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Preliminary Investigation Report

Proposed Development

Kestrel Way, Luton

February 2023

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Issuing office: Soiltechnics Ltd
Cedar Barn, White Lodge, Walgrave, Northampton. NN6 9PY
Tel: 01604 781 877 E-mail: mail@soiltechnics.net

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Drawing Register

Title	Produced by	Date	Reference
Location Plan, Mass Model Proposed Site Plan and Building Footprint	Luton inclusive economy property and infrastructure	20/07/22	E2225-DD-XX-XX-DR-A-80001
Site Plan	Soiltechnics	08/02/23	STU5850

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Non-technical Summary

Topic	Commentary
Site description	The site is currently a grassed area occupied by a telecommunication mast and fenced off tension cables and appears to be accessible to the general public. The site is bordered by residential properties to the west, south and east. To the north is Kestrel Way with fields beyond.
Development proposals	Proposals are for the construction of a two-storey school with associated grassed play area, soft landscaping and a car park.
Ground conditions	Geological maps record superficial deposits of Glaciofluvial Deposits and Head Deposits underlain by Zig Zag Chalk Formation bedrock. The superficial deposits are recorded as absent to the south of the site. The Glaciofluvial and Head deposits are recorded as secondary A aquifers and the Zig Zag Chalk is recorded as a principal aquifer. Local borehole records suggest groundwater may be present some 3-8m below the site although these are down gradient and closer to a watercourse and therefore groundwater may be deeper on site.
Chemical contamination	Potential risks from contamination have been identified, although these are limited and associated with possible reworked Topsoil from the sites likely former use as agricultural fields and surface contamination from adjacent roads (metals and PAH).
Radon, gas risk and protection measures	The site is located in an intermediate probability radon area although no radon protective measures are considered necessary in the construction of new dwellings or extensions. No potential sources of landfill gas have been identified.
Recommendation for further works	Intrusive investigations including sampling and testing of soils is required in order to refine the risk assessment and determine if any remedial measures are required to make the site suitable for use for the proposed development.

1 Introduction

1.1 Scheme Outline

1.1.1 It is understood that the development will comprise the construction of a new two storey school with associated grassed play area, soft landscaping and a car park. A drawing of the proposed development is presented within Appendix A.

1.1.2 It is understood that the development is controlled under the Luton Borough Council planning regime.

1.1.3 The report is based on the project proposals and information outlined above; should the scheme change then it will be necessary to review the conclusions and recommendations presented in this report.

1.2 Brief

1.2.1 This report has been prepared following instructions received from Luton Borough Council. The overall brief of works is to support the planning application by assessing the potential risks from contamination at the site.

1.2.2 The objectives of this report are outlined below:

- i) Review and summarise desk study information.
- ii) Undertake a land contamination Tier 1 preliminary risk assessment.

1.3 Definition of Scope

1.3.1 The phasing and scope of the ground investigation works is broadly defined by the following documents.

Title	Document Reference	Publisher	Investigation Scope
Code of practice for ground investigations	BS 5930: 2015	British Standards Institution	Phase 1: Desk study
Investigation of potentially contaminated sites – Code of practice	BS 10175: 2011+A2:2017	British Standards Institution	Preliminary Investigation
Land contamination risk management	Online resource, updated April 2021	Environment Agency	Stage 1 Risk Assessment: Tier 1: Preliminary risk assessment

Table 1-A: Definition of Investigation Scope

1.4 Limitations

1.4.1 Soiltechnics disclaims any responsibility to our Client and others in respect of any matters outside the scope of this report. This report has been prepared with reasonable skill, care and diligence in accordance with the terms of our contract, taking account of the manpower, resources, investigations and testing devoted to it by agreement with our Client. This report is confidential to our Client and Soiltechnics accepts no responsibility of whatsoever nature to third parties to whom this report or any part thereof is made known. Any such party relies upon the report at their own risk.

2 Desk Study

2.1 Sources of information

2.1.1 Reference has been made to the following sources of information:

- An Envirocheck Report and historical map records, presented as Appendix C.
- British Geological Survey (BGS) GeoIndex – Onshore database.
- BGS Sheet 220 (Scale 1:50 000) – Leighton Buzzard (1992).
- Ordnance Survey OpenData
- Coal Authority Development and Specific Risk databases.
- Environment Agency open-source databases
- Google mapping services
- Interrogation of search engines for anecdotal information on the site history and other readily available online resources.

2.2 Site Description

2.2.1 The proposed development site lies towards the northern outskirts of Luton and the post code for the site is LU4 0UD. The site is located within a predominantly residential area and is accessed from Kestrel Way which lies adjacent to the site's northern boundary.

2.2.2 An aerial image showing the approximate site boundary is presented below, followed by a table summarising the key site features. A site plan is provided within Appendix A.

2.2.3 Due to the sensitive nature of the site, we were requested not to complete a site inspection and therefore this assessment is undertaken using readily available aerial photographs and street views.



Figure 2-A: Aerial photograph and approximate site boundary

Theme	Feature
Current site use	The site is currently a grassed area occupied by a central telecommunication mast. The site appears to be accessible to the general public.
Local area land use	Two storey residential properties lie to the west, east and south. Undeveloped land present to the north of the site, beyond Kestrel Way.
Topography	The topography of the surrounding area generally falls gently to the northeast. On site topography appears relatively flat.
Buildings, surfacing and other permanent features	A radio mast is present in the centre of the site with surrounding fenced off tension cables. A small brick building, likely housing the equipment cabinets and satellite associated with the mast, is present in the northwest of the site with a small area of hardstanding allowing vehicular access. The remainder of the site is covered in grass.
Boundary features	The site boundaries to the west, east and south are defined by timber fencing and brick walls of adjacent houses/garages. The public pavement running along Kestrel Way forms the northern boundary, though a shallow ditch and wooden posts run parallel to the pavement, just inside the site.
Vegetation	A number of trees are present along the site boundaries but are all within adjacent gardens.
On-site / adjacent surface water features	None recorded in close proximity to the site, with the nearest (Houghton Brook) located approximately 240m to the north-east. The ditch to the north does not appear to be water bearing/for drainage, but rather to deter vehicular access on site.
Environmental Designations	The site is not reported to be within or in close proximity to any areas of designated sensitive land use, such as a Ramsar Site, Site of Special Scientific Interest (SSSI), or Special Area of Conservation.
Injurious and invasive weeds	Unknown at this stage but site appears fully grassed with no obvious evidence of vegetation/shrubs on site based on available information.
Asbestos containing material (ACM) in buildings	The scope of this report excludes identifying asbestos within buildings on site, and an asbestos survey was not made available at the time of writing.
ACMs on site	Unknown at this stage but nothing immediately obvious from available aerial imagery.
Potential sources of contamination	None identified but no site visit undertaken.
Evidence for ground instability	None identified but no site visit undertaken.

Table 2-A: Site Description

2.2.4 The descriptions provided above are made by a Geoenvironmental Engineer, who is not a specialist in asbestos surveying or invasive weed identification. Any associated comments are intended for use by this report only, and not for any other purpose.

2.3 Previous Reports

2.3.1 Soiltechnics are not aware of any previous ground investigation reports undertaken at the site.

2.4 Site History

2.4.1 Review of historical maps indicates the site was open fields until the early 1990s when the current radio mast, anchorages and brick building are recorded. The surrounding area is also recorded as open fields until the surrounding residential development is recorded at a similar time to the radio mast.

2.4.2 A chronological summary of the site's history is provided below.

Date	On-site	Off-site
Late-1800s	Site and surrounding area recorded as open fields.	Open fields with sporadic farms in excess of 500m from the site.
1910-1930s	No significant change.	No significant change.
1940s and 1950s	No significant change.	A gravel pit is recorded 500m to the southeast. Some residential development has occurred approximately 500m to the east/southeast.
1960s	No significant change.	M1 motorway is located 250m to the east of the site. The gravel pit is recorded as disused.
1970s and 1980s	No significant change.	Significant residential development has occurred in the area, extending to within approximately 300m of site.
1990s	A radio mast and likely anchorage points are on site. A small building and hardstanding area is located in the northwest.	Residential developments extend up to site boundaries to the south, east and west and a road borders the site to the north.
2000s to present day	No significant change.	No significant change.

Table 2-B: Summary of site history

2.5 Regulatory Enquiries

2.5.1 Soiltechnics have contacted the Local Authority Environmental Health department to request any pertinent information they may hold for the site or surrounding area. The Local Authority have requested a fee to undertake a search of their records. As an Envirocheck Report has already been obtained which includes searches of several regulatory databases, commissioning the Local Authority search is not considered necessary to complete the desk study and preliminary risk assessment in this instance.

2.6 Anticipated Geology

2.6.1 A summary of the anticipated geology underlying the site is summarised as follows, listed in order of superposition:

Stratum	Bedrock / superficial	Anticipated thickness (m)	Typical description
Glaciofluvial Deposits (northwest of site only)	Superficial	0-3m	Sands and gravels; sometimes clayey.
Head (northeast of site only)	Superficial	0-3m	Clays, sands and gravels.
Zig Zag Chalk Formation (at crop in the south)	Bedrock	35-50m	Pale grey to off-white blocky chalk

Table 2-C: Summary of anticipated geology at the site

2.7 Hydrogeology and Groundwater Sensitivity

2.7.1 The general hydrogeological profile of the site is provided in the table above.

Stratum	Aquifer Designation	Stratum Thickness (m)	Anticipated Groundwater Depth (m bgl)
Glaciofluvial Deposits	Secondary Aquifer - A	0-3m	Unknown
Head	Secondary Aquifer - undifferentiated	0-3m	Unknown
Zig Zag Chalk Formation	Principal Aquifer	35-50m	>3-8m*

Table 2-D: Preliminary Hydrogeological Model

2.7.2 Published borehole records in the surrounding area are limited. *Where groundwater strikes are recorded, these are generally within the Zig Zag Chalk Formation at depths of between 3-8m bgl. However, it is noted that some of these boreholes are located down-gradient and in close proximity to a watercourse and therefore groundwater may be more shallow at these locations than on site.

2.7.3 The site is located within a Source Protection Zone III (Total Catchment) associated with an abstraction point located in excess of 1000m to the southwest of the site. It is anticipated that the well is abstracting from the principal aquifer within the Chalk Formation.

2.8 Hydrology and Surface Water Sensitivity

2.8.1 The closest water feature is Houghton Brook which is located 200m northeast of the site. Small ponds are also located some 350-550m northwest of the site.

2.8.2 The ditch to the north of the site is considered to be to prevent vehicular access on site rather than as a surface water drainage system, but this has not been explicitly verified.

2.8.3 There are no active surface water abstraction licenses recorded within 1000m of the site.

2.9 Flood Risk

2.9.1 The site falls within a Flood Zone 1 area. This designation indicates there is less than a 0.1% chance of flooding from rivers or the sea in any year.

2.9.2 Areas of the site are recorded as having the potential for surface water flooding during a 1 in 1000 year flood event with a small area to the north having the potential for surface water flooding during a 1 in 100 year flood event.

2.9.3 The site is recorded in area shown to have a limited potential for groundwater flooding to occur.

2.9.4 It should be noted that this information does not constitute a site-specific Flood Risk Assessment and one may be required for the scheme.

2.10 Non-Mining Ground Instability Hazard

2.10.1 The Envirocheck Report includes hazard ratings due to natural ground instability, which have been derived by the BGS. These hazards have been summarised in the table below.

Hazard	Hazard Potential	Discussions
Collapsible ground	Very low	N/A
Compressible ground	No hazard	N/A
Ground dissolution	Very low	N/A
Landslide	Very low	N/A
Running sand	Very low	N/A
Shrinking or swelling clay	Very low	N/A

Table 2-E: Non-Mining Ground Stability Hazards

2.11 Quarrying and Mining

2.11.1 The site falls outside of a Coal Mining Reporting Area.

2.11.2 There are no active mineral sites recorded within close proximity of the site. One historical gravel pit is recorded 500m to the southeast and appears to have been infilled in the 1990s (is recorded as potentially infilled land). It is not recorded as a landfill.

2.12 Landfill and infilled ground

2.12.1 No records of landfill sites, infilled ground or mineral sites are held within 250m of the site.

2.13 Recent industrial activity

2.13.1 There are no regulated facilities or activities in the vicinity of the site under IPPC or LAPPC control, and no registered radioactive substances.

2.13.2 There are no Contemporary Trade Directory entries associated with site itself, and three are held within 250m. These entries include an ironing service (117m E), carpet cleaners (165m SE) and a tyre dealership (168m SE) and all are located as residential addresses suggesting they are likely to be registered company addresses/administration centres rather than sites of commercial activity. All are inactive. None of these activities are considered a potential source of contamination.

2.13.3 There are no discharge consents or pollution incidents to controlled waters recorded within 250m.

2.14 Radon

2.14.1 The site is in an area where the above ground Radon Affected Area status is classed as a Lower to Intermediate Probability Radon Area.

2.15 Underground Infrastructure

2.15.1 Copies of all utility plans obtained are presented as Appendix B. The plans are provided for information only and should not be relied upon to be accurate. In addition, it is worth noting that the public utility plans provided by the asset owners typically exclude private service runs.

2.15.2 A review of the plans indicates a low-pressure gas main present along the northern boundary, considered likely to be beneath the pavement. This may require protecting for new entrances and could impact the redevelopment, therefore the asset holder should be consulted at the earliest opportunity to identify any construction constraints that may apply.

2.16 Unexploded Ordnance (UXO) Hazard Screen

- 2.16.1 A preliminary risk review has been undertaken by a UXO specialist to assess the risk of encountering UXO during ground investigation works undertaken by Soiltechnics only and to identify any precautionary measures required. It should be noted that the risk assessment has not been carried out fully in accordance with CIRIA report C785 'Unexploded Ordnance (UXO) A guide for the construction Industry'.
- 2.16.2 The risk review concluded that there was not a credible risk of encountering UXO during the ground investigation. It should be noted that this preliminary risk review does not consider risks to the construction phase.

3 Tier 1 Preliminary Contamination Risk Assessment

3.1 Objectives

3.1.1 The objective of this preliminary risk assessment (PRA) is to determine the suitability of the site for the proposed redevelopment and end users, in terms of the risk from contamination. The assessment comprises the following steps:

- Identify potential contaminant linkages (PCLs) between sources, pathways and receptors.
- To provide data to assist in the design of potential exploratory and detailed intrusive investigations and to give an early indication of possible remedial requirements, if necessary.

3.2 Evaluation Criteria

3.2.1 The following assessment is undertaken within the legislative framework of the planning system. Therefore, the assessment needs to identify if land contamination could pose an unacceptable risk to human health or the environment, within the context of the proposed development site. In the context of the existing site use, as a minimum, land should not be capable of being determined as 'contaminated land' under Part IIA of the Environmental Protection Act 1990.

3.2.2 The risk criteria for the proposed development is based on a 'minimal risk' approach, whereas under the existing land use a designation of 'contaminated land' would only apply if there is a significant possibility of significant harm (SPOSH).

3.3 Methodology

3.3.1 The objectives listed above are achieved by utilising the information presented within the desk study to develop an initial conceptual site model (iCSM) and identification of potential unacceptable risks. Depending upon the outcome of the Tier 1 assessment, it may be necessary to undertake a Tier 2 generic quantitative risk assessment (GQRA).

3.3.2 An iCSM relies upon the identification and assessment of PCLs. A contaminant linkage comprises of three key components:

- Source – a contaminant or pollutant that is in, on or under the land and that has the potential to cause harm or pollution.
- Pathway – Current and post-development routes by which a receptor is, or could be, affected by a contaminant.
- Receptor – Something that could be adversely affected by a contaminant, for example a person (current and proposed end users or neighbours), controlled waters and ecosystems.

3.3.3 The Tier 1 risk assessment has been produced with reference to the following guidance:

- ['Land contamination risk management'](#) (EA, 2021).
- BS 10175:2011+A2:2017 'Investigation of potentially contaminated sites – Code of Practice'.
- CIRIA C552 'Contaminated land risk assessment- a guide to good practice', 2001.
- BS EN ISO 21365:2020 'Soil quality – Conceptual site models for potentially contaminated sites'
- BS 8576:2013 'Guidance on investigations for ground gas – Permanent gases and Volatile Organic Compounds (VOC)'.

3.4 Source Assessment

3.4.1 The table below summarises identified sources based on the findings of the desk study.

Potential Sources	Contaminant(s) of concern	Detail	Viable source?
On-site sources			
		The site has remained predominantly undeveloped with any Made Ground likely to be shallow and present within the footprint of the existing building and potentially mast/anchorages only.	
Made Ground and near surface soils	Metals, polycyclic aromatic hydrocarbons (PAH), asbestos	Possibility the Topsoil may have been reworked historically during agricultural use and could contain some anthropogenic material.	Y
		Site is located within an urban area adjacent to a road and there is a possibility that surface soils could contain elevated metals and PAHs.	
Carbonate rich deposits (chalk)	Permanent ground gases (CO ₂)	Carbonate rich materials can generate carbon dioxide due to natural geochemical and weathering processes. Typically, volume generated is low and does not pose a viable risk for developments.	N
Radon	Radon	The site is recorded as being in an Intermediate Probability Radon Area although gas protection measures are not considered necessary.	N
Aggressive ground conditions due to potentially pyritic ground	Pyrite and sulphates	The risk of aggressive ground affecting concrete is to be considered under the geotechnical investigation and has been excluded from further consideration.	N

Table 3-A: Contamination source assessment

3.5 Receptor Assessment

3.5.1 The following table summarises the identified receptors based on current site conditions and our understanding of the proposed end use:

Receptor Category	Principal Receptor	Receptor present?	Detail
Human health	Users of the current site	No	Site accessible to the general public.
	End user of the developed site	Yes	Proposed school.
	Construction operatives and other site investigators	Yes	Site proposed for redevelopment
	Adjacent site users and off-site members of the public	Yes	Public footpath and residential properties present adjacent to site.
Controlled waters	Surface waters	Yes	Surface waters located 200m northeast of the site.
	Groundwater	Yes	Site over superficial Secondary A Aquifer and Principal Aquifer.
Sensitive ecosystems and species	Current site	No	Site is not currently within, or proposed to form, a designated environmentally sensitive area (e.g. SSSI, RAMSAR, AONB, SPA, SAC).
	Developed site	No	
Property	Soft landscaping (current)	Yes	Site predominantly laid to grass.
	Soft landscaping (proposed)	Yes	Development to include soft landscaping.
	Building materials	No	Concrete classification to be assessed under any future geotechnical investigation.

Table 3-B: Receptor assessment

3.6 Pathway Assessment

3.6.1 The following table summarises the generic human health pathway assessment for the site, assuming a range of contaminant sources within the underlying soils. Source-specific pathways are considered within the iCSM in subsequent report sections.

Human Health Exposure Pathway	Site accessible to the general public (current)	School with soft landscaping (proposed)	Construction operatives	Adjacent Site Users
Ingestion, inhalation and dermal contact with soils and dusts	✓	✓	✓	✓ <i>(inhalation only)</i>
Ingestion, inhalation and dermal contact with site derived dusts indoors	✗	✓	✓	✗
Ingestion of home-grown vegetables	✗	✗	✗	✗
Inhalation of vapours in outside spaces	✓	✓	✓	✓
Intrusion and inhalation of vapours indoors	✗	✓	✓	✗
Accumulation and Inhalation of ground gas in enclosed structures	✗	✓	✓	✗
Permeation into below-ground drinking water pipes	✗	✓	✗	✗

Table 3-C: Generic pathway assessment

3.6.2 The following table summarises generic pathways for the site which could be viable for the identified controlled water receptors, given our understanding of the hydrogeological model and assuming a range of contaminants in the sub-surface.

Controlled Water Exposure Pathways	Current Setting	Proposed Setting	Mechanism
Site characteristics			
Leaching via infiltration through unsurfaced areas, and surface run-off	✓	✓	Mobilisation
Leaching via infiltration through cracks/joints in hardstanding areas and drainage infrastructure	✗	✓	Mobilisation
Leaching via saturation from groundwater flooding and shallow/perched groundwater bodies	✗	✗	Mobilisation
Infiltration through sustainable drainage systems	✗	✓	Mobilisation
Preferential lateral pathways (e.g. underground services)	✗	✓	Migration
Preferential vertical pathways (e.g. piling, vibro-stone columns)	✗	✗	Migration
Hydrogeological characteristics			
Vertical migration through permeable strata into shallow aquifers and perched groundwater bodies	✓	✓	Migration
Vertical migration through permeable strata into sensitive aquifers at depth	✓	✓	Migration
Lateral migration within shallow and perched groundwater bodies into surface waters	✓	✓	Migration

Table 3-D: Generic pathway assessment

3.7 Initial Conceptual Site Model (iCSM)

3.7.1 The table below presents our approach to the assessment of risks associated with PCLs. The categories below are based upon the definitions within CIRIA C552 (2001), with the addition of a ‘negligible likelihood’ scenario, which is to be used where there is no realistic scenario in which harm could occur.

3.7.2 The initial conceptual site model (iCSM) is presented within the following tables overleaf.

		Consequence of harm			
		Severe	Medium	Mild	Minor
Probability of harm	High likelihood	Risk: Very high (high – severe)	Risk: High (high – medium)	Risk: Moderate (high – mild)	Risk: Moderate/Low (high – minor)
	Likely	Risk: High (likely – severe)	Risk: Moderate (likely – medium)	Risk: Moderate/Low (likely – mild)	Risk: Low (likely – minor)
	Low Likelihood	Risk: Moderate (low – severe)	Risk: Moderate/Low (low – medium)	Risk: Low (low – mild)	Risk: Very low (low – minor)
	Unlikely	Risk: Moderate/Low (unlikely – severe)	Risk: Low (unlikely – medium)	Risk: Very low (unlikely – mild)	Risk: Very low (unlikely – minor)
	Negligible Likelihood	Risk: Low (negligible – severe)	Risk: Very Low (negligible – medium)	Risk: Very Low (negligible – mild)	Risk: Negligible (negligible – minor)

Table 3-E: iCSM Risk Ratings

RECEPTOR: PROPOSED END USERS				
Potential Source	Contaminants of Concern	Pathway	Tier 1 Risk Assessment (probability of harm x consequence)	Discussion
Made Ground and shallow soils	Metals, PAHs, asbestos	Ingestion, inhalation and contact with soils, dusts and vapours	Risk: Moderate/Low (low – medium)	Considered unlikely significant Made Ground is present on site based on the site history and therefore risk from this source is considered low. Possible that Topsoil contains some anthropogenic materials due to agricultural working historically and surface soils may have been impacted by metals/PAH due to the urban environment. Considered unlikely significant contamination would be present, however, testing to confirm concentrations would provide more certainty given the sensitivity of the proposed site use.

Table 3-F: iCSM – Proposed End Users

RECEPTOR: CONSTRUCTION WORKERS				
Potential Source	Contaminants of Concern	Pathway	Tier 1 Risk Assessment (probability of harm x consequence)	Discussion
Made Ground and shallow soils	Asbestos fibres and ACMs	Inhalation of dusts	Risk: Low (unlikely – medium)	Considered unlikely significant Made Ground is present on site based on the site history and therefore unlikely significant concentrations of asbestos fibres will be present. On this basis, the risk is considered low but again, testing to confirm the presence/absence of asbestos would provide additional certainty.
	Metals, PAHs, TPHs	Ingestion, inhalation and contact with soils, dusts and vapours	Risk: Low (low – mild)	No gross contamination of high-risk contaminants anticipated (e.g. cyanide, benzene, and vinyl chloride). Standard PPE and hygiene protocols for working on brownfield sites are likely to be sufficient to the mitigate risk.

Table 3-G: iCSM – Acute Exposure to Construction Workers

RECEPTOR: ADJACENT SITE USERS FOLLOWING COMPLETION

Potential Source	Contaminants of Concern	Pathway	Tier 1 Risk Assessment (probability of harm x consequence)	Discussion
Made Ground and shallow soils	Metals, PAHs, TPH, Asbestos	Ingestion, inhalation and contact with soils, dusts and vapours	Risk: Low (unlikely – medium)	Based on the exposure pathways that would be present from the developed site, and on the anticipated levels of contamination, it is considered unlikely that a pollutant linkage could pose an unacceptable risk to off-site receptors.

Table 3-H: *iCSM – Chronic Exposure to Adjacent Site Users*

RECEPTOR: ADJACENT SITE USERS DURING THE CONSTRUCTION PHASE

Potential Source	Contaminants of Concern	Pathway	Tier 1 Risk Assessment (probability of harm x consequence)	Discussion
Made Ground and shallow soils	Asbestos	Inhalation of dusts	Risk: Low (unlikely – medium)	Potential risk associated with generation of air-borne asbestos fibres and dust during construction main earthworks phase. However, based on the site history, Made Ground is not generally anticipated and therefore unlikely significant concentrations of asbestos fibres will be present. On this basis, the risk is considered low providing standard good practice is adopted during construction works.
	Metals, PAHs, TPHs	Ingestion, inhalation and contact with soils, dusts and vapours	Risk: Low (low – mild)	Unlikely to pose a viable risk to off-site receptors.

Table 3-I: *iCSM – Acute Exposure to Adjacent Site Users*

RECEPTOR: PROPOSED PLANTING

Potential Source	Contaminants of Concern	Pathway	Tier 1 Risk Assessment (probability of harm x consequence)	Discussion
Contaminants within topsoil and the shallow sub-surface	Metals, pH and inorganics	Direct contact and root uptake	Risk: Very low (low – minor)	Topsoil and shallow soils may have been impacted through reworking of the materials historically if used as farmland although elevated levels of phytotoxic contaminants are considered unlikely. A precursory review of aerial and street view imagery does not show any significant barren areas, signs of poor growth, or evidence of significant vegetative stress.

Table 3-J: iCSM – Phytotoxic Risk to Proposed Planting Scheme

RECEPTOR: CONTROLLED WATERS				
Potential Source	Contaminants of Concern	Pathway	Tier 1 Risk Assessment (probability of harm x consequence)	Discussion
Made Ground and shallow soils	Metals, PAH, TPH	Leaching and lateral migration (Surface water)	Risk: Very low (low – minor)	There is a potential for contaminants to be mobilised through the infiltration of rainwater and groundwater flooding, followed by the lateral migration along preferential pathways. However, the nearest surface water receptor is 240m from the site and is considered to be of relatively low sensitivity. In addition, based on the site history, it is considered low-likelihood that there will be significant concentrations of leachable contaminants within the shallow soils.
		Leaching and vertical migration (Groundwater)	Risk: Low (unlikely – medium)	Considered unlikely there will be significant concentrations of leachable contaminants within the shallow soils based on site history. On this basis, although there are potential pathways as granular soils are likely, the risk to groundwater is considered low.

Table 3-K: iCSM – Controlled Waters Risk

3.7.3 The risk to identified receptors from the proposed developments under the planning regime are assessed under a ‘minimal risk’ approach. Whereas, the risk to receptors under the current and continued use of the site is dealt with under the regulatory framework of the Part IIA regime, where Soiltechnics consider if there is a reasonable chance of a ‘significant potential of significant harm’ (SPOSH) occurring. This is not equivalent to a due diligence assessment for the continued use of the site to aid in determining potential contaminated land liabilities or land valuations.

3.7.4 The following table sets out the risk to current users under a ‘SPOSH’ approach:

Receptor	Potential Source	Contaminants of Concern	Pathway	Preliminary Assessment: Is their reasonable evidence of SPOSH?	Discussion
Human Health (Current and adjacent site users)	All potential contaminant sources identified above	Various Contaminants	Inhalation, ingestion and contact with soils, dusts and vapours.	No	Whilst potential contamination sources have been identified, Soiltechnics have not encountered any evidence which indicates there could be a significant possibility of significant harm to human health occurring from contamination on site.
Controlled Waters (Surface water and groundwater)	All potential contaminant sources identified above	Various Contaminants	Mobilisation and migration	No	Whilst potential contamination sources have been identified, Soiltechnics have not encountered any evidence which indicates there could be a significant possibility of significant harm to controlled waters occurring from contamination on site.
Ecosystems	All potential contaminant sources identified above	Various Contaminants	Direct contact and root uptake	No	The site does not fall within a relevant designation for environmentally sensitive land (e.g. SSSI, NRA, Ramsar).
Property	All potential contaminant sources identified above	Various Contaminants	Various pathways	No	Through undertaking the desk study, no evidence of potentially significant harm occurring to property has been identified.

Table 3-L: *iCSM – Current Site Risks (Part IIA)*

3.8 Preliminary Risk Assessment Conclusions and Recommendations

3.8.1 In summary, the PRA has not highlighted any potential contaminant linkages (PCL) which could pose a significant possibility of significant harm under the current land use. In terms of the proposed development scheme, a minimal risk approach applies, and PCLs have been identified which require further consideration.

3.8.2 Overall, each PCL identified as posing a risk of ‘Moderate/Low’ or higher should be considered as part of an intrusive Tier 2 generic quantitative risk assessment (GQRA). The following table summarises the principal receptors at risk which require further investigation to support the proposed development.

Receptor Category	Principal Receptor	PCL Present Requiring Further Investigation?
Human health	Current site users	No
	Proposed site users (soils, dusts, and vapour)	Yes
	Proposed site users (permanent ground gas)	No
	Proposed site users (radon)	No
	Adjacent site users and off-site members of the public (during the long-term use of the site)	No
	Adjacent site users and off-site members of the public (during the construction phase)	No
	Construction operatives	No
Controlled waters	Surface waters	No
	Groundwater	No
Property	Soft landscaping (current)	No
	Soft landscaping (proposed)	No
	Potable infrastructure	No
	Building materials	To be considered by the specifier

Table 3-M: Receptors at Risk Under The Proposed Scheme

4 Recommendations for further works

4.1 The following table summarises the additional works which should be undertaken prior to commencement of any construction works and in support of the planning conditions.

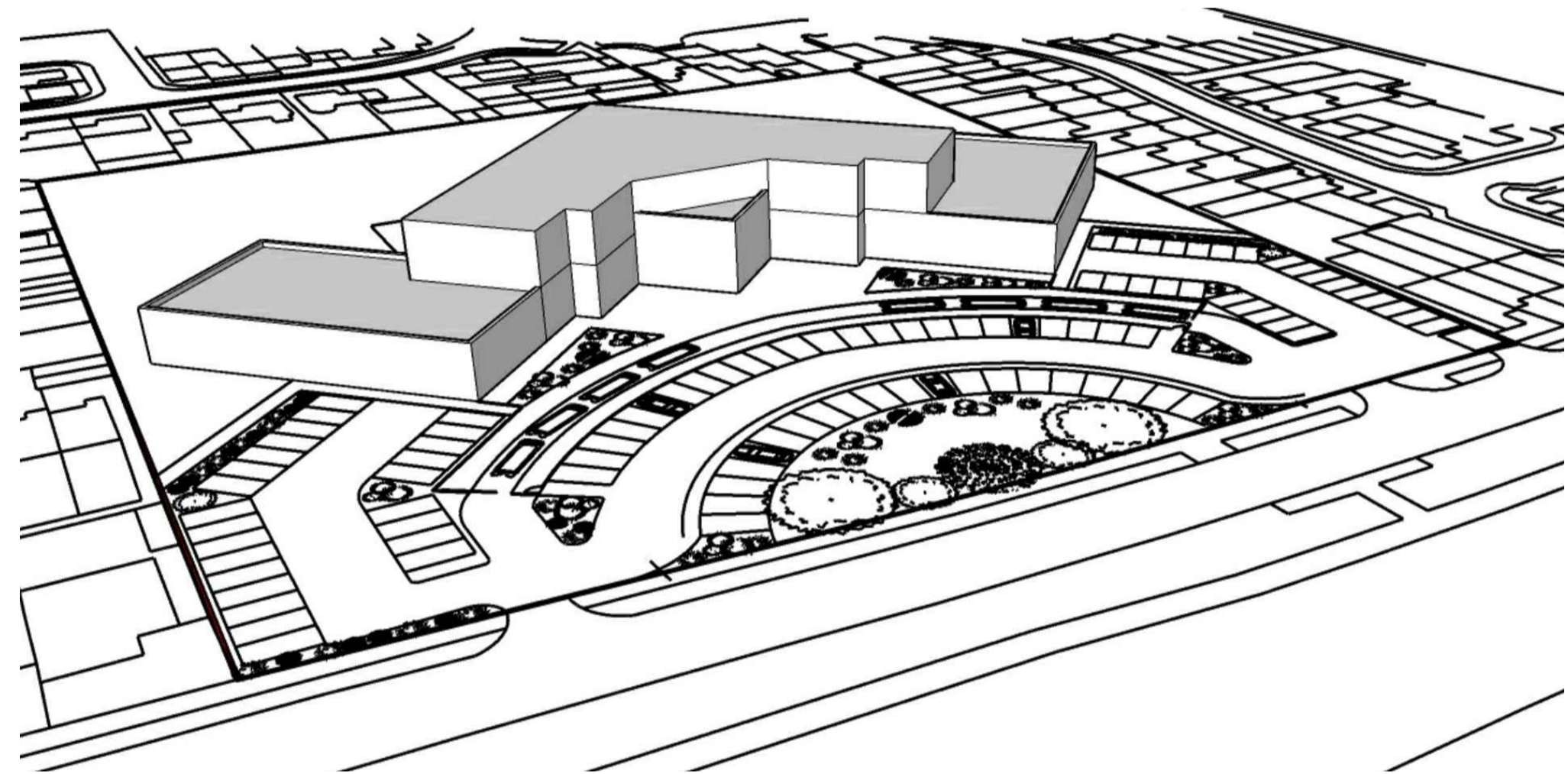
Aspect	Delivered By	Description	Necessity
Exploratory Investigation and GQRA	Soiltechnics	<p>The PRA has identified potential contaminant linkages, albeit nothing of moderate/high risk, but based on the sensitivity of the proposed development, warrant further investigation through intrusive methods, quantify the risk assessment and refine the assessment.</p> <p>An exploratory phase of works is therefore recommended.</p> <p>It is recommended to undertake this in conjunction with a geotechnical investigation to determine ground conditions and aid foundation design.</p>	REQUIRED

Table 4-A: Recommended Further Works (Pre-Commencement)

Appendix A Drawings

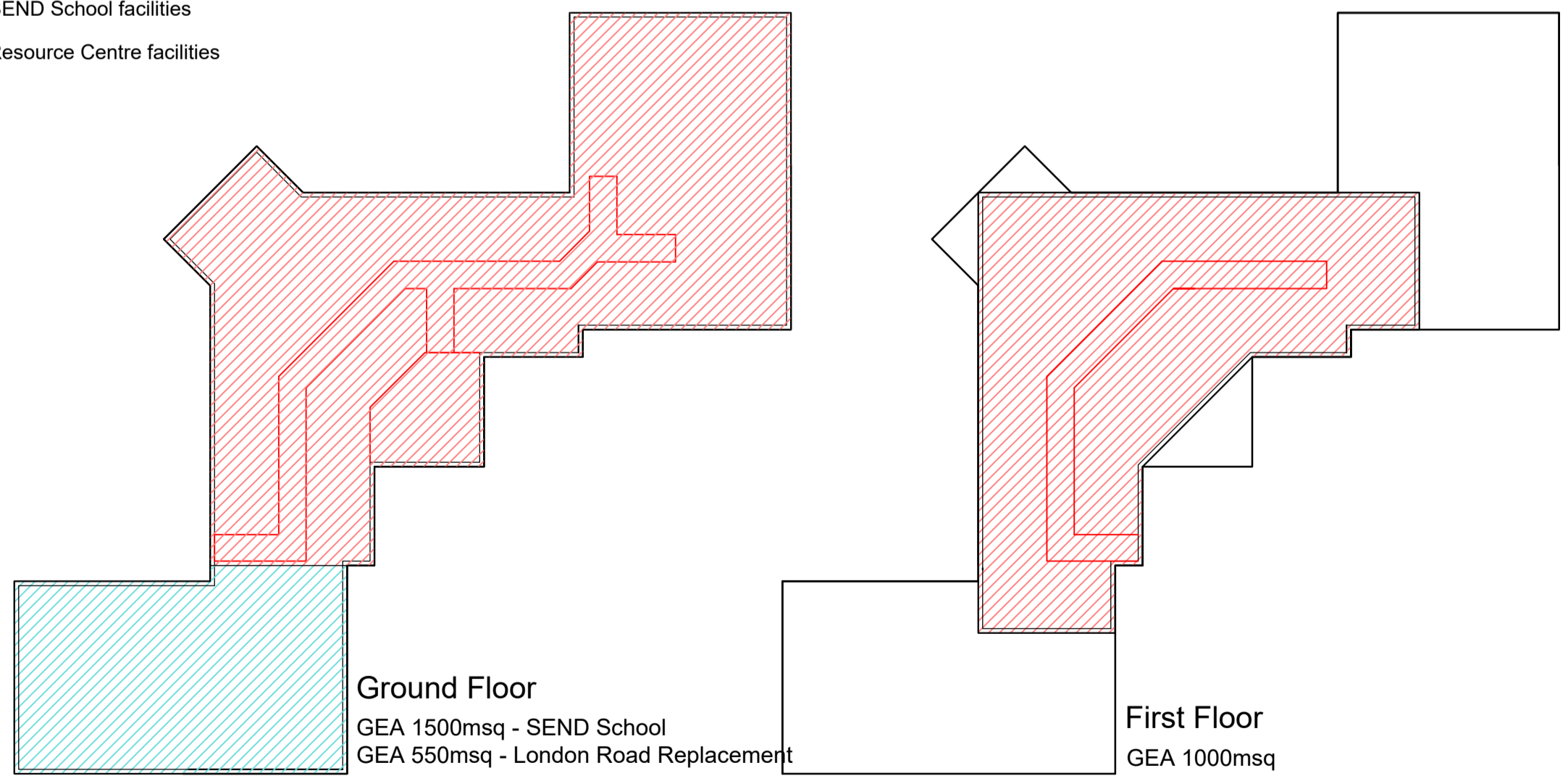


Location Plan
Scale 1:1250@A1



Sketch Mass Model
Scale NTS@A1

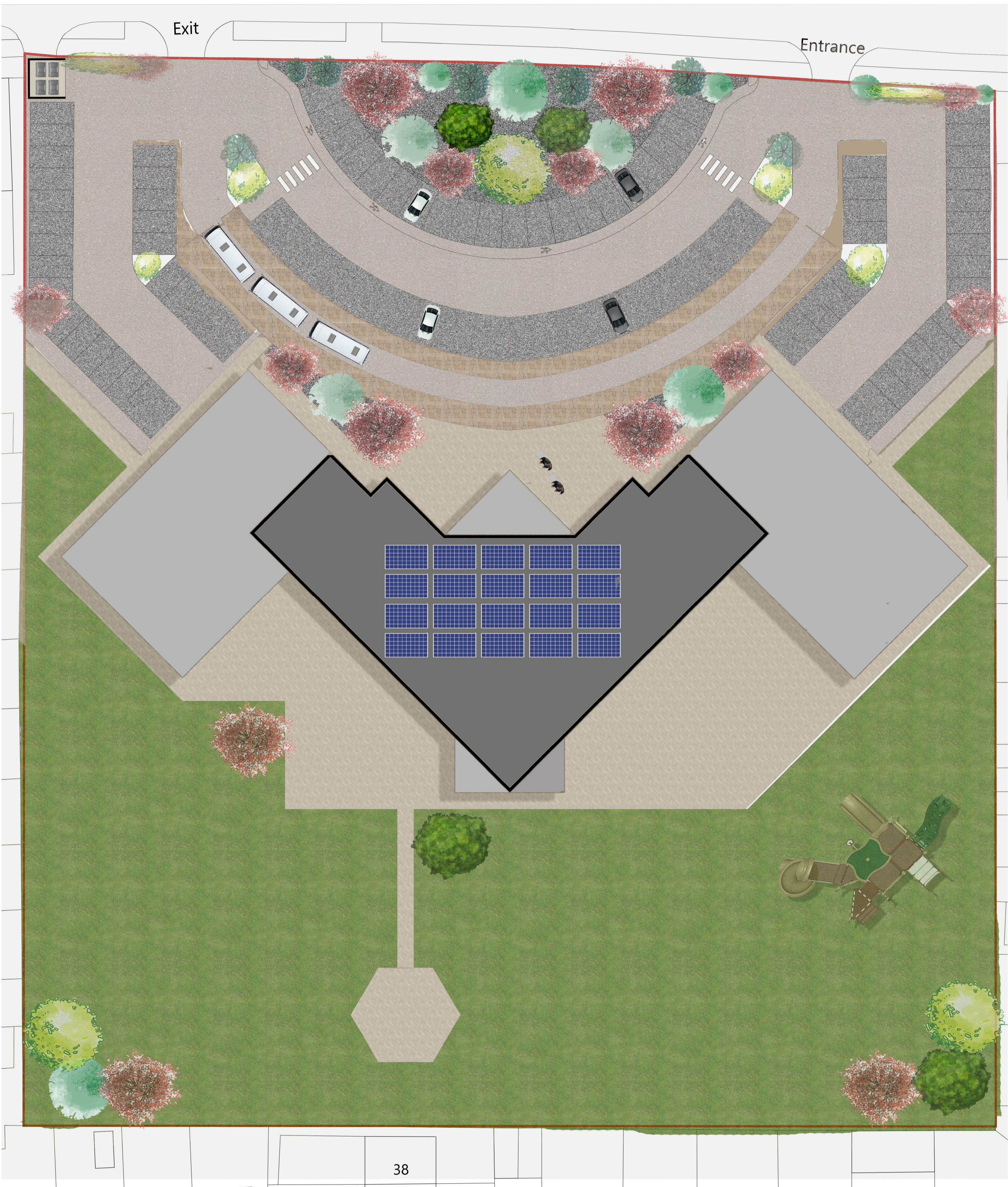
- Key:
- SEND School facilities
 - Resource Centre facilities



Proposed building footprint
Scale 1:500@A1

Ground Floor
GEA 1500msq - SEND School
GEA 550msq - London Road Replacement

First Floor
GEA 1000msq



Proposed site plan
Scale 1:250@A1

DISCLAIMER
This drawing is not to be scaled. Use figured dimensions only. All dimensions to be checked on site. report any discrepancies to Property & Infrastructure, Luton Council. All drawings to be read in conjunction with specifications and relevant consultant information where applicable.
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P1	issued for Pre App	MM	12.08.22
PD.1	issued for comment	MM	19.07.22
REV	DESCRIPTION	BY	DATE

DRAWING STATUS

Luton

INCLUSIVE ECONOMY
PROPERTY & INFRASTRUCTURE
Town Hall, Upper George Street Luton, LU1 2BQ
Tel: 01582 546000 Fax: 01582 546674

DRAWING TITLE
**LOCATION PLAN, MASS MODEL
PROPOSED SITE PLAN AND
BUILDING FOOTPRINT**

PROJECT NAME
**NEW SEND SCHOOL AND
REPLACEMENT OF RESOURCE CENTRE**

ADDRESS
**LAND AT KESTRAL WAY
LUTON**

CLIENT
LBC

SCALE	DRAWN BY	DATE
As Shown @A1	MM	20.07.22
SHEET NO.	CHECKED BY	DATE
1 OF 1		
DWG NO.	STAT	REV
E2225-DD-XX-DR-A-80001	S8	P1

\\calypso\archuser\archdesign\group\drawing\2225 - land at kestral way - send school\5-consultants\5.2 arch\5.2.6 cad\stage 2 - feasibility\2225-ds-xx-00-dr-a-80001.dwg



Key:

Site Boundary

Notes

- 1) Base image provided by Google.
- 2) All drawn features are approximate.

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A	Feb 23	First issue
REV	DATE	COMMENT ON VARIATION

soiltechnics
 environmental • geotechnical • building fabric

PROJECT
 Kestrel Way, Luton

TITLE
 Site Plan

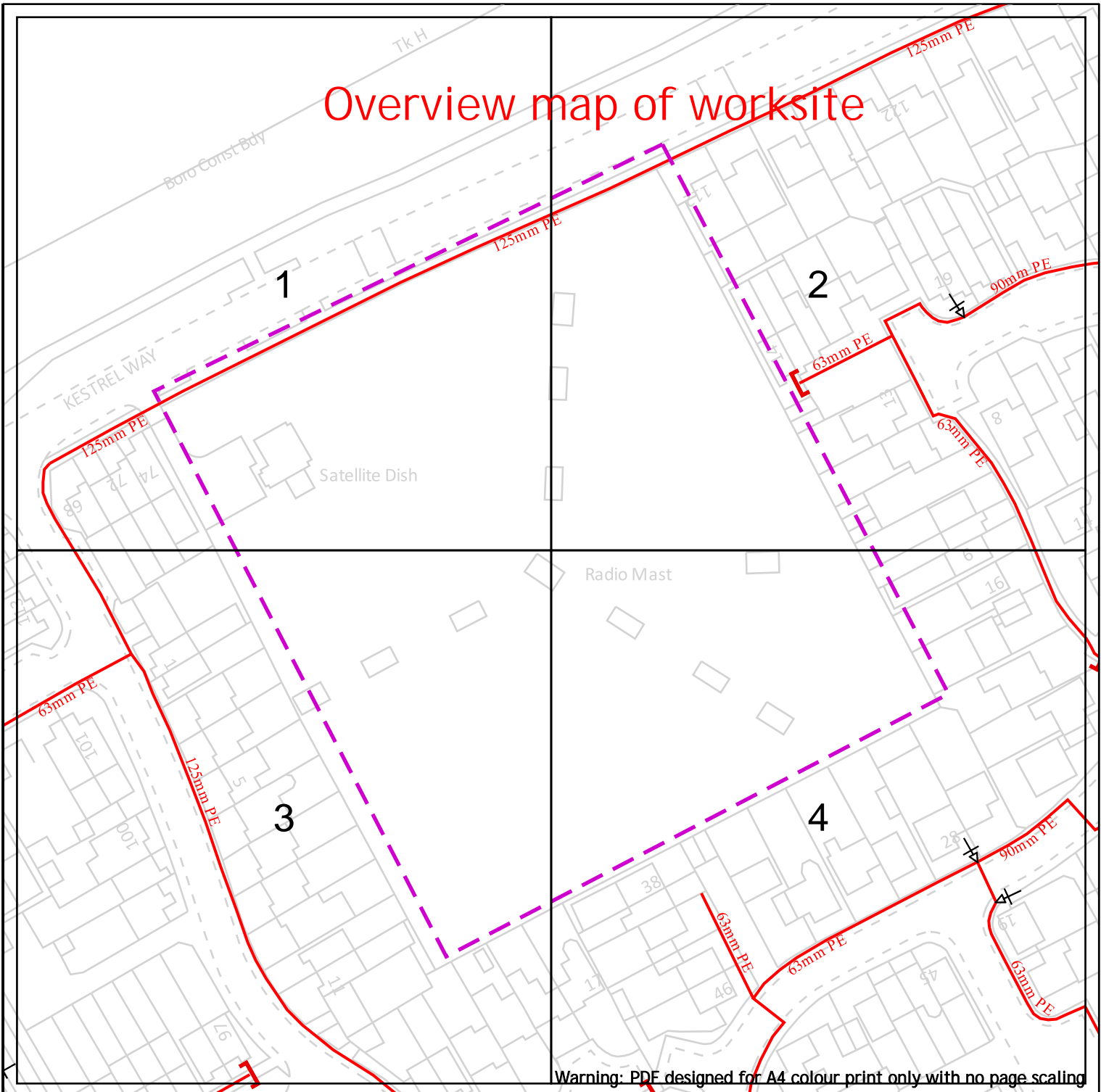
PROJECT No. STU5850	DRAWING 01	REVISION A
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0 30 60 90 120m

0 30 60 90 120m

Appendix B Utility Service Plans

Overview map of worksite



Warning: PDF designed for A4 colour print only with no page scaling



Dig Sites

Area:

Line:

- LP Mains
- MP Mains
- IP Mains
- LHP Mains

- Valve
- Depth of cover
- Syphon

- Diameter Change
- Material Change
- Out of Standard Service

Date Requested: 10/10/2022
 Job Reference: 27202707
 Site Location: 504324 224145
 Requested by: Miss Lauren Wenham
 Your Scheme/Reference: STU5850

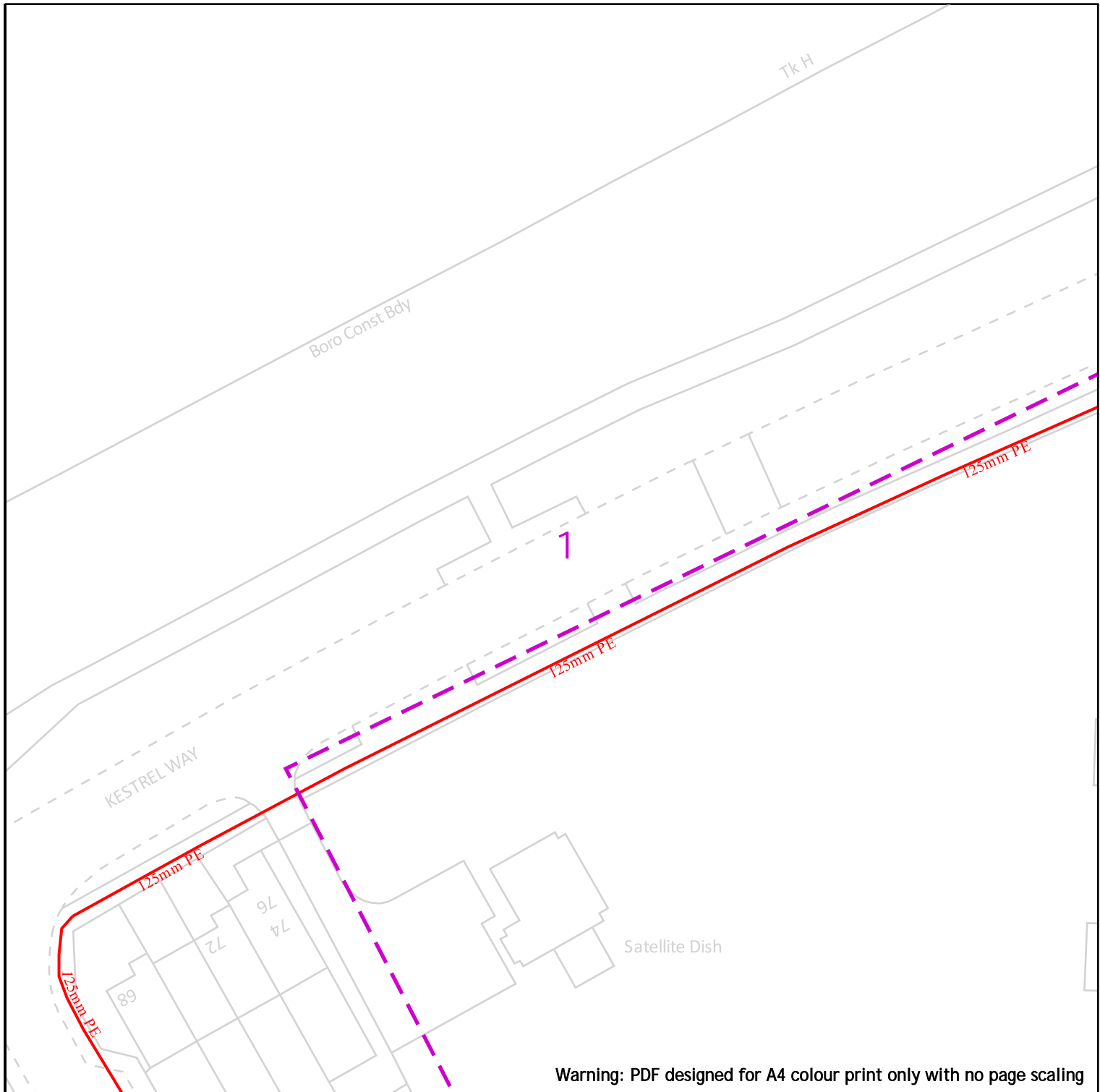
IMPORTANT NOTICES

This plan shows these pipes owned by Cadent Gas Limited in its role as a Licensed Gas Transporter (GT). Gas pipes owned by other GT's or otherwise privately owned may be present in this area. Information with regards to such pipes should be obtained from the relevant owners. The information shown on this plan is given without warranty, the accuracy thereof cannot be guaranteed. Service pipes, valves, syphons, stub connections etc. are not shown but their presence should be anticipated. No liability of any kind whatsoever is accepted by Cadent Gas Limited or their agents, servants or contractors for any errors or omission. Safe digging practices, in accordance with HS(G)47, must be used to verify and establish the actual position of mains, pipes, services and other apparatus on site before any mechanical plant is used. It is your responsibility to ensure that this information is provided to all persons (either direct labour or contractors) working for you on or near gas apparatus. The information included on this plan should not be referred to beyond a period of 28 days from the date of issue.

View extent: 100m, 100m

In case of emergency call - 0800 111 999

Scale: 1:1025 (When plotted at A4)



Warning: PDF designed for A4 colour print only with no page scaling

25m

Dig Sites

Area:

Line:

- LP Mains
- MP Mains
- IP Mains
- LHP Mains

Valve

Depth of cover

Syphon

Diameter Change

Material Change

Out of Standard Service



Date Requested: 10/10/2022
 Job Reference: 27202707
 Site Location: 504324 224145
 Requested by: Miss Lauren Wenham
 Your Scheme/Reference: STU5850

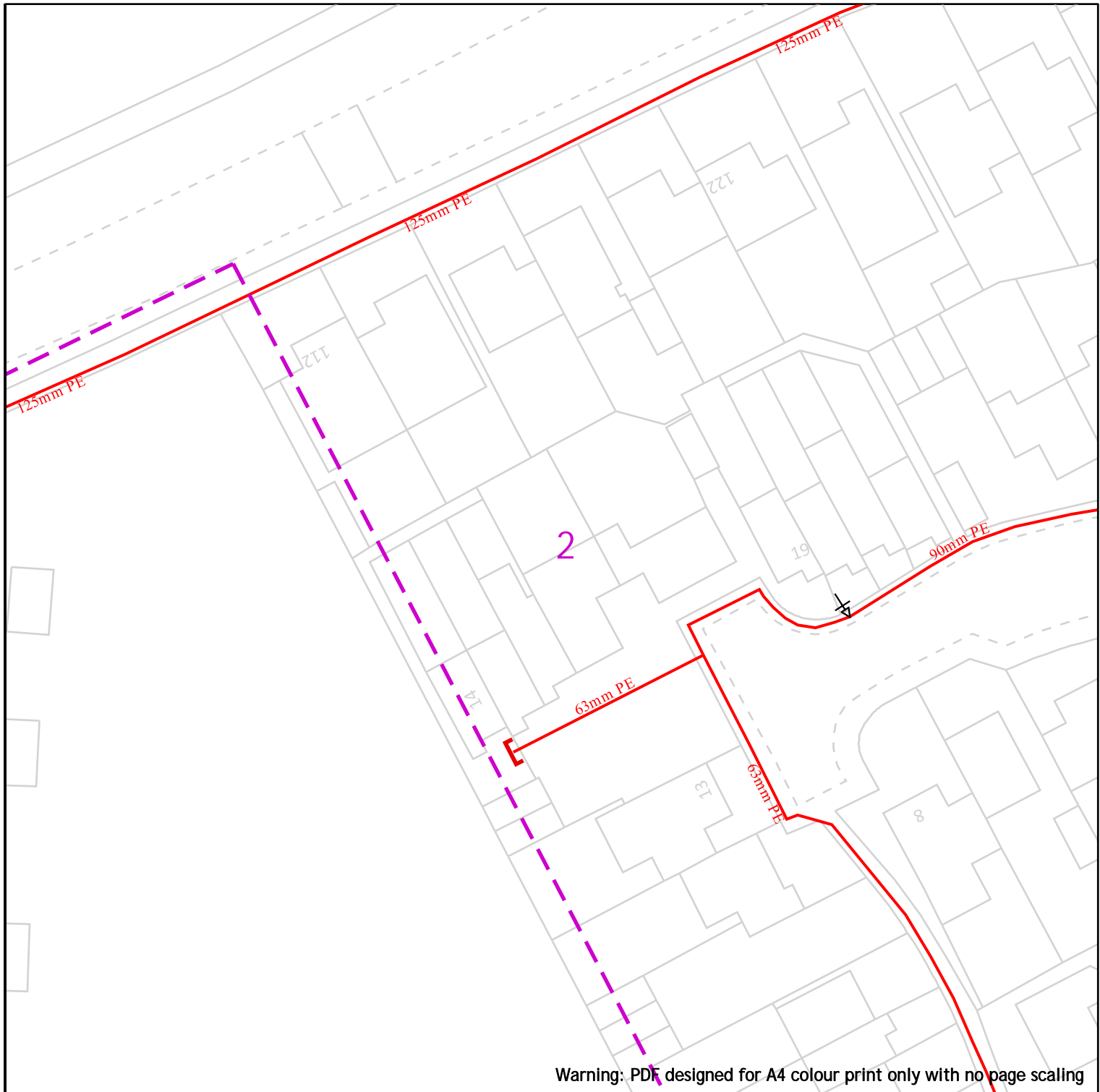
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In case of emergency call - 0800 111 999

View extent: 100m, 100m

Scale: 1:500 (When plotted at A4)



Warning: PDF designed for A4 colour print only with no page scaling

25m

Dig Sites

Area:

Line:



- LP Mains
- MP Mains
- IP Mains
- LHP Mains

- Valve
- Depth of cover
- Syphon

- Diameter Change
- Material Change
- Out of Standard Service

Date Requested: 10/10/2022
 Job Reference: 27202707
 Site Location: 504324 224145
 Requested by: Miss Lauren Wenham
 Your Scheme/Reference: STU5850

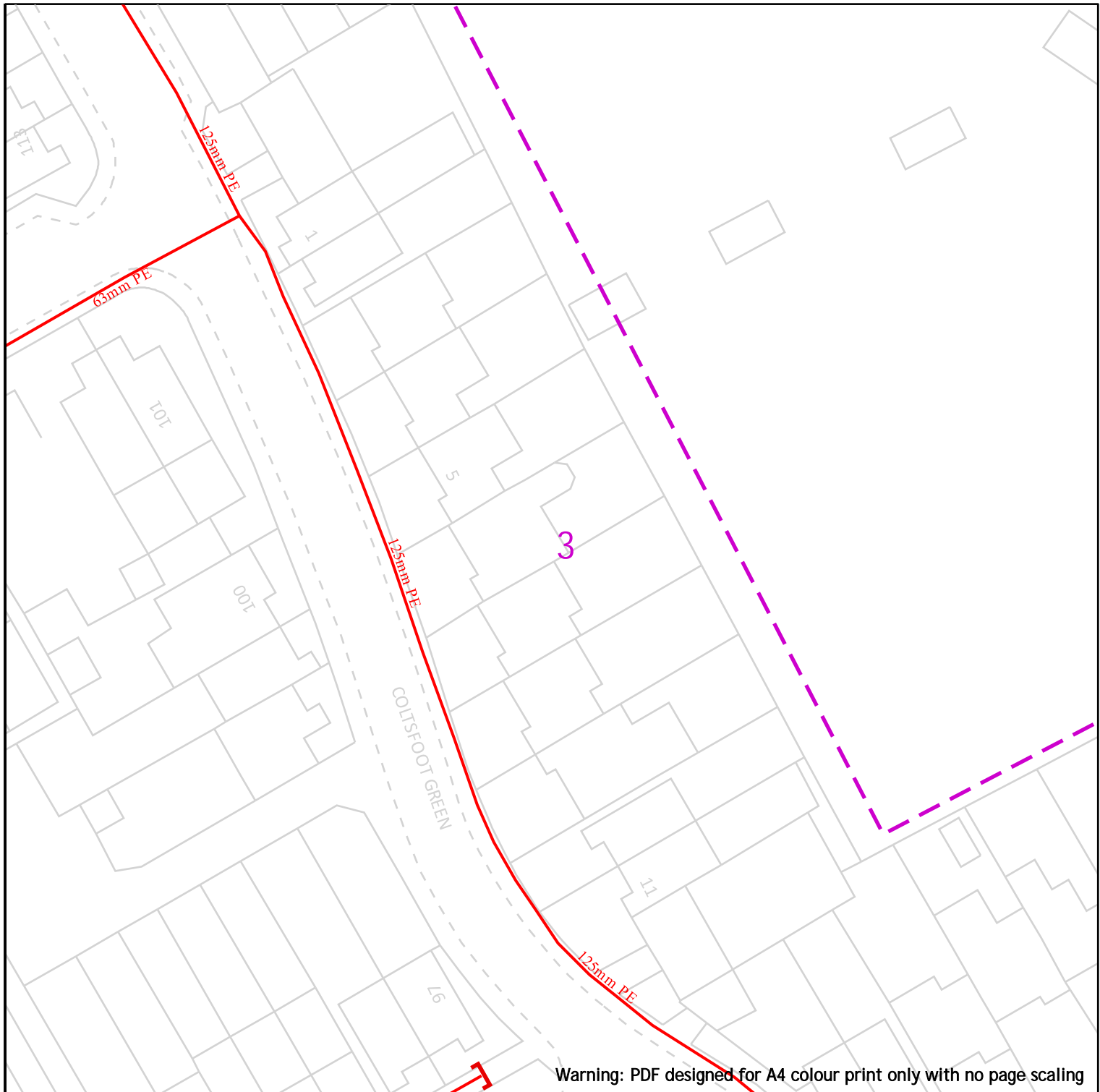
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View extent: 100m, 100m

In case of emergency call - 0800 111 999

Scale: 1:500 (When plotted at A4)



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25m




Dig Sites




Area: 




Line: 



-  LP Mains
-  MP Mains
-  IP Mains
-  LHP Mains

-  Valve
-  Depth of cover
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-  Diameter Change
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