

Baldock Street, Royston

Supplementary Ground Investigation



Report for:

McCarthy & Stone Retirement Lifestyle Ltd

Reference:

P0972/CS-2514

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EXECUTIVE SUMMARY

Site Setting		
Site description and current land use	The site comprises an irregular shaped parcel of land with an approximate area of 2.8Ha. The site is occupied by the former Morrisons building, delivery yard and car park to the south. The delivery yard is enclosed by a high metal fence.	
Environmental setting	Geology	The site is reportedly underlain by Chalk of the Holywell Nodular Chalk formation.
	Hydrology and hydrogeology	The underlying Holywell Nodular Chalk is classified as a “Principal” Aquifer. The western portion of the site lies within a Source Protection Zone 1 whilst the east lies within Zone 2. There are no licensed surface water or groundwater abstractions within 250m of the site, the closest is located 350m southwest and is reported as active and for potable water supply. Groundwater vulnerability is classified by the Environment Agency as high
	Mining	The site is not located within an area of historical coal mining
	Radon	Low risk. Protection measures are not required.
	UXO	Low risk.
Site history	From the earliest maps, dated in 1876, the site comprised a brewery building. From 1970, an electrical substation was identified in the north east of the site and remains to the present. In 1971, the brewery is indicated to now be a “sweets factory” with some of the former buildings retained and extended and others demolished. A historical garage and potential filling station is also indicated to have operated on adjacent land to the northwest of the site and is no longer identified from 1993. In 1985 the site is split by the construction of the existing Princes Mews.	
Areas of potential concern at desk study stage	On-site	Made ground underlying existing building.
Phase 2 Ground Investigation		
Ground conditions	Made ground was encountered within all exploratory holes. The made ground generally comprised concrete overlying a subbase type material, which in turn was underlain by brown gravelly clay with frequent inclusions of chalk, brick, concrete and flint. Chalk was only proven underlying made ground within the northeastern area of the site, as a structureless chalk to a weak medium dense white chalk with fractures.	
Principal Findings and Conclusions		
Human health and plant growth	Chemical analysis of the natural and made ground has not revealed concentrations above the adopted assessment criteria. As a result, the soils present a low risk. However, the made ground is considered physically unsuitable to remain at shallow depth within soft landscaping and a suitable thickness of topsoil and subsoil will need to be provided in accordance with the projects landscaping plan.	
Controlled waters	Based upon the findings of the investigation, the risk to controlled waters is considered to be low.	
Gas protection	Low ground gas concentrations revealed during monitoring – No protection measures required against ground gas.	
Potable supply pipework	Upgraded water supply pipework is unlikely to be required by the local water authority.	
Waste	The made ground and natural soils are classified as non-hazardous waste. Based on the initial chemical data the natural soils are anticipated to be treated as inert. However, further Waste Acceptance Criteria (WAC) testing may be required by the receiving site.	
Engineering design	Drainage	Soakaways are likely to offer a viable method of surface water drainage. A specialist drainage engineer should be consulted to finalise the design.
Considerations and Recommendations for Further Work		

Recommendations	General	• Discussions should be held with local landfill/soil waste treatment facilities to agree material classification/pre-treatment required for any soils to be disposed off-site as a result of proposed construction works. • Ground workers should remain vigilant for visible and olfactory signs of contamination following demolition of on-site buildings. • Ground workers should be vigilant for potential UXO and seek immediate professional advice if anything suspicious is encountered during groundworks. • A piling risk assessment may be required by regulators to assess the risk to Controlled Waters. Further advice should be sought from a geoenvironmental specialist in conjunction with pile design. • A site-specific health and safety plan should be prepared to inform on risks posed from the previous site use and mitigations for ground workers developing the site e.g. requirements for appropriate PPE, hygiene practices, environmental monitoring and requirements for mitigation measures during construction works. • A copy of this report should be provided to the relevant regulatory authorities to confirm that they are in agreement with the report findings.
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CONTENTS

1	INTRODUCTION	1
1.1	CONTRACT DETAILS	1
1.2	PROPOSED DEVELOPMENT	1
1.3	PREVIOUS REPORTS	1
1.4	OBJECTIVES	1
1.5	SCOPE OF WORKS	1
1.6	REPORT LIMITATIONS	2
2	SITE INFORMATION	3
2.1	SITE LOCATION	3
2.2	SITE DESCRIPTION	3
2.3	ENVIRONMENTAL SETTING	3
2.4	SUMMARY OF PREVIOUS GROUND INVESTIGATION REPORTS	4
2.5	UNCERTAINTIES/DATA GAPS	5
3	PRELIMINARY CONCEPTUAL SITE MODEL.....	6
3.1	BACKGROUND	6
3.2	POTENTIAL CONTAMINATION SOURCES	6
3.3	EXPOSURE PATHWAYS	6
3.4	POTENTIAL RECEPTORS	6
3.5	PRELIMINARY QUALITATIVE RISK ASSESSMENT	7
3.6	SUMMARY OF GEOHAZARDS	10
4	SCOPE OF WORK.....	11
4.1	SUMMARY OF FIELDWORK	11
4.2	FOUNDATION INSPECTION PITS	11
4.3	CHEMICAL LABORATORY TESTING	11
4.4	CONSTANT HEAD TESTING	12
5	SUMMARY OF GROUND CONDITIONS	13
5.1	ENCOUNTERED STRATA	13
5.2	EVIDENCE OF CONTAMINATION	13
6	HUMAN HEALTH AND PHYTOTOXIC RISK ASSESSMENT.....	14
6.1	INTRODUCTION	14
6.2	DETERMINATION OF AVERAGING AREAS/ZONES	14
6.3	HUMAN HEALTH SCREENING ASSESSMENT	14
6.4	DISCUSSION	14
6.5	DEVELOPMENT IMPLICATIONS	15
7	GAS/VAPOUR RISK ASSESSMENT	16
7.1	OVERVIEW OF CONCEPTUAL MODEL	16
7.1	DISCUSSION AND RISK EVALUATION	16
8	CONTROLLED WATERS RISK ASSESSMENT	17
8.1	OVERVIEW OF HYDROGEOLOGICAL SETTING	17
8.2	RISK EVALUATION	17
9	POTABLE SUPPLY PIPEWORK RISK ASSESSMENT.....	18
10	REFINED CONCEPTUAL SITE MODEL.....	19
10.1	OVERVIEW	19
10.2	SOURCES	19
10.3	RISK EVALUATION	19
11	PRELIMINARY WASTE ASSESSMENT	21

11.1	WASTE HIERARCHY	21
11.2	ON-SITE RE-USE OF MATERIALS	21
11.3	WASTE DISPOSAL TO LANDFILL	21
11.4	RECOMMENDATIONS	22
12	INFILTRATION.....	24
13	CONSIDERATIONS AND RECOMMENDATIONS	25
13.1	RECOMMENDATIONS FOR FURTHER WORK	25

APPENDICES

- A** **DRAWINGS**
- B** **PHOTOGRAPHS**
- C** **EXPLORATORY LOGS**
- D** **CHEMICAL RESULTS AND SCREENING ASSESSMENT**
- E** **HAZWASTE REPORT**

1 INTRODUCTION

1.1 Contract Details

Following instruction from McCarthy & Stone Retirement Lifestyle Ltd (the 'client'), this report presents the results of a Supplementary Ground Investigation undertaken for a proposed retirement residential development at Baldock Street, Royston (the 'site').

1.2 Proposed Development

Information presented to T&P Regeneration Ltd (T&P) indicates that the proposed redevelopment is intended to comprise the construction of a 3-storey building of retirement apartments across the eastern site area. The redevelopment will also include areas of communal soft landscaping with hard landscaped access and parking. A development layout plan is included in Appendix A.

1.3 Previous Reports

Previous reports pertaining to the site are listed in Table 1.1. Pertinent information is summarised in this report where appropriate. However, reference should be made to these reports directly for further detail.

Table 1.1 Summary of Previous Reports

Date	Title	Reference	Author
March 2023	Site Investigation Report	CCL03631.CR79	Crossfield Consulting
Sept 2023	Borehole infiltration Assessment	230901_CS-1941_TC_JP	T&P

1.4 Objectives

The purpose of the assessment is to establish the environmental conditions beneath the existing structure onsite and provide information on the existing foundation structures. This report considers the requirements and remedial measures considered necessary to mitigate potentially unacceptable risks resulting from current and/or historical land uses. In addition to providing the results of additional testing for the final drainage design.

1.5 Scope of Works

The scope of works to fulfil the purpose of the assessment has included the following:

- Review of previous investigation reports;
- Site walkover;
- Review of site specific environmental database information, where available, and publicly available information;
- Update of the preliminary site conceptual model and environmental risk assessment based on previous information;
- Intrusive ground investigation comprising trial pitting and constant head testing/;
- Collection of soil samples for chemical laboratory analysis;
- Assessment of chemical test results;
- Refinement of conceptual site model and update to environmental risk assessment;
- Assessment of the in-situ testing results and provision of permeability values.

1.6 Report Limitations

The recommendations, interpretations and conclusions of this report are based on the historical and current site conditions reported by database and mapping sources as supplemented with information gathered during on-site visits. No responsibility can be accepted for the accuracy of third party information including reference data contained within site specific database reports. Due to the inherent variability of ground conditions between exploratory hole positions, these conditions can only be interpreted and are accurate only for the date of the investigation works.

2 SITE INFORMATION

2.1 Site Location

Site location information is summarised in Table 2.1. A Site Location Plan is presented within Appendix A.

Table 2.1 Site Location Information

Information	Description
Full postal address	Former Morrisons Baldock Street, Royston, SG8 9BL
National Grid Reference (NGR)	535528, 240666

2.2 Site Description

A summary of pertinent site information is provided in Table 2.2 with reference to information in previous reports.

Table 2.2 Summary of Site Information

Information	Description
Site access	The site is accessed via Princes Mews, a road which bisects the site between the north and south boundaries.
Site description including current site use and dimensions/area (ha)	The site comprises of an irregular shaped parcel of land with an approximate area of 0.28Ha. The site is occupied by the former Morrisons building, delivery yard and car park to the south. The delivery yard is enclosed by a palisade metal fence.
Site elevation and topography	The site elevation ranges between 67 and 65 metres Above Ordnance Datum (mAOD). The site is generally level with a gentle slope (1-2°) down towards the south-western corner.
Ground cover (%)	The site ground cover comprises: • Hard landscaping (tarmacadam/concrete) - 60% • Buildings - 40%
Site boundaries	North Baldock Street
	South Brick wall approximately 5m high
	East Brick wall approximately 5m high
	West Princes Mews
Surrounding land uses	The site is located within a moderate density residential area, surrounded by residential development.

2.3 Environmental Setting

Pertinent environmental information within the previous Desk Study report has been reviewed and is summarised in Table 2.3.

Table 2.3 Summary of Site Setting from Desk Study Information

Information	Description
Site history	From the earliest maps, dated in 1876, the site comprised a brewery building. Commercial and residential properties are seen bordering of the site. From 1970, an electrical substation was identified, which remains up to the present. In 1971, the brewery is indicated to now be a "sweets factory" with some of the former buildings retained and extended and others demolished. A historical garage and potential filling

Information	Description
	station is also indicated to have operated on adjacent land to the northwest of the site and is no longer identified from 1993. In 1985 the site is split by the construction of the existing Princes Mews.
Geology	The site is reportedly underlain by Chalk of the Holywell Nodular Chalk formation.
Mining and geotechnical hazards	The site is not located within an area of historical coal mining.
Hydrology and hydrogeology	The underlying Holywell nodular chalk is classified as a "Principal" Aquifer. The western area of the site lies within a Source Protection Zone (SPZ) 1 whilst the east lies within a SPZ 2. There are 2No potable water supply boreholes located within approximately 500m of the site. The closest is located to the south west at a distance of 350m, the other abstraction is located to the north at a distance of 501m. Groundwater vulnerability is classified by the Environment Agency as high. There are no surface water features identified within 250m of the site.
Environmental designations	There are no sensitive environmental designations on or near the site.
Radon	No radon protection measures are required.
Flood risk	The site lies within a Flood Risk Zone 1 where the risk of flooding is very low.
UXO	The site is in a low UXO risk area.
Areas of Potential Concern	On-site made ground

2.4 Summary of Previous Ground Investigation Reports

2.4.1 Crossfield Consulting, March 2023

An intrusive ground investigation was undertaken by Crossfield Consulting on behalf of McCarthy & Stone Retirement Lifestyle Limited in March 2023. The investigation comprised 5No dynamic windowless boreholes and 2No trial pits. The ground conditions reportedly comprised of shallow made ground over the Holywell Nodular Chalk formation. The made ground was described as predominantly friable chalk with occasional brick fragments which was broadly found to depths between 0.3 to 1.3mbgl, however was found to extend to >2.0mbgl in one location (DS1) in the north of the site. The Holywell Nodular Chalk formation comprised weak, low to medium density of white chalk to the maximum recorded depth of 2.0mbgl (DS01).

Groundwater was not encountered in any of the exploratory holes at the time of the investigation. Soakaway testing, completed within 2No locations in the south of the site returned an infiltration rate of 1×10^{-5} m/s in one location and minimal rates in the other. Given the recorded low to medium density chalk it was recommended that proposed soakaway chambers are located a minimum of 10.0m from adjoining properties or proposed structures.

Chemical testing undertaken at the site returned no exceedances of the adopted criteria and as such the risks to human health and controlled waters are considered to be acceptably low. However, given that the site is entirely covered by hardstanding it was considered prudent to allow for a 300 or 450mm topsoil/capping layer in proposed areas of soft standing.

2.4.2 T&P, September 2023

A deep borehole infiltration assessment was undertaken by T&P in September 2023 to assess the infiltration characteristics of the underlying chalk. The investigation comprised drilling of 1No rotary cored borehole (RC01) to a depth of 15.50mbgl with falling head testing undertaken at 7.00m, 10.00m and 15.50m depth.

Ground conditions were found to comprise of 0.35m of concrete hardstanding directly underlain by chalk. Structureless Chalk (Grade Dc) was encountered to approximately 2.50mbgl. From

2.50mbgl the chalk comprised of very weak to weak medium density white chalk which was proven to 15.50mbgl.

The results of the test results and site observations it was considered that given sufficient capacity borehole soakaways are likely to offer a viable solution for surface water discharge.

2.5 Uncertainties/Data Gaps

Following a review of the reports outlined in Section 2.4, the following uncertainties/considerations have been identified, which this report is intended to address.

- Due to access constraints the materials directly underlying the existing structure have not been investigated.
- Additional testing is required for the completion of final design of the drainage system for the site.

3 PRELIMINARY CONCEPTUAL SITE MODEL

3.1 Background

A risk assessment has been carried out under the governing terms set by Part 2A of the Environmental Protection Act 1990, statutory guidance entitled 'Contaminated Land Statutory Guidance (April 2012)' and in accordance with UK's risk assessment framework¹.

The conceptual site model for the site has been developed with consideration of national guidance² which provides a framework for risk estimation and evaluation of plausible source-pathway-receptor linkages identified in the context of a proposed residential development.

3.2 Potential Contamination Sources

Potential on- and off-site sources of contamination have been identified in consideration of the review of previous reports and with reference to the previous desk study as summarised in section 2, in the context of on- and off-site current/historical activities. As such the potential source requiring further investigation is the made ground underlying the existing structure onsite, previously not investigated.

Based upon the identified sources, the following potential contaminants have been identified:

- Metals.
- Hydrocarbons.
- Asbestos. However, it has been assumed that an asbestos survey will be carried out prior to demolition works, with any identified asbestos containing materials appropriately removed. As such, potential asbestos within the existing building has been discounted from further consideration and this report considers the potential presence of asbestos within underlying made ground only.

3.3 Exposure Pathways

With consideration of the site setting and proposed development, potentially active exposure pathways are included in Table 3.1. The following pathways have been discounted from further consideration:

- Soil erosion/overland flow to surface water – No recorded surface water features within 250m of the site.

3.4 Potential Receptors

Identified receptors with regard to the current site setting and future proposed development are included in Table 3.1. The following receptors have been discounted from further consideration:

- Surface water – No recorded surface water features identified within 250m of the site. As such, migratory pathways are considered unlikely to be significantly active.
- Construction workers – it is considered that risks during the construction works will be managed appropriately to mitigate short term risks through measures such as use of Personal Protective Equipment (PPE), hygiene practices and other on-site controls as outlined in their Construction Phase Health and Safety Plan and method statements/risk assessments.
- Current site users – in the context of the proposed development for the site, future residents represent a more sensitive receptor than current site users, and as such, consideration of

¹ Land contamination risk management - <https://www.gov.uk/government/publications/land-contamination-risk-management-lcrm>.

² Annex 4 - Guidance for the Safe Development of Housing on land Affected by Contamination R&D66. NHBC. 2008.

potential risks to future residents will be suitably protective of current site users. As such, current site users will not be considered separately within have been identified.

3.5 Preliminary Qualitative Risk Assessment

A conceptual site model was developed previously by Crossfield consulting. Table 3.1 summarises those source-pathway-receptor relationships or “contaminant linkages” that may potentially be active in consideration of both the site’s current use and proposed future use. Those contaminant linkages previously assessed as low or very low risk at this stage do not require further consideration and have correspondingly been excluded from Table 3.1. Reference should be made to the previous report for further detail.

Table 3.1 Summary of Source-Pathway-Receptor Relationships

APC N°	Source	Pathway (s)	Receptor	Consequence	Probability	Risk*	Comment
1	On-site Made ground underlying existing building.	Oral ingestion	Future residents and maintenance workers	Medium	Low likelihood	Moderate/Low	-
		Vegetable uptake	Future residents	Medium	Low likelihood	Moderate/Low	-
		Dermal contact	Future residents and maintenance workers	Medium	Low likelihood	Moderate/Low	-
		Dust migration/inhalation	Future residents, maintenance workers and off- site residents/workers	Medium	Low likelihood	Moderate/Low	-
		Gas / vapour inhalation/explosion	Future residents and maintenance workers	Medium	Unlikely	Low	Based upon the previous investigations monitoring results the risk is considered to be low. However, due to the lack of investigation beneath the building this will be assessed following supplementary investigation.
		Permeation into drinking water supplies	Future residents	Medium	Low likelihood	Moderate/Low	-
		Leaching/dissolution with vertical migration to groundwater	Groundwater	Medium	Low likelihood	Moderate/Low	-
		Migration via existing service trenches	Groundwater	Medium	Low likelihood	Moderate/Low	-

APC N°	Source	Pathway (s)	Receptor	Consequence	Probability	Risk*	Comment
		Leaching/dissolution with vertical migration to groundwater, lateral migration in groundwater and subsequent volatilisation	Future residents, maintenance workers and off-site residents/workers	Medium	Low likelihood	Moderate/Low	-
		Uptake via root system	On-site flora	Medium	Low likelihood	Moderate/Low	-

**Where multiple receptors exist the risk classification is based on most sensitive receptor for conservatism.*

3.6 Summary of Geohazards

Based on information presented within section 2.3 and the anticipated geology beneath the site, the following geohazards have been identified which require further consideration:

- Possible made ground of unknown composition which is unlikely to be a suitable founding stratum for new buildings/structures.

4 SCOPE OF WORK

4.1 Summary of Fieldwork

An intrusive ground investigation was undertaken between 12th and 14th November 2024 and is summarised in Table 4.1.

Table 4.1 Summary of Exploratory Locations

Hole ID	Exploratory Location Type	Investigation Method	Depth (mbgl)		Comment
			Min	Max	
TP101 – TP106	Trial Pit	1.5 Tonne mini digger	2.00	3.50	-
HD101 – HD105	Inspection Pit	Hand tools	0.50	1.20	-

All holes were logged in accordance with BS5930³ and CIRIA C574⁴.

An exploratory hole location plan is presented within Appendix A and the exploratory hole logs are presented in Appendix C.

A significant thickness of concrete was encountered within the majority of internal exploratory locations which limited progress within these locations and caused the works to extend into a second day. As such one of the proposed locations was not completed. Due to access constraints and the presence of underground services the external locations were predominantly progressed via hand digging tools, and marginally relocated.

4.2 Foundation Inspection Pits

The trial pits were positioned by the client to provide information on the existing structure footings and walls. The encountered footings within each pit have been provided within Appendix A.

4.3 Chemical Laboratory Testing

The soil testing deemed necessary to adequately characterise the site from a contamination perspective in the context of the conceptual site model and proposed development is summarised in Table 4.2.

Samples from the investigation were forwarded to a UKAS and MCERTS accredited laboratory. Complete chemical results are provided in Appendix D.

Table 4.2 Summary of Chemical Testing

Test type	Notes	Quantity
Arsenic, Boron, Beryllium, Cadmium, Chromium, Lead, Mercury, Nickel, Copper, Zinc, Selenium, Vanadium, Phenols and US EPA 16 Polycyclic Aromatic Hydrocarbons.	-	4 soils
Asbestos screening/ID	-	2 soils

³ BS 5930:2015+A1:2020. Code of Practice for Ground Investigations. 2020.

⁴ CIRIA C574. Engineering in Chalk. 2002.

4.4 Constant Head Testing

In order to provide the drainage engineers with the information required to complete their designs, constant head testing was completed within the borehole installed by T&P in September 2023. Testing was completed at three defined levels (1.0mbgl, 2.0mbgl and 3.5mbgl).

5 SUMMARY OF GROUND CONDITIONS

5.1 Encountered Strata

The geological sequence encountered during the ground investigation is summarised in Table 5.1 and described further in the following sub-sections. Ground conditions were found to broadly correspond with published geological information and previous investigations. Exploratory logs are included in Appendix C.

Table 5.1 Summary of Ground Conditions

Stratum	Top depth range (mbgl)	Base depth range (mbgl)	Exploratory holes	Area of site	General description/ comments
Made ground	0.00	0.25	All Trial Pits	General	Concrete
	0.25	0.30	TP102, HD103, HD104	General	Yellow brown sand.
	0.30	>1.20	All exploratory locations	General	Brown and light grey slightly clayey, slightly sandy gravel.
Holywell Nodular Chalk formation	0.8	>1.00	TP103	General	Weak, medium density, white CHALK.
	0.3	>1.10	HD101 & HD104	General	Structureless CHALK composed of slightly sandy silty gravel.

5.1.1 Made ground

Made ground was encountered within all exploratory holes during the investigation. The made ground generally comprises of concrete overlying a subbase type material, which in turn was underlain by brown gravelly clay with frequent inclusions of chalk, brick, concrete and flint.

5.1.2 Bedrock Geology – Holywell Nodular Chalk Formation

Chalk was only proven underlying made ground within the northeastern area of the site, as a structureless chalk to a weak medium dense white unstained chalk with fractures. The majority of the exploratory holes were terminated due to effective refusal on competent bedrock which prevented further excavation.

5.2 Evidence of Contamination

With the exception of made ground encountered across the site, no significant visible or olfactory evidence of contamination was noted during the ground investigation.

6 HUMAN HEALTH AND PHYTOTOXIC RISK ASSESSMENT

6.1 Introduction

A human health generic quantitative risk assessment (GQRA) has been undertaken in accordance with the UK regulatory framework and current guidance on assessment of risks presented by land affected by contamination⁵.

When considering phytotoxic risks, contaminants selected are those listed within Annex 3 of 'Guidance for the Safe Development of Housing on Land Affected by Contamination. R&D66: 2008 Volume 2' as being 'phytotoxic'.

Where available, assessment values have been chosen based on the criteria within (in priority order) SGV Documents, ICRCL 59/83 phytotoxic threshold levels, Dutch RIVM Serious Risk Concentrations (SRC) for ecological receptors (amended for a UK soil of 10% clay and 2% soil organic matter) and US EPA Soil Screening Levels for plants.

6.2 Determination of Averaging Areas/Zones

For the purposes of investigation and assessment a site can be divided into zones based on historical uses or proposed end use. These zones can be further divided into averaging areas, which can be used to assess different soil types or different potential exposure pathways etc. for the purposes of risk evaluation. Each averaging area can be considered independently for human health exposure assessment.

Based upon the proposed end use of the site and the findings of the ground investigation it is proposed that a single zone with two averaging areas/single zone with one averaging area/two zones with two averaging areas is appropriate for the site as follows:

- Site wide – topsoil/natural soils.
- Site wide – made ground.

6.3 Human Health Screening Assessment

For each zone/averaging area, the analytical data has been evaluated directly against adopted screening levels⁶ for a 'residential with consumption of home-grown produce' end use. A copy of the screening assessment is included in Appendix D.

6.4 Discussion

A review of soil data has not identified any contaminants soil concentrations to be elevated against adopted human health screening levels for a 'residential with homegrown produce' end use.

In consideration of the outcome of the generic quantitative risk assessment, it is concluded that there are no unacceptable risks presented to human health associated with on-site soils via direct contact/ingestion/inhalation pathways.

⁵ Environmental Protection Act 1990.

Contaminated Land Statutory Guidance (April 2012).

Land contamination risk management - <https://www.gov.uk/government/publications/land-contamination-risk-management-lcrm>.

⁶ The LQM/CIEH S4ULs for Human Health Risk Assessment. 2015.

SP1010 – Development of Category 4 Screening Levels for Assessment of Land Affected by Contamination. CL:AIRE. 2013.

6.5 Development Implications

In accordance with the previous ground investigation, whilst shallow soils have not been found to be chemically unsuitable for use in areas of soft standing, the made ground and concrete will be physically unsuitable to remain at shallow depth. As such an allowance should be made for the provision of imported topsoil for use within the private gardens and other areas of soft landscaping.

7 GAS/VAPOUR RISK ASSESSMENT

7.1 Overview of Conceptual Model

Through the development of the preliminary conceptual model, the following potential sources of ground gas/vapour have been identified:

- Made ground present beneath the existing building.

7.1 Discussion and Risk Evaluation

The ground investigation encountered made ground within every location. The made ground was typically found to comprise concrete underlain by gravel subbase and reworked soils. No significant putrescible material was recorded.

Based upon the site observations and lack of significant made ground that may act as a potential source of ground gas, the environmental monitoring completed previously, the risk is considered to be low. As such, ground gas protection measures are not considered necessary within new buildings.

8 CONTROLLED WATERS RISK ASSESSMENT

8.1 Overview of Hydrogeological Setting

The underlying Holywell Nodular Chalk formation is designated as a “Principal” Aquifer. The site is recorded to lie within an Source Protection Zone 1 and the closest licensed abstraction point is located 350m away from the site.

There are no surface water features within 250m of the site.

8.2 Risk Evaluation

The ground investigation identified site wide made ground typically comprising a slightly sandy gravelly clay, with gravel of concrete, brick, mortar, tile and rare carbonaceous fragments. No significant visual or olfactory evidence of gross contamination was observed. Furthermore, although leachate testing was not undertaken as part of the assessment, the encountered soil concentrations of mobile contaminants (Polycyclic Aromatic Hydrocarbons) are considered to be below levels of concern.

As such, while a contaminant migration pathway may be present between the made ground and underlying saturated chalk natural soils, the risk to controlled waters is considered to be acceptably low owing to the low soil concentrations encountered within the made ground. In addition, it is considered likely that much of the proposed development will comprise buildings/hardstanding which will further decrease the likelihood of leaching. No further work is considered to be required, although a watching brief for unexpected contamination should be maintained during demolition/construction.

9 POTABLE SUPPLY PIPEWORK RISK ASSESSMENT

Water industry guidance⁷ states that only organic contaminants pose a potential risk to plastic pipe materials. The UKWIR report provides threshold values for polyethylene (PE) and polyvinyl chloride (PVC) pipes for the organic contaminants of concern. The results are summarised in Table 9.1 with exceedances highlighted in **bold**.

Table 9.1 Summary of Soil Screening Against UKWIR Criteria

Determinant	Pipe material Generic Assessment Criteria (mg/kg)		Min (mg/kg)	Max (mg/kg)
	PE	PVC		
Extended VOC suite ²	0.5	0.125	<0.1	0.47
BTEX + MTBE ¹	0.1	0.03	-	-
SVOCs TIC by purge and trap or head space and GC-MS with TIC (aliphatic and aromatic C ₅ -C ₁₀) ¹	2	1.4	-	-
Phenols	2	0.4	<1.0	<1.0
Cresols and chlorinated phenols ^{1 3}	2	0.04	-	-
Mineral oil C ₁₁ -C ₂₀ ¹	10	Suitable	-	-
Mineral oil C ₂₁ – C ₄₀ ¹	500	Suitable	-	-
Corrosive (conductivity, redox and pH) ¹	Suitable	Suitable	-	-

1. Determinant not tested.

2. Based upon recorded BaP concentrations.

3. Total Monohydric Phenols – Limit of Detection (LOD) is 5.0mg/kg. All speciated phenols are below LOD of 1.0mg/kg.

Given no visual or olfactory evidence of hydrocarbon or solvent based contamination was encountered on-site during the ground investigation, most of the determinants of concern in relation to water supply pipework were not tested.

However, an elevated soil concentration of benzo(a)pyrene (BaP) was recorded within the made ground in TP101 (0.4-0.5mbgl) at 0.47mg/kg. Given this result falls below the PE screening level, that this is an isolated result, and no on-site evidence of significant contamination has been noted, this result is not considered to present a significant risk. As a result, it is considered PE pipework will be suitable for potable supply on site and upgraded water supply pipework is unlikely to be required by the local water authority.

⁷ Guidance for the selection of water supply pipes to be used in brownfield sites (UK Water Industry Research Limited (UKWIR) - Ref: 10/WM/03/21) - 2010

10 REFINED CONCEPTUAL SITE MODEL

10.1 Overview

Following completion of the ground investigation, collection and interrogation of site data with consideration of the outcome of generic quantitative risk assessment discussed in preceding sections of this report, the conceptual site model has been revised.

10.2 Sources

Further to completion of ground investigation, the sources identified within the preliminary conceptual model to require further consideration include:

- On-site made ground beneath existing structures.

10.3 Risk Evaluation

Those SPRs identified within section 3 as presenting a moderate/low or moderate risk have been further interrogated in accordance with UK national guidance and regulatory framework⁸ following completion of ground investigation and risk assessment. Table 10.1 presents the revised SPRs with associated classification of risk as appropriate following re-evaluation of risks.

⁸ Annex 4 - Guidance for the Safe Development of Housing on land Affected by Contamination R&D66: 2008.
Land contamination risk management - <https://www.gov.uk/government/publications/land-contamination-risk-management-lcrm>.

Table 10.1 Revised Source-Pathway-Receptor Relationships

Area of potential concern N°	Source	Pathway (s)	Receptor	Consequence	Probability	Risk classification*	Comment
1	On-site Made ground associated with existing building	Oral ingestion	Future residents and maintenance workers	Medium	Unlikely	Low	No elevated soil concentrations identified when compared with adopted screening levels.
		Vegetable uptake	Future residents	Medium	Unlikely	Low	
		Dermal contact	Future residents and maintenance workers	Medium	Unlikely	Low	
		Dust migration/inhalation	Future residents, maintenance workers and off-site residents/workers	Medium	Unlikely	Low	
		Gas / vapour inhalation/explosion	Future residents and maintenance workers	Medium	Unlikely	Low	The revealed made ground is considered unlikely to act as a source of ground gas.
		Permeation into drinking water supplies	Future residents	Medium	Unlikely	Low	Upgraded pipework unlikely to be required.
		Leaching/dissolution with vertical migration to groundwater	Groundwater	Medium	Unlikely	Low	No elevated soil concentrations identified when compared with adopted screening levels.
		Migration via existing service trenches	Groundwater /surface water	Medium	Unlikely	Low	
		Leaching/dissolution with vertical migration to groundwater, lateral migration in groundwater and subsequent volatilisation	Future residents, maintenance workers and off-site residents/workers	Medium	Unlikely	Low	
		Uptake via root system	On-site flora	Medium	Unlikely	Low	

*Where multiple receptors exist the risk classification is based on most sensitive receptor for conservatism.

11 PRELIMINARY WASTE ASSESSMENT

11.1 Waste Hierarchy

In line with the requirements of the Waste Framework Directive, the principles of the “waste hierarchy” should be applied to management options for on-site generated wastes, giving priority to the prevention of waste in the first instance, before considering re-use, recycling, recovery and lastly disposal. Principal considerations are set out in subsequent sections, although it is recommended that advice of a geo-environmental/waste specialist is sought at an early stage in the development process to ensure opportunities for minimisation of waste volumes are maximised.

11.2 On-site Re-Use of Materials

It may be possible to demonstrate through application of the CL:AIRE Definition of Waste Code of Practice (DoW CoP) that site won excavated soils are not classified as waste, and in doing so, permit this material to be re-used as part of proposed site redevelopment works. The DoW CoP may also apply to source segregated material arising from demolition activities. In determining the suitability of this approach, early consideration should be given to being able to demonstrate a specific planning requirement for the re-use of the excavated material. It is noted this approach cannot be applied retrospectively.

It should be noted that on-site re-use of “uncontaminated soil or other naturally occurring material” excavated as part of construction works for the purposes of construction is excluded from waste regulation.

Alternative mechanisms for on-site re-use of soils or aggregate may also be appropriate, on a site specific basis, depending on the volume/nature of the materials, and their intended use, such as:

- Waste exemptions under the Environmental Permitting (England and Wales) Regulations 2010, which are operations which are exempt from requiring permits, providing certain conditions are met. This typically applies to small volumes of non-hazardous soils although may also apply to other material types.
- Environmental permit under the Environmental Permitting (England and Wales) Regulations 2010 (standard or bespoke depending on the material and the activity).
- WRAP Aggregates Quality protocol⁹ for the production and use of aggregates from inert waste, providing certain criteria are met.

11.3 Waste Disposal to Landfill

When waste is intended for disposal at a suitably licensed landfill site it is necessary for the waste producer (i.e. the developer or consultant on their behalf) to have completed a basic waste characterisation assessment, including:

- Description of the waste;
- List of Waste (LoW) code or codes if mixed waste;
- Determine the chemical composition to identify if waste has hazardous properties or Persistent Organic Pollutants (POPs) are present;
- Determination of hazardous properties;
- Waste Acceptance Criteria (WAC) testing (if required) to determine landfill acceptance.

⁹ Aggregates from inert waste. End of waste criteria for the production of aggregates from inert waste. WRAP.

Relevant information on the above can be found in WM3¹⁰ and is discussed further in the context of ground investigation findings in subsequent sections.

It should be noted that alternative off-site disposal routes may be available, such as recycling/treatment facilities and that in these instances, waste classification would not be appropriate. Instead, it will be necessary to confirm with the destination facility that the material complies with their permit criteria. Further testing in addition to the available ground investigation data may be required by them.

11.3.1 Waste Classification

A preliminary waste classification exercise has been undertaken with reference to available ground investigation data. Hazardous properties of the soils have been assessed using the HazWaste program. A copy of the HazWaste report is included in Appendix E.

All the results have been assessed as non-hazardous.

In consideration of the desk study findings and site conceptual model, and chemical results, POPs are considered unlikely to be present in on-site soils at concentrations sufficient to warrant consideration.

11.3.2 Landfill Tax

Unless specifically exempt landfill tax applies to disposal of material at a landfill that's covered by a permit under specific environmental legislation and at any unauthorised waste site. Currently this tax rate is set at £103.70/tonne (2024/2025).

There are some circumstances where material placed within a landfill cell is excepted from the charge to Landfill Tax, including use of material for creation of capping, drainage or otherwise meets conditions of other Landfill Tax exemptions e.g. dredgings, mining and quarrying materials.

A lower rate of landfill tax set at £3.30/tonne does apply to less polluting material listed in the landfill tax (qualifying material) order 2011¹¹, including naturally occurring rocks and soils, excluding topsoil (group 1) and ceramic or concrete (group 2).

11.4 Recommendations

- Waste management options should be considered in line with the Waste Hierarchy, with priority placed on prevention, re-use, recycling and recovery in order to reduce off-site disposal volumes. Sorting and segregation of excavated soils/materials may also enable reduction in off-site disposal volumes.
- In the event that off-site disposal of surplus excavated soils to landfill is intended, chemical results should be supplied to the receiving facility to confirm they will be able to accept the material. Supplementary testing may be required by the receiving facility, including WAC testing, to confirm the preliminary waste characterisation assessment and to ensure WM3 requirements have been met.
- Should on-site made ground be intended for re-use within the proposed development, it may be possible to demonstrate this material is not waste through preparation of a Materials Management Plan (MMP) to fulfil the requirements of the CL:AIRE DoW CoP. It is recommended that soil re-use opportunities are considered in the context of the

¹⁰ Guidance on the classification and assessment of waste - Technical Guidance WM3. Environment Agency 2015.

¹¹ Landfill Tax (Qualifying Material) Order 2011 can be found at <http://www.legislation.gov.uk/uksi/2011/1017/contents/made>

development earthworks strategy, cut/fill and remedial strategy (if appropriate) with input from a specialist geoenvironmental consultant.

12 INFILTRATION

12.1.1 Summary of Field Testing

Infiltration testing, comprised of a constant head test, undertaken within the previously installed borehole (RC01). Testing was initiated at 3.5mbgl, with water added until a steady-state of inflow was obtained. The head within the boreholes was then added in increments, with a steady state identified at 2.0mbgl and 1.0mbgl. Prior to initiating the testing the borehole was dipped using an interface meter no groundwater was reportedly in the monitoring well.

The testing was completed in line with BS 22282 Geotechnical investigation and testing.

12.1.2 Soil Infiltration Rate

The tests were completed in accordance with BS 22282. A summary of the results of the tests is provided in Table 12.1.

Table 12.1 Summary of Steady State Flow Rates

Exploratory Location	Plain Pipe Depth (mbgl)	Borehole Depth (m)	Borehole Diameter (m)	Maintained Head (m)	Flow Rate (L/Sec)
RC01	1.00	14.50	0.13	11.00	0.39
				12.50	0.56
				13.50	0.65

12.1.3 Discussion

The calculated permeability rates indicate the soils beneath the site have relatively good drainage characteristics which is reflective of the chalk encountered. The flow rate should be forwarded to the drainage engineer for use within their design calculations.

It should be noted that concentrated ingress of water into chalk can initiate new dissolution features. As such, due to the medium density nature of the chalk encountered and in accordance with the recommendations of CIRIA C574 soakaway drainage should be positioned a minimum 5m away from new roads and building foundations.

13 CONSIDERATIONS AND RECOMMENDATIONS

13.1 Recommendations for Further Work

13.1.1 General

- Discussions should be held with local landfill/soil waste treatment facilities to agree material classification/pre-treatment required for any soils to be disposed off-site as a result of proposed construction works.
- Ground workers should remain vigilant for visible and olfactory signs of contamination following demolition of on-site buildings.
- Ground workers should be vigilant for potential UXO and seek immediate professional advice if anything suspicious is encountered during groundworks.
- A piling risk assessment may be required by regulators to assess the risk to Controlled Waters. Further advice should be sought from a geoenvironmental specialist in conjunction with pile design.
- A site-specific health and safety plan should be prepared to inform on risks posed from the previous site use and mitigations for ground workers developing the site e.g. requirements for appropriate PPE, hygiene practices, environmental monitoring and requirements for mitigation measures during construction works.
- A copy of this report should be provided to the relevant regulatory authorities to confirm that they are in agreement with the report findings.

Appendix A – Drawings

— Site Boundary

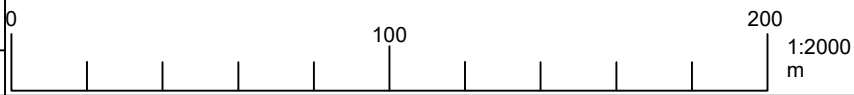


Base Map
Company: Bing Maps Autodesk Licence
DWG Title: -
DWG Number: -
Date: -

Drawn	Checked	Amendment	Date	Rev.
Client				
McCarthy & Stone Retirement Lifestyles				
Project				
Baldock Street, Royston				
Title				
Site Location Plan				
Scale	Date	Drawn by	Check by	Rev.
1:2000@A4	27/11/24	DA	EC	-

T&P 
Regen
Unit 5, Septimus, Hawkfield Business Park,
Bristol, BS14 0BN
Tel: 0117 927 7756
Email: Info@TP-regen.co.uk

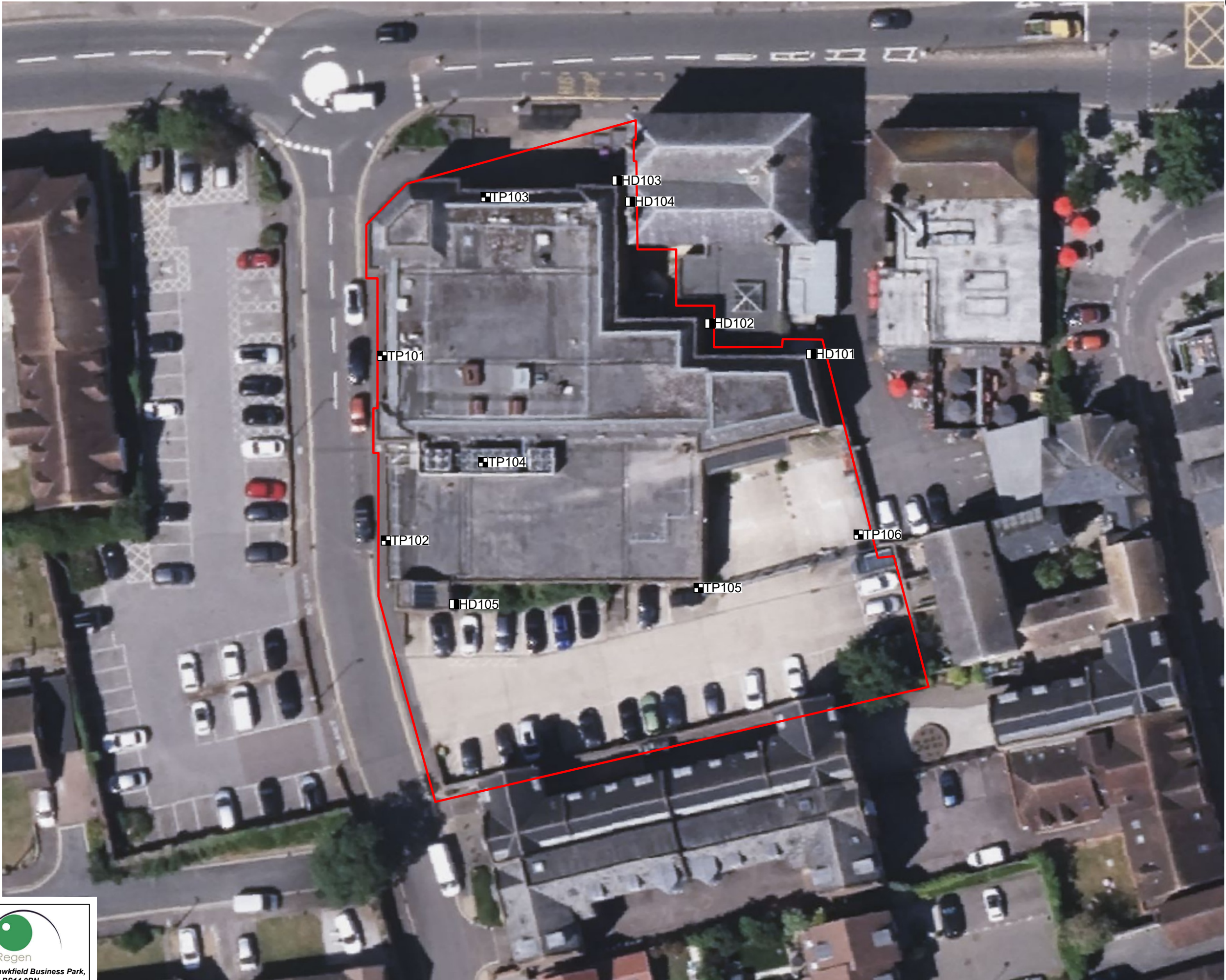
Rev.	Drawing No.
-	P0972-01-004



— Site Boundary

T&P Investigation

- Trial Pit Locations
(TP101 - TP106)
- Hand Dug Locations
(HD101 - HD105)



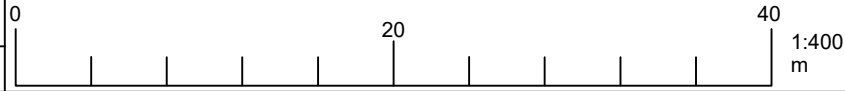
Base Map
Company: -
DWG Title: -
DWG Number: -
Date: -

Drawn	Checked	Amendment	Date	Rev.
Client				
McCarthy & Stone Retirement Lifestyles				
Project				
Baldock Street, Royston				
Title				
Exploratory Hole Location Plan				
Scale	Date	Drawn by	Check by	Rev.
1:400@A3	02/12/24	DA	EC	-

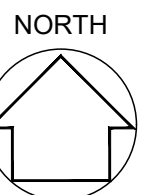


Unit 5, Septimus, Hawkfield Business Park,
Bristol, BS14 0BN
Tel: 0117 927 7756
Email: Info@TP-regen.co.uk

Rev.	Drawing No.
-	P0972-01-005



Rev. No.	Date	Amendment.	Initial.
T1	20.01.25	Tender Issue.	AS
T2	06.03.25	Drawing revised to suit Client comments.	AS



0 8 16m 1:200

McCARTHY STONE
Life, well lived

CHBC
Architecture

Essex Barn 24, Little Boyton Hall Farm, Boyton Cross,
Chelmsford, CM1 4LN. Telephone 01277 355007

Suite 4, Newmarket House, Fordham Rd, Snailwell,
Newmarket, CB8 7NB. Telephone 01638 663838

Client:
McCARTHY STONE

Project:
Baldock Street
Royston

Drawing:
Site Layout Plan

Scale: 1:200 @ A1	Date: OCT 2024
Drawn By: A.S	Checked By: A.S
Drawing No: MCS-2904-04-AC-362	Rev. No: T2

THIS DRAWING IS A COPYRIGHT
All dimensions to be checked on site or in the workshop before work commences.
Only figured dimensions to be worked to. Any discrepancies to be reported to the
drawing originator.

Appendix B – Photographs



PLATE 01 – Site Entrance



PLATE 02 – Site Entrance



PLATE 03 – Site overview – inside the building.



PLATE 04 – Site overview – inside the building



PLATE 05 – Side of the site overview.



PLATE 06 – Site Overview – side entrance



PLATE 07 – Trial Pit Excavation – TP101.



PLATE 08 – Trial Pit Excavation – TP102



PLATE 09 – Trial Pit Excavation – HD101.



PLATE 10 – Trial Pit Excavation – HD103



PLATE 11 – Trial Pit Excavation – HD103



PLATE 12 – Trial Pit Excavation – HD104



PLATE 13 – Trial Pit Excavation – TP103



PLATE 14 – Trial Pit Excavation – TP106.



PLATE 15 – Trial Pit Spoil – TP101.

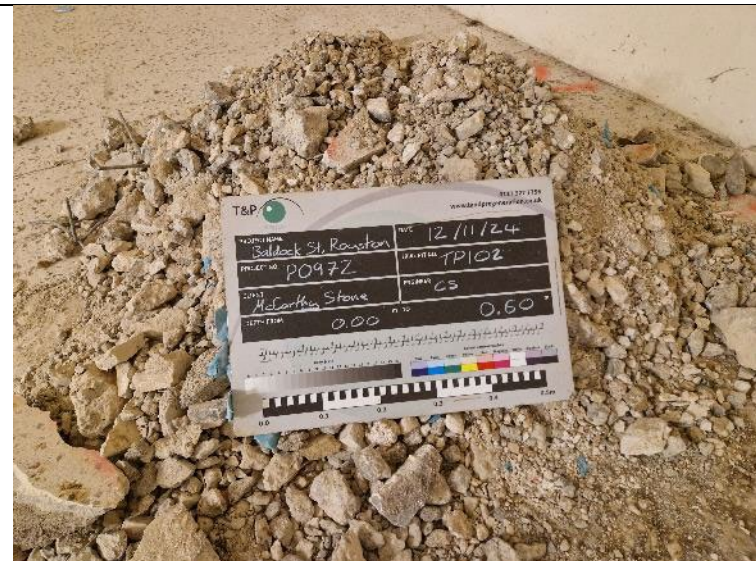


PLATE 16 – Trial Pit Spoil – TP102.

Appendix C – Exploratory Logs and foundation drawings

T&P Regen www.tandpregeneration.co.uk	Contract Name: Baldock Street, Royston		Client: McCarthy & Stone Lifestyles Limited			Trial Pit ID: TP101		
	Contract Number: P0972 / CS-2514	Date Started: 12/11/2024	Logged By: CS	Checked By: JO	Status: FINAL	Sheet 1 of 1		
	Easting:	Northing:	Ground Level:	Plant Used: 1.7 Tonne Compact Excavator		Scale: 1:10		
Trial Pit Log								
Weather: Clear		Termination: Effective Refusal			Stability: Stable			
Samples & In Situ Testing			Strata Details				Water	Backfill
Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description		
0.40 0.40 - 0.50	ES ES1			0.05		MADE GROUND: Light grey CONCRETE.		
						MADE GROUND: Light grey CONCRETE with rebar 5mm in diameter crossed every 15mm.		
				0.30		MADE GROUND: Dark brown gravelly CLAY. Gravel is angular fine to coarse of chalk, brick, concrete, flint and limestone. <u>At 0.30mbgl: Blue plastic membrane.</u>		
				(0.40)				
0.80 0.80 - 0.90	ES ES2			0.70		MADE GROUND: White slightly clayey slightly silty GRAVEL. Gravel is angular to subangular fine to coarse of chalk.		
				(0.50)				
				1.20		End of Trial Pit at 1.20m		
								1
								2
Sample Key: B = Bulk Disturbed D = Small Disturbed U = Undisturbed Open-Drive W = Water G = Gas ES = Environmental Soil EW = Environmental Water								
Remarks: Groundwater not encountered. Effective refusal on concrete.						Dimensions:		
						Length: 2.00m		Orientation: ° ←
						Width: 0.90m		
						Groundwater Details		
						Depth encountered (m)		Remarks
T&P Regeneration TP Template						Issue Number: 1		Issue Date: June 2016

T&P Regen www.tandpregeneration.co.uk	Contract Name: Baldock Street, Royston		Client: McCarthy & Stone Lifestyles Limited			Trial Pit ID: TP102			
	Contract Number: P0972 / CS-2514	Date Started: 12/11/2024	Logged By: CS	Checked By: JO	Status: FINAL	Sheet 1 of 1			
	Easting:		Northing:	Ground Level:	Plant Used: 1.7 Tonne Compact Excavator		Scale: 1:10		
Trial Pit Log									
Weather: Clear			Termination: Engineer's Instruction			Stability: Stable			
Samples & In Situ Testing			Strata Details					Water	Backfill
Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description			
				0.05		MADE GROUND: Light grey CONCRETE.			
						MADE GROUND: Light grey CONCRETE with rebar 5mm in diameter crossed every 15mm.			
				0.25		MADE GROUND: Yellow brown SAND.			
				0.30		Very weak, medium-density, white unstained CHALK. Fractures are very closely spaced, open and infilled with compacted silt-sized white comminuted chalk. (Grade C4). (HOLYWELL NODULAR CHALK FORMATION)			
				(0.30)					
				0.60		End of Trial Pit at 0.60m			
							1		
							2		
Sample Key: B = Bulk Disturbed D = Small Disturbed U = Undisturbed Open-Drive W = Water G = Gas ES = Environmental Soil EW = Environmental Water									
Remarks: Groundwater not encountered.						Dimensions:			
						Length: 1.60m			
						Width: 0.60m			
						Orientation: °			
						Groundwater Details			
						Depth encountered (m)		Remarks	
T&P Regeneration TP Template Issue Number: 1 Issue Date: June 2016									

T&P

Regen

www.tandpregeneration.co.uk

Contract Name:

Baldock Street, Royston

Client:

McCarthy & Stone Lifestyles Limited

Contract Number:

P0972 / CS-2514

Date Started:

12/11/2024

Logged By:

CS

Checked By:

JO

Status:

FINAL

Trial Pit ID:

TP103

Sheet 1 of 1

Easting:

Northing:

Ground Level:

Plant Used:

1.7 Tonne Compact Excavator

Scale:

1:10

Trial Pit Log

Weather: Clear

Termination: Effective Refusal

Stability: Stable

Samples & In Situ Testing

Strata Details

Depth

Sample ID

Test Result

Level (mAOD)

Depth (m) (Thickness)

Legend

Strata Description

Water

Backfill

0.05

MADE GROUND: Light grey CONCRETE

0.25

MADE GROUND: Light grey CONCRETE with rebar 5mm in diameter crossed every 15mm.

(0.55)

MADE GROUND: grey slightly clayey GRAVEL. Gravel is subangular to subrounded fine to coarse of chalk and mudstone. Low cobble content of angular concrete and brick.
At 0.25mbgl: Blue plastic membrane.

0.80

Weak, medium-density, white unstained CHALK. Fractures are closely spaced, open and infilled with compacted silt-sized white comminuted chalk. (Grade C4).
(HOLYWELL NODULAR CHALK FORMATION)

1.00

End of Trial Pit at 1.00m

1

2

Sample Key:

B = Bulk Disturbed

D = Small Disturbed

U = Undisturbed Open-Drive

W = Water

G = Gas

ES = Environmental Soil

EW = Environmental Water

Remarks:

Groundwater not encountered. Effective refusal in chalk.

Dimensions:

Length: 0.60m

Width: 0.60m

Orientation: °

Groundwater Details

Depth encountered (m)

Remarks

T&P Regeneration TP Template

Issue Number: 1

Issue Date: June 2016

T&P Regen www.tandpregeneration.co.uk	Contract Name: Baldock Street, Royston		Client: McCarthy & Stone Lifestyles Limited			Trial Pit ID: TP104			
	Contract Number: P0972 / CS-2514	Date Started: 14/11/2024	Logged By: CS	Checked By: JO	Status: FINAL	Sheet 1 of 1			
	Easting:		Northing:	Ground Level:	Plant Used: 1.7 Tonne Compact Excavator		Scale: 1:10		
Trial Pit Log									
Weather: Clear			Termination: Engineer's Instruction			Stability: Stable			
Samples & In Situ Testing			Strata Details					Water	Backfill
Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description			
0.30 - 0.40	ES1			0.05		MADE GROUND: Light grey CONCRETE.			
				MADE GROUND: Light grey CONCRETE with rebar 5mm in diameter crossed every 15mm.					
				0.25		MADE GROUND: Brown and dark brown sandy GRAVEL. Gravel is subrounded fine to coarse of limestone and rare brick.			
				0.50		MADE GROUND: Light grey slightly clayey sandy GRAVEL. Gravel is subangular to angular fine to coarse of chalk, limestone, brick, flint and concrete.			
0.50 - 0.60	ES ES2			(0.30)					
0.70 - 0.80	ES ES3			0.80		End of Trial Pit at 0.80m			
								1	
								2	
Sample Key: B = Bulk Disturbed D = Small Disturbed U = Undisturbed Open-Drive W = Water G = Gas ES = Environmental Soil EW = Environmental Water									
Remarks: Groundwater not encountered. Hydraulic breaker and machine excavated to 0.3mbgl. Hand tools used to progress excavation down narrow gap between wall and concreted service trench.					Dimensions:				
					Length: 2.80m		Orientation: ° ←		
					Width: 0.80m				
					Groundwater Details				
					Depth encountered (m)		Remarks		
T&P Regeneration TP Template					Issue Number: 1		Issue Date: June 2016		

T&P Regen www.tandpregeneration.co.uk	Contract Name: Baldock Street, Royston		Client: McCarthy & Stone Lifestyles Limited			Trial Pit ID: TP105		
	Contract Number: P0972 / CS-2514	Date Started: 14/11/2024	Logged By: CS	Checked By: JO	Status: FINAL	Sheet 1 of 1		
	Easting:		Northing:	Ground Level:	Plant Used: 1.7 Tonne Compact Excavator		Scale: 1:10	
Trial Pit Log								
Weather: Clear			Termination: Effective Refusal			Stability: Stable		
Samples & In Situ Testing			Strata Details				Water	Backfill
Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description		
				0.05		MADE GROUND: Light grey CONCRETE.		
						MADE GROUND: Light grey CONCRETE with rebar 5mm in diameter crossed every 15mm.		
				0.25		MADE GROUND: Light grey slightly clayey GRAVEL. Gravel is subrounded to rounded fine to course chalk.		
				0.30		At 0.25mbgl: Blue plastic membrane. End of Trial Pit at 0.30m		
							1	
							2	
Sample Key: B = Bulk Disturbed D = Small Disturbed U = Undisturbed Open-Drive W = Water G = Gas ES = Environmental Soil EW = Environmental Water								
Remarks: Groundwater not encountered. Effective refusal on concrete footings.						Dimensions:		
						Length: 1.70m		Orientation: ° ←
						Width: 0.80m		
						Groundwater Details		
						Depth encountered (m)		Remarks
T&P Regeneration TP Template						Issue Number: 1		Issue Date: June 2016

T&P Regen www.tandpregeneration.co.uk	Contract Name: Baldock Street, Royston		Client: McCarthy & Stone Lifestyles Limited			Trial Pit ID: TP106			
	Contract Number: P0972 / CS-2514	Date Started: 14/11/2024	Logged By: CS	Checked By: JO	Status: FINAL	Sheet 1 of 1			
	Easting:		Northing:	Ground Level:	Plant Used: 1.7 Tonne Compact Excavator		Scale: 1:10		
Trial Pit Log									
Weather: Clear			Termination: Engineer's Instruction			Stability: Stable			
Samples & In Situ Testing			Strata Details					Water	Backfill
Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description			
						MADE GROUND: Light grey CONCRETE with rebar 5mm in diameter crossed every 15mm.			
				0.24		MADE GROUND: Dark brown slightly clayey slightly sandy GRAVEL. Gravel is subrounded to rounded fine to coarse of sandstone.			
				0.30		MADE GROUND: Brown slightly clayey sandy GRAVEL. Gravel subrounded to rounded fine to coarse of chalk, brick and concrete.			
				(0.30)					
				0.60		End of Trial Pit at 0.60m			
								1	
								2	
Sample Key: B = Bulk Disturbed D = Small Disturbed U = Undisturbed Open-Drive W = Water G = Gas ES = Environmental Soil EW = Environmental Water									
Remarks: Groundwater not encountered.						Dimensions:			
						Length: 1.60m		Orientation: °	
						Width: 0.70m			
						Groundwater Details			
						Depth encountered (m)		Remarks	
T&P Regeneration TP Template						Issue Number: 1		Issue Date: June 2016	

Contract Name:

Baldock Street, Royston

Client:

McCarthy & Stone Lifestyles Limited

Trial Pit ID:	
---------------	--

HD101

Sheet 1 of 1

Scale:

1:10

Trial Pit Log

Easting:

P0972 / CS-2514

Northing:	
-----------	--

12/11/2024

Ground Lev	
------------	--

CS

Plant Used:

JO

--	--

FINAL

Hand Tools

Weather: Clear

Termination: Engineer's Instruction

Stability: Stable

Samples & In Situ Testing			Strata Details				Water	Backfill
Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description		
						MADE GROUND: Brown subrounded medium to coarse flint GRAVEL.		
				0.10		MADE GROUND: Brown slightly clayey gravelly SAND with frequent rootlets. Gravel is subrounded to rounded fine to coarse of brick, flint, rare metal, plastic and slate.		
				0.30		Structureless CHALK composed of slightly sandy, silty, subangular to rounded GRAVEL. Clasts are very weak, medium density, white with rare black specks. Matrix is white (Grade Dc). (HOLYWELL NODULAR CHALK FORMATION)		
				(0.80)				
				1.10		End of Trial Pit at 1.10m		

Sample Key: B = Bulk Disturbed D = Small Disturbed U = Undisturbed Open-Drive W = Water G = Gas ES = Environmental Soil EW = Environmental Water

Remarks:

Groundwater not encountered. Hole terminated due to effective refusal of hand tools.

Dimensions:

Length: 0.80m

Width: 3.00m

Orientation: °



Groundwater Details

Depth encountered (m)

Remarks

T&P Regen www.tandpregeneration.co.uk		Contract Name: Baldock Street, Royston		Client: McCarthy & Stone Lifestyles Limited			Trial Pit ID: HD102		
		Contract Number: P0972 / CS-2514	Date Started: 12/11/2024	Logged By: CS	Checked By: JO	Status: FINAL	Sheet 1 of 1		
Trial Pit Log		Easting:	Northing:	Ground Level:	Plant Used: Hand Tools		Scale: 1:10		
Weather: Clear			Termination: Engineer's Instruction			Stability: Stable			
Samples & In Situ Testing			Strata Details					Water	Backfill
Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description			
				0.10		MADE GROUND: Brown subrounded medium to coarse flint GRAVEL.			
						MADE GROUND: Greyish brown slightly clayey slightly sandy GRAVEL with a low cobble content. Gravel is subrounded to rounded of chalk, flint, limestone, brick and concrete. Cobbles are angular of concrete.			
				(0.50)		At 0.30mbgl: Cable in brown slightly gravelly sand.			
				0.60		End of Trial Pit at 0.60m			
								1	
								2	
Sample Key: B = Bulk Disturbed D = Small Disturbed U = Undisturbed Open-Drive W = Water G = Gas ES = Environmental Soil EW = Environmental Water									
Remarks: Groundwater not encountered. A cable preventing extension of hand pit.					Dimensions:				
					Length: 1.00m		Orientation: ° ←		
					Width: 1.00m				
					Groundwater Details				
					Depth encountered (m)		Remarks		
T&P Regeneration TP Template					Issue Number: 1		Issue Date: June 2016		

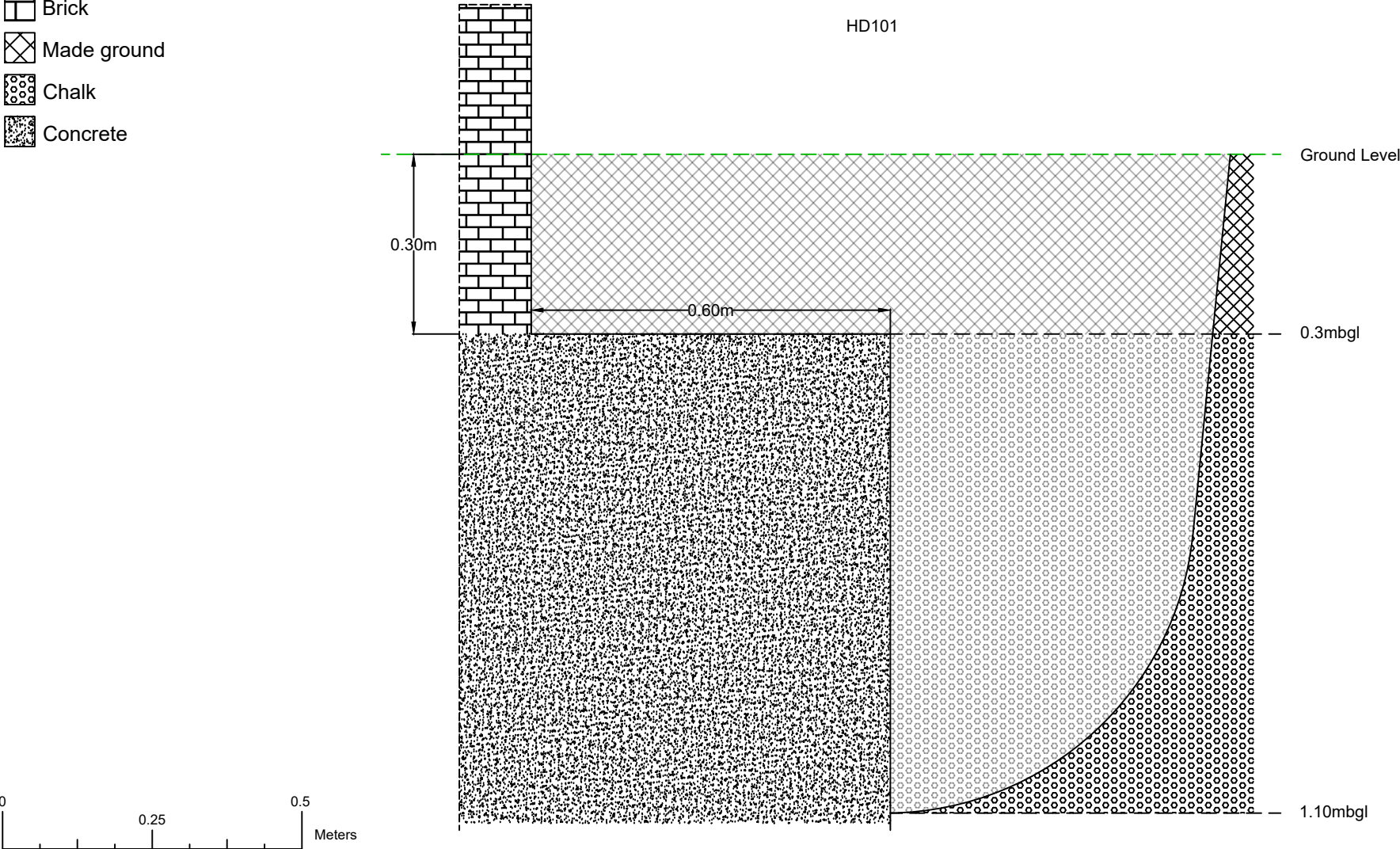
T&P Regen www.tandpregeneration.co.uk	Contract Name: Baldock Street, Royston		Client: McCarthy & Stone Lifestyles Limited			Trial Pit ID: HD103			
	Contract Number: P0972 / CS-2514	Date Started: 12/11/2024	Logged By: CS	Checked By: JO	Status: FINAL	Sheet 1 of 1			
	Easting:	Northing:	Ground Level:	Plant Used: Hand Tools		Scale: 1:10			
Trial Pit Log									
Weather: Clear			Termination: Engineer's Instruction			Stability: Stable			
Samples & In Situ Testing			Strata Details					Water	Backfill
Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description			
				0.05		MADE GROUND: Light grey CONCRETE.			
						MADE GROUND: Yellowish brown slightly gravelly SAND. Gravel is subangular to subrounded fine to coarse of flint.			
				0.20		MADE GROUND: Brown slightly gravelly CLAY. Gravel is angular fine to medium of flint, chalk and brick.			
				0.30		MADE GROUND: Greyish brown slightly clayey slightly sandy GRAVEL. Gravel is angular fine to medium of flint, chalk and brick.			
				(0.40)					
				0.70		End of Trial Pit at 0.70m			
								1	
								2	
Sample Key: B = Bulk Disturbed D = Small Disturbed U = Undisturbed Open-Drive W = Water G = Gas ES = Environmental Soil EW = Environmental Water									
Remarks: Groundwater not encountered. A cable preventing extension of hand pit.						Dimensions:			
						Length: 0.50m		Orientation: °	
						Width: 0.60m			
						Groundwater Details			
						Depth encountered (m)		Remarks	
T&P Regeneration TP Template Issue Number: 1 Issue Date: June 2016									

T&P Regen www.tandpregeneration.co.uk	Contract Name: Baldock Street, Royston			Client: McCarthy & Stone Lifestyles Limited			Trial Pit ID: HD104					
	Contract Number: P0972 / CS-2514		Date Started: 12/11/2024		Logged By: CS		Checked By: JO		Status: FINAL			
	Easting:		Northing:		Ground Level:		Plant Used: Hand Tools		Scale: 1:10			
Trial Pit Log												
Weather: Clear				Termination: Engineer's Instruction				Stability: Stable				
Samples & In Situ Testing				Strata Details							Water	Backfill
Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description						
				0.05		MADE GROUND: Light grey CONCRETE.						
						MADE GROUND: Yellowish brown slightly gravelly SAND. Gravel is subangular to subrounded fine to coarse of flint.						
				0.20		MADE GROUND: Brown slightly gravelly CLAY. Gravel is angular fine to medium of flint, chalk and brick.						
				0.30		MADE GROUND: Greyish brown slightly clayey slightly sandy GRAVEL. Gravel is angular fine to medium of flint, chalk and brick.						
				(0.30)								
				0.60		Structureless CHALK composed of slightly sandy silty, subangular to rounded GRAVEL. Clasts are very weak, medium density, white with rare black specks. Matrix is white (Grade Dc).						
				0.70		(HOLYWELL NODULAR CHALK FORMATION)						
						End of Trial Pit at 0.70m						
											1	
											2	
Sample Key: B = Bulk Disturbed D = Small Disturbed U = Undisturbed Open-Drive W = Water G = Gas ES = Environmental Soil EW = Environmental Water												
Remarks: Groundwater not encountered.						Dimensions: Length: 0.60m Width: 0.30m Orientation: ° 						
						Groundwater Details						
						Depth encountered (m) Remarks						
						T&P Regeneration TP Template Issue Number: 1 Issue Date: June 2016						

T&P Regen www.tandpregeneration.co.uk	Contract Name: Baldock Street, Royston		Client: McCarthy & Stone Lifestyles Limited			Trial Pit ID: HD105			
	Contract Number: P0972 / CS-2514	Date Started: 14/11/2024	Logged By: CS	Checked By: JO	Status: FINAL	Sheet 1 of 1			
	Easting:	Northing:	Ground Level:	Plant Used: Hand Tools		Scale: 1:10			
Trial Pit Log									
Weather: Clear		Termination: Engineer's Instruction			Stability: Stable				
Samples & In Situ Testing			Strata Details					Water	Backfill
Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description			
				0.05		MADE GROUND: Grey angular fine to coarse slate GRAVEL.			
				(0.55)		MADE GROUND: Brown slightly clayey slightly gravelly SAND with frequent rootlets. Gravel is subangular fine to coarse of flint, rare glass and brick.			
				0.60		MADE GROUND: Light grey slightly clayey GRAVEL with a low cobble content. Gravel is angular to subangular fine to coarse chalk, brick, tarmacadam, flint and rare ceramic and concrete. Cobbles are angular of concrete.			
				(0.60)				1	
				1.20		End of Trial Pit at 1.20m		2	
Sample Key: B = Bulk Disturbed D = Small Disturbed U = Undisturbed Open-Drive W = Water G = Gas ES = Environmental Soil EW = Environmental Water									
Remarks: Groundwater not encountered. Hole terminated due to effective refusal of hand tools.					Dimensions:				
					Length: 0.30m		Orientation: ° ←		
					Width: 0.50m				
					Groundwater Details				
					Depth encountered (m)		Remarks		
T&P Regeneration TP Template					Issue Number: 1		Issue Date: June 2016		

Foundation Diagram

- Brick
- Made ground
- Chalk
- Concrete



Drawing Number:

P0972-02-001

Project:

Baldock Street, Royston

Client:

McCarthy & Stone Retirement Lifestyles

Trial Pit Number:

HD101

Date:

04/12/24

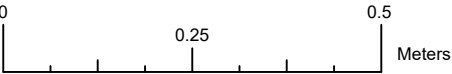
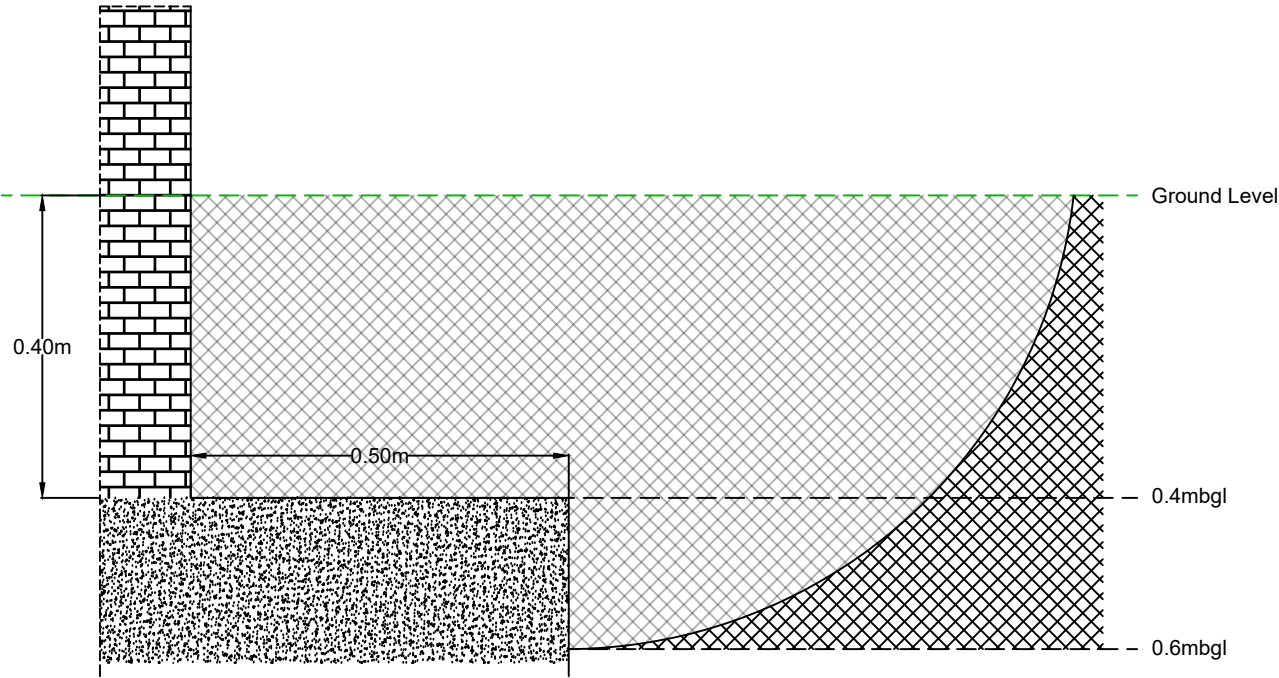
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1:10@A4

Foundation Diagram

- Brick
- Made ground
- Concrete

HD102



Drawing Number:

P0972-02-002

Trial Pit Number:

HD102

Project:

Baldock Street, Royston

Date:

04/12/24

Client:

McCarthy & Stone Retirement Lifestyles

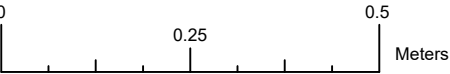
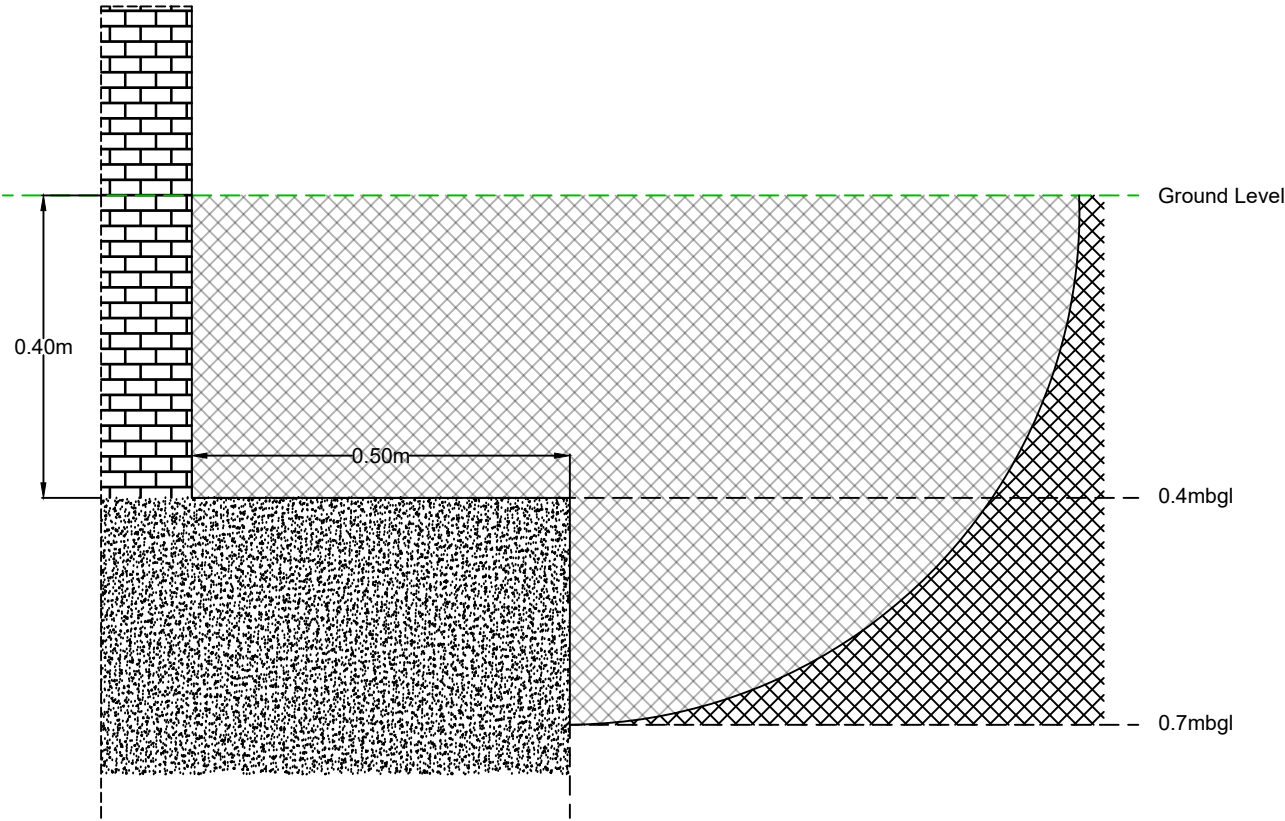
Scale:

1:10@A4

Foundation Diagram

- Brick
- Made ground
- Concrete

HD103



Drawing Number:

P0972-02-003

Trial Pit Number:

HD103

Project:

Baldock Street, Royston

Date:

04/12/24

Client:

McCarthy & Stone Retirement Lifestyles

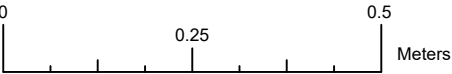
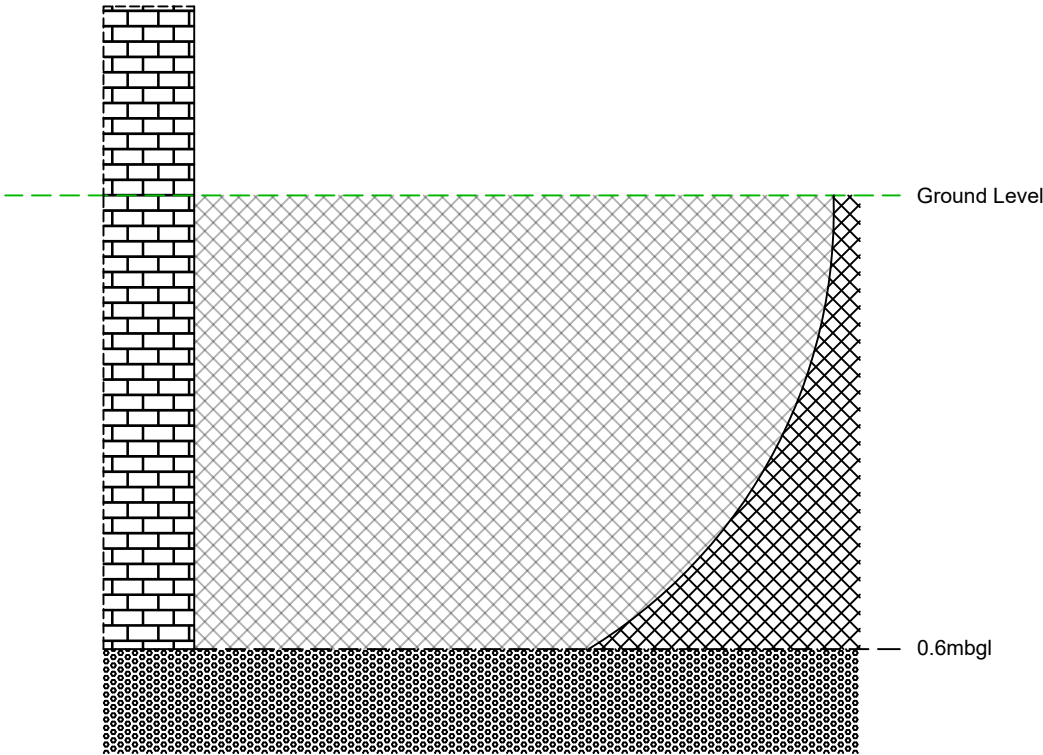
Scale:

1:10@A4

Foundation Diagram

- Brick
- Made ground
- Chalk
- Concrete

HD104



Drawing Number:

P0972-02-004

Trial Pit Number:

HD104

Project:

Baldock Street, Royston

Date:

04/12/24

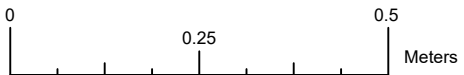
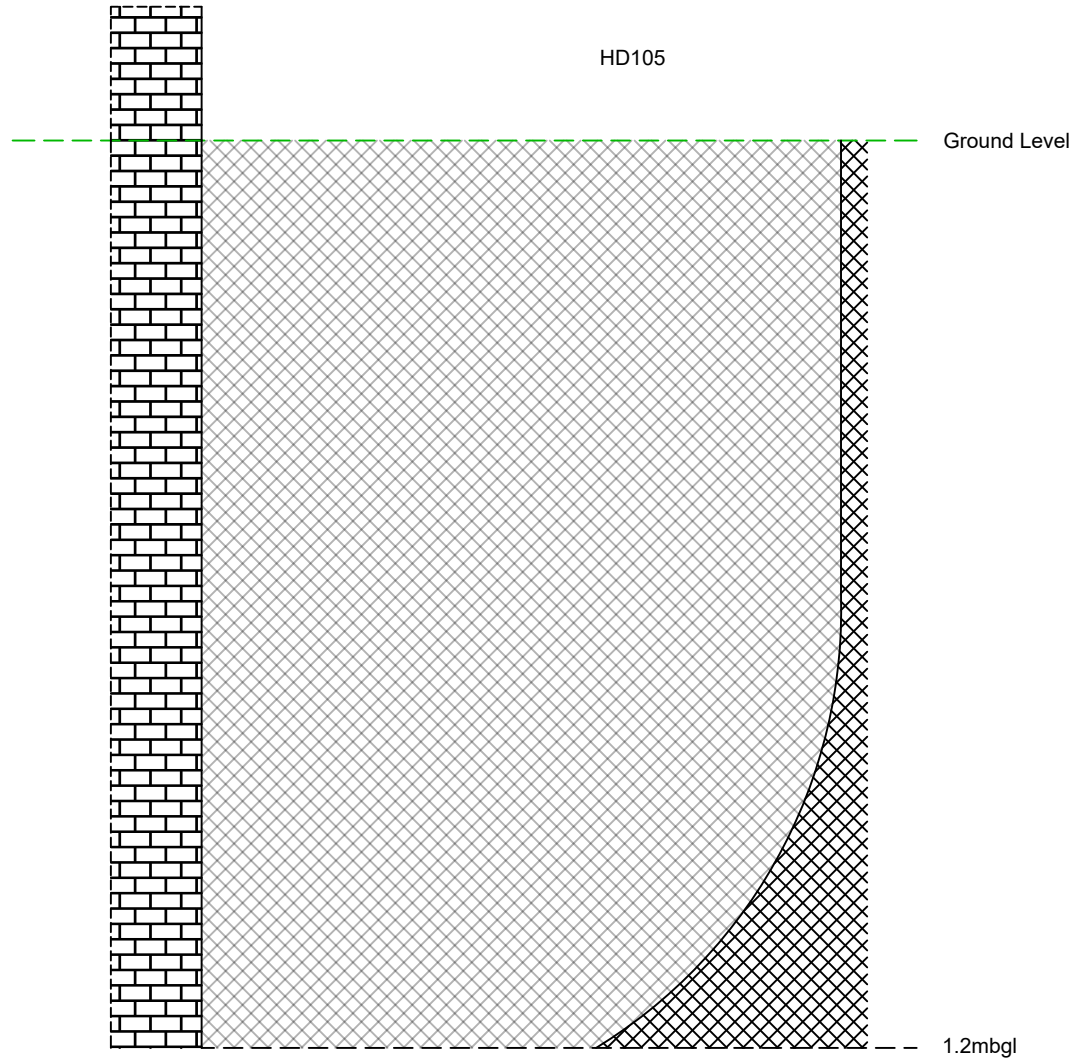
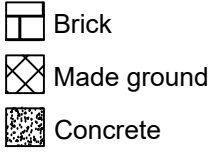
Client:

McCarthy & Stone Retirement Lifestyles

Scale:

1:10@A4

Foundation Diagram



Drawing Number:

P0972-02-005

Trial Pit Number:

HD105

Project:

Baldock Street, Royston

Date:

04/12/24

Client:

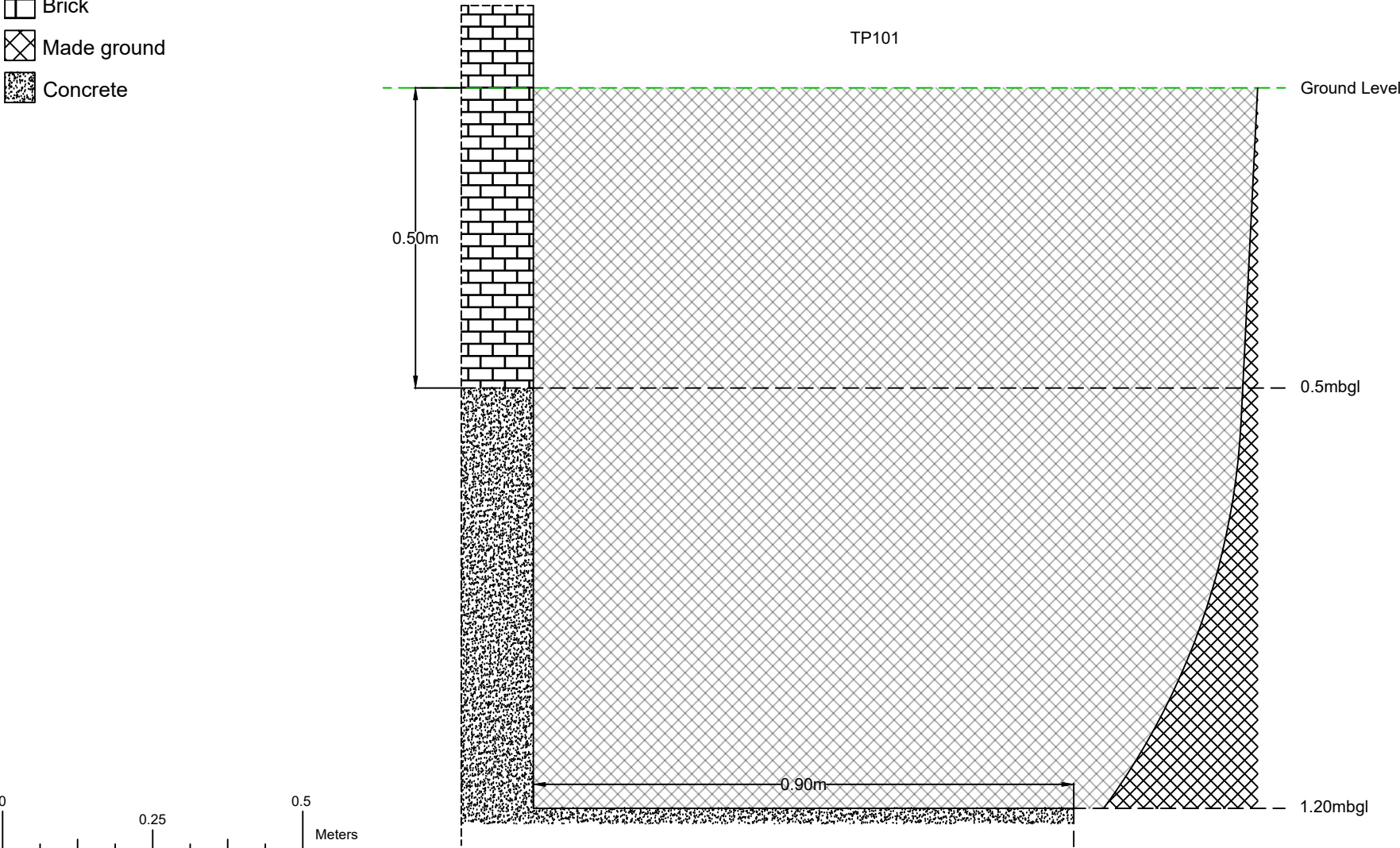
McCarthy & Stone Retirement Lifestyles

Scale:

1:10@A4

Foundation Diagram

- Brick
- Made ground
- Concrete



Drawing Number:

P0972-02-006

Trial Pit Number:

TP101

Project:

Baldock Street, Royston

Date:

04/12/24

Client:

McCarthy & Stone Retirement Lifestyles

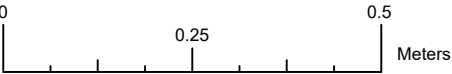
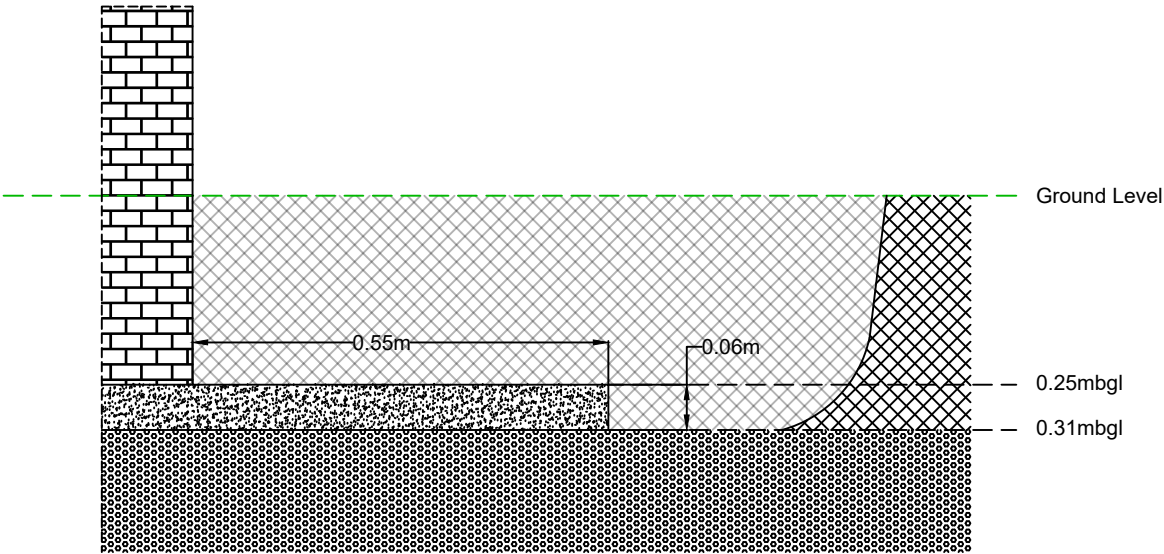
Scale:

1:10@A4

Foundation Diagram

- Brick
- Made ground
- Chalk
- Concrete

TP102



Drawing Number:

P0972-02-007

Trial Pit Number:

TP102

Project:

Baldock Street, Royston

Date:

04/12/24

Client:

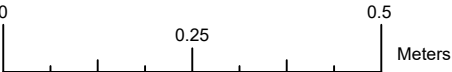
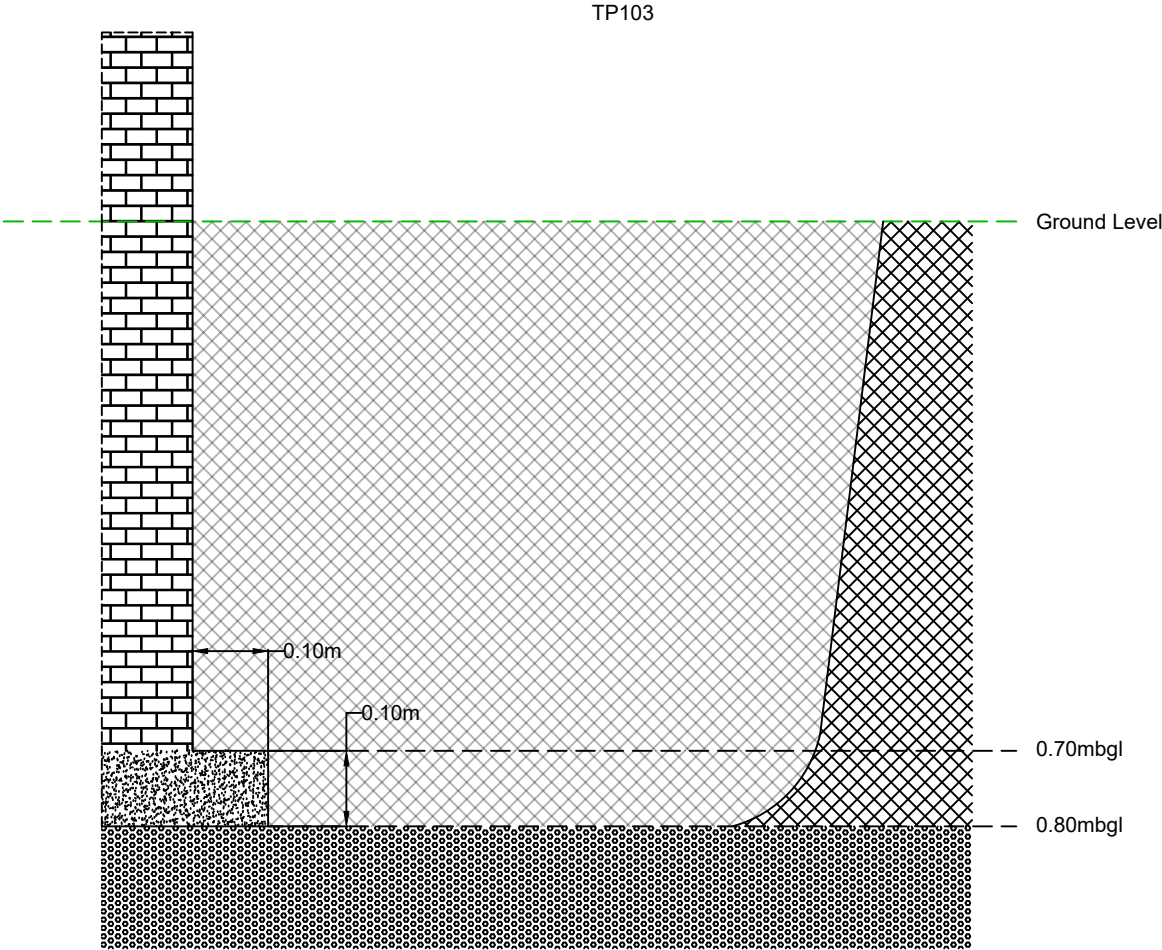
McCarthy & Stone Retirement Lifestyles

Scale:

1:10@A4

Foundation Diagram

- Brick
- Made ground
- Chalk
- Concrete



Drawing Number:

P0972-02-008

Trial Pit Number:

TP103

Project:

Baldock Street, Royston

Date:

04/12/24

Client:

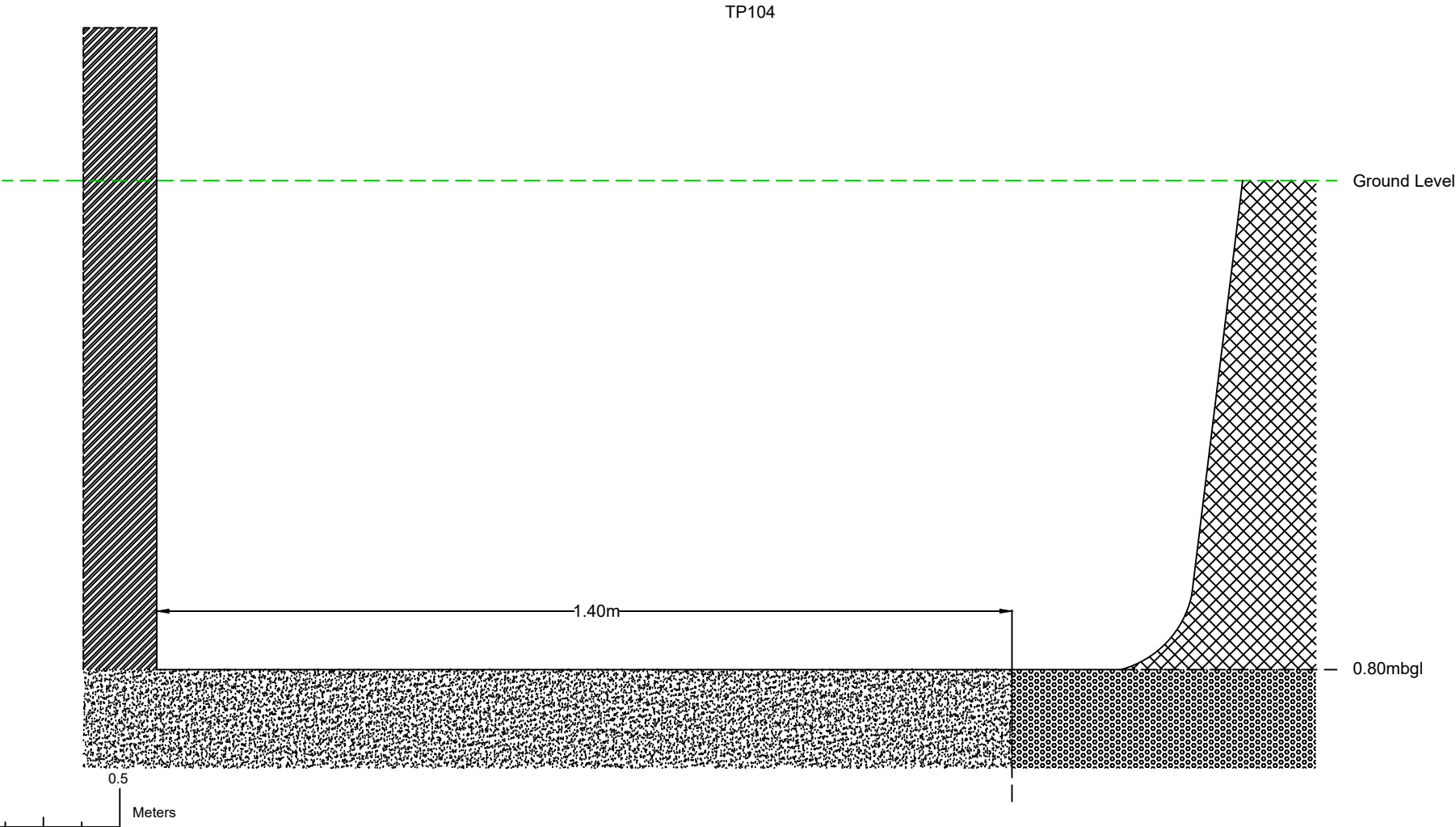
McCarthy & Stone Retirement Lifestyles

Scale:

1:10@A4

Foundation Diagram

- Steel Beam
- Made ground
- Chalk
- Concrete



Drawing Number:

P0972-02-009

Trial Pit Number:

TP104

Project:

Baldock Street, Royston

Date:

04/12/24

Client:

McCarthy & Stone Retirement Lifestyles

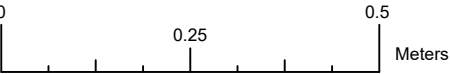
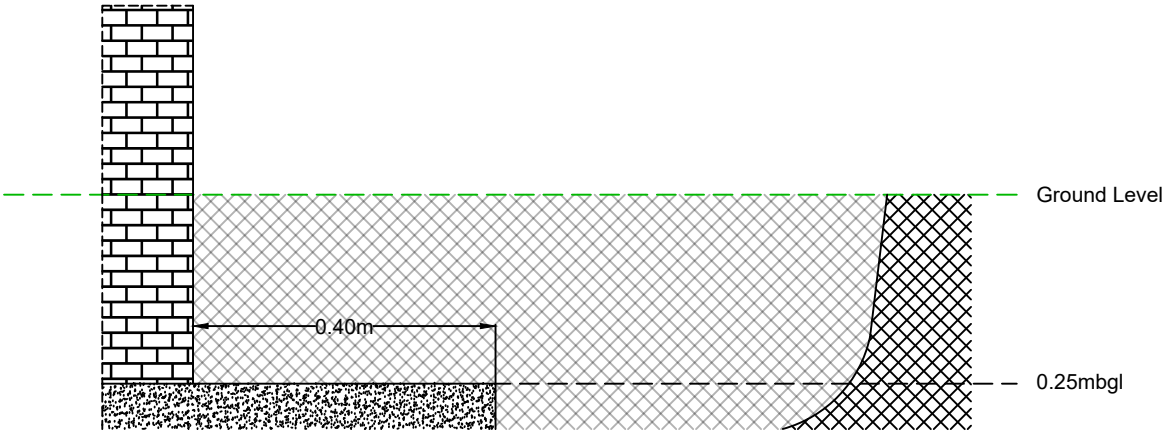
Scale:

1:10@A4

Foundation Diagram

- Brick
- Made ground
- Concrete

TP105



Drawing Number:

P0972-02-010

Trial Pit Number:

TP105

Project:

Baldock Street, Royston

Date:

04/12/24

Client:

McCarthy & Stone Retirement Lifestyles

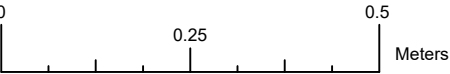
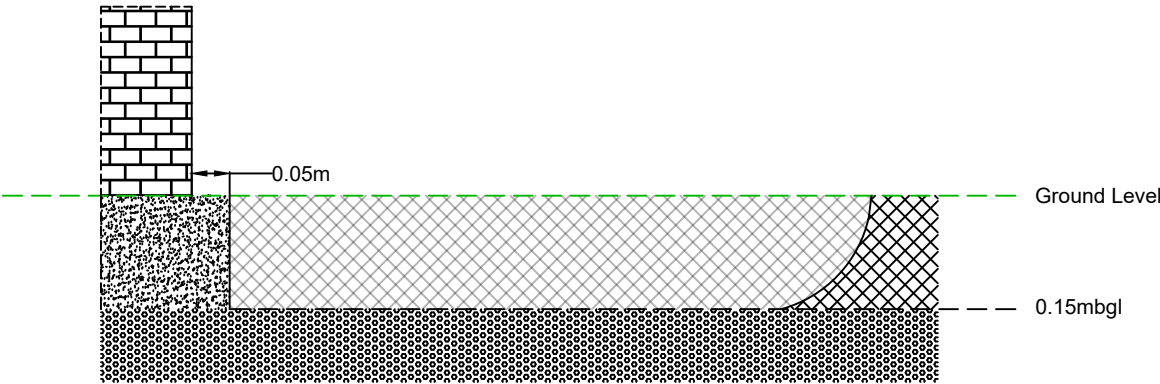
Scale:

1:10@A4

Foundation Diagram

- Brick
- Made ground
- Chalk
- Concrete

TP106



Drawing Number:

P0972-02-011

Project:

Baldock Street, Royston

Client:

McCarthy & Stone Retirement Lifestyles

Trial Pit Number:

TP106

Date:

04/12/24

Scale:

1:10@A4

Appendix D – Chemical Results and Screening Assessment

T&P Regeneration
Unit 5
Septimus
Hawkfield Business Park
BS14 0BN

i2 Analytical Ltd.
7 Woodshots Meadow,
Croxley Green
Business Park,
Watford,
Herts,
WD18 8YS

e: Calum@tp-regen.co.uk

t: 01923 225404
f: 01923 237404
e: reception@i2analytical.com

Analytical Report Number : 24-054343

Project / Site name:	P0972 Baldock Street, Royston	Samples received on:	18/11/2024
Your job number:	CS-2514	Samples instructed on/ Analysis started on:	18/11/2024
Your order number:	19612	Analysis completed by:	26/11/2024
Report Issue Number:	1	Report issued on:	26/11/2024
Samples Analysed:	4 soil samples		



Signed: _____

Anna Goc
PL Head of Reporting Team
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41-711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting

Excel copies of reports are only valid when accompanied by this PDF certificate.

Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.



4041



Environmental Science

Analytical Report Number: 24-054343

Project / Site name: P0972 Baldock Street, Royston

Your Order No: 19612

Lab Sample Number				381993	381994	381995	381996
Sample Reference				TP101	TP101	TP104	TP104
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix				N/A	N/A	N/A	N/A
Depth (m)				0.40-0.50	0.80-0.90	0.50-0.60	0.70-0.78
Date Sampled				12/11/2024	12/11/2024	14/11/2024	14/11/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status				

Stone Content	%	0.1	NONE	45	56.2	19.2	< 0.1
Moisture Content	%	0.01	NONE	3.7	11	17	22
Total mass of sample received	kg	0.1	NONE	1	1.1	1.2	1.1

Asbestos

Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	Not-detected	-	Not-detected	-
Asbestos Analyst ID	N/A	N/A	N/A	DSA	-	DSA	-

General Inorganics

pH (L099)	pH Units	N/A	MCERTS	10.3	10.8	10.6	8.5
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	580	530	680	200
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	290	263	341	99.4
Organic Matter (automated)	%	0.1	MCERTS	2.3	1.2	0.6	0.3
Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	1.3	0.7	0.3	0.2

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	0.34	0.1	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	0.06	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	0.06	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	0.47	0.13	< 0.05	0.21
Anthracene	mg/kg	0.05	MCERTS	0.24	0.07	< 0.05	0.06
Fluoranthene	mg/kg	0.05	MCERTS	0.73	0.24	< 0.05	0.24
Pyrene	mg/kg	0.05	MCERTS	0.75	0.23	< 0.05	0.18
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.41	0.11	< 0.05	0.07
Chrysene	mg/kg	0.05	MCERTS	0.53	0.14	< 0.05	0.07
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	0.75	0.22	< 0.05	0.08
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	0.3	0.08	< 0.05	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.47	0.14	< 0.05	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.22	0.07	< 0.05	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	0.06	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.22	0.08	< 0.05	< 0.05

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	5.6	1.6	< 0.80	0.91
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Analytical Report Number: 24-054343

Project / Site name: P0972 Baldock Street, Royston

Your Order No: 19612

Lab Sample Number				381993	381994	381995	381996
Sample Reference				TP101	TP101	TP104	TP104
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix				N/A	N/A	N/A	N/A
Depth (m)				0.40-0.50	0.80-0.90	0.50-0.60	0.70-0.78
Date Sampled				12/11/2024	12/11/2024	14/11/2024	14/11/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status				

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	9.7	7.6	4.2	1.9
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.62	0.37	0.16	0.08
Boron (water soluble)	mg/kg	0.2	MCERTS	1.1	1	0.7	0.6
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.4	0.3	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8	< 1.8	< 1.8	< 1.8
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	36	26	5.3	2.3
Copper (aqua regia extractable)	mg/kg	1	MCERTS	54	29	9.5	3.6
Lead (aqua regia extractable)	mg/kg	1	MCERTS	25	16	11	2.7
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	2.5	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	18	10	5.4	2.5
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	40	24	13	8.9
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	97	51	39	14

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number : 24-054343

Project / Site name: P0972 Baldock Street, Royston

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
381993	TP101	None Supplied	0.40-0.50	Brown loam and gravel with concrete and chalk
381994	TP101	None Supplied	0.80-0.90	Brown loam and gravel with concrete and chalk
381995	TP104	None Supplied	0.50-0.60	Beige clay and sand with gravel and chalk
381996	TP104	None Supplied	0.70-0.78	Beige clay and sand with chalk

Analytical Report Number : 24-054343

Project / Site name: P0972 Baldock Street, Royston

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters Heating/Cooling (PrW) DI Process Water (DI PrW)

Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in Soil	Asbestos Identification with the use of polarised light microscopy in conjunction with dispersion staining techniques	In-house method based on HSG 248, 2021	A001B	D	ISO 17025
Organic matter (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate (Walkley Black Method)	In-house method	L009B	D	MCERTS
Total organic carbon (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate (Walkley Black Method)	In-house method	L009B	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically (up to 30°C)	In-house method	L019B	W	NONE
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight	In-house method based on British Standard Methods and MCERTS requirements.	L019B	D	NONE
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil	L038B	D	MCERTS
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES	In-house method based on Second Site Properties version 3	L038B	D	MCERTS
Sulphate, water soluble, in soil (16hr extraction)	Sulphate, water soluble, in soil (16hr extraction)	In-house method	L038B	D	MCERTS
Speciated PAHs and/or Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds (including PAH) in soil by extraction in dichloromethane and hexane followed by GC-MS	In-house method based on USEPA 8270	L064B	D	MCERTS
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in NaOH and addition of 1,5 diphenylcarbazine followed by colorimetry	In-house method	L080-PL	W	MCERTS
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080-PL	W	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement	In-house method	L099-PL	D	MCERTS

For method numbers ending in 'UK' or 'A' analysis have been carried out in our laboratory in the United Kingdom (Watford).

For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).

For method numbers ending in 'PL' or 'B' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30°C.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Quality control parameter failure associated with individual result applies to calculated sum of individuals.

The result for sum should be interpreted with caution

End Use Scenario	SOM	Code	(All)
Residential with Home Grown Produce	1.0%	Code2	(All)
		St. Ref	(All)

P0972
HUMAN HEALTH
ASSESSMENT



Min Value (mg/kg)	Max Value (mg/kg)	Count Values	No. of Exceed - ances	Screen Level (mg/kg)	Location ID			TP101		TP104	
							Depth Top and Base (m)	0.4	0.8	0.5	0.7
					Ref.	Group	Contaminant Reported	0.5	0.9	0.6	0.78
1.90	9.70	4	-	37	1.01	Heavy Metals	Arsenic	9.70	7.60	4.20	1.90
0.08	0.62	4	-	1.7	1.02	Heavy Metals	Beryllium	0.62	0.37	0.16	0.08
0.20	0.40	4	-	22	1.03	Heavy Metals	Cadmium	0.40	0.30	0.20	0.20
2.30	36.00	4	-	910	1.04	Heavy Metals	Chromium	36.00	26.00	5.30	2.30
2.70	25.00	4	-	200	1.05	Heavy Metals	Lead	25.00	16.00	11.00	2.70
0.30	2.50	4	-	200	1.06	Heavy Metals	Mercury	0.30	2.50	0.30	0.30
2.50	18.00	4	-	180	1.07	Heavy Metals	Nickel	18.00	10.00	5.40	2.50
1.00	1.00	4	-	250	1.08	Heavy Metals	Selenium	1.00	1.00	1.00	1.00
8.90	40.00	4	-	410	1.09	Heavy Metals	Vanadium	40.00	24.00	13.00	8.90
0.60	1.10	4	-	290	2.01	Inorganics	Water Soluble Boron	1.10	1.00	0.70	0.60
1.80	1.80	4	-	21	2.02	Inorganics	Hexavalent Chromium	1.80	1.80	1.80	1.80
3.60	54.00	4	-	2400	3.01	Phytotoxic Metals	Copper	54.00	29.00	9.50	3.60
14.00	97.00	4	-	3700	3.02	Phytotoxic Metals	Zinc	97.00	51.00	39.00	14.00
1.00	1.00	4	-	280	4.01	Phenols	Phenol	1.00	1.00	1.00	1.00
0.05	0.34	4	-	15	5.01	PAHs	Naphthalene	0.34	0.10	0.05	0.05
0.05	0.06	4	-	170	5.02	PAHs	Acenaphthylene	0.06	0.05	0.05	0.05
0.05	0.05	4	-	210	5.03	PAHs	Acenaphthene	0.05	0.05	0.05	0.05
0.05	0.06	4	-	170	5.04	PAHs	Fluorene	0.06	0.05	0.05	0.05
0.05	0.47	4	-	95	5.05	PAHs	Phenanthrene	0.47	0.13	0.05	0.21
0.05	0.24	4	-	2400	5.06	PAHs	Anthracene	0.24	0.07	0.05	0.06
0.05	0.73	4	-	280	5.07	PAHs	Fluoranthene	0.73	0.24	0.05	0.24
0.05	0.75	4	-	620	5.08	PAHs	Pyrene	0.75	0.23	0.05	0.18
0.05	0.41	4	-	7.2	5.09	PAHs	Benzo[a]anthracene	0.41	0.11	0.05	0.07
0.05	0.53	4	-	15	5.10	PAHs	Chrysene	0.53	0.14	0.05	0.07
0.05	0.75	4	-	2.6	5.11	PAHs	Benzo[b]fluoranthene	0.75	0.22	0.05	0.08
0.05	0.30	4	-	77	5.12	PAHs	Benzo[k]fluoranthene	0.30	0.08	0.05	0.05
0.05	0.47	4	-	5	5.13	PAHs	Benzo[a]pyrene	0.47	0.14	0.05	0.05
0.05	0.22	4	-	27	5.14	PAHs	Indeno[1,2,3-cd]pyrene	0.22	0.07	0.05	0.05
0.05	0.06	4	-	0.24	5.15	PAHs	Dibenz[a,h]anthracene	0.06	0.05	0.05	0.05
0.05	0.22	4	-	320	5.16	PAHs	Benzo[ghi]perylene	0.22	0.08	0.05	0.05

End Use Scenario
Phytotoxic

Code	(All)
Code2	(All)
St. Ref	(All)

P0972

PHYTOTOXIC

REPORT



Min Value	Max Value	Count Values	No. of Exceed - ances	Screen Level	Location ID			TP101		TP104	
					Depth Top and Base			0.4	0.8	0.5	0.7
					Ref.	Group	Contaminant Reported	0.5	0.9	0.6	0.78
0.20	0.40	4	-	8	1.03	Heavy Metals	Cadmium	0.40	0.30	0.20	0.20
2.30	36.00	4	-	154	1.04	Heavy Metals	Chromium	36.00	26.00	5.30	2.30
0.30	2.50	4	-	28	1.06	Heavy Metals	Mercury	0.30	2.50	0.30	0.30
2.50	18.00	4	-	70	1.07	Heavy Metals	Nickel	18.00	10.00	5.40	2.50
1.00	1.00	4	-	10	1.08	Heavy Metals	Selenium	1.00	1.00	1.00	1.00
0.60	1.10	4	-	3	2.01	Inorganics	Water Soluble Boron	1.10	1.00	0.70	0.60
3.60	54.00	4	-	130	3.01	Phytotoxic Metals	Copper	54.00	29.00	9.50	3.60
14.00	97.00	4	-	300	3.02	Phytotoxic Metals	Zinc	97.00	51.00	39.00	14.00

Geology Code	(All)
Geology Code2	(All)
Stratum Reference	(All)

P0972

ASBESTOS

REPORT



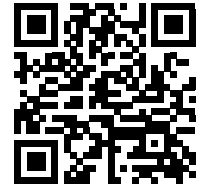
Location ID Depth Top and Base	TP101	TP104	Grand Total
	0.4	0.5	
Not-detected	1	1	2
Grand Total	1	1	2

Appendix E – HazWaste Report

Waste Classification Report

HazWasteOnline™ classifies waste as either **hazardous** or **non-hazardous** based on its chemical composition, related legislation and the rules and data defined in the current UK or EU technical guidance (Appendix C) (note that HP 9 Infectious is not assessed). It is the responsibility of the classifier named below to:

- understand the origin of the waste
- select the correct List of Waste code(s)
- confirm that the list of determinands, results and sampling plan are fit for purpose
- select and justify the chosen metal species (Appendix B)
- correctly apply moisture correction and other available corrections
- add the meta data for their user-defined substances (Appendix A)
- check that the classification engine is suitable with respect to the national destination of the waste (Appendix C)



LXC53-572E1-7V63U

To aid the reviewer, the laboratory results, assumptions and justifications managed by the classifier are highlighted in **pale yellow**.

Report is invalid if pages are removed.

Job name

Baldock Street, Royston

Description/Comments

Project

P0972

Site

Baldock Street, Royston

Classified by

Name: **Matthew Carr**
Date: **29 Nov 2024 14:47 GMT**
Telephone: **0117 927 7756**
Company: **T&P Regeneration Ltd**
Unit 5, Septimus
Hawkfield Business Park
Bristol
BS14 0BN

HazWasteOnline™ provides a two day, hazardous waste classification course that covers the use of the software and both basic and advanced waste classification techniques. Certification has to be renewed every 3 years.

HazWasteOnline™ Certification:

CERTIFIED

Course

Hazardous Waste Classification
Most recent 3 year Refresher

Date

09 Dec 2021
03 Dec 2024 *

Next 3 year Refresher due by Dec 2024
* training course booked

Purpose of classification

2 - Material Characterisation

Address of the waste

Baldock Street , Royston

Post Code **SG8 5BA**

SIC for the process giving rise to the waste

Description of industry/producer giving rise to the waste

Development of site.

Description of the specific process, sub-process and/or activity that created the waste

Waste created during the excavation of soils for development.

Description of the waste

Made ground and chalk.

Job summary

#	Sample name	Depth [m]	Classification Result	Hazard properties	Page
1	TP101--12112024-0.40		Non Hazardous		3
2	TP101--12112024-0.80		Non Hazardous		5
3	TP104--14112024-0.50		Non Hazardous		7
4	TP104--14112024-0.70		Non Hazardous		9

Related documents

#	Name	Description
1	24-054343_HWOL.HWOL	i2 Analytical .hwol file used to populate the Job

Report

Created by: Matthew Carr

Created date: 29 Nov 2024 14:47 GMT

Appendices	Page
Appendix A: Classifier defined and non GB MCL determinands	11
Appendix B: Rationale for selection of metal species	12
Appendix C: Version	13

Classification of sample: TP101--12112024-0.40

✔ **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:
TP101--12112024-0.40	Chapter:
Moisture content:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
3.7%	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
(wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 3.7% Wet Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
1	monohydric phenols		P1186		<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
2	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<1.8 mg/kg	2.27	<4.086 mg/kg	<0.000409 %		<LOD
	024-017-00-8									
3	pH		PH		10.3 pH		10.3 pH	10.3 pH		
4	boron { diboron trioxide }				1.1 mg/kg	3.22	3.411 mg/kg	0.000341 %	✓	
	005-008-00-8	215-125-8	1303-86-2							
5	arsenic { arsenic compounds, with the exception of those specified elsewhere in this Annex }			1	9.7 mg/kg		9.341 mg/kg	0.000934 %	✓	
	033-002-00-5									
6	beryllium { beryllium chloride }				0.62 mg/kg	8.868	5.295 mg/kg	0.000529 %	✓	
			7787-47-5							
7	cadmium { cadmium compounds, with the exception of cadmium sulphoselenide (xCdS.yCdSe), reaction mass of cadmium sulphide with zinc sulphide (xCdS.yZnS), reaction mass of cadmium sulphide with mercury sulphide (xCdS.yHgS), and those specified elsewhere in this Annex }			1	0.4 mg/kg		0.385 mg/kg	0.0000385 %	✓	
	048-001-00-5									
8	copper { copper(II) carbonate – copper(II) hydroxide (1:1) }				54 mg/kg	1.74	90.473 mg/kg	0.00905 %	✓	
	029-020-00-8	235-113-6	12069-69-1							
9	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }			1	<0.3 mg/kg		<0.3 mg/kg	<0.00003 %		<LOD
	080-002-00-6									
10	nickel { nickel sulfide }				18 mg/kg	1.546	26.804 mg/kg	0.00268 %	✓	
	028-006-00-9	240-841-2 [1] 234-349-7 [2] - [3]	16812-54-7 [1] 11113-75-0 [2] 1314-04-1 [3]							
11	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	25 mg/kg		24.075 mg/kg	0.00241 %	✓	
	082-001-00-6									

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
12	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<1 mg/kg	1.405	<1.405 mg/kg		<0.000141 %		<LOD
	034-002-00-8										
13	vanadium { divanadium pentaoxide; vanadium pentoxide }				40 mg/kg	1.785	68.765 mg/kg		0.00688 %	✓	
	023-001-00-8	215-239-8	1314-62-1								
14	zinc { zinc sulphate }				97 mg/kg	2.469	230.659 mg/kg		0.0231 %	✓	
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]								
15	naphthalene				0.34 mg/kg		0.327 mg/kg		0.0000327 %	✓	
	601-052-00-2	202-049-5	91-20-3								
16	acenaphthylene				0.06 mg/kg		0.0578 mg/kg		0.00000578 %	✓	
		205-917-1	208-96-8								
17	acenaphthene				<0.05 mg/kg		<0.05 mg/kg		<0.000005 %		<LOD
		201-469-6	83-32-9								
18	fluorene				0.06 mg/kg		0.0578 mg/kg		0.00000578 %	✓	
		201-695-5	86-73-7								
19	phenanthrene				0.47 mg/kg		0.453 mg/kg		0.0000453 %	✓	
		201-581-5	85-01-8								
20	anthracene				0.24 mg/kg		0.231 mg/kg		0.0000231 %	✓	
		204-371-1	120-12-7								
21	fluoranthene				0.73 mg/kg		0.703 mg/kg		0.0000703 %	✓	
		205-912-4	206-44-0								
22	pyrene				0.75 mg/kg		0.722 mg/kg		0.0000722 %	✓	
		204-927-3	129-00-0								
23	benzo[a]anthracene				0.41 mg/kg		0.395 mg/kg		0.0000395 %	✓	
	601-033-00-9	200-280-6	56-55-3								
24	chrysene				0.53 mg/kg		0.51 mg/kg		0.000051 %	✓	
	601-048-00-0	205-923-4	218-01-9								
25	benzo[a]pyrene; benzo[def]chrysene				0.47 mg/kg		0.453 mg/kg		0.0000453 %	✓	
	601-032-00-3	200-028-5	50-32-8								
26	indeno[123-cd]pyrene				0.22 mg/kg		0.212 mg/kg		0.0000212 %	✓	
		205-893-2	193-39-5								
27	dibenz[a,h]anthracene				0.06 mg/kg		0.0578 mg/kg		0.00000578 %	✓	
	601-041-00-2	200-181-8	53-70-3								
28	benzo[ghi]perylene				0.22 mg/kg		0.212 mg/kg		0.0000212 %	✓	
		205-883-8	191-24-2								
29	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				36 mg/kg	1.462	52.616 mg/kg		0.00526 %		
		215-160-9	1308-38-9								
30	benzo[bk]fluoranthene				1.05 mg/kg		1.011 mg/kg		0.000101 %	✓	
		[1] 205-911-9 [2] 205-916-6	[1] 205-99-2 [2] 207-08-9								
Total:									0.0524 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP101--12112024-0.80

 **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:
TP101--12112024-0.80	Chapter:
Moisture content:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
11%	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
(wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 11% Wet Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
1	monohydric phenols				<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
			P1186							
2	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<1.8 mg/kg	2.27	<4.086 mg/kg	<0.000409 %		<LOD
	024-017-00-8									
3	pH				10.8 pH		10.8 pH	10.8 pH		
			PH							
4	boron { diboron trioxide }				1 mg/kg	3.22	2.866 mg/kg	0.000287 %	✓	
	005-008-00-8	215-125-8	1303-86-2							
5	arsenic { arsenic compounds, with the exception of those specified elsewhere in this Annex }			1	7.6 mg/kg		6.764 mg/kg	0.000676 %	✓	
	033-002-00-5									
6	beryllium { beryllium chloride }				0.37 mg/kg	8.868	2.92 mg/kg	0.000292 %	✓	
			7787-47-5							
7	cadmium { cadmium compounds, with the exception of cadmium sulphoselenide (xCdS.yCdSe), reaction mass of cadmium sulphide with zinc sulphide (xCdS.yZnS), reaction mass of cadmium sulphide with mercury sulphide (xCdS.yHgS), and those specified elsewhere in this Annex }			1	0.3 mg/kg		0.267 mg/kg	0.0000267 %	✓	
	048-001-00-5									
8	copper { copper(II) carbonate – copper(II) hydroxide (1:1) }				29 mg/kg	1.74	44.904 mg/kg	0.00449 %	✓	
	029-020-00-8	235-113-6	12069-69-1							
9	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }			1	2.5 mg/kg		2.225 mg/kg	0.000223 %	✓	
	080-002-00-6									
10	nickel { nickel sulfide }				10 mg/kg	1.546	13.762 mg/kg	0.00138 %	✓	
	028-006-00-9	240-841-2 [1] 234-349-7 [2] - [3]	16812-54-7 [1] 11113-75-0 [2] 1314-04-1 [3]							
11	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	16 mg/kg		14.24 mg/kg	0.00142 %	✓	
	082-001-00-6									

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
12	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<1 mg/kg	1.405	<1.405 mg/kg	<0.000141 %		<LOD
	034-002-00-8									
13	vanadium { divanadium pentaoxide; vanadium pentoxide }				24 mg/kg	1.785	38.132 mg/kg	0.00381 %	✓	
	023-001-00-8	215-239-8	1314-62-1							
14	zinc { zinc sulphate }				51 mg/kg	2.469	112.081 mg/kg	0.0112 %	✓	
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]							
15	naphthalene				0.1 mg/kg		0.089 mg/kg	0.0000089 %	✓	
	601-052-00-2	202-049-5	91-20-3							
16	acenaphthylene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		205-917-1	208-96-8							
17	acenaphthene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		201-469-6	83-32-9							
18	fluorene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		201-695-5	86-73-7							
19	phenanthrene				0.13 mg/kg		0.116 mg/kg	0.0000116 %	✓	
		201-581-5	85-01-8							
20	anthracene				0.07 mg/kg		0.0623 mg/kg	0.00000623 %	✓	
		204-371-1	120-12-7							
21	fluoranthene				0.24 mg/kg		0.214 mg/kg	0.0000214 %	✓	
		205-912-4	206-44-0							
22	pyrene				0.23 mg/kg		0.205 mg/kg	0.0000205 %	✓	
		204-927-3	129-00-0							
23	benzo[a]anthracene				0.11 mg/kg		0.0979 mg/kg	0.00000979 %	✓	
	601-033-00-9	200-280-6	56-55-3							
24	chrysene				0.14 mg/kg		0.125 mg/kg	0.0000125 %	✓	
	601-048-00-0	205-923-4	218-01-9							
25	benzo[a]pyrene; benzo[def]chrysene				0.14 mg/kg		0.125 mg/kg	0.0000125 %	✓	
	601-032-00-3	200-028-5	50-32-8							
26	indeno[123-cd]pyrene				0.07 mg/kg		0.0623 mg/kg	0.00000623 %	✓	
		205-893-2	193-39-5							
27	dibenz[a,h]anthracene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-041-00-2	200-181-8	53-70-3							
28	benzo[ghi]perylene				0.08 mg/kg		0.0712 mg/kg	0.00000712 %	✓	
		205-883-8	191-24-2							
29	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				26 mg/kg	1.462	38 mg/kg	0.0038 %		
		215-160-9	1308-38-9							
30	benzo[bk]fluoranthene				0.3 mg/kg		0.267 mg/kg	0.0000267 %	✓	
		[1] 205-911-9 [2] 205-916-6	[1] 205-99-2 [2] 207-08-9							
Total:								0.0284 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP104--14112024-0.50

 **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:
TP104--14112024-0.50	Chapter:
Moisture content:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
17%	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
(wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 17% Wet Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
1	monohydric phenols				<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
			P1186							
2	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<1.8 mg/kg	2.27	<4.086 mg/kg	<0.000409 %		<LOD
	024-017-00-8									
3	pH				10.6 pH		10.6 pH	10.6 pH		
			PH							
4	boron { diboron trioxide }				0.7 mg/kg	3.22	1.871 mg/kg	0.000187 %	✓	
	005-008-00-8	215-125-8	1303-86-2							
5	arsenic { arsenic compounds, with the exception of those specified elsewhere in this Annex }			1	4.2 mg/kg		3.486 mg/kg	0.000349 %	✓	
	033-002-00-5									
6	beryllium { beryllium chloride }				0.16 mg/kg	8.868	1.178 mg/kg	0.000118 %	✓	
			7787-47-5							
7	cadmium { cadmium compounds, with the exception of cadmium sulphoselenide (xCdS.yCdSe), reaction mass of cadmium sulphide with zinc sulphide (xCdS.yZnS), reaction mass of cadmium sulphide with mercury sulphide (xCdS.yHgS), and those specified elsewhere in this Annex }			1	<0.2 mg/kg		<0.2 mg/kg	<0.00002 %		<LOD
	048-001-00-5									
8	copper { copper(II) carbonate – copper(II) hydroxide (1:1) }				9.5 mg/kg	1.74	13.718 mg/kg	0.00137 %	✓	
	029-020-00-8	235-113-6	12069-69-1							
9	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }			1	<0.3 mg/kg		<0.3 mg/kg	<0.00003 %		<LOD
	080-002-00-6									
10	nickel { nickel sulfide }				5.4 mg/kg	1.546	6.931 mg/kg	0.000693 %	✓	
	028-006-00-9	240-841-2 [1] 234-349-7 [2] - [3]	16812-54-7 [1] 11113-75-0 [2] 1314-04-1 [3]							
11	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	11 mg/kg		9.13 mg/kg	0.000913 %	✓	
	082-001-00-6									

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
12	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<1 mg/kg	1.405	<1.405 mg/kg	<0.000141 %			<LOD
	034-002-00-8										
13	vanadium { divanadium pentaoxide; vanadium pentoxide }				13 mg/kg	1.785	19.262 mg/kg	0.00193 %		✓	
	023-001-00-8	215-239-8	1314-62-1								
14	zinc { zinc sulphate }				39 mg/kg	2.469	79.931 mg/kg	0.00799 %		✓	
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]								
15	naphthalene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
	601-052-00-2	202-049-5	91-20-3								
16	acenaphthylene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
		205-917-1	208-96-8								
17	acenaphthene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
		201-469-6	83-32-9								
18	fluorene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
		201-695-5	86-73-7								
19	phenanthrene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
		201-581-5	85-01-8								
20	anthracene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
		204-371-1	120-12-7								
21	fluoranthene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
		205-912-4	206-44-0								
22	pyrene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
		204-927-3	129-00-0								
23	benzo[a]anthracene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
	601-033-00-9	200-280-6	56-55-3								
24	chrysene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
	601-048-00-0	205-923-4	218-01-9								
25	benzo[a]pyrene; benzo[def]chrysene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
	601-032-00-3	200-028-5	50-32-8								
26	indeno[123-cd]pyrene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
		205-893-2	193-39-5								
27	dibenz[a,h]anthracene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
	601-041-00-2	200-181-8	53-70-3								
28	benzo[ghi]perylene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
		205-883-8	191-24-2								
29	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				5.3 mg/kg	1.462	7.746 mg/kg	0.000775 %			
		215-160-9	1308-38-9								
30	benzo[bk]fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		[1] 205-911-9 [2] 205-916-6	[1] 205-99-2 [2] 207-08-9								
Total:									0.0151 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP104--14112024-0.70

 **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:
TP104--14112024-0.70	Chapter:
Moisture content:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
22%	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
(wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 22% Wet Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
1	monohydric phenols				<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
			P1186							
2	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<1.8 mg/kg	2.27	<4.086 mg/kg	<0.000409 %		<LOD
	024-017-00-8									
3	pH				8.5 pH		8.5 pH	8.5 pH		
			PH							
4	boron { diboron trioxide }				0.6 mg/kg	3.22	1.507 mg/kg	0.000151 %	✓	
	005-008-00-8	215-125-8	1303-86-2							
5	arsenic { arsenic compounds, with the exception of those specified elsewhere in this Annex }			1	1.9 mg/kg		1.482 mg/kg	0.000148 %	✓	
	033-002-00-5									
6	beryllium { beryllium chloride }				0.08 mg/kg	8.868	0.553 mg/kg	0.0000553 %	✓	
			7787-47-5							
7	cadmium { cadmium compounds, with the exception of cadmium sulphoselenide (xCdS.yCdSe), reaction mass of cadmium sulphide with zinc sulphide (xCdS.yZnS), reaction mass of cadmium sulphide with mercury sulphide (xCdS.yHgS), and those specified elsewhere in this Annex }			1	<0.2 mg/kg		<0.2 mg/kg	<0.00002 %		<LOD
	048-001-00-5									
8	copper { copper(II) carbonate – copper(II) hydroxide (1:1) }				3.6 mg/kg	1.74	4.885 mg/kg	0.000489 %	✓	
	029-020-00-8	235-113-6	12069-69-1							
9	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }			1	<0.3 mg/kg		<0.3 mg/kg	<0.00003 %		<LOD
	080-002-00-6									
10	nickel { nickel sulfide }				2.5 mg/kg	1.546	3.015 mg/kg	0.000302 %	✓	
	028-006-00-9	240-841-2 [1] 234-349-7 [2] - [3]	16812-54-7 [1] 11113-75-0 [2] 1314-04-1 [3]							
11	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	2.7 mg/kg		2.106 mg/kg	0.000211 %	✓	
	082-001-00-6									

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
12	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<1 mg/kg	1.405	<1.405 mg/kg	<0.000141 %			<LOD
	034-002-00-8										
13	vanadium { divanadium pentaoxide; vanadium pentoxide }				8.9 mg/kg	1.785	12.393 mg/kg	0.00124 %		✓	
	023-001-00-8	215-239-8	1314-62-1								
14	zinc { zinc sulphate }				14 mg/kg	2.469	26.965 mg/kg	0.0027 %		✓	
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]								
15	naphthalene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
	601-052-00-2	202-049-5	91-20-3								
16	acenaphthylene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
		205-917-1	208-96-8								
17	acenaphthene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
		201-469-6	83-32-9								
18	fluorene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
		201-695-5	86-73-7								
19	phenanthrene				0.21 mg/kg		0.164 mg/kg	0.0000164 %		✓	
		201-581-5	85-01-8								
20	anthracene				0.06 mg/kg		0.0468 mg/kg	0.00000468 %		✓	
		204-371-1	120-12-7								
21	fluoranthene				0.24 mg/kg		0.187 mg/kg	0.0000187 %		✓	
		205-912-4	206-44-0								
22	pyrene				0.18 mg/kg		0.14 mg/kg	0.000014 %		✓	
		204-927-3	129-00-0								
23	benzo[a]anthracene				0.07 mg/kg		0.0546 mg/kg	0.00000546 %		✓	
	601-033-00-9	200-280-6	56-55-3								
24	chrysene				0.07 mg/kg		0.0546 mg/kg	0.00000546 %		✓	
	601-048-00-0	205-923-4	218-01-9								
25	benzo[a]pyrene; benzo[def]chrysene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
	601-032-00-3	200-028-5	50-32-8								
26	indeno[123-cd]pyrene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
		205-893-2	193-39-5								
27	dibenz[a,h]anthracene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
	601-041-00-2	200-181-8	53-70-3								
28	benzo[ghi]perylene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
		205-883-8	191-24-2								
29	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				2.3 mg/kg	1.462	3.362 mg/kg	0.000336 %			
		215-160-9	1308-38-9								
30	benzo[bk]fluoranthene				0.08 mg/kg		0.0624 mg/kg	0.00000624 %		✓	
		[1] 205-911-9 [2] 205-916-6	[1] 205-99-2 [2] 207-08-9								
Total:									0.00644 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Appendix A: Classifier defined and non GB MCL determinands

monohydric phenols (CAS Number: P1186)

Description/Comments: Combined hazards statements from harmonised entries in CLP for phenol, cresols and xylenols (604-001-00-2, 604-004-00-9, 604-006-00-X)

Data source: CLP combined data

Data source date: 26 Mar 2019

Hazard Statements: Muta. 2; H341 , Acute Tox. 3; H331 , Acute Tox. 3; H311 , Acute Tox. 3; H301 , STOT RE 2; H373 , Skin Corr. 1B; H314 , Skin Corr. 1B; H314 >= 3 % , Skin Irrit. 2; H315 1 <= conc. < 3 % , Eye Irrit. 2; H319 1 <= conc. < 3 % , Aquatic Chronic 2; H411

pH (CAS Number: PH)

Description/Comments: Appendix C4

Data source: WM3 1st Edition 2015

Data source date: 25 May 2015

Hazard Statements: None.

arsenic compounds, with the exception of those specified elsewhere in this Annex

GB MCL index number: 033-002-00-5

Description/Comments: Worst Case: IARC considers arsenic compounds Group 1; Carcinogenic to humans

Additional Hazard Statement(s): Carc. 1A; H350

Reason for additional Hazards Statement(s):

20 Nov 2021 - Carc. 1A; H350 hazard statement sourced from: IARC Group 1 (23, Sup 7, 100C) 2012

beryllium chloride (CAS Number: 7787-47-5)

Description/Comments: Data from C&L Inventory Database; No entries in Registered Substances Database, IARC or Pesticide Properties Database

Data source: <http://clp-inventory.echa.europa.eu/SummaryOfClassAndLabelling.aspx?SubstanceID=27264&HarmOnly=no?fc=true&lang=en>

Data source date: 02 Jun 2014

Hazard Statements: Acute Tox. 3; H301 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315 , Skin Sens. 1; H317 , Carc. 1B; H350 , STOT RE 1; H372 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

cadmium compounds, with the exception of cadmium sulphoselenide (xCdS.yCdSe), reaction mass of cadmium sulphide with zinc sulphide (xCdS.yZnS), reaction mass of cadmium sulphide with mercury sulphide (xCdS.yHgS), and those specified elsewhere in this Annex

GB MCL index number: 048-001-00-5

Description/Comments: Worst Case: IARC considers cadmium compounds Group 1; Carcinogenic to humans

Additional Hazard Statement(s): Carc. 1A; H350

Reason for additional Hazards Statement(s):

20 Nov 2021 - Carc. 1A; H350 hazard statement sourced from: IARC Group 1 (23, Sup 7, 100C) 2012

lead compounds with the exception of those specified elsewhere in this Annex (worst case)

GB MCL index number: 082-001-00-6

Description/Comments: Worst Case: IARC considers lead compounds Group 2A; Probably carcinogenic to humans; Lead REACH Consortium, following MCL protocols, considers lead compounds from smelting industries, flue dust and similar to be Carcinogenic category 1A

Additional Hazard Statement(s): Carc. 1A; H350

Reason for additional Hazards Statement(s):

20 Nov 2021 - Carc. 1A; H350 hazard statement sourced from: IARC Group 2A (Sup 7, 87) 2006; Lead REACH Consortium www.reach-lead.eu/substanceinformation.html (worst case lead compounds). Review date 29/09/2015

acenaphthylene (EC Number: 205-917-1, CAS Number: 208-96-8)

Description/Comments: Data from C&L Inventory Database

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 17 Jul 2015

Hazard Statements: Acute Tox. 4; H302 , Acute Tox. 1; H330 , Acute Tox. 1; H310 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315

acenaphthene (EC Number: 201-469-6, CAS Number: 83-32-9)

Description/Comments: Data from C&L Inventory Database

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 17 Jul 2015

Hazard Statements: Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410 , Aquatic Chronic 2; H411

fluorene (EC Number: 201-695-5, CAS Number: 86-73-7)

Description/Comments: Data from C&L Inventory Database

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 06 Aug 2015

Hazard Statements: Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

■ **phenanthrene** (EC Number: 201-581-5, CAS Number: 85-01-8)

Description/Comments: Data from C&L Inventory Database

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 06 Aug 2015

Hazard Statements: Acute Tox. 4; H302 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Carc. 2; H351 , Skin Sens. 1; H317 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410 , Skin Irrit. 2; H315

■ **anthracene** (EC Number: 204-371-1, CAS Number: 120-12-7)

Description/Comments: Data from C&L Inventory Database

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 17 Jul 2015

Hazard Statements: Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315 , Skin Sens. 1; H317 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

■ **fluoranthene** (EC Number: 205-912-4, CAS Number: 206-44-0)

Description/Comments: Data from C&L Inventory Database

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 21 Aug 2015

Hazard Statements: Acute Tox. 4; H302 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

■ **pyrene** (EC Number: 204-927-3, CAS Number: 129-00-0)

Description/Comments: Data from C&L Inventory Database; SDS Sigma Aldrich 2014

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 21 Aug 2015

Hazard Statements: Skin Irrit. 2; H315 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

■ **indeno[123-cd]pyrene** (EC Number: 205-893-2, CAS Number: 193-39-5)

Description/Comments: Data from C&L Inventory Database

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 06 Aug 2015

Hazard Statements: Carc. 2; H351

■ **benzo[ghi]perylene** (EC Number: 205-883-8, CAS Number: 191-24-2)

Description/Comments: Data from C&L Inventory Database; SDS Sigma Aldrich 28/02/2015

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 23 Jul 2015

Hazard Statements: Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

■ **chromium(III) oxide (worst case)** (EC Number: 215-160-9, CAS Number: 1308-38-9)

Description/Comments: Data from C&L Inventory Database

Data source: <https://echa.europa.eu/information-on-chemicals/cl-inventory-database/-/discli/details/33806>

Data source date: 17 Jul 2015

Hazard Statements: Acute Tox. 4; H332 , Acute Tox. 4; H302 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315 , Resp. Sens. 1; H334 , Skin Sens. 1; H317 , Repr. 1B; H360FD , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

■ **benzo[bk]fluoranthene** (EC Number: [1] 205-911-9 [2] 205-916-6, CAS Number: [1] 205-99-2 [2] 207-08-9)

Description/Comments: Combined data from harmonised entries in CLP for benzo[b] and benzo[k]fluoranthene; C&L Inventory Database

Data source: <https://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 02 Mar 2017

Hazard Statements: Carc. 1B; H350 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

Appendix B: Rationale for selection of metal species

chromium in chromium(VI) compounds {chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex}

Worst case.

boron {diboron trioxide}

Based upon material type it is considered to be the most likely worst case compound.

arsenic {arsenic compounds, with the exception of those specified elsewhere in this Annex}

Most likely based upon material type and environmental conditions.

beryllium {beryllium chloride}

Worst case.

cadmium {cadmium compounds, with the exception of cadmium sulphoselenide (xCdS.yCdSe), reaction mass of cadmium sulphide with zinc sulphide (xCdS.yZnS), reaction mass of cadmium sulphide with mercury sulphide (xCdS.yHgS), and those specified elsewhere in this Annex}

Most likely based upon the material type and environmental conditions.

copper {copper(II) carbonate – copper(II) hydroxide (1:1)}

Based upon material type it is considered to be the most likely worst case compound.

mercury {inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex}

Based upon material type it is considered to be the most likely worst case compound.

nickel {nickel sulfide}

Based upon material type it is considered to be the most likely worst case compound.

lead {lead compounds with the exception of those specified elsewhere in this Annex (worst case)}

Based upon material type it is considered to be the most likely worst case compound.

selenium {selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex}

Based upon material type it is considered to be the most likely worst case compound.

vanadium {divanadium pentaoxide; vanadium pentoxide}

Based upon material type it is considered to be the most likely worst case compound.

zinc {zinc sulphate}

Based upon material type it is considered to be the most likely worst case compound.

chromium in chromium(III) compounds {chromium(III) oxide (worst case)}

Worst case.

Appendix C: Version

HazWasteOnline Classification Engine: **WM3 1st Edition v1.2.GB - Oct 2021**

HazWasteOnline Classification Engine Version: 2024.332.6362.11667 (27 Nov 2024)

HazWasteOnline Database: 2024.331.6361.11659 (26 Nov 2024)

This classification utilises the following guidance and legislation:

WM3 v1.2.GB - Waste Classification - 1st Edition v1.2.GB - Oct 2021

CLP Regulation - Regulation 1272/2008/EC of 16 December 2008

1st ATP - Regulation 790/2009/EC of 10 August 2009

2nd ATP - Regulation 286/2011/EC of 10 March 2011

3rd ATP - Regulation 618/2012/EU of 10 July 2012

4th ATP - Regulation 487/2013/EU of 8 May 2013

Correction to 1st ATP - Regulation 758/2013/EU of 7 August 2013

5th ATP - Regulation 944/2013/EU of 2 October 2013

6th ATP - Regulation 605/2014/EU of 5 June 2014

WFD Annex III replacement - Regulation 1357/2014/EU of 18 December 2014

Revised List of Waste 2014 - Decision 2014/955/EU of 18 December 2014

7th ATP - Regulation 2015/1221/EU of 24 July 2015

8th ATP - Regulation (EU) 2016/918 of 19 May 2016

9th ATP - Regulation (EU) 2016/1179 of 19 July 2016

10th ATP - Regulation (EU) 2017/776 of 4 May 2017

HP14 amendment - Regulation (EU) 2017/997 of 8 June 2017

13th ATP - Regulation (EU) 2018/1480 of 4 October 2018

14th ATP - Regulation (EU) 2020/217 of 4 October 2019

15th ATP - Regulation (EU) 2020/1182 of 19 May 2020

The Chemicals (Health and Safety) and Genetically Modified Organisms (Contained Use)(Amendment etc.) (EU Exit)

Regulations 2020 - UK: 2020 No. 1567 of 16th December 2020

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GB MCL List - version 1.1 of 09 June 2021

GB MCL List v2.0 - version 2.0 of 20th October 2023

GB MCL List v3.0 - version 3.0 of 11th January 2024

GB MCL List v4.0 - version 4.0 of 2nd March 2024

GB MCL List v5.0 - version 5.0 of 26th June 2024