

**Former Grove Public House Carpark, Port
Talbot**

Ground Investigation

Factual and Interpretative (Phase II) Report

G22075

April 2023

Fellow Developments Ltd.

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Report Control Sheet**Report Number**

G22075

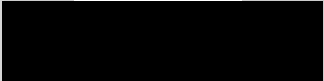
Date of Issue

April 2023

Site Address

Land At 191 Victoria Rd, Sandfields, Port Talbot, SA12 6QJ

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Jackson Geo Services is a trading name of Jackson Drilling Holdings Limited – registered company number 06919550.

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1 Introduction

1.1 General

Fellow Developments Ltd. entered into a contract with Jackson Geo Services (JGS) to complete a ground investigation at the Former Grove Public House Carpark, Port Talbot. (hereafter referred to as The Site). The initial contract was agreed during October 2022, with this phase of works instructed in March 2023. As per the Construction Design and Management (CDM) Regulations (2015), parties were attributed the following responsibilities:

Table 1: Responsibility Under CDM

Client	Fellow Developments Ltd.
Designer	GO Concept Design Ltd
Principal Contractor	Fellow Developments Ltd.
Sub-Contractor	JGS

1.2 Proposed Development

The Site is proposed to be developed for residential use with 1 Nr. detached residential dwelling and 2 Nr. residential apartments proposed. Proposed development plans (GOCD GKT01 – P007) are included within Appendix I. The proposed development relates to the full planning application with Neath Port Talbot Council (NPT) Ref: P2022/0493. No loadings of the proposed structure have been provided, however it is considered the design will comprise a lightly loaded structure with an anticipated load of 75 kN/m² or less.

1.3 Scope of Works

The scope of investigation was defined by JGS and is based upon the findings presented within the Phase I desk study report produced by JGS in November 2022. In summary, the scope of investigation comprised:

- ✍ Dynamic Windowless Sampling
- ✍ Machine Excavated Trial Pitting
- ✍ In-situ Testing
- ✍ Geotechnical Testing
- ✍ Geoenvironmental Testing
- ✍ Factual Reporting
- ✍ Interpretation of the results to provide an indication of bearing capacity, concrete classification and to test the source-pathway-receptor model as presented within the Phase I report.

2 Background to Assessment

2.1 General

In accordance with the contaminated land assessment regime (Land contamination risk management (LCRM) (April 2021) and the current published standards, BS:10175:2011+A2:2017, BS:21365:2020 and BS:5930:2015+A1:2020, this Phase 1 preliminary assessment has been produced in order to:

- Assess the likelihood of contamination, its nature and its extent.
- Assess the likelihood of any geological risks which could impact the development.
- Evaluate the environmental setting of The Site and identify sensitive receptors.
- Provide information from which likely contamination linkages (source-pathway-receptor relationships) can be identified.
- Determine the requirements for any investigation (if required).

LCRM has been designed to be used in a range of regulatory and management contexts, including voluntary remediation, planning, assessment of liabilities or under the Part 2A contaminated land regime.

LCRM states that a risk assessment must be completed by a competent person to:

- Identify the reasons for doing the risk assessment.
- Identify the potential contaminant linkages.
- Assess and evaluate the risk to establish whether there is unacceptable risk.

LCRM indicates this should be completed using a tiered approach to risk assessment as follows:

- Preliminary risk assessment – first tier of risk assessment that develops the initial conceptual site model to establish whether there are any potentially unacceptable risks.
- Generic quantitative risk assessment – uses generic assessment criteria and assumptions to estimate risk.
- Detailed quantitative risk assessment – uses detailed site-specific information to estimate risk.

2.2 Technical Approach to Risk Assessment

LCRM details that for each required tier of risk assessment the following must be identified:

- Identify the hazard – establish contaminant sources.
- Assess the hazard – use a source-pathway-receptor (S-P-R) linkage approach to find out if there is potential for unacceptable risk.
- Estimate the risk – predict what degree of harm or pollution might result and how likely it is to occur by using the tiered approach to risk assessment.
- Evaluate the risk – decide whether a risk is unacceptable.

2.3 Source-Pathway-Receptor Approach

The S-P-R approach uses a risk based approach to assess the potential the identified contamination linkages may cause to human health or the environment. Sources, Pathways and Receptors are defined within LCRM as the following:

- Source – a contaminant or pollutant that is in, on or under the land and that the potential to cause harm or pollution.
- Pathway – a route by which a receptor is or could be affected by a contaminant
- Receptor – something that could be adversely affected by a contaminant, for example a person, controlled waters, an organism, an ecosystem, or Part 2A receptors such as buildings, crops or animals

If a viable pathway is identified to connect a source and receptor then there is potential for a contamination linkage to be present which may cause harm to human health or the environment. Within LCRM these are defined as 'potential contaminant linkages' until they are confirmed.

2.4 Conceptual Site Model

The Conceptual Site Model (CSM) is used to represent the characteristics of The Site and presents the relationship between the identified Sources, Pathways and Receptors showing the 'potential contaminant linkages'. The CSM also evaluates the potential risks from these identified 'potential contaminant linkages'.

2.5 Risk Assessment and Risk Categorisation

The risk assessment process is a requirement defined within LCRM as presented within Section 2.1. The jointly published guidance document EA and NHBC R&D Publication 66: *Guidance for the Safe Development of Housing on Land Affected by Contamination Vol.1* (2008) sets out a strategy for the categorisation of for Preliminary Risk Assessment. Table 1 shows how Risk Categories can be derived for identified 'potential contaminant linkages'.

Table 1: Risk Categories

Probability (Likelihood)	Consequence			
		Severe	Medium	Mild
	High Likelihood	Very High Risk	High Risk	Moderate Risk
	Likely	High Risk	Moderate Risk	Moderate/low Risk
	Low Likelihood	Moderate Risk	Moderate/low risk	Low Risk
	Unlikely	Moderate/Low Risk	Low Risk	Very Low Risk

The risk categories have been given the following definitions:

- Very high risk - There is a high probability that severe harm could arise to a designated receptor from an identified hazard at The Site without appropriate remediation action.
- High Risk - Harm is likely to arise to a designated receptor from an identified hazard at The Site without appropriate remediation action.
- Moderate Risk - It is possible that without appropriate remediation action harm could arise to designated receptor. It is relatively unlikely that any such harm would be severe, and if any harm were to occur it is more likely that such harm would be relatively mild.
- Low Risk - It is possible that harm could arise to a designated receptor from an identified hazard. It is likely that, at worst if any harm was realised any effects would be mild.
- Very Low Risk - The presence of an identified hazard does not give rise to the potential to cause harm to a designated receptor.

Each identified 'potential contaminant linkage' will be assigned a Risk Category as part of the risk assessment process. These will be assigned on a qualitative basis using professional judgement to estimate the Probability and Consequence. The risk category will be utilised to help determine any intrusive investigation strategy required with areas of The Site where

higher risk 'potential pollution linkages' are identified requiring a more intense investigation than those areas with a lower Risk Category.

2.6 Limitations

The project has been undertaken in accordance with The Specification and current standards and guidance as applicable (see References).

This report presents the observations made during desk based studies and the fieldwork period on a factual basis. Any observations within the report are limited to those which can be made based upon the information available at the time.

JGS consider the contents of the report have been produced accurately and the data presented is representative of the site conditions at the time. JGS assumes any third party data included in the report is accurate and correct. No responsibility is accepted by JGS for inaccuracies within third party data.

This report has been written to The Specification and is for use only in this context by the named Client and their advisers and is confidential to the named Client.

This report presents information on ground conditions, including groundwater, gas and contamination concentrations and soil properties, which are based upon the available dataset for the investigation. This dataset is considered representative of the site as whole, however is limited by the locations of investigation. Ground conditions, in particular Made Ground, can vary substantially and JGS do not accept responsibility for local unforeseen changes. Furthermore, groundwater, gas concentrations and chemical concentration can vary with time, atmospheric conditions and spatially dependent upon a variety of confining factors.

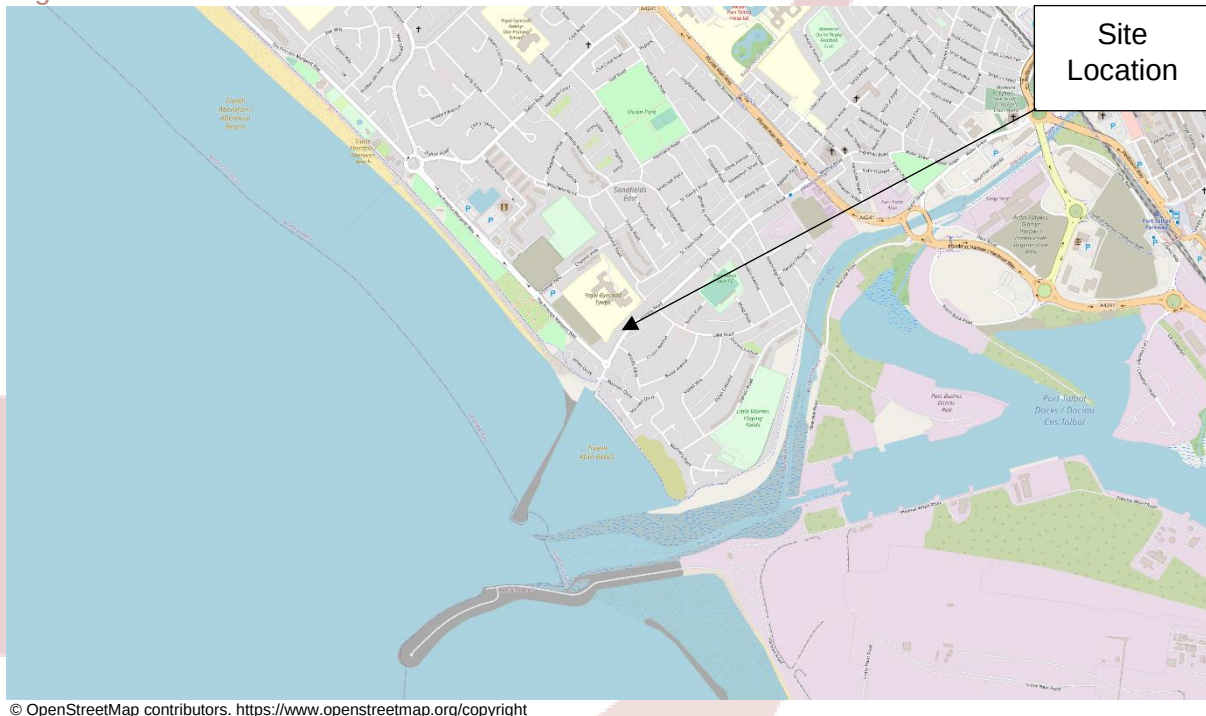
Consideration should be made as to the relevance of the information if the dataset is to be utilised after a significant period of time has elapsed from the date of investigation.

3 The Site

3.1 Site Location

The Site is situated at National Grid Reference (NGR) SS 7487 8927 and is located in the Sandfields area of Port Talbot. The location of The Site is shown in Figure 1:

Figure 1: Site Location



3.2 Current Use

The Site currently comprises an area of former carpark which has been stripped of its macadam surface leaving the site surface comprising rough hardstand. It is roughly rectangular in shape and measures approximately 30 m by 20 m. It lies at the junction of Victoria Road and The Princess Margaret Way.

The Site was found to be gently sloping from a high in the south west, downwards to the north east. Topographic survey levels shown levels to be a high of 10.59 mAOD and a low of 9.78 mAOD. The site is currently vacant. The sites south western boundary has been surrounded by Heras style fencing.

To the south of the car park, but within the fenced area, is a sandy grass verge. This area is included within the sites red line boundary and includes an area of NPT land adjacent to the corner of The Princess Margaret Way and Victoria Road. Beyond the verge is a macadam footway with a number of visible utilities including a linear scar. The sites boundary with Victoria Road contains the northly continuation of this footway however a small blockwork boundary wall is present. The western boundary is also a blockwork wall beyond which are three residential dwellings, beyond which is a new residential development.

To the north of the development boundary is 191 Victoria Road which falls within the ownership boundary of this site. This is a residential property with access and parking to the north of the site boundary. These two areas are separated by a timber post and road fence. Beyond this development is the Sandfields residential estate. This residential development is also present to the east across Victoria road. To the north west is an area of grassland understood to be playing fields associated with the Tywyn Primary School.

To the south is The Princess Margaret Way, beyond which is the modern “Jersey Quay” residential development and Aberavon Seafront. Most locally is “the small beach” and a concrete and riprap protected slipway.

3.3 Anticipated Ground Conditions

As presented within Phase I report, the anticipated ground conditions have been assessed using the data available on the British Geological Survey (BGS) Geology of Britain Viewer (2022), the published BGS map (map no. 247, 2011). These are summarised within Table 2:

Table 2: Anticipated Ground Conditions

Artificial Ground	Landsaped Ground	Landsaped Ground is an area where the land surface (natural or artificial) has been extensively remodelled, but where it is impracticable or impossible to delineate separate zones of Made Ground, Worked Ground, or Disturbed Ground
Primary Superficial Deposits	Blown Sand	Blown sand is sand that has been transported by wind, or sand consisting predominantly of wind-borne particles.
Secondary Superficial Deposits	Tidal Flat Deposits	Tidal flat deposits, including mud flat and sand flat deposits, consist of unconsolidated sediment, mainly mud and/or sand. They may form the top surface of a deltaic deposit. Normally a consolidated soft silty clay, with layers of sand, gravel and peat.
Solid Geology	South Wales Middle Coal Measures Formation	Grey, (productive) coal-bearing mudstones/siltstones, with seat earths and minor sandstones

An inferred fault is recorded around 300 m to the east of the site.

The DEFRA MAGIC mapping system (2022) and the Envirocheck report indicates The Site is located within an area where the superficial deposits and bedrock are classified as a secondary A aquifer with a combined High groundwater vulnerability classification. The Site is indicated not to lie within a source protection zone. The site is not indicated to lie within an European Community (EC) Nitrate directive (91/676/EEC) Nitrate Vulnerability Zone (NVZ).

4 Fieldwork

4.1 General Information

The fieldwork was completed on 21 March 2023.

The ground investigation was undertaken in accordance with BS5930:2015+A1:2020. The works were supervised by a trained and competent JGS engineer.

The layout of the investigation locations and their unique identifiers were determined by JGS. JGS set out the locations onsite from local features.

Services were marked out onsite by Fellow Developments Ltd. prior to works commencing on site and the locations were set to avoid these features.

Prior to excavation, each exploratory hole location was scanned using a Cable Avoidance Tool (CAT) to confirm the absence of services beneath the proposed excavation.

All exploratory hole locations, with the exception of machine excavated trial pits, were excavated to a depth of 1.20 m by hand prior to using mechanical plant. As hand excavation progressed, the excavations were scanned using a Cable Avoidance Tool (CAT) to continue to confirm the absence of services.

Photographs of the materials encountered were taken and are presented in Appendix II.

Following completion of the fieldwork, all investigation locations been surveyed to National Grid and Ordnance Datum. The location of the exploratory holes is shown on the drawing within Appendix I. The survey was completed by JGS.

4.2 Exploratory Holes

The proposed numbers of exploratory holes, their unique identifiers, termination depths and installation requirements were determined by JGS. The details of the as built exploratory holes, including the location ID, construction method, actual termination depth and installation detail, are listed within Table 3.

Table 3: Exploratory Hole Details

Exploratory Hole ID	Construction Method	Termination Depth (m)	Installation Details		
			Type	Diameter (mm)	Response Zone (m bgl)
TP01	Machine excavated trial pit	2.00	Backfilled with arisings		
TP02		2.00			
TP03		2.10			
WS01	Dynamic windowless sampler borehole	5.45	Backfilled with bentonite		
WS02					
WS03					

Notes: SP – Standpipe piezometer; P – Piezometer

During the investigation no significant thickness of potentially gas producing deposits (such as organic containing materials or Made Ground) were encountered. Standpipes for ground gas monitoring were therefore not installed within the exploratory holes.

Fair copy logs, which record the method, samples obtained, in-situ testing completed within the exploratory holes, backfill and descriptions of the material encountered, are presented within Appendix II.

4.3 Logging and Sampling

Samples of the materials encountered were obtained in accordance with The Specification for descriptive and geotechnical and geoenvironmental testing purposes.

The description of the materials encountered was completed in accordance with BS5930:2015+A1:2020, BS EN ISO 14688-1 (2018) and BS EN ISO 14689 (2018).

Geotechnical samples were stored at ambient temperature and protected from extremes of weather until lab testing commenced, either onsite or at the JGS Llantrisant sample storage facility. Once scheduled for testing, the samples were transported to Geo Site and Lab Testing Services Limited (GSTL).

Geoenvironmental samples were packaged appropriately and dispatched directly from site to Eurofins Chemtest ensuring compliance with the deviant sampling policy. The samples were subsequently stored under laboratory conditions until testing commenced.

4.4 In-situ Testing

In-situ testing was completed in accordance with scope of works and relevant associated technical standards. In summary, the in-situ testing comprised the following:

- Standard Penetration testing

The lateral and vertical spacing of the in-situ testing was determined by JGS.

The in-situ testing results are presented on the logs within Appendix II. Calibration certificates for the equipment used are presented within Appendix II as appropriate.

5 Laboratory Testing

5.1 Geotechnical Testing

Laboratory testing for geotechnical purposes was completed at GSTL, UKAS registration number 2788. The testing requirements were specified by JGS and the testing has been completed in accordance with the requirements of relevant technical standards. The geotechnical testing was completed on 11 April 2023. The testing is summarised in Table 4 and the results are presented within Appendix III.

Table 4: Geotechnical Testing Summary

Test Type	Number of Tests
Particle Size Distribution	4

5.2 Geoenvironmental and Geochemical Testing

Laboratory testing for geoenvironmental and geochemical purposes was completed at Eurofins Chemtest, UKAS registration number 2183, with soil pathogens analysis further sub-contracted to Sci-Tech. The testing requirements were specified by JGS and the testing has been completed in accordance with relevant technical standards. The geoenvironmental and geochemical testing was completed on 31 March 2023. The testing is summarised within Table 5 and the results are presented within Appendix IV.

Table 5: Geoenvironmental and Geochemical Testing Summary

Test Type	Number of Tests
Soil Pathogens	2

JGS Soil Screening Suite	6
BRE Suite D	4

6 Ground Conditions Summary

The ground conditions encountered during the fieldwork were consistent with the anticipated ground conditions as outlined within Section 3.3. The ground conditions encountered are summarised within Table 6:

Table 6: Encountered Ground Conditions

Stratum	Top Depth (m bgl)	Top depth (m OD)	Maximum thickness (m)	Remarks
Made Ground (Artificial Ground)	Ground level	9.98	0.90	Encountered within all exploratory holes.
Blown Sand	0.30	9.98	Not Proven	Encountered within all exploratory holes where. Base not proven within any exploratory hole.

The ground conditions encountered were consistent across the site with slight variation in depth of the made ground identified.

Further detail on each stratum encountered is provided below.

6.1 Made Ground

Made Ground was encountered at ground level of each exploratory hole location and comprised non-cohesive materials and was variable in its nature.

The encountered materials comprised predominantly a slightly silty gravelly fine to coarse SAND, partially of ash, with low cobble content. The gravel is very angular to subrounded fine to coarse of limestone, sandstone, slag, clinker, brick and concrete. Cobbles were subangular of sandstone and clinker.

Within exploratory hole WS01 the Made Ground comprises silty SAND and GRAVEL. Sand was fine to coarse partially of ash. Gravel was very angular to subangular fine to coarse of slag, clinker and burnt siltstone.

These materials are deemed representative of the Landscaped Ground artificial ground strata shown on geological mapping.

6.2 Blown Sand

Underlying the Made Ground natural material was identified in all locations comprising non-cohesive materials deemed representative of the mapped superficial Blown Sand strata.

This material comprised light yellowish brown slightly silty fine to medium, occasionally coarse, SAND.

Uncorrected SPT 'N' values in the Blown Sand range between N = 7 and N = 28 indicating the material ranges between loose to medium dense. This indicates an angle of internal friction between 28 and 35 degrees and an approximate unit weight of between 11.9 and 20.4 kN/m³. Four particle size distribution tests were completed on the Blown Sand which indicate it comprises between 98 to 99 % sand and between 1 to 2 % silt or clay.

6.3 Groundwater

Groundwater was not encountered within any of the exploratory holes and therefore is considered to sit at depth beneath the site.

It should be noted that groundwater levels are influenced by seasonal fluctuations and therefore may vary when compared to the levels observed during the fieldwork period.

7 Geoenvironmental Assessment

A Generic Human Health Risk Assessment (GQRA) and Controlled Waters Risk Assessment has been completed in accordance with the guidance given within LCRM (April 2021) as discussed within Section 2 of this report. The purpose of the assessments are to test the source-pathway-receptors identified within Conceptual Site Model (CSM) presented within the Phase 1 Desk Study and identify any actual risk to the identified receptors. The CSM from the desk study is presented in Table 7 below for reference.

Table 7: Initial Site Conceptual Model and Preliminary Risk Assessment

Source	Pathway	Receptor	Consequence	Probability	Risk
Contaminated Soil	Direct Ingestion of soil and dust including adherence to vegetation and subsequent ingestion	Construction workers during redevelopment & future site users	Severe	Medium to High Likelihood	High Risk
	Dermal contact with soil and dust		Mild	Medium to High Likelihood	Moderate Risk
	Inhalation of soil and dust		Severe	Low Likelihood	Moderate/Low Risk
	Ingestion of contaminants via biotic transport (plants and vegetables for consumption)	Future Site Users	Mild	Low Likelihood	Moderate/Low Risk
	Inhalation of vapours		Severe	Low Likelihood	Low Risk
	Downward migration of contaminants via leaching or gravity	Aquifer underlying the site	Mild	Low Likelihood	Low Risk
Contaminated Soil / Groundwater	Lateral migration of contaminants via groundwater flow	Surface Water (Bristol Channel)	Low	Low Likelihood	Negligible Risk
	Direct contact or seepage into supply pipes or drainage	Buried Infrastructure	Mild to Severe	Medium Likelihood	Moderate/Low Risk
	Volatilisation of contaminants into confined air spaces (i.e. buildings)	Future Site Users	Mild to Severe	Low Likelihood	Moderate/Low Risk
	Direct contact with buildings or structures	Building foundations	Low	Low Likelihood	Negligible Risk
Peat and Organic Soil, Contaminated Soil / Groundwater	Migration of ground gas to indoor and outdoor air	Future Site Users	Mild	Low Likelihood	Moderate/Low Risk

7.1 Generic Human Health Risk Assessment

The results of the geoenvironmental tests conducted on soils have been compared against the GACs for a Residential end use with plant uptake and an organic matter content of 1 %. The assessment of the lab results against the GACs is presented within Appendix V. The majority of determinants showed no exceedances of the GACs and these determinants are not considered to pose a risk to human health. However, exceedances of the GACs for Lead, Benzo[b]fluoranthene, Benzo(a)pyrene and Dibenzo(a,h)Anthracene were observed within samples taken from the Made Ground materials. Within the underlying natural material, no exceedances were identified. The exceedances with the made ground are summarised within Table 8.

Table 8: Summary of Determinants which exceed the GAC

Determinant	Critical Concentration (mg/kg)	Maximum Concentration (mg/kg)	Mean* (mg/kg)
Lead	200	240	160
Benzo[b]fluoranthene	2.60	9.3	4.08
Benzo(a)pyrene	2.2	6.1	2.58
Dibenzo(a,h)Anthracene	0.24	1.8	0.63

*Mean is based on 3 samples from the made ground and is therefore not statistically reliable.

Based on the above the shallow Made Ground materials contain levels of PAHs including Benzo(a)pyrene which exceed the GACs for the proposed use of residential with plant uptake. As such they are deemed unsuitable for this use as some remedial action will be required to ensure safe development.

Two samples from TP01 were tested for coliforms which was excavated in the vicinity of the former public toilet. There is no GAC for coliforms. The results indicated that presumptive coliforms were observed above the detection limits within the sample TP1 at 0.10m depth. However the levels of faecal streptococci and E Coli in both samples tested were below the detection limits. Therefore it is considered that historic faecal matter has not impacted the site and does not pose a risk to the identified receptors.

7.2 Controlled Waters Risk Assessment

The results of the geoenvironmental tests indicate generally low levels of contamination have been observed onsite with samples taken from the natural material not exceeding any GACs. When these low levels are considered in conjunction with the proposed site layout comprising only a limited area of soft landscaping and the made ground being found to contain low mobility contaminants such as PAHs and lead, it is considered that there is a minimal risk from leachates migrating downwards and contaminating the groundwater underlying the site and therefore The Site is not considered to pose a risk to controlled waters.

8 Preliminary Vapour Risk Assessment

The potential for vapours has been identified within the initial CSM with the primary potential vapour source anticipated to be either Made Ground or materials containing organics (such as peat) which are under lying the site. No significant thickness of Made Ground and no materials containing organics were encountered during the investigation as such there is not considered to be source likely to produce ground gas present which could impact The Site.

9 Revised Conceptual Site Model and Conclusions

9.1 Revised Conceptual Site Model

The results of the GQRA and Controlled Waters Risk Assessments undertaken suggest that the majority of determinants do not pose a risk to the identified receptors identified within the CSM.

The exception is the shallow Made Ground materials which have been shown to contain levels of PAHs and lead that could pose a risk to future site users should they be present within future garden areas.

9.2 Conclusions and Recommendations

It is considered that The Site can generally be considered suitable for the proposed end development however some remedial action is required to mitigate against the risk from shallow Made Ground. The most appropriate approach would be through the removal of the source (Made Ground) from within the areas of the proposed gardens and the installation of a clean soil cover system as defined in BRE 465.

A BRE 465 cover system has been designed based on the conservative assumption that levels of BaP are the main risk driver. The highest exceedance (6.1) was around 2.8 times the GAC for BaP (2.2 mg/kg). This would require a cover system of **470mm thickness** of clean topsoil. These calculations are based on a mixing zone of 600mm.

It is likely that in the proposed garden areas there may be less than 470mm of thickness of Made Ground below the designed garden levels. If this is the case, Made Ground should be removed until clean natural soils have been exposed to a sufficient depth to allow the placement of the required minimum topsoil thickness. As per NHBC technical extra (issue 8) (2012), '*verification of clean cover system-testing of subsoil and topsoil*', imported topsoil should meet the standard of BS 3882:2007 and be obtained from a certified and tested source.

Following placement, the cover system will require validation by a geoenvironmental specialist. The validation report should comprise confirmation that the imported topsoil meets BS 3882:2007 (i.e. certification from the material source is available for inclusion in the report) and confirmation that a suitable depth of clean cover has been placed onsite (i.e. pitting to confirm a sufficient depth of Made Ground has been removed and clean cover placed). This validation report should be submitted to the Local Planning Authority.

10 Geotechnical Assessment

10.1 Foundation Options

The results of this investigation have shown that suitable bearing strata are present at shallow depths comprising Blown Sand and therefore shallow foundations (such as strip or pad foundations) are considered a likely suitable foundation option. It is not recommended that foundation are constructed within the Made Ground due to its variable nature.

10.2 Building Foundations

The ground conditions are deemed suitable for the use of traditional strip foundations for the proposed buildings bearing on the Blown Sand.

Foundations should fully penetrate any made ground and should extend at least 0.15 m into the underlying natural materials.

Indicative allowable bearing capacities are given for the proposed strip foundations in the table 9 below. Calculations have been made based on a 1.00 m wide strip footing.

Table 9: Allowable Bearing Capacity Calculations

Depth (m)	Allowable Bearing Capacity (kN/m ²)
1.00	55
1.50	120
2.00	170

At the above bearing pressure total settlements are unlikely to exceed 20 mm. Within granular materials settlements are expected to be rapid.

11 Aggressive Chemical Environment for Concrete Classification

Chemical agents within the ground can provide a destructive environment to concrete with sulphates and acids most likely to attack and degrade concrete. This can lead to the softening and expansion of concrete, reducing its structural properties. In line with current practice, BRE Special Digest 1, Concrete in Aggressive Ground (2005) has been used to determine the Design Sulphate Class and Aggressive Chemical Environment for Concrete (ACEC) classification.

Four samples have been tested for the Brownfield testing suite as defined within BRE Special Digest 1, the results are presented within Appendix IV. The classification has been completed using the population tested within each stratum, taking the maximum value within in each stratum in order to determine the DS and ACEC classification requirements for the concrete.

☞ pH = 8.9-9.1 - Water Soluble Sulphate as SO₄ = <10mg/l

Comparison of these values to Table C2, ACEC Classification for Brownfield Locations presented within BRE Special Digest indicates a Design Sulphate Classification for location of DS-1 and a ACEC classification of AC-1s for all materials.

12 References

- ≡ BGS England and Wales Sheet 247, Swansea, 1:50000 geological map (Bedrock and Superficials). British Geological Survey. (2011)
- ≡ BGS GeoIndex (onshore) Map Viewer. www.bgs.ac.uk. British Geological Survey. (2023)
- ≡ BRE Special Digest 1. Concrete in aggressive ground. Building Research Establishment. (2005)
- ≡ BRE 465. Cover systems for land regeneration – thickness of cover systems for contaminated land. (2004)
- ≡ BS 1377. Methods of test for soils for civil engineering purposes. British Standards Institution. (1990)
- ≡ BS 5930:2015+A1. Code of practice for ground investigations. British Standards Institution. (2020)
- ≡ BS 10175:2011+A2. Investigation of potentially contaminated sites. Code of practice. (2017)
- ≡ BS EN 1997-2. Eurocode 7. Geotechnical design. Part 2 Ground investigation and testing. British Standards Institution. (2007, incorporating corrigendum June 2010)
- ≡ BS EN ISO 14688-1. Geotechnical investigation and testing. Identification and classification of soil. Part 1 Identification and description (2018)
- ≡ BS EN ISO 14688-2. Geotechnical investigation and testing. Identification and classification of soil. Part 2 Principles for a classification (2018)
- ≡ BS EN ISO 22476-3:2005+A1. Geotechnical investigation and testing. Field testing. Part 3 Standard penetration test. British Standards Institution. (2011)
- ≡ Department for Environment, Food and Rural Affairs (DEFRA) MAGIC maps online application. DEFRA (2023)
- ≡ NHBC Technical Extra (issue 8) : Verification of clean cover system-testing of subsoil and topsoil (2012)
- ≡ Open Street Map (2023)

Appendix I

Drawings

Exploratory Hole Plan

Drawing Number: JGS-G22075-JGS001

Client Design Drawings

Drawing Number: GOCD GKT01 – P007

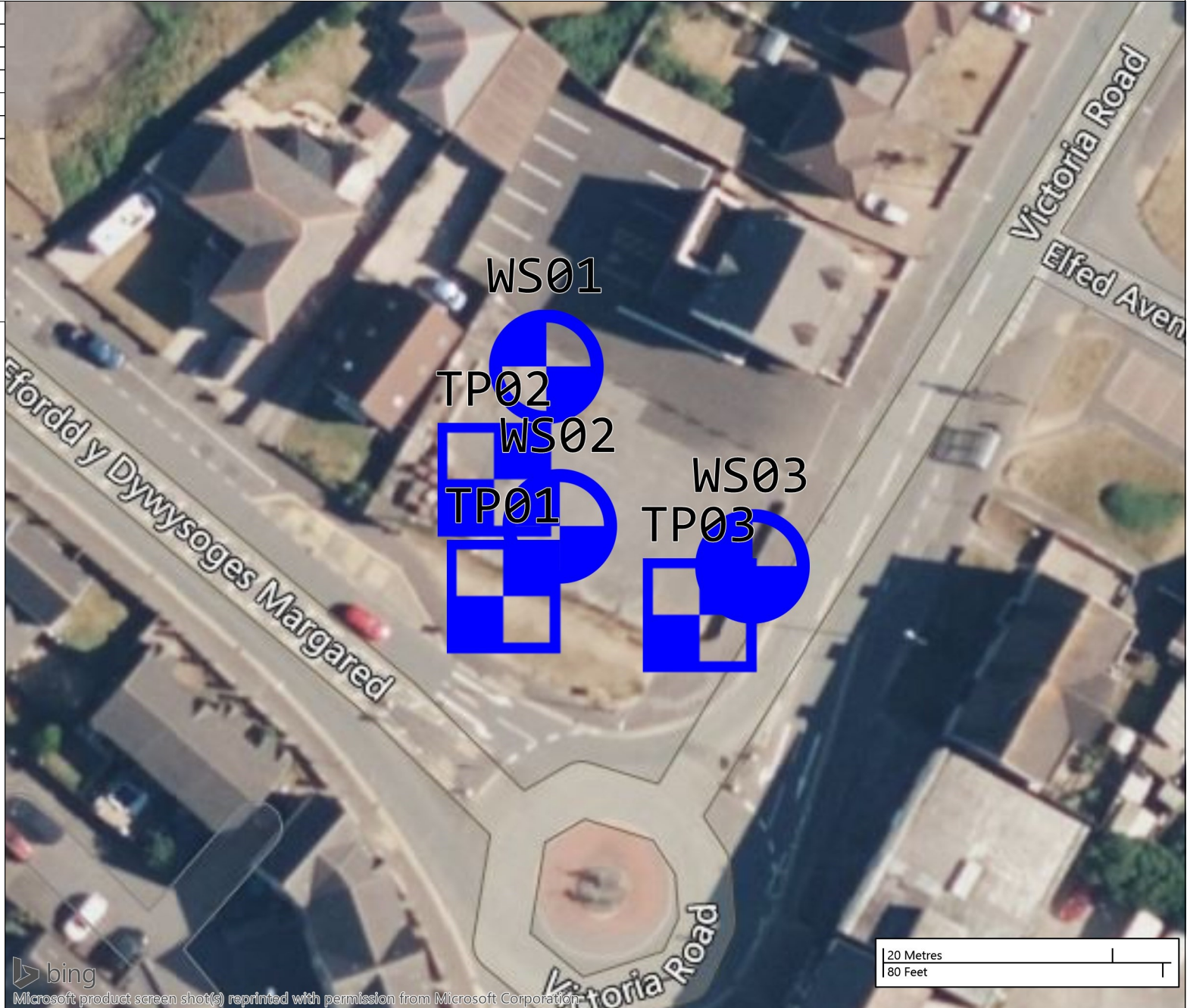
SITE PLAN

Project	Former Grove Public House Car Park
Client	Fellow Developments Ltd.
Project Number	G22075
Drawing Number	G22075-JGS-001
Scale	1:500
Printed	06/04/2023 08:24



Legend Key

-  Locations By Type - TP
-  Locations By Type - WS





Planning Statement

Land at 191 Victoria Rd, Port Talbot, SA12 6QJ

Full Planning Application for 1Nr. Detached Residential Dwelling Plus 2 Residential Apartments

Introduction

This document has been prepared to support a Planning Application to construct 1nr detached residential dwelling and 2 residential apartments on the former Grove Public House carpark on Victoria Rd. Please see below location plan for the proposed site (NTS).



01

Location Plan

1 : 1000

Pre-Planning Application

Pre-planning application advice was sought on 15th June 2021 with a response received on 30th August 2021. See Planning Ref. Q2021/0135.

The pre-planning response was very positive towards our proposals with some relatively minor observations and recommendations received. These are summarised below along with responses relative to the designs proposed in this full planning application.

1. Rear balcony design and location.

The rear balcony has been designed and positioned to provide views across to the Swansea Bay area. The proposed Coach house / Annex is positioned so that it aligns with the existing Ty Traeth, it also prevents overlooking onto Ty Traeth from the rear balcony area. We don't believe there are any issues with overlooking from the design.

2. Coach House overbearing.

The Coach House has been carefully designed to ensure no impact on neighbouring Ty Traeth. The ridge heights are the same and given the sun paths there will be no detrimental impact on Ty Traeth. The whole form of the design very much mirrors Ty Traeth creating a very nice street scene. The garden of the proposed main dwelling will not feel the affect of the new proposed Coach House either. The distances have been considered and the proposed dwelling has a large garden which will not feel over powered by the relatively low eaves height of the Coach House. The courtyard garden feel has been purposely designed for privacy and a feel of isolation within the external grounds of the new proposed main dwelling; this is very much key to the whole flow of the design from inside to outside.

3. Highways

Visibility splays have now been provided for access and egress. Parking spaces are now aligned with the new requirement of 2.6m x 4.8m. Street sign relocation proposal is shown on the proposed site plan. Existing approved parking arrangement for 'The Grove' shown on proposed site plan are unimpacted by proposed development and access. Boundary treatments shown on site plan. Where visibility is required from public highway, boundary treatment is restricted to 600mm as requested.

4. Major Development

Our proposals do not constitute a 'Major Development' and therefore the pre-app comments regarding this are not applicable.

This full planning application takes cognisance of the advice received within the pre-planning response and we feel any concerns have been addressed in our proposals.

5. Land Contamination Assessment

A Phase 1 Land Contamination Assessment will be carried out and submitted for approval prior to commencement on site. If the Phase 1 desktop study requires a Phase 2 and 3 investigation, and remediation works, then details will be submitted for approval prior to commencement. Given our knowledge of the site, we don't envisage any further investigation following the Phase 1 Desktop Study.

LDP Overarching Policies

SC1 – Settlement Limits

The proposed development is located within the existing settlement of Sandfields.

SP3 – Sustainable Communities

The settlement of Sandfields is classified as a Large Local Centre within the Town of Port Talbot. The proposed development site is located within a sustainable location with existing adequate public transport links, retail units and local services. This settlement can easily accommodate the growth of the new residential dwellings proposed in addition to the designated H1 sites nearby.

LDP Topic Based Policies

SP7 – Housing Requirement

Under Policy SP7 a growth strategy to deliver 8,760 between 2011-2026 is set out. In the 2017/2018 review and monitoring of these targets SP7 is highlighted for further research and investigation. In 2017/2018 housing delivery fell short of target by 477 units; delivering 148 units compared to the 625 units targeted for the year. Whilst these totals are made up of high-volume Policy H1 sites, the delivery of smaller private residential development is an important contribution towards these targets; particularly with the growth in popularity and accessibility to self-build funding. Our proposals contribute positively towards the targets set out in SP7 and will be a welcomed development in a sought-after location on a site that is currently redundant on an important street scene junction at the beach front.

TR2 – Design & Access of New Development

Development on the proposed site will not compromise the safe, effective and efficient use of the existing highway network. The proposed development will have no significant adverse effect nor increase in traffic generation to the existing infrastructure. The development proposals include sufficient access to off-road parking (3 Parking Spaces for the detached dwelling and 3 Parking Spaces for the 2 apartments) within the curtilage of the plot, from an existing vehicle access off the main street of Victoria Rd.

Cycling and walking is a very popular activity within the area particularly with the ease of access to Aberavon Beach Front and local amenities such as shops and a health centre. The proposed development plot is easily accessible via walking and cycling. There is also a public bus service with a bus stop immediately at the proposed site boundary.

BE1 – Design

Local Context & Character

The existing dwellings in the locality of the proposed development have a broad range of characteristics, finishes, scale and layouts. Along Victoria Road there are large detached and semi-detached properties with various external finishes from brickwork, render, pebbledash, timber cladding and stonework. There are also a variety of roof gradients, eaves levels and feature gable ends making attractive features throughout the street.

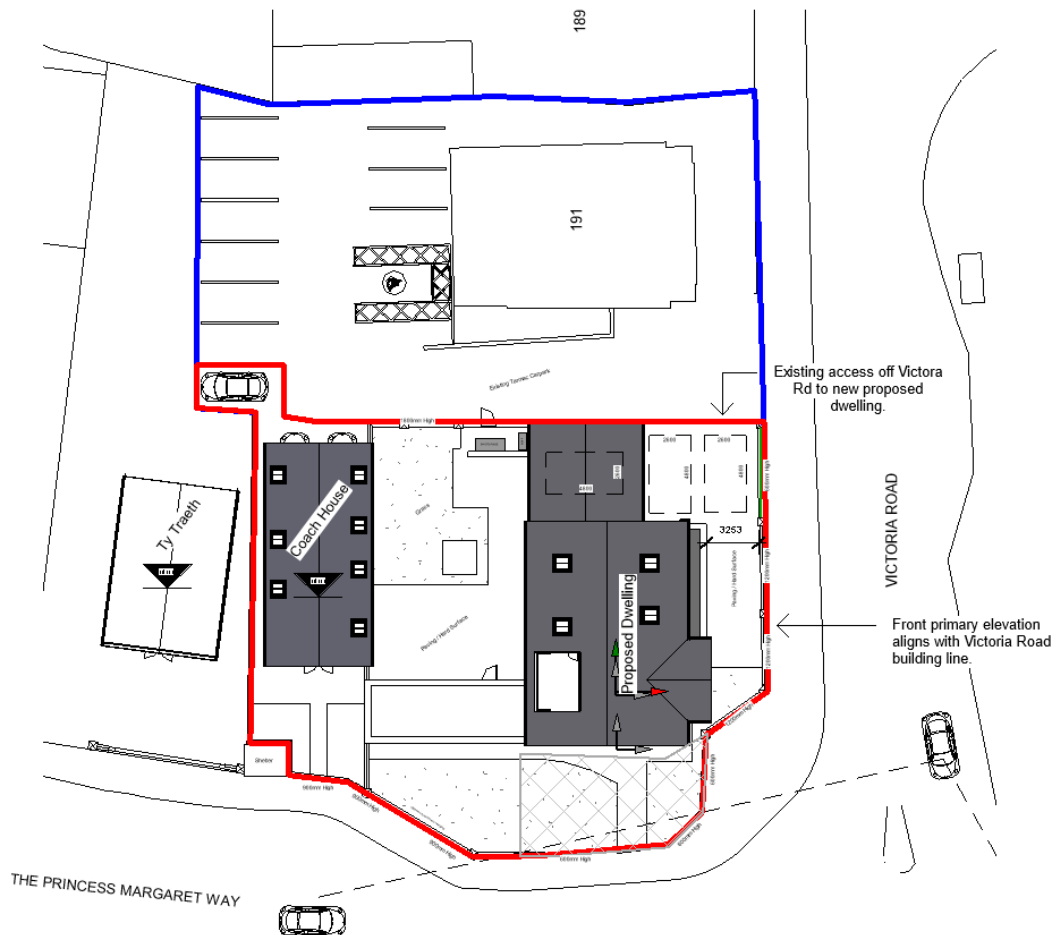
Opposite the proposed development site, along The Princess Margaret Way, there are the higher rise apartment blocks of Jersey Quay. Our proposals have been carefully considered in that the feature Princess Margaret Way gable elevation acknowledges the gable features and balcony features of the existing apartments. It really will reflect on each other and create a wonderful main junction street scene at this end of the beach. The Gallois Public House also has an external balcony area which nods to our proposals.

We propose the use of predominantly face brickwork and light textured render, which ties in with the character of Jersey Quay. The feature gable proposes some feature timber cladding highlights which will really make this whole street junction special but not overpowering. It's subtle and natural but enough to catch the eye and improve the street scene here.





1 Street Scene - The Princess Margaret Way
1 : 150



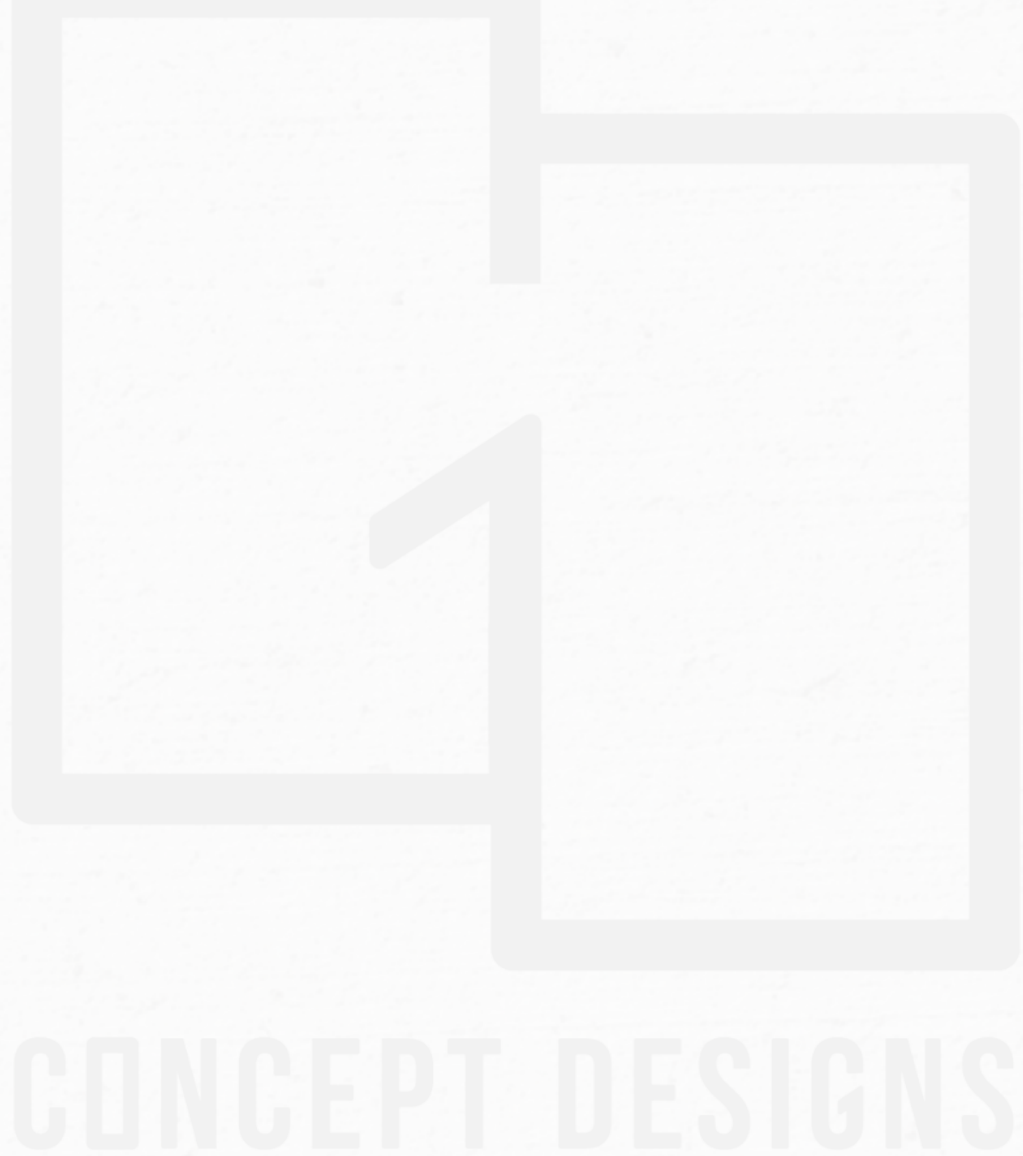
03 Proposed Site Plan
1 : 500



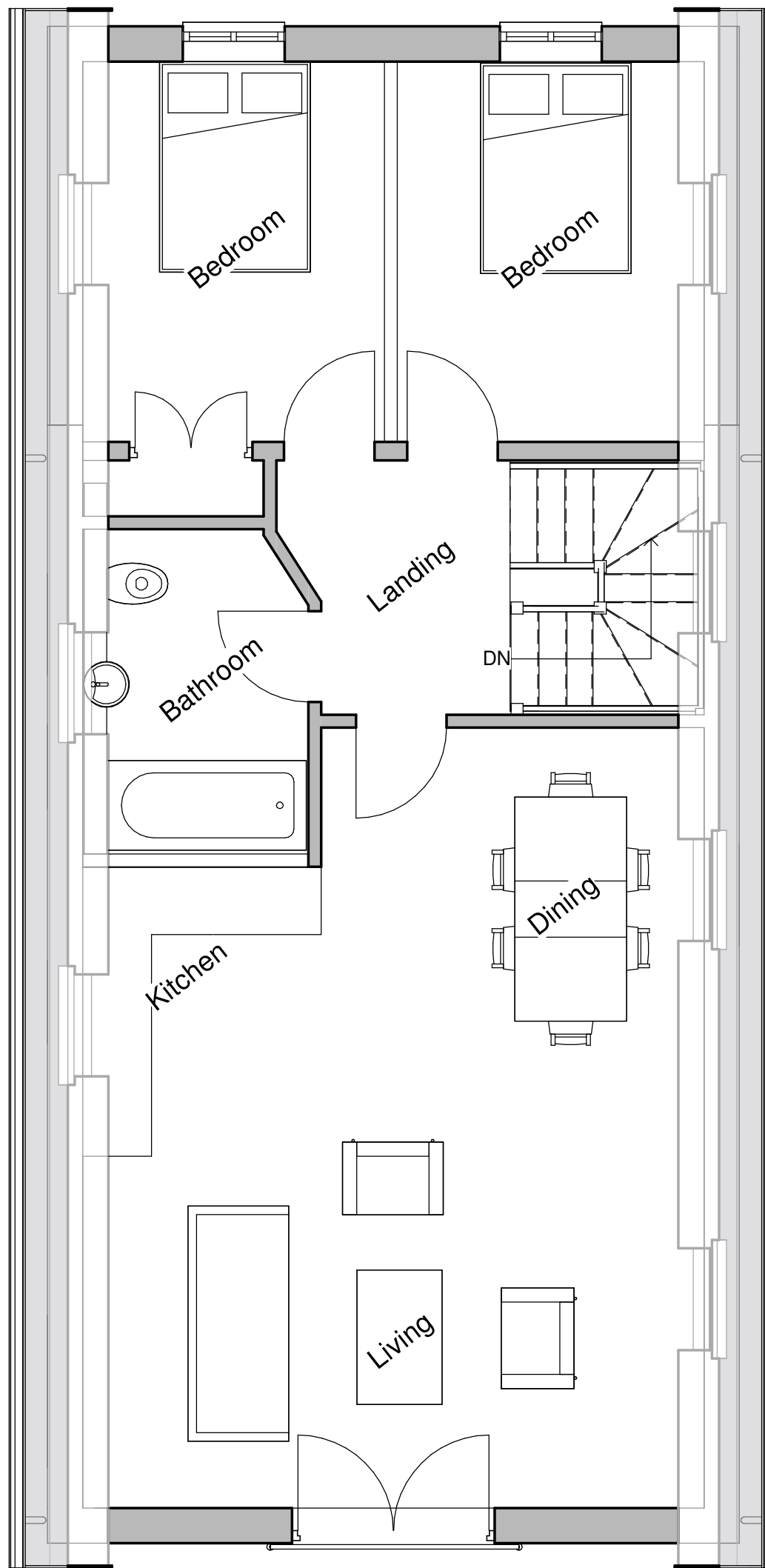
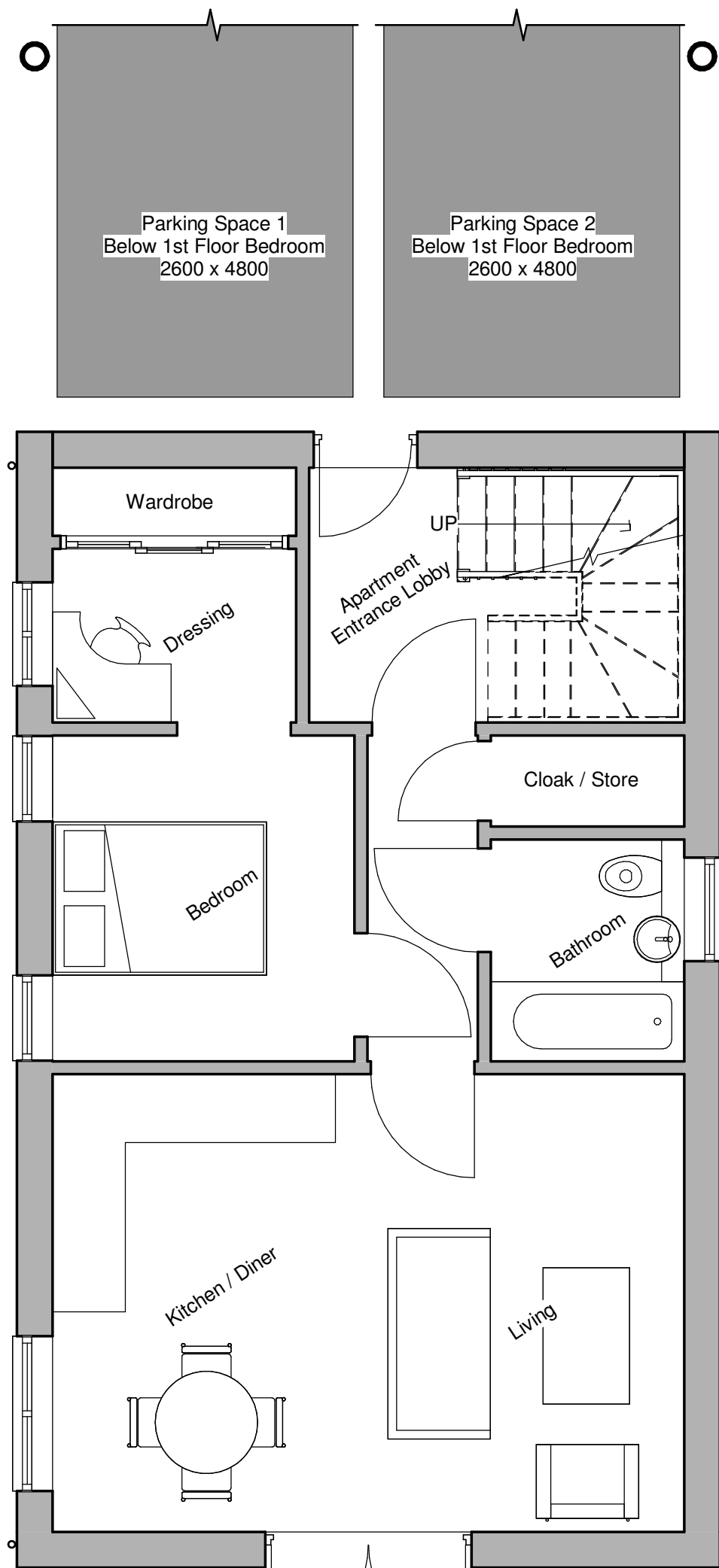
Summary

The proposed development has been designed to naturally fit in with the surrounding area through the use of features and elevation treatments common to the locality. The scale and aesthetic of the proposals compliment the surrounding area and really bring first class architectural design to this important junction at the eastern end of Aberavon Beach Front which will lift the whole area.

The relevant LDP Policies have been reviewed and considered, and it is believed that the proposed development is compliant with these policies and would constitute suitable and sought-after development at this vacant brownfield site.



CONCEPT DESIGNS



NOTES:



DRAWING STATUS

Planning

PROJECT

191 Victoria Rd, Port Talbot -
Residential Dwelling

TITLE

Coach House Floor Plans

CLIENT

Mr & Mrs G Thomas

DRAWN BY
Gareth Owen

DATE
03.06.22

SCALE (@A3)
1 : 50

PROJECT NO.
GOCD GKT01

DRAWING NO.
CH01

REV
-

GO CONCEPT DESIGNS LTD, 9 DARWIN RD, PORT TALBOT, SA12 6BT
gareth@goconceptdesigns.co.uk adriana@goconceptdesigns.co.uk



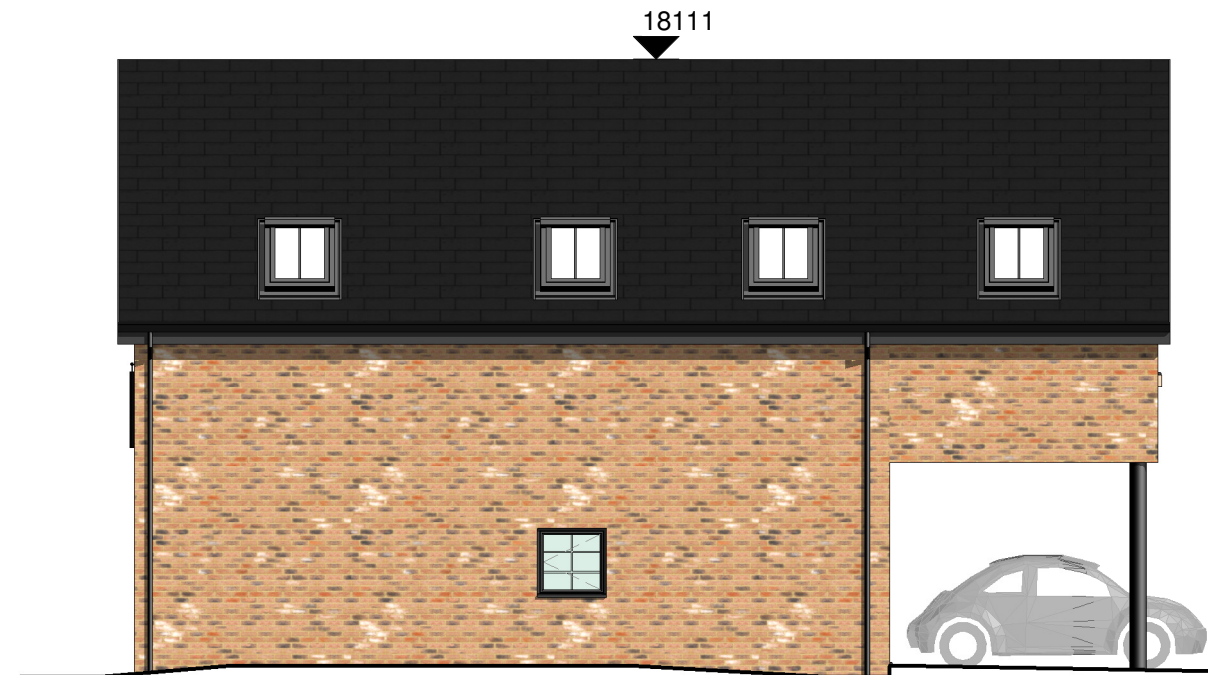
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2 Proposed Rear Elevation
1 : 100



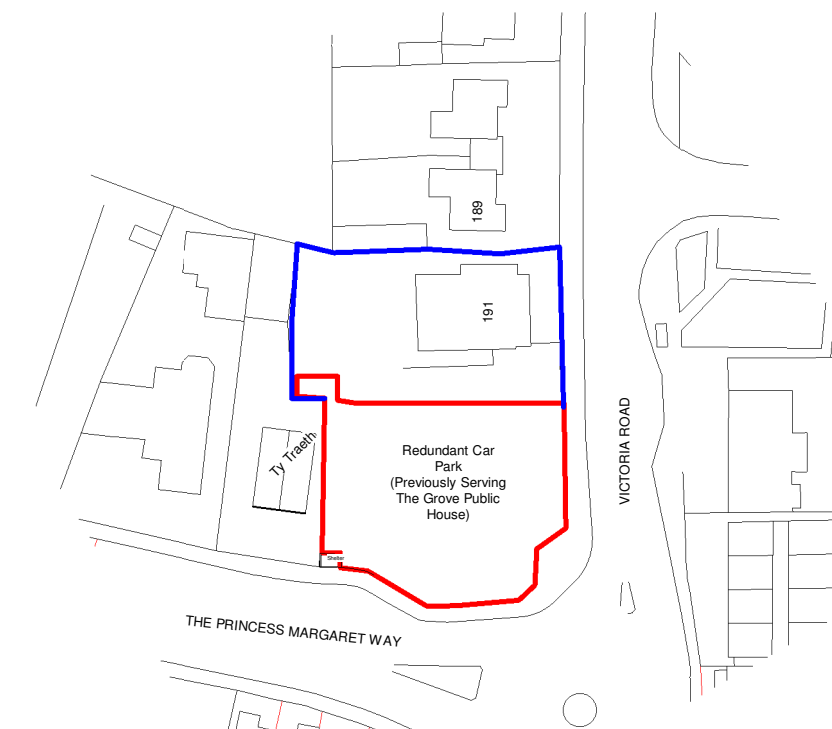
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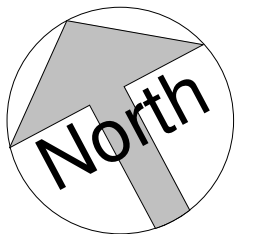
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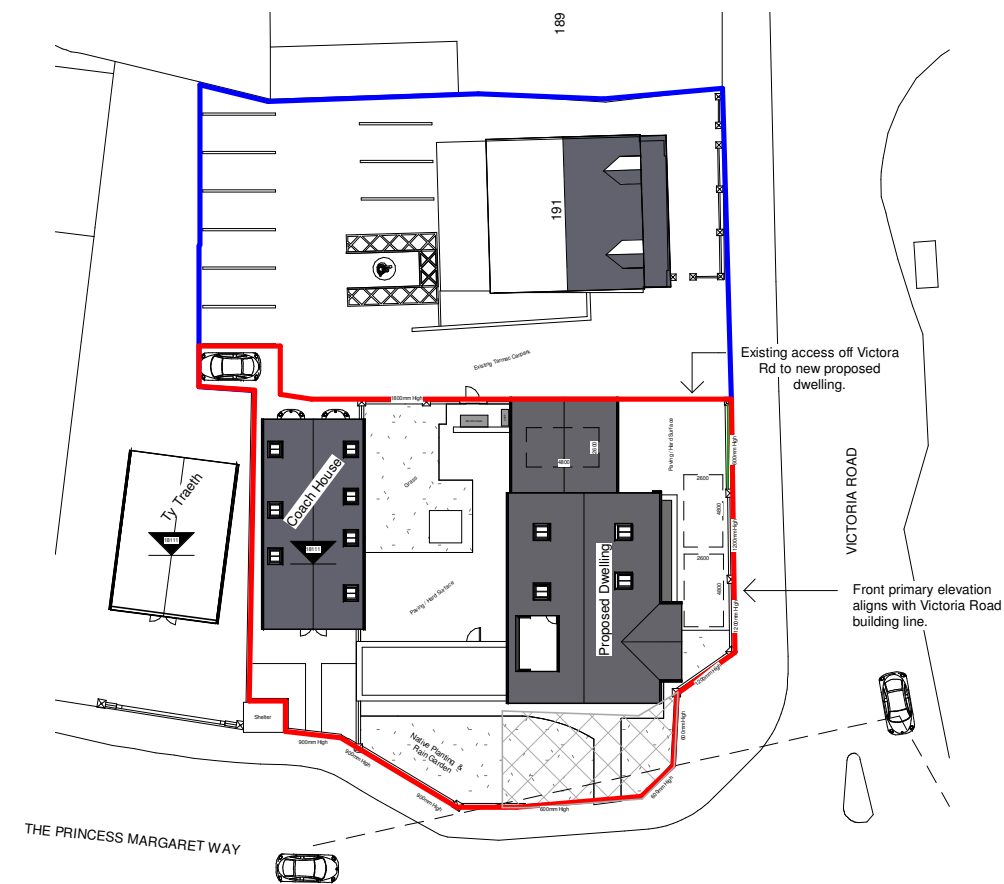
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Planning	
PROJECT	
191 Victoria Rd, Port Talbot - Residential Dwelling	
TITLE	
Coach House Elevations	
CLIENT	
Mr & Mrs G Thomas	
DRAWN BY	DATE
Gareth Owen	03.06.22
SCALE (@A3)	PROJECT NO.
1 : 100	GOCD GKT01
DRAWING NO.	REV
CH02	-
GO CONCEPT DESIGNS, 9 DARWIN RD, PORT TALBOT, SA12 6BT	
gareth@goconceptdesigns.co.uk	



01 Location Plan
1 : 1000



02 Existing Site Plan
1 : 500



03 Proposed Site Plan
1 : 500



DRAWING STATUS
Planning - Site

PROJECT
191 Victoria Rd, Port Talbot - Residential Dwelling

TITLE
Location & Site Plans

CLIENT
Mr & Mrs G Thomas

DRAWN BY
Gareth Owen

DATE
20.06.22

SCALE (@A3)
As indicated

PROJECT NO.
GOCD GKT01

DRAWING NO.
S001

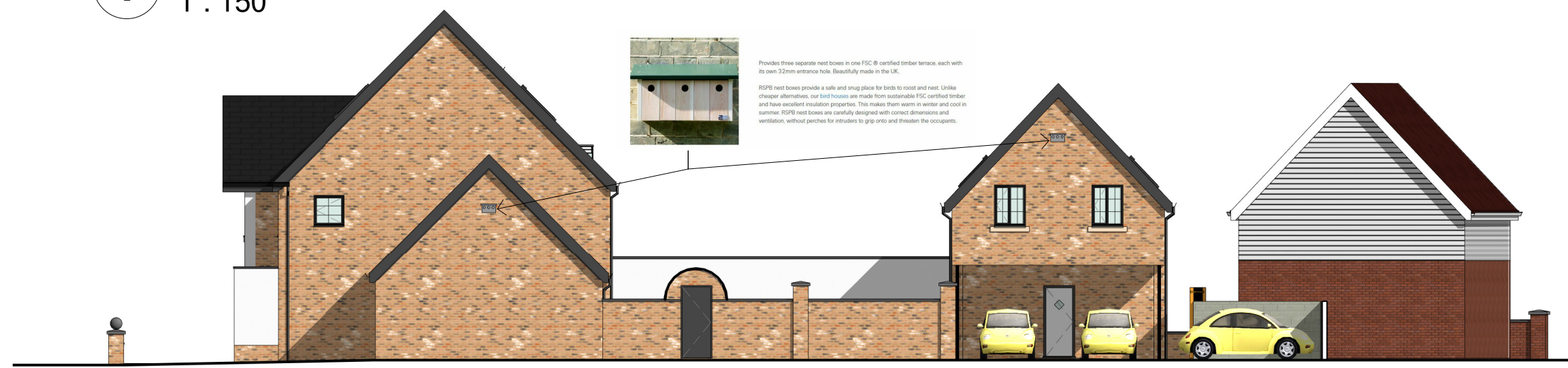
REV
P1

GO CONCEPT DESIGNS, 9 DARWIN RD, PORT TALBOT, SA12 6BT

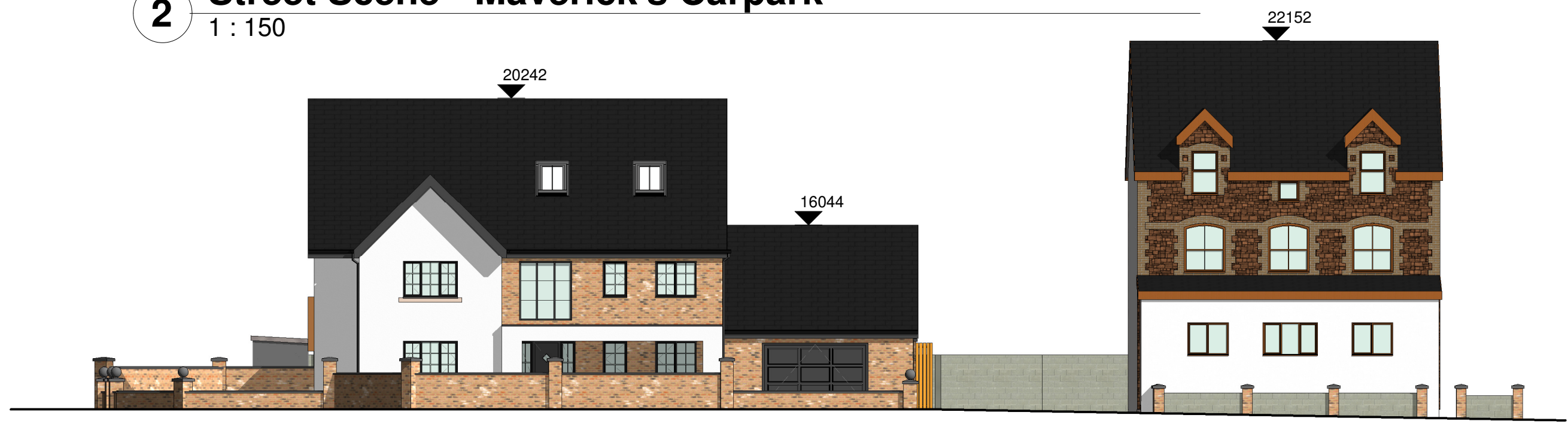
gareth@goconceptdesigns.co.uk



1 Street Scene - The Princess Margaret Way
1 : 150



2 Street Scene - Maverick's Carpark
1 : 150

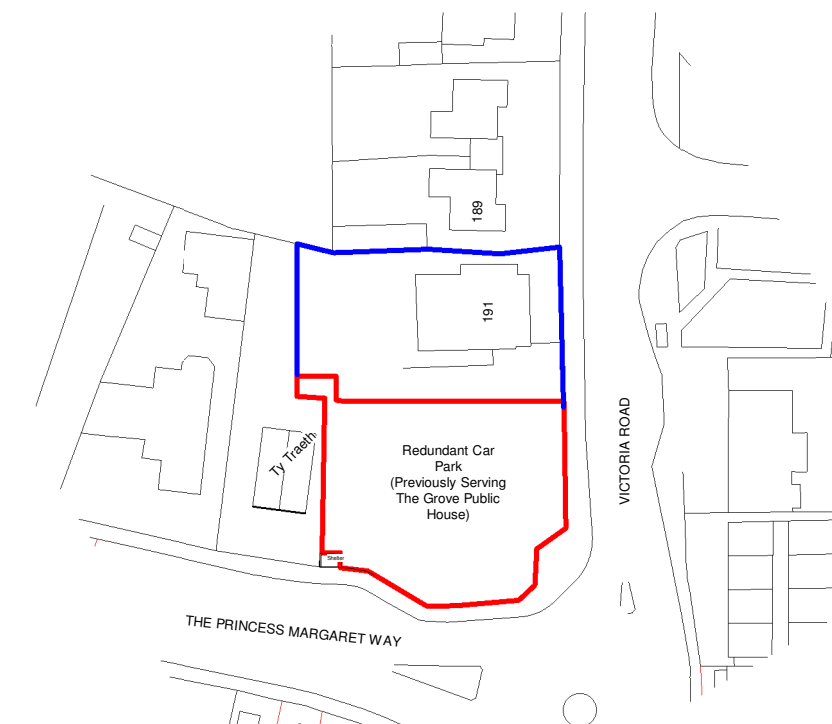


3 Street Scene - Victoria Road
1 : 150

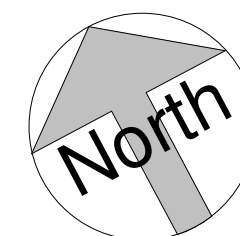
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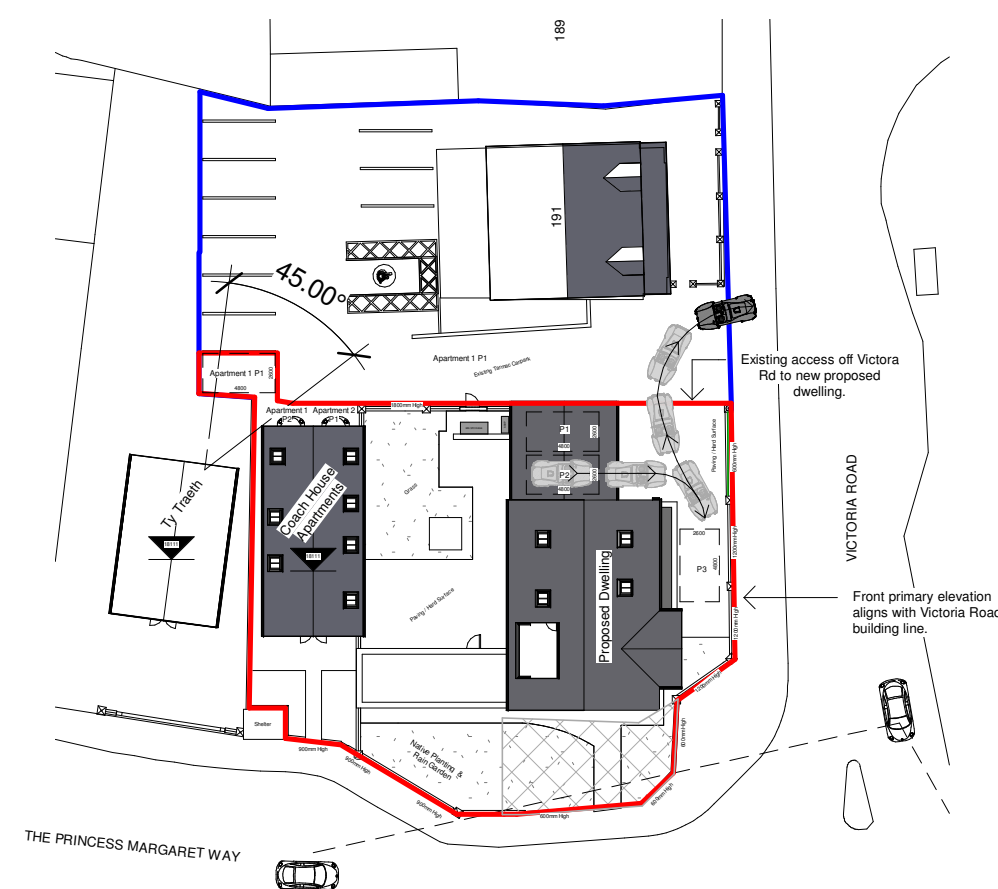
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PROJECT	
191 Victoria Rd, Port Talbot - Residential Dwelling	
TITLE	
Street Scenes	
CLIENT	
Mr & Mrs G Thomas	
DRAWN BY Gareth Owen	DATE 20.06.22
SCALE (@A3) 1 : 150	PROJECT NO. GOCD GKT01
DRAWING NO. S002	REV P1
GO CONCEPT DESIGNS LTD, 9 DARWIN RD, PORT TALBOT, SA12 6BT gareth@goconceptdesigns.co.uk adriana@goconceptdesigns.co.uk	



01 Location Plan
1 : 1000



02 Existing Site Plan
1 : 500



03 Proposed Site Plan
1 : 500



DRAWING STATUS

Planning - Site

PROJECT

191 Victoria Rd, Port Talbot -
Residential Dwelling

TITLE

Location & Site Plans

CLIENT

Mr & Mrs G Thomas

DRAWN BY
Gareth Owen

DATE
29.07.22

SCALE (@A3)
As indicated

PROJECT NO.
GOCD GKT01

DRAWING NO.
S001

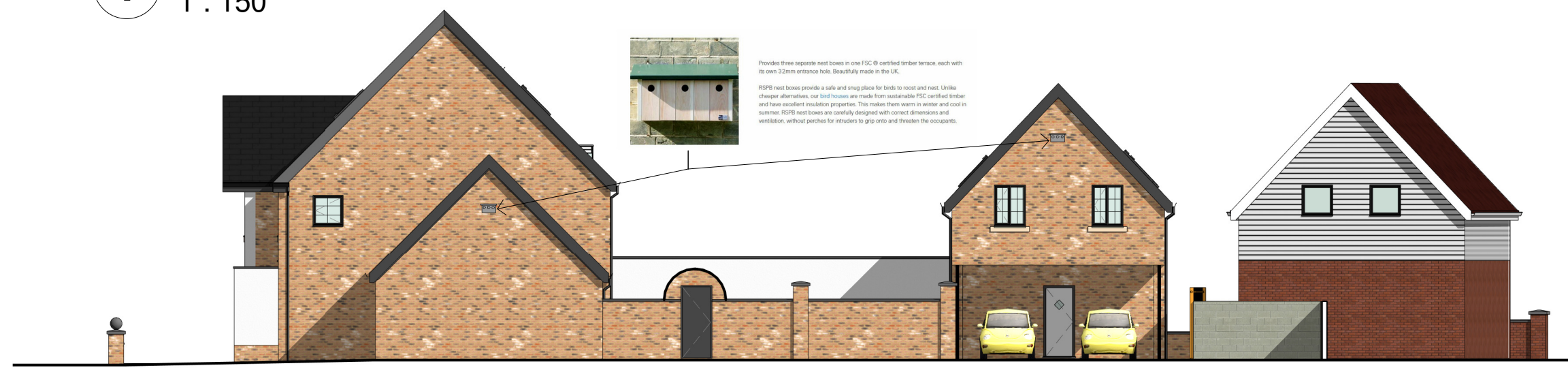
REV
P2

GO CONCEPT DESIGNS, 9 DARWIN RD, PORT
TALBOT, SA12 6BT

gareth@goconceptdesigns.co.uk



1 **Street Scene - The Princess Margaret Way**
1 : 150



2 **Street Scene - Maverick's Carpark**
1 : 150



3 **Street Scene - Victoria Road**
1 : 150

NOTES:



DRAWING STATUS	
Planning - Site	
PROJECT	
191 Victoria Rd, Port Talbot - Residential Dwelling	
TITLE	
Street Scenes	
CLIENT	
Mr & Mrs G Thomas	
DRAWN BY	DATE
Gareth Owen	29.07.22
SCALE (@A3)	PROJECT NO.
1 : 150	GOCD GKT01
DRAWING NO.	REV
S002	P2
GO CONCEPT DESIGNS LTD, 9 DARWIN RD, PORT TALBOT, SA12 6BT	
gareth@goconceptdesigns.co.uk adriana@goconceptdesigns.co.uk	



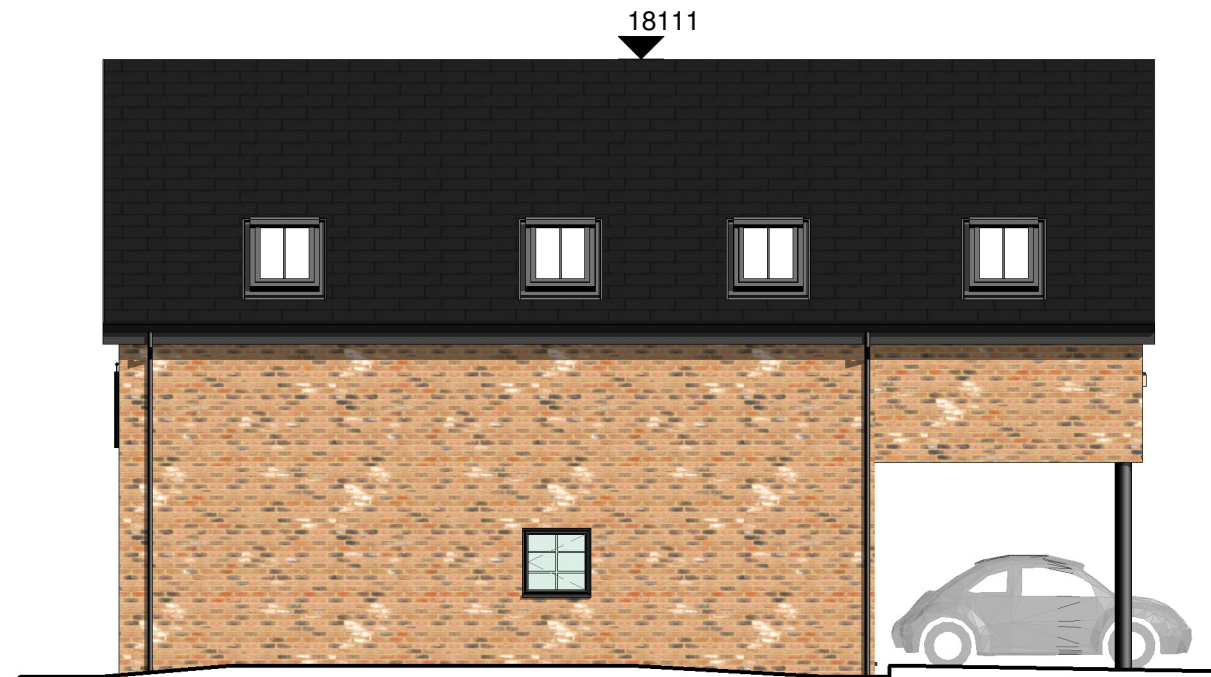
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2 Proposed Rear Elevation
1 : 100



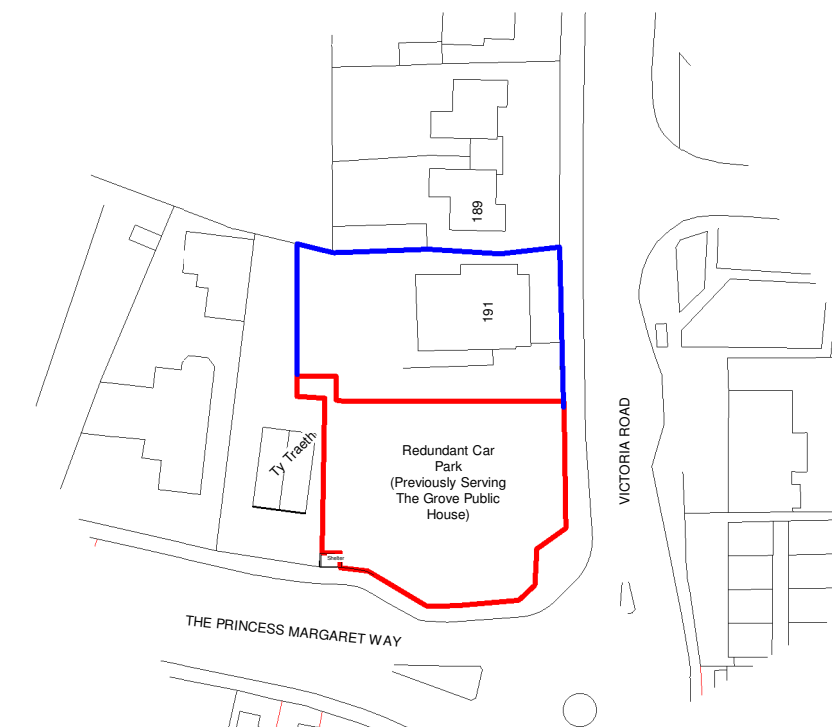
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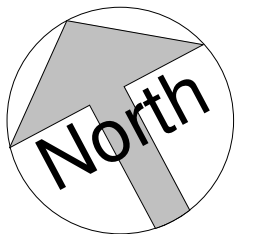
4 Proposed Left Elevation
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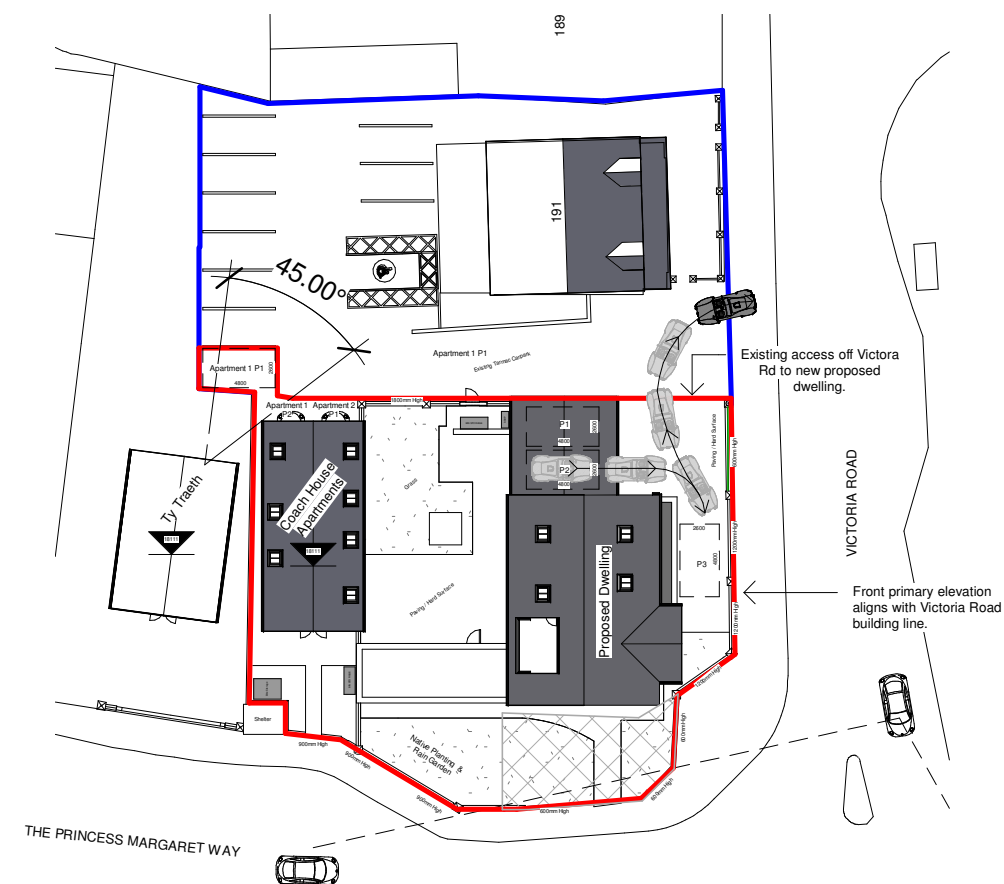
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PROJECT	
191 Victoria Rd, Port Talbot - Residential Dwelling	
TITLE	
Coach House Elevations	
CLIENT	
Mr & Mrs G Thomas	
DRAWN BY	DATE
Gareth Owen	27.06.22
SCALE (@A3)	PROJECT NO.
1 : 100	GOCD GKT01
DRAWING NO.	REV
CH02	P1
GO CONCEPT DESIGNS, 9 DARWIN RD, PORT TALBOT, SA12 6BT	
gareth@goconceptdesigns.co.uk	



01 Location Plan
1 : 1000



02 Existing Site Plan
1 : 500



03 Proposed Site Plan
1 : 500



DRAWING STATUS

Planning - Site

PROJECT

191 Victoria Rd, Port Talbot -
Residential Dwelling

TITLE

Location & Site Plans

CLIENT

Mr & Mrs G Thomas

DRAWN BY
Gareth Owen

DATE
03.08.22

SCALE (@A3)
As indicated

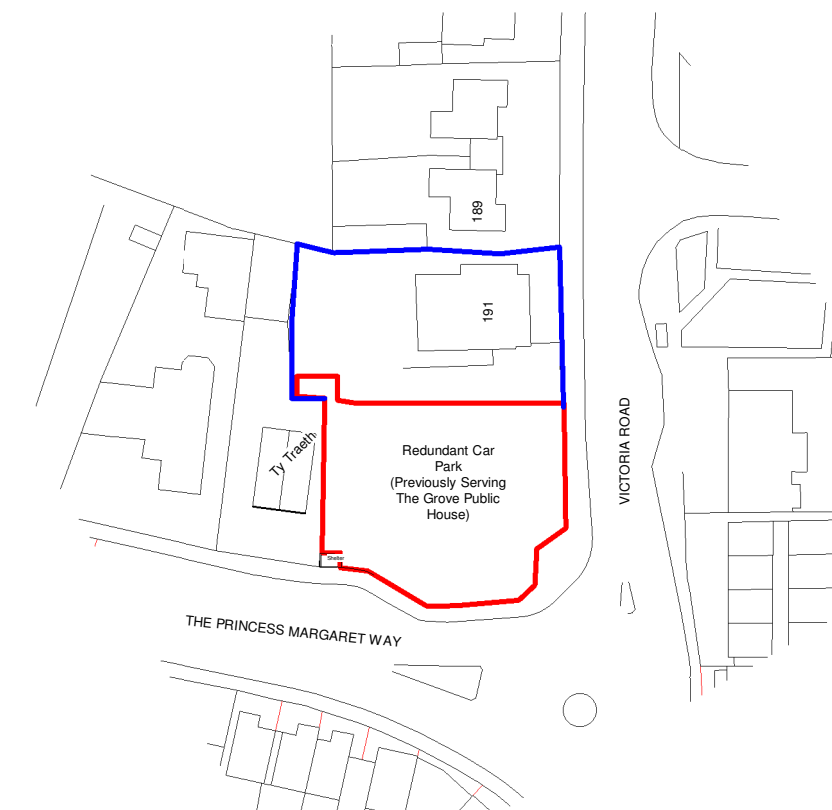
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GOCD GKT01

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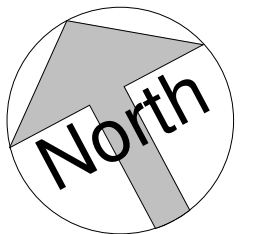
REV
P3

GO CONCEPT DESIGNS, 9 DARWIN RD, PORT
TALBOT, SA12 6BT

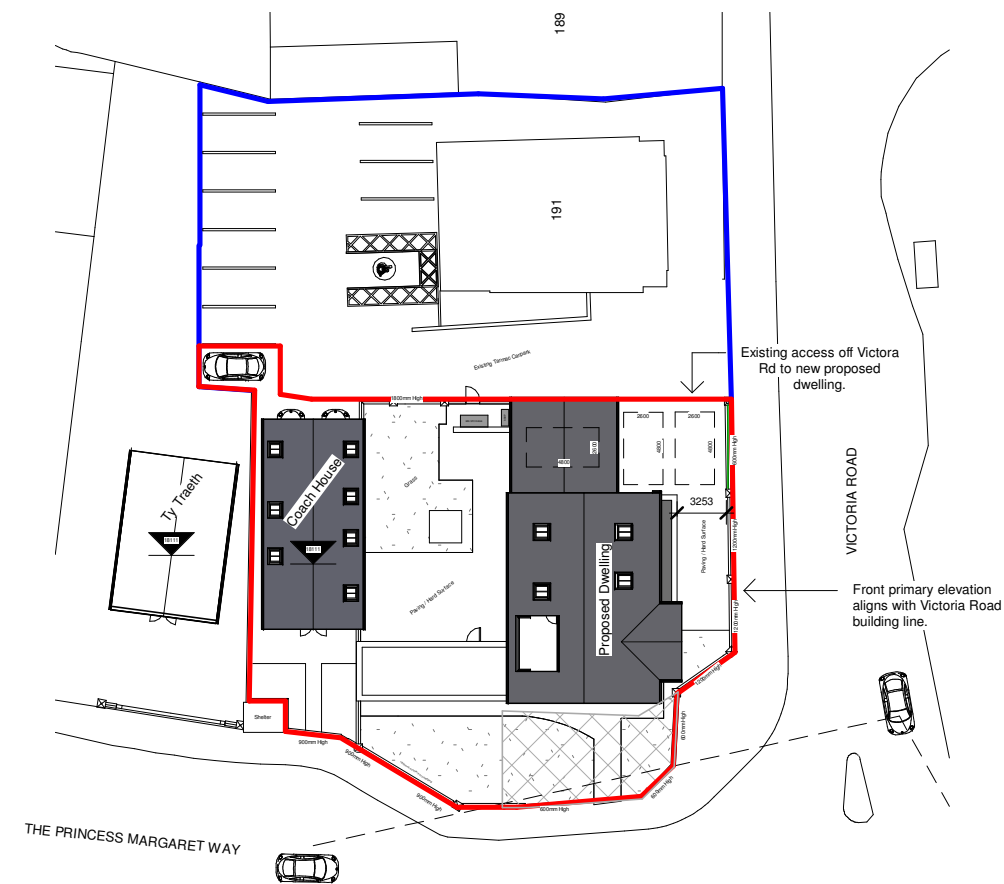
gareth@goconceptdesigns.co.uk



01 Location Plan
1 : 1000



02 Existing Site Plan
1 : 500



03 Proposed Site Plan
1 : 500



DRAWING STATUS
Planning - Site

PROJECT
191 Victoria Rd, Port Talbot - Residential Dwelling

TITLE
Location & Site Plans

CLIENT
Mr & Mrs G Thomas

DRAWN BY
Gareth Owen

DATE
03.06.22

SCALE (@A3)
As indicated

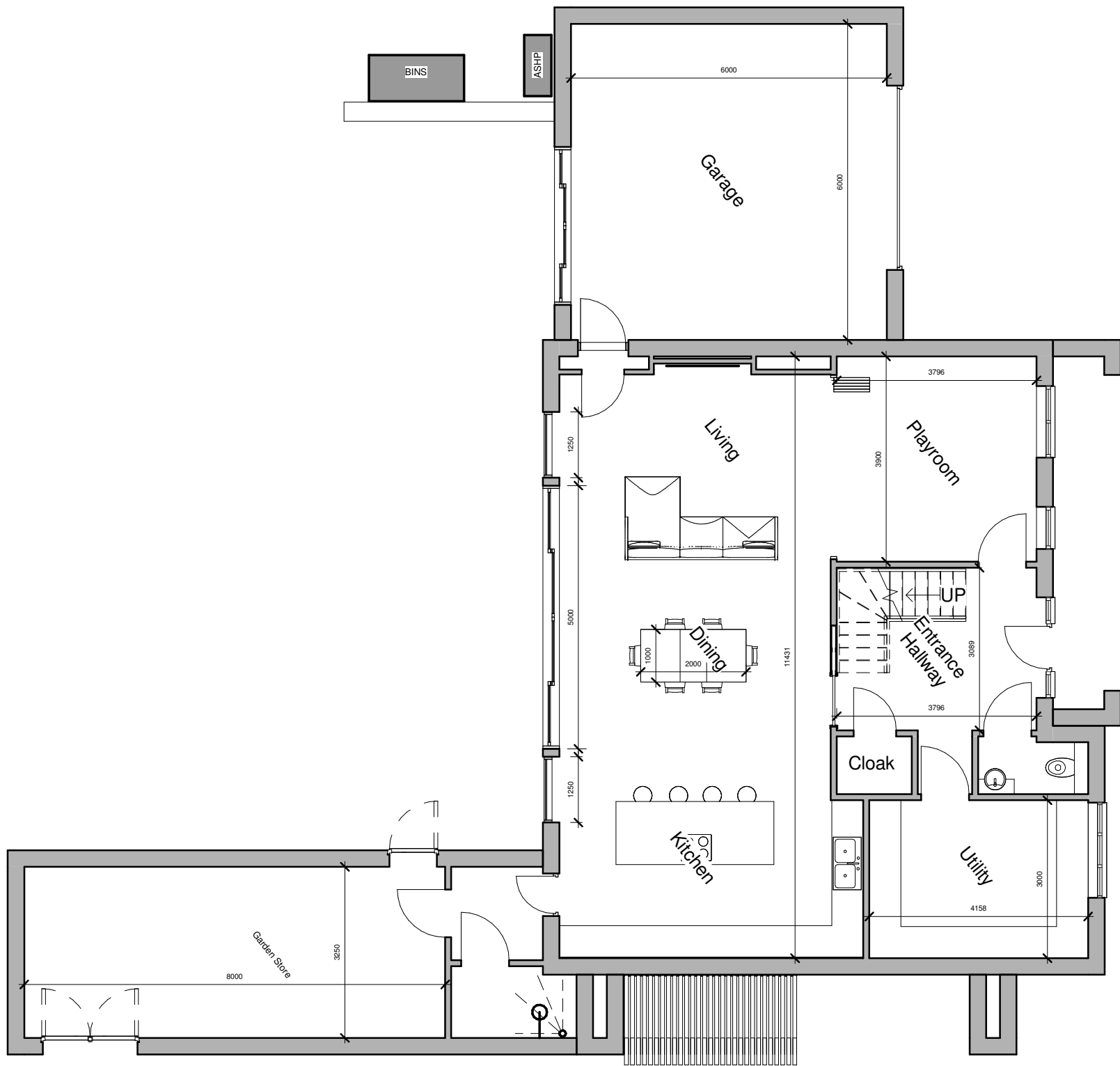
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GOCD GKT01

DRAWING NO.
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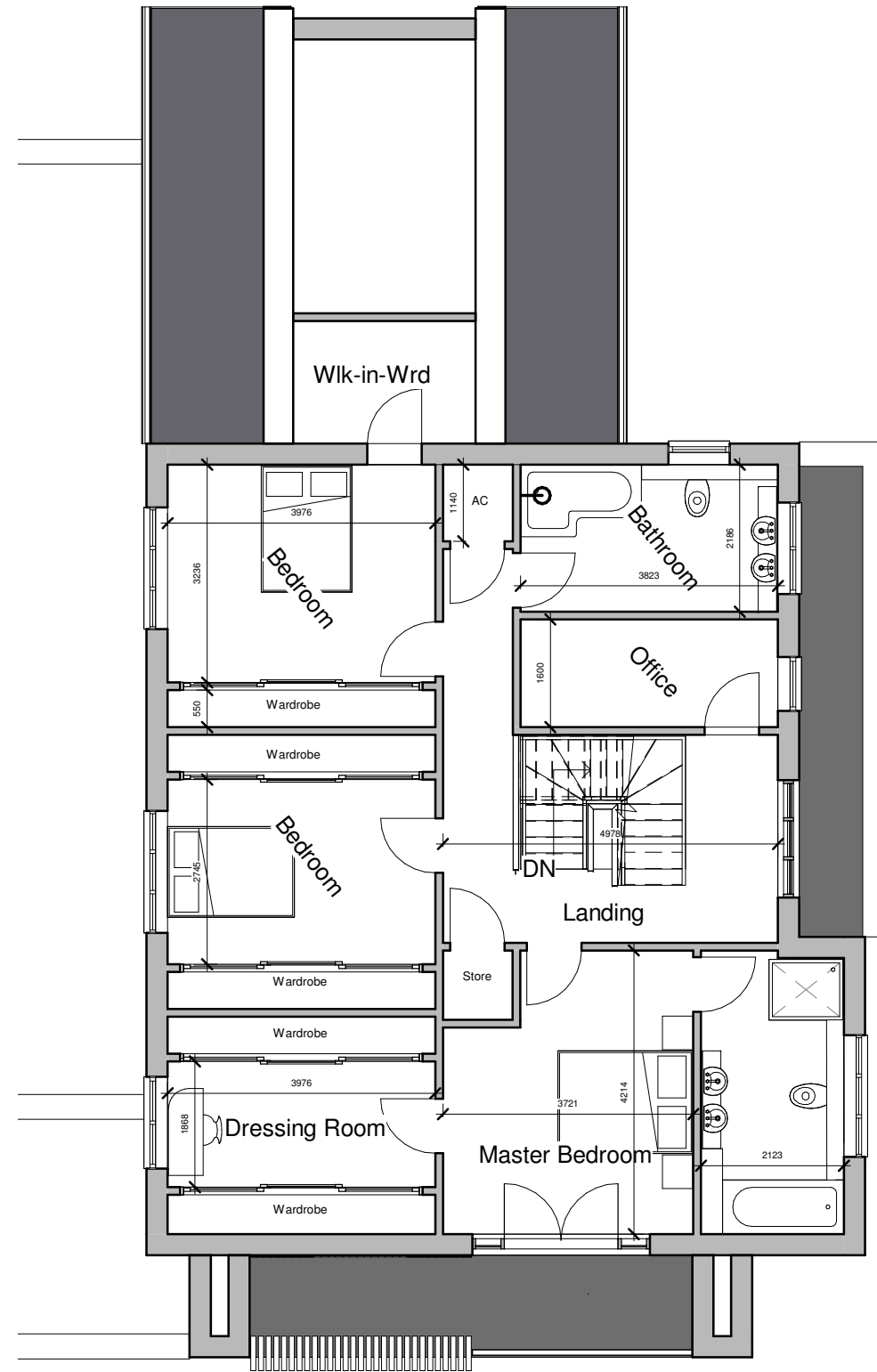
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GO CONCEPT DESIGNS, 9 DARWIN RD, PORT TALBOT, SA12 6BT

gareth@goconceptdesigns.co.uk



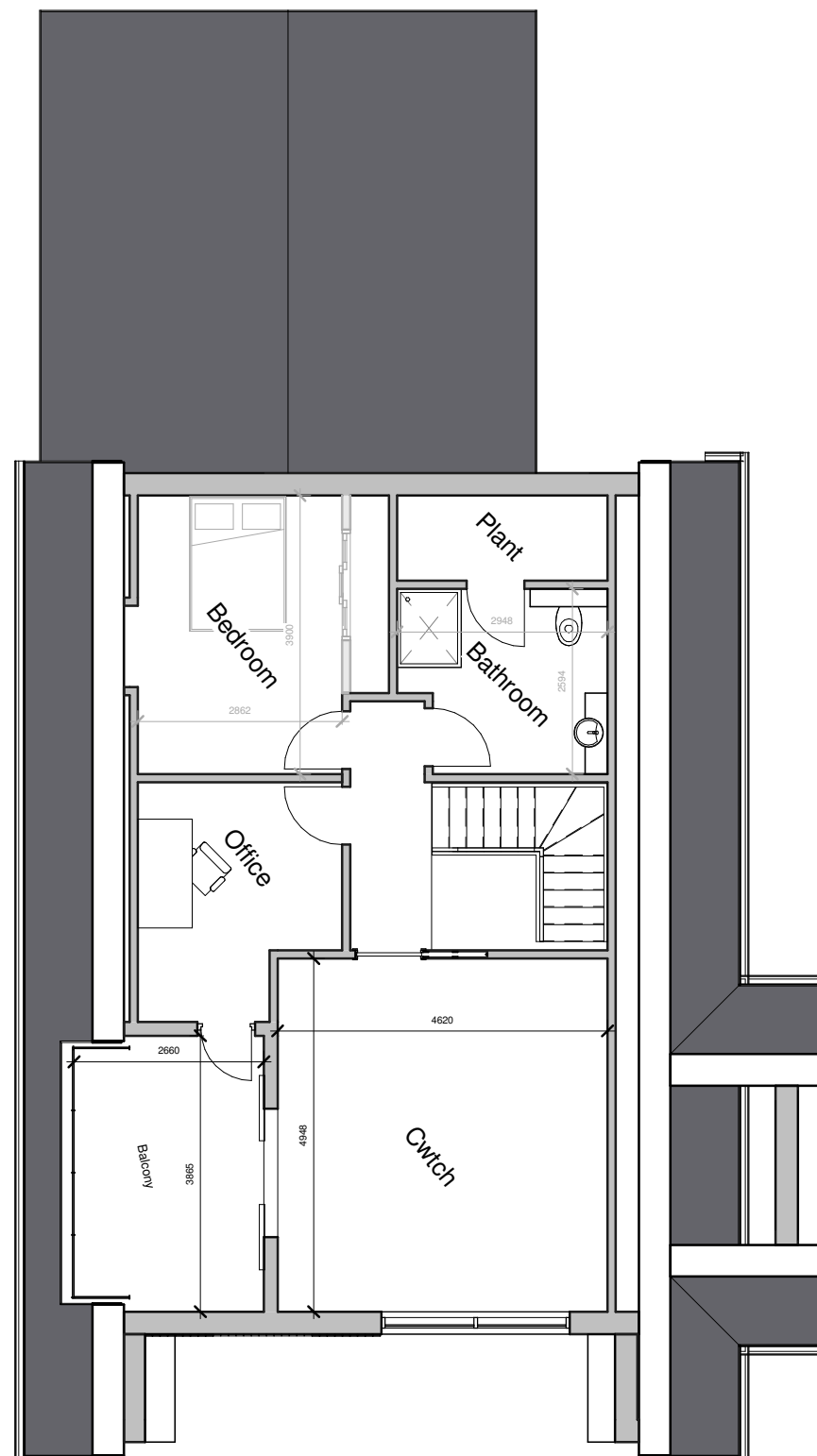
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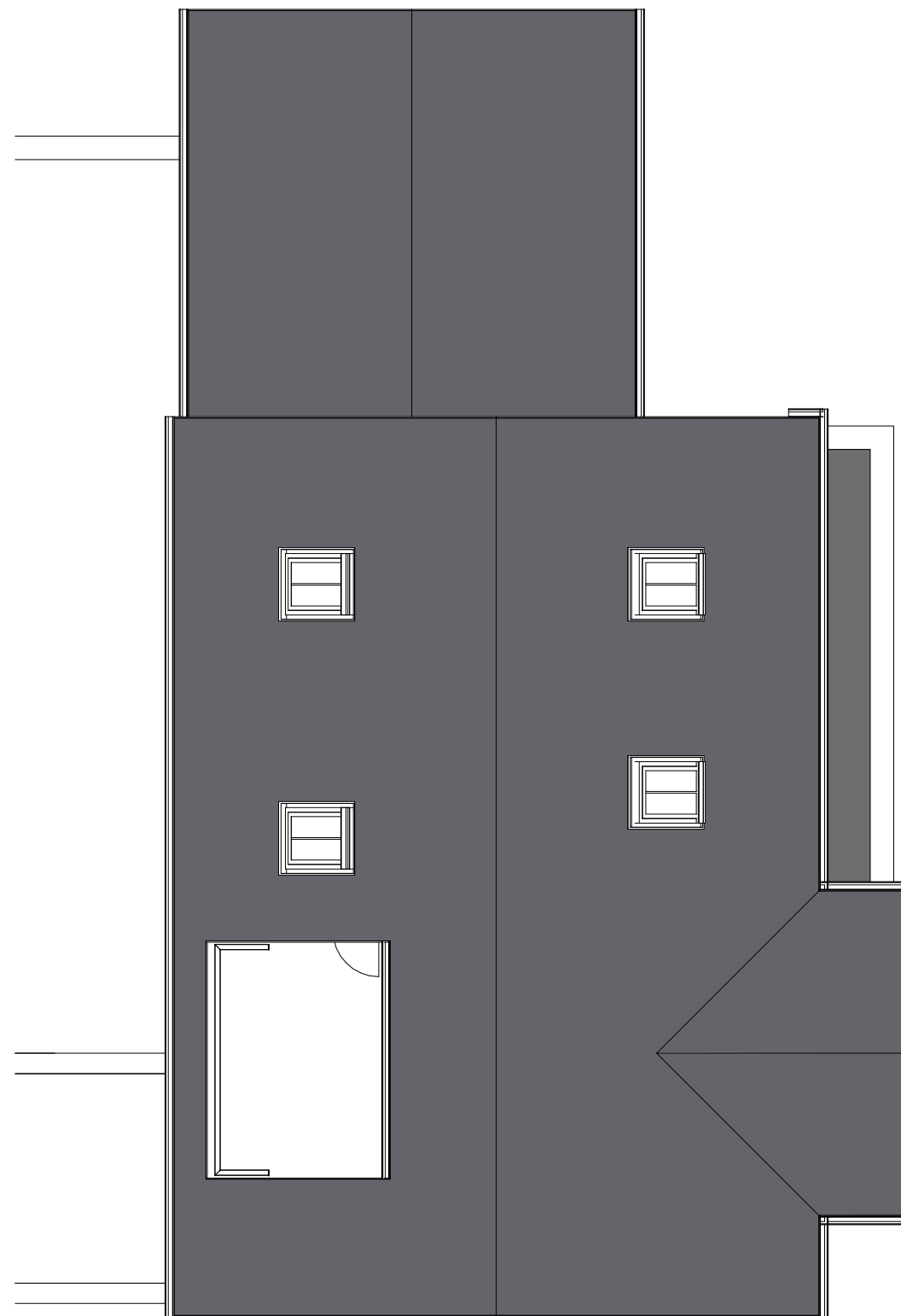
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1 : 100



DRAWING STATUS	
Planning	
PROJECT	
191 Victoria Rd, Port Talbot - Residential Dwelling	
TITLE	
House - Proposed Floor Plans 01	
CLIENT	
Mr & Mrs G Thomas	
DRAWN BY	DATE
Gareth Owen	03.06.22
SCALE (@A3)	PROJECT NO.
1 : 100	GOCD GKT01
DRAWING NO.	REV
B00A	-
GO CONCEPT DESIGNS, 9 DARWIN RD, PORT TALBOT, SA12 6BT	
gareth@goconceptdesigns.co.uk	



1 Level 2
1 : 100



2 Roof Plan
1 : 100



DRAWING STATUS	
Planning	
PROJECT	
191 Victoria Rd, Port Talbot - Residential Dwelling	
TITLE	
House - Proposed Floor Plans 02	
CLIENT	
Mr & Mrs G Thomas	
DRAWN BY Gareth Owen	DATE 03.06.22
SCALE (@A3) 1 : 100	PROJECT NO. GOCD GKT01
DRAWING NO. B001B	REV -
GO CONCEPT DESIGNS, 9 DARWIN RD, PORT TALBOT, SA12 6BT	
gareth@goconceptdesigns.co.uk	



1 Front Elevation
1 : 100



2 Rear Elevation
1 : 100



DRAWING STATUS

Planning

PROJECT

191 Victoria Rd, Port Talbot -
Residential Dwelling

TITLE

House - Proposed Elevations 01

CLIENT

Mr & Mrs G Thomas

DRAWN BY
Gareth Owen

DATE
03.06.22

SCALE (@A3)
1 : 100

PROJECT NO.
GOCD GKT01

DRAWING NO.
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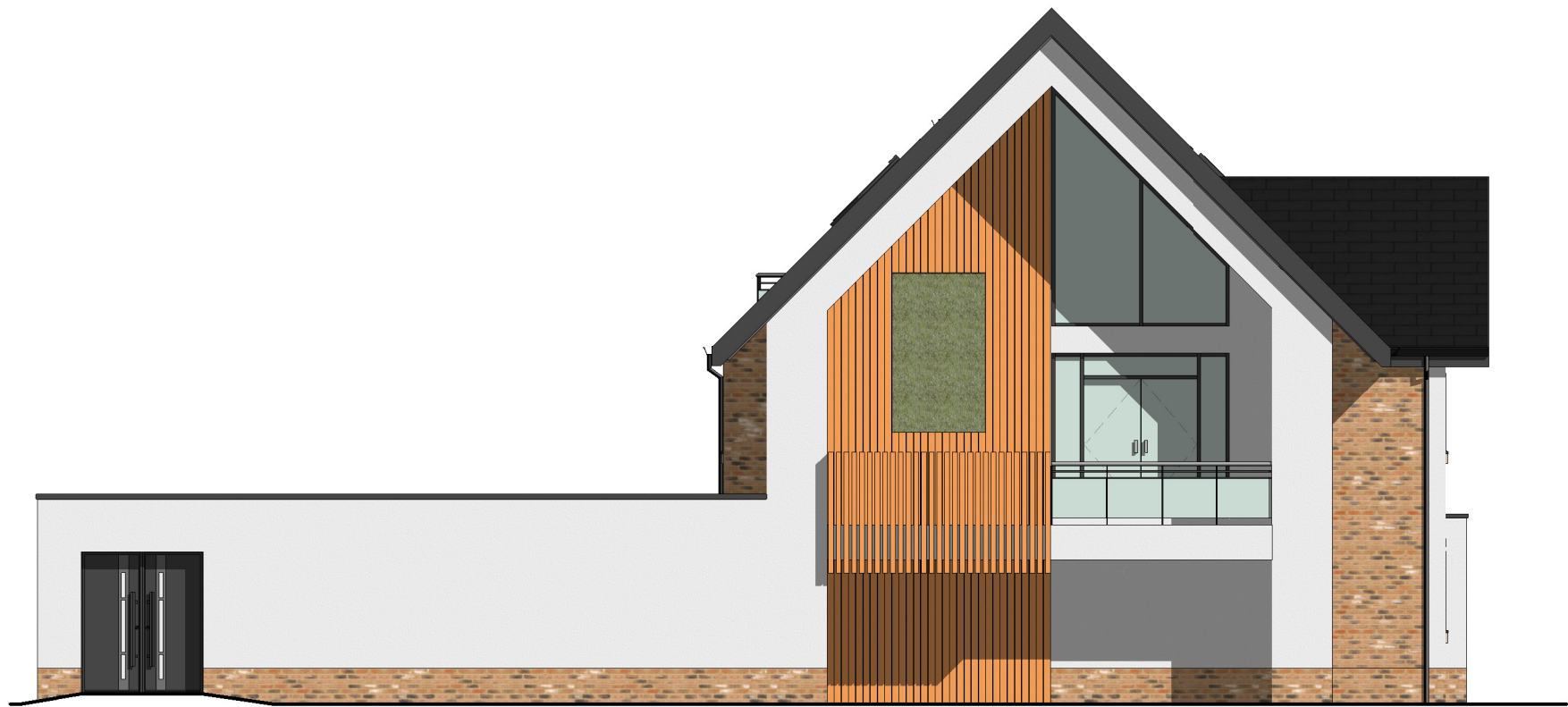
REV
-

GO CONCEPT DESIGNS, 9 DARWIN RD, PORT
TALBOT, SA12 6BT

gareth@goconceptdesigns.co.uk



1 Right Elevation
1 : 100



2 Left Elevation
1 : 100



DRAWING STATUS	
Planning	
PROJECT	
191 Victoria Rd, Port Talbot - Residential Dwelling	
TITLE	
House - Proposed Elevations 02	
CLIENT	
Mr & Mrs G Thomas	
DRAWN BY Gareth Owen	DATE 03.06.22
SCALE (@A3) 1 : 100	PROJECT NO. GOCD GKT01
DRAWING NO. B002B	REV -
GO CONCEPT DESIGNS, 9 DARWIN RD, PORT TALBOT, SA12 6BT	
gareth@goconceptdesigns.co.uk	

Appendix II

Exploratory Hole Logs and In-situ Testing

SPT Hammer Calibration Certificate

Certificate Number: DART540

Trial Pits Logs

TP01 to TP03

Dynamic Windowless Sampler Logs

WS01 to WS03

SPT Hammer Energy Test Report

in accordance with BSEN ISO 22476-3:2005

ARCHWAY ENGINEERING
AINLEYS INDUSTRIAL ESTATE
ELLAND
WEST YORKSHIRE
HX5 9JP

SPT Hammer Ref: DART540
Test Date: 18/01/2022
Report Date: 18/01/2022
File Name: DART540.spt
Test Operator: JL

Instrumented Rod Data

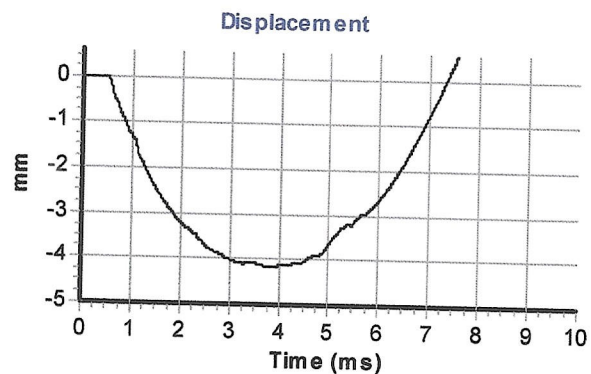
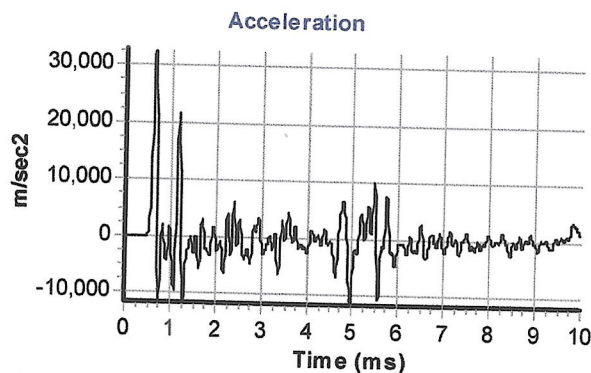
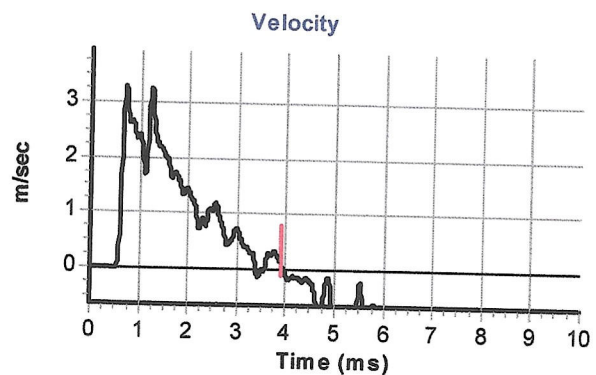
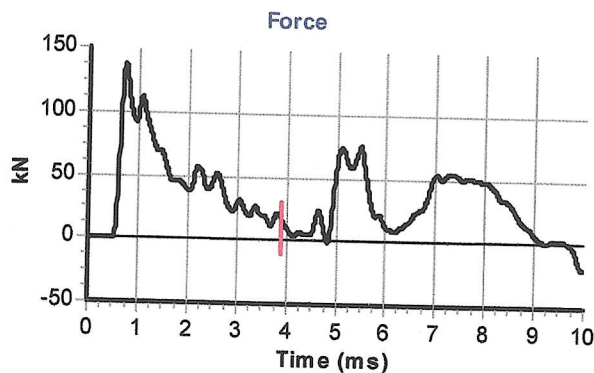
Diameter d_r (mm): 54
Wall Thickness t_r (mm): 6.0
Assumed Modulus E_a (GPa): 200
Accelerometer No.1: 7080
Accelerometer No.2: 11609

SPT Hammer Information

Hammer Mass m (kg): 63.5
Falling Height h (mm): 760
SPT String Length L (m): 10.0

Comments / Location

SOUTH WALED GROUND TESTING - 78099



Calculations

Area of Rod A (mm^2): 905
Theoretical Energy E_{theor} (J): 473
Measured Energy E_{meas} (J): 327

Energy Ratio E_r (%): **69**

Signed: J.LOCK
Title: FITTER

The recommended calibration interval is 12 months

		EXPLORATORY HOLE PHOTOGRAPHS		Remarks Machine excavated trial pit from GL to 2.00m		Exploratory Hole
						TP01
Project	Former Grove Public House Car Park	Easting	274860.96	Equipment	JCB 3cx	Sheet 1 of 3
Client	Fellow Developments Ltd.	Northing	189264.62	Method	TP	
Project No	G22075	Level	10.37 mAOD	Termination Reason	Instability	



TP01 Face C



TP01 Face A

		EXPLORATORY HOLE PHOTOGRAPHS		Remarks Machine excavated trial pit from GL to 2.00m		Exploratory Hole
						TP01
Project	Former Grove Public House Car Park	Easting	274860.96	Equipment	JCB 3cx	Sheet 2 of 3
Client	Fellow Developments Ltd.	Northing	189264.62	Method	TP	
Project No	G22075	Level	10.37 mAOD	Termination Reason	Instability	



TP01 Spoil



TP01 Face D



EXPLORATORY HOLE PHOTOGRAPHS

Remarks Machine excavated trial pit from GL to 2.00m		Exploratory Hole
		TP01

Project	Former Grove Public House Car Park	Easting	274860.96	Equipment	JCB 3cx
Client	Fellow Developments Ltd.	Northing	189264.62	Method	TP
Project No	G22075	Level	10.37 mAOD	Termination Reason	Instability



TP01 Face B

		EXPLORATORY HOLE PHOTOGRAPHS		Remarks Machine excavated trial pit from GL to 2.00m.		Exploratory Hole
						TP02
Project	Former Grove Public House Car Park	Easting	274860.41	Equipment	3 Ton Tracked Excavator	Sheet 1 of 3
Client	Fellow Developments Ltd.	Northing	189274.86	Method	TP	
Project No	G22075	Level	10.28 mAOD	Termination Reason	Instability, constant collapse.	



TP02 Face C



TP02 Face B

EXPLORATORY HOLE PHOTOGRAPHS

Remarks Machine excavated trial pit from GL to 2.00m.	Exploratory Hole
	TP02

Project	Former Grove Public House Car Park	Easting	274860.41	Equipment	3 Ton Tracked Excavator	Sheet 2 of 3
Client	Fellow Developments Ltd.	Northing	189274.86	Method	TP	
Project No	G22075	Level	10.28 mAOD	Termination Reason	Instability, constant collapse.	



TP02 Face D



TP02 Face A

		EXPLORATORY HOLE PHOTOGRAPHS		Remarks Machine excavated trial pit from GL to 2.00m.		Exploratory Hole
						TP02
Project	Former Grove Public House Car Park	Easting	274860.41	Equipment	3 Ton Tracked Excavator	Sheet 3 of 3
Client	Fellow Developments Ltd.	Northing	189274.86	Method	TP	
Project No	G22075	Level	10.28 mAOD	Termination Reason	Instability, constant collapse.	



TP02 Spoil

		TRIAL PIT EXPLORATORY HOLE LOG						Exploratory Hole Progress by Time			Exploratory Hole								
								Date and Time		Depth	Water Depth	TP03							
								21/03/2023 11:10		0.40									
								21/03/2023 11:20		0.80									
21/03/2023 11:30		1.60			Sheet 1 of 1														
21/03/2023 11:50		2.10			Scale	1:20													
Project		Former Grove Public House Car Park		Equipment		JCB 3cx		Logged		KW									
Client		Fellow Developments Ltd.		Method		TP		Checked		AP									
Project No		G22075		Level		10.04 mAOD		Orientation											
Easting		274878.10		Northing		189262.55		Length		2.10									
Termination Reason		Instability		Width		1.10													
Samples		Sampling and Testing Depths		Insitu Testing and Depth Related Remarks		Depth (Thickness)		Level (mAOD)		Legend									
1 B 4 ES		0.10 0.10 - 0.20				0.00 (0.40)		9.64											
2 B 5 ES		0.60 0.60 - 0.70				(0.40) 0.80		9.24											
3 B 6 ES		1.50 1.50 - 1.60				(1.30)		7.94											
										End of Exploratory Hole at 2.10m									
										2.50									
										3.00									
										3.50									
										4.00									
Weather		Windy with intermittent rain		Trial Pit Excavation Onsite Layout						Water Strikes									
Shoring		None								Date and Time		Strike		Rising to		Time		Remarks	
Stability		Unstable																	
Remarks																			
Machine excavated trial pit from GL to 2.10m																			

EXPLORATORY HOLE PHOTOGRAPHS

Remarks
Machine excavated trial pit from GL to 2.10m

Exploratory Hole
TP03

Project	Former Grove Public House Car Park	Easting	274878.10	Equipment	JCB 3cx
Client	Fellow Developments Ltd.	Northing	189262.55	Method	TP
Project No	G22075	Level	10.04 mAOD	Termination Reason	Instability

Sheet 1 of 3



TP03 Spoil



TP03 Face B

		EXPLORATORY HOLE PHOTOGRAPHS		Remarks Machine excavated trial pit from GL to 2.10m		Exploratory Hole
						TP03
Project	Former Grove Public House Car Park	Easting	274878.10	Equipment	JCB 3cx	Sheet 2 of 3
Client	Fellow Developments Ltd.	Northing	189262.55	Method	TP	
Project No	G22075	Level	10.04 mAOD	Termination Reason	Instability	



TP03 Face A

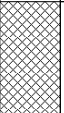
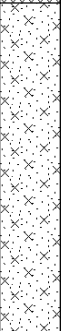
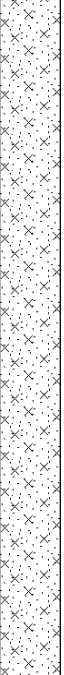


TP03 Face C

JACKSON GEO SERVICES			EXPLORATORY HOLE PHOTOGRAPHS		Remarks Machine excavated trial pit from GL to 2.10m		Exploratory Hole
							TP03
Project	Former Grove Public House Car Park	Easting	274878.10		Equipment	JCB 3cx	
Client	Fellow Developments Ltd.	Northing	189262.55		Method	TP	
Project No	G22075	Level	10.04 mAOD		Termination Reason	Instability	



TP03 Face D

		DYNAMIC SAMPLING EXPLORATORY HOLE LOG						Exploratory Hole Progress by Time					Exploratory Hole			
								Date and Time		Depth	Casing Depth	Water Depth	WS01			
								21/03/2023 08:30 21/03/2023 09:30		0.00 5.45		Dry				
								ProjectFormer Grove Public House Car Park		EquipmentDart 540						
ClientFellow Developments Ltd.		MethodWLS/IP		Sheet 1 of 2		Scale1:20										
Project NoG22075		Level10.11 mAOD		Inclination90 degrees		DrilledMJ										
Easting274865.18		Northing189284.66		SPT Hammer Serial NumberX		LoggedAF										
Termination ReasonScheduled depth.		SPT Hammer Energy Ratio70 %		CheckedAP												
Samples	Sampling and Testing Depths	Insitu Testing and Depth Related Remarks		Depth (Thickness)	Level (mAOD)	Legend	Description					Scale	Backfill			
1 B 4 ES	0.10 - 0.30 0.20			0.00 (0.30) 0.30	9.81		Reddish brown silty SAND and GRAVEL. Sand is fine to coarse partialy of ash. Gravel is very angular to subangular fine to coarse of slag, clinker, and burnt siltstone. (MADE GROUND)									
2 B	0.70 - 1.00						Loose becoming medium dense light yellowish brown slightly silty to silty fine to coarse SAND. (BLOWN SAND DEPOSITS)					0.50				
	1.20	SPT(C) N=9 (1,2/2,2,2,3) Casing: 0.00 Water: Dry					2.00m - 5.45m Medium dense.					1.00				
	2.00	SPT(C) N=12 (2,2/3,3,3,3) Casing: 0.00 Water: Dry										1.50				
	3.00 - 5.00 3.00	SPT(S) N=11 (3,2/2,2,3,4) Casing: 0.00 Water: Dry		(5.15)								2.00				
3 B												2.50				
	4.00											3.00				
												3.50				
												4.00				
Continued on next Sheet																
Dynamic Sampling Run Details						Hole Diameter		Casing Diameter		Water Strikes						
Test No.	Depth Top	Depth Base	Diameter	Duration (hh:mm:ss)	Recovery	Depth Base	Diameter	Depth Base	Diameter	Date and Time	Casing	Strike	Sealed	Rising to	Time	Remarks
1	1.20	2.00	87mm	00:00:00	100%	2.00	102mm									
2	2.00	3.00	77mm	00:00:00	90%	4.00	86mm									
3	3.00	4.00	77mm	00:00:00	90%	5.00	76mm									
4	4.00	5.00	67mm	00:00:00	95%											
Remarks																
Hand excavated inspection pit from GL to 1.20m. Dynamic windowless sampling from 1.20 to 5.45m.																
Printed 06/04/2023 08:14																

		DYNAMIC SAMPLING EXPLORATORY HOLE LOG						Exploratory Hole Progress by Time				Exploratory Hole				
								Date and Time		Depth	Casing Depth	Water Depth	WS01			
Project		Former Grove Public House Car Park		Equipment		Dart 540		21/03/2023 08:30 21/03/2023 09:30		0.00 5.45		Dry	Sheet 2 of 2			
Client		Fellow Developments Ltd.		Method		WLS/IP							Scale	1:20		
Project No		G22075	Level		10.11 mAOD	Inclination		90 degrees					Drilled	MJ		
Easting		274865.18	Northing		189284.66	SPT Hammer Serial Number		X					Logged	AF		
Termination Reason		Scheduled depth.		SPT Hammer Energy Ratio		70 %							Checked	AP		
Samples	Sampling and Testing Depths	Insitu Testing and Depth Related Remarks		Depth (Thickness)	Level (mAOD)	Legend	Description					Scale	Backfill			
		SPT(C) N=28 (4,7/7,6,8,7) Casing: 0.00 Water: Dry					Loose becoming medium dense light yellowish brown slightly silty to silty fine to coarse SAND. (BLOWN SAND DEPOSITS)					4.50				
	5.00	SPT(S) N=18 (5,6/5,4,5,4) Casing: 0.00 Water: Dry			4.66							5.00				
							End of Exploratory Hole at 5.45m					5.50				
												6.00				
												6.50				
												7.00				
												7.50				
												8.00				
Dynamic Sampling Run Details						Hole Diameter		Casing Diameter		Water Strikes						
Test No.	Depth Top	Depth Base	Diameter	Duration (hh:mm:ss)	Recovery	Depth Base	Diameter	Depth Base	Diameter	Date and Time	Casing	Strike	Sealed	Rising to	Time	Remarks
1	1.20	2.00	87mm	00:00:00	100%	2.00	102mm									
2	2.00	3.00	77mm	00:00:00	90%	4.00	86mm									
3	3.00	4.00	77mm	00:00:00	90%	5.00	76mm									
4	4.00	5.00	67mm	00:00:00	95%											
Remarks																
Hand excavated inspection pit from GL to 1.20m. Dynamic windowless sampling from 1.20 to 5.45m.																
Printed 06/04/2023 08:14																

		EXPLORATORY HOLE PHOTOGRAPHS		Remarks Hand excavated inspection pit from GL to 1.20m. Dynamic windowless sampling from 1.20 to 5.45m.		Exploratory Hole WS01
Project	Former Grove Public House Car Park	Easting	274865.18	Equipment	Dart 540	Sheet 1 of 1
Client	Fellow Developments Ltd.	Northing	189284.66	Method	WLS/IP	
Project No	G22075	Level	10.11 mAOD	Termination Reason	Scheduled depth.	

Jackson Geoservices

Unit B3, Fram Enterprise Centre

Parc Busnes Edwards, Llantrisant

Pontyclun, CF72 8QZ

Email: team@jacksongeo.co.uk

Telephone: 02920 099 769



Project Name

GROVE PUB CARPARK

Project Number

G22075

Client

Date

21 MARCH 2023

Exploratory Hole Number

WS01

Box / Face Number

Depth (m) from

1.20 to 5.00

Engineer

A

0.00m

0.10m

0.20m

0.30m

0.40m

0.50m

0.60m

0.70m

0.80m

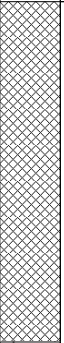
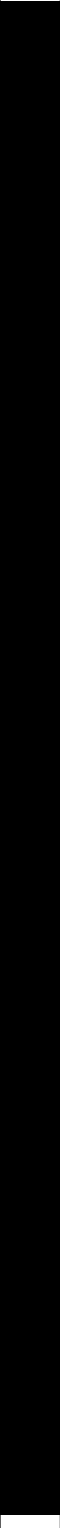
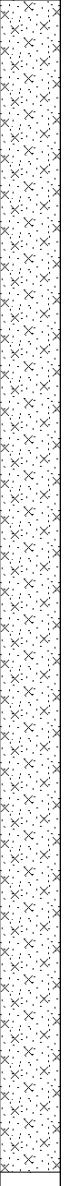
0.90m

1.00m



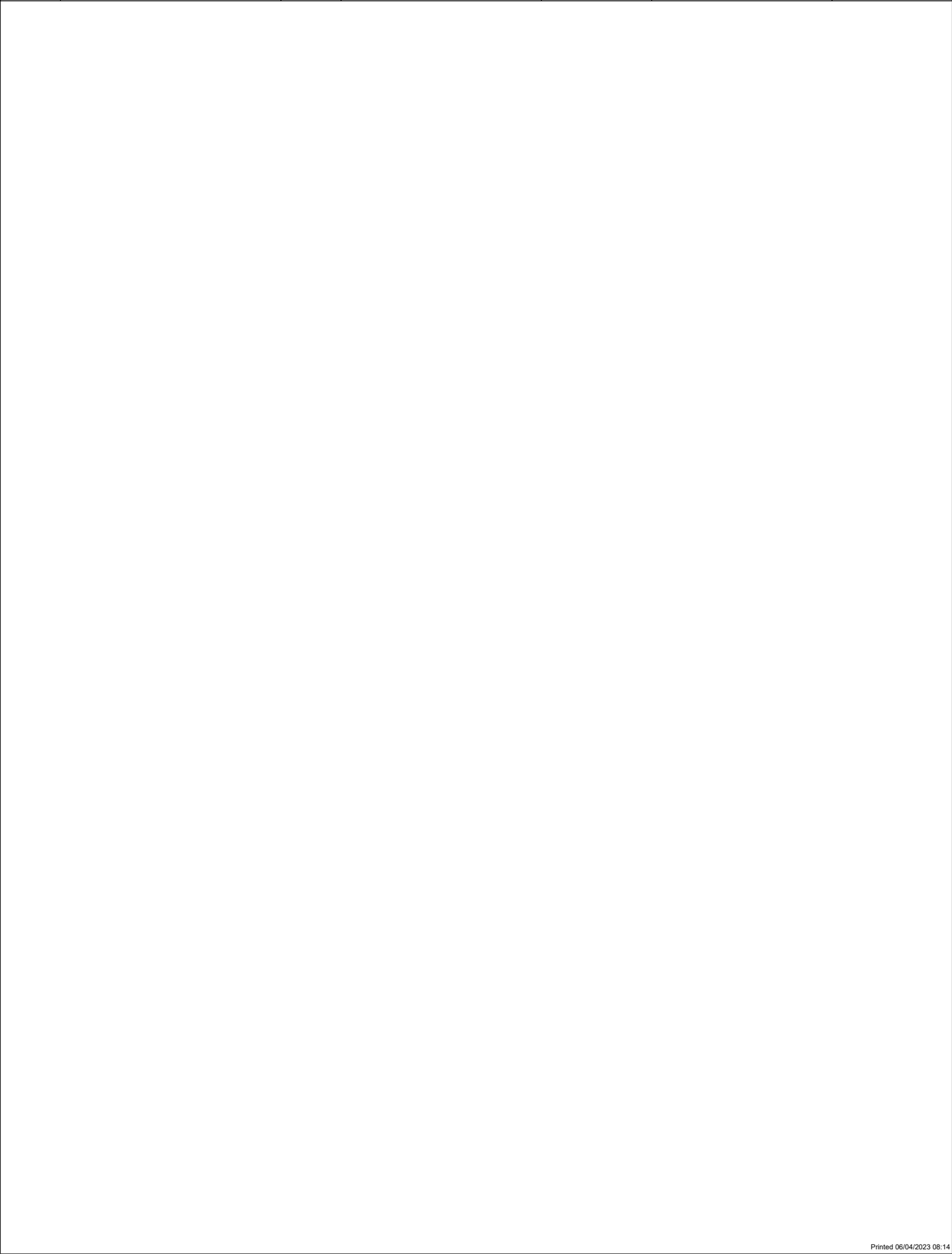
WS01 1.20 m to 2.00 m

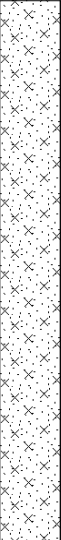
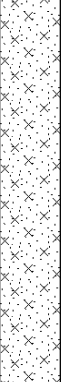
Printed 06/04/2023 08:14

		DYNAMIC SAMPLING EXPLORATORY HOLE LOG						Exploratory Hole Progress by Time					Exploratory Hole			
								Date and Time		Depth	Casing Depth	Water Depth	WS02			
								21/03/2023 09:30 21/03/2023 11:00		0.00 5.45		Dry				
Project		Former Grove Public House Car Park			Equipment		Dart 540			Sheet 1 of 2						
Client		Fellow Developments Ltd.			Method		WLS/IP			Scale	1:20					
Project No		G22075	Level	10.20 mAOD	Inclination		90 degrees		Drilled	MJ						
Easting		274865.99	Northing	189270.66	SPT Hammer Serial Number		X		Logged	AF						
Termination Reason		Scheduled depth.			SPT Hammer Energy Ratio		70 %		Checked	AP						
Samples	Sampling and Testing Depths	Insitu Testing and Depth Related Remarks			Depth (Thickness)	Level (mAOD)	Legend	Description				Scale	Backfill			
1 B	0.20 - 0.40	SPT(C) N=12 (1,2/2,3,4,3) Casing: 0.00 Water: Dry			0.00	9.30		Dark brownish grey silty gravelly fine to coarse SAND occasionally of ash with medium cobble content. Gravel is very angular to well rounded fine to coarse of sandstone, limestone aggregate, slag, clinker, brick, and concrete. Occasional fragments of glass, ceramic and macadam. Cobbles are subangular to well rounded of sandstone and vesicular slag. (MADE GROUND)								
3 ES	0.50				(0.90)							0.50				
	1.20	SPT(C) N=16 (3,3/4,4,4,4) Casing: 0.00 Water: Dry			0.90		Medium dense light yellowish brown slightly silty to silty fine to coarse SAND. (BLOWN SAND DEPOSITS)				1.00					
												1.50				
2 B	2.00 - 5.00 2.00	SPT(C) N=14 (3,2/3,3,4,4) Casing: 0.00 Water: Dry									2.00					
												2.50				
	3.00										3.00					
	4.00				(4.55)						3.50					
Continued on next Sheet											4.00					
Dynamic Sampling Run Details						Hole Diameter		Casing Diameter		Water Strikes						
Test No.	Depth Top	Depth Base	Diameter	Duration (hh:mm:ss)	Recovery	Depth Base	Diameter	Depth Base	Diameter	Date and Time	Casing	Strike	Sealed	Rising to	Time	Remarks
1	1.20	2.00	77mm	00:00:00	81%	2.00	86mm									
2	2.00	3.00	67mm	00:00:00	95%	4.00	76mm									
3	3.00	4.00	67mm	00:00:00	90%	5.00	66mm									
4	4.00	5.00	57mm	00:00:00	80%											
Remarks																
Hand excavated inspection pit from GL to 1.20m. Dynamic windowless sample from 1.20 to 5.45m.																
Printed 06/04/2023 08:14																

JACKSON GEO SERVICES		DYNAMIC SAMPLING EXPLORATORY HOLE LOG						Exploratory Hole Progress by Time				Exploratory Hole				
								Date and Time		Depth	Casing Depth	Water Depth	WS02			
								21/03/2023 09:30 21/03/2023 11:00		0.00 5.45		Dry				
Project	Former Grove Public House Car Park			Equipment	Dart 540					Sheet 2 of 2						
Client	Fellow Developments Ltd.			Method	WLS/IP					Scale	1:20					
Project No	G22075	Level	10.20 mAOD	Inclination		90 degrees				Drilled	MJ					
Easting	274865.99	Northing	189270.66	SPT Hammer Serial Number		X				Logged	AF					
Termination Reason		Scheduled depth.		SPT Hammer Energy Ratio		70 %				Checked	AP					
Samples	Sampling and Testing Depths	Insitu Testing and Depth Related Remarks		Depth (Thickness)	Level (mAOD)	Legend	Description				Scale	Backfill				
		SPT(C) N=20 (3,4/4,5,5,6) Casing: 0.00 Water: Dry					Medium dense light yellowish brown slightly silty to silty fine to coarse SAND. (BLOWN SAND DEPOSITS)				4.50					
	5.00	SPT(C) N=20 (4,6/5,4,5,6) Casing: 0.00 Water: Dry			4.75						5.00					
							End of Exploratory Hole at 5.45m				5.50					
											6.00					
											6.50					
											7.00					
											7.50					
											8.00					
Dynamic Sampling Run Details						Hole Diameter		Casing Diameter		Water Strikes						
Test No.	Depth Top	Depth Base	Diameter	Duration (hh:mm:ss)	Recovery	Depth Base	Diameter	Depth Base	Diameter	Date and Time	Casing	Strike	Sealed	Rising to	Time	Remarks
1	1.20	2.00	77mm	00:00:00	81%	2.00	86mm									
2	2.00	3.00	67mm	00:00:00	95%	4.00	76mm									
3	3.00	4.00	67mm	00:00:00	90%	5.00	66mm									
4	4.00	5.00	57mm	00:00:00	80%											
Remarks																
Hand excavated inspection pit from GL to 1.20m. Dynamic windowless sample from 1.20 to 5.45m.																
Printed 06/04/2023 08:14																

		EXPLORATORY HOLE PHOTOGRAPHS		Remarks Hand excavated inspection pit from GL to 1.20m. Dynamic windowless sample from 1.20 to 5.45m.		Exploratory Hole
						WS02
Project	Former Grove Public House Car Park	Easting	274865.99	Equipment	Dart 540	Sheet 1 of 1
Client	Fellow Developments Ltd.	Northing	189270.66	Method	WLS/IP	
Project No	G22075	Level	10.20 mAOD	Termination Reason	Scheduled depth.	



		DYNAMIC SAMPLING EXPLORATORY HOLE LOG						Exploratory Hole Progress by Time				Exploratory Hole				
								Date and Time		Depth	Casing Depth	Water Depth	WS03			
Project		Former Grove Public House Car Park				Equipment				21/03/2023 11:00 21/03/2023 12:10		0.00 5.45		Dry	Sheet 1 of 2	
Client		Fellow Developments Ltd.				Method		IP/WLS							Scale	1:20
Project No		G22075		Level		9.98 mAOD		Inclination		90 degrees					Drilled	
Easting		274882.80		Northing		189266.74		SPT Hammer Serial Number		X					Logged	AF
Termination Reason		Scheduled depth.				SPT Hammer Energy Ratio		70 %							Checked	AP
Samples	Sampling and Testing Depths		Insitu Testing and Depth Related Remarks			Depth (Thickness)	Level (mAOD)	Legend	Description						Scale	Backfill
1 B	0.20 - 0.40					0.00 (0.50) 0.50	9.48		Dark greyish brown slightly silty gravelly fine to coarse SAND occasionally of ash with low cobble content. Gravel is very angular to subrounded fine to coarse of sandstone, limestone aggregate, slag, clinker, brick, and concrete. Occasional fragments of glass, ceramic, and macadam. Cobbles are angular to subrounded of sandstone and vesicular slag. (MADE GROUND)						0.50	
2 B	1.20 - 2.00 1.20		SPT(C) N=7 (1,1/1,2,2,2) Casing: 0.00 Water: Dry						Loose becoming medium dense light yellowish brown slightly silty to silty fine to coarse SAND. (BLOWN SAND DEPOSITS)							
3 B	2.00 - 5.00 2.00		SPT(C) N=7 (1,1/2,1,2,2) Casing: 0.00 Water: Dry													
	3.00		SPT(C) N=11 (1,2/2,3,3,3) Casing: 0.00 Water: Dry			(4.95)			3.00m - 5.45m Medium dense.							
	4.00															
Continued on next Sheet																
Dynamic Sampling Run Details							Hole Diameter		Casing Diameter		Water Strikes					
Test No.	Depth Top	Depth Base	Diameter	Duration (hh:mm:ss)	Recovery	Depth Base	Diameter	Depth Base	Diameter	Date and Time	Casing	Strike	Sealed	Rising to	Time	Remarks
1	1.20	2.00	87mm	00:00:00	88%	2.00	102mm									
2	2.00	3.00	77mm	00:00:00	90%	3.00	86mm									
3	3.00	4.00	67mm	00:00:00	95%	4.00	76mm									
4	4.00	5.00	57mm	00:00:00	90%	5.00	66mm									
Remarks																
Hand excavated inspection pit from GL to 1.20m. Dynamic windowless sample from 1.20 to 5.45m.																
Printed 06/04/2023 08:14																



Remarks
Hand excavated inspection pit from GL to 1.20m. Dynamic windowless sample from 1.20 to 5.45m.

		EXPLORATORY HOLE PHOTOGRAPHS		Remarks Hand excavated inspection pit from GL to 1.20m. Dynamic windowless sample from 1.20 to 5.45m.		Exploratory Hole WS03	
Project	Former Grove Public House Car Park	Easting	274882.80	Equipment		Sheet 1 of 1	
Client	Fellow Developments Ltd.	Northing	189266.74	Method	IP/WLS		
Project No	G22075	Level	9.98 mAOD	Termination Reason	Scheduled depth.		

Appendix III

Geotechnical Testing

GSTL Lab Report

Report number: 65508



Laboratory Report



Contract Number: 65508

Client Ref: **G22075**

Client PO:

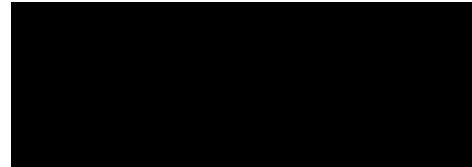
Date Received: **24-03-2023**

Date Completed: **11-04-2023**

Report Date: **11-04-2023**

Client: **Jackson Drilling Holdings Ltd**
Northwood Farm
Coxbridge Road
Baltonsborough
Somerset
BA6 8RA

This report has been checked and approved by:



Brendan Evans
Office Administrator

Contract Title: **Former Grove Public House Car Park**

For the attention of: **Adam Putt**

Test Description	Qty
PSD Wet Sieve method BS 1377:1990 - Part 2 : 9.2 - * UKAS	4
Disposal of samples for job	1

Notes: Observations and Interpretations are outside the UKAS Accreditation

* - denotes test included in laboratory scope of accreditation

- denotes test carried out by approved contractor

@ - denotes non accredited tests

This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This test report/certificate shall not be reproduced except in full, without the approval of GEO Site & Testing Services Ltd. Any opinions or interpretations stated - within this report/certificate are excluded from the laboratories UKAS accreditation.

Approved Signatories:

Brendan Evans (Office Administrator) - Darren Bourne (Quality Senior Technician) - Paul Evans (Director)
Richard John (Quality/Technical Manager) - Shaun Jones (Laboratory manager) - Shaun Thomas (Site Manager)
Wayne Honey (Human Resources/ Health and Safety Manager)

**PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve, Clause 9.2**

Contract Number 65508

Borehole/Pit No. TP01

Project Name Former Grove Public House Car Park

Sample No. 4

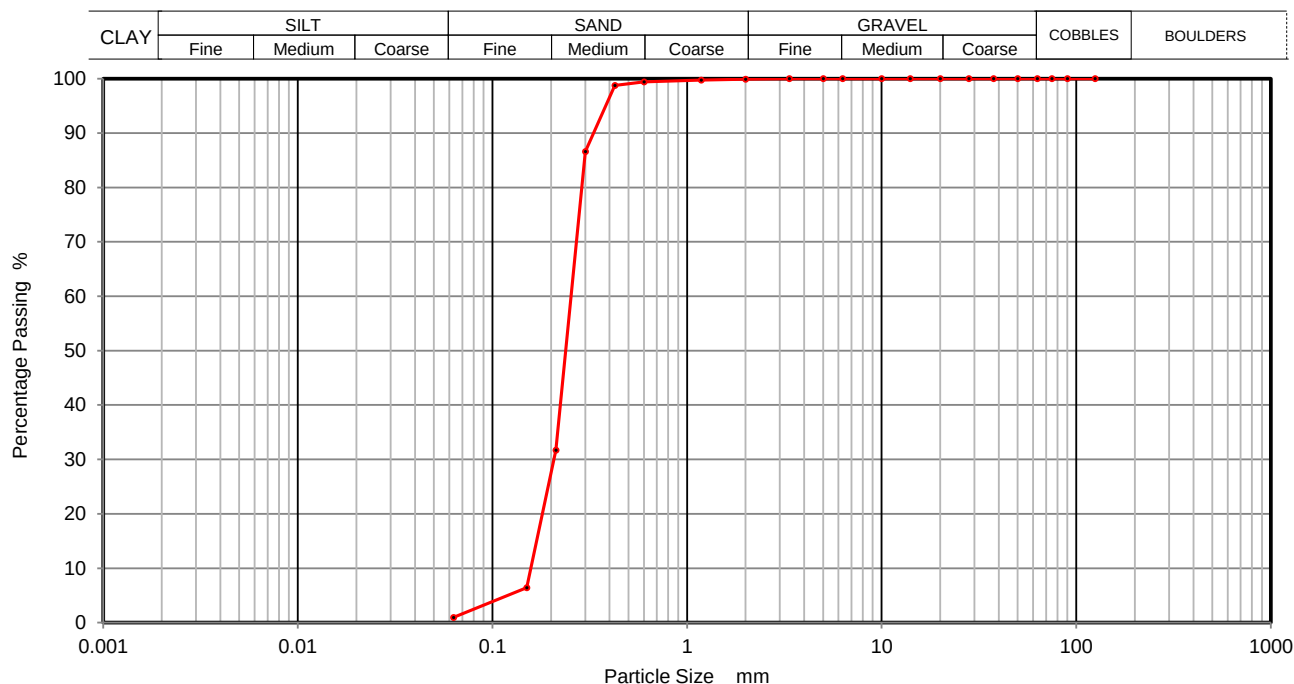
Soil Description Brown slightly silty/ clayey fine to coarse SAND

Depth Top 1.00

Depth Base 1.10

Date Tested 06/04/2023

Sample Type B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	100		
1.18	100		
0.6	99		
0.425	99		
0.3	87		
0.212	32		
0.15	6		
0.063	1		

Sample Proportions	% dry mass
Cobbles	0
Gravel	0
Sand	99
Silt and Clay	1

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Operator

David Edwards

**PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve, Clause 9.2**

Contract Number 65508

Borehole/Pit No. TP02

Project Name Former Grove Public House Car Park

Sample No. 3

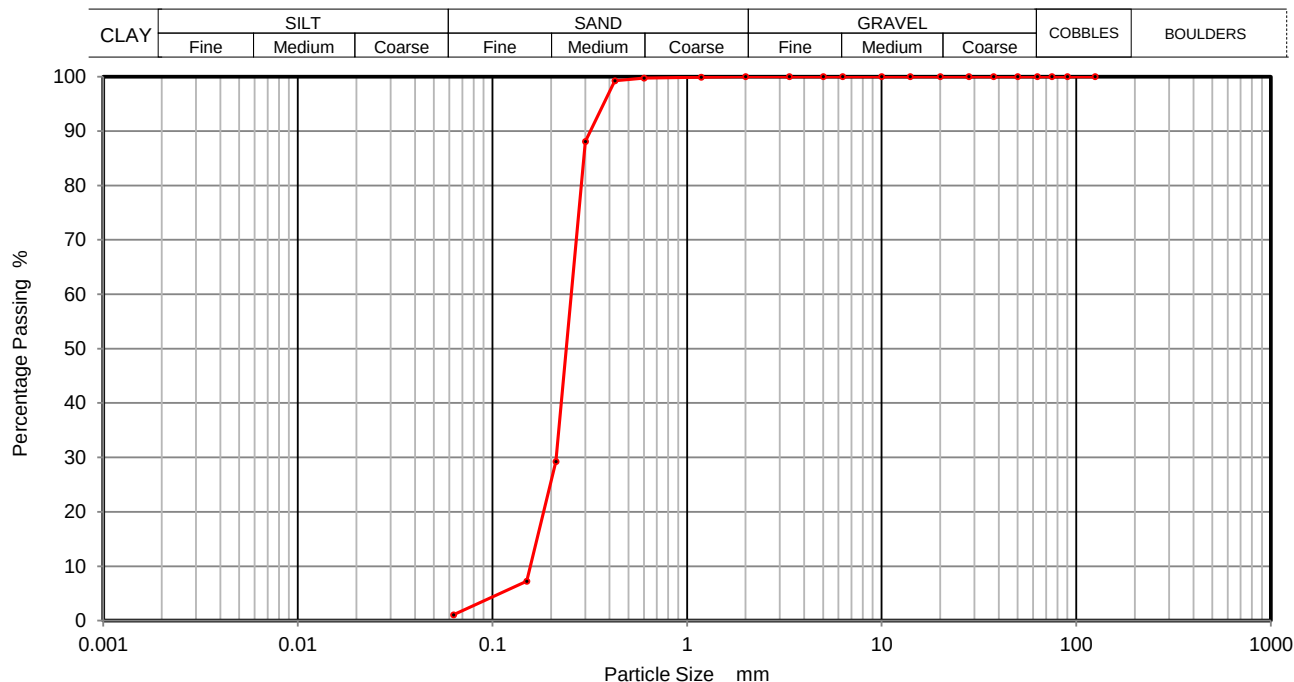
Soil Description Brown slightly silty/ clayey fine to coarse SAND

Depth Top 1.70

Depth Base 1.80

Date Tested 06/04/2023

Sample Type B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	100		
1.18	100		
0.6	100		
0.425	99		
0.3	88		
0.212	29		
0.15	7		
0.063	1		

Sample Proportions	% dry mass
Cobbles	0
Gravel	0
Sand	99
Silt and Clay	1

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Operator

David Edwards

**PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve, Clause 9.2**

Contract Number 65508

Borehole/Pit No. WS02

Project Name Former Grove Public House Car Park

Sample No. 2

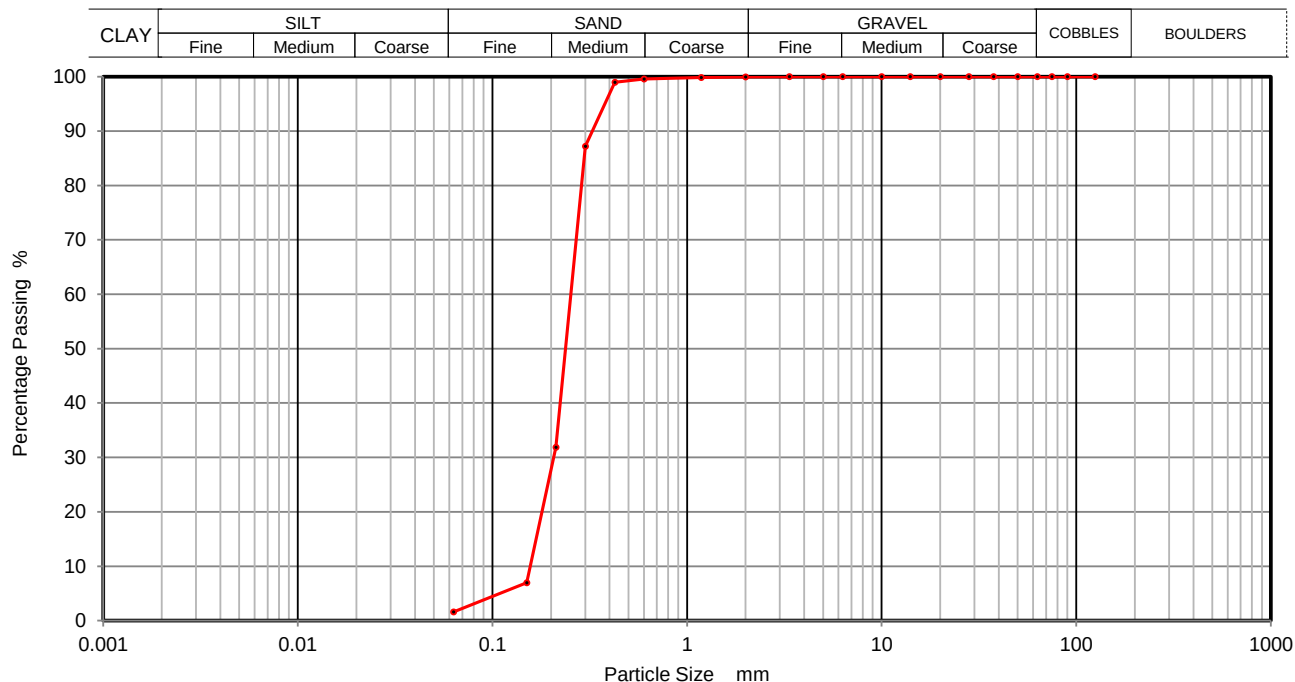
Soil Description Brown slightly silty/ clayey fine to coarse SAND

Depth Top 2.00

Depth Base 5.00

Date Tested 06/04/2023

Sample Type B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	100		
1.18	100		
0.6	100		
0.425	99		
0.3	87		
0.212	32		
0.15	7		
0.063	2		

Sample Proportions	% dry mass
Cobbles	0
Gravel	0
Sand	98
Silt and Clay	2

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Operator

David Edwards

PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve, Clause 9.2

Contract Number 65508

Borehole/Pit No. WS03

Project Name Former Grove Public House Car Park

Sample No. 3

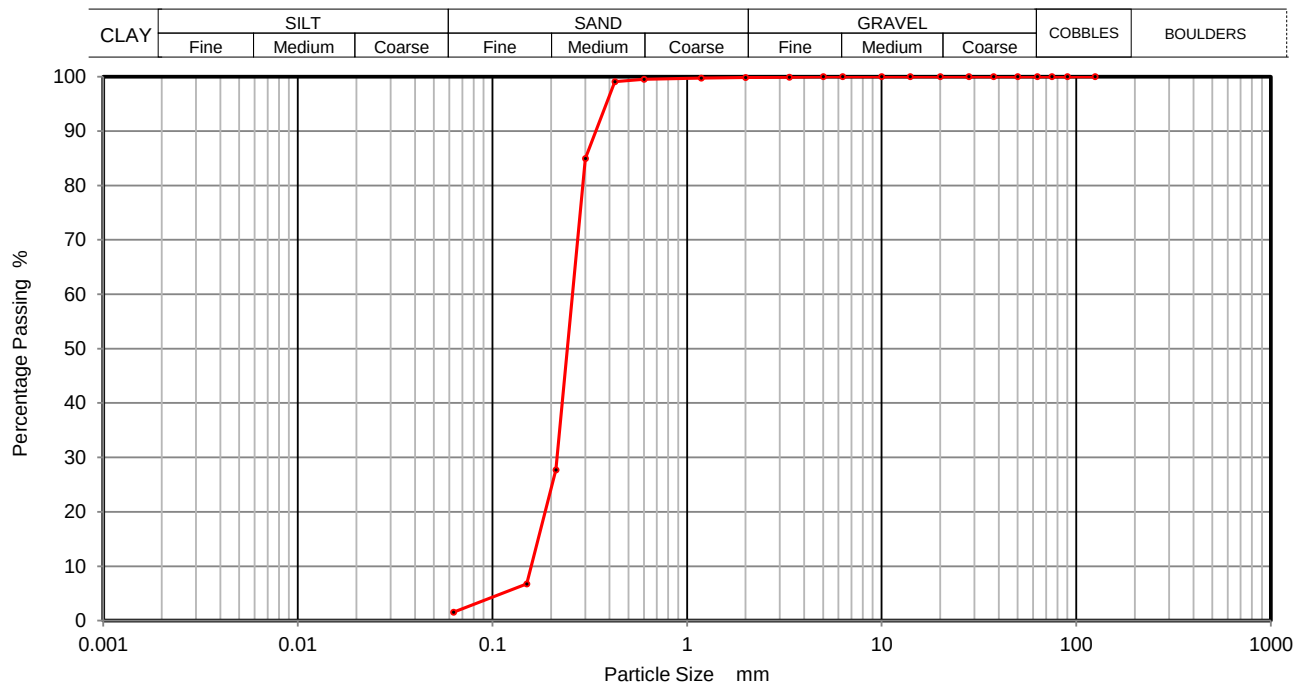
Soil Description Brown slightly silty/ clayey fine to coarse SAND

Depth Top 2.00

Depth Base 5.00

Date Tested 06/04/2023

Sample Type B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	100		
1.18	100		
0.6	100		
0.425	99		
0.3	85		
0.212	28		
0.15	7		
0.063	2		

Sample Proportions	% dry mass
Cobbles	0
Gravel	0
Sand	98
Silt and Clay	2

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Operator

David Edwards

Appendix IV

Geoenvironmental and Geochemical Testing

Eurofins Chemtest Reports

Report number 23-09886

and 23-10067

Sci-Tech Report

Report number PO24403



Amended Report

Report No.:	23-09886-5		
Initial Date of Issue:	31-Mar-2023	Date of Re-Issue:	31-Mar-2023
Client	Jackson Geo Services		
Client Address:	Northwood Farm Coxbridge Road Baltonsborough Somerset BA68 RA		
Contact(s):	Adam Putt		
Project	G220754 Former Grove Public House Car Park		
Quotation No.:	Q22-29524	Date Received:	24-Mar-2023
Order No.:		Date Instructed:	24-Mar-2023
No. of Samples:	6		
Turnaround (Wkdays):	5	Results Due:	30-Mar-2023
Date Approved:	30-Mar-2023	Subcon Results Due:	18-Apr-2023
Approved By:			
Details:	Stuart Henderson, Technical Manager		

Results - Soil

Project: G220754 Former Grove Public House Car Park

Client: Jackson Geo Services	Chemtest Job No.:					23-09886	23-09886	23-09886	23-09886	23-09886	23-09886
Quotation No.: Q22-29524	Chemtest Sample ID.:					1612600	1612602	1612603	1612604	1612606	1612609
Order No.:	Client Sample Ref.:					6	8	5	4	5	3
	Client Sample ID.:					#73862636635 80006	#73862636635 80008	#65491030116 20005	#65491030116 20004	#15404894629 20005	#53944407428 50003
	Sample Location:					TP01	TP01	TP02	TP02	TP03	WS02
	Sample Type:					SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Top Depth (m):					0.10	1.10	0.10	0.70	0.60	0.50
	Date Sampled:					21-Mar-2023	21-Mar-2023	21-Mar-2023	21-Mar-2023	21-Mar-2023	21-Mar-2023
	Time Sampled:					10:46	10:56	11:24	11:23	11:42	12:14
	Asbestos Lab:					COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY
Determinand	Accred.	SOP	Units	LOD							
ACM Type	U	2192		N/A	-	-	-	-	-	-	-
Asbestos Identification	U	2192		N/A	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected
Moisture	N	2030	%	0.020	20	4.8	8.7	5.1	5.2	14	
E. coli (Subcon)	SN		cfu/g	N/A	See Attached	See Attached					
Faecal Strep (Subcon)	SN		cfu/g	N/A	See Attached	See Attached					
Tot Coliforms Presumptive (Subcon)	SN		cfu/g	N/A	See Attached	See Attached					
pH	U	2010		4.0	7.6	8.9	8.6	8.9	9.0	8.4	
Cyanide (Free)	U	2300	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	
Arsenic	U	2455	mg/kg	0.5	8.5	8.1	20	7.8	7.7	24	
Cadmium	U	2455	mg/kg	0.10	0.19	< 0.10	1.0	< 0.10	< 0.10	0.55	
Chromium	U	2455	mg/kg	0.5	5.6	3.6	7.1	3.8	3.0	14	
Copper	U	2455	mg/kg	0.50	20	1.3	62	5.8	7.7	100	
Mercury	U	2455	mg/kg	0.05	< 0.05	< 0.05	0.06	< 0.05	< 0.05	0.23	
Nickel	U	2455	mg/kg	0.50	5.9	3.9	6.7	4.3	3.3	21	
Lead	U	2455	mg/kg	0.50	30	3.1	210	11	5.4	240	
Selenium	U	2455	mg/kg	0.25	0.44	< 0.25	0.26	< 0.25	< 0.25	0.59	
Zinc	U	2455	mg/kg	0.50	61	13	340	42	20	240	
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
Aliphatic TPH >C8-C10	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
Aliphatic TPH >C10-C12	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
Aliphatic TPH >C12-C16	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
Aliphatic TPH >C16-C21	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
Aliphatic TPH >C21-C35	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
Aromatic TPH >C8-C10	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
Aromatic TPH >C10-C12	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
Aromatic TPH >C12-C16	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
Aromatic TPH >C16-C21	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	17	
Aromatic TPH >C21-C35	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	130	

Results - Soil

Project: G220754 Former Grove Public House Car Park

Client: Jackson Geo Services	Chemtest Job No.:		23-09886	23-09886	23-09886	23-09886	23-09886	23-09886
Quotation No.: Q22-29524	Chemtest Sample ID.:		1612600	1612602	1612603	1612604	1612606	1612609
Order No.:	Client Sample Ref.:		6	8	5	4	5	3
	Client Sample ID.:		#73862636635 80006	#73862636635 80008	#65491030116 20005	#65491030116 20004	#15404894629 20005	#53944407428 50003
	Sample Location:		TP01	TP01	TP02	TP02	TP03	WS02
	Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Top Depth (m):		0.10	1.10	0.10	0.70	0.60	0.50
	Date Sampled:		21-Mar-2023	21-Mar-2023	21-Mar-2023	21-Mar-2023	21-Mar-2023	21-Mar-2023
	Time Sampled:		10:46	10:56	11:24	11:23	11:42	12:14
	Asbestos Lab:		COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY
Determinand	Accred.	SOP	Units	LOD				
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	< 5.0	< 5.0	< 5.0
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	< 10	< 10	< 10	< 10
Naphthalene	U	2700	mg/kg	0.10	< 0.10	< 0.10	0.22	< 0.10
Acenaphthylene	U	2700	mg/kg	0.10	< 0.10	< 0.10	0.27	< 0.10
Acenaphthene	U	2700	mg/kg	0.10	< 0.10	< 0.10	0.11	< 0.10
Fluorene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Phenanthrene	U	2700	mg/kg	0.10	< 0.10	< 0.10	0.49	< 0.10
Anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10	0.21	< 0.10
Fluoranthene	U	2700	mg/kg	0.10	0.31	< 0.10	1.3	< 0.10
Pyrene	U	2700	mg/kg	0.10	0.28	< 0.10	1.5	< 0.10
Benzo[a]anthracene	U	2700	mg/kg	0.10	0.67	< 0.10	1.5	< 0.10
Chrysene	U	2700	mg/kg	0.10	0.36	< 0.10	1.8	< 0.10
Benzo[b]fluoranthene	U	2700	mg/kg	0.10	< 0.10	< 0.10	2.9	< 0.10
Benzo[k]fluoranthene	U	2700	mg/kg	0.10	< 0.10	< 0.10	0.97	< 0.10
Benzo[a]pyrene	U	2700	mg/kg	0.10	< 0.10	< 0.10	1.6	< 0.10
Indeno(1,2,3-c,d)Pyrene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Total Of 16 PAH's	U	2700	mg/kg	2.0	< 2.0	< 2.0	13	< 2.0
Total Phenols	U	2920	mg/kg	0.10	0.31	< 0.10	< 0.10	< 0.10

Test Methods

SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	pH	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Alkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2455	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2680	TPH A/A Split	Aliphatics: >C5–C6, >C6–C8,>C8–C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Dichloromethane extraction / GCxGC FID detection
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenzo[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID (GC-FID detection is non-selective and can be subject to interference from co-eluting compounds)
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A - Date of sampling not supplied
- B - Sample age exceeds stability time (sampling to extraction)
- C - Sample not received in appropriate containers
- D - Broken Container
- E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:

customerservices@chemtest.com



2183

Final Report

Report No.:	23-10067-1		
Initial Date of Issue:	31-Mar-2023		
Client	Jackson Geo Services		
Client Address:	Northwood Farm Coxbridge Road Baltonsborough Somerset BA68 RA		
Contact(s):	Adam Putt		
Project	G22075 Former Grove Public House Car Park		
Quotation No.:	Q22-29524	Date Received:	27-Mar-2023
Order No.:		Date Instructed:	27-Mar-2023
No. of Samples:	4		
Turnaround (Wkdays):	5	Results Due:	31-Mar-2023
Date Approved:	31-Mar-2023		

Approved By:



Details: Stuart Henderson, Technical
Manager

Results - Soil

Project: G22075 Former Grove Public House Car Park

Client: Jackson Geo Services	Chemtest Job No.:				23-10067	23-10067	23-10067	23-10067
Quotation No.: Q22-29524	Chemtest Sample ID.:				1613411	1613412	1613413	1613414
Order No.:	Client Sample Ref.:				4	3	2	3
	Client Sample ID.:				#73862636635 80004	#65491030116 20003	#539444407428 50002	#95604356981 50003
	Sample Location:				TP01	TP02	WS02	WS03
	Sample Type:				SOIL	SOIL	SOIL	SOIL
	Top Depth (m):				1.00	1.70	2.00	2.00
	Bottom Depth (m):				1.10	1.80	5.00	5.00
Determinand	Accred.	SOP	Units	LOD				
Moisture	N	2030	%	0.020	6.4	7.7	7.4	7.5
pH (2.5:1)	N	2010		4.0	[A] 9.1	[A] 9.2	[A] 8.9	[A] 9.1
Magnesium (Water Soluble)	N	2120	g/l	0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010
Total Sulphur	U	2175	%	0.010	[A] 0.033	[A] 0.023	[A] 0.024	[A] 0.019
Chloride (Water Soluble)	U	2220	g/l	0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010
Nitrate (Water Soluble)	N	2220	g/l	0.010	< 0.010	< 0.010	< 0.010	< 0.010
Sulphate (Acid Soluble)	U	2430	%	0.010	[A] < 0.010	[A] 0.017	[A] 0.010	[A] 0.019

Deviations

In accordance with UKAS Policy on Deviating Samples TPS 63. Chemtest have a procedure to ensure 'upon receipt of each sample a competent laboratory shall assess whether the sample is suitable with regard to the requested test(s)'. This policy and the respective holding times applied, can be supplied upon request. The reason a sample is declared as deviating is detailed below. Where applicable the analysis remains UKAS/MCERTs accredited but the results may be compromised.

Sample:	Sample Ref:	Sample ID:	Sample Location:	Sampled Date:	Deviation Code(s):	Containers Received:
1613411	4	#7386263663580004	TP01		A	Plastic Tub 500g
1613412	3	#6549103011620003	TP02		A	Plastic Tub 500g
1613413	2	#5394440742850002	WS02		A	Plastic Tub 500g
1613414	3	#9560435698150003	WS03		A	Plastic Tub 500g

Test Methods

SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	pH	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2175	Total Sulphur in Soils	Total Sulphur	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2220	Water soluble Chloride in Soils	Chloride	Aqueous extraction and measurement by 'Aquakem 600' Discrete Analyser using ferric nitrate / mercuric thiocyanate.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.

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I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
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All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:

customerservices@chemtest.com



The Grove, Craven Arms, Shropshire. SY7 8DA.
Tel. 01588 672600 Fax. 01588 672880 Email: enquiries@scitech-labs.uk.com

CERTIFICATE OF ANALYSIS

Sample Ref: See Below

Company Name and Address Chemtest Limited
11 Depot Road, Newmarket, Suffolk, CB8 0AL

Farm/Premises Name and Address (if Different) PO 24403

Type of Sample Soil

Test method Used EIB 11, EIB 26, Internal

Sampled: 21/03/2023 at +N/S

Date Submitted: Not Stated

Date Received: 27/03/2023

Date Tested: 27/03/2023

Laboratory Reference Number: BAT2303270014

Page 1 of 1

Sci-Tech Reference No.	Customer Reference	E. Coli c.f.u. per g*	Faecal Streptococci c.f.u. per g*	Presumptive Coliforms c.f.u. per g*
SMP2303270047	Job No : 23 - 09886 - Sample 1612600	<10	<10	5,900
SMP2303270048	Job No : 23 - 09886 - Sample 1612602	<10	<10	<10

Date Reported 30/03/2023

All samples tested as received

*Not included in UKAS Schedule
+N/S = Time Not Stated

E=Estimated, <= less than, >= greater than. All customer results are obtained from samples sampled and delivered to the laboratory by the customer and all samples are tested as received. Opinions and interpretations expressed herein are outside the scope of our UKAS accreditation. This report is invalid unless signed by an authorised signatory. This report shall not be amended or reproduced (except in full) without the written approval of Sci-Tech Laboratories

Sci-Tech Laboratories, a trading division of Cawood Scientific Ltd

DEFRA approved laboratory, approval number AHZ2135

Signature



KEnefer
Laboratory Team Leader

Appendix V

Comparison Against GACs

Comparison of laboratory data Vs GACs for Residential with Plant Uptake

GENERIC ASSESSMENT CRITERIA - RESIDENTIAL WITH PLANT UPTAKE

Project: Q22008 New Manor Farm									
Client: Jackson Geo Services		Chemtest Job No.:		23-09896	23-09898	23-09896	23-09896	23-09896	23-09896
Quotation No.: Q22-26882		Chemtest Sample ID.:		1612600	1612602	1612603	1612604	1612606	1612609
Order No.:		Client Sample Ref.:		6	6	5	4	5	3
		Sample Location:		#738626368 3560006	#738626368 3580008	#654910301 1620005	#554910301 1620004	#53444074 2620005	#53444074 2650003
		Sample Type:		TP01	TP01	TP02	TP02	TP03	WS02
		Top Depth (m):		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
		Bottom Depth (m):		0.10	1.10	0.10	0.70	0.60	0.50
		Date Sampled:		21-Mar-2023	21-Mar-2023	21-Mar-2023	21-Mar-2023	21-Mar-2023	21-Mar-2023
		Asbestos Lab:							
Determinand		Accred.	SOP	Units	LOD				
ACM Type		U	2192		N/A	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected
Asbestos Identification		U	2192		N/A				
Asbestos by Gravimetry		U	2192	%	0.001				
Total Asbestos		U	2192	%	0.001				
Moisture		N	2030	%	0.020	20	4.8	8.7	5.1
pH		U	2010		4.0	7.6	8.9	8.6	8.9
Cyanide (Free)		U	2300	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Arsenic		U	2450	mg/kg	1.0	8.5	8.1	20	7.8
Cadmium		U	2450	mg/kg	0.10	0.19	< 0.10	1.0	< 0.10
Chromium		U	2450	mg/kg	1.0	5.6	3.6	7.1	3.8
Copper		U	2450	mg/kg	0.50	20	1.3	62	5.8
Mercury		U	2450	mg/kg	0.10	< 0.05	< 0.05	0.06	< 0.05
Nickel		U	2450	mg/kg	0.50	5.9	2.9	6.7	4.3
Lead		U	2450	mg/kg	0.50	30	3.1	210	11
Selenium		U	2450	mg/kg	0.20	0.44	< 0.25	0.26	< 0.25
Zinc		U	2450	mg/kg	0.50	61	13	340	42
Chromium (Hexavalent)		N	2490	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Organic Matter		U	2625	%	0.40				
Aliphatic TPH >C5-C8		N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C6-C8		N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C8-C10		U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C10-C12		U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C12-C16		U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C16-C21		U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C21-C35		U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C35-C44		N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Aliphatic Hydrocarbons		N	2680	mg/kg	5.0	< 5.0	< 5.0	< 5.0	< 5.0
Aromatic TPH >C5-C7		N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C7-C8		N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C8-C10		U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C10-C12		U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C12-C16		U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C16-C21		U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C21-C35		U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C35-C44		N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Aromatic Hydrocarbons		N	2680	mg/kg	5.0	< 5.0	< 5.0	< 5.0	< 5.0
Total Petroleum Hydrocarbons		N	2680	mg/kg	10.0	< 10	< 10	< 10	< 10
Naphthalene		U	2700	mg/kg	0.10	< 0.10	< 0.10	0.22	< 0.10
Acenaphthylene		U	2700	mg/kg	0.10	< 0.10	< 0.10	0.27	< 0.10
Acenaphthene		U	2700	mg/kg	0.10	< 0.10	< 0.10	0.11	< 0.10
Fluorene		U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Phenanthrene		U	2700	mg/kg	0.10	< 0.10	< 0.10	0.49	< 0.10
Anthracene		U	2700	mg/kg	0.10	< 0.10	< 0.10	0.21	< 0.10
Fluoranthene		U	2700	mg/kg	0.10	0.31	< 0.10	1.3	< 0.10
Pyrene		U	2700	mg/kg	0.10	0.28	< 0.10	1.5	< 0.10
Benzo(a)anthracene		U	2700	mg/kg	0.10	0.67	< 0.10	1.5	< 0.10
Chrysene		U	2700	mg/kg	0.10	0.36	< 0.10	1.8	< 0.10
Benzo(b)fluoranthene		U	2700	mg/kg	0.10	< 0.10	< 0.10	2.9	< 0.10
Benzo(k)fluoranthene		U	2700	mg/kg	0.10	< 0.10	< 0.10	0.97	< 0.10
Benzo(p)pyrene		U	2700	mg/kg	0.10	< 0.10	< 0.10	1.6	< 0.10
Indeno(1,2,3-c,d)pyrene		U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Dibenz(a,h)anthracene		U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo(g,h,i)perylene		U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Chloromethane		U	2760	µg/kg	1.0				
Vinyl Chloride		U	2760	µg/kg	1.0				
Chloroethane		U	2760	µg/kg	2.0				
1,1-Dichloroethane		U	2760	µg/kg	1.0				
cis-1,2-Dichloroethane		U	2760	µg/kg	1.0				
Trichloromethane		U	2760	µg/kg	1.0				
1,1,1-Trichloroethane		U	2760	µg/kg	1.0				
Tetrachloromethane		U	2760	µg/kg	1.0				
Benzene		U	2760	µg/kg	1.0				
1,2-Dichloroethane		U	2760	µg/kg	2.0				
Trichloroethene		N	2760	µg/kg	1.0				
Toluene		U	2760	µg/kg	1.0				
Tetrachloroethene		U	2760	µg/kg	1.0				
Chlorobenzene		U	2760	µg/kg	1.0				
1,1,1,2-Tetrachloroethane		U	2760	µg/kg	2.0				
Ethylbenzene		U	2760	µg/kg	1.0				
m & p-Xylene		U	2760	µg/kg	1.0				
o-Xylene		U	2760	µg/kg	1.0				
Methyl Tert-Butyl Ether		U	2760	µg/kg	1.0				
Total PCBs (12 Congeners)		N	2815	mg/kg	0.12				
Aldrin		N	2840	mg/kg	0.20				
Total Phenols		U	2920	mg/kg	0.10				

Type	Evaluation	SOM
	Res/Plant	1%
Select From Drop Down Above		

Determinand GAC

	SOM (%)			No. Excadances
	1	2.5	6	
Arsenic	37.00	37.00	37.00	0
Cadmium	11.00	11.00	11.00	0
Chromium	910.00	910.00	910.00	0
Copper	2400.00	2400.00	2400.00	0
Elemental Mercury	1.20	1.20	1.20	0
Nickel	130.00	130.00	130.00	0
Lead	200.00	200.00	200.00	2
Selenium	250.00	250.00	250.00	0
Zinc	3700.00	3700.00	3700.00	0
Chromium (VI)	6.00	6.00	6.00	0
Aliphatic EC 5-6	42	78	160	0
Aliphatic EC >6-8	100	230	530	0
Aliphatic EC >8-10	27	65	150	0
Aliphatic EC >10-12	130	330	760	0
Aliphatic EC >12-16	1100	2400	4300	0
Aliphatic EC >16-35	65000	92000	110000	0
Aliphatic EC >35-44	65000	92000	110000	0
Aromatic EC 5-7	70	140	300	0
Aromatic EC >7-8	130	290	660	0
Aromatic EC >8-10	34	83	190	0
Aromatic EC >10-12	74	180	380	0
Aromatic EC >12-16	140	330	660	0
Aromatic EC >16-21	260	540	930	0
Aromatic EC >21-35	1100	1500	1700	0
Aromatic EC >35-44	1100	1500	1700	0
Aliphatic+Aromatic EC >44-70	1600	1800	1900	0
Naphthalene	2.3	5.6	13	0
Acenaphthylene	170	420	920	0
Acenaphthene	210	510	1100	0
Flourene	170	400	860	0
Phenanthrene	95	220	440	0
Anthracene	2400	5400	11000	0
Flouranthene	280	560	890	0
Pyrene	620	1200	2000	0
Benzo(a)anthracene	7.2	11	13	0
Chrysene	15	22	27	0
Benzo(b)fluoranthene	2.6	3.3	3.7	2
Benzo(k)fluoranthene	77	93	100	0
Benzo(a)pyrene	2.2	2.7	3	1
Indeno(1,2,3-c,d)pyrene	27	36	41	0
Dibenz(a,h)anthracene	0.24	0.28	0.3	1
Benzo(g,h,i)perylene	320	340	350	0
Chloromethane	0.0083	0.0098	0.013	0
Chloroethene (Vinyl Chloride)	0.00064	0.00087	0.004	0
Chloroethane	8.3	11	18	0
1,1-Dichloroethane	2.4	3.9	7.4	0
cis-1,2-dichloroethene	0.11	0.19	0.37	0
Trichloromethane (Chloroform)	0.91	1.7	3.4	0
1,1,1-Trichloroethane	8.8	18	39	0
Tetrachloromethane (Carbon Tetrachloride)	0.026	0.056	0.13	0
Benzene	0.087	0.17	0.37	0
1,2-Dichloroethane	0.0071	0.011	0.017	0
Trichloroethene (TCE)	0.016	0.034	0.075	0
Toluene	130	290	660	0
Tetrachloroethene (PCE)	0.18	0.39	0.9	0
Chlorobenzene	0.46	1	2.4	0
1,1,2,2 and 1,1,1,2 Tetrachloroethanes	1.2	2.8	6.4	0
Ethylbenzene	41	110	260	0
p-xylene (worse case)	56	130	310	0
o-xylene	60	140	330	0
Metyl tert-butyl ether (MTBE)	49	84	160	0
PCBs (12 congeners)	0.008	0.008	0.008	0
Aldrin	5.7	6.6	7.1	0
Phenol	280	550	1100	0