



Client: Laing O'Rourke

2488240 - Margam Substation Port Talbot

Material Management Plan – Margam Substation

Prepared By: RSK Group

Revision: P02

Reference: MARPT-RSK-01-XX-PL-R-090036

Material Management Plan – Margam Substation

S3 – For Review and Comment

11/11/2025





RSK Environment Ltd

Margam Substation

Material Management Plan

3020304 R01 (01)

RSK GENERAL NOTES

Project No.: 30202304 R01 (01)

Title: Material Management Plan: Margam Substation

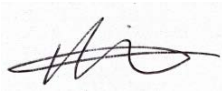
Client: RSK Environment Ltd

Date: November 2025

Office: RSK Environment, Fourways House, 57 Hilton Street, Manchester, M1 2EJ. Tel: 0161 236757

Status: Final

Author	<u>Rachel Hill</u>	Technical reviewer	<u>Andy White</u>
Signature		Signature	
Date:	<u>11/11/25</u>	Date:	<u>11/11/25</u>

Project manager	<u>Rachel Hill</u>	Quality reviewer	<u>Maeve Quigley-Bramhall</u>
Signature		Signature	
Date:	<u>11/11/25</u>	Date:	<u>11/11/25</u>

Revision control sheet				
Revision ref.	Date	Reason for revision	Amended by:	Approved by:
Rev 00	29/10/25	First issue	N/A	Andy White
Rev 01	11/11/25	Client comments	Rachel Hill	Andy White

RSK shall prepare any reports in accordance with your instructions. We shall not be responsible for any use of the report (which is confidential and non-assignable) or its contents for any purpose other than that for which it was prepared and provided.

Should you require to pass copies of the report to other parties for information, the whole of the report may be copied, but no professional liability or warranty shall be extended to other parties by us in this connection without our express written permission.

Should you enter into discussions to sell or develop the site, the report can be regarded as having been issued by us jointly in favour of you and the potential purchaser/developer. We would owe the potential purchaser/developer the same duty of care that we owed to you (in relation to the report) when we were instructed to prepare the report subject to all the matters contained or referred to in the report and the limitations in this agreement.

This work has been undertaken in accordance with the quality management system of RSK Environment Ltd.

CONTENTS

1	INTRODUCTION	1
1.1	Background	1
1.2	Summary of proposed development and current site conditions	1
1.3	Assessment Purpose.....	2
1.4	Methodology	2
1.5	Accompanying plans and documentation	3
2	WASTE LEGISLATION, POLICY AND GUIDANCE	4
2.1	Introduction.....	4
2.2	National Legislation	4
2.3	National Waste Policy and Guidance	6
2.4	Regional and Local Waste Policy.....	8
3	PROJECT PLANNING AND DESIGN STAGE.....	10
3.1	Introduction.....	10
3.2	Designing Out Waste.....	10
3.3	Identification of material needs.....	10
3.4	Project Management	11
3.5	Site Waste Management Plan.....	11
4	MANAGEMENT OF EXCAVATION AND CONSTRUCTION WASTE AND MATERIALS.....	12
4.1	Introduction.....	12
4.2	Roles and Responsibilities	12
4.3	Site Preparation.....	13
4.4	Anticipated Site Preparation Waste and Materials	14
4.5	Anticipated Construction Waste and Materials	15
4.6	Raw Materials and Waste Storage and Management on site	17
4.7	Materials and Waste Transport	18
4.8	Waste and Material Reuse Opportunities and Mechanisms	19
4.9	Importation of Materials (aggregate)	20
4.10	Waste Classification	21
4.11	Waste Duty of Care	21
4.12	Waste Recycling and Disposal.....	23
4.13	Objectives and targets.....	23
4.14	Monitoring and Measurement.....	24
5	SUMMARY AND CONCLUSION	25
5.1	Summary of the Plan	25
5.2	Conclusion	25

APPENDICES

Appendix A - Service constraints

Appendix B - Site location plan

Appendix C - Cut and fill plan

Appendix D - Attenuation basin design

TABLES

Table 1: The Waste Hierarchy (reproduced from Defra website)	4
Table 2: Roles and Responsibilities	12
Table 3: Anticipated site preparation excavation arisings and imported materials	14
Table 4: Anticipated cut and fill volumes of excavated and imported material for the substation platform	15
Table 5: Objectives and targets set out in the Laing O'Rourke Construction Environmental Management Plan for the development.	23

1 INTRODUCTION

1.1 Background

RSK Geosciences have been commissioned by RSK Environment Ltd on behalf of Laing O'Rourke (LOR) to develop a Material Management Plan (MMP) for the proposed upgrade of the Margam Substation, Port Talbot, SA13 2NF. The location of the site is shown in **Appendix B**.

This MMP has been produced to accompany the development planning application to Neath Port Talbot County Borough Council.

To support with the planning application this MMP considers the potential impacts that may arise as part of the development from waste generated during site preparation, construction and operational phases, with an overall aim of developing a strategy for legislative compliance and good practice in the separation, storage, collection, treatment and/or disposal of waste arisings. It also addresses the potential for import and export of materials from site and the legal requirements and mechanisms to enable this. To promote resource efficiency and sustainability the plan will outline the potential reuse and sustainable mechanisms which may be utilised during the development.

This plan does not constitute an MMP under the Contaminated Land: Applications in Real Environments (CL:AiRE) Definition of Waste (DoW): Code of Practice (CoP). Where this is required, it will be developed at a later stage.

1.2 Summary of proposed development and current site conditions

National Grid Electricity Transmission has appointed Laing O'Rourke Ltd as the principal contractor for the project to deliver critical infrastructure. The site is located within the southern extents of Port Talbot, South Wales at approximate grid reference SS 78651 86399.

The works and full planning application this report forms part of encompasses the extension of the Margam 275 kV substation including the erection of a gas insulated switchgear hall (GIS hall) and the demolition of the existing control and amenities buildings to enable the erection of a new amenities building. Works to include earthworks, surface water management and drainage infrastructure, lighting, CCTV, boundary treatment (physical structures and landscaping), car parking, ecological improvements including a wildlife tower and gabion baskets, improved internal access roads, diesel generator and hardstanding, storage building and water storage tank, flood defence wall including flood gates and appropriate landscaping and other associated engineering operations.

The site currently comprises of undeveloped low-lying marshland and woodland and is currently characterised by natural vegetation and drainage ditches adjacent to the existing Margam

Substation which is situated to the West. A Geotechnical Desk Study was undertaken by Baker Hicks (Report ref.: 30004240-BHK-XX-XX-RP-C-0003; dated: 8 March 2024) which identified the site to be undeveloped land with no onsite sources of contamination identified during the Conceptual Site Model preparation. Offsite sources identified were the existing Margam Substation adjacent to the site and above ground storage tanks approximately 5 m west of the site. The subsequent Ground Investigation report undertaken by Baker Hicks (report ref.: MARPT-BHK-01-XX-RP-G-090001 rev. P03; dated: 22 August 2025) indicated the site history of the site showed a very low risk of contamination and all samples taken returned result below the adopted screening criteria for commercial LQM/CIEH S4UL thresholds. However, localised TPH at levels of 1,400 mg/kg was identified within the sample taken at TP115 0.2 below ground level (bgl). In addition, made ground was identified in at three locations (TP05, TP05A, TP05B) up to a depth of 2.30 m bgl, however the proposed development in this area only comprises of a road with no load bearing structure or earthworks. The report concluded that remediation of the site soils/ground water was unlikely to be required for the proposed site use, however consideration should be given to the localised increased TPH levels and made ground in terms of material reuse and waste disposal.

No slag waste from the nearby steel works to the West of the site was identified during the ground investigation undertaken on the site.

1.3 Assessment Purpose

The purpose of this MMP is to fulfil the Neath Port Talbot County Borough Council planning condition requirements and provide an outline of how Laing O'Rourke Ltd will appropriately manage, reuse, store, transport and dispose of materials and waste arising from the development, exported from site, and/or imported to site, with particular reference to:

- Outlining procedures and methodologies for the management, reuse, storage, transportation, and disposal of materials and wastes both generated on site, and imported to site.
- Identifying opportunities for waste and material reuse and sustainable management.

1.4 Methodology

The development of this MMP has involved a number of tasks including:

- A desk top review of information relating to the excavation, demolition, construction activities to collate information relating to waste generation, management, disposal, and reuse.
- A desk top review of information relating to material usage requirements and anticipated imported materials.
- A review of Neath Port Talbot County Borough Council waste management requirements, as the local planning authorities, and any forthcoming policy changes for development in the area.
- A review of available and accessible planning and policy guidance.
- Identification of opportunities for waste minimisation, reuse and recycling during the site preparation (including demolition where required), construction and operational phase (including options for sustainable re-use and recycling of wastes such as Environmental Permit

Exemptions; the CL:AIRE DoWCoP (for re-use of soils); and Waste and Resources Action Programme (WRAP) Quality Protocol (for the reuse of demolition materials)).

1.5 Accompanying plans and documentation

Alongside this Material Management Plan, additional plans are being submitted for the planning application submission, including:

- Outline Soil Management Plan by ADAS (MARPT-RSK-01-XX-PL-R-090038 Rev. 02; dated: 10 November 2025).
- Peat Management Plan by WRc (MARPT-RSK-01-XX-PL-R-090024 Rev.04; dated: 8 August 2025).
- Landscape and Habitat Management Plan by Stantec UK Ltd (Project no.: 331201497; dated: August 2025).
- Environmental Impact Assessment Screening Report by Stantec UK Ltd (Report ref.: 331201497/A5/EIAScreening; Rev 05; dated: May 2025).

The Soil and Peat Management Plans will provide detailed information on how each of these aspects are to be managed on site and should be read in conjunction with the Material Management Plan.

The Landscape and Habitat Management Plan, alongside the landscape designs, will be dependant on the restoration of soils. The restoration of the soils will be undertaken by the Contractor as part of the Permitted Development Works. It is assumed that the Contractor will adhere to the following standards and good practice methods.

The EIA Screening Report assesses the potential impacts which may arise from the development alongside the relevant mitigation measures which will be employed to support in reducing the potential impacts. In regard to waste, it is stated that a Construction Waste Management Plan/Site Waste Management Plan will form part of the Construction Environmental Management Plan for the Substation documentation. In regard to ground conditions and contamination, a Peat Management Plan is suggested as mitigation, alongside appropriate Ground Investigation specification, contaminated land desk top assessment and coal mining risk assessment report. It also outlines the consideration of different construction methods including drilled displacement piles and controlling water through an abstraction and discharge system. Through the implementation of appropriate mitigation measures the screening assessment determined that there would not be any likely significant effects from the development.

2 WASTE LEGISLATION, POLICY AND GUIDANCE

2.1 Introduction

This section contains detail of the national legislation as well as regional and local waste policy and guidance that has relevance to this proposed development.

2.2 National Legislation

Waste Framework Directive

The key European legislation is the revised Waste Framework Directive (2008/98/EC) ('rWFD'), which consolidates a number of separate waste Directives and amendments. It establishes the basis for the management of wastes across the European Union (EU). It defines certain terms, such as "waste", "recovery" and "disposal", to ensure that a uniform approach is taken across the EU. Following the UK withdrawal from the EU, this directive still applies through the implementation of the European Union (Withdrawal) Act 2018 and the European Union (Withdrawal Agreement) Act 2020 (see Section below).

Duty of Care

The waste duty of care is a legal requirement, originally implemented by Section 34 of the Environmental Protection Act 1990, to ensure that producers and holders handle their waste safely and in compliance with the appropriate regulations. One of the fundamental aspects of duty of care requires the holder of waste to make sure that anyone else dealing with their waste has the necessary authorisation to do so. If the holder does not do this and their waste is subsequently found to have been illegally disposed, the holder could be held responsible and may face prosecution. The duty of care provisions are contained in the Waste (England and Wales) Regulations 2011 SI 2011 No. 988.

The Waste Regulations

The Waste (England and Wales) Regulations 2011 SI 2011 No. 988, implement the rWFD in England and Wales. The waste hierarchy is set out at Article 4 of the rWFD. The waste hierarchy requires a demonstration by the producer/holder of a waste that the priority identified in **Table 1** has been considered in order to determine the most suitable waste management option for all waste arisings:

Table 1: The Waste Hierarchy (reproduced from Defra website)

Waste Hierarchy	Relevant Activity
Prevention	Using less material in design and manufacture, keeping products for longer, re-use, using less hazardous materials.
Preparing for re-use	The waste is capable of being recycled by existing local or regional waste management facilities without requiring adaptation.

Waste Hierarchy	Relevant Activity
Recycling	Turning waste into a new substance or product, includes composting if it meets quality protocols.
Other recovery	Includes anaerobic digestion, incineration with energy recovery, gasification and pyrolysis which produce energy (fuels, heat, and power) and materials from waste, some backfilling.
Disposal	Landfill and incineration without energy recovery.

It is a legal requirement for waste producers/holders to follow the waste hierarchy when making decisions about waste management options for waste. Waste holders must choose the highest possible hierarchical option for their wastes. Lower hierarchical options cannot be justified by cost alone. They require environmental justification over available higher options, for example the location of a site may justify sending waste to a lower option (e.g. local landfill), rather than sending it hundreds of miles to the nearest facility that could provide a higher option.

Hazardous Waste Regulations

The Hazardous Waste Regulations (HWR) provides the rules for assessing if a waste is hazardous or not as set out under the EU List of Wastes Decision 2000/532/EC. As part of the assessment of waste, Hazardous wastes are identified in the European Waste Catalogue (EWC) by an asterisk (*). Some types are classed as hazardous outright (known as absolute entries in the EWC), others require separate assessment dependent upon the concentration of dangerous substances present above threshold concentrations (known as mirror entries in the EWC). The HWR refer to the List of Wastes for the relevant thresholds for some of the hazardous properties; and to assign the formal description and code for the waste. The regulatory framework to do this is contained in:

- Hazardous Waste (England and Wales) Regulations 2005 SI 894.
- Hazardous Waste (England and Wales) (Amendment) Regulations 2009 SI 507.
- Hazardous Waste (Miscellaneous Amendments) Regulations SI 2015/1360.
- Hazardous Waste (England and Wales) (Amendment) Regulations 2016 (SI 2016/334).

Following the UK withdrawal from the EU, the implementation of the European Union (Withdrawal) Act 2018 and the European Union (Withdrawal Agreement) Act 2020 (see Section 2.2.6) means that this legislation is currently unaffected.

European Union (Withdrawal) Act 2018 and European Union (Withdrawal Agreement) Act 2020

On the 31 December 2020 the effect of the European Communities Act 1972 (ECA 1972) ceased and no longer serves as a conduit through which the EU can directly affect UK legislation. The European Union (Withdrawal) Act 2018 and European Union (Withdrawal Agreement) Act 2020 provide a framework to ensure the legal position that existed before the 31 December 2020 will continue to be preserved by retaining EU law that applies to the UK at that point and bringing it within the UK's domestic legal framework as a new category of law – Retained EU Law. The acts also provide the government with the necessary powers to amend or disapply Retained EU Law where it is considered appropriate.

2.3 National Waste Policy and Guidance

Planning Policy Wales, Edition 11, February 2021¹

The Planning Policy Wales sets out the Welsh government's land use planning policies supported by Technical Advice Notes, providing guidance on specific topics like waste, transport, and renewable energy.

Its purpose is to ensure that development and planning decisions contribute to sustainable development, support economic growth, protect the environment, and improve well-being for current and future generations. Planning Policy Wales (PPW) emphasises a plan-led approach, requiring local development plans to align with national objectives, including climate change mitigation, resource efficiency, and biodiversity enhancement. Key principles include promoting sustainable communities, efficient use of land and infrastructure, reducing flood risk, encouraging renewable energy, and integrating waste management and circular economy considerations into planning. National policy also provides guidance on development in sensitive areas, such as protected landscapes, and aims to balance economic, social, and environmental priorities in decision-making.

Technical Advice Note (TAN) 21: Waste supports PPW and provides detailed guidance on integrating waste management into land use planning in Wales. Its key purpose is to ensure that planning decisions support the sustainable management of waste in line with the circular economy and national waste policies. TAN21 sets out:

- Provision of waste management facilities: Identifying suitable locations for recycling, recovery, and disposal facilities, including the safe management of hazardous waste.
- Proximity principle: Waste should be managed as close as possible to its source to reduce transport impacts.
- Integration with development: New developments should consider waste management needs, such as space for collection, storage, and recycling facilities.
- Hierarchical approach: Emphasises the waste hierarchy—prevention, preparation for reuse, recycling, recovery, and disposal.
- Sustainable design: Encourages designing developments to minimise waste production and maximise reuse and recycling opportunities.
- Collaboration with local authorities: Developers, planners, and waste operators are encouraged to work together to ensure that sufficient waste infrastructure exists to meet local and regional needs.

Environment (Wales) Act 2016²

This provides the legal framework for the sustainable management of natural resources in Wales, supporting the transition to a low carbon, resources efficient and biodiverse nation. It places a duty on public bodies to apply the principles of sustainable resource management and introduces measures to reduce greenhouse gas emissions by at least 80% by 2050. The Act also strengthens

¹ <https://www.gov.wales/planning-policy-wales>

² <https://www.legislation.gov.uk/anaw/2016/3/contents>

waste management powers, enabling Welsh Ministers to make regulations on waste separation, collection, and disposal, and to promote resource efficiency and the circular economy. Overall, the Act underpins Wales's commitment to tackling climate change, enhancing ecosystem resilience, and ensuring that natural resources are managed in a way that benefits both current and future generations.

Waste (Wales) Measure 2010³

The Waste (Wales) Measure 2010 provides the Welsh Government with the powers to regulate waste management in Wales, with a particular focus on reducing, reusing, and recycling waste and promoting the circular economy. A key feature of the Measure is its provision to introduce Site Waste Management Plans (SWMPs) and associated fees or charges for construction and demolition projects, ensuring that waste is properly planned, recorded, and managed from the outset of a development. It also gives Welsh Ministers powers to set statutory targets for waste reduction, restrict the disposal of certain waste types, and regulate the treatment, recovery, or disposal of waste to protect the environment. Overall, the Measure aims to improve resource efficiency, minimize environmental impacts, and ensure that construction and other sectors in Wales handle waste in a sustainable and accountable manner.

Towards Zero Waste⁴

Towards Zero Waste is Wales's national waste strategy, first published in 2010 and updated in 2019, which sets out the framework for sustainable waste management and resource efficiency. The strategy's primary aim is to treat waste as a resource, moving Wales towards a circular economy by reducing waste generation, increasing reuse and recycling, and minimising disposal to landfill. Key objectives include:

- Preventing waste wherever possible, particularly avoidable waste.
- Promoting reuse and recycling across households, businesses, and the construction sector.
- Recovering value from residual waste through energy recovery and other sustainable means.
- Protecting the environment by reducing the impact of waste disposal on air, land, and water.
- Encouraging business and consumer engagement to foster a culture of resource efficiency.

The strategy is basis originates from the Waste (Wales) Measure 2010 and the Environment (Wales) Act 2016, and it aligns with planning guidance such as TAN 21: Waste. Its update in 2019 reinforced the emphasis on a circular economy, decarbonization, and sustainable management of resources, reflecting Wales's ongoing commitment to environmental protection and long-term resource efficiency.

³ <https://www.legislation.gov.uk/mwa/2010/8/contents>

⁴ <https://www.gov.wales/towards-zero-waste-our-waste-strategy>

CL:AIRE Definition of Waste: Code of Practice (DoWCoP)⁵

The definition of waste and re-use of materials can be complex, CL:AIRE have produced a DoWCoP that can be followed when reusing source segregated aggregate on the site of production. The CoP covers:

- Ground based infrastructure that is capable of reuse within earthworks projects e.g. road base, concrete floors.
- Source segregated aggregate material arising from demolition activities, such as crushed brick and concrete, to be reused on the site of production within earthworks projects or as sub-base or drainage materials.
- Stockpiled excavated materials that include the above.

A Materials Management Plan (MMP) must be developed to manage arisings from excavations and services as per the CL:AIRE Code of Practice. It should include:

- A description of the materials in terms of potential use and relative quantities.
- Details of where and how these materials will be stored.
- Details of the intended final destination and use of these materials.
- Details of how these materials are to be tracked and moved.

2.4 Regional and Local Waste Policy

Neath Port Talbot Local Development Plan (2011-2026)

The Neath Port Talbot Local Development Plan (2011-2026)⁶ guides the future development of the area and provides a clear vision for the County Borough regarding where, when and how new development can take place of the period between 2011 and 2026. As part of this it sets out various policies relating to how development will be undertaken:

- Policy EN8 – Pollution and Land Stability states that proposals which would likely have an unacceptable adverse effect on health, biodiversity and/or local amenity or would expose people to unacceptable risk due to the following will not be permitted:
 - air pollution.
 - noise pollution.
 - light pollution.
 - contamination.
 - land instability.
 - water (including groundwater) pollution.
 - proposals which would create new problems or exacerbate existing problems detailed above will not be acceptable unless mitigation measures are included to reduce the risk of harm to public health, biodiversity and/or local amenity to an acceptable level.
- Policy W3 – Waste Management in New Development states that proposal for new development will need to demonstrate that provision is made for the design, layout, storage and management of the waste generated by the development both during the construction phase and occupation.

⁵ <https://claire.co.uk/projects-and-initiatives/dow-cop.html>

⁶ <https://www.npt.gov.uk/planning-and-building-control/planning-policy/adopted-ldp-2011-2026/>

- The following proposals will be required to produce Site Waste Management Plans:
 - residential development for 50 or more dwellings.
 - industrial or commercial developments that would generate in excess of 1,000 tonnes of waste per annum.
 - development that would generate hazardous waste.

Neath Port Talbot Waste Strategy (2023)⁷

The Neath Port Talbot County Borough Council Waste Strategy aligns with national Welsh Government targets, aiming to reduce waste, increase recycling, and promote sustainable resource use. The policy covers residential services such as bin collections, recycling facilities, and bulky waste collection, as well as development-related requirements, including Site Waste Management Plans for new construction projects to ensure compliance with Local Development Plan policies SP19 and W3. This forms part of the council's approach to sustainable waste management, particularly for construction and demolition projects.

⁷ <https://www.npt.gov.uk/council/strategies-plans-and-policies/environment/waste-strategy/>

3 PROJECT PLANNING AND DESIGN STAGE

3.1 Introduction

The following section outlines how effective waste management will be considered during the design stage of the project.

3.2 Designing Out Waste

The type and quantity of waste generated on the development will be significantly influenced at the design stage. By making design decisions at this stage the generation of waste can be prevented and minimised in the first place.

Decisions at this stage can also positively improve the recycled content and future recyclability of the development.

Design teams and Project Managers will be required to:

- Understand the waste streams that are produced on site.
- Understand how materials will be reused and recycled.
- Review at key stages how well design and specification is impacting upon waste management and identify any opportunities for improvement.

At design stage, in order to minimise waste, the following will be considered as a minimum:

- The design of the development will aim to utilise the existing site levels wherever practicable. Doing this will optimise the cut and fill operation and ensure that material exported from the site is prevented/minimised.
- Use of prefabricated and standardised materials wherever possible will reduce waste on site. Many materials can be produced to a specific specification to reduce the quantity of offcuts.
- The types of materials to be used on the development should be considered, with priority given to recycled and reclaimed materials wherever feasible.
- The provision of accurate design specifications to subcontractors and supply chain teams.

3.3 Identification of material needs

During the design phase, the type and quantity of materials to be imported or won during site preparation are to be identified. Through early engagement during the design process, provisions can be made in order to:

- Identify potential appropriate site won materials for reuse.
- Identify suitable suppliers of materials.
- Identify sustainable options and alternatives for materials, such as recycled aggregate.
- Identify appropriate storage locations and infrastructure for materials imported to site.

Decisions at this stage can increase the sustainability and resource efficiency of a project and reduce waste production.

3.4 Project Management

Efficient Project Management is key to reducing the quantity of waste produced on a site and ensuring that any waste produced is managed sustainably and appropriately wherever possible.

The following are a number of steps that will be considered by project managers:

- By undertaking work in the correct order, the need for remedial actions will be reduced and as a result the amount of waste produced will also be reduced.
- By determining how materials and waste will be moved around the site the site manager can ensure that waste is disposed of appropriately and that segregation takes place.
- Ensure that all site staff and sub-contractors gain a suitable site induction that includes awareness of good waste management and the specific measures to be used on site.
- Regular toolbox talks can be used to make sure that everyone who comes to site knows how to reduce, re-use and recycle at the site.
- 'Just-in-time' delivery strategies can reduce waste created by improper storage and weather damage. Therefore, arrange deliveries of materials to align with project construction stages. This will help avoid materials being stored on-site longer than necessary and reduce the risk of damage.
- Check contracts with suppliers and the supplier's haulier for return of packaging. It is often the case that the supplier contract will include a clause for return of packaging, but this is not included in the contract with their haulier. These issues should be identified and resolved as early as possible to prevent problems on-site.
- Consider suppliers that offer reusable packaging schemes.

3.5 Site Waste Management Plan

In addition to the general measures outlined within this MMP, a Site Waste Management Plan (SWMP) will be produced as part of the Construction Environmental Management Plan produced by Laing O'Rourke for the development (Report ref.: MARPT-LOR-XX-XX-PL-R-090009;). The SWMP should detail the following:

- A detailed action plan for the management of waste, including roles and responsibilities, methods of data collection and reporting procedures.
- An initial estimate and type of likely waste arisings, based upon the final design of the proposed development.
- Proposals for managing the waste following the Waste Hierarchy to ensure that waste arisings are minimised, including 'designing out waste' and waste prevention measures.
- An analysis of any waste management facilities, and details of any site waste storage facilities including the requirements of environmental permits and pollution control measures.

4 MANAGEMENT OF EXCAVATION AND CONSTRUCTION WASTE AND MATERIALS

4.1 Introduction

The following section details how overarching waste management practices would be undertaken during the site preparation phase and subsequent construction phases of the proposed development.

4.2 Roles and Responsibilities

The main aims of managing waste should be to improve materials resource efficiency by promoting economic use of construction materials and methods to ensure that the waste hierarchy of reduce, reuse, recycle is followed before any disposal options are explored. In addition, opportunities for the illegal disposal of waste will be significantly reduced by ensuring compliance with existing legal controls and providing a full audit trail of waste removed from the construction site.

Records of all waste movements offsite will be retained by site management for the required time and these records will outline how waste was managed and demonstrate compliance with Duty of Care with respect to construction waste.

Different members of the construction team will have specific roles and responsibilities.

Table 2: Roles and Responsibilities

Position	Roles	Responsibilities
Applicant	Promote waste minimisation Drive good practice within team Ensure hazardous waste identified prior to construction	Duty of Care Best Practice Identification of waste reduction opportunities
Architect	Consider design options to reduce waste Promote use of reclaimed materials	Duty of Care Design out waste
Main Contractor – Site Manager	Develop, implement and communicate site specific waste plan/strategy Work with design team Ensure segregation of waste materials Designate and facilitate on site storage compounds/treatment areas Reduce waste being brought onto site (packaging) Ensure appropriate waste storage Keep proper records of all waste produced/re-used/sent off-site Ensure appropriate off-site transport of waste and confirm destination of all waste leaving site	Health and Safety Development of a site-specific waste plan/strategy Management of on-site processes and programme Hazardous waste identification and management Duty of Care record keeping
Sub-Contractors	Develop method statements for works on site	Duty of Care

Position	Roles	Responsibilities
	Liaise with Main Contractor to ensure they understand and comply with the site waste plan/strategy	Production of method statements Appropriate management of activities under direct control Ensure that wastes are segregated

Regular inspection and audit of all waste management records and activities on site will be undertaken to ensure that the relevant legislation and any good practice measures outlined within this MMP are complied with. Inspections and audits will be arranged by management teams at appropriate intervals and records of these inspections and audits will be retained.

4.3 Site Preparation

Due to the undeveloped nature of the site, the site preparation is anticipated to comprise of estimated four months of excavation and construction of a work platform, haul roads and ditch crossings. In order to prepare the areas, other works such as vegetation clearance, may be required.

The presence of any invasive non-native plant (i.e. Japanese Knotweed etc.) will be checked. Should the presence of any invasive non-native plant species be confirmed, the most appropriate methods of mitigation and removal will be determined. Prior to vegetation clearance commencing, the presence of invasive non-native plants will be assessed again. The removal, treatment and disposal of any identified invasive non-native plants will be undertaken in accordance with the latest guidance to prevent further growth or spread beyond the site.

Any other vegetation removed from site will be reused where possible. Examples of reuse include the creation of habitats for wildlife and the chipping of any vegetation to create mulch. Such examples of reuse may require the registration of the appropriate waste exemption. If reuse is not possible then any green waste should be handled and transported from site by an appropriately registered contractor for reuse/recycling.

Excavation will take place as part of the development, and this will produce an amount of topsoil and subsoil (predominantly clay).

Efforts will be made to ensure that any suitable soil from the excavation works is re-used on site, where possible. Where this cannot be reused or is not suitable for reuse, this will be disposed of off site to a suitably permitted facility.

Should, during the course of any excavation and ground preparatory works, any potentially contaminated land not already identified be observed, works in that area will cease until an appropriate assessment has been undertaken by specialists to determine if there is any risk present to either the environment or human health. Should contaminated ground be discovered

then the affected area of land would require remediation, with any contaminated excavated material treated or disposed of at an appropriately permitted site.

Should any asbestos containing material (ACM) be identified by the preconstruction ground investigation or encountered during construction works, then this will be managed and disposed of in accordance with The Control of Asbestos Regulations, 2012.

A number of measures will be implemented to ensure that the excavation of materials and the subsequent management of it is undertaken in a manner that does not impact upon the environment or local amenity. This will be detailed within the Peat Management Plan (MARPT-RSK-01-XX-PL-R-090024 Rev.04; dated: 8 August 2025) and Outline Soil Management Plan (MARPT-RSK-01-XX-PL-R-090038 Rev. 02; dated: 10 November 2025) for the site, and may include, but may not be limited to:

- Where possible any stripping, stockpiling or placing of soil will be carried out under dry weather conditions and where possible using tracked equipment to reduce compaction.
- Stripped soils should be stored for short periods of time only. This will ensure that the any detrimental impacts on the soils' physical, chemical and biological properties are minimised.
- Stockpiles of different excavated materials will be clearly defined and labelled where necessary to avoid the mixing of topsoil and subsoil, and hazardous and non-hazardous.
- Temporary stockpiles will have side slopes of no greater than 1 in 3 and will not be higher than 3 m.
- Any excavated materials will not be mixed with construction waste or contaminated materials.
- Stripped soil will be utilised onsite where possible. If a contractor imports soil, they must use a reputable supplier, establish the source of the soil and ensure it is suitable for the intended use.
- Stockpiles will be located away from any watercourses and drains and other sensitive receptors wherever possible. If drains are located near to any stockpiles, they will be blocked to ensure runoff does not enter them.
- Runoff from stockpiles will be carefully monitored and managed where required to ensure there is no impact to the environment.

4.4 Anticipated Site Preparation Waste and Materials

Calculations, undertaken by Laing O'Rourke and provided to RSK Geosciences, have been undertaken of the anticipated excavated materials and imported material requirements for the site preparation phase of the development and these are outlined below:

Table 3: Anticipated site preparation excavation arisings and imported materials

Type	Estimated volume
Excavation arisings	
Topsoil	3,738

Type	Estimated volume
Subsoil (clay)	5,606
Materials to be imported	
Sand/0-4 mm dust	1,406
Type 1	1,846
20/40 mm Primary Aggregate	2,046
6F5	11,480
Concrete filled bagwork (e.g. SoluForm)	2,848 (bags)

Excavation arisings will be appropriately managed on site to support either reuse opportunities, where possible, or for disposal if reuse opportunities cannot be identified. See Section 4.6 for further information.

4.5 Anticipated Construction Waste and Materials

Calculations for the anticipated construction waste arisings and material requirements have yet to be undertaken for the construction phase.

During construction activities, waste will be produced from surplus materials such as oversupply, off-cuts or damaged quantities of timber, concrete, pipes, steel reinforcement etc. some packing waste is also expected to be produced.

Surplus excavation waste and material is also anticipated through further excavation to be undertaken during the construction phase of the works. During the earthworks for the substation platform, the below cut and fill is anticipated as calculated by Laing O'Rourke on the Cut and Fill assessment/drawing provided to RSK Geosciences (**Appendix C**):

Table 4: Anticipated cut and fill volumes of excavated and imported material for the substation platform

Element	Cut (m ³)	Fill (m ³)	Net (m ³)
Site strip to accommodate piling mat	13,114	21.60	13,092.40
Imported/reused Material			
Load Transfer Platform Volume	0.0	8,579.60	8,579.60
Piling Matt	0.0	5,719.70	5,719.70
Site platform: Chippings	0.0	1,107.50	1,107.50
Site platform: MOT Type 3	0.0	4,430.20	4,440.20
Site platform: Class 6F2/6F5	0.0	11,796.90	11,796.90

In addition to this, excavation will be undertaken of the proposed attenuation basin to the north of the existing substation (**Appendix D**). The estimated volume of material to arise from the excavations to prepare the attention basin is 1,002.30 m³.

A new access road will also be constructed, comprising of approximately 870 m². This will comprise of (assuming worst case California Bearing Ratio values):

- 250 mm - sub-base
- 420 mm – capping material
- 100 mm - AC32 Asphalt
- 60 mm – AC20 Asphalt
- 50 mm - AC14 Asphalt Surface

The substation surface build up (14,929 m²) will also be undertaken which will comprise of the following:

- 300 mm – well compacted type 3 sub-base to Specification for Highways Works Series 800.
- 75 mm – stone chippings.

Other potential waste arisings and material requirements, not yet quantified will be produced during the construction phase of the works.

The composition of the construction waste arisings will be dependent on the construction methods employed. The following list includes anticipated wastes, including those from site offices and welfare:

- soils
- packaging
- wood/timber
- general waste (miscellaneous)
- plastics
- concrete/cement
- metals
- plasterboard
- insulation
- tiles/ceramics
- cabling
- oils, fuel oils and lubricants (for vehicle operation and maintenance)
- absorbents and filler materials (spill kits)
- biodegradable waste
- hazardous wastes
- portable toilet waste
- road sweeper waste.

Waste generation can be significantly reduced through the use of good waste management practices and reuse mechanisms and opportunities where available to retain the waste or material as a resource.

4.6 Raw Materials and Waste Storage and Management on site

Implementation of good practice measures in relation to on-site storage and security of raw materials and waste include the following:

- Designated areas prepared for the storage of raw materials and waste in an appropriate location within the site boundary, such as adjacent to or within the site compound. The area will be clearly marked, easily accessible to site staff and vehicles and provided for all phases of the construction process.
- Storage areas for raw materials and waste should be located away from any sensitive receptors (i.e. watercourses, boreholes etc) wherever possible.
- Clearly labelled or colour coded skips or containers to allow segregation of waste for re-use and recycling will be made available.
- Covered skips to prevent spread of wind-blown wastes will be used where appropriate.
- Hazardous waste materials will be stored in secure bunded compounds in appropriate containers with clear signage.
- Any fuels, oils or chemicals needed in the construction process will be stored in appropriate containers in secure bunded compounds.
- Where practicable, surplus bricks/blocks and aggregates will be reused within hardstanding areas onsite.
- Ensuring deliveries to the site are as far as practicable 'just in time' to minimise the generation of damaged goods becoming waste.
- Provision of onsite security to ensure potential loss of material from damage, vandalism or theft is avoided.
- Avoid the mixing of hazardous and non-hazardous materials.

Stockpiles of excavated materials and waste will be appropriately managed in line with the Peat Management Plan (MARPT-RSK-01-XX-PL-R-090024 Rev.04; dated: 8 August 2025) and Outline Soil Management Plan (MARPT-RSK-01-XX-PL-R-090038 Rev. 02; dated: 10 November 2025) for the development.

Waste and material storage areas will be set up before site works start one each phase of the development. Where practicable, the waste and material storage areas will be located close to the site compound and adequate hard standing will be provided for waste containers. Plans showing the location of the waste and material storage areas will be developed.

The waste storage areas will comprise of a number of waste containers that are best suited to the activities taking place in that area. These will typically comprise of a combination of, or all of, the following:

- **Gypsum/Plasterboard Skip.**
- **Metal Waste Skip** – for all types of clean metal, including rebar offcuts, scrap metal etc.

- **Packaging/Light Mixed Waste** - Cardboard, paper products etc (not polythene sheeting or ties as this should go in the “mixed” skip).
- **Wood** - All types of clean untreated timber or wood products (treated timbers may contain hazardous preservatives and so may need to be placed in an additional separate skip).
- **Inert** - Clean concrete, rubble, hardcore, brick and block etc (should not decompose or create a hazard when buried).
- **Mixed General Waste Skip** - Any waste except contaminated waste that cannot be recycled in other skips on the site.
- **Hazardous Waste** – Usually a three drum system for expanding foam, aerosols and mastics. More drums can be added for additional hazardous waste types.
- Additional containers may be provided for paint cans and plasterboard offcuts in order for them to be stored separately. This will allow for them to be returned to the supplier as part of any takeback scheme, should it be available.
- Any used pallets will be stacked in a designated area so that they may be collected by a pallet repatriation company. This company will identify pallets that can be reused and arrange for the disposal of any that are unsuitable or damaged beyond repair.

Waste storage areas will be subject to daily checks by either a waste manager, site manager or suitable personnel designated by the site manager to ensure that the area remains clean and tidy, waste is segregated properly and that there are no impacts to the environment. This includes inspections of any stockpiles of material or waste present on site. A record of the daily checks will be retained on site.

Take-back schemes will be utilised wherever available to promote the reuse of any offcuts or leftover materials.

No waste will be burnt on site.

4.7 Materials and Waste Transport

Materials and waste will be appropriately transported inline with Laing O'Rourke's procedures and processes.

Appropriate consideration will be given to planning and co-ordination of deliveries and vehicle movements relating to the materials and waste management. Consideration will be given to the following aspects:

- Delivery scheduling – to reduce impacts of traffic congestion and surrounding networks.
- Just-in-time delivery – to minimise the amount of materials stored on site to allow for adequate construction area and reduce potential material degradation.
- Site layout and on-site traffic management – efficient onsite routes, including access and egress, and traffic management measures will support in the management of transport and reduction in any potential associated impacts.

- Dust, noise and mud – potential environmental impacts resulting from the transportation of materials and waste onsite and offsite will be mitigated and reduced through appropriate documentation and control measures

As per Section 4.11 the legal requirements of Waste Duty of Care in relation to the transport of waste will be followed.

4.8 Waste and Material Reuse Opportunities and Mechanisms

Waste and material reuse opportunities and mechanisms will be utilised where possible through out the scheme, dependant on the available opportunities, available materials/wastes, and requirement for the material/waste either onsite or at other sites.

Waste Framework Directive – Chapter 1 Article 2 1(c)

The Waste Framework Directive states:

“uncontaminated soil and other naturally occurring material excavated in the course of construction activities where it is certain that the material will be used for the purposes of construction in its natural state on the site from which it was excavated”

Therefore, clean and naturally occurring material generated on site during development activities can be reused in the development without it being considered a waste. Suitable evidence will be required to confirm that the material is clean and naturally occurring.

CL:AIRE DoWCoP

Excavated materials which are considered surplus to requirements may then be classified as waste unless it is removed to a suitable site in accordance with the Definition of Waste: Development Industry Code of Practice (CL:AIRE DoWCoP). Where followed correctly, DoWCoP allows for the reuse of non-waste outside of waste regulation. The process enables certain scenarios of material reuse to be undertaken:

- The re-use of contaminated and uncontaminated materials on their site of origin.
- The direct transfer and reuse of clean naturally occurring soil materials between sites.
- The reuse of contaminated materials between sites within defined Cluster projects.

Through evidencing the four factors (protection of human health; suitability for use; quantity of material; certainty of use).

Where materials do not meet the suitable for use criteria under DoWCoP, alternative mechanisms may be sought to support with sustainable reuse.

Waste Exemptions

A waste exemption can be utilised for a waste operation which is exempt from needing an environmental permit, providing all conditions can be adhered to. There are several waste exemptions which may support in the treatment or use of wastes generated during the works:

- U1 – Use of Waste In Construction – allows for the reuse of various wastes including non-hazardous soil and stones in the course of construction activities.
- T6 – Treating Waste Wood and Plant Matter – allows for the treatment of waste wood so that it is suitable for use as mulch, panel board, fuel, and surfacing for tracks and paths. An additional Waste Exemption will be required if the treated waste is to be reused on site/off site.
- T7 – Treatment of waste bricks, tiles and concrete by crushing, grinding or reducing in size – allows for the treatment of certain waste streams, which can subsequently be reused under a U1 Waste Exemption either on site or off site. This must be registered with the local authority.

Where conditions within waste exemptions cannot be complied with, alternative mechanisms such as environmental permits will be required.

WRAP Quality Protocol: Aggregates from Inert Waste

The WRAP Quality Protocol: Aggregates from Inert Waste enables the production of aggregates from inert waste. Where followed, the aggregate would cease to be a waste and no longer subject to waste management controls and legislation provided:

- Must be produced from specific inert wastes.
- Conforms to a European Standard related to destined use - sampling and test required.
- Requires no further processing after creation.
- Suppliers must provide 'delivery documentation' detailed in the Quality Protocol which declares that the material has been made inline with the Protocol.
- The aggregate must be used in its as received state and require no further processing (including size reduction).

A suitable mechanism would be required to allow for the treatment and processing of waste to accompany the application of the WRAP Quality Protocol.

4.9 Importation of Materials (aggregate)

Materials in the form of virgin and recycled aggregates are to be bought onto site in the course of the development to enable the site preparation phase and construction phase. These are to be purchased from appropriate approved suppliers.

For virgin aggregates, these will be appropriately checked once received at site to make sure they align with the specification and quality expected. Where these do not meet the expected quality of specification, then these will not be accepted on to site and returned to the supplier.

Where recycled aggregates are imported onto site, it is anticipated these will have been produced in line with the WRAP Quality Protocol: Aggregates from Inert Wastes and the following checks will be undertaken:

- Results from the testing regime undertaken on the product.
- A summary of historical testing results.

- Delivery documentation for each load must contain:
 - the type of aggregate product dispatched.
 - the site at which the product was produced.
 - a statement that the aggregate was produced under a quality management scheme conforming to the aggregates Quality Protocol.

Where appropriate evidence of compliance with the WRAP Quality Protocol: Aggregates from Inert Wastes cannot be shown, then the material should not be accepted onto site. Upon receiving material at site, visual inspections will be undertaken to confirm compliance with the anticipated material type and specification, where this does not comply, the material will be rejected.

All records will be kept for a minimum of three years.

4.10 Waste Classification

As part of waste duty of care, waste must be assessed and classified, and any hazardous properties identified. Classification must be done before the waste is moved, disposed of, or recovered. It will help determine any controls that need to be applied during movement of the waste and help identify where the waste needs to be sent.

In most cases classification of waste is straightforward, i.e. cardboards, plastics, metals, glass etc. However, for soils, liquids or other less clear waste types there is a methodology by which waste should be classified and assessed - Technical Guidance WM3 – Guidance on the Classification and Assessment of Waste. This technical guidance outlines the steps to be taken and the information to be considered. The classification and assessment of waste should consider geographical factors, historical factors, online visual assessments and can include laboratory analysis. If this level of assessment is required, then further guidance will be sought.

4.11 Waste Duty of Care

Any work undertaken will be managed in accordance with Laing O'Rourke's internal environmental management procedures.

Any person working for or on behalf of Laing O'Rourke that transports waste from the project site must be registered (licensed) as a waste carrier. This will be confirmed prior to the activities being undertaken.

Any person employed to manage waste contracts/removals by other waste carriers on behalf of the main contractor must be registered as a 'Waste Broker'.

All movements of waste from site must be accompanied by a Waste Transfer Note (WTN) or Hazardous Waste Consignment Note (HWCN). WTNs and HWCNs must detail specific information regarding the type of waste produced. Common to both are:

- Date and time of movement.

- European Waste Catalogue (EWC) code.
- Description of waste.
- Address of the producing site from where the waste has been collected from (i.e. Margam Substation development).
- Standard Industrial Classification Code (SIC) 2007, which describes the producer of the waste (i.e. construction of utility projects for fluids - 42.21).
- Waste carrier's details including waste carrier registration number.
- Quantity of waste.
- How it is contained (e.g. RORO skip).
- Address of the receiving site (e.g. landfill).
- The Environmental Permit or Environmental Permit Exemption Number associated with the receiving site.
- Confirmation that the waste hierarchy has been applied.

In addition to the above information, a HWCN must contain the following:

- Consignment note code that starts with the hazardous waste premises code (generated by the main contractor in Wales).
- Chemical/biological component in the waste and their concentrations.
- Physical form of the waste (i.e. solid, liquid, gas, sludge, powder or mixed).
- Relevant Hazard Property Code (i.e. HP1- explosive, HP14- Ecotoxic etc).
- A Part E that the receiving site will sign to acknowledge receipt and then sent to the waste producer within three months.

By signing a WTN or HWCN, a site representative is confirming that all the details are correct and that the material is to be sent by a licensed waste carrier to a suitably licensed receiving site, able to receive that type of waste. The signature is binding of this fact and completes the WTN or HWCN as a legal document, which must be retained for a minimum of two years if it is a WTN and three years if it is a HWCN.

All notes will be retained by the project Office Manager and then transferred to an agreed regional/head office after an appropriate period of time and/or upon completion of the project. Copies of electronic notes are to be held on the project SharePoint.

Any sampling reports undertaken to assess and classify waste will be retained for the duration of the development.

Waste Transfer Notes and Hazardous Waste Consignment Notes will be made available to the Local Authority and National Resources Wales upon request.

4.12 Waste Recycling and Disposal

Laing O'Rourke will arrange for a suitable waste and recycling service. This will include the provision of suitably sized and number of storage containers, and their collection frequency.

In accordance with the waste hierarchy, disposal of waste will be the final option for any waste removed from site. Where possible, sustainable waste management options will be identified and utilised.

Prior to waste being sent to any treatment or disposal sites, they will be checked to ensure they are suitable and that they can accept waste from the development. These checks may be undertaken by any waste broker used, but records will be made available upon request.

4.13 Objectives and targets

As part of the Construction Environmental Management Plan produced by Laing O'Rourke for the development (Report ref.: MARPT-LOR-XX-XX-PL-R-090009) the project has developed specific environmental objectives to align with the environmental risk profile and client planning requirements.

In regard to waste and material management the following objectives and targets apply:

Table 5: Objectives and targets set out in the Laing O'Rourke Construction Environmental Management Plan for the development.

Objective	Actions	Responsibility	Evidence/Progress	Target Time constraint
Landfill Diversion – 100% non-hazardous waste diverted from landfill	Ensure accurate reporting process in place to track and monitor waste diversion targets	Construction Leader Sustainability Manager	Project Certainty/ Enviro Dashboards	Monitor through project duration. Target to be met and maintained by end of project
Waste recycling – 80%	-	Construction Leader Sustainability Manager	Monthly environmental performance report	Reported monthly, project certainty metric provided monthly
Timber procurement	All timber must be from chain of custody certified sources (FSC, PEFC, GIB) or reclaimed	Project Manager	Monthly environmental performance report	Monitor through project duration. Target too be met and maintained by end of projected,

Objective	Actions	Responsibility	Evidence/Progress	Target Time constraint
				Reported monthly. Target to be achieved at project completion.

4.14 Monitoring and Measurement

Monitoring and measurement of materials and wastes generated and used in the course of the development will be undertaken by Laing O'Rourke.

As part of the Construction Environmental Management Plan produced by Laing O'Rourke for the development (Report ref.: MARPT-LOR-XX-XX-PL-R-090009), waste data will be monitored on a monthly basis and waste procedure re-briefs regarding Waste Duty of Care will be undertaken in a quarterly basis.

These monitoring and measurement will be appropriately recorded by Laing O'Rourke and utilised to track and manage alignment with the objectives and targets set for the development. Where it is identified that improvements are required, these will be appropriately actioned.

5 SUMMARY AND CONCLUSION

5.1 Summary of the Plan

Waste and materials generated, imported, and exported during the course of site preparation and construction of the Margam substation will be appropriately managed to align with waste legislation, local policy and sustainable best practice.

Waste from Site Preparation

A significant quantity of the potential waste generated on site can be reduced by specifying the reuse of certain materials generated during excavation works. Development of Material Management Plans (MMP) at the different phases of development will outline how both contaminated and uncontaminated arisings from excavations will be managed.

Where excavated waste may not be immediately suitable for reuse, any treatment to make this waste suitable for reuse will be undertaken through an appropriately permitted mobile plant waste processing facility that complies with the relevant environmental permitting legislation. Where on-site treatment is not feasible, wastes will be sent to an offsite treatment/recycling facility in preference to a landfill wherever possible.

Any hazardous waste material identified during the site preparation phase will be managed accordingly to ensure that there is no impact to the environment and to human health and will be disposed of at an appropriately permitted site.

Waste from the Construction Phase

Good practice measures in relation to on-site storage and security of raw materials and waste should be implemented specifically for the segregation of waste to aid recycling, and for waste and materials to be safely and securely stored on site.

Further preliminary estimates of potential waste arisings can be provided once final designs for the development have been determined. More accurate estimates and conclusive figures will be calculated before, during, and after construction, and will be presented within the SWMP.

5.2 Conclusion

This MMP is an outline strategy only at this stage of the development. The strategy will be further refined prior to commencement of the development within a SWMP.

It will be ensured Waste Duty of Care is complied with at all times and that all movements of waste are tracked and recorded using the appropriate forms.

The proposals identify the requirements of relevant waste policy and follow applicable guidance.

Opportunities to further reduce waste arisings and increase recycling rates from the proposed development have been identified to ensure it contributes to an improved waste and material management performance.

APPENDICES

APPENDIX A

SERVICE CONSTRAINTS

1. Service Constraints

1.1. This Report (the "Report") and any study, inspection, investigation, sampling, testing and or interpretation carried out in connection with the Report (together the "Services") were compiled and carried out by RSK Environment Limited (RSK) trading as Leap Environmental or RSK Geosciences, for the Client named in the first paragraph of the Report (the "Client") in accordance with the terms of an RSK Fee Proposal including RSK Environment Standard Terms and Conditions (the "Appointment") between RSK and the Client, unless otherwise stated in the first paragraph of the Report. The Services were performed by RSK with the reasonable skill and care ordinarily exercised by a geo-environmental consultant at the time the Services were performed. Nothing in this Report shall be construed as imposing any fitness for purpose obligation. Further, and in particular, the Services were performed by RSK taking into account the limits of the scope of works required by the Client, the time scale involved and the resources, including financial and manpower resources, agreed between RSK and the Client.

1.2 Other than that, expressly contained in paragraph 1 above, RSK provides no other representation or warranty whether express or implied, in relation to the Services. RSK shall not be liable in respect of any action or proceedings arising out of or in connection with this Report whether in contract, in tort, for breach of statutory duty or otherwise after the expiry of six (6) years from either (i) the date of the Report or (ii) such earlier date as prescribed by law, unless varied in the terms of the Appointment.

1.3 Unless otherwise agreed in writing, the Services were performed by RSK exclusively for the purposes of the Client. RSK is not aware of any interest of or reliance by any party other than the Client in or on the Services. Unless expressly provided in writing, RSK does not authorise, consent, or condone any party, other than the Client relying upon the Services. Should this Report or any part of this Report, or details of the Services or any part of the Services, be made known to any such party, and such party relies thereon, that party does so wholly at its own and sole risk, and RSK disclaims any liability to such parties. Any such party would be well advised to seek independent advice from a competent geo-environmental consultant and/or lawyer.

1.4 The Client shall not, without the prior written consent of RSK, assign, transfer, charge, mortgage, subcontract, or deal in any other manner with all or any of the benefits provided in this Report. Unless specified in the Appointment, RSK shall not be obliged to assign the benefit of the Report whether by collateral warranty, third party rights pursuant to the Contracts (Rights of Third Parties) Act 1999, letter of reliance or otherwise. If RSK agrees to any assignment of the benefit of this Report, in whatever form, benefits to third parties through collateral warranties, third party rights or letters of reliance shall not be provided unless a fee for each right, warranty or letter is agreed. The form of wording used in the warranty or letter shall be provided by RSK for agreement by the Client. Any reasonable changes to the form of wording will be implemented by mutual agreement, however the terms in the warranty or letter cannot offer the third party any greater benefit than the Appointment offered to the Client.

1.5 It is the understanding of RSK that this Report is to be used for the purpose described in the introduction to the Report. That purpose was a significant factor in determining the scope and level of the Services. Should the purpose for which the Report is used, or the proposed use of the site change, this Report may no longer be valid and any further use of or reliance upon the Report in those circumstances by the Client without the review and advice of RSK shall be at the Client's sole and own risk. RSK shall not be liable for any use of this Report for any purpose other than that for which it was provided.

1.6 The passage of time may result in changes in site conditions, regulatory or other legal provisions, technology or economic conditions which could render the Report inaccurate or unreliable. The information and conclusions contained in this Report should not be relied upon in the future without the written advice of RSK. In the absence of such written advice of RSK, reliance on the Report in the future shall be at the Client's own and sole risk.

1.7 The observations and conclusions described in this Report are based solely upon the Services which were provided pursuant to the agreement between the Client and RSK. RSK has not performed any observations, investigations, studies or testing not specifically set out, or required by the Appointment between the Client and RSK. RSK is not liable for the existence of any condition, the discovery of which would require performance of services not otherwise contained in the Services. For the avoidance of doubt, unless otherwise expressly referred to in the introduction to this Report, RSK did not seek to evaluate the presence on or off site of asbestos, invasive plants, electromagnetic fields, lead paint, heavy metals, radon gas, fuel storage, persistent bio-accumulative or toxic chemicals (including PFAS and related compounds) or other radioactive or hazardous materials, unless specifically identified in the Services.

1.8 The Services are based upon RSK's observations of existing physical conditions at the Site gained from a visual inspection of the site together with RSK's interpretation of desk based publicly available information, including documentation, obtained from third parties and from the Client on the history and usage of the site, unless specifically identified in the Services and the limitations below:

- a. The Services were based on information and/or analysis provided by independent testing and information services or laboratories upon which RSK was reasonably entitled to rely.
- b. The Services were limited by the accuracy of the information, including documentation, reviewed by RSK and the observations possible at the time of the visual inspection.
- c. The Services did not attempt to independently verify the accuracy or completeness of information, documentation or materials received from the Client or third parties, including laboratories and information services, during the performance of the Services.
- d. The Client has identified in writing to RSK, the information, reports, findings, surveys and preliminary works RSK may not rely upon when providing the Services.

RSK is not liable for any inaccurate information or conclusions, the discovery of which inaccuracies required the doing of any act including the gathering of any information which was not reasonably available to RSK, and including the doing of any independent investigation of the information provided to RSK, save as otherwise provided in the terms of the Appointment between the Client and RSK.

1.9 Any site drawing(s) provided in this Report is (are) not meant to be an accurate base plan for scale measurement but is (are) used to present the general relative locations of features on, and surrounding, the site. Features (intrusive and sample locations etc) annotated on site plans are not drawn to scale but are centred over the approximate location. Such features should not be used for accurate setting out and should be considered indicative only.

1.10 Should RSK be requested to review the Report after the date of issue of this Report, RSK shall be entitled to additional payment at the existing rates, or such other terms as agreed between RSK and the Client.

2. Service Constraints where the Report provides an intrusive assessment of ground conditions:

2.1 The intrusive environmental ground investigation aspects of the Services are a limited sampling of soil from the site, at pre-determined locations based on the known historic / operational configuration of the site. The conclusions given in this Report are based on information gathered at the specific test locations and can only be extrapolated to an undefined limited area around those locations. The extent

of the limited area depends on the properties of the materials adjacent and local conditions, together with the position of any current structures and underground utilities and facilities, and natural and other activities on site. In addition, chemical analysis was carried out for a limited number of parameters (as stipulated in the scope agreed between the Client and RSK, based on an understanding of the available operational and historical information) and it should not be inferred that other chemical species (not tested) are not present.

2.2 The comments given in this Report and the opinions expressed are based on the ground conditions encountered during the site work and on the results of tests made in the field and in the laboratory. The extent of the exploratory holes, laboratory testing and monitoring undertaken may have been restricted due to a number of factors including accessibility, the presence of buried or overhead services, current development, site usage, timescales or the Client's specification. The exploratory holes only assess a small proportion of the site area with respect to the site as a whole, and as such may only provide an indicative assessment of ground conditions on site. There may be conditions pertaining to the site that have not been disclosed by the investigation and therefore could not be taken into account. In particular, it should be noted that there may be areas of made ground not detected due to the limited nature of the investigation or the thickness and quality of made ground across the site may be variable. In addition, groundwater levels and ground gas concentrations and flows, may vary from those reported due to seasonal, or other, effects and the limitations stated in the data should be recognised. The presence of hotspots of undisclosed contamination or exceptional and unforeseen ground conditions cannot be discounted.

2.3 Where the Services include Investigation of an exploratory nature or relating to physical ground works, any costings and prices provided in the Report are estimated and provided for guidance purposes only. The actual cost and time quantities shall be remeasured and shall be dependent upon the ground or other conditions, constraints present, and number and depth of the investigation locations, which shall influence the number of samples and tests required, and the quantities of soil being classified.

2.4 Asbestos is often observed to be present in soils in discrete areas. Whilst asbestos-containing materials may have been locally encountered during the fieldworks or supporting laboratory analysis, the history of brownfield and demolition sites indicates that asbestos fibres may be present more widely in soils and aggregates, which could be encountered during more extensive ground works. However, this Report does not constitute an asbestos survey. On this basis, the presence of asbestos on site cannot be discounted and a full asbestos survey should be undertaken.

2.5 Unless stated otherwise, only preliminary geotechnical recommendations are presented in this Report and these should be verified in a Geotechnical Design Report, once proposed construction and structural design proposals are confirmed. Eurocode 7 gives guidance on the type of sampling, sample quality, number and spacing of intrusive investigations, and number of laboratory tests required. It is intended that the Geotechnical Information section of this Report will fulfil the general requirements of the Ground Investigation Report as set out in section 6 of Eurocode7, although this is subject to the restrictions imposed on the investigation, as listed above. For geotechnical design, Eurocode 7 requires the Geotechnical Design Report to address both the geotechnical and structural aspects of the geotechnical design for both the limit and serviceability states. The Geotechnical Appraisal section of this Report will not meet the requirements of a Geotechnical Design Report (GDR) and should therefore be used for preliminary guidance only.

3. Service Constraints where the Report relates to Surface Water Management:

3.1 The Surface Water Management Inspection (SWMI) Report, documents provided, observations, actions, and recommendations, with respect to the management of potential pollution issues to surface waters, made during the site Inspection visit, are those present at the time of the visit, and may not represent those recorded by others on the same day.

3.2 The comments given in this Report and the opinions expressed are based on the weather, ground and ground water conditions encountered during the site work and on the results of tests made in the field and in the laboratory. However, there may be conditions pertaining to the site that have not been disclosed by the inspection and therefore could not be taken into account. In addition, groundwater levels and flows, may vary from those Reported due to seasonal, or other, effects and the limitations stated in the data should be recognised.

3.3 RSK places a degree of dependence upon oral information provided by site representatives, which is not readily verifiable through visual inspection, or supported by any available written documentation. RSK shall not be held responsible for conditions or consequences arising from relevant facts that were not fully disclosed by facility or site representatives at the time this Report was prepared.

3.4 This Report is a live document, to be continually reviewed and updated as the development progresses or other changes occur on site. RSK can only maintain the currency of this Report through the Client requesting support with supplementary site visits or attendance at meetings ahead of key stages of the development in relation to surface water management. Our risk rating assesses a number of risk factors in line with the source-pathway- receptor model and is therefore subject to constant change.

3.5 Standard design drawings are indicative. Material types, dimensions and construction details will need to be adjusted by the Client to suit the specific conditions / flows on Site.

3.6 The full responsibility for implementing the site-specific protection and maintenance measures to protect the surface water system as stated in this Report, remains with the Client and their site management team. Additional control measures may be required to achieve the objectives set out in the Surface Water Management Plan to be implemented and financed by the Client.

4. Service Constraints where the Report relates to Waste Management:

4.1 In accordance with the definition provided in the Waste Framework Directive (WFD), materials are only considered waste if 'they are discarded, intended to be discarded or required to be discarded, by the holder'. Naturally occurring soils are not considered waste if re-used on the site of origin for the purposes of development. Soils such as made ground that are not of clean and natural origin (irrespective of whether they are contaminated or not) and other materials such as recycled aggregate, do not necessarily become waste until the criteria above are met. Excavation arisings from the development may therefore be classified as waste if surplus to requirements and/or unsuitable for re-use.

4.2 It is the duty of the waste producer, to ensure that all waste is accurately classified prior to waste disposal. Technical Guidance WM3 (EA, 2018) sets out in its Appendix D requirements for waste sampling. It is a legal requirement to correctly assess and classify waste. The level of sampling should be proportionate to the volume of waste and its heterogeneity. Unless otherwise stated, the waste assessment presented in this Report should be considered as preliminary and further testing and assessment of the waste under the provisions of a Waste Sampling Plan may be required to obtain the necessary level of data required for basic characterisation of the waste in support of disposal.

4.3 Unless stated otherwise in the Report, information relating to historical operations at the site was not reviewed as part of the assessment by RSK. In addition, unless otherwise stated in the Services, RSK was not present during the collection of the samples nor had any input on the chemical testing suite. Therefore, the waste assessment and classification detailed in this Report are based solely on any information that were provided to RSK (e.g., laboratory chemical data, exploratory hole records) and were completed without prejudice for our Client.

4.4 RSK assumes that any ground investigation data, chemical testing results etc., that were provided by the Client to inform the waste assessment and supporting review were carried out in accordance with current best practice and relevant guidance/ standards, where applicable. Thus, the

comments given in this Report and the opinions expressed are based solely on the information provided by the Client. However, it is noted that there may be conditions pertaining to the site that have not been disclosed by the investigation and therefore could not be taken into account as part of the RSK assessment.

5. Service Constraints for Construction Environmental Management Plan Reports:

5.1 This Report should be considered in the light of any changes in legislation, statutory requirement or industry practices that may have occurred subsequent to the date of issue.

5.2 The measures and comments outlined in this Report and any opinions expressed are based on the plans provided at the time and discussions with relevant parties. However, there may be conditions pertaining to the site that have not been disclosed by investigations and therefore could not be taken into account.

5.3 This CEMP is a live document and is subject to change throughout the project, as and when necessary, to ensure management of environmental aspects remains relevant, and to ensure continued compliance with legislation and commitments as they may change. RSK understands that this CEMP will be reviewed by the Client every six months and updated as and when necessary.

5.4 It is the full responsibility of the Principal Contractor/ Client to ensure that their works do not contravene legal requirements, and adherence to this CEMP alone cannot be a full defence regarding legal action against the Principal Contractor.

6. Service Constraints where the Report relates to Ground Gas Membrane Verification:

6.1 This Report is limited to the verification of the gas resistant membrane/vapour membrane/radon barrier after installation and no inspections were undertaken of the substrate (i.e. prepared ground). The Report therefore does not constitute as a full verification of ground gas protection system.

6.2 The comments given in this Report and the opinions expressed, are based on the condition of the ground gas membrane as encountered at the time of inspection by suitably qualified personnel. RSK cannot accept liability for any subsequent change to the status of the gas membrane by follow-on trades or other construction activity.

6.3 Where not designed by RSK, the verification of protection measures is carried out with reference to the gas protection design provided by the Client. RSK assume the scope of gas protection measures as determined by third parties to be correct and to have achieved any required approval from authorities.

6.4 The Ground Gas Design Report/Remediation Strategy and Verification Plan contains details of the procedures to be adopted for inspection and validation of the works. However, it should be noted that responsibility for the correct implementation of the strategy lies with the appointed contractor. RSK cannot be held responsible for any remedial works that are carried out without the agreed procedures involving either direct supervision by RSK, or inspection and validation of the works by a representative from RSK.

7. Service Constraints for Environmental Due Diligence (EDD) Reports:

7.1 The comments given in this Report and the opinions expressed are based on the information obtained and reviewed as part of the desk-based assessment. However, there may be conditions pertaining to the Site that have not been disclosed by the assessment and therefore could not be taken into account. Furthermore, no intrusive investigations, monitoring or sampling have been undertaken to confirm the environmental status of the site, therefore any comments relating to ground conditions and subsurface contamination are based solely on a review of desk-based information.

7.2 This Report describes the results of the EDD exercise. The scope of this EDD Report, where appropriate, covers legal or regulatory compliance with respect to UK or international regulations associated with environmental matters.

7.3 As with any EDD exercise, there is a certain degree of dependence upon information provided by the target company. The EDD does not include a site walkover / visit or liaison with site representatives unless identified in the Services. Therefore, the assessment is based on the available desk study information. Also, there is a certain degree of dependence upon oral information provided by site representatives, which is not readily verifiable through visual inspection, or supported by any available written documentation. RSK shall not be held responsible for conditions or consequences arising from relevant facts that were not fully disclosed by facility or site representatives at the time this EDD exercise was performed.

7.4 This Report, including all supporting data and notes (collectively referred to hereinafter as "information"), was prepared or collected by RSK for the benefit of its Client.

7.5 The comments given in this Report and the opinions expressed are based on the information obtained and reviewed as part of the desk-based assessment and the site inspection visit. However, there may be conditions pertaining to the Site that have not been disclosed by the assessment and therefore could not be taken into account. Furthermore, no intrusive investigations, monitoring or sampling have been undertaken to confirm the environmental status of the Site therefore any comments relating to ground conditions and subsurface contamination are based solely on a review of desk-based information and observations collected during the site inspection visit.

8. Service Constraints for Ground source heat energy Reports:

8.1 It is understood that this is a desktop survey only and that there are no requirements for a site walkover, service utility survey, or provision of service plans. These services can be provided upon request if required.

8.2 At a later stage, it is possible that a thermal response test (TRT) will need to be completed, for which a test borehole will have to be drilled, and these would be costed at the time. RSK can provide all aspects of subsequent site work for a GSHP system if required.

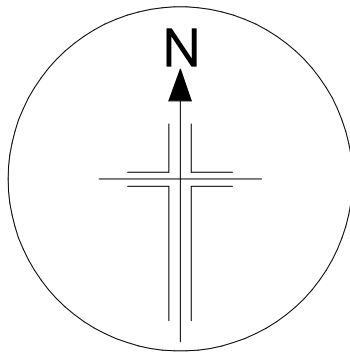
9. Service Constraints for Water Abstraction Borehole Reports:

9.1 The Report aims principally to only identify and assess the suitability of the site for a water abstraction borehole. This Report should be considered in the light of any changes in legislation, statutory requirements, and industry practices, that have occurred subsequent to the date of the Report.

9.2 Unless stated in the Report, the opinions expressed in this Report including all comments and recommendations provided are on the basis of the information obtained from a desk-based assessment.

APPENDIX B

SITE LOCATION PLAN



0 20 40 60 80 100
SCALE 1:2500 m

For Planning

GENERAL NOTES

ALL BAKERHICKS DRAWINGS ARE TO BE READ IN CONJUNCTION WITH THE GENERAL NOTES DRAWINGS, THE RELEVANT BAKERHICKS SPECIFICATIONS AND ALL RELEVANT ARCHITECTS AND SERVICE ENGINEERS DRAWINGS AND SPECIFICATION.

ALL LEVELS ARE IN METRES ABOVE ORDINANCE DATUM.

ALL DIMENSIONS ARE IN MILLIMETRES (U.N.O.)

DO NOT SCALE ANY ENGINEERING DRAWINGS OR DIGITAL DATA. IF IN DOUBT ASK WORK TO FIGURED DIMENSIONS ONLY. ANY DISCREPANCIES IN DIMENSIONS ARE TO BE REFERRED TO ENGINEER BEFORE WORK IS PUT TO HAND.

THE CONTRACTOR MUST ADVISE THE ARCHITECT AND ENGINEER OF ANY DISCREPANCIES BETWEEN THE CONTRACT DRAWINGS AND/OR SITE CONDITIONS / DIMENSIONS AT THE EARLIEST POSSIBLE OPPORTUNITY.

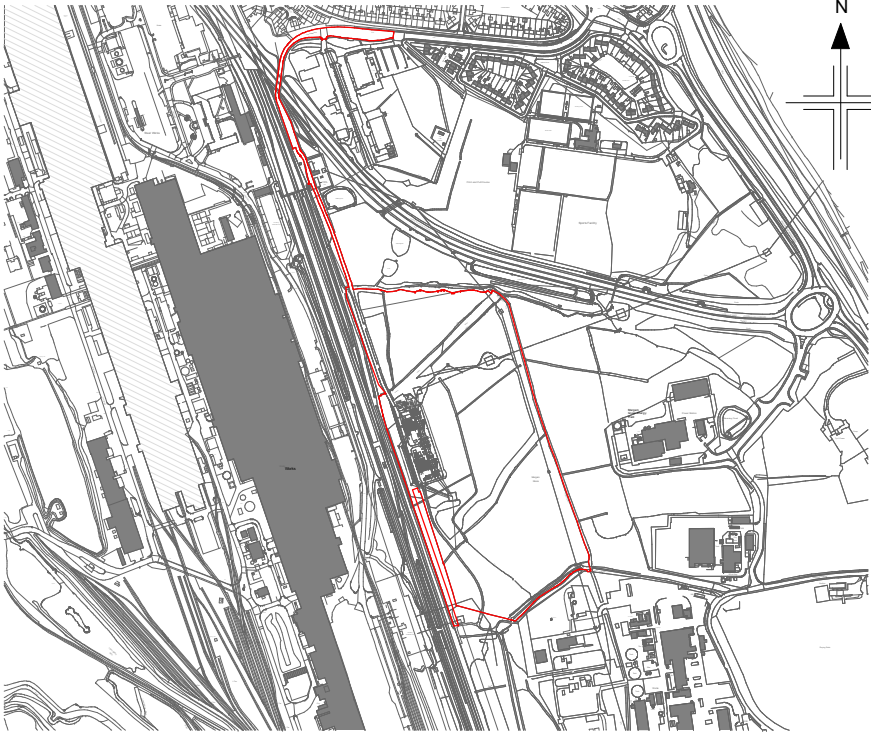
REVISION NOTES ARE FOR GUIDANCE ONLY. FOR SPECIFIC DETAILS, REFER TO CLOUDED AREA ON DRAWINGS FOR MOST RECENT AMENDMENTS.

ALL DIMENSIONS AND LEVELS ARE TO BE CHECKED ON SITE BY THE CONTRACTOR OR HIS SUBCONTRACTOR PRIOR TO PREPARING ANY WORKING DRAWINGS OR COMMENCING ON SITE.

ALL WORK HAS TO BE CARRIED OUT WITH THE REQUIREMENTS OF THE RELEVANT STATUTORY AUTHORITIES AND REGULATIONS.

ALL METHOD STATEMENTS SHOULD BE SUBMITTED TO THE ARCHITECT / CDM PRINCIPAL DESIGNER AND ENGINEER FOR REVIEW AT LEAST TWO WEEKS BEFORE CARRYING OUT THE SAD WORKS.

ALL PROPRIETARY PRODUCTS TO BE AS SPECIFIED OR EQUAL APPROVED.



KEYPLAN

SITE KEY



SITE BOUNDARY
SITE AREA: (154648.052 m2)
(15.46 Hectares)
(38.20 Acres)

NOTE:

DRAWING TO BE PRINTED IN
COLOUR

**REFER TO PEAT MANAGEMENT
STRATEGY FOR AREAS OF PEAT
BURIAL LOCATIONS**

P04	S3 For Review and Comment: Planning drawings updated following feedback with NPT on 24/07/25	MY	OTr / PC	29/07/25
P03	Issued for planning, comments incorporated following client feedback	GP	OTr / RC	24/04/25
P02	Issued For Planning	DSB	OTr / RW	10/02/25
P01	Issued to Client and Planning Consultant for Comment	MY	OTr / RW	27/01/25
Rev	Description	Cre'd	Chk'd / App'd	Date

nationalgrid

Master Scheme No:	Sub-Scheme No:	Site:
101677		MARGAM

Scheme Name:
Margam Substation

Document Title:

Margam GIS Hall - Location Plan

Created by:	Date:	Checked by:	Date:	Approved by:	Date:
MY	07/01/25	OTr	07/01/25	RW	07/01/25
Development Eng:	Document Type:	Scale:	Format:	Sheet(s):	Rev:
DWG		1 : 2500	A1	1 OF 1	P04

National Grid Document Number:	13_LOR_0063
--------------------------------	-------------

FEED Document Number:	MARPT-BHK-01-ZZ-DG-A-130020
-----------------------	-----------------------------

1 Location Plan_Planning Application

Scale: 1 : 2500

© BakerHicks
This document is issued for the party which commissioned it and for specific purposes connected with the captioned project only. It should not be relied upon by any other party or used for any other purpose.
We accept no responsibility for the consequences of this document being relied upon by any other party, or being used for any other purpose, or containing any error or omission which is due to an error or omission in data supplied to use by other parties

© National Grid
Copyright not to be reproduced without written permission of the National Grid Electricity Transmission Plc.

THIS IS A TP500 STAGE 4.2
DRAWING AND IS FOR
DEVELOPMENT PURPOSES ONLY

APPENDIX C

CUT AND FILL PLAN

Name	Cut Factor	Fill Factor	2D Area	Cut	Fill	Net
Margam Site Strip to Piling Matt	1.000	1.000	14299.3sq.m	13114.0 Cu. M.	21.6 Cu. M.	13092.4 Cu. M.<Cut>

Name	Cut Factor	Fill Factor	2D Area	Cut	Fill	Net
Margam_Load Transfer Platform Volume	1.000	1.000	14299.3sq.m	0.0 Cu. M.	8579.6 Cu. M.	8579.6 Cu. M.<Fill>
Margam_Piling Matt Volume	1.000	1.000	14299.3sq.m	0.0 Cu. M.	5719.7 Cu. M.	5719.7 Cu. M.<Fill>
Margam_Site Platform Volume:	1.000	1.000	14767.3sq.m	0.0 Cu. M.	17159.2 Cu. M.	17159.2 Cu. M.<Fill>
- Chippings (75mm Depth)	1.000	1.000	14767.3sq.m	0.0 Cu. M.	1107.5 Cu. M.	1107.5 Cu. M.<Fill>
- MOT Type 3 (300mm Depth)	1.000	1.000	14767.3sq.m	0.0 Cu. M.	4430.2 Cu. M.	4430.2 Cu. M.<Fill>
-Class 6F2/6F5 (825mm Depth)	1.000	1.000	14299.3sq.m	0.0 Cu. M.	11796.9 Cu. M.	11796.9 Cu. M.<Fill>

Site plan showing proposed construction area with various annotations and labels:

- CESSPOOL LOCATION**: Indicated by a dashed line and arrow pointing to a specific location.
- No. 2**: Yellow triangle marker.
- IN ABEYANCE, PENDING GROUND IMPROVEMENT DESIGN AND TEMPORARY WORKS REQUIRED**: Red text box with a red dashed border.
- No. 7**: Yellow triangle marker.
- No. 5**: Yellow triangle marker.
- No. 6**: Yellow triangle marker.
- EXISTING EARTH**: Blue dashed line.
- EXISTING SURFACE WATER DRAINAGE**: Green dashed line.
- Electricity Distribution Site**: Label pointing to a specific area.
- SOP 009**: E=278594.094, N=186455.048.
- SOP 008**: E=278523.802, N=186419.733.
- SOP 007**: E=278513.323, N=186416.324.
- SOP 006**: E=278509.661, N=186427.578.
- SOP 005**: E=278473.328, N=186415.668.
- CONTINUATION TO SHEET 2**: Vertical text label.
- PLAN**: Scale 1:500.

DRAWING NUMBER		
NATIONAL GRID	BAKER HICKS	DESCRIPTION
48_LOR_0202	MARPT-BHK-01-ZZ-DG-C-181001	MARGAM EARTHWORKS GENERAL ARRANGEMENT SHEET 01 OF 02
18_LOR_0203	MARPT-BHK-01-ZZ-DG-C-181002	MARGAM EARTHWORKS GENERAL ARRANGEMENT SHEET 02 OF 02
18_LOR_0204	MARPT-BHK-01-ZZ-DG-C-181003	MARGAM EARTHWORKS CUT & FILL SECTIONS SHEET 01 OF 02
18_LOR_0205	MARPT-BHK-01-ZZ-DG-C-181004	MARGAM EARTHWORKS CUT & FILL SECTIONS SHEET 02 OF 02
09_LOR_0009	MARPT-BHK-ZZ-XX-SP-G-090001	EARTHWORKS SPECIFICATION

PRELIMINARY

SIGNIFICANT RISKS ASSOCIATED WITH THIS DRAWING ARE IDENTIFIED BELOW AND, WHERE APPLICABLE, AT SPECIFIC LOCATIONS ON THE DRAWING. REFER TO THE HAZARD REGISTER 09_LOR_0005 / 30004595-BHK-XX-XX-RE-HS-0012 FOR FULL DETAILS.

- GENERAL NOTES:

1. FOR REVIEW AND COMMENT ONLY. DO NOT CONSTRUCT FROM THIS DRAWING.
2. UNLESS NOTED OTHERWISE, LEVELS (AOD) AND CO-ORDINATE (RELATIVE TO ORDINANCE DATUM) ARE IN METRES.
3. PROPOSED FINISHED SUBSTATION PLATFORM LEVEL = 4.150m AOD.

EARTHWORKS NOTES:

1. ALL WORKS TO BE UNDERTAKEN IN ACCORDANCE WITH:
 - NGTS 3.10.02 (MATERIALS).
 - NGTS 3.10.03 (EXCAVATION, BACKFILLING AND RESTORATION)
 - SPECIFICATION FOR HIGHWAYS WORKS (MCHW) SERIES 600.
 - EARTHWORKS SPECIFICATION MARPT-BHK-ZZ-XX-SP-G-090001 (09_LOR_0009).
2. CUT & FILL ANALYSIS HAS BEEN DEVELOPED USING A 1:1 VOLUMETRIC COMPARISON, NO ALLOWANCE FOR BULKING AND COMPACTION FACTORS HAVE BEEN ACCOUNTED FOR. CONTRACTOR TO APPLY AS REQUIRED FOR MATERIAL ORDERING PURPOSES.
3. ALL ENGINEERED BACKFILL PROPOSED IS NOT CONTAIN ANY SLAG WITHIN MATERIAL MIXES.
4. FORMATION DEPTH OF ACCESS ROAD BASED ON CBR >2.5% (700mm).
5. FORMATION DEPTH OF DETENTION BASIN DESIGNED WITH CONSIDERATION OF 500mm DEPTH OF PUDDLE CLAY & 200mm CLASS 2 GENERAL BACKFILL MATERIAL WITH PERMEABILITY COEFFICIENT AT 1X10-9M/S.
7. LOAD TRANSFER PLATFORM DESIGN PRESENTED AT CONSTANT 600mm, DEPTHS TO BE CONFIRMED FOLLOWING COMPLETION OF LOAD TRANSFER PLATFORM AND RIGID INCLUSION DESIGNS.
8. PILING MATT DESIGN PRESENTED AT CONSTANT 400mm DEPTH, REPRESENTING POST INSTALLATION OF RIGID INCLUSIONS.
9. PRE EXCAVATION OF DETENTION BASIN AND PRE BACKFILL OF PUDDLE CLAY, FORMATION OF BASIN TO BE INSPECTED TO CONFIRM GROUND CONDITIONS WITH DESIGNER ARE SUITABLE TO PROCEED.
10. ALL EXISTING UTILITIES WITHIN PROPOSED SUBSTATION EXTENSION TO BE DIVERTED IN ADVANCE OF ANY GROUND IMPROVEMENT AND EARTHWORKS.

ASSUMPTIONS:

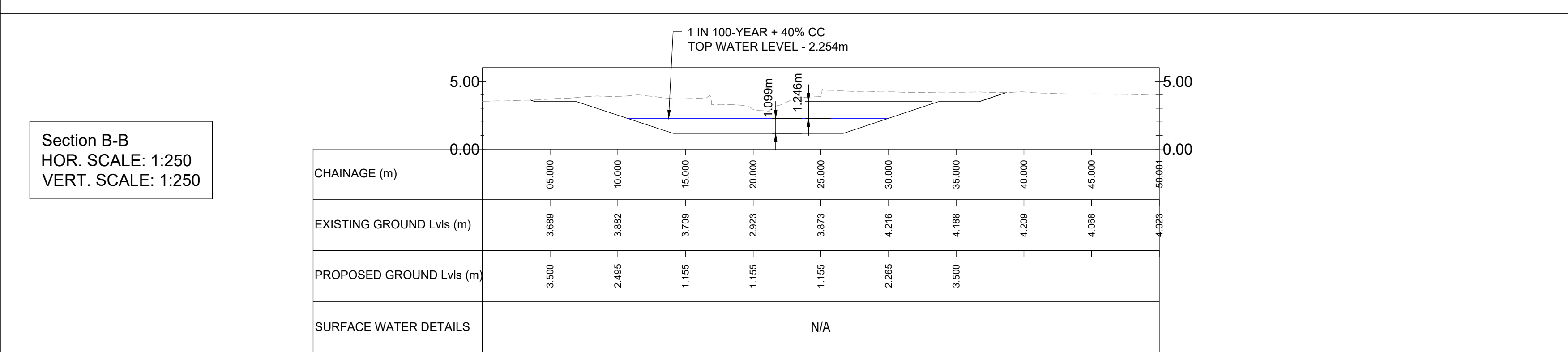
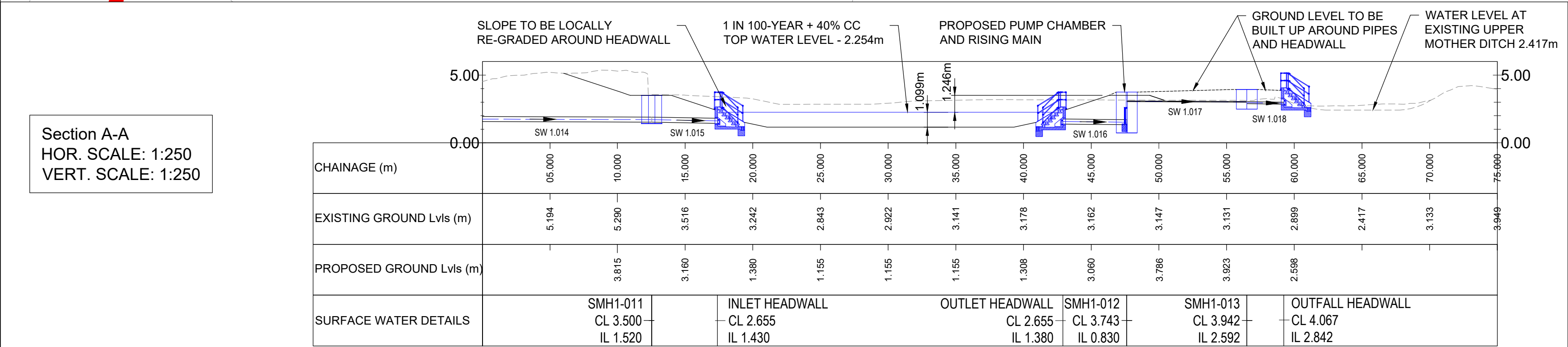
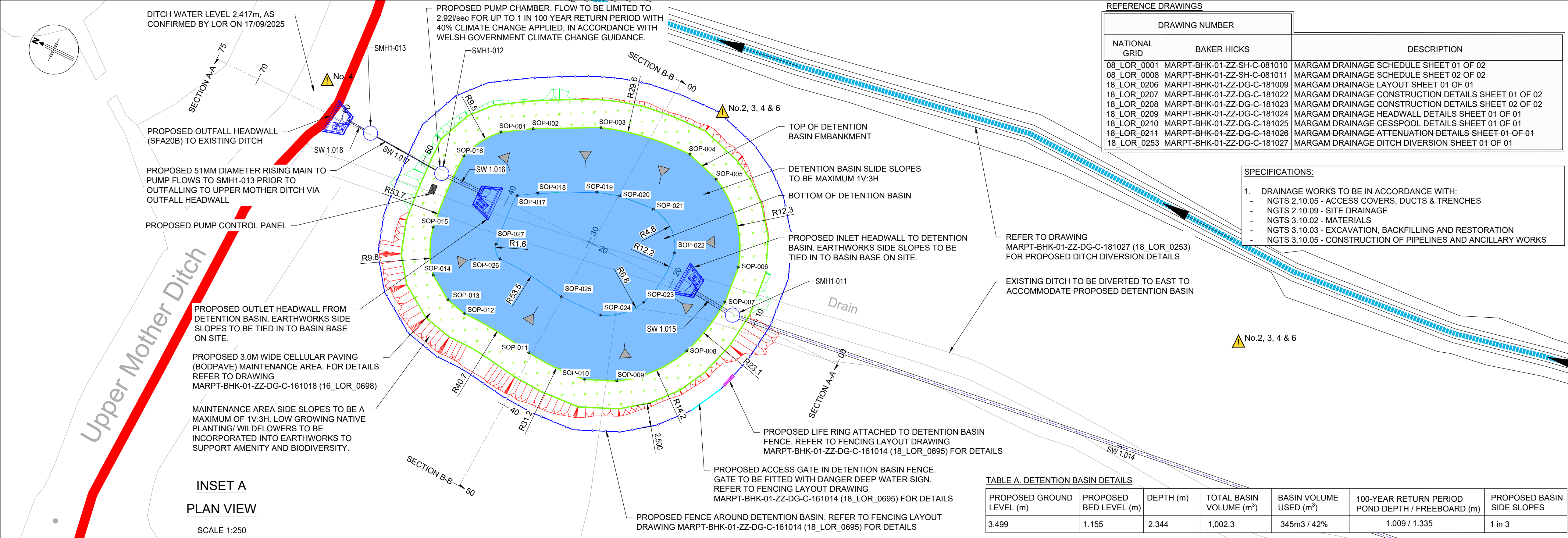
11. CONSTRUCTION ARISING'S ARE NOT CAPTURED WITHIN THIS CUT AND FILL ANALYSIS SUCH AS DRAINAGE TRENCHES, ROAD CONSTRUCTION AND FOUNDATIONS ETC.
12. DETENTION BASIN SLOPE IS TO BE CONFIRMED FOLLOWING SLOPE ANALYSIS.
13. NO ALLOWANCE PROVIDED FOR CUT AND FILL ANALYSIS IN REGARDS TO INSTALLATION OF SHEETS PILES TO SUPPORT FLOOD DEFENCE WALL.
14. VOLUME ANALYSIS BASED ON THE APPROACH TO UTILISE THE PROPOSED PERIMETER FLOOD DEFENCE WALL AS FORM WORK DURING BACKFILLING AND COMPACTION OF PLATFORM.
15. CONSTRUCTING OF EARTHWORKS BESIDES EXISTING LIVE SUBSTATION. MAINTAIN EXISTING SUBSTATION PERIMETER FEATURE DURING BACKFILL AND COMPACTION OF MATERIAL WITH USE OF TEMPORARY WORKS FOLLOWING DIVERSION OF EXISTING UTILITIES AS REQUIRED.
16. VOLUMES PROVIDED ARE NOT CONSIDERATE OF ANY CONSOLIDATION OF MATERIAL AT EARLY STAGES PRIOR TO INSTALLATION OF GROUND IMPROVEMENT WORKS.
17. NO GROUND IMPROVEMENT WORKS REQUIRED AROUND THE EXISTING SUBSTATION PERIMETER APART FROM WHERE EXTENSION IS PROPOSED.
18. ACCESS ROAD PROVIDED ON THE BASIS OF A MINIMUM 2.5% CBR SUB GRADE MODULUS. VALIDATION TESTING ALONG ACCESS ROAD TO CONFIRM ROAD CONSTRUCTION DETAIL.
19. VOLUME ANALYSIS SOLELY BASED ON COMPARISON BETWEEN DESIGN AND COMBINATION OF TOPOGRAPHICAL INFORMATION SURVEYED BY BOTH CENTARA "109964 03_02 - Bakericks - Margam South Wales - & LOR" Margam Ditch Survey Topo - Complete 200625".
20. TOP SOIL TAKEN AT A 150mm DEPTH ACROSS THE WHOLE PROPOSED WORKS.

SCALE 1:100

SCALE 1:100

APPENDIX D

ATTENUATION BASIN DESIGN



SETTING OUT POINTS			
POINT NUMBER	EASTING (m)	NORTHING (m)	LEVEL (m)
SOP-001	278469.986	186600.723	3.500
SOP-002	278471.842	186597.760	3.500
SOP-003	278475.176	186591.210	3.500
SOP-004	278476.807	186581.257	3.500
SOP-005	278475.657	186577.489	3.500
SOP-006	278468.129	186571.142	3.500
SOP-007	278464.085	186570.783	3.500
SOP-008	278457.476	186572.181	3.500
SOP-009	278451.237	186577.573	3.500
SOP-010	278449.846	186580.796	3.500

SETTING OUT POINTS			
POINT NUMBER	EASTING (m)	NORTHING (m)	LEVEL (m)
SOP-011	278449.779	186587.489	3.500
SOP-012	278450.551	186595.633	3.500
SOP-013	278451.095	186597.921	3.500
SOP-014	278452.835	186600.535	3.500
SOP-015	278457.478	186602.783	3.500
SOP-016	278465.855	186603.214	3.500
SOP-017	278464.573	186596.110	1.155
SOP-018	278465.772	186594.198	1.155
SOP-019	278468.675	186588.509	1.155
SOP-020	278469.406	186586.116	1.155

SETTING OUT POINTS			
POINT NUMBER	EASTING (m)	NORTHING (m)	LEVEL (m)
SOP-021	278469.740	186582.204	1.155
SOP-022	278466.461	186578.056	1.155
SOP-023	278460.179	186578.712	1.155
SOP-024	278456.866	186582.283	1.155
SOP-025	278456.819	186587.007	1.155
SOP-026	278457.583	186594.792	1.155
SOP-027	278458.849	186595.841	1.155

