Area [generally within 250m]
❖ 1848 / 94	❖ The earliest map edition of 1848 shows the site is within a farm field in a wholly rural setting. ❖ The NE boundary of the site is defined by an existing road.	❖ The surrounding area is farmland. ❖ There is a pond approx. 10m S of the site and there are numerous more distant ponds in the surrounding fields including 140m E & 160m NW. ❖ A small cottage, later named Hawthorn Cottage is approx. 40m SE. ❖ Pits Farm is situated approx. 250m SE. ❖ The Lancashire & Yorkshire Railway is 490m W. ❖ The adjacent road is named Moston Lane by 1891 along which is a County Borough & Union Boundary. ❖ By 1891 there has been residential development 250m to 500m E / SE.
❖ 1906 / 23	❖ The site remains part of an undeveloped farm field.	❖ The surrounding area remains largely unchanged except that schools have been constructed approx. 100m SE. ❖ There has been some more residential development alongside Moston Lane to the NW. ❖ There is a Recreation Ground and Bowling Green to the S.
❖ 1932 / 38	❖ The site is now a school playground and playing field and the school has been constructed directly W.	❖ There has been extensive residential development directly SW & NW and there are Public Baths and a Dance Hall 175m NW. ❖ The pond 10m S is no longer shown and may have been infilled by this time. ❖ By 1938 further residential development has begun to the N.
❖ 1950 / 93	❖ No significant change as the site remains as the school playground and playing field. ❖ By 1954 the school buildings have been extended and is now known as New Moston County Primary School.	❖ The area to the NE is now fully developed as residential housing and the nearby ponds have been infilled. ❖ By the 1980s, the former school to the SE is now labelled as a Works then later as a Community Centre and removed by 1992.
❖ 2001 / 22	❖ Part of the school playground was in use as a car park by the time of the 2009 aerial photograph.	❖ The school was extended again at the NW side sometime between 2010 and 2022.

In summary, the site was part of a farm field in the 19th and early 20th Centuries until the school was first constructed sometime before the 1932 map edition and the site itself has been in use as the school playground and playing field since then. Part of the playground was used as a car park by the time of the 2009 aerial photograph.

The surrounding area has been dominantly residential in character since the mid 20th century.

4.0 LAND USE

The environmental database includes sections on land use, waste and pollution prevention and control. The information in this section will be used to check for potential sources of ground contamination and environmental risks. Database entries within 250m (unless otherwise stated) are listed below.

4.1 Historical industrial sites

- ❖ There is only 1 No entry in the database as potentially contaminative past land use within 250m. This is 81m SE (unspecified works). There are more distant entries over 300m away for unspecified pits and unspecified ground workings, which may relate to the coal mining history as identified later in the Coal Mining Risk Assessment.
- ❖ Historical tanks: none within 500m.
- ❖ Historical energy features: 1 No listed within 250m, which is an electricity substation 92m NW.
- ❖ Historical petrol or fuel filling stations: none listed within 500m.
- ❖ Historical garage and motor vehicle repair sites: none listed within 250m, the nearest being 398m SE.
- ❖ Potentially infilled land: there are a number of ponds in the surrounding area shown on the historical maps, some of which may have been infilled, including the nearest, 10m S, 140m E & 160m NW. However, given the likely relatively impermeable nature of the superficial geology and the small scale of the ponds, we have concluded that there is unlikely to be a significant ground gas risk from these features. This has been confirmed by ground gas monitoring undertaken in the existing Ground Investigation.

4.2 Landfill and other waste sites

- ❖ Environment Agency Landfill data and historic landfill sites; none recorded within 250m, the nearest being 483m S (land to the rear of Romer Avenue, Moston – household waste).
- ❖ Historical waste sites: none recorded within 500m.
- ❖ Licensed waste sites: none recorded within 500m.
- ❖ Waste exemptions: none recorded within 500m.

4.3 Current land use

- ❖ Records of potentially contaminative industrial sites: 3 No entries within 250m, which are the electricity substation 95m NW and baking and confectionary 226m & 227m NW.
- ❖ Current petrol and fuel sites: none within 500m.
- ❖ National Grid high voltage underground electricity cables: none within 500m
- ❖ National Grid high pressure gas transmission pipelines: none within 500m
- ❖ Sites determined as contaminated land: none listed within 500m.
- ❖ Railways and tunnels: none within 250m.

4.4 Environmental permits, incidents and registers

- ❖ Control of Major Accident Hazards: none listed within 500m.
- ❖ Regulated explosive sites: none within 500m.
- ❖ Hazardous substance storage / usage: none within 500m.

- ❖ Integrated pollution control (IPC) records: none within 500m.
- ❖ Licensed Industrial Activities (Part A(1)): none within 500m.
- ❖ Licensed Pollutant Release (Part A(2) & Part B): none within 500m.
- ❖ Licensed Discharges to Controlled Waters: none within 500m.
- ❖ Pollutant release to surface waters (Red List): none within 500m.
- ❖ Pollutant release to public sewer: none within 500m.
- ❖ List 1 Dangerous Substances: none within 500m.
- ❖ List 2 Dangerous Substances: none within 500m.
- ❖ Recorded Pollution Incidents: none within 500m.
- ❖ Pollution inventory substances and waste transfers: none within 500m.

4.5 Manchester City Council Environmental Information

We consulted Manchester City Council Environmental Protection Officer, and they have provided the appended report on their Environmental Searches.

The EPO has confirmed that the information on ground conditions they refer to is the Amey / WYG Environmental (2015) report of which we are already aware.

5.0 GEOLOGICAL INFORMATION

The geological database includes sections on geology, Radon, historical workings and mining and hazard ratings for natural ground subsidence. The information in this section will be used to check for potential sources of ground contamination and environmental sensitivity. Database entries within 250m are described in the following listings.

- ❖ Artificial / Made Ground: no records within 250m, nearest is 445m W (worked ground (undivided)).
- ❖ Superficial Deposits / Drift Geology: Devensian Till on site (low to high permeability, mixed flow type). No records of landslip within 500m.
- ❖ Bedrock/Solid Geology: Pennine Middle Coal Measures Formation on site (low to moderate permeability, fracture flow type), Collyhurst Sandstone Formation 161m S.
- ❖ Bedrock faults and other linear features: 5No within 250m, which are faults 36m NE, 75m SW, 209m NW, a fossil horizon 112m S and a coal seam / inferred subcrop 179m NW.
- ❖ Borehole Records Map: none recorded within 250m.
- ❖ Natural Ground Subsidence: very low to negligible hazard rating for all listed categories.
- ❖ Natural cavities: none recorded within 500m.
- ❖ BGS British Pits: none recorded within 500m.
- ❖ Surface ground workings: 3No entries within 250m, which are ponds 151m NW and 236m NE. We also are aware of other ponds including one 10m S until the early 20th century.
- ❖ Underground workings: none recorded within 500m, but there are 13No entries relating to collieries, unspecified mines and old shafts between 525m W and 888m E.
- ❖ Historical mineral planning areas: none recorded within 500m.
- ❖ Non-coal mining: none recorded within 1,000m.

- ❖ Mining cavities: none recorded within 1,000m.
- ❖ Johnson, Poole & Bloomer mining areas: none on site.
- ❖ Coal mining: the site is located in a coal mining area and we have obtained the appended Coal Authority Report to provide further assessment in Section 7.0.
- ❖ Radon: the property is not in a Radon area as less than 1% of properties are above the Action Level. No Radon protective measures are necessary.
- ❖ Estimated Background Soil Chemistry: Arsenic 15-25mg/kg; Bioaccessible Arsenic: no data; Lead 100mg/kg; Bioaccessible Lead 60mg/kg; Cd 1.8mg/kg; Cr 90-120mg/kg; Ni 15-30mg/kg.

6.0 ENVIRONMENTAL INFORMATION

The environmental database also includes sections on hydrogeology, hydrology, flooding and environmentally sensitive areas. The information in this section will be considered when determining the site sensitivity. Database entries within 250m are described in the following paragraphs.

6.1 Hydrogeology and hydrology

- ❖ Aquifer within superficial deposits: 'Secondary Undifferentiated' on site (Devensian Till) and 'Secondary A' 238m S (Alluvial Soils).
- ❖ Aquifer within bedrock deposits: 'Secondary A' on site (Pennine Middle Coal Measures Formation) and 'Principal' (Collyhurst Sandstone Formation) 191m S.
- ❖ Groundwater vulnerability is given as low vulnerability as the Secondary Aquifer is >10m thickness thereby protecting the underlying 'Secondary A' Aquifer.
- ❖ Groundwater abstractions: none within 2,000m.
- ❖ Surface water abstractions: none within 2,000m.
- ❖ Potable water abstractions: none within 2,000m.
- ❖ Source Protection Zones: none within 500m.
- ❖ Source Protection Zones (confined aquifer): none within 500m.
- ❖ Water Network (OS MasterMap): no records within 250m.
- ❖ Surface water features: no records within 250m.
- ❖ WFD Surface water body catchments: 1 No on site: River Irk (Irwell Catchment).
- ❖ WFD Surface water bodies: none within 250m, nearest is 597m SE (River Irk).
- ❖ WFD Groundwater bodies: on site: Northern Manchester Carboniferous Aquifers.

6.2 Flooding

- ❖ Risk of Flooding from Rivers and the Sea (RoFRaS): none recorded within 50m.
- ❖ Historical flood events: none recorded within 250m.
- ❖ Flood defences within 250m: none identified.
- ❖ Areas benefitting from flood defences and flood storage within 250m: none identified.
- ❖ Flood Zone 2 & Flood Zone 3: none recorded within 50m.
- ❖ Surface water flooding: Highest risk on site is negligible. Highest risk within 50m is 1 in 30 year, 0.3m to 1.0m.

- ❖ Groundwater flooding: Highest risk on site is low. Highest risk within 50m is low.

6.3 Designated environmentally sensitive areas

- ❖ Sites of Special Scientific Interest: none within 250m, nearest is 612m E (Rochdale Canal) and the site is within an Impact Risk Zone for a SSSI (see below).
- ❖ Special Protection Areas: none within 2,000m.
- ❖ Local Nature Reserves: none within 250m, nearest is 1,741m W (Boggart Hole Clough).
- ❖ National Nature Reserves: none within 2,000m.
- ❖ Designated Ancient Woodland: none within 250m, nearest is 1,588m W (Boggart Hole Clough).
- ❖ Marine Conservation Zones: none within 2,000m.
- ❖ Green Belt Land: none within 2,000m.
- ❖ Nitrate Vulnerable Zones: on site (River Irk (Moston Brook to River Irwell) NVZ).
- ❖ SSSI Impact Risk Zones: Impact Risk Zone on site. The requirements do not relate to the currently proposed kitchen and car park extensions so there should be no need to consult with Natural England.

7.0 DESK BASED COAL MINING RISK ASSESSMENT

The database obtained has indicated that the site is within a coal mining area. We have therefore obtained the appended Coal Authority Report so that mining risk can be assessed. The CON29M report states:

- **The property lies within the potential zone of influence of recorded workings in 2 seams of coal. The most recent underground working in the area was in 1900. These workings lie between 90 metres and 295 metres. Any ground movement due to this coal mining activity should have stopped.**
- The property does not lie within the boundary of an underground site from which coal is being removed by underground methods.
- The property does not lie within the boundary of an underground site for which the Coal Authority is determining whether to grant a licence to remove coal by underground methods. The property does not lie within the boundary of an underground site for which a licence to remove coal using underground methods has been granted. The property does not lie within the zone of likely physical influence on the surface of planned future underground workings. No notices have been given under Section 46 of the Coal Mining Subsistence Act 1991, stating that the land is at risk of subsidence.
- No coal mine entries are recorded to lie within 20m of the property.
- No damage arising from geological faults or other lines of weakness activated by coal mining are recorded within the property.
- The property does not lie within the boundary of an opencast site from which coal was removed by opencast methods.
- The property does not lie within 200m of the boundary of an opencast site from which coal is being removed by opencast methods.
- The property does not lie within 800m of the boundary of an opencast site for which the Coal Authority are determining whether to grant a licence to remove coal by opencast methods. The property does not lie within 800m of the boundary of an opencast site for which a licence to remove coal by opencast methods has been granted.

- The Coal Authority has no evidence of a damage notice or subsidence claim for the property, or within 50m of the property, since 31st October 1994.
There are no current Stop Notices delaying the start of remedial works or repairs to the property. There is no record of a request that has been made to carry out preventative works before coal is worked under Section 33 of the Coal Mining Subsistence Act 1991.
- No mine gas emissions are recorded within the boundary of the property.
- No Emergency Surface Hazard Call Out procedures are recorded against the property.
- The property does not lie within an area where a right to withdraw support has been granted. The property does not lie within a geographical area in which a revocation notice has been given under Section 41 of the Coal Industry Act 1994.
- The property is not in an area where a court order has been issued under the provisions of the Mines (Working Facilities and Supports) Acts 1923 and 1966 or any statutory modification or amendment thereof.
- Regarding payments to owners of former copyhold land, the property does not lie within former copyholder land.

The report includes the above statements based on known records held by the Coal Authority.

Worked coal seams have been identified at great depth beneath the site and The Coal Authority state that ground movement associated with the workings should have stopped by now.

In conclusion, the risk of adverse effects due to coal mining beneath the site should be considered as **Low Risk**.

8.0 PRELIMINARY GROUND CONTAMINATION ASSESSMENT

This assessment of risks to human health and environmental receptors is in accordance with current policy and practice in the UK and is applicable to new development under the planning regime.

8.1 Regulatory framework and assessment criteria

Development sites can only be assessed as significantly contaminated if all of the following are found to be present, namely

- i) A contaminant; a substance in, on or under the land which has the potential to cause harm or to cause pollution of controlled waters
- ii) A receptor; something that could be adversely affected by a contaminant, such as people, an ecological system, property, or a water body
- iii) A pathway; a route or means by which a receptor can be exposed to or affected by a contaminant

This type of linked combination of contaminant-pathway-receptor is known as a pollutant linkage.

In terms of this current risk assessment, we must assess whether or not there is a potential for such a pollutant linkage to exist here and whether or not further investigation or protective measures are required.

8.2 Proposed end use

This is an existing primary school site for which a kitchen extension and a car park extension are proposed. On this basis the site should be considered of **medium to high** sensitivity with regard to human health receptors and we concur with Amey / WYG Environmental that a '**public open space near residential housing**' end use scenario should be adopted for risk assessment.

8.3 Site sensitivity

The underlying geology includes a ‘Secondary Undifferentiated’ Aquifer overlying a ‘Secondary A’ Aquifer at depth. There are no nearby potable groundwater abstractions nor are there any nearby Source Protection Zones.

The superficial soils are expected to be of low leaching class and low vulnerability and probably >10m thickness, thereby protective of the underlying ‘Secondary A’ Aquifer.

There are no nearby surface water features.

At this stage the available environmental and geological information has indicated that the site should be considered of **low** sensitivity with regard to environmental receptors.

8.4 Contaminant sources

There may be Made Ground present on site following the original school development and this may contain soils of industrial origin including potential contaminants such as metals, inorganics, hydrocarbons and asbestos. This has been confirmed by the existing ground investigation which reported elevated levels of polycyclic aromatic hydrocarbons at shallow depths in upper layers of Made Ground.

Otherwise, we have found no evidence of potential sources of ground contamination on site.

Ground gas sources are considered in Section 8.5, below.

8.5 Ground gas

There are no nearby Licensed Waste Sites nor any historical landfills. Regarding Radon risk, less than 1% of properties are above the action level in this area, and Radon protection is not required.

Ponds are noted within 250m on the historical maps and some of these features may have been infilled, including one close by only 10m south. However, even if these features include biodegradable waste, which would seem unlikely, the small size of the ponds and the cohesive nature of the intervening superficial soils (Devensian Till) is likely to impede ground gas migration, which is therefore considered low risk. This has been confirmed by the existing ground investigation which included ground gas monitoring, concluding that Characteristic Situation No 1 would be applicable and that ground gas protection would not be required.

The risk assessment findings are tabulated in Section 9.0: Preliminary Conceptual Model.

9.0 PRELIMINARY CONCEPTUAL MODEL

Sources	Contaminants	Receptors	Pathways	Mitigating Factors and Risk Management	Preliminary Risk Levels
Made Ground is likely to be present and this has already been confirmed by the existing ground investigation. There are no other known on site sources of ground contamination.	Contaminants may be present including metals, inorganics, hydrocarbons and asbestos.	Construction workers, future site occupants and groundwater.	Ingestion, skin contact, breathing dust and permeation to aquifers.	Phase 2 ground investigation has already been undertaken which has found elevated levels of polyaromatic hydrocarbons within the shallow layers of Made Ground. These soils are protected by hard surfacing for the majority of the site, but there is a small area of proposed soft surfacing where this Made Ground will need to be removed. Risks to construction workers can be managed by appropriate PPE.	Low Risk Subject to concurrent Remediation Strategy (1406A Rev 0 : 9th Sept 2022) for removal of near surface Made Ground in soft surfaced areas.
There are no nearby Licensed Waste Sites nor any historical landfills. Radon protection is not required. Migration pathways from nearby infilled ponds are unlikely due to dominantly cohesive superficial cover.	Ground gas including carbon dioxide and methane.	Future site occupants	The relatively impermeable Devensian Till is likely to provide a barrier to impede ground gas migration.	Ground gas monitoring has shown that ground gas protection is not required. Radon protection is not required.	Low Risk
The locality has a history of farming and residential usage which are low risk in terms of sources of ground contamination.	Potential contaminants include metals, inorganics, hydrocarbons & asbestos.	Construction workers and future site occupants	Ingestion, skin contact and breathing dust	We recommend that groundworkers and construction operatives should remain vigilant and if unexpected ground contamination is found then specialist advice should be sought.	Low Risk Subject to Vigilance during Groundworks

10.0 PRELIMINARY CONCLUSIONS AND RECOMMENDATIONS

10.1 Ground contamination conclusions

Our preliminary assessment has drawn the following conclusions with regard to ground contamination.

- a) On the basis of the available database and historical maps, the site has been a school playground and playing field since the early 20th Century prior to which it was farmland.
- b) The only identifiable source of ground contamination on site is Made Ground, as described in the existing ground investigation report and which laboratory analysis has shown includes elevated levels of polyaromatic hydrocarbons. These soils can remain in place beneath hard surfacing, but will require removal and replacement in the small area of proposed soft surfacing. Our concurrent Remediation Strategy (1406A 9th Sept 2022)) can be referred to in this regard.
- c) There are no nearby Licensed Waste Sites nor any historical landfills. Regarding Radon risk, less than 1% of properties are above the action level in this area, and Radon protection is not required. Ponds are noted within 250m on the historical maps and some of these features may have been infilled, including one close by only 10m south. However, even if these features include biodegradable waste, which would seem unlikely, the small size of the ponds and the cohesive nature of the intervening superficial soils (Devensian Till) is likely to impede ground gas migration, which is therefore considered low risk. This has been confirmed by ground gas monitoring in the existing ground investigation report so ground gas protection is not required.
- d) The underlying geology includes a 'Secondary Undifferentiated' Aquifer overlying a 'Secondary A' Aquifer at depth. There are no nearby groundwater abstractions and no nearby Source Protection Zones. The superficial soils are expected to be of low leaching class and low vulnerability and probably >10m thickness, thereby protective of the underlying 'Secondary A' Aquifer.
- e) There may be spoil arisings from foundation excavations for off-site disposal. The waste regulators may require laboratory chemical analysis of the spoil, including standard suites and Waste Acceptance Criteria (WAC) tests in order to accept / classify the soils for disposal.
- f) The existing school was constructed before the year 2000 so should be checked for asbestos containing materials (ACMs). A specialist should be consulted and an asbestos survey may be required, unless one is already available, so that risks can be assessed and safely managed.

10.2 Recommendations

Based upon the information reviewed, our preliminary desk based assessment is that ground contamination risks to potential receptors should be considered **LOW** for the proposed development, subject to the stated mitigation measures and remediation. Groundworkers should remain vigilant during groundworks and construction so that if ground contamination is found or is suspected then specialist advice can be sought.



GENERAL INFORMATION, LIMITATIONS AND EXCEPTIONS

Unless otherwise stated, our Report is a Ground Investigation Report [GIR] as defined in BS EN1997-2. Our Report is not intended to be and should not be viewed or treated as a Geotechnical Design Report [GDR] as defined in EN1997-2. If 'design' recommendations are provided, they are for guidance only and are intended to allow the designer to assess the results and implications of our investigation/testing and to permit preliminary design of relevant elements of the proposed scheme. When the title of the report is 'Factual Report on Ground Investigation' this means that geotechnical design recommendations are not provided.

The scope and methods of investigation used have been chosen taking into account project and site constraints including but not limited to access and space limitations. Where it has not been possible to reasonably undertake an EC7 compliant scope or investigation technique we have adopted a practical and economic scope and technique(s) to obtain indicative soil parameters and any interpretation is based upon our engineering experience and relevant published information.

The Report is issued on the condition that G7 Geotech Ltd will under no circumstances be liable for any loss arising directly or indirectly from ground conditions between the exploratory points which differ from those identified during our investigation. In addition G7 Geotech Ltd will not be liable for any loss arising directly or indirectly from any opinion given on the possible configuration of strata both between the exploratory points and/or below the maximum depth of the investigation; such opinions, where given, are for guidance only and no liability can be accepted as to their accuracy. The results of any measurements taken may vary spatially or with time and further confirmatory measurements should be made after any significant delay in using this Report.

Comments made relating to ground-water or ground-gas are based upon observations made during our investigation unless otherwise stated. Ground-water and ground-gas conditions may vary with time from those reported due to factors such as seasonal effects, atmospheric effects and and/or tidal conditions. We recommend that if monitoring installations have been included as part of our investigation, continued monitoring should be carried out to maximise the information gained.

Specific geotechnical features/hazards such as [but not limited to] areas of root-related desiccation and dissolution features in chalk/soluble rock can exist in discrete localised areas - there can be no certainty that any or all of such features/hazards have been located, sampled or identified. Where a risk is identified the designer should provide appropriate contingencies to mitigate the risk through additional exploratory work and/or an engineered solution.

Where spread foundations are used, we recommend that all excavations are inspected and approved by suitably experienced personnel; appropriate inspection records should be kept. This should also apply to any structures which are in direct contact with the soil where the soil could have a detrimental effect on performance or integrity of the structure.

Ground contamination often exists in small discrete areas - there can be no certainty that any or all such areas have been located, sampled or identified.

The findings and opinions conveyed in this Report may be based on information from a variety of third party sources such as commercially available desk based geological and environmental searches, historical maps, mining reports, radon reports, geotechnical laboratory testing and contamination laboratory analyses. G7 Geotech Ltd cannot and does not provide any guarantee as to the authenticity, accuracy or reliability of such information from third parties; such information has not been independently verified unless stated in our Report.

Our Report is written in the context of an agreed scope of work between G7 Geotech Ltd and the Client and should not be used in any different context. In light of additional information becoming available, improved practices and changes in legislation, amendment or re-interpretation of the assessment or the Report in part or in whole may be necessary after its original publication.

Unless otherwise stated our investigation does not include an arboricultural survey, asbestos survey, ecological survey or flood risk assessment and these should be deemed to be outside the scope of our investigation.

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