COAKLEY O'NEILL
town planning

Environmental Impact Assessment Report (EIAR)

Large-Scale Residential Development at

Ringwood, Blarney

Volume III – Appendices

Prepared in December 2025 on behalf of

Clockstrike Ltd.

Coakley O'Neill Town Planning Ltd.

NSC Campus, Mahon, Cork 021 2307000 info@coakleyoneill.ie www.coakleyoneill.ie

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RINGWOOD LRD EIAR - VOLUME III

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CHAPTER 1 APPENDICES

Appendix 1.1 Prescribed Bodies EIAR Scoping Responses

An Roinn Aeráide, Fuinnimh agus Comhshaoil
Department of Climate, Energy and the Environment

Geological Survey
Suirbhéireacht Gheolaíochta
Ireland | Éireann

Alan O'Callaghan / Dave Coakley
Coakley O'Neill Town Planning Ltd.,
NSC Campus
Mahon
Cork, T12 H7AA

14 October 2025

Re: EIA Consultation for proposed LRD at Ringwood, Blarney, Co Cork
Your Ref: n/a
Our Ref: 25/158

Dear Alan, Dave,

Geological Survey Ireland is the national earth science agency and is a division of the Department of Climate, Energy and the Environment. We provide independent geological information and interpretation and gather various data for that purpose. Please see our website for data availability.

With reference to your email received on the 07 October 2025, concerning the EIA Consultation for proposed LRD at Ringwood, Blarney, Co Cork, we recommend using our various data sets when conducting the EIAR, SEA, planning and scoping processes for developments, plans and policies. For more detailed information on how to access this data please access 'Data and Maps' Data & Maps (gsi.ie) on our 'Geoscience for planning' webpage. Use of our data or maps should be attributed correctly (please refer to each individual dataset's metadata for correct attribution).

For specific data available for Environmental Assessment and Planning topics please follow this link [Data by Environmental Assessment and Planning Topic (gsi.ie)], where you will find our data arranged by environmental assessment topic as illustrated below:

Land and soils

Soil
- Subsoils (Quaternary Geology)
- Tellus Geochemistry
- Geotechnical

Geology
- Bedrock
- Geophysics
- Bedrock & Quaternary 3D

Water

Groundwater
- Aquifers GW vulnerability, GWPSs (GWPPs)

Surface water
- Tellus Geochemistry

Estuarine & marine waters
- Marine and coastal

Flooding
- GWClimate
- Karst

Climate Change

Carbon accounting / Carbon balance
- Geothermal
- Carbon capture and storage

Climate change trends
- National coastal change assessment

Cultural Heritage

Archaeology
- Cherish

Underwater Archaeology
- Shipwrecks

Material Assets

Built Services
- Natural resources (Minerals & Aggregates)
- Active quarries

The Landscape

Landscape Appearance & Character
- Physiographic units

Historical landscapes
- Historic mines

Other Relevant Data

Natural (Geo) hazards
- Landslide Susceptibility Mapping
- Groundwater flooding
- Coastal vulnerability
- Subsidence
- Radon

Natural heritage
- Geoheritage (County Geological Sites)
- Dimension Stone/Stone Built Ireland

Other Comments

Should development go ahead, all other factors considered, Geological Survey Ireland would much appreciate a copy of reports detailing any site investigations carried out. The data would be redacted for confidentiality and added to Geological Survey Ireland's national database of site investigation boreholes, implemented to provide a better service to the civil engineering sector. Data can be sent to the Geological Mapping Unit, at mailto:GeologicalMappingInfo@gsi.ie.

If we can be of any further help, please do not hesitate to contact me Clare Glanville, or my colleague Trish Smullen at GSIPlanning@gsi.ie.

Yours sincerely,

Dr. Clare Glanville
Senior Geologist
Geoheritage and Planning Programme
Geological Survey Ireland

Trish Smullen
Geologist
Geoheritage and Planning Programme
Geological Survey Ireland

The publicly available data referenced/presented here, should in no way be construed as Geological Survey Ireland support for or objection to the proposed development or plan. The data are made freely available to all and can be used as independent scientific data in assessments, plans or policies. It should be noted that in many cases these data are a baseline or starting point for further site specific assessments.

National Environmental Health Service,
Health Service Executive,
Floor 2, Block 1, St Finbarr's Hospital,
Douglas Road,
Cork T12 XH60.

Phone: 021 4921801

Dave Coakley,
Coakley O'Neill Town Planning Limited
NSC Campus,
Mahon,
Cork
dave@coakleyoneill.ie

Date: 12th November 2025

Name: Dave Coakley, Coakley O'Neill Town Planning Limited

Consultant's reference:

Re: EIA Scoping

Proposed development: Large-scale Residential Development

Applicant: Clockstrike Limited

EHIS Reference: 5338

Dear Orla,

Please find enclosed the HSE Consultation Report in relation to the above proposal.

The following HSE departments were made aware of the consultation request for the proposed development on the 10th October 2025

- HSE South Emergency Management
- National Capital Estates Office
- Director of National Health Protection
- REO South West

If you have any queries regarding this report please contact Ms. Kathleen Clifford, PEHO, Cork North Lee (Kathleen.clifford@hse.ie) in the first instance.

Yours sincerely

Kathleen Clifford.

Kathleen Clifford
Principal Environmental Health Officer

HSE EIA Scoping

National Environmental Health Service Submission Report

Date: 12th November 2025

Our reference: EHIS 5338

Report to: Dave Coakley,Coakley O'Neill Town Planning Limited, NSC Campus, Mahon, Cork dave@coakleyoneill.ie

Type of Consultation: EIA Scoping

Proposed development: Large-Scale Residential Development at Ringwood, Sheen Upper, Blarney, Co. Cork

Applicant: Clockstrike Limited.

Proposed Development: Clockstrike Limited are described as preparing a proposed Large-Scale Residential Development (LRD) planning application to be lodged with Cork City Council. It is described as Phase 2 of development in the Blarney East/Ringwood expansion area and comprises of the following key elements:-

- 326 no. residential units
- A Primary Care Centre
- Refurbishment and Redevelopment of existing farm outbuildings for conversion of retail/pharmacy use
- New access roadway
- Drainage works and SuDS
- Foul Sewer Infrastructure
- Car parking including EV charging points, bicycle parking and motorcycle parking bays
- Substation and all associated ancillary site, drainage and development works.

The following submission is based upon a letter received from Coakley O'Neill, Town Planning. No date on the letter but received October 10th 2025.

General Introduction

The following documents should be taken into consideration when preparing the Environmental Impact Assessment Report:

- Guidelines on the information to be contained in Environmental Impact Assessment Reports (2022), EPA.

- Advice Notes on Current Practice in the preparation of Environmental Impact Statements (2003), EPA.

- Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment, August 2018

https://www.housing.gov.ie/sites/default/files/publications/files/guidelines_for_planning_authorities_and_an_bord_pleanála_on_carrying_out_eia_-_august_2018.pdf

EU publication: Environmental Impact Assessment of Projects Guidance on the preparation of the Environmental Impact Assessment Report, EU, 2017

http://ec.europa.eu/environment/eia/pdf/EIA_guidance_EIA_report_final.pdf

Adoption of the Directive (2014/52/EU) in April 2014 initiated a review of the above guidelines. The draft new guidelines can be seen at:

http://www.epa.ie/pubs/consultation/reviewofdrafteisguidelinesadvicenotes

Generally, the Environmental Impact Assessment should examine all likely significant impacts and provide the following information for each:

a) Description of the receiving environment;

b) The nature and scale of the impact;

c) An assessment of the significance of the impact;

d) Proposed mitigation measures;

e) Residual impacts.

Directive 2014/52/EU has an enhanced requirement to assess likely significant impacts on Population and Human Health. It is the experience of the National Environmental Health Service (NEHS) that impacts on human health are often inadequately assessed in EIAs in Ireland. It is recommended that the wider determinants of health and well-being are considered in a proportionate manner when considering the EIA.

In addition to any likely significant negative impacts from the proposed development, any positive likely significant impacts should also be assessed. For example the potential for health gain should also be assessed, from, for example the inclusion of active travel infrastructure. Such infrastructure may improve air quality and contribute to enabling active lifestyles.

The HSE will consider the final EIAR accompanying the Planning application and will make comments to Cork City Council on the methodology used for assessing the likely significant impacts and the evaluation criteria used in assessing the significance of the impact.

This report only comments on Environmental Health Impacts of the proposed development. It is based on an assessment of the correspondence submitted which was a 3 page letter received on October 10th 2025. No scoping report was seen.

The National Environmental Health Service (NEHS) recommends that the following matters are included and assessed in the EIAR

- Public Consultation
- Population and Human Health including Opportunities for Health Gain
- Land, Soil and Geology
- Water and Hydrology
- Air Quality
- Climate Change (Mitigation and Adaptation)
- Noise & Vibration

- Material Assets – Traffic and Transportation
- Material Assets – Utilities, Services and Waste
- Ancillary facilities
- Cumulative impacts

Some comment on selected criteria for inclusion are provided below.

Public Consultation

The EIAR should demonstrate that a process of public consultation has taken place and that consent has been received from all interested parties. Sensitive receptors and other stakeholders should be identified to ensure all necessary and appropriate mitigation measures are put in place to avoid any complaints about the development, primarily during the construction phase. Similarly, the public should be consulted specifically on the public health aspects of the scheme by consulting on questions like 'what are the potential health benefits/challenges from the development' and 'what opportunities can the development deliver for health gain'.

A feedback/complaint mechanism should be put in place to enable stakeholders engage with the developer, through online and offline means. A dedicated Community Liaison Officer should be appointed by the developer to act as formal point of contact for open communication between the developer/contractor and residents/community groups on matters of environmental performance and for the receipt of complaints regarding the construction of the proposed development.

The Environmental Impact Assessment Report (EIAR) should clearly demonstrate the link between public consultations and how those consultations have influenced the decision-making process in the EIA.

Population and Human Health

The National Environmental Health Service recommends that the potential impacts on human and population health are addressed in each of the following chapters in each of the proposed development's phase construction and operations.

- Land, Soils and Geology
- Water (Hydrology and Hydrogeology)
- Air Quality including dust

- Climate Change (Mitigation and Adaptation)
- Noise and Vibration
- Traffic and Transportation
- Waste Management
- Ancillary Facilities
- Cumulative Impacts

The EIAR should be accompanied by a Construction Environmental Management Plan (CEMP) detailing Avoidance, Remedial or Mitigation measures for the protection of public health during that phase of the proposed development.

Opportunities for Health Gain could be included in this part of the EIAR to demonstrate how the proposed development contributes to the vision of the Healthy Ireland Framework "where everyone can enjoy physical, and mental health and well-being to their full potential, where well-being is valued and supported at every level of society and is everyone's responsibility"

Land, Soil and Geology

The NEHS recommends that the chosen site is identified as a greenfield site, a brownfield site or combination and assessed in the context of contaminated land if relevant to the proposed development.

Water (Hydrology and Hydrogeology)

The NEHS recommends that the water chapter assess the potential impact of the proposed development on drinking water supplies, for both surface water and ground water sources.

The NEHS recommends the inclusion of flood risk assessment under this chapter that looks at historical data on flood risk but also predictive meteorological data in a warming and perhaps wetter Cork for decades into the future. The chapter should assess future precipitation patterns.

Opportunities to incorporate Sustainable Drainage Systems and Rainwater Harvesting should also be assessed. Rainwater harvesting may also be linked into strategies to build resilience for the proposed development in the context of climate change where longer and drier spells may be more frequent.

Air Quality including Dust

The potential impacts of the proposed development on local air quality should be assessed in the EIAR with a particular emphasis on the potential effects of dust during the construction phase on identified sensitive receptors.

All possible sources impacting air quality during the operation of the development should be identified and mitigation measures indicated. Possible sources may include heating systems but may also include aeroallergens associated with landscaping.

The NEHS recommends that the EIAR contain a detailed Construction Environmental Management Plan (CEMP) indicating the background air quality situation, the likely sources of emissions during construction (including dust) and the detailed mitigation measures to be put in place to ensure air quality is protective of human health during the construction phase. The NEHS advises utilisation of the WHO Air Quality Guidelines 2021 in determining some emissions levels protective of public health.

Climate Change

Climate Change poses the greatest threat to global health this century (World Health Organisation and others) and is therefore regarded as one of the most important population health issues to assess in the EIAR.

The construction phase has the potential to deliver significant Green House Gas emissions through the use of carbon intensive materials such as concrete (embodied carbon), the use of fossil fuels in the operation of machinery and transport, and through the supply chain. Reducing those emissions, otherwise known as mitigation is relevant to the protection of public health both locally and globally due to the transboundary nature of climate change.

The NEHS recommends that the EIAR quantify the emissions profile of the proposed development in both the construction and operational phase including opportunities to sequester carbon. Ways to limit the generation of green-house gases are by ensuring the proposed development is designed and constructed to meet Nearly Zero Energy Building Standard or Zero Emission Building Standard. Construction activity should limit emissions through materials choice, green procurement, supply chain and limiting fossil fuel use during this phase.

In the context of Adaptation and Resilience the development should be designed to limit exposure to potential hazards and reduce vulnerability of both the infrastructure and the community who will live there. Hazards to consider include severe weather events such as floods (possibly addressed

under the Water Chapter), windstorms, heatwaves, dry spells/drought and slower onset hazards associated with changing precipitation patterns and warmer temperatures that may give rise to increased vector borne illness risk (rodents, mosquitos and flies for example).

Particular attention is drawn to the design of urban spaces to limit the urban heat island affect and the EIAR should demonstrate how vulnerable people are protected through the use of shade (natural shade from trees or artificial shade at bus shelters for example), limiting concrete surfaces, and the inclusion of green spaces and blue spaces to additional support mental health.

The EIAR should clearly illustrate how the development contributes to obligations under the Climate Action and Low Carbon Development Act 2015 and amendment of 2021, the National Adaptation Framework 2024, National Planning Objective 54 of the National Planning Framework and the most recent national Climate Action Plan 2025

Noise & Vibration

The potential impacts for noise and vibration from the proposed development on all noise sensitive locations must be clearly identified in the EIAR. The EIAR must also consider the appropriateness and effectiveness of all proposed mitigation measures to minimise noise and vibration.

A baseline noise monitoring survey should be undertaken to establish the existing background noise levels and an assessment of the predicted noise impacts during the construction phase and the operational phase of the proposed development must be undertaken which details the change in the noise environment resulting from the proposed development.

As previously stated the CEMP may detail the proposed mitigation measures for the Construction Phase.

Material Assets – Traffic and Transportation

The NEHS recommends any assessment of traffic should be cognisant of the transport hierarchy and work towards assessing access into and out of the proposed development on foot, by bike, by public transport and vehicular transport. The EIAR should identify ways in which the proposed development will facilitate the Climate Action Plan 2023 strategy of Shift – Avoid – Improve. Such a move will ultimately improve air quality and support active travel.

Material Assets – Utilities, Services and Waste.

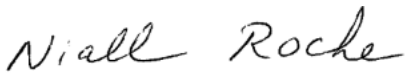
The EIAR should identify the sources and quantities of waste generated during construction and look to adopt the principles of the 'waste hierarchy'. The proposed development should support movement towards the goals of the Circular Economy and Miscellaneous Provisions Act 2022 where Ireland moves to being a circular economy.

Ancillary Facilities

The EIAR should include details of the on-site infrastructure covering items such as site office, fuel storage depot, sanitary accommodation and canteen, First Aid facilities, disposal of wastewater and the provision of a potable water supply.

Cumulative Impacts

The EIAR should include details of potential cumulative impacts in the context of other developments, existing and proposed in the vicinity of the proposed development.



Niall Roche

Oifigeach Sláinte Comhshaoil - Environmental Health Officer

Timpeallacht/Athrú Aeráide, Aonad Tacaíochta Líonra - Environment/Climate Change, Network Support Unit (NSU)

Príomh Oifigeach
Bainistiú Éigeandála,
Réigiúnach Deisceart
An tOspidéil Súl, Cluas agus Scornaí,
Bóthar an Iarthair,
Corcaigh T12 WP62

Chief Emergency
Management Officer
Region South

Eye, Ear and Throat Hospital,
Western Road, Cork, T12 WP62

www.hse.ie

t 021 49 21622
e emo@hse.ie

EHIS Reference No: 5338

Date: 15/10/2025

A Chara

Thank you for the opportunity to comment on this application.

Due to resource constraints, Emergency Management is not in a position to provide a bespoke response to individual applications.

Under Section 7(1) of the Health Act, 2004, the HSE is charged with using the resources available to it '*in the most beneficial, effective and efficient manner to improve, promote and protect the health and welfare of the public'*. It is within this context, that the below emergency planning comments are provided.

At a strategic level, the following should be considered during the planning application process:

1. Impact upon access to health service facilities during construction and operation.

2. The availability of health services within the area for the population increase during construction, and, if applicable, operation of the development.

3. Impact upon health service delivery in the area during construction of the development, especially any traffic restrictions.

4. Location of Upper and Lower Tier COMAH sites within the area, including any "area in which people may be affected", as defined by the Central Competent Authority (i.e.; the Health and Safety Authority).

5. Any enhancement that the development offers to increase resilience of, or protection to, critical infrastructure.

6. Any existing, or potential designation of the development under European Union (Resilience of Critical Entities) Regulation 2024 – SI 559 of 2024

Before a new development becomes operational, a suitable emergency plan should be developed for the site, in line with relevant legislation. More information on 'Emergency Plans' for specific industries can be found on www.hsa.ie

If a developer / operator wishes to liaise directly with the Health Service Executive (HSE) regarding a specific risk impacting upon population health and/ or health service delivery, then please contact the appropriate HSE Emergency Management Office. Click Here for contact details

David O'Sullivan
Chief Emergency Management Officer – HSE SOUTH

Bonneagar Iompair Éireann
Transport Infrastructure Ireland

Dave Coakley
Coakley O'Neill Town Planning Ltd.
NSC Campus,
Mahon,
Cork.

By email : dave@coakleyoneill.ie

Dáta|Date 15 October 2025 **Ár dTag|Our Ref.:** TII25-133557

Re: EIAR Scoping Consultation at Ringwood Blarney - 326no. dwellings, a primary care centre, pharmacy, restaurant and new link road which is the subject of a proposed Large Scale Residential Development (LRD) Cork

Dear Mr. Coakley

Transport Infrastructure Ireland (TII) wishes to advise that it is not in a position to engage directly with planning applicants with respect to proposed developments. TII will endeavour to consider and respond to planning applications referred to it given its status and duties as a statutory consultee under the Planning Acts. The approach to be adopted by TII in making such submissions or comments will seek to uphold official national road and light rail policy and guidelines including *Spatial Planning and National Roads Guidelines for Planning Authorities* (DoECLG, 2012) and TII Publications.

Regard should also be had to other relevant guidance available at www.TII.ie.

The issuing of this correspondence is provided as best practice guidance only and does not prejudice TII's statutory right to make any observations, requests for further information, objections or appeals following the examination of any valid planning application referred.

With respect to EIAR scoping issues, the recommendations indicated below provide only general guidance for the preparation of an EIAR, which may affect the national roads networks.

The project promoter should have regard, *inter alia*, to the following;

Having regard to the EPA *Guidelines on the information to be contained in Environmental Impact Assessment Reports,* 2022 it is recommended as appropriate that the national road and light rail networks are recognised as strategic transport assets under "material assets". EIAR assessment and mitigation should have regard to the following:

- **National Roads:** Official policy for development at or near national roads is set out in in the DoECLG *Spatial Planning and National Roads Guidelines for Planning Authorities* (2012) available at https://www.gov.ie/en/collection/85b83-planning-guidelines-standards/
- **TII Publications**: - In addition, as part of TII's responsibilities for managing and improving the country's national road and light rail networks, the Authority sets development guidance and standards for traffic and road assessments and construction that may be necessary by reason of proposed development location, scale or typology to be prepared to accompany applications for developments or works. Technical guidance and standards are contained in TII Publications, available at https://www.tiipublications.ie/

In addition, the EIAR should have regard to, *inter alia*, the following:

Próiseálann BIÉ sonraí pearsanta a sholáthraítear dó I gcomhréir lena Fhógra ar Chosaint Sonraí atá ar fáil ag www.tii.ie
TII process personal data in accordance with its Data Protection Notice available at www.tii.ie

National Road Network:

- TII would be specifically concerned as to potential significant impacts the development would have on the national road network (and junctions with national roads) and associated infrastructure in the proximity of the proposed development,
- In this instance, and, as advised to Cork City Council in a response to LRD Opinion (LRD25-05), TII considers that arrangements for any proposed works adjacent to the N20 will need to be address appropriately the following:
    - It would be expected that intended works adjacent to the N20 such as landscaping, boundary treatment, lighting, security and drainage as well construction methodologies would be documented, evaluated and designed in manner that has regard to the extents and function of the national road assets and also where relevant TII publications.
    - TII will require that the requirements to safeguard and maintain the TII maintained area and all associated infrastructure assets on the N20 will be addressed in relation to the proposed SUDS/landscaped adjacent to the N20 boundary. Appropriate assessments and plans for the proposal will be expected to address to examine proposal interactions and demonstrate the protection of the N20's drainage regime and the physical structural integrity of the N20 in general.
- Consultations should be had with the relevant Local Authority/National Roads Design Office (RDO) regarding locations of existing and future national road schemes especially in regard to the M20 Scheme.
- The EIAR should have regard to any prior Environmental Impact Statement or Assessment Report, and all conditions and/or modifications imposed by An Bord Pleanála and City Council regarding road schemes in the area. The developer should have regard to any potential cumulative impacts.

TII Publications:

- It would be important that, where appropriate, subject to meeting the appropriate thresholds and criteria and having regard to best practice, a Traffic and Transport Assessment be carried out in accordance with relevant guidelines, noting traffic volumes attending the site and traffic routes to/from the site with reference to impacts on the national road network and junctions of lower category roads with national roads. The Authority's *Traffic and Transport Assessment Guidelines* (TII Publication No. PE-PDV-02045) should be referred to in relation to proposed development with potential impacts on the national road network. The scheme promoter is also advised to have regard to Section 2.2 of the Guidelines which addresses requirements for sub-threshold TTA.
- The designers and assessors are asked to consult TII Publications to determine whether a Road Safety Audit is required.

Construction Management and the National Road Network:

- Any Construction Environmental Management Plan (CEMP) prepared to accompany the EIAR shall demonstrate and ensure any proposed works in the vicinity of the national road comply with TII Publications requirements and mitigation of potential impact on the national road network.
- Any Construction Traffic Management Plan (CTMP) shall demonstrate compliance with TII Publications requirements and include mitigation of potential impact on the national road network.
- Separate structure approvals/permits and other licences and works specific deeds of indemnity may be required in connection with the proposed routes, including where temporary modification to the road network may be required. Consultation with relevant local authorities, PPP Companies and MMaRC Contractors may also be required.

TII Environmental Assessment Guidance:

- The EIAR should have regard to TII's Environmental Assessment and Construction Guidelines, including the *Good Practice Guidance for the Treatment of Noise during the Planning of National Road Schemes (March 2014)*,

  The EIAR should consider the European Communities (Environmental Noise) Regulations 2018 (S.I. No. 549 of 2018)) and how the development will affect future action plans by the relevant competent authority. The developer may need to consider the incorporation of noise barriers to reduce noise impacts (see *Good Practice Guidance for the Treatment of Noise during the Planning of National Road Schemes (March 2014)*),

- Environmental Impact Assessment shall include provision for travel planning / mobility management planning in the interests of protecting national roads capacity in the interests of sustainable travel policy. Transport analysis should also consider:
  I. A mobility management plan should accompany the transport assessment,
  II. Modal share targets should be outlined and how any PT modal share is accommodated,
  III. Measures proposed to reduce car dependency should be outlined,
  IV. Detailed phasing proposals of development with associated transport infrastructure provision is required,
  V. Consider and address cumulative impacts of other development and impacts on road capacity,
  VI. The traffic and transport assessment should consider all road users,
  VII. Mitigation measures should be aligned with phasing of road infrastructure improvements and required public transport interventions; all clearly outlined.

- Any proposals related to future public transport provision are a matter for the NTA.

Notwithstanding, any of the above, the developer should be aware that this list is non-exhaustive, thus site and development specific issues should be addressed in accordance with best practise.

No part of this submission shall be construed as TII giving consent to access or alter any national road infrastructure assets including drainage regimes, structures, safety, etc. If any damage is caused by any development works to the national road or associated assets, overground or underground, costs arising to fully remediate all impacted infrastructure assets to TII Publications standards and requirements will be pursued.

In the interests of clarity, the issuing of this correspondence is provided as best practice guidance only. This correspondence does not prejudice TII's statutory right to make any observations, requests for further information, objections or appeals following the examination of any valid planning application referred.

Yours sincerely,



Tara Spain
Head of Land Use Planning

From: Michael McPartland <Michael.McPartland@fisheriesireland.ie>
Sent: Wednesday 8 October 2025 10:18
To: Alan O'Callaghan | Coakley O'Neill <Alan@coakleyoneill.ie>
Subject: EIA Consultation, Ringwood Blarney

CAUTION: External E-Mail: This is not from a Coakley O'Neill Employee - Use caution before replying, clicking links, or opening attachments.

Alan,

Thank you for your email.
It appears it may be proposed to dispose of septic effluent from the development to the public sewer. IFI would ask that Irish Water signifies there is sufficient capacity in existence so that it does not overload either hydraulically or organically existing treatment facilities or result in polluting matter entering waters. Should this not be the case then please forward proposals for alternative treatment and disposal options.
IFI would ask that there be no interference with, bridging, draining, or culverting of any watercourse, their banks or bankside vegetation to facilitate this development, without the prior approval of IFI and that full cognisance is given to IFI "Guidelines on protection of fisheries during construction works in and adjacent to waters"

https://www.fisheriesireland.ie/media/guidelines-on-protection-of-fisheries-during-construction-works-in-and-adjacent-to-waters
Furthermore, there should be no loss of flood plain as a result of the proposed development.

Michael Mc Partland
Senior Fisheries Environmental Officer.

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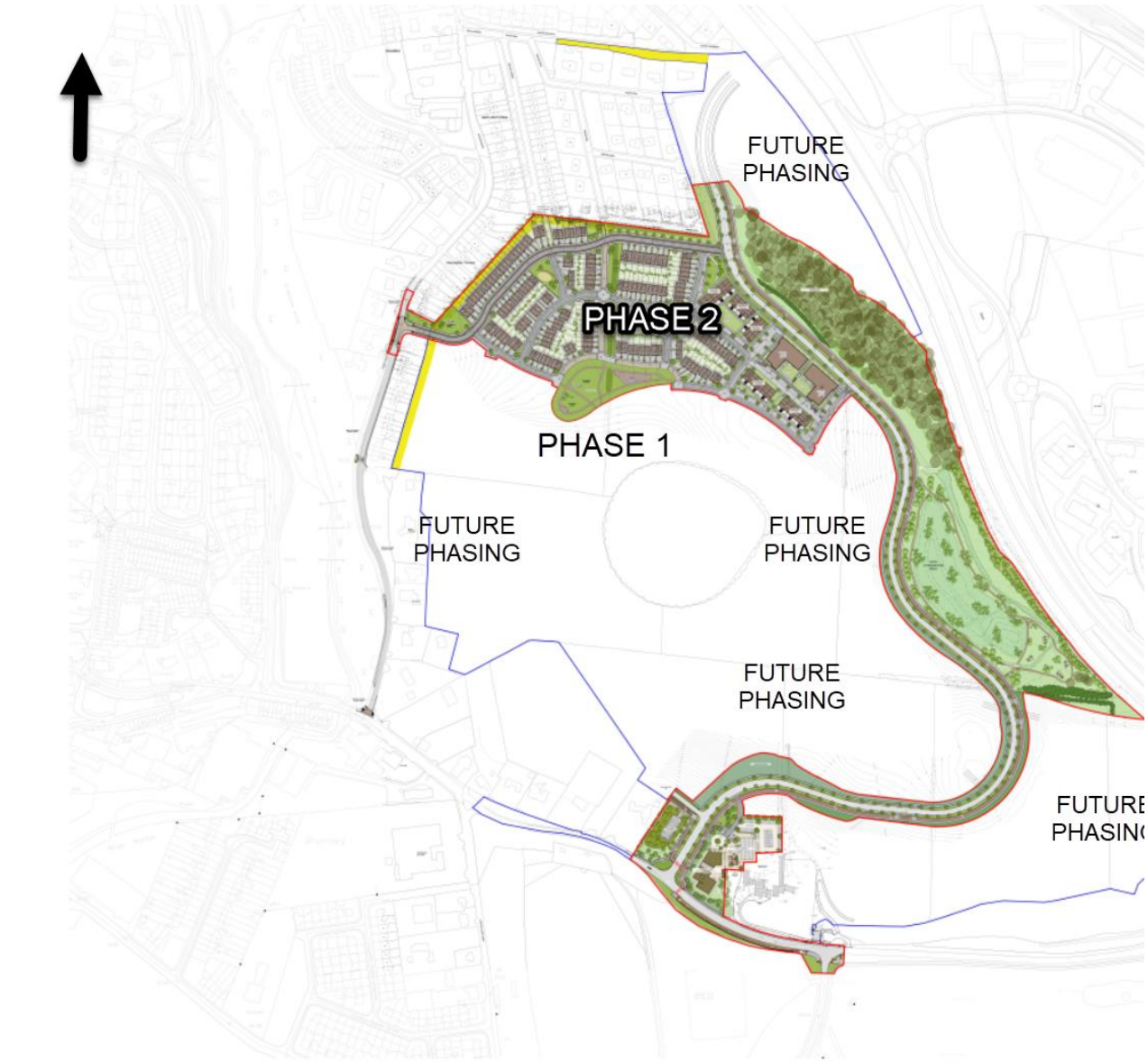


CHAPTER 5 APPENDICES

Appendix 5.1 Proposed Phasing Plans

5. Construction Strategy Appendix

- Proposed phasing plans



CHAPTER 8 APPENDICES

Appendix 8.1 Dust Management Plan

Appendix 8.1 - Dust Management Plan

The objective of dust control at the proposed site is to ensure that no significant dust nuisance occurs at nearby sensitive receptors. The following management plan has been formulated by drawing on best practice guidance from Ireland (EPA) and the UK (IAQM 2024). The mitigation measures have been divided into general measures applicable to the entire site for the duration of the construction phase and measures applicable specifically to the earthwork, construction and trackout activity.

Site Management

The aim is to ensure good site management by avoiding dust becoming airborne at source. This will be done through good design and effective control strategies. At the construction planning stage, the siting of activities and storage piles will take note of the location of sensitive receptors and prevailing wind directions. As the prevailing wind is predominantly south-westerly, locating construction compounds and storage piles downwind of sensitive receptors will minimise the potential for dust nuisance to occur at sensitive receptors. The Principal Contractor or equivalent must ensure that the proposed mitigation measures are implemented, and that dust impacts and nuisance are minimised.

- It is recommended that community engagement be undertaken before works commence on site explaining the nature and duration of the works to local residents and businesses.
- The name and contact details of a person to contact regarding air quality and dust issues shall be displayed on the site boundary. A complaints register will be kept on site detailing all sources of complaints received in connection with dust nuisance or air quality concerns, together with details of any remedial actions carried out.
- Regular inspections of the site and boundary should be carried out to monitor dust, records and notes on these inspections should be logged.
- Record any exceptional incidents that cause dust and/or air emissions, either on- or offsite, and the action taken to resolve the situation in the logbook.
- In the event of dust nuisance occurring outside the site boundary, site activities will be reviewed, and satisfactory procedures implemented to rectify the problem.

Monitoring

- Carry out regular inspections to monitor compliance with the plan, record inspection results, and make an inspection log available to the local authority when asked;
- Increase the frequency of the site inspections when high dust generating activity is undergone and during prolonged dry or windy conditions particularly in the case of earthworks.
- Undertake Daily onsite and off-site inspections, where receptors (including roads) are nearby, to monitor dust, record inspection results and, make the log available to the local authority when asked. This should include regular dust soiling checks of surface such as street furniture, cars and windowsills within 100m of the Site Boundary, with cleaning to be provided if necessary.

Preparing and Maintaining the Site

- Plan site layout so that machinery and dust causing activities are located away from receptors, as far as is possible.

- Erect solid screens or barriers around dusty activities or the site boundary that are at least as high as any stockpiles on site if necessary.
- Fully enclose site or specific operations where there is a high potential for dust production and the site is actives for an extensive period
- Avoid site runoff of water or mud.
- Keep site fencing, barriers and scaffolding clean using wet methods.
- Remove materials that have a potential to produce dust from site as soon as possible, unless being re-used on site. If they are being re-used on-site cover or fence stockpiles to prevent wind whipping.

Site Roads And Operating Vehicles / Machinery

- A speed restriction of 20 km/hr will be applied as an effective control measure for dust for on-site vehicles using unpaved site roads.
- Access gates to the site shall be located at least 10m from sensitive receptors where possible.
- Bowsers or suitable watering equipment will be available during periods of dry weather. Watering shall be conducted during sustained dry periods to ensure that unpaved areas are kept moist.
- Any hard surface roads will be swept to remove mud and aggregate materials from their surface while any unsurfaced roads shall be restricted to essential site traffic only.
- Ensure all vehicles switch off engines when stationary.
- Avoid the use of diesel or petrol powered generators and use mains electricity or battery powered equipment where practicable.

Site Traffic On Public Roads

- Vehicles delivering material with potential for dust emissions to an off-site location shall be enclosed or covered with tarpaulin at all times.
- At the main construction traffic exit, a wheel wash facility shall be installed. All trucks leaving the site must pass through the wheel wash. The wheel wash will be located sufficiently far from the exit to allow trucks to 'drip off' prior to exit. In addition, public roads outside the site shall be regularly inspected for cleanliness and cleaned as necessary.
- Vehicles onsite shall turn off engines when not in use to prevent idling emissions.

Onsite Operations

- Only use cutting, grinding, or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays.
- Ensure an adequate water supply on the site for effective dust / particulate matter suppression.
- Use enclosed chutes and conveyors and covered skips.
- Avoid dry sweeping of large areas.
- Minimise drop heights from conveyors and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate.
- Ensure equipment is readily available on site to clean any dry spillages and clean up spillages as soon as reasonably practicable after the event.

Waste Management

- Avoid bonfires and burning of waste materials.

Measures Specific To Earthwork Activities

- Re-vegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces as soon as practicable.
- Only remove the cover in small areas during work and not all at once.
- During dry and windy periods, and when there is a likelihood of dust nuisance, a bowser or similar will operate to ensure moisture content is high enough to increase the stability of the soil and thus suppress dust.

Measures Specific To Construction Activities

- Ensure aggregates are stored in bunded areas and are not allowed to dry out unless this is required for a particular process.
- Ensure bulk cement and other fine powder materials are delivered in enclosed tankers and stored in with suitable emission control systems to prevent escape of material and overfilling during delivery.
- For smaller supplies of fine power materials ensure bags are sealed after use and stored appropriately.
- During periods of very high winds (gales), construction activities likely to generate significant dust emissions should be postponed until the gale has subsided.
- Avoid Scabbing (Roughening of concrete surfaces) where possible

Measures Specific To Trackout

- Ensure vehicles entering and leaving the site are covered to prevent escape of materials during transport.
- Use water-assisted dust sweeper(s) on the access and local roads, to remove, as necessary any material tracked out of the Site.
- Avoid dry sweeping of large areas.
- Inspect onsite haul routes for integrity and instigate necessary repairs to the surface as soon as reasonably practicable.
- Implement a wheel washing system;
- Access gates to be located at least 10m from receptors as far as practicable.

CHAPTER 10 APPENDICES

Appendix 10.1 ProPG 2017 STAGE 2 – Full Acoustic Assessment

10.0 *ProPG 2017* STAGE 2 – FULL ACOUSTIC ASSESSMENT

This assessment is concerned with the proposed Large-Scale Residential Development (LRD) by Clockstrike Ltd. The proposed development is located within a greenfield area east of Blarney town and west of the N20 national road, Co. Cork.

10.1 Do Nothing Scenario

The Site is zoned 'Z02-New Residential Neighbourhoods' with small portions of the Site to the south zoned as 'Z20 City Hinderland, and Long-Term Strategic Development' and 'Z0 15 Public Open Space' as per Map 11 of the Cork City Development Plan 2022-2028. These small portions of land to the south will be planted with hedgerows and specimen trees. It is therefore reasonable to assume the Site will be developed in the future. The impact of any future residential development would be similar to the impact identified within this assessment.

However, if the Site did not become developed as per the zoning objective, noise levels in the vicinity of the Site would likely remain unchanged. There would also be no supplementary noise-sensitive receptors in the vicinity exposed to the existing ambient noise levels.

10.2 Element 1: Good Acoustic Design Process

Applicants must therefore consider all possibilities for mitigation including but not limited to:

- Checking the feasibility of relocating, or reducing noise levels from relevant sources;
- Considering options for planning the site or building layout;
- Considering the orientation of proposed building(s);
- Selecting construction types and methods for meeting building performance requirements;
- Assessing the viability of alternative solutions;
- Assessing external amenity area noise;
- Examining the effects of noise control measures on ventilation, fire regulation, health; and
- Safety, cost, CDM (construction, design, and management) etc.

10.3 Application Of Good Acoustic Design Process To The Proposed Development

Regarding the Site's limitations and taking care not to limit the extent of the Site's footprint the principles of Good Acoustic Design have been applied to the proposed development as detailed below.

10.4 Noise at Source

The dominant noise source is offsite traffic from the adjacent road network outside of the Site's red-line boundary. Baseline monitoring undertaken by CLV Consulting recorded sound levels across the Site from east to the west.

Within the proposed development, noise from the proposed heating systems have been considered within this assessment due to their proximity to residential units.

10.5 Layout and Orientation

The proposed development will consist of a large-scale residential development (LRD), representing Phase 2 of development in the Blarney East / Ringwood Expansion Area, and comprising the construction of

(i) 323 no. residential dwellings comprising of 157 no. terraced, end-of-terrace, and detached houses (129no. 3-bed and 28no. 4-bed units); 52 no. duplexes provided in 5 no. 3-storey buildings and 114 no. apartments provided in 2 no. 5-storey buildings (including a mix of 1, 2 and 3 bed units);
(ii) a primary care centre, over 2 stories and 1,724sqm in area, incorporating GP services
(iii) the refurbishment and redevelopment of existing farm outbuildings for conversion to a retail/pharmacy use, 80sqm in area, and café/restaurant use, 380sqm in area;
(iv) a new access roadway into the site from the R617 with associated pedestrian and cyclist infrastructure, which will form the 1st phase of the proposed Stoneview Access Link Road,
(v) a new signalised junction on the R617 road which will provide a single lane approach to the west and a two lane approach to the east, comprising one lane for through traffic on the R617 and a right turn lane for traffic turning into the site, and associated footpath improvements and cycle lane provision
(vi) a new signalised junction at the R617 and Killard Road junction which will provide a two lane approach from the west, one lane for through traffic heading eastbound on the R617 and a right turn lane onto the Killard Road, with associated footpath improvements and pedestrian and cyclist infrastructure;
(vii) a new signalised junction on Station Road that reflects the junction permitted under the Phase 1 LRD scheme (Reg. Ref. 2443031)
(viii) private, communal, and public open spaces and hard and soft landscaping, boundary treatments and amenity areas, including a new wetland public amenity area,
(ix) drainage works and nature-based SuDS measures
(x) foul sewer infrastructure, including 1no. pump station, the diversion of existing foul and water sewers and other new network works,
(xi) car parking, including EV charging points, bicycle parking, and motorcycle parking bays
(xii) 2no. substations, all associated ancillary site, drainage and development works. The planning application is accompanied by an Environmental Impact Assessment Report (EIAR).

Phase 1 of the development at Ringwood has been granted planning permission and consists of a link road and future LRD with similar infrastructure. Future Phases will be designed in accordance with the Development Plan objectives and standards regarding potential noise impacts. The design of Phase 2 has been designed with the Phase 1 requirements in mind, ensuring that the design of the Proposed Development will complement it.

The layout presents a non-linear layout stretching from east to west. Duplexes and apartment blocks along the eastern boundary closest to the N20 are oriented with front facing out towards the roadside and grouped around back gardens and communal open spaces that are shielded from the roadway by the buildings themselves.

Figure 2.1 shows the Phase 2 layout (along with Phase 1) with house identification.

10.6 Construction Type

These elements will comply with the Technical Guidance Document E - Sound (2014) with regards to sound insulation performance. The following design for build-up has been outlined:

For houses, duplexes and apartment blocks, the construction involves masonry cavity or timber-framed external walls with brick / block outer layers. Party walls are solid masonry blockwork. Internal walls feature plasterboard on timber studs.

These construction types provide good sound insulation performance. As with all construction, glazing and ventilation elements have reduced sound insulation properties compared to the wall make-up.



Figure 10.1: Layout of Phase 2 with Identification

10.7 External Amenity Area

ProPG recommend that external amenity areas should not be above the range of 50 -55dB $L_{Aeq,16hr}$. Existing noise levels across the Site were all confirmed as being in this range based on the noise measurements undertaken by CLV Consulting in 2025 (refer to Table 10.4 in the main chapter).

In addition, the Proposed Development layout identifies 5 primary parks / open spaces with additional recreational areas located throughout the Site, refer to Figure 10.2 on the following page.

- Linear Park (ca.0.15ha.) located within Phase 1 of the Site,
- Central Park (ca.0.6ha.) located on the southern boundary of Phase 2 of the Site,
- Southern Park (ca.0.15ha) located on the southern boundary of Phase 1 of the Site;
- Pocket Park (ca.0.02ha) located on the eastern boundary of Phase 1 of the Site; and
- Communal Open Space (ca. 0.03ha) on the western boundary of Phase 2 of the Site.

In addition, there are a number of smaller open spaces located throughout both Phases of the development.



Figure 10.2: Amenity Areas Within the Proposed Development.

10.8 Impact of Acoustic Design on Fire, Health and Safety

The acoustic design measures such as layout will not have any significant impact on issues related to fire and/or health and safety. Any recommendations relating to upgrading of glazing and ventilation elements will need to be verified by relevant specialists, however standard options have been specified in this assessment.

10.9 Element 2: Internal Noise Levels – BS 8233 Assessment

10.9.1 Wall Construction

The estimated sound insulation rating of the Proposed Development external walls and glazing are described in Table 10.1 below which provides an indicative build-up and associated sound reduction.

Item	Sound Insulation Rating (dB Rw)
External Wall for Apartments: Masonry external walls with insulated cavity and rendered/brick outer leaf. **External Wall for Houses/Duplexes/Creche:** Masonry cavity external walls with insulated cavity/timber frame with brick/block outer leaf.	**> 50**
External Glazing for Apartments: High performance uPVC double-glazed external windows & doors, Low E **Glass External Glazing for Houses/Duplexes/Creche:** High-performance uPVC double-glazed windows, Low E Glass.	**35**

Table 10.1: External Sound Insulation Rating

To determine the estimated impact of the external noise to the Proposed Development internal residential units the worst case average noise level measured during the ambient noise monitoring and most exposed façade (Apartment Block 2) were considered as a worst-case scenario. Refer to Table 10.2 below.

Location	Floor Level	Noise Level ($L_{Aeq,T}$)		Min. Façade Reduction / Attenuation (dB R_w)	Predicted Noise Level in Receiving Spaces (dB $L_{Aeq,T}$)	
		Daytime	Night Time		Daytime (35dB $L_{Aeq,T}$ Limit)	Night Time (35dB $L_{Aeq,T}$ Limit)
Apartment Block 2	Ground	54	50	30	24	20
	1st - 4th	54	50	30	24	20

Table 10.2: Calculation of Façade Reduction

The minimum façade attenuation has therefore been demonstrated to achieve the *BS 8233* limits for daytime and night-time periods internally to the most exposed façade of the proposed development.

10.9.2 Glazing - Opened vs Closed Windows

External glazing (total sound reduction of ≥ 30dB R_w) will result in an internal noise level of 24dB during the daytime and 20dB during night time periods. When windows are open, a reduction of 15dB from outside to inside is assumed (World Health Organization, 2009). This would result in an internal noise level when windows are open of ≤ 39dB $L_{Aeq,T}$ during the daytime and ≤35dB $L_{Aeq,T}$ during night time periods which exceed the *ProPG 2017* recommended internal L_{Aeq} levels (refer to Table 10.2 above).

However, the key criteria are to ensure the rooms can be comfortably lived within with the windows closed. The ability to open the windows for occupants' personal preference (non-acoustic likely) will present a higher internal noise value, but this is an option the design cannot mitigate.

10.9.3 Ventilation

Demand Controlled Mechanical Ventilation (DCMV) will be used for residential units. The system proposed provides an attenuation when open of $D_{n,e,A2}$[1]: 39dB for AquWall HY+ and 47dB for AquWall SI HY+.

Where building service vents, extraction fans, and louvres are present, they shall be acoustically rated baffle filters or similar to ensure break-in from external noise to internal living areas is reduced by a minimum of 40dB. All ducting shall be installed to ensure no vibrational borne noise occurs within the building.

10.9.4 Roof

The construction of the roof will involve placing concrete roof tiles on battens, which are supported by a breather membrane on a trussed timber rafter roof.

Mechanical plant will be placed in the attic for the apartments as solar panels to be used on apartments for heating of common areas, 2-3 panels per core. Mini inverters to be positioned on the roof along with solar panels, negligible noise from inverters is likely.

10.10 Element 3 – External Amenity Area Noise Assessment

As stated previously, ProPG 2017 recommends that external amenity areas should not be above the range of 50 - 55dB LAeq,16hr.

Existing noise levels across the Site ranged from 47dBA to 54dB LAeq,T during daytime periods, based on both ambient noise measurements undertaken across the site. In addition, there are a numb er of parks and recreational areas in the Proposed Development which will provide additional 'quiet areas' with the constructed homes, apartments and garden walls providing acoustic sheltering for these areas. Accruing a minimum standard of 5dB for barrier effects, as per BS 5228, the ambient noise levels in the various external amenity areas are estimated to be in the range of 42 to 49dB LAeq,16hr.

10.11 Element 4 – Assessment Of Other Relevant Issues

Element 4 of Stage 2 details other issued which may be considered relevant to the assessment which are:

- Acoustic Design V Unintended adverse consequences; and,
- Acoustic Design V wider planning objectives.
- Compliance with relevant national and local policy;
- Likely occupants of the development;
- Magnitude and extent of compliance with ProPG;

10.12 Compliance with Relevant National & Local Policy

[1] $D_{n,e,A2}$: an attenuation index, which is focused on low tones, e.g., urban traffic, slow rail traffic, music, airplanes in a distance.

The Site is zoned 'Z02- New Residential Neighbourhoods' with small portions of the Site to the south zoned as 'Z20 City Hinderland, and Long-Term Strategic Development' and 'Z0 15 Public Open Space' as per Map 11 of the CDP and is therefore identified by the Council as an area in need for good residential development in the town to manage the growing population.

Although a specific layout or design is not identified within the zoning, the fundamental use of the land for residential is in line with *ProPG 2017* approach for new development.

10.13 Magnitude & Extent of Compliance with *ProPG 2017*

As detailed above, the proposed development is within compliance with *ProPG 2017* when windows are closed for living spaces. In addition, external amenity areas are within the Proposed Development and are predicted to be within compliance with *ProPG 2017* recommended range.

10.14 Likely Occupants of the Development

The Proposed Development will be occupied by long-term residents.

The criteria adopted in this assessment is based upon criteria recommended for long-term / permanent dwellings / apartment buildings and is therefore considered appropriate.

10.15 Acoustic Design V Unintended Adverse Consequences

Design measures taken to reduce intrusion by noise have not had any unintended adverse consequences for the Proposed Development or the nearby environment.

Regarding operational noise, low noise heat pumps are being provided to reduce noise intrusion to the Proposed Development.

10.16 Acoustic Design vs Wider Planning Objectives

This assessment has demonstrated the living areas of the Proposed Development will achieve a good internal ambient noise environment.

CHAPTER 11 APPENDICES

Appendix 11.1 Q-Sample species compositions, September, and November 2023

Appendix 11.2 Physiochemical water quality results, September & November 2023

Appendix 11.1

Q-Sample species compositions, September, and November 2023

Table 1. Q-sample species composition on the Shean Upper Stream (sites 1 & 2) and Blarney River (site 3) 28th September 2023.

Taxon	Family	Binomial name	Site 1	Site 2	Site 3	EPA Group
Ephemeroptera	Heptageniidae	*Ecdyonurus dispar*		3		**A**
Trichoptera	Leptoceridae	*Athripsodes aterrimus*			1	**B**
Trichoptera	Sericostomatidae	*Sericostoma personatum*		1		**B**
Trichoptera	Glossosomatidae	*Agapetus fuscipes*		1		**B**
Odonata	Coenagrionidae	sp. indet.			1	**B**
Ephemeroptera	Baetidae	*Baetis rhodani*	12	19		**C**
Trichoptera	Hydropsychidae	*Diplectrona felix*	9	6		**C**
Trichoptera	Philopotamidae	*Philopotamus montanus*	60	4		**C**
Trichoptera	Philopotamidae	*Wormaldia occipitalis*	8			**C**
Trichoptera	Polycentropodidae	*Plectrocnemia geniculata*	4			**C**
Trichoptera	Rhyacophilidae	*Rhyacophila dorsalis*		1		**C**
Coleoptera	Dytiscidae	Dytiscidae larva			2	**C**
Coleoptera	Elmidae	*Elmis aenea* (adult)		2		**C**
Coleoptera	Elmidae	*Limnius volckmari*		7		**C**
Amphipoda	Gammaridae	*Gammarus duebeni*	19	26		**C**
Diptera	Tipuliidae	*Tipula* sp.	3			**C**
Diptera	Chironomidae	Non-chironomus spp.		11		**C**
Diptera	Limoniidae	*Antocha* sp.		1		**C**
Diptera	Pediciidae	*Dicranota* sp.	1			**C**
Diptera	Simuliidae	sp. indet.	7	4		**C**
Mollusca	Lymnaeidae	*Lymnaea stagnalis*			4	**C**
Mollusca	Planorbidae	*Gyraulus albus*			1	**C**
Mollusca	Valvatidae	*Valvata piscinalis*			9	**C**
Amphipoda	Crangonyctidae	Crangonyx sp.			4	**D**
Hirudinidae	Glossiphoniidae	sp. indet.		3	3	**D**
Isopoda	Asellidae	*Asellus aquaticus*		6	10	**D**
Mollusca	Lymnaeidae	*Ampullacaena balthica*			2	**D**
Mollusca	Physidae	*Physa fontinalis*		3	1	**D**
Mollusca	Sphaeriidae	sp. indet.			7	**D**
Diptera	Chironomidae	Chironomus spp.			5	**E**
Annelidae	Oligochaeta	sp. indet.		1		**N/A**
Mollusca	Tateidae	*Potamopyrgus antipodarum*		1		**N/A**
Total Abundance			**123**	**100**	**50**	
Taxon Richness			**9**	**18**	**13**	
Q Rating			**Q3**	**Q3-4**	**Q2-3**	
Water Quality Status			**Poor**	**Moderate**	**Poor**	

Table 2. Q-sample species composition on the Shean Upper Stream (sites 1 & 2) and Blarney River (site 3) 9th November 2023

Taxon	Family	Binomial name	Site 1	Site 2	Site 3	EPA Groups
Ephemeroptera	Heptageniidae	*Ecdyonurus dispar*		5		**A**
Ephemeroptera	Baetidae	*Alainites muticus*	1			**B**
Odonata	Coenagrionidae	sp. indet.			2	**B**
Trichoptera	Glossosomatidae	*Agapetus fuscipes*		1		**B**
Trichoptera	Goeridae	*Silo pallipes*		2		**B**
Trichoptera	Limnephilidae	*Limnephilus marmoratus*			2	**B**
Trichoptera	Limnephilidae	*Potamophylax cingulatus*		2		**B**
Trichoptera	Sericostomatidae	*Sericostoma personatum*		3		**B**
Ephemeroptera	Baetidae	*Baetis rhodani*	21	13		**C**
Trichoptera	Hydropsychidae	*Diplectrona felix*	5	3		**C**
Trichoptera	Philopotamidae	*Philopotamus montanus*	20			**C**
Trichoptera	Philopotamidae	*Wormaldia occipitalis*	4			**C**
Coleoptera	Elmidae	*Limnius volckmari*		2		**C**
Coleoptera	Scirtidae	Scirtidae larva		1		**C**
Coleoptera	Elmidae	*Elmis aenea* (larva)			1	**C**
Diptera	Simuliidae	sp. indet.	3	2	1	**C**
Amphipoda	Gammaridae	*Gammarus duebeni*	31	26		**C**
Hemiptera	Corixidae	*Hesperocorixa linnaei*			4	**C**
Hemiptera	Notonectidae	*Notonecta viridis*			1	**C**
Mollusca	Lymnaeidae	*Stagnicola fuscus*		2		**C**
Mollusca	Lymnaeidae	*Lymnaea stagnalis*			2	**C**
Amphipoda	Crangonyctidae	Crangonyx sp.			2	**D**
Isopoda	Asellidae	*Asellus aquaticus*	1	28	22	**D**
Mollusca	Physidae	*Physa fontinalis*		4	*2*	**D**
Mollusca	Lymnaeidae	*Ampullacaena balthica*			17	**D**
Diptera	Chironomidae	Chironomus spp.			1	**E**
Total Abundance			**86**	**94**	**57**	
Taxon Richness			**8**	**14**	**12**	
Q Rating			**Q3**	**Q3-4**	**Q2-3**	
Water Quality Status			**Poor**	**Moderate**	**Poor**	

Appendix 11.2

Appendix B – Physiochemical water quality results, September & November 2023.

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Analysis Certificate (Blarney Bog)

	Arrival Date	28/09/2023	28/09/2023	28/09/2023	28/09/2023	28/09/2023	28/09/2023
EPA approved	Sample	River 1	River 2	River 3	Lake A	Lake B	Lake C
Yes	pH	7.55	7.58	6.87	7.13	6.87	7.00
Yes	Alkalinity (mg $CaCO_3$/l)	72	81	62	93	73	93
Yes	Conductivity @25° C (µS/cm)	238	283	231	316	281	362
N/A	Total Ammonia (mg N/l)	0.138	0.052	0.095	0.271	0.163	0.031
Yes	Ortho-P (mg P/l)	0.050	0.041	0.200	0.181	0.157	0.036
Yes	Total P (mg P/l)	0.077	0.063	0.379	0.297	0.285	0.064
Yes	Total Oxidised Nitrogen (mg N/l)	2.275	3.472	2.198	1.918	4.209	6.473
Yes	BOD (mg O_2/l)	0.8	0.7	3.0	--	--	--
N/A	Chlorophyll a (µg/l)	--	--	--	14.13	11.53	6.95
Yes	Suspended Solids (mg/l)	6.0	3.2	5.3	5.0	8.5	3.0

Sample Arrival Date: 28-09-23 / Report Date: 04-10-23

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Analysis Certificate (Blarney Bog)

	Arrival Date	09/11/2023	09/11/2023	09/11/2023	09/11/2023	09/11/2023	09/11/2023
EPA approved	Sample	River 1	River 2	River 3	Lake A	Lake B	Lake C
Yes	pH	7.86	7.54	7.43	7.07	7.52	7.03
Yes	Alkalinity (mg $CaCO_3$/l)	82	83	84	98	83	97
Yes	Conductivity @25° C (µS/cm)	272	307	316	363	299	347
Yes	Total Ammonia (mg N/l)	0.037	0.017	0.096	0.105	0.020	0.151
Yes	Ortho-P (mg P/l)	0.030	0.036	0.045	0.082	0.025	0.076
Yes	Total P (mg P/l)	0.047	0.043	0.077	0.140	0.101	0.136
Yes	Total Oxidised Nitrogen (mg N/l)	2.963	4.348	5.408	5.296	4.357	4.831
Yes	BOD (mg O_2/l)	0.7	0.6	0.8	--	--	--
N/A	Chlorophyll a (µg/l)	--	--	--	2.37	8.29	2.57
Yes	Suspended Solids (mg/l)	3.2	3.5	3.5	2.0	42.0	2.5

Sample Arrival Date: 09-11-23 / Report Date: 14-11-23

CHAPTER 12 APPENDICES

Appendix 12.1 SMR/RMP Within The Study Area

Appendix 12.2 Legislation Protecting The Archaeological Resource

Appendix 12.3 Legislation Protecting The Architectural Resource

Appendix 12.4 Impact Assessment and the Cultural Heritage Resource

Appendix 12.5 Mitigation Measures and the Cultural Heritage Resource

APPENDICES

APPENDIX 12.1 SMR/RMP WITHIN THE STUDY AREA

SMR NO.	CO062-179
RMP STATUS	Yes
TOWNLAND	Shean Upper
I.T.M.	561786 , 576109
CLASSIFICATION	Redundant Record
DIST. FROM DEVELOPMENT	c. 75m south
DESCRIPTION	Listed as a 'landscape feature' in the SMR (1988) and the RMP (1998). According to the records of the Cork Archaeological Survey, UCC, this is a non-antiquity and as such does not constitute an archaeological monument.
REFERENCE	www.archaeology.ie/ SMR file

SMR NO.	CO062-249
RMP STATUS	Yes
TOWNLAND	Shean Upper
I.T.M.	562168 , 575971
CLASSIFICATION	Fulacht fia
DIST. FROM DEVELOPMENT	Within southeast of proposed development site – **RECORD ONLY**
DESCRIPTION	A large spread of heat-shattered stones and charcoal-enriched soil was exposed during archaeological testing in advance of a large housing development and was excavated in 2006. Excavation revealed troughs, a roasting or fire pit and a possible shelter. A small area of burnt bone, which post-dated the fulacht fia was exposed a short distance to the SW. (pers. comm. D. Sutton).
REFERENCE	www.archaeology.ie/ SMR file

APPENDIX 12.2 LEGISLATION PROTECTING THE ARCHAEOLOGICAL RESOURCE

PROTECTION OF CULTURAL HERITAGE

The cultural heritage in Ireland is safeguarded through national and international policy designed to secure the protection of the cultural heritage resource to the fullest possible extent (Department of Arts, Heritage, Gaeltacht and the Islands 1999, 35). This is undertaken in accordance with the provisions of the European Convention on the Protection of the Archaeological Heritage (Valletta Convention), ratified by Ireland in 1997.

THE ARCHAEOLOGICAL RESOURCE

The National Monuments Act 1930 to 2014 and relevant provisions of the National Cultural Institutions Act 1997 are the primary means of ensuring the satisfactory protection of archaeological remains, which includes all man-made structures of whatever form or date except buildings habitually used for ecclesiastical purposes. A National Monument is described as 'a monument or the remains of a monument the preservation of which is a matter of national importance by reason of the historical, architectural, traditional, artistic or archaeological interest attaching thereto' (National Monuments Act 1930 Section 2)

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A number of mechanisms under the National Monuments Act are applied to secure the protection of archaeological monuments. These include the Register of Historic Monuments, the Record of Monuments and Places, and the placing of Preservation Orders and Temporary Preservation Orders on endangered sites.

The National Monuments Act 1930, as amended by various acts including but not limited to, the National Monuments (Amendment) Act 1954, the National Monuments (Amendment) Act 1987, the National Monuments (Amendment) Act 1994 and the National Monuments (Amendment) Act 2004 (together the National Monuments Acts) make provision for the protection and preservation of national monuments, archaeological monuments and archaeological objects in Ireland. The description of the existing environment in this chapter takes account of those statutory designations and the chapter takes account of the legislative monitoring and licencing requirements as mitigation.

The Historic and Archaeological Heritage and Miscellaneous Provisions Act 2023 (the 2023 Act) was enacted by the Oireachtas in late 2023 and aims to address a range of structural issues, simplify terminology, as well as provide a single accessible piece of legislation. At the date of writing many sections of the 2023 Act have yet to commence.

It is not anticipated that this will result in statutory protection being extended to any potential receptors apart from those already considered in the Cultural Heritage chapter and the chapter already identifies as mitigation the various archaeological investigations and licencing requirements that will come into force when the 2023 Act is commenced. Accordingly, the EIAR conclusions are likely to be unchanged should the 2023 Act commence fully while the application is moving through the planning process.

OWNERSHIP AND GUARDIANSHIP OF NATIONAL MONUMENTS

The Minister may acquire national monuments by agreement or by compulsory order. The state or local authority may assume guardianship of any national monument (other than dwellings). The owners of national monuments (other than dwellings) may also appoint the Minister or the local authority as guardian of that monument if the

state or local authority agrees. Once the site is in ownership or guardianship of the state, it may not be interfered with without the written consent of the Minister.

REGISTER OF HISTORIC MONUMENTS

Section 5 of the 1987 Act requires the Minister to establish and maintain a Register of Historic Monuments. Historic monuments and archaeological areas present on the register are afforded statutory protection under the 1987 Act. Any interference with sites recorded on the register is illegal without the permission of the Minister. Two months' notice in writing is required prior to any work being undertaken on or in the vicinity of a registered monument. The register also includes sites under Preservation Orders and Temporary Preservation Orders. All registered monuments are included in the Record of Monuments and Places.

PRESERVATION ORDERS AND TEMPORARY PRESERVATION ORDERS

Sites deemed to be in danger of injury or destruction can be allocated Preservation Orders under the 1930 Act. Preservation Orders make any interference with the site illegal. Temporary Preservation Orders can be attached under the 1954 Act. These perform the same function as a Preservation Order but have a time limit of six months, after which the situation must be reviewed. Work may only be undertaken on or in the vicinity of sites under Preservation Orders with the written consent, and at the discretion, of the Minister.

RECORD OF MONUMENTS AND PLACES

Section 12(1) of the 1994 Act requires the Minister for Arts, Heritage, Gaeltacht and the Islands (now the Minister for the Department of Housing, Local Government and Heritage) to establish and maintain a record of monuments and places where the Minister believes that such monuments exist. The record comprises a list of monuments and relevant places and a map/s showing each monument and relevant place in respect of each county in the state. All sites recorded on the Record of Monuments and Places receive statutory protection under the National Monuments Act 1994. All recorded monuments on the proposed development site are represented on the accompanying maps. Section 12(3) of the 1994 Act provides that 'where the owner or occupier (other than the Minister for Arts, Heritage, Gaeltacht and the Islands) of a monument or place included in the Record, or any other person, proposes to carry out, or to cause or permit the carrying out of, any work at or in relation to such a monument or place, he or she shall give notice in writing to the Minister of Arts, Heritage, Gaeltacht and the Islands to carry out work and shall not, except in case of urgent necessity and with the consent of the Minister, commence the work until two months after giving of notice'.

Under the National Monuments (Amendment) Act 2004, anyone who demolishes or in any way interferes with a recorded site is liable to a fine not exceeding €3,000 or imprisonment for up to 6 months. On summary conviction and on conviction of indictment, a fine not exceeding €10,000 or imprisonment for up to 5 years is the penalty. In addition, they are liable for costs for the repair of the damage caused.

In addition to this, under the European Communities (Environmental Impact Assessment) Regulations 1989, Environmental Impact Statements (EIS) are required for various classes and sizes of development project to assess the impact the proposed development will have on the existing environment, which includes the cultural, archaeological and built heritage resources. These document's recommendations are typically incorporated into the conditions under which the proposed development must proceed, and thus offer an additional layer of protection for monuments which have not been listed on the RMP.

THE PLANNING AND DEVELOPMENT ACT 2024

Under planning legislation, each local authority is obliged to draw up a Development Plan setting out their aims and policies with regard to the growth of the area over a five-year period. They cover a range of issues including archaeology and built heritage, setting out their policies and objectives with regard to the protection and enhancement of both. These policies can vary from county to county. The Planning and Development Act 2024 recognises that proper planning and sustainable development includes the protection of the archaeological heritage. Conditions relating to archaeology may be attached to individual planning permissions.

APPENDIX 12.3 LEGISLATION PROTECTING THE ARCHITECTURAL RESOURCE

The main laws protecting built heritage are the Architectural Heritage (National Inventory) and National Monuments (Miscellaneous Provisions) Act 1999 and the Planning and Development Act, 2024. The Architectural Heritage Act requires the Minister to establish a survey to identify, record and assess the architectural heritage of the country. The background to this legislation derives from Article 2 of the 1985 Convention for the Protection of Architectural Heritage (Granada Convention). This states that for the purpose of precise identification of the monuments, groups of structures and sites to be protected, each member state will undertake to maintain inventories of that architectural heritage.

The National Inventory of Architectural Heritage (NIAH) was established in 1990 to fulfil Ireland's obligation under the Granada Convention, through the establishment and maintenance of a central record, documenting and evaluating the architecture of Ireland (NIAH 2024, page 3). As inclusion in the inventory does not provide statutory protection, the survey information is used in conjunction with the Architectural Heritage Protection Guidelines for Planning Authorities to advise local authorities on compilation of a Record of Protected Structures as required by the Planning and Development Act, 2024.

PROTECTION UNDER THE RECORD OF PROTECTED STRUCTURES AND COUNTY DEVELOPMENT PLAN

Structures of special architectural, historical, archaeological, artistic, cultural, scientific, social or technical interest can be protected under the Planning and Development Act, 2024.

The Act states that 'A planning authority shall prepare and maintain a record of every structure, part of a structure and specified feature within the attendant grounds of a structure within its functional area that, in the opinion of the planning authority, forms part of the architectural heritage of the area and is of special architectural, historical, archaeological, artistic, cultural, scientific, social or technical interest'.

At any time after preparing a record of protected structures under section 306 , a planning authority may (a) add a structure, a specified part of a structure or a specified feature within the attendant grounds of a structure to the record of protected structures where the authority considers the structure, the part, or the feature, as the case may be, to be of special architectural, historical, archaeological, artistic, cultural, scientific, social or technical interest or value (b) delete a structure, a specified part of a structure or a specified feature within the attendant grounds of a structure from the record of protected structures where the authority considers that the protection of the structure, part or feature, as the case may be, is no longer warranted.

ARCHAEOLOGICAL

Archaeological interest is essentially defined by the degree to which material remains can contribute to our understanding of any period or set of social conditions in the past. Structures can have the characteristics of both architectural and archaeological interest as these are not mutually exclusive. The standing walls of a sixteenth-century tower house will have both characteristics of interest. The party walls or basements of houses of late appearance may contain medieval fabric and reveal information of archaeological interest. Fragments of early fabric, including carved or worked stone, may have been reused in later buildings giving these structures archaeological interest. A complex of industrial buildings may have archaeological interest because of its potential to reveal artefacts and information about the evolution of industry that may be useful to archaeologists, historians and the general public.

ARCHITECTURAL

The characteristics of architectural interest may be attributed to a structure or part of a structure with such qualities as the following:

- A generally agreed exemplar of good quality architectural design;
- The work of a known and distinguished architect, designer or engineer;
- An exemplar of a building type, plan form, style or styles of any period but also the harmonious interrelationship of differing styles within one structure;
- A structure which makes a positive contribution to its setting, such as a group of structures or a streetscape in an urban area, or the landscape in a rural area;
- A structure with an interior that is well designed, rich in decoration, complex or spatially pleasing.

HISTORICAL

The notion of historical interest underpins a general belief that it is worthwhile to conserve and preserve information, sites and structures from past centuries. The level of importance of the historical connection and its relationship to the existing fabric of the structure should be assessed. The historical interest relating to a structure or parts of a structure may be identified in various ways.:

- A structure may have historical interest as the location of an important event that occurred in or is associated with it. It may have historical interest in its association with a historic personality. Some associations or events may be so important that the structure retains its significance regardless of subsequent alteration;
- A structure may have influenced, or been influenced by, a historic figure. Important people may have lived in the structure or have been otherwise associated with it, e.g. its architect, builder or patron. Places in which evidence of an association with a person survive in situ, or in which the settings are substantially intact, are of greater significance than those which are much changed or in which much evidence does not survive;
- Historical interest can be attributed where light is thrown on the character of a past age by virtue of the structure's design, location, materials or original use;
- A structure may be a memorial to a past event;
- A structure itself may be an example of the effects of change over time. The design and fabric of the structure may contain evidence of its former use or symbolic meaning. This may be the case with former churches or gaols that have since changed and, in so doing, illustrate a historic development;
- Some features and fixtures may survive, e.g. in consistory courts and courts of law, that are important evidence of former legal or liturgical practice and may have special historical interest for that reason;
- Some unusual structures may have historical or socio-historical interest, e.g. early electricity substations, "Emergency"-era lookout posts or sentry boxes. Although not yet of popular heritage significance, such structures can nonetheless have special historical and social interest;
- Special historical interest may exist because of the rarity of a structure. Either few structures of an identifiable type were built at a particular time or few have survived. In either case, the extant structure may be one of the few representative examples of its time that still exists in a local, regional or national context. The rarity of surviving examples of a building type can ensure that special historical interest accrues to them.

TECHNICAL

Technical interest in a structure relates to the art of the structural engineer in devising solutions to problems of spanning space and weatherproofing enclosures. It may be found in structures which are important examples of

innovative, unusual or virtuoso engineering design or use of materials. A structure may be of technical interest for one or more of the following reasons:

- It displays engineering or structural innovation in its construction or design such as the use of cast- or wrought iron prefabrication or the early use of concrete;
- It is the work of a distinguished engineer;
- It is an exemplar of the engineering design practice of its time. For example, a bridge may be a masonry arch, an iron suspension or a concrete span;
- It displays technically innovative or unusual construction materials, such as early examples of Coade stone, cement plank cladding or glazed curtain walling;
- It contains innovative mechanical fixtures, machinery or plant or industrial heritage artefacts that describe the character of production processes. The specifically industrial aspect of some sites like mills, mill ponds or mines can often have a technical interest;
- Technical interest can be ascribed to the innovative engineering qualities of structure, as distinct from the building's appropriateness for use or its appearance.

CULTURAL

The characteristic of cultural interest permeates architectural heritage and can, in the broadest terms, include aesthetic, economic, historic, scientific or social values of past and present generations. Special cultural interest apply to:

- Those structures to which the Granada Convention refers as 'more modest works of the past that have acquired cultural significance with the passing of time';
- Structures that have cinematic or literary associations;
- Other structures that illustrate the development of society, such as early libraries, print works, schoolhouses or swimming baths.

SCIENTIFIC

The scientific interest, or research value, of a structure will depend on the importance of the data involved and on its quality and/or rarity. Its scientific interest should also be assessed as to how well it represents the area of research in question and the degree to which the structure may contribute further objective information. For example:

- The results of scientific research may be seen in the execution of the structure;
- The materials used in the structure may have the potential to contribute to scientific research, e.g. extinct plant or pollen species preserved in the base layers of ancient thatch roofs;
- The structure may be associated with scientific research that has left its mark on the place, e.g. early Ordnance Survey benchmarks carved into stone work.

SOCIAL

The characteristic of social interest embraces those qualities for which a structure, a complex or an area has become a focus of political, spiritual, symbolic or other sentiment to any group of people. A community may have an attachment to a place because it is an essential reference point for that community's identity, whether as a meeting place or a place of ceremony, ritual or tradition. The configuration, disposition or layout of a space or group of structures, where they facilitate behaviour that would otherwise be difficult or impossible, may be of social interest. For example:

- The features and fixtures that testify to community involvement in the creation of a structure, or have a spatial form or layout indicating community involvement in the use of a structure, could include such elements as memorials, stained glass or statues;

- A structure may display vernacular traditions of construction and may be in a group or setting which illustrates the social organisation of the inhabitants. Most obviously this would include thatched houses. In vernacular buildings, elements of the plan form – direct entry, lobby entry, opposing doors, outshots, etc. – and/or the roofing material may be distinctive and have special social interest;
- Types of decoration may have social as well as artistic interest, such as shell houses or the local manifestation of exuberant or astylar stucco decoration where it is particular to a region or town;
- A social interest could also be attributed to structures illustrating the social philosophy of a past age, as in the case of philanthropic and social housing developments. Structures which illustrate a particular lifestyle or social condition, e.g. holy wells, are to be found in many parts of the country.

ARTISTIC

Special artistic interest may be attributed to a structure itself, or to a part of a structure, for its craftsmanship, decoration or design. Examples could include:

- Decoratively carved sculpture or statuary that is part of an architectural composition;
- Ceramic, faience or mosaic tiled or decoratively carved timber shopfronts;
- Fittings and fixtures including chimneypieces, chandeliers or sconces, staircases and wainscoting;
- Decorative plasterwork ceilings;
- Religious art in a place of worship including stained glass or Stations of the Cross;
- Funerary monuments within a graveyard;
- Decorative cast- or wrought iron gates or railings;
- The relationship of materials to each other, and to the totality of the building in which they are situated, if these have been designed as an ensemble.
  (From the NIAH Handbook 2024 pages 15–17)

The Local Authority has the power to order conservation and restoration works to be undertaken by the owner of the protected structure if it considers the building to need repair. Similarly, an owner or developer must make a written request to the Local Authority to carry out any works on a protected structure and its environs, which will be reviewed within three months of application. Failure to do so may result in prosecution.

APPENDIX 12.4 IMPACT ASSESSMENT AND THE CULTURAL HERITAGE RESOURCE

POTENTIAL IMPACTS ON ARCHAEOLOGICAL AND HISTORICAL REMAINS

Impacts are defined as 'the degree of change in an environment resulting from a development' (Environmental Protection Agency 2022). They are described as profound, significant or slight impacts on archaeological remains.

They may be negative, positive or neutral, direct, indirect or cumulative, temporary or permanent.

Impacts can be identified from detailed information about a project, the nature of the area affected and the range of archaeological and historical resources potentially affected. Development can affect the archaeological and historical resource of a given landscape in a number of ways.

- Permanent and temporary land-take, associated structures, landscape mounding, and their construction may result in damage to or loss of archaeological remains and deposits, or physical loss to the setting of historic monuments and to the physical coherence of the landscape.
- Archaeological sites can be affected adversely in a number of ways: disturbance by excavation, topsoil stripping and the passage of heavy machinery; disturbance by vehicles working in unsuitable conditions; or burial of sites, limiting accessibility for future archaeological investigation.
- Hydrological changes in groundwater or surface water levels can result from construction activities such as de-watering and spoil disposal, or longer-term changes in drainage patterns. These may desiccate archaeological remains and associated deposits.
- Visual impacts on the historic landscape sometimes arise from construction traffic and facilities, built earthworks and structures, landscape mounding and planting, noise, fences and associated works. These features can impinge directly on historic monuments and historic landscape elements as well as their visual amenity value.
- Landscape measures such as tree planting can damage sub-surface archaeological features, due to topsoil stripping and through the root action of trees and shrubs as they grow.
- Ground consolidation by construction activities or the weight of permanent embankments can cause damage to buried archaeological remains, especially in colluviums or peat deposits.
- Disruption due to construction also offers in general the potential for adversely affecting archaeological remains. This can include machinery, site offices, and service trenches.

Although not widely appreciated, positive impacts can accrue from developments. These can include positive resource management policies, improved maintenance and access to archaeological monuments, and the increased level of knowledge of a site or historic landscape as a result of archaeological assessment and fieldwork.

PREDICTED IMPACTS

The severity of a given level of land-take or visual intrusion varies with the type of monument, site or landscape features and its existing environment. Severity of impact can be judged taking the following into account:

- The proportion of the feature affected and how far physical characteristics fundamental to the understanding of the feature would be lost;
- Consideration of the type, date, survival/condition, fragility/vulnerability, rarity, potential and amenity value of the feature affected;
- Assessment of the levels of noise, visual and hydrological impacts, either in general or site-specific terms, as may be provided by other specialists.

APPENDIX 12.5 MITIGATION MEASURES AND THE CULTURAL HERITAGE RESOURCE

POTENTIAL MITIGATION STRATEGIES FOR CULTURAL HERITAGE REMAINS

Mitigation is defined as features of the design or other measures of the proposed development that can be adopted to avoid, prevent, reduce or offset negative effects.

The best opportunities for avoiding damage to archaeological remains or intrusion on their setting and amenity arise when the site options for the development are being considered. Damage to the archaeological resource immediately adjacent to developments may be prevented by the selection of appropriate construction methods.

Reducing adverse effects can be achieved by good design, for example by screening historic buildings or upstanding archaeological monuments or by burying archaeological sites undisturbed rather than destroying them.

Offsetting adverse effects is probably best illustrated by the full investigation and recording of archaeological sites that cannot be preserved in situ.

DEFINITION OF MITIGATION STRATEGIES

ARCHAEOLOGICAL RESOURCE

The ideal mitigation for all archaeological sites is preservation in situ. This is not always a practical solution, however. Therefore, a series of recommendations are offered to provide ameliorative measures where avoidance and preservation in situ are not possible.

Archaeological Test Trenching can be defined as 'a limited programme of intrusive fieldwork which determines the presence or absence of archaeological features, structures, deposits, artefacts or ecofacts within a specified area or site on land, inter-tidal zone or underwater. If such archaeological remains are present field evaluation defines their character, extent, quality and preservation, and enables an assessment of their worth in a local, regional, national or international context as appropriate' (CIfA 2023a).

Full Archaeological Excavation can be defined as 'a programme of controlled, intrusive fieldwork with defined research objectives which examines, records and interprets archaeological deposits, features and structures and, as appropriate, retrieves artefacts, ecofacts and other remains within a specified area or site on land, inter-tidal zone or underwater. The records made and objects gathered during fieldwork are studied and the results of that study published in detail appropriate to the project design' (CIfA 2023b).

Archaeological Monitoring can be defined as 'a formal programme of observation and investigation conducted during any operation carried out for non-archaeological reasons. This will be within a specified area or site on land, inter-tidal zone or underwater, where there is a possibility that archaeological deposits may be disturbed or destroyed. The programme will result in the preparation of a report and ordered archive (CIfA 2023c).

Underwater Archaeological Assessment consists of a programme of works carried out by a specialist underwater archaeologist, which can involve wade surveys, metal detection surveys and the excavation of test pits within the sea or riverbed. These assessments are able to access and assess the potential of an underwater environment to a much higher degree than terrestrial based assessments.

ARCHITECTURAL RESOURCE

The architectural resource is generally subject to a greater degree of change than archaeological sites, as structures may survive for many years but their usage may change continually. This can be reflected in the fabric of the building, with the addition and removal of doors, windows and extensions. Due to their often more visible presence within the landscape than archaeological sites, the removal of such structures can sometimes leave a discernible 'gap' with the cultural identity of a population. However, a number of mitigation measures are available to ensure a record is made of any structure that is deemed to be of special interest, which may be removed or altered as part of a proposed development.

Conservation Assessment consists of a detailed study of the history of a building and can include the surveying of elevations to define the exact condition of the structure. These assessments are carried out by Conservation Architects and would commonly be carried out in association with proposed alterations or renovations on a Recorded Structure.

Building Survey may involve making an accurate record of elevations (internal and external), internal floor plans and external sections. This is carried out using an EDM (Electronic Distance Measurer) and GPS technology to create scaled drawings that provide a full record of the appearance of a building at the time of the survey.

Historic Building Assessment is generally specific to one building, which may have historic significance, but is not a Protected Structure or listed within the NIAH. A full historical background for the structure is researched and the site is visited to assess the standing remains and make a record of any architectural features of special interest. These assessments can also be carried out in conjunction with a building survey.

Written and Photographic record provides a basic record of features such as stone walls, which may have a small amount of cultural heritage importance and are recorded for prosperity. Dimensions of the feature are recorded with a written description and photographs as well as some cartographic reference, which may help to date a feature.

CHAPTER 13 APPENDICES

Appendix 13.1 Verified View Photomontages For Proposed Ringwood LRD



Verified View Photomontages For Proposed Mixed-Use Development at Ringwood, Blarney, Co. Cork

Phase II

December 2025

Document at A3 prepared by G-Net 3D

NSC Campus, Mahon, Cork

www. gnet3d.com

Photomontage Methodology

The methodology used to develop the photomontages is based on the “Visual Representation of Development Proposals” Guidance note by the Landscape Institute, 2019.

Photography

The photography was carried out on the September 4t, 2023; October 3rd, 2023; November 23rd, 2023; September 8th, 2025 and November 28th, 2025 using Sony α7RIII full frame camera. Two lenses 24mm and 50mm prime lens were used for the photography.
A 24mm - wide angle lens was selected for the photography to provide more information on the context around the proposed development. The horizontal field of view of these photographs is 74°. The above-mentioned guidance suggests that 40° angle is the closest to human eye vision and is recommended for the verified photomontages. In the cases where the wide lens is used, there should be an indication of 40° field of view, which is shown on the bottom of all the views.
A recommended viewing distance of the photomontages taken using 50mm lens is around 500mm and 24mm lens - 300mm from eyes when printed on A3 paper.

Geomax Zenith 60 GPS Antennae was used to accurately record the viewpoint and reference markers’ coordinates and height levels. Viewpoint locations are indicated in the viewpoint map to the right, viewpoint coordinates and information on photography is under each photo.

Modelling

Preparation of an accurate 3D model of the proposed mixed-use development, including landscape and infrastructure.

Setup

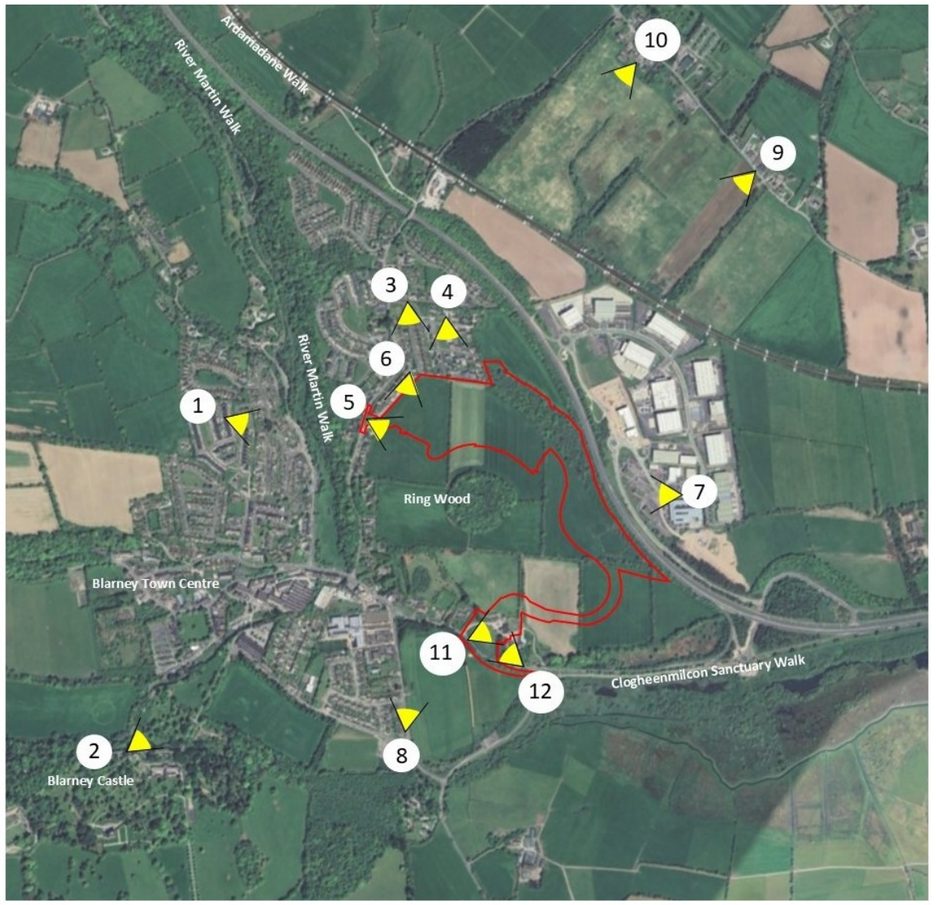
The following information is used to accurately position the model of the proposed development into the photographs:
-Site survey,
-Photographs,
-Verified viewpoint coordinates and height levels are accurately marked on the location OSi map.
To match the 3D camera view with the photograph we take the following steps:
The camera height is taken from information gathered on the levels from where the photos are taken (table belc
The height levels of the proposed development are outlined on the site. Focal length is based on the photograph info.
This data is imported into our 3D software and the 3D camera is matched with the selected photographs.
To match the 3D camera accurately we use all the above data and the reference 3D models. The reference 3D models are existing structures i.e. buildings, roads, lamps, etc which are visible on the photographs.
These items are modelled based on the survey information. After all the above conditions are fulfilled and we are satisfied that the camera matches correctly, we proceed to the next step.

Rendering

We apply the materials and textures prior to rendering the photomontage images. Light settings are adjusted to match the brightness of the photographs and sun is positioned according to the date and time the photo was taken.

Post processing

This process means incorporating a 3D image of the proposed development into the photograph to achieve the final result.





View 1. As Exists



Project Name: Ringwood LRD	Photo Date: 03.10.2023 Photo Time: 13:59 Camera: Sony a7RIII	Viewpoint location: from Monacnappa Estate Viewpoint Coordinates (ITM): 561057.755;576355.457;74.185

Prepared By G-Net 3D

View 1. Proposed Phase 2 Development

< 24mm 73.7°

<<50 mm 39.6°

39.6° 50mm>>

73.7° 24mm >

Project Name: Ringwood LRD	Photo Date: 03.10.2023 Photo Time: 13:59 Camera: Sony a7RIII	Viewpoint location: from Monacnappa Estate Viewpoint Coordinates (ITM): 561057.755;576355.457;74.185

Prepared By G-Net 3D

View 1. Proposed Phase 2 & Permitted Phase 1 Planning Ref No 2443031



Project Name: Ringwood LRD	Photo Date: 03.10.2023 Photo Time: 13:59 Camera: Sony a7RIII	Viewpoint location: from Monacnappa Estate Viewpoint Coordinates (ITM): 561057.755;576355.457;74.185

Prepared By G-Net 3D

View 2. As Exists



Project Name: Ringwood LRD	Photo Date: 04.09.2023 Photo Time: 14:17 Camera: Sony a7RIII	Viewpoint location: from Blarney Castle Viewpoint Coordinates (ITM): 560741.536;575375.888;65.134

Prepared By G-Net 3D

View 2. Proposed Phase 2 Development



Project Name: Ringwood LRD	Photo Date: 04.09.2023 Photo Time: 14:17 Camera: Sony a7RIII	Viewpoint location: from Blarney Castle Viewpoint Coordinates (ITM): 560741.536;575375.888;65.134

Prepared By G-Net 3D

View 2. Proposed Phase 2 & Permitted Phase 1 Planning Ref No 2443031



Project Name: Ringwood LRD	Photo Date: 04.09.2023 Photo Time: 14:17 Camera: Sony a7RIII	Viewpoint location: from Blarney Castle Viewpoint Coordinates (ITM): 560741.536;575375.888;65.134

Prepared By G-Net 3D

View 3. As Exists



Project Name: Ringwood LRD	Photo Date: 03.10.2023 Photo Time: 15:07 Camera: Sony a7RIII	Viewpoint location: from Ard na Greine Viewpoint Coordinates (ITM): 561585.230;576642.382;67.612	Prepared By G-Net 3D

View 3. Proposed Phase 2 Development



Project Name: Ringwood LRD	Photo Date: 03.10.2023 Photo Time: 15:07 Camera: Sony a7RIII	Viewpoint location: from Ard na Greine Viewpoint Coordinates (ITM): 561585.230;576642.382;67.612

Prepared By G-Net 3D

View 3. Proposed Phase 2 & Permitted Phase 1 Planning Ref No 2443031



Project Name: Ringwood LRD	Photo Date: 03.10.2023 Photo Time: 15:07 Camera: Sony a7RIII	Viewpoint location: from Ard na Greine Viewpoint Coordinates (ITM): 561585.230;576642.382;67.612

Prepared By G-Net 3D

View 4. As Exists



Project Name: Ringwood LRD	Photo Date: 03.10.2023 Photo Time: 15:16 Camera: Sony a7RIII	Viewpoint location: from Asling Gael Viewpoint Coordinates (ITM): 561677.157;576650.628;69.701

Prepared By G-Net 3D

View 4. Proposed Phase 2 Development

< 24mm 73.7° | <<50 mm 39.6° | 39.6° 50mm>> | 73.7° 24mm >

Project Name: Ringwood LRD	Photo Date: 03.10.2023 Photo Time: 15:16 Camera: Sony a7RIII	Viewpoint location: from Asling Gael Viewpoint Coordinates (ITM): 561677.157;576650.628;69.701

Prepared By G-Net 3D

View 4. Proposed Phase 2 & Permitted Phase 1 Planning Ref No 2443031



Project Name: Ringwood LRD	Photo Date: 03.10.2023 Photo Time: 15:16 Camera: Sony a7RIII	Viewpoint location: from Asling Gael Viewpoint Coordinates (ITM): 561677.157;576650.628;69.701	Prepared By G-Net 3D

View 5. As Exists



Project Name: Ringwood LRD	Photo Date: 03.10.2023 Photo Time: 14:21 Camera: Sony a7RIII	Viewpoint location: from Station Road Viewpoint Coordinates (ITM): 561430.353;576332.767;55.884

Prepared By G-Net 3D

View 5. Proposed Phase 2 Development

< 24mm 73.7° | <<50 mm 39.6° | 39.6° 50mm>> | 73.7° 24mm >

Project Name: Ringwood LRD	Photo Date: 03.10.2023 Photo Time: 14:21 Camera: Sony a7RIII	Viewpoint location: from Station Road Viewpoint Coordinates (ITM): 561430.353;576332.767;55.884

Prepared By G-Net 3D

View 5. Proposed Phase 2 & Permitted Phase 1 Planning Ref No 2443031



Project Name: Ringwood LRD	Photo Date: 03.10.2023 Photo Time: 14:21 Camera: Sony a7RIII	Viewpoint location: from Station Road Viewpoint Coordinates (ITM): 561430.353;576332.767;55.884

Prepared By G-Net 3D

View 6. As Exists



Project Name: Ringwood LRD	Photo Date: 03.10.2023 Photo Time: 15:37 Camera: Sony a7RIII	Viewpoint location: from Station Road Backlands Viewpoint Coordinates (ITM): 561583.520;576477.048;61.925

Prepared By G-Net 3D

View 6. Proposed Phase 2 Development



Project Name: Ringwood LRD	Photo Date: 03.10.2023 Photo Time: 15:37 Camera: Sony a7RIII	Viewpoint location: from Station Road Backlands Viewpoint Coordinates (ITM): 561583.520;576477.048;61.925

Prepared By G-Net 3D

View 7. As Exists



Project Name: Ringwood LRD	Photo Date: 03.10.2023 Photo Time: 11:14 Camera: Sony a7RIII	Viewpoint location: from Blarney Business Park Viewpoint Coordinates (ITM): 562405.315;576127.801;61.498

Prepared By G-Net 3D

View 7. Proposed Phase 2 Development



Project Name: Ringwood LRD	Photo Date: 03.10.2023 Photo Time: 11:14 Camera: Sony a7RIII	Viewpoint location: from Blarney Business Park Viewpoint Coordinates (ITM): 562405.315;576127.801;61.498

Prepared By G-Net 3D

View 7. Proposed Phase 2 & Permitted Phase 1 Planning Ref No 2443031



Project Name: Ringwood LRD	Photo Date: 03.10.2023 Photo Time: 11:14 Camera: Sony a7RIII	Viewpoint location: from Blarney Business Park Viewpoint Coordinates (ITM): 562405.315;576127.801;61.498

Prepared By G-Net 3D

View 8. As Exists



Project Name: Ringwood LRD	Photo Date: 03.10.2023 Photo Time: 11:49 Camera: Sony a7RIII	Viewpoint location: from Castle Close Lawn Viewpoint Coordinates (ITM): 561564.560;575402.830;29.970

Prepared By G-Net 3D

View 8. Proposed Phase 2 Development



Project Name: Ringwood LRD	Photo Date: 03.10.2023 Photo Time: 11:49 Camera: Sony a7RIII	Viewpoint location: from Castle Close Lawn Viewpoint Coordinates (ITM): 561564.560;575402.830;29.970

Prepared By G-Net 3D

View 8. Proposed Phase 2 & Permitted Phase 1 Planning Ref No 2443031



Project Name: Ringwood LRD	Photo Date: 03.10.2023 Photo Time: 11:49 Camera: Sony a7RIII	Viewpoint location: from Castle Close Lawn Viewpoint Coordinates (ITM): 561564.560;575402.830;29.970

Prepared By G-Net 3D

View 9. As Exists



Project Name: Ringwood LRD	Photo Date: 03.10.2023 Photo Time: 10:51 Camera: Sony a7RIII	Viewpoint location: from Stoneview Viewpoint Coordinates (ITM): 562602.942;577130.407;116.835

Prepared By G-Net 3D

View 9. Proposed Phase 2 Development



Project Name: Ringwood LRD	Photo Date: 03.10.2023 Photo Time: 10:51 Camera: Sony a7RIII	Viewpoint location: from Stoneview Viewpoint Coordinates (ITM): 562602.942;577130.407;116.835

Prepared By G-Net 3D

View 9. Proposed Phase 2 & Permitted Phase 1 Planning Ref No 2443031



Project Name: Ringwood LRD	Photo Date: 03.10.2023 Photo Time: 10:51 Camera: Sony a7RIII	Viewpoint location: from Stoneview Viewpoint Coordinates (ITM): 562602.942;577130.407;116.835

Prepared By G-Net 3D

View 10. As Exists



Project Name: Ringwood LRD	Photo Date: 03.10.2023 Photo Time: 10:29 Camera: Sony a7RIII	Viewpoint location: from Stoneview, Old Golf Club entrance Viewpoint Coordinates (ITM): 562454.020;577288.484;115.696

Prepared By G-Net 3D

View 10. Proposed Phase 2 Development

< 50 mm 39.6°

50 mm 39.6°>

Project Name: Ringwood LRD	Photo Date: 03.10.2023 Photo Time: 10:29 Camera: Sony a7RIII	Viewpoint location: from Stoneview, Old Golf Club entrance Viewpoint Coordinates (ITM): 562454.020;577288.484;115.696

Prepared By G-Net 3D

View 10. Proposed Phase 2 & Permitted Phase 1 Planning Ref No 2443031



Project Name: Ringwood LRD	Photo Date: 03.10.2023 Photo Time: 10:29 Camera: Sony a7RIII	Viewpoint location: from Stoneview, Old Golf Club entrance Viewpoint Coordinates (ITM): 562454.020;577288.484;115.696

Prepared By G-Net 3D

View 11. As Exists



Project Name: Ringwood LRD	Photo Date: 28.11.2025 Photo Time: 10:11 Camera: Sony a7RIII	Viewpoint location: from Link Road Junction on R617 Viewpoint Coordinates (ITM): 561726.123;575716.285;34.263

Prepared By G-Net 3D

View 11. Proposed Phase 2



Project Name: Ringwood LRD	Photo Date: 28.11.2025 Photo Time: 10:11 Camera: Sony a7RIII	Viewpoint location: from Link Road Junction on R617 Viewpoint Coordinates (ITM): 561726.123;575716.285;34.263

Prepared By G-Net 3D

View 12. As Exists



Project Name: Ringwood LRD	Photo Date: 23.11.2023 Photo Time: 14:49 Camera: Sony a7RIII	Viewpoint location: from Link Road Junction on R617 Viewpoint Coordinates (ITM): 561830.993;575630.106;33.221

Prepared By G-Net 3D

View 12. Proposed Phase 2



Project Name: Ringwood LRD	Photo Date: 08.09.2025 Photo Time: 11:38 Camera: Sony a7RIII	Viewpoint location: from Link Road Junction on R617 Viewpoint Coordinates (ITM): 561830.993;575630.106;33.221

Prepared By G-Net 3D

View 13. As Exists



Project Name: Ringwood LRD	Photo Date: 03.10.2023 Photo Time: 12:38 Camera: Sony a7RIII	Viewpoint location: from Bawnafinny Scenic Route Viewpoint Coordinates (ITM): 560190.049;574208.691;67.945

Prepared By G-Net 3D

View 13. Proposed Phase 2 Development

< 50 mm 39.6°

50 mm 39.6°>

Project Name: Ringwood LRD	Photo Date: 03.10.2023 Photo Time: 12:38 Camera: Sony a7RIII	Viewpoint location: from Bawnafinny Scenic Route Viewpoint Coordinates (ITM): 560190.049;574208.691;67.945

Prepared By G-Net 3D

View 13. Proposed Phase 2 & Permitted Phase 1 Planning Ref No 2443031



Project Name: Ringwood LRD	Photo Date: 03.10.2023 Photo Time: 12:38 Camera: Sony a7RIII	Viewpoint location: from Bawnafinny Scenic Route Viewpoint Coordinates (ITM): 560190.049;574208.691;67.945

Prepared By G-Net 3D

View 14. As Exists



Project Name: Ringwood LRD	Photo Date: 03.10.2023 Photo Time: 12:14 Camera: Sony a7RIII	Viewpoint location: from Clogheen to Blarney Road Viewpoint Coordinates (ITM): 563738.698;572799.310;118.769

Prepared By G-Net 3D

View 14. Proposed Phase 2 Development



Project Name: Ringwood LRD	Photo Date: 03.10.2023 Photo Time: 12:14 Camera: Sony a7RIII	Viewpoint location: from Clogheen to Blarney Road Viewpoint Coordinates (ITM): 563738.698;572799.310;118.769

Prepared By G-Net 3D

View 14. Proposed Phase 2 & Permitted Phase 1 Planning Ref No 2443031



Project Name: Ringwood LRD	Photo Date: 03.10.2023 Photo Time: 12:14 Camera: Sony a7RIII	Viewpoint location: from Clogheen to Blarney Road Viewpoint Coordinates (ITM): 563738.698;572799.310;118.769

Prepared By G-Net 3D

CHAPTER 14 APPENDICES

Appendix 14.1 Site Investigation Works, 2025

Element Materials Technology
Unit 3 Deeside Point
Zone 3
Deeside Industrial Park
Deeside
CH5 2UA

P: +44 (0) 1244 833780
F: +44 (0) 1244 833781
W: www.element.com

Ground Investigations Ireland
Catherinestown House
Hazelhatch Road
Newcastle
Co. Dublin
Ireland
D22 K5P8

Attention :	James Cashen
Date :	14th November, 2025
Your reference :	14975-09-25
Our reference :	Test Report 25/18288 Batch 1
Location :	Ringwood Phase 2
Date samples received :	3rd November, 2025
Status :	Final Report
Issue :	202511141054

Fourteen samples were received for analysis on 3rd November, 2025 of which fourteen were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

The greenhouse gas emissions generated (in Carbon – Co2e) to obtain the results in this report are estimated as:

Scope 1&2 emissions - 70.662 kg of CO2

Scope 1&2&3 emissions - 166.994 kg of CO2

Authorised By:

Bruce Leslie
Project Manager

Please include all sections of this report if it is reproduced

Client Name: Ground Investigations Ireland
Reference: 14975-09-25
Location: Ringwood Phase 2
Contact: James Cashen
EMT Job No: 25/18288

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

EMT Sample No.	1-4	5-8	9-12	13-16	17-20	21-24	25-28	29-32	33-36	37-40	LOD/LOR	Units	Method No.
Sample ID	TP163	TP163	TP165	TP165	TP167	TP167	TP169	TP169	TP171	TP171			
Depth	0.70	1.70	0.70	1.70	0.70	1.70	0.70	1.70	0.70	1.70			
COC No / misc													
Containers	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T			
Sample Date	<>	<>	<>	<>	<>	<>	<>	<>	<>	<>			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	03/11/2025	03/11/2025	03/11/2025	03/11/2025	03/11/2025	03/11/2025	03/11/2025	03/11/2025	03/11/2025	03/11/2025			
Antimony	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	mg/kg	TM30/PM15
Arsenic #	7.3	16.3	3.5	10.1	5.5	6.9	7.1	4.8	5.3	3.7	<0.5	mg/kg	TM30/PM15
Barium #	37	43	34	42	20	23	20	21	48	28	<1	mg/kg	TM30/PM15
Cadmium #	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	mg/kg	TM30/PM15
Chromium #	33.8	79.0	107.6	90.0	61.5	118.4	48.0	53.8	51.9	90.5	<0.5	mg/kg	TM30/PM15
Copper #	5	10	3	9	6	8	9	9	13	8	<1	mg/kg	TM30/PM15
Lead #	14	20	8	10	9	10	12	9	27	6	<5	mg/kg	TM30/PM15
Mercury #	0.1	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	<0.1	<0.1	mg/kg	TM30/PM15
Molybdenum #	1.7	4.9	7.4	5.7	3.4	8.0	2.1	2.4	2.5	5.0	<0.1	mg/kg	TM30/PM15
Nickel #	14.6	19.5	11.2	22.5	27.5	21.1	32.3	32.8	24.1	39.1	<0.7	mg/kg	TM30/PM15
Selenium #	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	mg/kg	TM30/PM15
Sulphur as S	-	-	-	-	<0.01	-	-	-	0.02	-	<0.01	%	TM30/PM15
Total Sulphate as SO4 BRE	-	-	-	-	<0.01	-	-	-	0.03	-	<0.01	%	TM50/PM29
Zinc #	21	29	15	35	52	33	60	55	69	69	<5	mg/kg	TM30/PM15
PAH MS													
Naphthalene #	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	mg/kg	TM4/PM8
Acenaphthylene	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.08	<0.03	<0.03	mg/kg	TM4/PM8
Acenaphthene #	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	mg/kg	TM4/PM8
Fluorene #	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	mg/kg	TM4/PM8
Phenanthrene #	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.33	<0.03	<0.03	mg/kg	TM4/PM8
Anthracene #	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	0.07	<0.04	<0.04	mg/kg	TM4/PM8
Fluoranthene #	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.78	<0.03	<0.03	mg/kg	TM4/PM8
Pyrene #	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.63	<0.03	<0.03	mg/kg	TM4/PM8
Benzo(a)anthracene #	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	0.32	<0.06	<0.06	mg/kg	TM4/PM8
Chrysene #	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.38	<0.02	<0.02	mg/kg	TM4/PM8
Benzo(bk)fluoranthene #	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	0.60	<0.07	<0.07	mg/kg	TM4/PM8
Benzo(a)pyrene #	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	0.33	<0.04	<0.04	mg/kg	TM4/PM8
Indeno(123cd)pyrene #	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	0.21	<0.04	<0.04	mg/kg	TM4/PM8
Dibenzo(ah)anthracene #	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	0.07	<0.04	<0.04	mg/kg	TM4/PM8
Benzo(ghi)perylene #	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	0.22	<0.04	<0.04	mg/kg	TM4/PM8
Coronene	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	mg/kg	TM4/PM8
PAH 6 Total #	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	2.14	<0.22	<0.22	mg/kg	TM4/PM8
PAH 17 Total	<0.64	<0.64	<0.64	<0.64	<0.64	<0.64	<0.64	<0.64	4.02	<0.64	<0.64	mg/kg	TM4/PM8
Benzo(b)fluoranthene	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.43	<0.05	<0.05	mg/kg	TM4/PM8
Benzo(k)fluoranthene	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.17	<0.02	<0.02	mg/kg	TM4/PM8
Benzo(j)fluoranthene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	mg/kg	TM4/PM8
PAH Surrogate % Recovery	97	100	94	92	96	91	93	97	96	96	<0	%	TM4/PM8
Mineral Oil (C10-C40) (EH_CU_1D_AL)	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	mg/kg	TM5/PM8/PM16

Please see attached notes for all abbreviations and acronyms

Client Name: Ground Investigations Ireland
Reference: 14975-09-25
Location: Ringwood Phase 2
Contact: James Cashen
EMT Job No: 25/18288

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

EMT Sample No.	1-4	5-8	9-12	13-16	17-20	21-24	25-28	29-32	33-36	37-40	LOD/LOR	Units	Method No.
Sample ID	TP163	TP163	TP165	TP165	TP167	TP167	TP169	TP169	TP171	TP171			
Depth	0.70	1.70	0.70	1.70	0.70	1.70	0.70	1.70	0.70	1.70			
COC No / misc													
Containers	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T			
Sample Date	<>	<>	<>	<>	<>	<>	<>	<>	<>	<>			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	03/11/2025	03/11/2025	03/11/2025	03/11/2025	03/11/2025	03/11/2025	03/11/2025	03/11/2025	03/11/2025	03/11/2025			
TPH CWG													
Aliphatics													
>C5-C6 (HS_1D_AL)#	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>C6-C8 (HS_1D_AL)#	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>C8-C10 (HS_1D_AL)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>C10-C12 (EH_CU_1D_AL)#	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	mg/kg	TM5/PM8/PM16
>C12-C16 (EH_CU_1D_AL)#	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	mg/kg	TM5/PM8/PM16
>C16-C21 (EH_CU_1D_AL)#	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	mg/kg	TM5/PM8/PM16
>C21-C35 (EH_CU_1D_AL)#	<7	<7	<7	<7	<7	<7	<7	<7	15	<7	<7	mg/kg	TM5/PM8/PM16
>C35-C40 (EH_CU_1D_AL)	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	mg/kg	TM5/PM8/PM16
Total aliphatics C5-40 (EH_CU+HS_1D_AL)	<26	<26	<26	<26	<26	<26	<26	<26	<26	<26	<26	mg/kg	TM5/TM36/PM8/PM12/PM16
>C6-C10 (HS_1D_AL)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>C10-C25 (EH_CU_1D_AL)	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	mg/kg	TM5/PM8/PM16
>C25-C35 (EH_CU_1D_AL)	<10	<10	<10	<10	<10	<10	<10	<10	15	<10	<10	mg/kg	TM5/PM8/PM16
Aromatics													
>C5-EC7 (HS_1D_AR)#	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>EC7-EC8 (HS_1D_AR)#	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>EC8-EC10 (HS_1D_AR)#	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>EC10-EC12 (EH_CU_1D_AR)#	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	mg/kg	TM5/PM8/PM16
>EC12-EC16 (EH_CU_1D_AR)#	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	mg/kg	TM5/PM8/PM16
>EC16-EC21 (EH_CU_1D_AR)#	<7	<7	<7	<7	<7	<7	<7	<7	11	<7	<7	mg/kg	TM5/PM8/PM16
>EC21-EC35 (EH_CU_1D_AR)#	<7	<7	<7	<7	<7	<7	<7	<7	51	<7	<7	mg/kg	TM5/PM8/PM16
>EC35-EC40 (EH_CU_1D_AR)	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	mg/kg	TM5/PM8/PM16
Total aromatics C5-40 (EH_CU+HS_1D_AR)	<26	<26	<26	<26	<26	<26	<26	<26	62	<26	<26	mg/kg	TM5/TM36/PM8/PM12/PM16
Total aliphatics and aromatics(C5-40) (EH_CU+HS_1D_Total)	<52	<52	<52	<52	<52	<52	<52	<52	62	<52	<52	mg/kg	TM5/TM36/PM8/PM12/PM16
>EC6-EC10 (HS_1D_AR)#	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>EC10-EC25 (EH_CU_1D_AR)	<10	<10	<10	<10	<10	<10	<10	<10	24	<10	<10	mg/kg	TM5/PM8/PM16
>EC25-EC35 (EH_CU_1D_AR)	<10	<10	<10	<10	<10	<10	<10	<10	38	<10	<10	mg/kg	TM5/PM8/PM16
MTBE#	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM36/PM12
Benzene#	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM36/PM12
Toluene#	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM36/PM12
Ethylbenzene#	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM36/PM12
m/p-Xylene#	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM36/PM12
o-Xylene#	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM36/PM12
PCB 28#	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM17/PM8
PCB 52#	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM17/PM8
PCB 101#	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM17/PM8
PCB 118#	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM17/PM8
PCB 138#	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM17/PM8
PCB 153#	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM17/PM8
PCB 180#	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM17/PM8
Total 7 PCBs#	<35	<35	<35	<35	<35	<35	<35	<35	<35	<35	<35	ug/kg	TM17/PM8

Please see attached notes for all abbreviations and acronyms

Element Materials Technology

Client Name: Ground Investigations Ireland
Reference: 14975-09-25
Location: Ringwood Phase 2
Contact: James Cashen
EMT Job No: 25/18288

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

EMT Sample No.	1-4	5-8	9-12	13-16	17-20	21-24	25-28	29-32	33-36	37-40	LOD/LOR	Units	Method No.
Sample ID	TP163	TP163	TP165	TP165	TP167	TP167	TP169	TP169	TP171	TP171			
Depth	0.70	1.70	0.70	1.70	0.70	1.70	0.70	1.70	0.70	1.70			
COC No / misc													
Containers	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T			
Sample Date	<>	<>	<>	<>	<>	<>	<>	<>	<>	<>			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	03/11/2025	03/11/2025	03/11/2025	03/11/2025	03/11/2025	03/11/2025	03/11/2025	03/11/2025	03/11/2025	03/11/2025			
Natural Moisture Content	13.6	12.0	12.7	11.8	9.7	10.2	12.1	9.8	14.9	10.8	<0.1	%	PM4/PM0
Moisture Content (% Wet Weight)	12.0	10.7	11.3	10.6	8.8	9.3	10.8	8.9	13.0	9.7	<0.1	%	PM4/PM0
Hexavalent Chromium #	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	mg/kg	TM38/PM20
Sulphate as SO4 (2:1 Ext) #	-	-	-	-	<0.0015	-	-	-	0.0279	-	<0.0015	g/l	TM38/PM20
Chromium III	33.8	79.0	107.6	90.0	61.5	118.4	48.0	53.8	51.9	90.5	<0.5	mg/kg	NONE/NONE
Total Organic Carbon #	0.16	0.09	0.24	0.09	0.19	0.08	0.27	0.18	1.21	0.28	<0.02	%	TM21/PM24
pH #	7.36	7.38	5.84	6.90	7.24	6.91	6.93	6.67	7.91	6.71	<0.01	pH units	TM73/PM11

Please see attached notes for all abbreviations and acronyms

Client Name: Ground Investigations Ireland
Reference: 14975-09-25
Location: Ringwood Phase 2
Contact: James Cashen
EMT Job No: 25/18288

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

Please see attached notes for all abbreviations and acronyms

EMT Sample No.	41-44	45-48	49-52	53-56							LOD/LOR	Units	Method No.
Sample ID	TP173	TP174	TP176	TP176									
Depth	0.70	0.70	0.70	1.70									
COC No / misc													
Containers	V J T	V J T	V J T	V J T									
Sample Date	<>	<>	<>	<>									
Sample Type	Soil	Soil	Soil	Soil									
Batch Number	1	1	1	1									
Date of Receipt	03/11/2025	03/11/2025	03/11/2025	03/11/2025									
Antimony	1	<1	1	<1							<1	mg/kg	TM30/PM15
Arsenic #	20.7	4.5	3.3	5.0							<0.5	mg/kg	TM30/PM15
Barium #	54	32	33	16							<1	mg/kg	TM30/PM15
Cadmium #	<0.3	<0.3	<0.3	<0.3							<0.3	mg/kg	TM30/PM15
Chromium #	91.4	73.7	78.2	51.3							<0.5	mg/kg	TM30/PM15
Copper #	12	11	18	18							<1	mg/kg	TM30/PM15
Lead #	19	9	<5	6							<5	mg/kg	TM30/PM15
Mercury #	0.1	<0.1	<0.1	0.1							<0.1	mg/kg	TM30/PM15
Molybdenum #	5.0	3.5	3.6	1.8							<0.1	mg/kg	TM30/PM15
Nickel #	26.0	37.0	44.4	37.1							<0.7	mg/kg	TM30/PM15
Selenium #	<1	<1	<1	<1							<1	mg/kg	TM30/PM15
Sulphur as S	-	-	-	<0.01							<0.01	%	TM30/PM15
Total Sulphate as SO4 BRE	-	-	-	<0.01							<0.01	%	TM50/PM29
Zinc #	66	77	68	58							<5	mg/kg	TM30/PM15
PAH MS													
Naphthalene #	<0.04	<0.04	<0.04	<0.04							<0.04	mg/kg	TM4/PM8
Acenaphthylene	<0.03	<0.03	<0.03	<0.03							<0.03	mg/kg	TM4/PM8
Acenaphthene #	<0.05	<0.05	<0.05	<0.05							<0.05	mg/kg	TM4/PM8
Fluorene #	<0.04	<0.04	<0.04	<0.04							<0.04	mg/kg	TM4/PM8
Phenanthrene #	0.06	<0.03	<0.03	<0.03							<0.03	mg/kg	TM4/PM8
Anthracene #	<0.04	<0.04	<0.04	<0.04							<0.04	mg/kg	TM4/PM8
Fluoranthene #	0.15	0.04	<0.03	<0.03							<0.03	mg/kg	TM4/PM8
Pyrene #	0.12	0.04	<0.03	<0.03							<0.03	mg/kg	TM4/PM8
Benzo(a)anthracene #	0.09	<0.06	<0.06	<0.06							<0.06	mg/kg	TM4/PM8
Chrysene #	0.09	0.03	<0.02	<0.02							<0.02	mg/kg	TM4/PM8
Benzo(bk)fluoranthene #	0.14	<0.07	<0.07	<0.07							<0.07	mg/kg	TM4/PM8
Benzo(a)pyrene #	0.08	<0.04	<0.04	<0.04							<0.04	mg/kg	TM4/PM8
Indeno(123cd)pyrene #	0.06	<0.04	<0.04	<0.04							<0.04	mg/kg	TM4/PM8
Dibenzo(ah)anthracene #	<0.04	<0.04	<0.04	<0.04							<0.04	mg/kg	TM4/PM8
Benzo(ghi)perylene #	0.05	<0.04	<0.04	<0.04							<0.04	mg/kg	TM4/PM8
Coronene	<0.04	<0.04	<0.04	<0.04							<0.04	mg/kg	TM4/PM8
PAH 6 Total #	0.48	<0.22	<0.22	<0.22							<0.22	mg/kg	TM4/PM8
PAH 17 Total	0.84	<0.64	<0.64	<0.64							<0.64	mg/kg	TM4/PM8
Benzo(b)fluoranthene	0.10	<0.05	<0.05	<0.05							<0.05	mg/kg	TM4/PM8
Benzo(k)fluoranthene	0.04	<0.02	<0.02	<0.02							<0.02	mg/kg	TM4/PM8
Benzo(j)fluoranthene	<1	<1	<1	<1							<1	mg/kg	TM4/PM8
PAH Surrogate % Recovery	94	96	95	96							<0	%	TM4/PM8
Mineral Oil (C10-C40) (EH_CU_1D_AL)	<30	<30	<30	<30							<30	mg/kg	TM5/PM8/PM16

Client Name: Ground Investigations Ireland
Reference: 14975-09-25
Location: Ringwood Phase 2
Contact: James Cashen
EMT Job No: 25/18288

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

EMT Sample No.	41-44	45-48	49-52	53-56							LOD/LOR	Units	Method No.
Sample ID	TP173	TP174	TP176	TP176									
Depth	0.70	0.70	0.70	1.70									
COC No / misc													
Containers	V J T	V J T	V J T	V J T									
Sample Date	<>	<>	<>	<>									
Sample Type	Soil	Soil	Soil	Soil									
Batch Number	1	1	1	1									
Date of Receipt	03/11/2025	03/11/2025	03/11/2025	03/11/2025									
TPH CWG													
Aliphatics													
>C5-C6 (HS_1D_AL)#	<0.1	<0.1	<0.1	<0.1							<0.1	mg/kg	TM36/PM12
>C6-C8 (HS_1D_AL)#	<0.1	<0.1	<0.1	<0.1							<0.1	mg/kg	TM36/PM12
>C8-C10 (HS_1D_AL)	<0.1	<0.1	<0.1	<0.1							<0.1	mg/kg	TM36/PM12
>C10-C12 (EH_CU_1D_AL)#	<0.2	<0.2	<0.2	<0.2							<0.2	mg/kg	TM5/PM8/PM16
>C12-C16 (EH_CU_1D_AL)#	<4	<4	<4	<4							<4	mg/kg	TM5/PM8/PM16
>C16-C21 (EH_CU_1D_AL)#	<7	<7	<7	<7							<7	mg/kg	TM5/PM8/PM16
>C21-C35 (EH_CU_1D_AL)#	<7	<7	<7	<7							<7	mg/kg	TM5/PM8/PM16
>C35-C40 (EH_CU_1D_AL)	<7	<7	<7	<7							<7	mg/kg	TM5/PM8/PM16
Total aliphatics C5-40 (EH_CU+HS_1D_AL)	<26	<26	<26	<26							<26	mg/kg	TM5/TM36/PM8/PM12/PM16
>C6-C10 (HS_1D_AL)	<0.1	<0.1	<0.1	<0.1							<0.1	mg/kg	TM36/PM12
>C10-C25 (EH_CU_1D_AL)	<10	<10	<10	<10							<10	mg/kg	TM5/PM8/PM16
>C25-C35 (EH_CU_1D_AL)	<10	<10	<10	<10							<10	mg/kg	TM5/PM8/PM16
Aromatics													
>C5-EC7 (HS_1D_AR)#	<0.1	<0.1	<0.1	<0.1							<0.1	mg/kg	TM36/PM12
>EC7-EC8 (HS_1D_AR)#	<0.1	<0.1	<0.1	<0.1							<0.1	mg/kg	TM36/PM12
>EC8-EC10 (HS_1D_AR)#	<0.1	<0.1	<0.1	<0.1							<0.1	mg/kg	TM36/PM12
>EC10-EC12 (EH_CU_1D_AR)#	<0.2	<0.2	<0.2	<0.2							<0.2	mg/kg	TM5/PM8/PM16
>EC12-EC16 (EH_CU_1D_AR)#	<4	<4	<4	<4							<4	mg/kg	TM5/PM8/PM16
>EC16-EC21 (EH_CU_1D_AR)#	<7	<7	<7	<7							<7	mg/kg	TM5/PM8/PM16
>EC21-EC35 (EH_CU_1D_AR)#	<7	<7	<7	<7							<7	mg/kg	TM5/PM8/PM16
>EC35-EC40 (EH_CU_1D_AR)	<7	<7	<7	<7							<7	mg/kg	TM5/PM8/PM16
Total aromatics C5-40 (EH_CU+HS_1D_AR)	<26	<26	<26	<26							<26	mg/kg	TM5/TM36/PM8/PM12/PM16
Total aliphatics and aromatics(C5-40) (EH_CU+HS_1D_Total)	<52	<52	<52	<52							<52	mg/kg	TM5/TM36/PM8/PM12/PM16
>EC6-EC10 (HS_1D_AR)#	<0.1	<0.1	<0.1	<0.1							<0.1	mg/kg	TM36/PM12
>EC10-EC25 (EH_CU_1D_AR)	<10	<10	<10	<10							<10	mg/kg	TM5/PM8/PM16
>EC25-EC35 (EH_CU_1D_AR)	<10	<10	<10	<10							<10	mg/kg	TM5/PM8/PM16
MTBE#	<5	<5	<5	<5							<5	ug/kg	TM36/PM12
Benzene#	<5	<5	<5	<5							<5	ug/kg	TM36/PM12
Toluene#	<5	<5	<5	<5							<5	ug/kg	TM36/PM12
Ethylbenzene#	<5	<5	<5	<5							<5	ug/kg	TM36/PM12
m/p-Xylene#	<5	<5	<5	<5							<5	ug/kg	TM36/PM12
o-Xylene#	<5	<5	<5	<5							<5	ug/kg	TM36/PM12
PCB 28#	<5	<5	<5	<5							<5	ug/kg	TM17/PM8
PCB 52#	<5	<5	<5	<5							<5	ug/kg	TM17/PM8
PCB 101#	<5	<5	<5	<5							<5	ug/kg	TM17/PM8
PCB 118#	<5	<5	<5	<5							<5	ug/kg	TM17/PM8
PCB 138#	<5	<5	<5	<5							<5	ug/kg	TM17/PM8
PCB 153#	<5	<5	<5	<5							<5	ug/kg	TM17/PM8
PCB 180#	<5	<5	<5	<5							<5	ug/kg	TM17/PM8
Total 7 PCBs#	<35	<35	<35	<35							<35	ug/kg	TM17/PM8

Please see attached notes for all abbreviations and acronyms

Element Materials Technology

Client Name: Ground Investigations Ireland
Reference: 14975-09-25
Location: Ringwood Phase 2
Contact: James Cashen
EMT Job No: 25/18288

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

EMT Sample No.	41-44	45-48	49-52	53-56							LOD/LOR	Units	Method No.
Sample ID	TP173	TP174	TP176	TP176									
Depth	0.70	0.70	0.70	1.70									
COC No / misc													
Containers	V J T	V J T	V J T	V J T									
Sample Date	<>	<>	<>	<>									
Sample Type	Soil	Soil	Soil	Soil									
Batch Number	1	1	1	1									
Date of Receipt	03/11/2025	03/11/2025	03/11/2025	03/11/2025									
Natural Moisture Content	13.5	9.6	6.2	7.1							<0.1	%	PM4/PM0
Moisture Content (% Wet Weight)	11.9	8.7	5.8	6.6							<0.1	%	PM4/PM0
Hexavalent Chromium #	<0.3	<0.3	<0.3	<0.3							<0.3	mg/kg	TM38/PM20
Sulphate as SO4 (2:1 Ext) #	-	-	-	0.0032							<0.0015	g/l	TM38/PM20
Chromium III	91.4	73.7	78.2	51.3							<0.5	mg/kg	NONE/NONE
Total Organic Carbon #	0.40	0.15	0.18	0.10							<0.02	%	TM21/PM24
pH #	8.15	7.41	6.19	6.62							<0.01	pH units	TM73/PM11

Please see attached notes for all abbreviations and acronyms

Client Name: Ground Investigations Ireland
Reference: 14975-09-25
Location: Ringwood Phase 2
Contact: James Cashen
EMT Job No: 25/18288

Report : CEN 10:1 1 Batch

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

EMT Sample No.	1-4	5-8	9-12	13-16	17-20	21-24	25-28	29-32	33-36	37-40	LOD/LOR	Units	Method No.
Sample ID	TP163	TP163	TP165	TP165	TP167	TP167	TP169	TP169	TP171	TP171			
Depth	0.70	1.70	0.70	1.70	0.70	1.70	0.70	1.70	0.70	1.70			
COC No / misc													
Containers	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T			
Sample Date	<>	<>	<>	<>	<>	<>	<>	<>	<>	<>			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	03/11/2025	03/11/2025	03/11/2025	03/11/2025	03/11/2025	03/11/2025	03/11/2025	03/11/2025	03/11/2025	03/11/2025			
Dissolved Antimony #	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	mg/l	TM30/PM17
Dissolved Antimony (A10) #	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	mg/kg	TM30/PM17
Dissolved Arsenic #	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	mg/l	TM30/PM17
Dissolved Arsenic (A10) #	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	mg/kg	TM30/PM17
Dissolved Barium #	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	mg/l	TM30/PM17
Dissolved Barium (A10) #	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	mg/kg	TM30/PM17
Dissolved Cadmium #	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	mg/l	TM30/PM17
Dissolved Cadmium (A10) #	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	mg/kg	TM30/PM17
Dissolved Chromium #	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	mg/l	TM30/PM17
Dissolved Chromium (A10) #	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	mg/kg	TM30/PM17
Dissolved Copper #	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	mg/l	TM30/PM17
Dissolved Copper (A10) #	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	mg/kg	TM30/PM17
Dissolved Lead #	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	mg/l	TM30/PM17
Dissolved Lead (A10) #	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	mg/kg	TM30/PM17
Dissolved Molybdenum #	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	mg/l	TM30/PM17
Dissolved Molybdenum (A10) #	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	mg/kg	TM30/PM17
Dissolved Nickel #	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	mg/l	TM30/PM17
Dissolved Nickel (A10) #	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	mg/kg	TM30/PM17
Dissolved Selenium #	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	mg/l	TM30/PM17
Dissolved Selenium (A10) #	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	mg/kg	TM30/PM17
Dissolved Zinc #	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	mg/l	TM30/PM17
Dissolved Zinc (A10) #	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	mg/kg	TM30/PM17
Mercury Dissolved by CVAF #	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	mg/l	TM61/PM0
Mercury Dissolved by CVAF #	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	mg/kg	TM61/PM0
Phenol	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/l	TM26/PM0
Phenol	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM26/PM0
Fluoride	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	mg/l	TM173/PM0
Fluoride	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	mg/kg	TM173/PM0
Sulphate as SO4 #	<0.5	0.6	<0.5	0.7	<0.5	<0.5	<0.5	<0.5	7.4	1.9	<0.5	mg/l	TM38/PM0
Sulphate as SO4 #	<5	6	<5	7	<5	<5	<5	<5	74	19	<5	mg/kg	TM38/PM0
Mass of raw test portion	0.1038	0.1013	0.1027	0.103	0.0997	0.0981	0.1023	0.1006	0.1063	0.1011		kg	NONE/PM17
Chloride #	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	0.5	0.4	<0.3	mg/l	TM38/PM0
Chloride #	<3	<3	<3	<3	<3	<3	<3	<3	5	4	<3	mg/kg	TM38/PM0
Mass of dried test portion	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09		kg	NONE/PM17
Dissolved Organic Carbon	3	<2	<2	<2	4	2	3	2	7	3	<2	mg/l	TM60/PM0
Dissolved Organic Carbon	30	<20	<20	<20	40	<20	30	20	70	30	<20	mg/kg	TM60/PM0
pH	7.34	6.89	6.59	6.62	6.57	6.53	6.51	6.14	7.72	7.44	<0.01	pH units	TM73/PM0

Please see attached notes for all abbreviations and acronyms

Element Materials Technology

Client Name: Ground Investigations Ireland
Reference: 14975-09-25
Location: Ringwood Phase 2
Contact: James Cashen
EMT Job No: 25/18288

Report : CEN 10:1 1 Batch

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

EMT Sample No.	1-4	5-8	9-12	13-16	17-20	21-24	25-28	29-32	33-36	37-40	LOD/LOR	Units	Method No.
Sample ID	TP163	TP163	TP165	TP165	TP167	TP167	TP169	TP169	TP171	TP171			
Depth	0.70	1.70	0.70	1.70	0.70	1.70	0.70	1.70	0.70	1.70			
COC No / misc													
Containers	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T			
Sample Date	<>	<>	<>	<>	<>	<>	<>	<>	<>	<>			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	03/11/2025	03/11/2025	03/11/2025	03/11/2025	03/11/2025	03/11/2025	03/11/2025	03/11/2025	03/11/2025	03/11/2025			
Total Dissolved Solids #	<35	<35	<35	<35	<35	<35	<35	<35	103	<35	<35	mg/l	TM20/PM0
Total Dissolved Solids #	<350	<350	<350	<350	<350	<350	<350	<350	1031	<350	<350	mg/kg	TM20/PM0

Please see attached notes for all abbreviations and acronyms

Please include all sections of this report if it is reproduced
All solid results are expressed on a dry weight basis unless stated otherwise.

Client Name: Ground Investigations Ireland
Reference: 14975-09-25
Location: Ringwood Phase 2
Contact: James Cashen
EMT Job No: 25/18288

Report : CEN 10:1 1 Batch

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

EMT Sample No.	41-44	45-48	49-52	53-56							LOD/LOR	Units	Method No.
Sample ID	TP173	TP174	TP176	TP176									
Depth	0.70	0.70	0.70	1.70									
COC No / misc													
Containers	V J T	V J T	V J T	V J T									
Sample Date	<>	<>	<>	<>									
Sample Type	Soil	Soil	Soil	Soil									
Batch Number	1	1	1	1									
Date of Receipt	03/11/2025	03/11/2025	03/11/2025	03/11/2025									
Dissolved Antimony #	<0.002	<0.002	<0.002	<0.002							<0.002	mg/l	TM30/PM17
Dissolved Antimony (A10) #	<0.02	<0.02	<0.02	<0.02							<0.02	mg/kg	TM30/PM17
Dissolved Arsenic #	0.0295	<0.0025	<0.0025	<0.0025							<0.0025	mg/l	TM30/PM17
Dissolved Arsenic (A10) #	0.295	<0.025	<0.025	<0.025							<0.025	mg/kg	TM30/PM17
Dissolved Barium #	<0.003	<0.003	<0.003	<0.003							<0.003	mg/l	TM30/PM17
Dissolved Barium (A10) #	<0.03	<0.03	<0.03	<0.03							<0.03	mg/kg	TM30/PM17
Dissolved Cadmium #	<0.0005	<0.0005	<0.0005	<0.0005							<0.0005	mg/l	TM30/PM17
Dissolved Cadmium (A10) #	<0.005	<0.005	<0.005	<0.005							<0.005	mg/kg	TM30/PM17
Dissolved Chromium #	<0.0015	<0.0015	<0.0015	<0.0015							<0.0015	mg/l	TM30/PM17
Dissolved Chromium (A10) #	<0.015	<0.015	<0.015	<0.015							<0.015	mg/kg	TM30/PM17
Dissolved Copper #	<0.007	<0.007	<0.007	<0.007							<0.007	mg/l	TM30/PM17
Dissolved Copper (A10) #	<0.07	<0.07	<0.07	<0.07							<0.07	mg/kg	TM30/PM17
Dissolved Lead #	<0.005	<0.005	<0.005	<0.005							<0.005	mg/l	TM30/PM17
Dissolved Lead (A10) #	<0.05	<0.05	<0.05	<0.05							<0.05	mg/kg	TM30/PM17
Dissolved Molybdenum #	<0.002	<0.002	<0.002	<0.002							<0.002	mg/l	TM30/PM17
Dissolved Molybdenum (A10) #	<0.02	<0.02	<0.02	<0.02							<0.02	mg/kg	TM30/PM17
Dissolved Nickel #	<0.002	<0.002	<0.002	<0.002							<0.002	mg/l	TM30/PM17
Dissolved Nickel (A10) #	<0.02	<0.02	<0.02	<0.02							<0.02	mg/kg	TM30/PM17
Dissolved Selenium #	<0.003	<0.003	<0.003	<0.003							<0.003	mg/l	TM30/PM17
Dissolved Selenium (A10) #	<0.03	<0.03	<0.03	<0.03							<0.03	mg/kg	TM30/PM17
Dissolved Zinc #	<0.003	<0.003	0.003	0.005							<0.003	mg/l	TM30/PM17
Dissolved Zinc (A10) #	<0.03	<0.03	<0.03	0.05							<0.03	mg/kg	TM30/PM17
Mercury Dissolved by CVAF #	<0.00001	<0.00001	<0.00001	<0.00001							<0.00001	mg/l	TM61/PM0
Mercury Dissolved by CVAF #	<0.0001	<0.0001	<0.0001	<0.0001							<0.0001	mg/kg	TM61/PM0
Phenol	<0.01	<0.01	<0.01	<0.01							<0.01	mg/l	TM26/PM0
Phenol	<0.1	<0.1	<0.1	<0.1							<0.1	mg/kg	TM26/PM0
Fluoride	0.4	<0.3	<0.3	<0.3							<0.3	mg/l	TM173/PM0
Fluoride	4	<3	<3	<3							<3	mg/kg	TM173/PM0
Sulphate as SO4 #	<0.5	<0.5	<0.5	<0.5							<0.5	mg/l	TM38/PM0
Sulphate as SO4 #	<5	<5	<5	<5							<5	mg/kg	TM38/PM0
Mass of raw test portion	0.1036	0.1002	0.1022	0.0981								kg	NONE/PM17
Chloride #	<0.3	<0.3	<0.3	<0.3							<0.3	mg/l	TM38/PM0
Chloride #	<3	<3	<3	<3							<3	mg/kg	TM38/PM0
Mass of dried test portion	0.09	0.09	0.09	0.09								kg	NONE/PM17
Dissolved Organic Carbon	<2	<2	4	3							<2	mg/l	TM60/PM0
Dissolved Organic Carbon	<20	<20	40	30							<20	mg/kg	TM60/PM0
pH	7.70	7.41	7.31	6.54							<0.01	pH units	TM73/PM0

Please see attached notes for all abbreviations and acronyms

Element Materials Technology

Client Name: Ground Investigations Ireland
Reference: 14975-09-25
Location: Ringwood Phase 2
Contact: James Cashen
EMT Job No: 25/18288

Report : CEN 10:1 1 Batch

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

EMT Sample No.	41-44	45-48	49-52	53-56							LOD/LOR	Units	Method No.
Sample ID	TP173	TP174	TP176	TP176									
Depth	0.70	0.70	0.70	1.70									
COC No / misc													
Containers	V J T	V J T	V J T	V J T									
Sample Date	<>	<>	<>	<>									
Sample Type	Soil	Soil	Soil	Soil									
Batch Number	1	1	1	1									
Date of Receipt	03/11/2025	03/11/2025	03/11/2025	03/11/2025									
Total Dissolved Solids #	<35	<35	<35	<35							<35	mg/l	TM20/PM0
Total Dissolved Solids #	<350	<350	<350	<350							<350	mg/kg	TM20/PM0

Please see attached notes for all abbreviations and acronyms

Please include all sections of this report if it is reproduced

All solid results are expressed on a dry weight basis unless stated otherwise.

Element Materials Technology

Client Name: Ground Investigations Ireland
Reference: 14975-09-25
Location: Ringwood Phase 2
Contact: James Cashen
EMT Job No: 25/18288

Report : EN12457_2

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

Please see attached notes for all abbreviations and acronyms

Unable to perform guideline check. Limits of detection have been raised. This could be due to insufficient sample, dilution or matrix effect.

EMT Sample No.	1-4	5-8	9-12	13-16	17-20	21-24	25-28	29-32	33-36	37-40						
Sample ID	TP163	TP163	TP165	TP165	TP167	TP167	TP169	TP169	TP171	TP171						
Depth	0.70	1.70	0.70	1.70	0.70	1.70	0.70	1.70	0.70	1.70						
COC No / misc																
Containers	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T						
Sample Date	<>	<>	<>	<>	<>	<>	<>	<>	<>	<>						
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil						
Batch Number	1	1	1	1	1	1	1	1	1	1						
Date of Receipt	03/11/2025	03/11/2025	03/11/2025	03/11/2025	03/11/2025	03/11/2025	03/11/2025	03/11/2025	03/11/2025	03/11/2025	Inert	Stable Non-reactive	Hazardous	LOD LOR	Units	Method No.
Solid Waste Analysis																
Total Organic Carbon #	0.16	0.09	0.24	0.09	0.19	0.08	0.27	0.18	1.21	0.28	3	5	6	<0.02	%	TM21/PM24
Sum of BTEX	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	6	-	-	<0.025	mg/kg	TM36/PM12
Sum of 7 PCBs #	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	1	-	-	<0.035	mg/kg	TM17/PM8
Mineral Oil	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	500	-	-	<30	mg/kg	TM5/PM8/PM16
PAH Sum of 6 #	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	2.14	<0.22	-	-	-	<0.22	mg/kg	TM4/PM8
PAH Sum of 17	<0.64	<0.64	<0.64	<0.64	<0.64	<0.64	<0.64	<0.64	4.02	<0.64	100	-	-	<0.64	mg/kg	TM4/PM8
CEN 10:1 Leachate																
Arsenic #	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	0.5	2	25	<0.025	mg/kg	TM30/PM17
Barium #	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	20	100	300	<0.03	mg/kg	TM30/PM17
Cadmium #	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.04	1	5	<0.005	mg/kg	TM30/PM17
Chromium #	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	0.5	10	70	<0.015	mg/kg	TM30/PM17
Copper #	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	2	50	100	<0.07	mg/kg	TM30/PM17
Mercury #	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.01	0.2	2	<0.0001	mg/kg	TM61/PM0
Molybdenum #	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.5	10	30	<0.02	mg/kg	TM30/PM17
Nickel #	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.4	10	40	<0.02	mg/kg	TM30/PM17
Lead #	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.5	10	50	<0.05	mg/kg	TM30/PM17
Antimony #	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.06	0.7	5	<0.02	mg/kg	TM30/PM17
Selenium #	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.1	0.5	7	<0.03	mg/kg	TM30/PM17
Zinc #	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	4	50	200	<0.03	mg/kg	TM30/PM17
Total Dissolved Solids #	<350	<350	<350	<350	<350	<350	<350	<350	1031	<350	4000	60000	100000	<350	mg/kg	TM20/PM0
Dissolved Organic Carbon	30	<20	<20	<20	40	<20	30	20	70	30	500	800	1000	<20	mg/kg	TM60/PM0
Mass of raw test portion	0.1038	0.1013	0.1027	0.103	0.0997	0.0981	0.1023	0.1006	0.1063	0.1011	-	-	-		kg	NONE/PM17
Dry Matter Content Ratio	86.9	88.6	87.7	87.2	90.6	92.2	88.2	89.0	84.5	88.6	-	-	-	<0.1	%	NONE/PM4
Leachant Volume	0.887	0.888	0.887	0.887	0.891	0.892	0.888	0.889	0.884	0.888	-	-	-		l	NONE/PM17
Moisture Content 105C (% Dry Weight)	15.0	12.9	14.1	14.7	10.4	8.5	13.4	12.4	18.3	12.8	-	-	-	<0.1	%	PM4/PM0
pH #	7.36	7.38	5.84	6.90	7.24	6.91	6.93	6.67	7.91	6.71	-	-	-	<0.01	pH units	TM73/PM11
Phenol	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	1	-	-	<0.1	mg/kg	TM26/PM0
Fluoride	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	10	150	500	<3	mg/kg	TM173/PM0
Sulphate as SO4 #	<5	6	<5	7	<5	<5	<5	<5	74	19	1000	20000	50000	<5	mg/kg	TM38/PM0
Chloride #	<3	<3	<3	<3	<3	<3	<3	<3	5	4	800	15000	25000	<3	mg/kg	TM38/PM0

Element Materials Technology

Client Name: Ground Investigations Ireland
Reference: 14975-09-25
Location: Ringwood Phase 2
Contact: James Cashen
EMT Job No: 25/18288

Report : EN12457_2

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

Please see attached notes for all abbreviations and acronyms

Unable to perform guideline check. Limits of detection have been raised. This could be due to insufficient sample, dilution or matrix effect.

EMT Sample No.	41-44	45-48	49-52	53-56							Inert	Stable Non-reactive	Hazardous	LOD LOR	Units	Method No.
Sample ID	TP173	TP174	TP176	TP176												
Depth	0.70	0.70	0.70	1.70												
COC No / misc																
Containers	V J T	V J T	V J T	V J T												
Sample Date	<>	<>	<>	<>												
Sample Type	Soil	Soil	Soil	Soil												
Batch Number	1	1	1	1												
Date of Receipt	03/11/2025	03/11/2025	03/11/2025	03/11/2025												
Solid Waste Analysis																
Total Organic Carbon #	0.40	0.15	0.18	0.10							3	5	6	<0.02	%	TM21/PM24
Sum of BTEX	<0.025	<0.025	<0.025	<0.025							6	-	-	<0.025	mg/kg	TM36/PM12
Sum of 7 PCBs #	<0.035	<0.035	<0.035	<0.035							1	-	-	<0.035	mg/kg	TM17/PM8
Mineral Oil	<30	<30	<30	<30							500	-	-	<30	mg/kg	TM5/PM8/PM16
PAH Sum of 6 #	0.48	<0.22	<0.22	<0.22							-	-	-	<0.22	mg/kg	TM4/PM8
PAH Sum of 17	0.84	<0.64	<0.64	<0.64							100	-	-	<0.64	mg/kg	TM4/PM8
CEN 10:1 Leachate																
Arsenic #	0.295	<0.025	<0.025	<0.025							0.5	2	25	<0.025	mg/kg	TM30/PM17
Barium #	<0.03	<0.03	<0.03	<0.03							20	100	300	<0.03	mg/kg	TM30/PM17
Cadmium #	<0.005	<0.005	<0.005	<0.005							0.04	1	5	<0.005	mg/kg	TM30/PM17
Chromium #	<0.015	<0.015	<0.015	<0.015							0.5	10	70	<0.015	mg/kg	TM30/PM17
Copper #	<0.07	<0.07	<0.07	<0.07							2	50	100	<0.07	mg/kg	TM30/PM17
Mercury #	<0.0001	<0.0001	<0.0001	<0.0001							0.01	0.2	2	<0.0001	mg/kg	TM61/PM0
Molybdenum #	<0.02	<0.02	<0.02	<0.02							0.5	10	30	<0.02	mg/kg	TM30/PM17
Nickel #	<0.02	<0.02	<0.02	<0.02							0.4	10	40	<0.02	mg/kg	TM30/PM17
Lead #	<0.05	<0.05	<0.05	<0.05							0.5	10	50	<0.05	mg/kg	TM30/PM17
Antimony #	<0.02	<0.02	<0.02	<0.02							0.06	0.7	5	<0.02	mg/kg	TM30/PM17
Selenium #	<0.03	<0.03	<0.03	<0.03							0.1	0.5	7	<0.03	mg/kg	TM30/PM17
Zinc #	<0.03	<0.03	<0.03	0.05							4	50	200	<0.03	mg/kg	TM30/PM17
Total Dissolved Solids #	<350	<350	<350	<350							4000	60000	100000	<350	mg/kg	TM20/PM0
Dissolved Organic Carbon	<20	<20	40	30							500	800	1000	<20	mg/kg	TM60/PM0
Mass of raw test portion	0.1036	0.1002	0.1022	0.0981							-	-	-		kg	NONE/PM17
Dry Matter Content Ratio	86.7	89.6	87.8	92.0							-	-	-	<0.1	%	NONE/PM4
Leachant Volume	0.886	0.89	0.887	0.892							-	-	-		l	NONE/PM17
Moisture Content 105C (% Dry Weight)	15.3	11.6	13.9	8.7							-	-	-	<0.1	%	PM4/PM0
pH #	8.15	7.41	6.19	6.62							-	-	-	<0.01	pH units	TM73/PM11
Phenol	<0.1	<0.1	<0.1	<0.1							1	-	-	<0.1	mg/kg	TM26/PM0
Fluoride	4	<3	<3	<3							10	150	500	<3	mg/kg	TM173/PM0
Sulphate as SO4 #	<5	<5	<5	<5							1000	20000	50000	<5	mg/kg	TM38/PM0
Chloride #	<3	<3	<3	<3							800	15000	25000	<3	mg/kg	TM38/PM0

Client Name: Ground Investigations Ireland

Reference: 14975-09-25

Location: Ringwood Phase 2

Contact: James Cashen

Matrix : Solid

EMT Job No.	Batch	Sample ID	Depth	EMT Sample No.	EPH Interpretation
25/18288	1	TP163	0.70	1-4	No interpretation possible
25/18288	1	TP163	1.70	5-8	No interpretation possible
25/18288	1	TP165	0.70	9-12	No interpretation possible
25/18288	1	TP165	1.70	13-16	No interpretation possible
25/18288	1	TP167	0.70	17-20	No interpretation possible
25/18288	1	TP167	1.70	21-24	No interpretation possible
25/18288	1	TP169	0.70	25-28	No interpretation possible
25/18288	1	TP169	1.70	29-32	No interpretation possible
25/18288	1	TP171	0.70	33-36	Possible lubricating oils & possible PAH's
25/18288	1	TP171	1.70	37-40	No interpretation possible
25/18288	1	TP173	0.70	41-44	No interpretation possible
25/18288	1	TP174	0.70	45-48	No interpretation possible
25/18288	1	TP176	0.70	49-52	No interpretation possible
25/18288	1	TP176	1.70	53-56	No interpretation possible

Client Name: Ground Investigations Ireland
Reference: 14975-09-25
Location: Ringwood Phase 2
Contact: James Cashen

Note:

Asbestos Screen analysis is carried out in accordance with our documented in-house methods PM042 and TM065 and HSG 248 by Stereo and Polarised Light Microscopy using Dispersion Staining Techniques and is covered by our UKAS accreditation. Detailed Gravimetric Quantification and PCOM Fibre Analysis is carried out in accordance with our documented in-house methods PM042 and TM131 and HSG 248 using Stereo and Polarised Light Microscopy and Phase Contrast Optical Microscopy (PCOM). Asbestos sub-samples are retained for not less than 6 months from the date of analysis unless specifically requested.

The LOQ of the Asbestos Quantification is 0.001% dry fibre of dry mass of sample.

Where the sample is not taken by a Element Materials Technology consultant, Element Materials Technology cannot be responsible for inaccurate or unrepresentative sampling.

EMT Job No.	Batch	Sample ID	Depth	EMT Sample No.	Analyst Name	Date Of Analysis	Analysis	Result
25/18288	1	TP163	0.70	4	Catherine Coles	06/11/2025	**General Description (Bulk Analysis)**	brown soil,stone
					Catherine Coles	06/11/2025	**Asbestos Fibres**	NAD
					Catherine Coles	06/11/2025	**Asbestos ACM**	NAD
					Catherine Coles	06/11/2025	**Asbestos Type**	NAD
25/18288	1	TP163	1.70	8	Charlotte Taylor	06/11/2025	**General Description (Bulk Analysis)**	brown soil/stones
					Charlotte Taylor	06/11/2025	**Asbestos Fibres**	NAD
					Charlotte Taylor	06/11/2025	**Asbestos ACM**	NAD
					Charlotte Taylor	06/11/2025	**Asbestos Type**	NAD
25/18288	1	TP165	0.70	12	Caoimhe Anders	06/11/2025	**General Description (Bulk Analysis)**	Brown soil, stones
					Caoimhe Anders	06/11/2025	**Asbestos Fibres**	NAD
					Caoimhe Anders	06/11/2025	**Asbestos ACM**	NAD
					Caoimhe Anders	06/11/2025	**Asbestos Type**	NAD
25/18288	1	TP165	1.70	16	Kieran Hubbard	06/11/2025	**General Description (Bulk Analysis)**	brown soil
					Kieran Hubbard	06/11/2025	**Asbestos Fibres**	NAD
					Kieran Hubbard	06/11/2025	**Asbestos ACM**	NAD
					Kieran Hubbard	06/11/2025	**Asbestos Type**	NAD
25/18288	1	TP167	0.70	20	Caoimhe Anders	06/11/2025	**General Description (Bulk Analysis)**	Sand, soil, stones
					Caoimhe Anders	06/11/2025	**Asbestos Fibres**	NAD
					Caoimhe Anders	06/11/2025	**Asbestos ACM**	NAD
					Caoimhe Anders	06/11/2025	**Asbestos Type**	NAD
25/18288	1	TP167	1.70	24	Caoimhe Anders	06/11/2025	**General Description (Bulk Analysis)**	Sand, stones
					Caoimhe Anders	06/11/2025	**Asbestos Fibres**	NAD
					Caoimhe Anders	06/11/2025	**Asbestos ACM**	NAD
					Caoimhe Anders	06/11/2025	**Asbestos Type**	NAD
25/18288	1	TP169	0.70	28	Simon Postlewhite	07/11/2025	**General Description (Bulk Analysis)**	Brown soil/stones
					Simon Postlewhite	07/11/2025	**Asbestos Fibres**	NAD
					Simon Postlewhite	07/11/2025	**Asbestos ACM**	NAD
					Simon Postlewhite	07/11/2025	**Asbestos Type**	NAD
25/18288	1	TP169	1.70	32	Charlotte Taylor	06/11/2025	**General Description (Bulk Analysis)**	brown soil/stones
					Charlotte Taylor	06/11/2025	**Asbestos Fibres**	NAD
					Charlotte Taylor	06/11/2025	**Asbestos ACM**	NAD
					Charlotte Taylor	06/11/2025	**Asbestos Type**	NAD

Client Name: Ground Investigations Ireland
Reference: 14975-09-25
Location: Ringwood Phase 2
Contact: James Cashen

EMT Job No.	Batch	Sample ID	Depth	EMT Sample No.	Analyst Name	Date Of Analysis	Analysis	Result
25/18288	1	TP171	0.70	36	Charlotte Taylor	06/11/2025	**General Description (Bulk Analysis)**	brown soil/stones
					Charlotte Taylor	06/11/2025	**Asbestos Fibres**	NAD
					Charlotte Taylor	06/11/2025	**Asbestos ACM**	NAD
					Charlotte Taylor	06/11/2025	**Asbestos Type**	NAD
25/18288	1	TP171	1.70	40	Kieran Hubbard	07/11/2025	**General Description (Bulk Analysis)**	Brown soil
					Kieran Hubbard	07/11/2025	**Asbestos Fibres**	NAD
					Kieran Hubbard	07/11/2025	**Asbestos Fibres (2)**	NAD
					Kieran Hubbard	07/11/2025	**Asbestos ACM**	NAD
					Kieran Hubbard	07/11/2025	**Asbestos ACM (2)**	NAD
					Kieran Hubbard	07/11/2025	**Asbestos Type**	NAD
					Kieran Hubbard	07/11/2025	**Asbestos Type (2)**	NAD
25/18288	1	TP173	0.70	44	Kieran Hubbard	07/11/2025	**General Description (Bulk Analysis)**	Brown soil
					Kieran Hubbard	07/11/2025	**Asbestos Fibres**	NAD
					Kieran Hubbard	07/11/2025	**Asbestos Fibres (2)**	NAD
					Kieran Hubbard	07/11/2025	**Asbestos ACM**	NAD
					Kieran Hubbard	07/11/2025	**Asbestos ACM (2)**	NAD
					Kieran Hubbard	07/11/2025	**Asbestos Type**	NAD
					Kieran Hubbard	07/11/2025	**Asbestos Type (2)**	NAD
25/18288	1	TP174	0.70	48	Matthew Turner	06/11/2025	**General Description (Bulk Analysis)**	Brown soil/Stone
					Matthew Turner	06/11/2025	**Asbestos Fibres**	NAD
					Matthew Turner	06/11/2025	**Asbestos ACM**	NAD
					Matthew Turner	06/11/2025	**Asbestos Type**	NAD
25/18288	1	TP176	0.70	52	Matthew Turner	06/11/2025	**General Description (Bulk Analysis)**	Brown soil/Stone
					Matthew Turner	06/11/2025	**Asbestos Fibres**	NAD
					Matthew Turner	06/11/2025	**Asbestos ACM**	NAD
					Matthew Turner	06/11/2025	**Asbestos Type**	NAD
25/18288	1	TP176	1.70	56	Charlotte Taylor	06/11/2025	**General Description (Bulk Analysis)**	brown soil/stones
					Charlotte Taylor	06/11/2025	**Asbestos Fibres**	NAD
					Charlotte Taylor	06/11/2025	**Asbestos ACM**	NAD
					Charlotte Taylor	06/11/2025	**Asbestos Type**	NAD

Client Name: Ground Investigations Ireland

Matrix : Solid

Reference: 14975-09-25

Location: Ringwood Phase 2

Contact: James Cashen

EMT Job No.	Batch	Sample ID	Depth	EMT Sample No.	Analysis	Reason
25/18288	1	TP163	0.70	1-4	All analyses	No sampling date given
25/18288	1	TP163	1.70	5-8	All analyses	No sampling date given
25/18288	1	TP165	0.70	9-12	All analyses	No sampling date given
25/18288	1	TP165	1.70	13-16	All analyses	No sampling date given
25/18288	1	TP167	0.70	17-20	All analyses	No sampling date given
25/18288	1	TP167	1.70	21-24	All analyses	No sampling date given
25/18288	1	TP169	0.70	25-28	All analyses	No sampling date given
25/18288	1	TP169	1.70	29-32	All analyses	No sampling date given
25/18288	1	TP171	0.70	33-36	All analyses	No sampling date given
25/18288	1	TP171	1.70	37-40	All analyses	No sampling date given
25/18288	1	TP173	0.70	41-44	All analyses	No sampling date given
25/18288	1	TP174	0.70	45-48	All analyses	No sampling date given
25/18288	1	TP176	0.70	49-52	All analyses	No sampling date given
25/18288	1	TP176	1.70	53-56	All analyses	No sampling date given

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating. Only analyses which are accredited are recorded as deviating if set criteria are not met.

It is a requirement under ISO 17025 that we inform clients if samples are deviating i.e. outside what is expected. A deviating sample indicates that the sample 'may' be compromised but not necessarily will be compromised. The result is still accredited and our analytical reports will still show accreditation on the relevant analytes.

Please include all sections of this report if it is reproduced

EMT Job No.: 25/18288

SOILS and ASH

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary. Asbestos samples are retained for 6 months.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Limits of detection for analyses carried out on as received samples are not moisture content corrected. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C. Ash samples are dried at 35°C ±5°C.

Where Mineral Oil is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

Sufficient amount of sample must be received to carry out the testing specified. Where an insufficient amount of sample has been received the testing may not meet the requirements of our accredited methods, as such accreditation may be removed.

Negative Neutralization Potential (NP) values are obtained when the volume of NaOH (0.1N) titrated (pH 8.3) is greater than the volume of HCl (1N) to reduce the pH of the sample to 2.0 - 2.5. Any negative NP values are corrected to 0.

The calculation of Pyrite content assumes that all oxidisable sulphides present in the sample are pyrite. This may not be the case. The calculation may be an overesitimate when other sulphides such as Barite (Barium Sulphate) are present.

WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 accreditation applies to surface water and groundwater and usually one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil is quoted, this refers to Total Aliphatics C10-C40.

STACK EMISSIONS

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation for Dioxins and Furans and Dioxin like PCBs has been performed on XAD-2 Resin, only samples which use this resin will be within our MCERTS scope.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

DEVIATING SAMPLES

All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. The temperature of sample receipt is recorded on the confirmation schedules in order that the client can make an informed decision as to whether testing should still be undertaken.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

BLANKS

Where analytes have been found in the blank, the sample will be treated in accordance with our laboratory procedure for dealing with contaminated blanks.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a requirement of our Accreditation Body for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.
Laboratory records are kept for a period of no less than 6 years.

REPORTS FROM THE SOUTH AFRICA LABORATORY

Any method number not prefixed with SA has been undertaken in our UK laboratory unless reported as subcontracted.

Measurement Uncertainty

Measurement uncertainty defines the range of values that could reasonably be attributed to the measured quantity. This range of values has not been included within the reported results. Uncertainty expressed as a percentage can be provided upon request.

Customer Provided Information

Sample ID and depth is information provided by the customer.

Age of Diesel

The age of release estimation is based on the nC17/pristane ratio only as prescribed by Christensen and Larsen (1993) and Kaplan, Galperin, Alimi et al., (1996).
Age estimation should be treated with caution as it can be influenced by site specific factors of which the laboratory are not aware.

Tentatively Identified Compounds (TICs)

Where Tentatively Identified Compounds (TICs) are reported, up to 10 Tentatively Identified Compounds will be listed where there is found to be a greater than 80% match with the NIST library. The reported concentration is determined semi-quantitively, with a matrix specific limit of detection. Note, other compounds may be present but are not reported.

ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS Ref No. 4225) accredited - UK.
SA	ISO17025 (SANAS Ref No.T0729) accredited - South Africa
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
>>	Results above quantitative calibration range. The result should be considered the minimum value and is indicative only. The actual result could be significantly higher.
*	Analysis subcontracted to an Element Materials Technology approved laboratory.
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
TB	Trip Blank Sample
OC	Outside Calibration Range

HWOL ACRONYMS AND OPERATORS USED

HS	Headspace Analysis.
EH	Extractable Hydrocarbons - i.e. everything extracted by the solvent.
CU	Clean-up - e.g. by florisil, silica gel.
1D	GC - Single coil gas chromatography.
Total	Aliphatics & Aromatics.
AL	Aliphatics only.
AR	Aromatics only.
2D	GC-GC - Double coil gas chromatography.
#1	EH_Total but with humics mathematically subtracted
#2	EU_Total but with fatty acids mathematically subtracted
_	Operator - underscore to separate acronyms (exception for +).
+	Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total
MS	Mass Spectrometry.

EMT Job No: 25/18288

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35 degrees Celsius or 105 degrees Celsius. Calculation based on ISO 11465:1993(E) and BS1377-2:1990.	PM0	No preparation is required.			AR	
TM4	Modified USEPA 8270D v5:2014 method for the solvent extraction and determination of PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes
TM4	Modified USEPA 8270D v5:2014 method for the solvent extraction and determination of PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes		AR	Yes
TM5	Modified 8015B v2:1996 method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) within the range C8-C40 by GCFID. For waters the solvent extracts dissolved phase plus a sheen if present.	PM16	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.			AR	
TM5	Modified 8015B v2:1996 method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) within the range C8-C40 by GCFID. For waters the solvent extracts dissolved phase plus a sheen if present.	PM8/PM16	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required/Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.			AR	Yes
TM5	Modified 8015B v2:1996 method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) within the range C8-C40 by GCFID. For waters the solvent extracts dissolved phase plus a sheen if present.	PM8/PM16	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required/Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.	Yes		AR	Yes
TM5/TM36	please refer to TM5 and TM36 for method details	PM8/PM12/PM16	please refer to PM8/PM16 and PM12 for method details			AR	Yes
TM17	Modified US EPA method 8270D v5:2014. Determination of specific Polychlorinated Biphenyl congeners by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes		AR	Yes
TM20	Modified BS 1377-3:1990/USEPA 160.1/3 (TDS/TS: 1971) Gravimetric determination of Total Dissolved Solids/Total Solids	PM0	No preparation is required.	Yes		AR	Yes
TM21	Modified BS 7755-3:1995, ISO10694:1995 Determination of Total Organic Carbon or Total Carbon by combustion in an Eltra TOC furnace/analyser in the presence of oxygen. The CO2 generated is quantified using infra-red detection. Organic Matter (SOM) calculated as per EA MCERTS Chemical Testing of Soil.	PM24	Preparation of Soil and Marine Sediment Samples for Total Organic Carbon.	Yes		AD	Yes

EMT Job No: 25/18288

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM26	Determination of phenols by Reversed Phased High Performance Liquid Chromatography and Electro-Chemical Detection.	PM0	No preparation is required.			AR	Yes
TM30	Determination of Trace Metals by ICP-OES (Inductively Coupled Plasma-Optical Emission Spectrometry): WATERS by Modified USEPA Method 200.7, Rev. 4.4, 1994; Modified EPA Method 6010B, Rev.2, Dec 1996; Modified BS EN ISO 11885:2009: SOILS by Modified USEP 6010B, Rev.2, Dec.1996; Modified EPA Method 3050B, Rev.2, Dec.1996	PM15	Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 degrees Celsius. Samples containing asbestos are not dried and ground.			AD	Yes
TM30	Determination of Trace Metals by ICP-OES (Inductively Coupled Plasma-Optical Emission Spectrometry): WATERS by Modified USEPA Method 200.7, Rev. 4.4, 1994; Modified EPA Method 6010B, Rev.2, Dec 1996; Modified BS EN ISO 11885:2009: SOILS by Modified USEP 6010B, Rev.2, Dec.1996; Modified EPA Method 3050B, Rev.2, Dec.1996	PM15	Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 degrees Celsius. Samples containing asbestos are not dried and ground.	Yes		AD	Yes
TM30	Determination of Trace Metals by ICP-OES (Inductively Coupled Plasma-Optical Emission Spectrometry): WATERS by Modified USEPA Method 200.7, Rev. 4.4, 1994; Modified EPA Method 6010B, Rev.2, Dec 1996; Modified BS EN ISO 11885:2009: SOILS by Modified USEP 6010B, Rev.2, Dec.1996; Modified EPA Method 3050B, Rev.2, Dec.1996	PM17	Modified method BS EN12457-2:2002 As received solid samples are leached with water in a 10:1 water to soil ratio for 24 hours, the moisture content of the sample is included in the ratio.	Yes		AR	Yes
TM36	Modified US EPA method 8015B v2:1996. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID. MTBE by GCFID co-elutes with 3-methylpentane if present and therefore can give a false positive. Positive MTBE results will be re-run using GC-MS to double check, when requested.	PM12	Modified US EPA method 5021A v2:2014. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes
TM36	Modified US EPA method 8015B v2:1996. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID. MTBE by GCFID co-elutes with 3-methylpentane if present and therefore can give a false positive. Positive MTBE results will be re-run using GC-MS to double check, when requested.	PM12	Modified US EPA method 5021A v2:2014. Preparation of solid and liquid samples for GC headspace analysis.	Yes		AR	Yes
TM38	Soluble Ion analysis using Discrete Analyser. Modified US EPA methods: Chloride 325.2 (1978), Sulphate 375.4 (Rev.2 1993), o-Phosphate 365.2 (Rev.2 1993), TON 353.1 (Rev.2 1993), Nitrite 354.1 (1971), Hex Cr 7196A (1992), NH4+ 350.1 (Rev.2 1993) - All anions comparable to BS ISO 15923-1: 2013I	PM0	No preparation is required.	Yes		AR	Yes
TM38	Soluble Ion analysis using Discrete Analyser. Modified US EPA methods: Chloride 325.2 (1978), Sulphate 375.4 (Rev.2 1993), o-Phosphate 365.2 (Rev.2 1993), TON 353.1 (Rev.2 1993), Nitrite 354.1 (1971), Hex Cr 7196A (1992), NH4+ 350.1 (Rev.2 1993) - All anions comparable to BS ISO 15923-1: 2013I	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.	Yes		AD	Yes
TM38	Soluble Ion analysis using Discrete Analyser. Modified US EPA methods: Chloride 325.2 (1978), Sulphate 375.4 (Rev.2 1993), o-Phosphate 365.2 (Rev.2 1993), TON 353.1 (Rev.2 1993), Nitrite 354.1 (1971), Hex Cr 7196A (1992), NH4+ 350.1 (Rev.2 1993) - All anions comparable to BS ISO 15923-1: 2013I	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.	Yes		AR	Yes
TM50	Acid soluble sulphate (Total Sulphate) analysed by ICP-OES	PM29	A hot hydrochloric acid digest is performed on a dried and ground sample, and the resulting liquor is analysed.			AD	Yes

EMT Job No: 25/18288

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM60	TC/TOC analysis of Waters by High Temperature Combustion followed by NDIR detection. Based on the following modified standard methods: USEPA 9060A (2002), APHA SMEWW 5310B:1999 22nd Edition, ASTM D 7573, and USEPA 415.1.	PM0	No preparation is required.			AR	Yes
TM61	Determination of Mercury by Cold Vapour Atomic Fluorescence - WATERS: Modified USEPA Method 245.7, Rev 2, Feb 2005. SOILS: Modified USEPA Method 7471B, Rev.2, Feb 2007	PM0	No preparation is required.	Yes		AR	Yes
TM65	Asbestos Bulk Identification method based on HSG 248 Second edition (2021)	PM42	Modified SCA Blue Book V.12 draft 2017 and WM3 1st Edition v1.1:2018. Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065.	Yes		AR	
TM73	Modified US EPA methods 150.1 (1982) and 9045D Rev. 4 - 2004) and BS1377-3:1990. Determination of pH by Metrohm automated probe analyser.	PM0	No preparation is required.			AR	Yes
TM73	Modified US EPA methods 150.1 (1982) and 9045D Rev. 4 - 2004) and BS1377-3:1990. Determination of pH by Metrohm automated probe analyser.	PM11	Extraction of as received solid samples using one part solid to 2.5 parts deionised water.	Yes		AR	No
TM173	Analysis of fluoride by ISE (Ion Selective Electrode) using modified ISE method 9214 - 340.2 (EPA 1998)	PM0	No preparation is required.			AR	Yes
NONE	No Method Code	NONE	No Method Code			AD	Yes
NONE	No Method Code	PM17	Modified method BS EN12457-2:2002 As received solid samples are leached with water in a 10:1 water to soil ratio for 24 hours, the moisture content of the sample is included in the ratio.				
NONE	No Method Code	PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35 degrees Celsius or 105 degrees Celsius. Calculation based on ISO 11465:1993(E) and BS1377-2:1990.			AR	

CHAPTER 16 APPENDICES

Appendix 16.1 Site investigation report prepared by Priority Geotechnical

Our Ref: GH/Rp/P23171 +attachments (*.pdf)

28th November, 2023

M.H.L & Associates Ltd. Consulting Engineers
Unit 1B,
The Atrium,
Blackpool,
Cork.
T23T2VY

Re: Ringwood development lands, Blarney, Preliminary site investigation, Factual report.

Introduction

In September 2023, Priority Geotechnical Ltd. (PGL) were requested by M.H.L. acting on behalf of Clockstrike Ltd., to undertake a preliminary site investigation at the private property owned by the Client and located in Blarney, Co. Cork, just north east of Blarney Village. The site is bisected by the N20, with the lands to the south of this road known as Castlelands (Ringwood).



Objectives

The aim of the proposed investigation in so far as the scope of works allows is to evaluate the ground and groundwater conditions within the site to allow the construction of mixed use phased residential/ commercial development; to include the development of all internal roads, services and include new access junctions onto the roads that abound the boundaries of the site, large surface water attenuation tanks, new water and wastewater services, new road construction, boundary treatments and accommodation works.

Scope

The scope of the preliminary site investigation determined by M.H.L. comprised of:

- 7Nr. Trial pit excavations TP01 – TP07;
- *In situ* testing: 4Nr. BRE365 soakaway; tests: TP01, TP02, TP05 and TP07;
- All associated sampling;
- Laboratory testing;
- Environmental testing, Suite E: TP02,TP03,TP04 and TP06 and
- Reporting.

The site works as completed is outlined, herein. This report presents the fieldworks records with regard to the site investigation at Ringwood, Blarney, Co. Cork. The report should be read in conjunction with the exploratory records and laboratory data accompanying this factual report.

Site Works

This ground investigation was carried out on the 28th September, 2023, under the supervision of PGL, Engineering Geologist(s) in accordance with Eurocode 7- Geotechnical Design Part 2, ground investigation and testing (BS EN 1997-2: 2007) and the relevant British Standards (BS 5930 (2015) Code of Practice for Site Investigation and BS 1377, Method of Tests for Soil for Civil Engineering Purposes, *in situ* Tests Parts 1 to 9). Details of the plant and equipment used are detailed on the relevant exploratory records, accompanying this report.

Trial excavations

A total of seven (7) trial pits were excavated to depths 2.65m bgl to 4.60m bgl using a 17t tracked excavator; the exploratory logs are presented herein.

Location	Final depth, m bgl	Remarks	
		Stability	Groundwater
TP01	3.70	Good	None encountered.
TP02	4.20	Good	None encountered.
TP03	3.60	Moderate	None encountered.
TP04	3.25	Good	None encountered.
TP05	4.20	Good	None encountered.
TP06	2.65	Good.	None encountered.
TP07	4.60	Good	Steady rate of flow 3.25m.

Sampling

A total of twenty six (26) bulk disturbed samples (B) and five (5) small disturbed samples (D) were taken during the fieldworks in accordance with Geotechnical Investigation and Sampling – Sampling Methods and Groundwater Measurements (EN ISO 22475-1:2006).

Survey and exploratory locations

Upon completion of the fieldworks, the 'as built' exploration locations were surveyed using Trimble 5700/5800 GPS equipment to the Ordinance Survey Irish Transverse Mercator system of co-ordinates (ITM) and elevations to Malin Head datum.

Location	Easting	Northing	Ground Level, mOD Malin	Final Depth, m bgl	Date Start, dd/mm/yyyy
TP01	561508.640	576345.180	61.180	3.70	28/09/2023
TP02	561601.320	576391.150	65.440	4.20	28/09/2023
TP03	561826.950	576359.750	66.330	3.60	28/09/2023
TP04	561580.990	576259.230	66.490	3.25	28/04/2023
TP05	561669.890	576287.820	66.200	4.20	28/09/2023
TP06	561851.520	576236.290	64.140	2.65	28/09/2023
TP07	562005.360	576217.040	57.270	4.60	28/09/2023

Soakaway tests

Four (4) infiltration/ soakaway tests were undertaken in general accordance with BRE Digest 365, Soakaway Design (2003/ 2007); noting one (1) number cycle were completed. The data from the testing accompanies the relevant exploratory records accompanying this report.

Location	Depth, m bgl	Infiltration coefficient, ms^{-1}
SA TP01	2.0	*2.95 E-06*
SA TP02	2.1	*2.11 E-06*
SA TP05	2.3	*3.17 E-06*
SA TP07	2.0	*5.35 E-06*

Laboratory testing

All samples were transported to Priority Geotechnical's laboratory in Midleton, Co. Cork examined, logged and prepared for scheduled testing. Laboratory testing was scheduled by PGL on behalf of MHL and carried out by PGL, in accordance with BS1377 (1990), Methods of test for soils for civil engineering purposes. Specialist chemical testing was undertaken by Eurofins (UK) on behalf of PGL. The laboratory test results were presented within this factual report, summarized as follows.

SUMMARY OF LABORATORY TESTING

Type	**Quantity, Nr.**	**Remarks**
Natural moisture content	18	12% to 28%
Atterberg limits	4	Liquid limit 22% to 38% Plastic limit 13% to 22% Plasticity index 9 to 16
Particle size distribution	9	4Nr. hydrometer analysis on fines
Moisture condition value, MCV	2	MCV0.0 and MCV4.5
California bearing ratio, CBR	5	CBR0.1% to CBR1.3%
pH	6	8.1 to 8.8
Sulphate content SO_4	6	<0.010g/l to 0.013g/l
Sulphate SO_4, (acid soluble)	6	<0.010%
Total Sulphur	1	<0.010%
Environmental, Suite E (absolute levels and waste acceptance criteria, WAC)	4	TP02 0.3m, TP03 0.3m, TP04 0.3m and TP06 0.3m ; **See attached.**

Please note that all samples/ core shall be retained for a period no longer than 28 days from the date of this report. Thereafter all remaining samples shall be appropriately disposed of unless a written instruction to the contrary is received by PGL prior to the date of this reporting and within the 28 day period outlined above. Laboratory testing will result in a reduction of sample quantity and in some cased the use of the full sample mass. Samples already tested may not be suitable or available for further testing.

Ground and Groundwater Conditions

The full details of the ground conditions encountered are provided for on the exploratory records accompanying this report. The records provide descriptions, in accordance with BS 5930 (2015) and Eurocode 7, Geotechnical Investigation and Testing, Identification and classification of soils, Part 1, Identification and description (EN ISO 14688-1: 2002),– Identification and Classification of Soil, Part 2: Classification Principles (EN ISO 14688-2:2004) and Identification and Classification of Rock, Part 1: Identification & Description (EN ISO 14689-1:2004) of the materials encountered, *in situ* testing and details of the samples taken, together with any observations made during the site investigation.

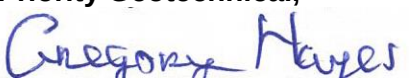
Topsoil was 300mm to 400mm thick overlay mixed glacial deposits: (very) clayey very sandy GRAVEL and slightly sandy gravelly CLAY to a depth between 2.3m below existing ground level (bgl) to 4.6m bgl (TP07). The glacial deposits were was underlain by weathered SILTSTONE 2.0m bgl to 2.5m bgl, at TP01, TP04 and TP046 to depths 2.65m below existing ground level (bgl) to 3.7m bgl.

Groundwater levels may be subject to diurnal, seasonal and climatic variations and can also be affected by drainage conditions, tidal variations etc. The duration trial excavations remain open may not allow for equilibrium groundwater level to be established in cohesive deposits. The groundwater regime should be assessed from standpipe well installations where available.

Location	Depth to groundwater strike, m bgl	Remarks
TP01	-	None encountered.
TP02	-	None encountered.
TP03	-	None encountered.
TP04	-	None encountered.
TP05	-	None encountered.
TP06	-	None encountered.
TP07	**3.25**	Steady rate of flow 3.25m.

Should you have any queries in relation to the data collected and presented herein, please do not hesitate to contact our office.

Yours sincerely,
For **Priority Geotechnical,**



Greg Hayes BE MEngSc CEng MIEI
Geotechnical Specialist

This report has been prepared for M.H.L. as outline, herein. The information provided should not be used by Third Parties without their prior written permission and notification to PGL or possible Third Party liabilities.

No responsibility can be held by PGL for ground conditions between exploratory locations. The exploratory logs provide for ground profiles and configuration of strata relevant to the investigation depths achieved during the fieldworks. Caution shall be taken when extrapolating between such exploratory locations. No liability is accepted for ground conditions extraneous to the exploratory locations.

The scope of the works has been defined by others. PGL have provided for the interpretation of this data set. Additional works and further observations may form part of a more detailed investigation. This report may be subject to change where further information becomes available.

No account has been taken of potential subsidence or ground movement due to mineral extraction, mining works or karstification below or in proximity to the site, unless specifically addressed.

KEY TO SYMBOLS ON EXPLORATORY HOLE RECORDS

All linear dimensions are in metres or millimetres

DESCRIPTIONS

**	Drillers Description
Friable	Easily crumbled

SAMPLES

U( )	Undisturbed 102mm diameter sample, ( ) denotes number of blows to drive sampler
U( )F, U( )P	F- not recovered, P-partially recovered
U38	Undisturbed 38mm diameter sample
P(F), (P)	Piston sample - disturbed
B	Bulk sample - disturbed
D	Jar Sample - disturbed
W	Water Sample
CBR	California Bearing Ratio mould sample
ES	Chemical Sample for Contamination Analysis
SPTLS	Standard Penetration Test S lump sample from split sampler

CORE RECOVERY AND ROCK QUALITY

TCR	Total Core Recovery (% of Core Run)
SCR	Solid Core Recovery (length of core having at least one full diameter as % of core run)
RQD	Rock Quality Designation (length of solid core greater than 100mm as % of core run)

Where there is insufficient space for the TCR, SCR and RQD, the results may be found in the remarks column

If	Fracture Spacing in mm (Minimum/Average/Maximum) NI - non intact, NR - no recovery
AZCL	Assumed Zone of Core Loss
NI	Non intact

GROUNDWATER

▽	Groundwater strike
▼	Groundwater level after standing period
Date/Water	Date of shift (day/month)/Depth to water at end of previous shift shown above the date and depth to water at beginning of shift given below the date

INSITU TESTING

S	Standard Penetration Test - split barrel sampler
C	Standard Penetration Test - solid 60^o cone
SW	Self Weight Penetration
Ivp, HVp (R)	In Situ Vane Test, Hand Vane Test (R) demonstrates remoulded strength
K(F), (C), (R), (P)	Permeability Test
HP	Hand Penetrometer Test

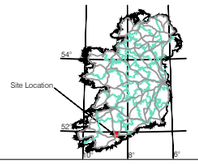
MEASURED PROPERTIES

N	Standard Penetration Test - blows required to drive 300mm after seating drive
x/y	Denotes x blows for y mm within the Standard Penetration Test
x*/y	Denotes x blows for y mm within the seating drive
c_u	Undrained Shear Strength (kN/m^2)
CBR	California Bearing Ratio

ROTARY DRILLING SIZES

Index Letter	Nominal Diameter (mm)	
	Borehole	Core
N	75	54
H	99	76
P	120	92
S	146	113

Priority Geotechnical Site



SI-01

SI-02

TP01

TP02

TP03

TP04

TP05

TP06

TP07

St John's Terrace

Saint John's Place

Assumption Terrace

Woodville Terrace

Mount Pleasant

Riverdale

Pond

62.77

57.90

57.25

55.23

53.53

51.05

47.21

42.96

68.38

67.01

65.45

63.58

61.45

58.44

56.22

53.89

10Kv

CR

UND

JOB NAME:

Ringwood,
Blarney,
Co. Cork.

Sheet Title:

Exploratory Location Layout

JOB NUMBER:

P23171

DRAWING NUMBER:

P23171-SI-A

DRAWN BY:

G.C.

DATE:

29/09/2023

SCALE:

1:2500 ON A3

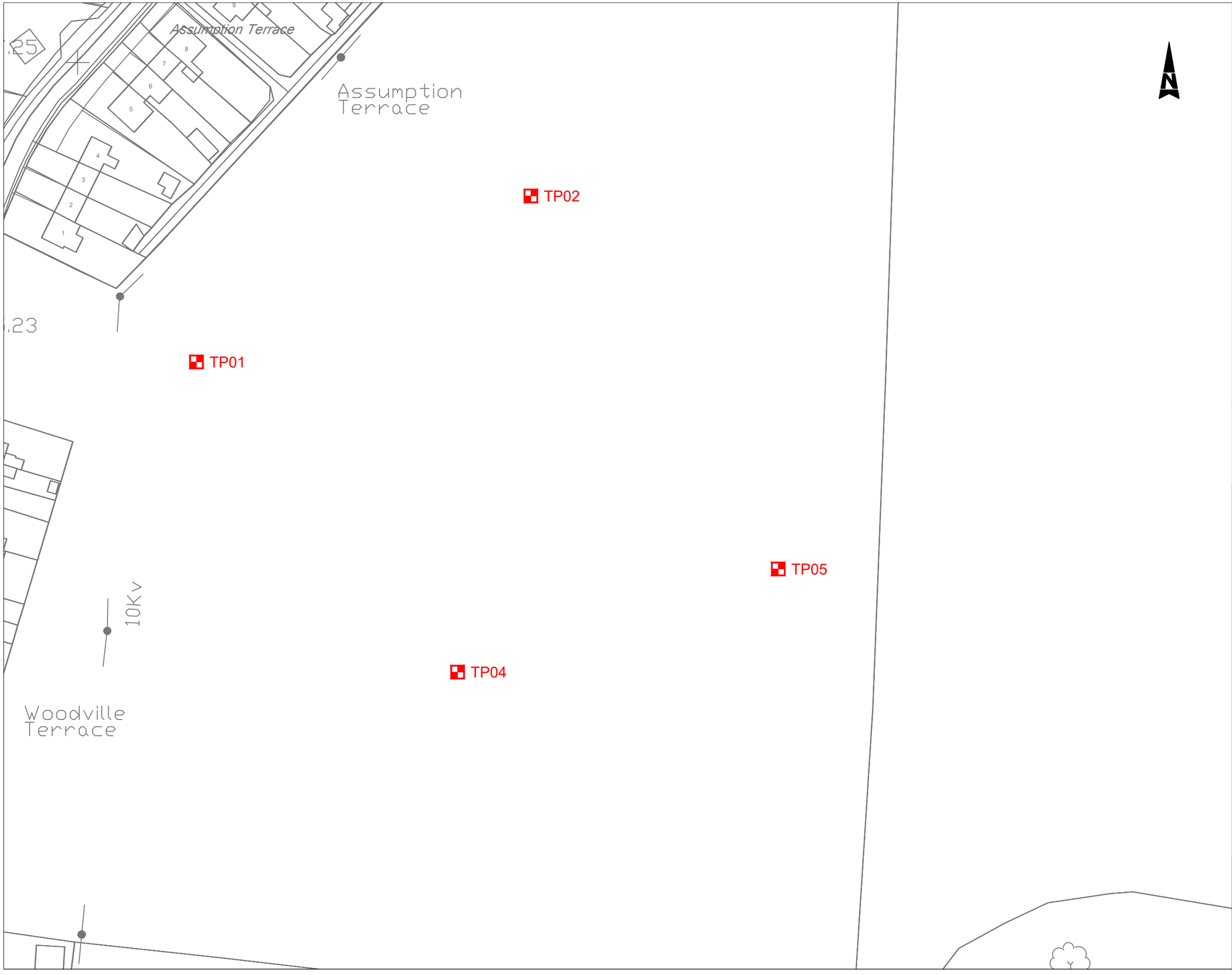
APPROVED:

GH

REVISION:

D01

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KEY:

TP00 Denotes Trial Pit location

JOB NAME:

Ringwood,
Blarney,
Co. Cork.

Sheet Title:

EXPLORATORY LOCATION PLAN

JOB NUMBER:

P23171

DRAWING NUMBER:

P23171-SI-01

DRAWN BY:

G.C.

DATE:

29/09/2023

SCALE:	APPROVED:
1:1000 ON A3	GH

REVISION:

D01

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KEY:

TP00 Denotes Trial Pit location

JOB NAME:

Ringwood,
Blarney,
Co. Cork.

Sheet Title:

EXPLORATORY LOCATION PLAN

JOB NUMBER:

P23171

DRAWING NUMBER:

P23171-SI-02

DRAWN BY:

G.C.

DATE:

29/09/2023

SCALE:	APPROVED:
1:1000 ON A3	GH

REVISION:

D01

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Trial Pit No
TP01
Sheet 1 of 1

Project Name: Ringwood Blarney	**Project No.** P23171	**Co-ords:** 561509E - 576345N **Level:** 61.18m OD	**Date** 28/09/2023
Location: Blarney, Co. Cork		**Dimensions (m):** 5.00 x 1.00 **Depth:** 3.70m BGL	**Scale** 1:25
Client: Clockstrike Ltd.			**Logged** DOC

Water Strike & Backfill	Samples & In Situ Testing: Depth (m)	Type	Results	Depth (m)	Level (m OD)	Legend	Stratum Description
				0.30	60.88		(TOPSOIL) Black SILT.
	0.50 - 1.50 0.50 - 1.50	B D					Orange/Red, clayey, very sandy GRAVEL.
				1.00	60.18		Brown, very clayey very sandy GRAVEL.
	1.50 - 2.50 1.50 - 2.50	B D					
				2.30	58.88		Soft, weak weathered Rock, recovered as very gravelly CLAY.
	2.50 - 3.40	B					
	3.40 - 3.50	B					
				3.70	57.48		End of Pit at 3.700m

Stability: Good
Plant: 17.2T Track machine.
Backfill: Arisings.

Groundwater: None encountered.

Remarks: Trial pit terminated at 3.7m bgl due to hard rock reached.

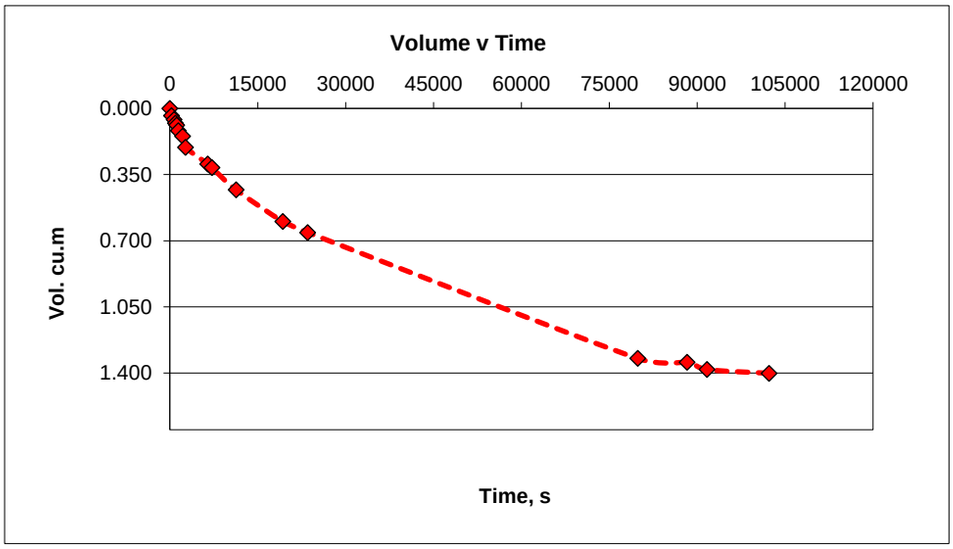
P23171 **Ringwood, Blarney** **28/09/2023**

Test 1 **SA TP01** E561508.64 N576345.18 61.18mOD

l, m	**1.400**	b, m	**0.700**	d, m	**2.000**
l_base, m	**1.400**			d_eff, m	**1.700**
l_eff, m	**1.400**				

	Time, min	Measure, m bgl	Time, sec	Depth water, m	Fall, m	Volume
10:26	0	0.300	0	1.70	0.00	0.000
	5	0.340	300	1.66	0.04	0.039
	12	0.360	720	1.64	0.06	0.059
	16	0.380	960	1.62	0.08	0.078
	20	0.390	1200	1.61	0.09	0.088
	24	0.420	1440	1.58	0.12	0.118
	36	0.450	2160	1.55	0.15	0.147
	45	0.510	2700	1.49	0.21	0.206
	108	0.600	6480	1.40	0.30	0.294
	120	0.620	7200	1.38	0.32	0.314
	189	0.740	11340	1.26	0.44	0.431
	321	0.910	19260	1.09	0.61	0.598
	392	0.970	23520	1.03	0.67	0.657
29/09/2023, 08:37	1331	1.650	79860	0.35	1.35	1.323
	1471	1.670	88260	0.33	1.37	1.343
	1528	1.710	91680	0.29	1.41	1.382
14:50	1704	1.730	102240	0.27	1.43	1.401

Area	0.980	m^2	$V_{p75\text{-}25\ theory}$	volume	0.8330	m^3
50% Area_eff, a_{p50}	4.550	m^2	$V_{p\ 75\ -\ 25\ actual}$	volume	0.7007	m^3
50% Area_act, a_{p50}	3.983	m^2	$t_{p\ 75\text{-}\ 25\ actual}$	time	62041	s
			Infiltration Coefficient	*f*	2.95E-06	ms^-1



NOTES:

See TP01 for detailed soil description; very clayey very sandy GRAVEL

No groundwater encountered. Pit assumed unsaturated. Moderate stability

Infiltration calculated over effective fall.

Photographic Record





Number:	**TP01**	**Project**	Ringwood Blarney	
		Project No	P23171	
		Engineer	MHL & Associates	

Photographic Record





Number:	**TP01**	**Project**	Ringwood Blarney	
		Project No	P23171	
		Engineer	MHL & Associates	

Photographic Record





Number:	**TP01**	**Project**	Ringwood Blarney	
		Project No	P23171	
		Engineer	MHL & Associates	

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Trial Pit No
TP02
Sheet 1 of 1

Project Name: Ringwood Blarney	**Project No.** P23171	**Co-ords:** 561601E - 576391N **Level:** 65.44m OD	**Date** 28/09/2023
Location: Blarney, Co. Cork		**Dimensions (m):** 4.70 x 1.30 **Depth:** 4.20m BGL	**Scale** 1:25
Client: Clockstrike Ltd.			**Logged** DOC

Water Strike & Backfill	Samples & In Situ Testing: Depth (m)	Type	Results	Depth (m)	Level (m OD)	Legend	Stratum Description
							(TOPSOIL)Black, slightly sandy gravelly SILT.
	0.30 - 1.00 0.30 - 1.00	B D		0.30	65.14		Pale/Brown, slightly sandy gravelly CLAY.
	1.00 - 2.00 1.00 - 2.00	B D					
	2.00 - 3.00 2.00 - 3.00	B D					
	3.00 - 4.00	B		3.00	62.44		Brown, slightly sandy gravelly CLAY.
	4.00 - 4.20	B					
				4.20	61.24		End of Pit at 4.200m

Stability: Good
Plant: 17.2T Track machine
Backfill: Arisings.

Groundwater: None encountered.

Remarks: Trial pit terminated at 4.2m bgl due to hard rock reached.

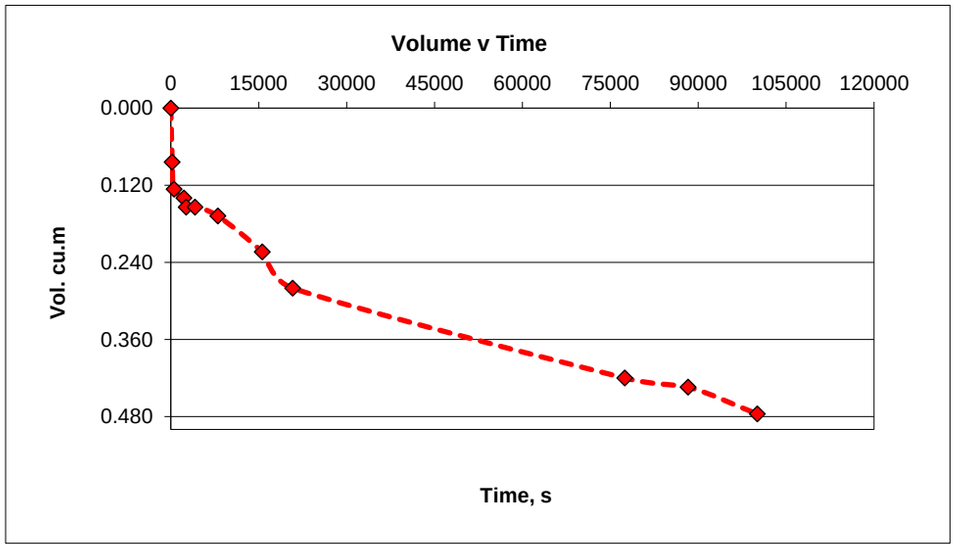
P23171 **Ringwood, Blarney** **28/09/2023**

Test 1 **SA TP02** E561601.32 N576391.15 65.44mOD

l, m	**2.000**	b, m	**0.700**	d, m	**2.100**
l_base, m	**2.000**			d_eff, m	**1.300**
l_eff, m	**2.000**				

	Time, min	Measure, m bgl	Time, sec	Depth water, m	Fall, m	Volume
11:25	0	0.800	0	1.30	0.00	0.000
	4	0.860	240	1.24	0.06	0.084
	9	0.890	540	1.21	0.09	0.126
	37	0.900	2220	1.20	0.10	0.140
	44	0.910	2640	1.19	0.11	0.154
	69	0.910	4140	1.19	0.11	0.154
	134	0.920	8040	1.18	0.12	0.168
	260	0.960	15600	1.14	0.16	0.224
	346	1.000	20760	1.10	0.20	0.280
29/09/2023, 08:56	1291	1.100	77460	1.00	0.30	0.420
	1471	1.110	88260	0.99	0.31	0.434
29/09/2023, 15:15	1668	1.140	100080	0.96	0.34	0.476

Area	1.400	m^2	$V_{p75\text{-}25\ theory}$	volume	0.9100	m^3
50% Area_eff, a_{p50}	4.910	m^2	$V_{p\ 75\ -\ 25\ actual}$	volume	0.2380	m^3
50% Area_act, a_{p50}	2.318	m^2	$t_{p\ 75\text{-}\ 25\ actual}$	time	48570	s
			Infiltration Coefficient	*f*	2.11E-06	ms^-1



NOTES:

See TP02 for detailed soil description; slightly sandy gravelly CLAY

No groundwater encountered. Pit assumed unsaturated. Moderate stability

Infiltration calculated over actual fall recorded.

Photographic Record





Number:	**TP02**	**Project**	Ringwood Blarney	
		Project No	P23171	
		Engineer	MHL & Associates	

Photographic Record





Number:	**TP02**	**Project**	Ringwood Blarney	
		Project No	P23171	
		Engineer	MHL & Associates	

Photographic Record





Number:	**TP02**	**Project**	Ringwood Blarney	
		Project No	P23171	
		Engineer	MHL & Associates	

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Trial Pit No
TP03
Sheet 1 of 1

Project Name: Ringwood Blarney	**Project No.** P23171	**Co-ords:** 561827E - 576360N **Level:** 66.33m OD	**Date** 28/09/2023
Location: Blarney, Co. Cork		**Dimensions (m):** 4.10 x 1.10	**Scale** 1:25
Client: Clockstrike Ltd.		**Depth:** 3.60m BGL	**Logged** DOC

Water Strike & Backfill	Samples & In Situ Testing: Depth (m)	Type	Results	Depth (m)	Level (m OD)	Legend	Stratum Description
							(TOPSOIL) Black, slightly sandy gravelly SILT.
	0.30 - 1.00	B		0.30	66.03		Palish/brown, slightly sandy gravelly CLAY with medium Cobble content.
	1.00 - 2.00	B					
	2.00 - 3.00	B					
	3.00 - 3.60	B					
				3.60	62.73		End of Pit at 3.600m

1
2
3
4
5

Stability: Moderate
Plant: 17.2T track machine
Backfill: Arisings.

Groundwater: None encountered.

Remarks: Trial pit terminated at 3.6m bgl due to hard rock reached.

Photographic Record





Number:	**TP03**	**Project**	Ringwood Blarney	
		Project No	P23171	
		Engineer	MHL & Associates	

Photographic Record





Number:	**TP03**	**Project**	Ringwood Blarney	
		Project No	P23171	
		Engineer	MHL & Associates	

Photographic Record





Number:	**TP03**	**Project**	Ringwood Blarney	
		Project No	P23171	
		Engineer	MHL & Associates	

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Trial Pit No
TP04
Sheet 1 of 1

Project Name: Ringwood Blarney	**Project No.** P23171	**Co-ords:** 561581E - 576259N **Level:** 66.49m OD	**Date** 28/04/2023
Location: Blarney, Co. Cork		**Dimensions (m):** 4.20 × 1.20	**Scale** 1:25
Client: Clockstrike Ltd.		**Depth:** 3.25m BGL	**Logged** DOC

Water Strike & Backfill	Samples & In Situ Testing: Depth (m)	Type	Results	Depth (m)	Level (m OD)	Legend	Stratum Description
	0.30 - 1.50	B		0.40	66.09		(TOPSOIL) Brown/Black, slightly sandy gravelly SILT.
	1.50 - 3.00	B		2.50	63.99		Pale Red/Brown, clayey sandy GRAVEL with low Cobble content.
	3.00	B		3.25	63.24		Weak SILTSTONE, easily broken up by excavator. End of Pit at 3.250m

Stability: Good
Plant: 17.2T Track machine
Backfill: Arisings.

Groundwater: None encountered.

Remarks: Trial pit terminated at 3.25m bgl due to hard rock reached.

Photographic Record





Number:	**TP04**	**Project**	Ringwood Blarney	
		Project No	P23171	
		Engineer	MHL & Associates	

Photographic Record





Number:	**TP04**	**Project**	Ringwood Blarney	
		Project No	P23171	
		Engineer	MHL & Associates	

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Trial Pit No
TP05
Sheet 1 of 1

Project Name: Ringwood Blarney	**Project No.** P23171	**Co-ords:** 561670E - 576288N **Level:** 66.20m OD	**Date** 28/09/2023
Location: Blarney, Co. Cork		**Dimensions (m):** 4.00 x 1.00 **Depth:** 4.20m BGL	**Scale** 1:25
Client: Clockstrike Ltd.			**Logged** DOC

Water Strike & Backfill	Samples & In Situ Testing: Depth (m)	Type	Results	Depth (m)	Level (m OD)	Legend	Stratum Description
							(TOPSOIL) Black slightly sandy gravelly SILT.
				0.30	65.90		Brown, slightly sandy gravelly CLAY.
	0.50 - 1.50	B					
	1.50 - 2.50	B					
	2.50 - 3.40	B					
	3.40 - 4.10	B		3.40	62.80		Brown, slightly sandy gravelly CLAY with Boulder content.
				4.20	62.00		End of Pit at 4.200m

Stability: Good
Plant: 17.2T Track machine
Backfill: Arisings.

Groundwater: None encountered.

Remarks: Trial pit terminated at 4.2m bgl due to hard rock reached.

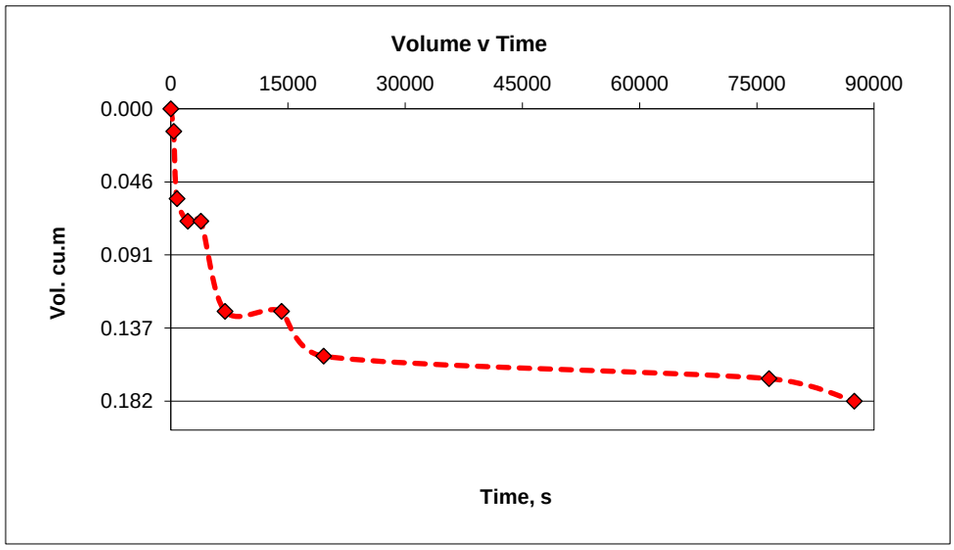
P23171 **Ringwood, Blarney** **28/09/2023**

Test 1 **SA TP05** E561669.89 N576287.82 66.20mOD

l, m	**2.000**	b, m	**0.700**	d, m	**2.300**
l_base, m	**2.000**			d_eff, m	**1.330**
l_eff, m	**2.000**				

	Time, min	Measure, m bgl	Time, sec	Depth water, m	Fall, m	Volume
11:44	0	0.970	0	1.33	0.00	0.000
	6	0.980	360	1.32	0.01	0.014
	13	1.010	780	1.29	0.04	0.056
	36	1.020	2160	1.28	0.05	0.070
	64	1.020	3840	1.28	0.05	0.070
	116	1.060	6960	1.24	0.09	0.126
	236	1.060	14160	1.24	0.09	0.126
	326	1.080	19560	1.22	0.11	0.154
29/09/2023, 09:00	1276	1.090	76560	1.21	0.12	0.168
12:02	1458	1.100	87480	1.20	0.13	0.182

Area	1.400	m^2	$V_{p75\text{-}25\ theory}$	volume	0.9310	m^3
50% Area_eff, a_{p50}	4.991	m^2	$V_{p\ 75\ -\ 25\ actual}$	volume	0.0910	m^3
50% Area_act, a_{p50}	4.640	m^2	$t_{p\ 75\text{-}\ 25\ actual}$	time	6180	s
			Infiltration Coefficient	*f*	3.17E-06	ms^-1



NOTES:

See TP05 for detailed soil description; slightly sandy gravelly CLAY

No groundwater encountered. Pit assumed unsaturated. Moderate stability

Infiltration calculated over actual fall recorded.

Photographic Record





Number:	**TP05**	**Project**	Ringwood Blarney	
		Project No	P23171	
		Engineer	MHL & Associates	

Photographic Record





Number:	**TP05**	**Project**	Ringwood Blarney	
		Project No	P23171	
		Engineer	MHL & Associates	

Photographic Record





Number:	**TP06**	**Project**	Ringwood Blarney	
		Project No	P23171	
		Engineer	MHL & Associates	

Priority Geotechnical Ltd.
Tel: 021 4631600
Fax: 021 4638690
www.prioritygeotechnical.ie

Trial Pit No
TP06
Sheet 1 of 1

Project Name: Ringwood Blarney	**Project No.** P23171	**Co-ords:** 561852E - 576236N **Level:** 64.14m OD	**Date** 28/09/2023
Location: Blarney, Co. Cork		**Dimensions (m):** 4.00 x 1.20 **Depth:** 2.65m BGL	**Scale** 1:25
Client: Clockstrike Ltd.			**Logged** DOC

Water Strike & Backfill	Samples & In Situ Testing: Depth (m)	Type	Results	Depth (m)	Level (m OD)	Legend	Stratum Description
	0.30 - 1.50	B		0.40	63.74		(TOPSOIL) Black, slightly sandy gravelly SILT.
	1.50 - 2.00	B		2.00	62.14		Orange/Brown, slightly sandy gravelly CLAY with Boulder content.
				2.65	61.49		Broken up weak rock, SILTSTONE
							End of Pit at 2.650m

1
2
3
4
5

Stability: Good.
Plant: 17.2T Track machine
Backfill: Arisings.

Groundwater: None encountered.

Remarks: Trial pit terminated at 2.65m bgl due to hard rock.

Photographic Record





Number:	**TP06**	**Project**	Ringwood Blarney	
		Project No	P23171	
		Engineer	MHL & Associates	

Photographic Record





Number:	**TP06**	**Project** Ringwood Blarney **Project No** P23171 **Engineer** MHL & Associates	

Priority Geotechnical Ltd.
Tel: 021 4631600
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www.prioritygeotechnical.ie

Trial Pit No
TP07
Sheet 1 of 1

Project Name: Ringwood Blarney	**Project No.** P23171	**Co-ords:** 562005E - 576217N **Level:** 57.27m OD	**Date** 28/09/2023
Location: Blarney, Co. Cork		**Dimensions (m):** 3.40 x 1.30 **Depth:** 4.60m BGL	**Scale** 1:25
Client: Clockstrike Ltd.			**Logged** DOC

Water Strike & Backfill	Samples & In Situ Testing: Depth (m)	Type	Results	Depth (m)	Level (m OD)	Legend	Stratum Description
							(TOPSOIL)Brown, gravelly SILT.
				0.30	56.97		Brown, slightly sandy gravelly CLAY.
	0.50 - 1.50	B					
	1.50 - 2.50	B					
	2.50 - 3.50	B					
▼				3.25	54.02		Brown, slightly sandy gravelly CLAY
	3.50 - 4.50	B					
				4.60	52.67		End of Pit at 4.600m

1
2
3
4
5

Stability: Good
Plant: 17.2T Track machine
Backfill: Arisings.

Groundwater: Steady rate of flow 3.25m.

Remarks: Trial pit terminated at 4.6m bgl due to required depth achieved.

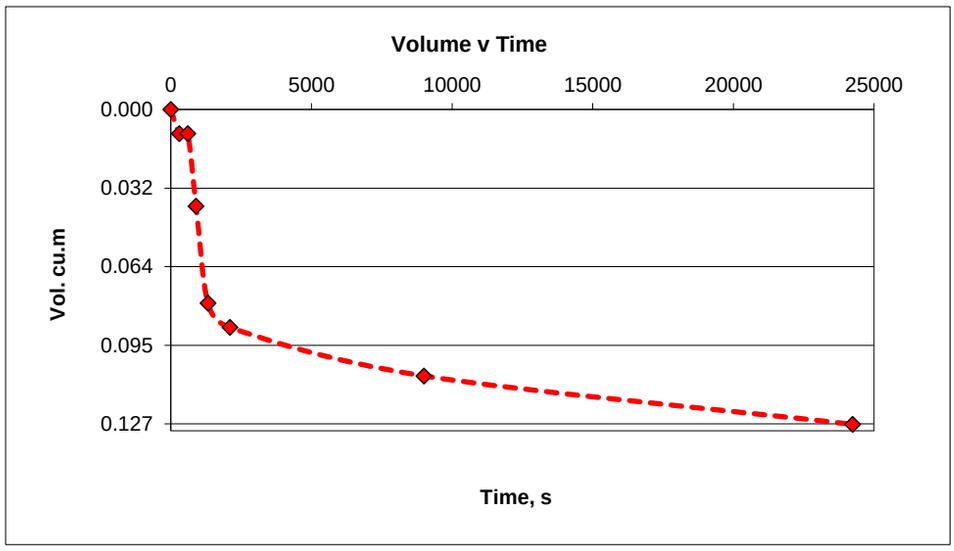
P23171 **Ringwood, Blarney** **28/09/2023**

Test 1 **SA TP07** E562005.36 N576217.04 57.27mOD

l, m	**1.400**	b, m	**0.700**	d, m	**2.000**
l_base, m	**1.400**			d_eff, m	**1.200**
l_eff, m	**1.400**				

	Time, min	Measure, m bgl	Time, sec	Depth water, m	Fall, m	Volume
09:47	0	0.800	0	1.20	0.00	0.000
	5	0.810	300	1.19	0.01	0.010
	10	0.810	600	1.19	0.01	0.010
	15	0.840	900	1.16	0.04	0.039
	22	0.880	1320	1.12	0.08	0.078
	35	0.890	2100	1.11	0.09	0.088
	150	0.910	9000	1.09	0.11	0.108
16:56	404	0.930	24240	1.07	0.13	0.127

Area	0.980	m^2	$V_{p75\text{-}25\ theory}$	volume	0.5880	m^3
50% Area_eff, a_{p50}	3.500	m^2	$V_{p\ 75\ -\ 25\ actual}$	volume	0.0637	m^3
50% Area_act, a_{p50}	3.227	m^2	$t_{p\ 75\text{-}\ 25\ actual}$	time	3690	s
			Infiltration Coefficient	*f*	5.35E-06	ms^-1



NOTES:

See TP07 for detailed soil description; slightly sandy gravelly CLAY

Groundwater encountered 3.25. Pit assumed unsaturated. Moderate stability

Infiltration calculated over actual fall recorded.

Photographic Record





Number:	**TP07**	**Project**	Ringwood Blarney	
		Project No	P23171	
		Engineer	MHL & Associates	

Photographic Record





Number:	**TP07**	**Project**	Ringwood Blarney	
		Project No	P23171	
		Engineer	MHL & Associates	

KEY TO SYMBOLS - LABORATORY TEST RESULT

U	Undisturbed Sample	
P	Piston Sample	
TWS	Thin Wall Sample	
B	Bulk Sample - Disturbed	
D	Jar Sample - Disturbed	
W	Water Sample	
pH	Acidity/Alkalinity Index	
SO_3	% - Total Sulphate Content (acid soluble)	
SO_3	g/ltr - Water Soluble Sulphate (Water or 2:1 Aqueous Soil Extract)	
+	Calcareous Reaction	
Cl	Chloride Content	
PI	Plasticity Index	
<425	% of material in sample passing 425 micron sieve	
LL	Liquid Limit	
PL	Plastic Limit	
MC	Water Content	
NP	Non Plastic	
Yb	Bulk Density	
Yd	Dry Density	
Ps	Particle Density	
U/D	Undrained/Drained Triaxial	
U/C	Unconsolidated/Consolidated Triaxial	
T/M	Single Stage/Multistage Triaxial	
100/38	Sample Diameter (mm)	
REM	Remoulded Triaxial Test Specimen	
TST	Triaxial Suction Test	
V	Vane Test	
DSB	Drained Shear Box	
RSB	Residual Shear Box	
RS	Ring Shear	
σ_3	Cell Pressure	
σ_1-σ_3	Deviator Stress	
c	Cohesion	
c_	Effective Cohesion Intercept	
ϕ	Angle of Shearing Resistance - Degrees	
ϕ_	Effective Angle of Shearing Resistance	
εf	Strain at Failure	
*	Failed under 1st Load	
**	Failed under 2nd Load	
#	Untestable	
##	Excessive Strain	
p_o	Effective Overburden Pressure	
m_v	Coefficient of Volume Decrease	
c_v	Coefficient of Consolidation	
Opt	Optimum	
Nat	Natural	
Std	Standard Compaction - 2.5kg Rammer	(¶ CBR)
Hvy	Heavy Compaction - 4.5kg Rammer	(§ CBR)
Vib	Vibratory Compaction	
CBR	California Bearing Ratio	
Sat m.c.	Saturation Moisture Content	
MCV	Moisture Condition Value	

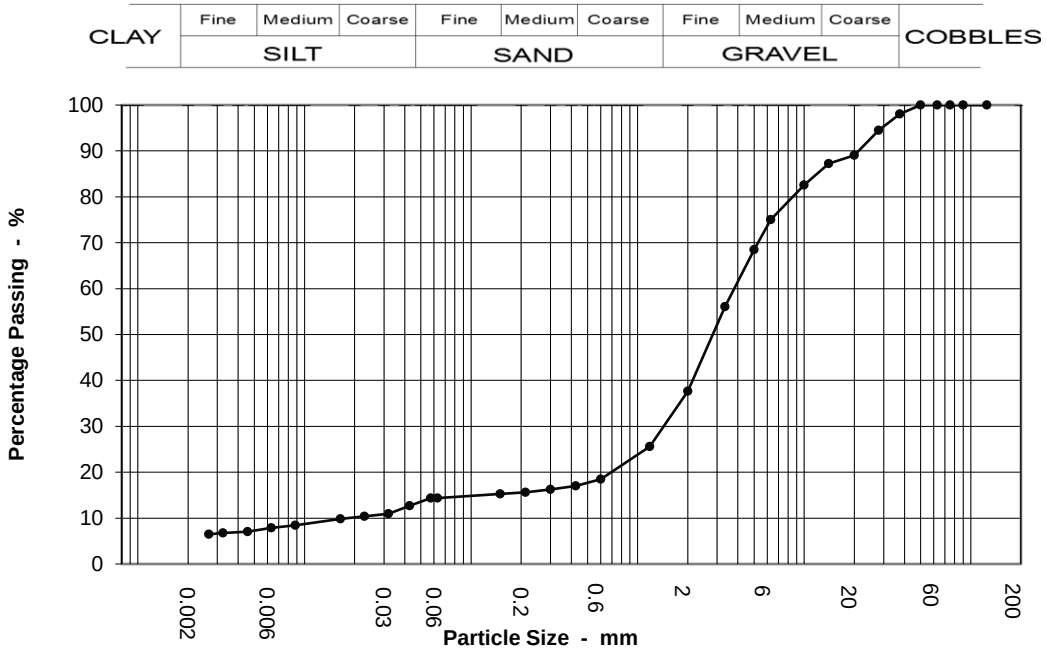
pgl priority geotechnical	**Natural Moisture Content/Atterberg Limits Summary** **BS 1377 : Part 2 : 1990 : Clause 3**	**Job Ref**
Location	**Ringwood Blarney**	**P23171**

Hole ID	Sample Ref	Depth (m)	Sample Type	Sample Description	MC	LL	PL	PI	% Pass 425
TP01	1	0.5	B	Clayey very sandy GRAVEL	17	38	22	16	34.8
TP01	2	0.5	D	Clayey very sandy GRAVEL	12				
TP01	4	1.5	D	Very clayey very sandy GRAVEL	15				
TP02	2	0.3	D	Slightly sandy gravelly SILT	31				
TP02	3	1	B	Slightly sandy gravelly CLAY		29	16	13	61.2
TP02	4	1	D	Slightly sandy gravelly CLAY	16				
TP02	6	2	D	Slightly sandy gravelly CLAY	13				
TP03	1	0.3	B	Slightly sandy gravelly SILT	29				
TP03	2	1	B	Slightly sandy slightly gravelly CLAY with medium cobble content	17				
TP03	3	2	B	Slightly sandy slightly gravelly CLAY	13				
TP03	4	3	B	Slightly sandy slightly gravelly CLAY	14				
TP04	1	0.3	B	Slightly sandy gravelly SILT	25				
TP04	2	1.5	B	Clayey sandy GRAVEL with low cobble content	11				
TP05	1	0.5	B	Slightly sandy gravelly CLAY	18				
TP05	2	1.5	B	Slightly sandy gravelly CLAY	19	22	13	9	69.5
TP05	3	2.5	B	Slightly sandy gravelly CLAY	14				
TP05	4	3.4	B	Slightly sandy gravelly CLAY	14				
TP07	2	1.5	B	Slightly sandy gravelly CLAY	13	24	15	9	69.8
TP07	3	2.5	B	Slightly sandy gravelly CLAY	38				

PARTICLE SIZE DISTRIBUTION

BS 1377 : Part 2 : 1990 : Clause 9

		Job Ref	**P23171**
		Borehole / Pit No	TP01
Location	**Ringwood Blarney**	Sample No	1
		Depth	0.50 m
Soil Description	Clayey very sandy GRAVEL	Sample type	B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.057	14
90	100	0.043	13
75	100	0.032	11
63	100	0.023	10
50	100	0.016	10
37.5	98	0.009	8
28	94	0.006	8
20	89	0.005	7
14	87	0.003	7
10	83	0.003	6
6.3	75	0.001	5
5	69		
3.35	56		
2	38		
1.18	26		
0.6	18		
0.425	17		
0.3	16		
0.212	16		
0.15	15		
0.063	14		

Test Method	
BS 1377 : Part 2 : 1990	
Sieving	Clause 9.5
Sedimentation	Clause 9.5

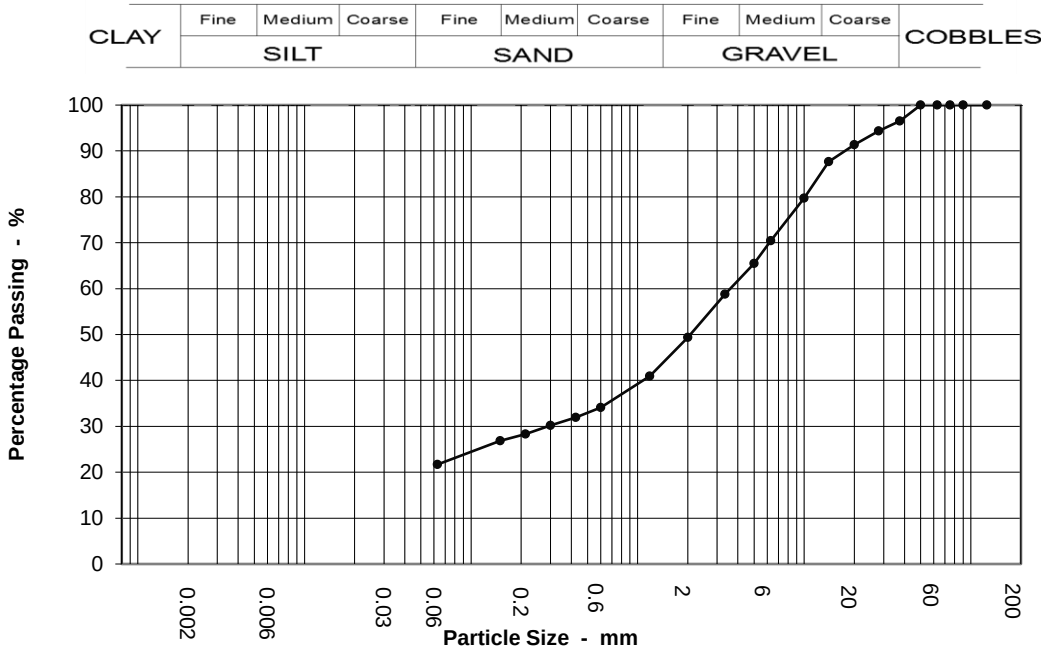
Sample Proportions	
Cobbles	0.0
Gravel	62.0
Sand	23.0
Silt	8.0
Clay	6.0

Grading Analysis	
D100	50.00
D60	3.80
D10	0.02
Uniformity Coefficient	210.00

PARTICLE SIZE DISTRIBUTION

BS 1377 : Part 2 : 1990 : Clause 9

		Job Ref	**P23171**
		Borehole / Pit No	TP01
Location	**Ringwood Blarney**	Sample No	3
		Depth	1.50 m
Soil Description	Very clayey very sandy GRAVEL	Sample type	B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	97		
28	94		
20	91		
14	88		
10	80		
6.3	70		
5	66		
3.35	59		
2	49		
1.18	41		
0.6	34		
0.425	32		
0.3	30		
0.212	28		
0.15	27		
0.063	22		

Test Method	
BS 1377 : Part 2 : 1990	
Sieving	Clause 9.3
Sedimentation	N/A

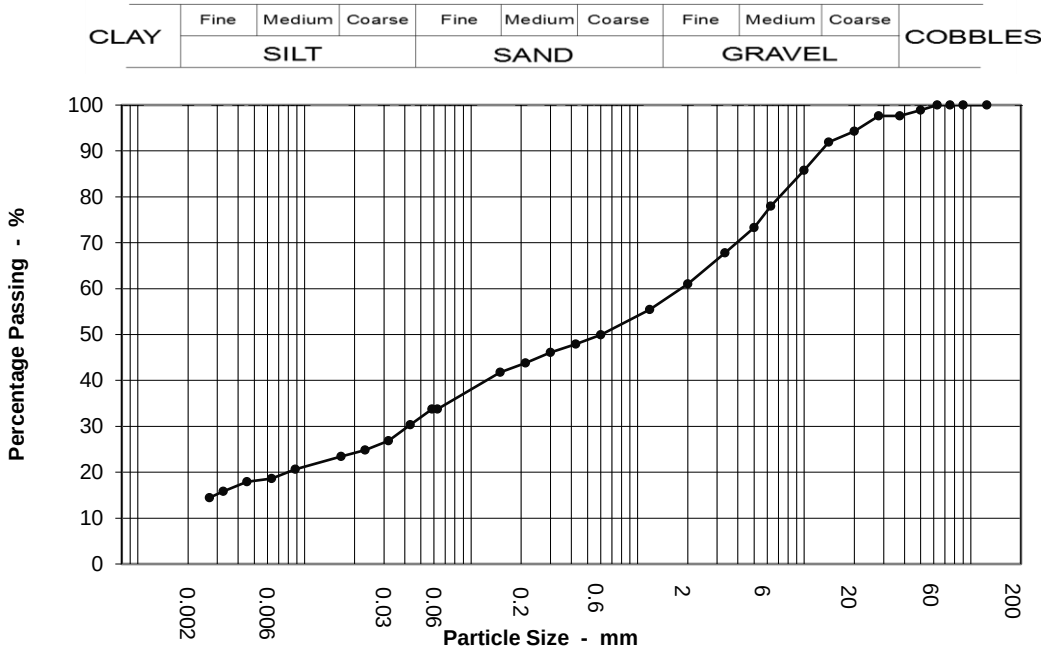
Sample Proportions	
Cobbles	0.0
Gravel	51.0
Sand	28.0
Silt & Clay	22.0

Grading Analysis	
D100	50.00
D60	3.60
D10	
Uniformity Coefficient	

PARTICLE SIZE DISTRIBUTION

BS 1377 : Part 2 : 1990 : Clause 9

		Job Ref	**P23171**
		Borehole / Pit No	TP02
Location	**Ringwood Blarney**	Sample No	3
		Depth	1.00 m
Soil Description	Slightly sandy gravelly CLAY	Sample type	B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.058	34
90	100	0.043	30
75	100	0.032	27
63	100	0.023	25
50	99	0.017	23
37.5	98	0.009	21
28	98	0.006	19
20	94	0.005	18
14	92	0.003	16
10	86	0.003	14
6.3	78	0.001	12
5	73		
3.35	68		
2	61		
1.18	55		
0.6	50		
0.425	48		
0.3	46		
0.212	44		
0.15	42		
0.063	34		

Test Method	
BS 1377 : Part 2 : 1990	
Sieving	Clause 9.5
Sedimentation	Clause 9.5

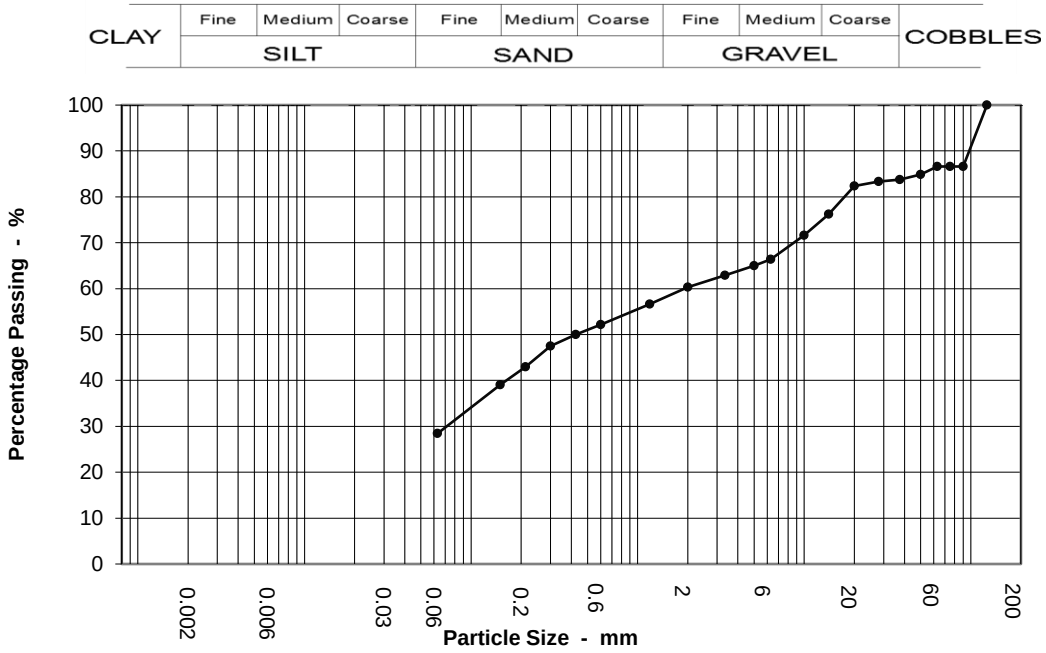
Sample Proportions	
Cobbles	0.0
Gravel	39.0
Sand	27.0
Silt	20.0
Clay	13.0

Grading Analysis	
D100	63.00
D60	1.82
D10	
Uniformity Coefficient	

PARTICLE SIZE DISTRIBUTION

BS 1377 : Part 2 : 1990 : Clause 9

		Job Ref	**P23171**
		Borehole / Pit No	TP03
Location	**Ringwood Blarney**	Sample No	2
		Depth	1.00 m
Soil Description	Slightly sandy slightly gravelly CLAY with medium cobble content	Sample type	B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	87		
75	87		
63	87		
50	85		
37.5	84		
28	83		
20	82		
14	76		
10	72		
6.3	66		
5	65		
3.35	63		
2	60		
1.18	57		
0.6	52		
0.425	50		
0.3	47		
0.212	43		
0.15	39		
0.063	28		

Test Method	
BS 1377 : Part 2 : 1990	
Sieving	Clause 9.3
Sedimentation	N/A

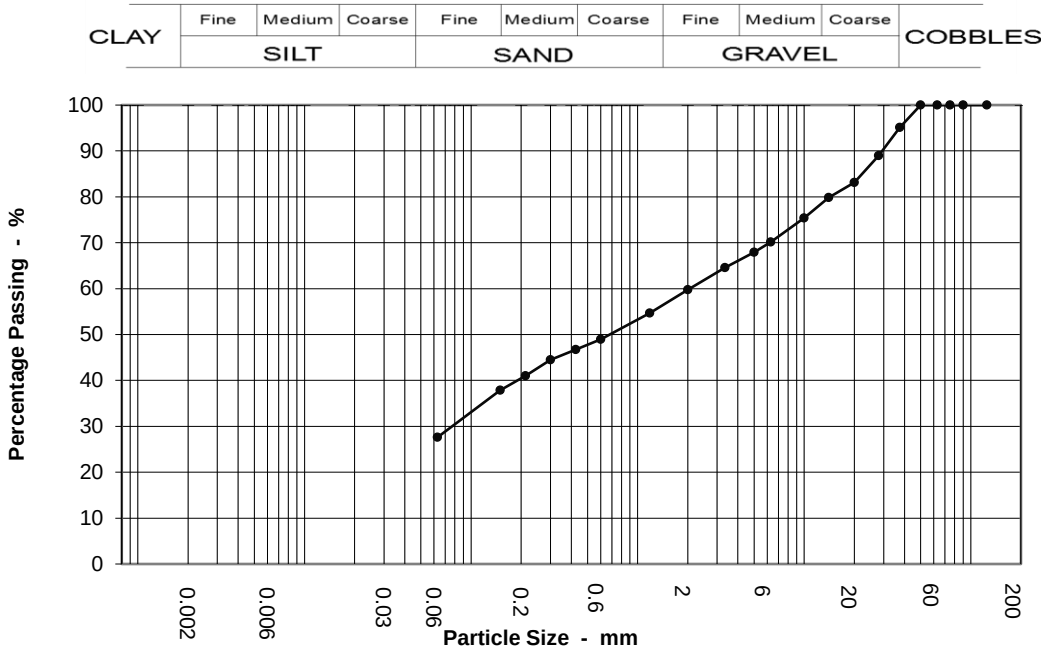
Sample Proportions	
Cobbles	13.0
Gravel	26.0
Sand	32.0
Silt & Clay	28.0

Grading Analysis	
D100	125.00
D60	1.91
D10	
Uniformity Coefficient	

PARTICLE SIZE DISTRIBUTION

BS 1377 : Part 2 : 1990 : Clause 9

		Job Ref	**P23171**
		Borehole / Pit No	TP04
Location	**Ringwood Blarney**	Sample No	1
		Depth	0.30 m
Soil Description	Slightly sandy gravelly SILT	Sample type	B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	95		
28	89		
20	83		
14	80		
10	75		
6.3	70		
5	68		
3.35	65		
2	60		
1.18	55		
0.6	49		
0.425	47		
0.3	44		
0.212	41		
0.15	38		
0.063	28		

Test Method	
BS 1377 : Part 2 : 1990	
Sieving	Clause 9.3
Sedimentation	N/A

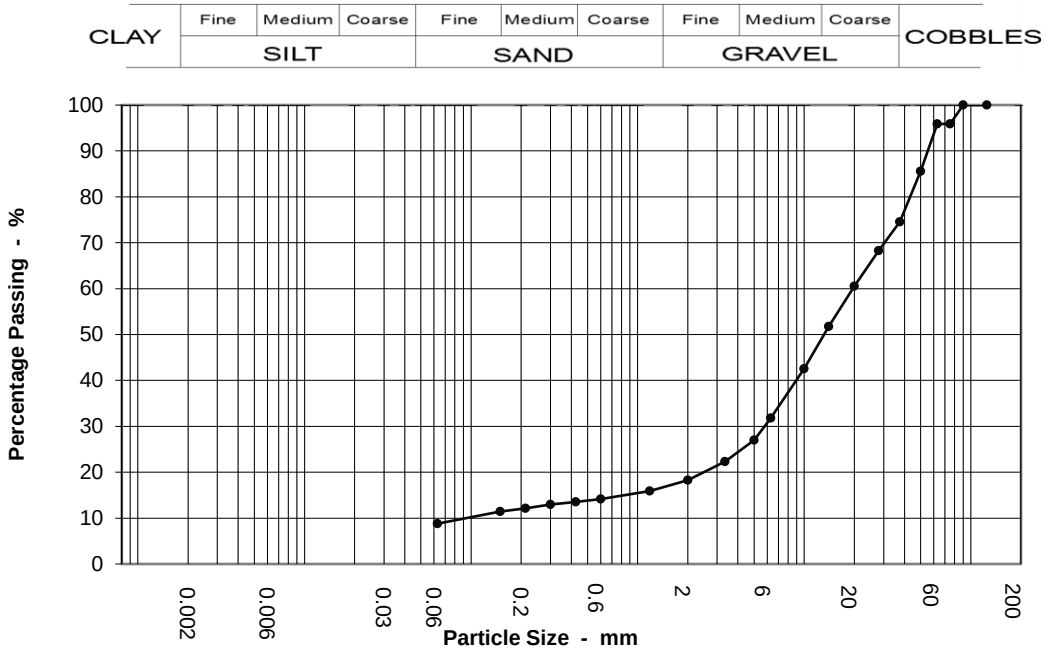
Sample Proportions	
Cobbles	0.0
Gravel	40.0
Sand	32.0
Silt & Clay	28.0

Grading Analysis	
D100	50.00
D60	2.05
D10	
Uniformity Coefficient	

PARTICLE SIZE DISTRIBUTION

BS 1377 : Part 2 : 1990 : Clause 9

		Job Ref	**P23171**
		Borehole / Pit No	TP04
Location	**Ringwood Blarney**	Sample No	2
		Depth	1.50 m
Soil Description	Clayey sandy GRAVEL with low cobble content	Sample type	B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	96		
63	96		
50	86		
37.5	75		
28	68		
20	61		
14	52		
10	43		
6.3	32		
5	27		
3.35	22		
2	18		
1.18	16		
0.6	14		
0.425	14		
0.3	13		
0.212	12		
0.15	11		
0.063	9		

Test Method	
BS 1377 : Part 2 : 1990	
Sieving	Clause 9.3
Sedimentation	N/A

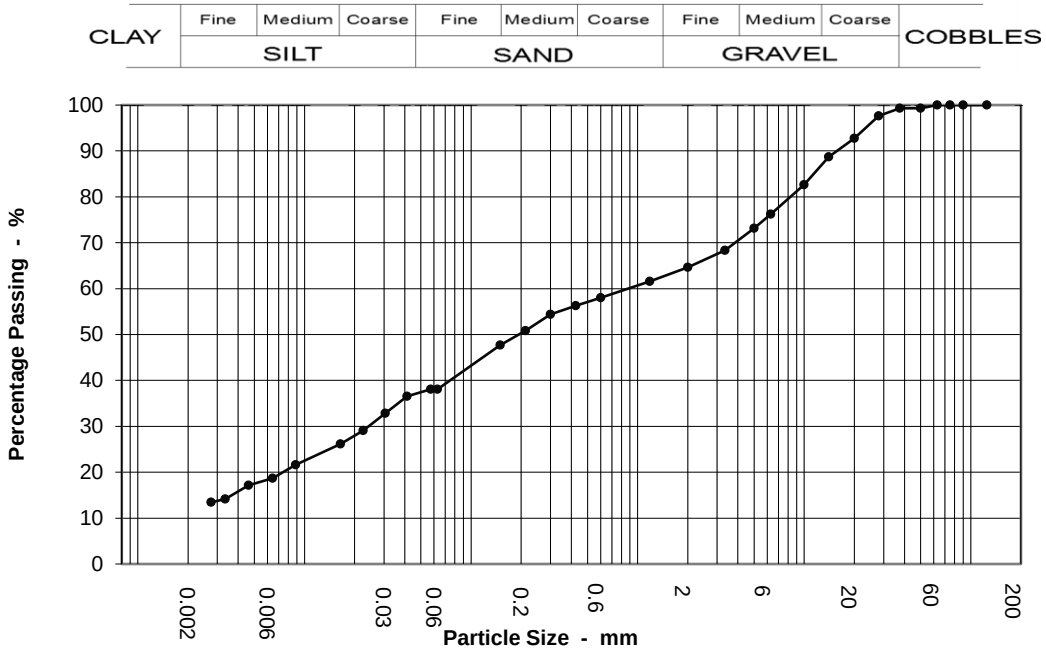
Sample Proportions	
Cobbles	4.0
Gravel	78.0
Sand	9.0
Silt & Clay	9.0

Grading Analysis	
D100	90.00
D60	19.60
D10	0.09
Uniformity Coefficient	210.00

PARTICLE SIZE DISTRIBUTION

BS 1377 : Part 2 : 1990 : Clause 9

		Job Ref	**P23171**
		Borehole / Pit No	TP05
Location	**Ringwood Blarney**	Sample No	2
		Depth	1.50 m
Soil Description	Slightly sandy gravelly CLAY	Sample type	B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.057	38
90	100	0.041	37
75	100	0.031	33
63	100	0.023	29
50	99	0.016	26
37.5	99	0.009	22
28	98	0.006	19
20	93	0.005	17
14	89	0.003	14
10	83	0.003	13
6.3	76	0.001	10
5	73		
3.35	68		
2	65		
1.18	62		
0.6	58		
0.425	56		
0.3	54		
0.212	51		
0.15	48		
0.063	38		

Test Method	
BS 1377 : Part 2 : 1990	
Sieving	Clause 9.5
Sedimentation	Clause 9.5

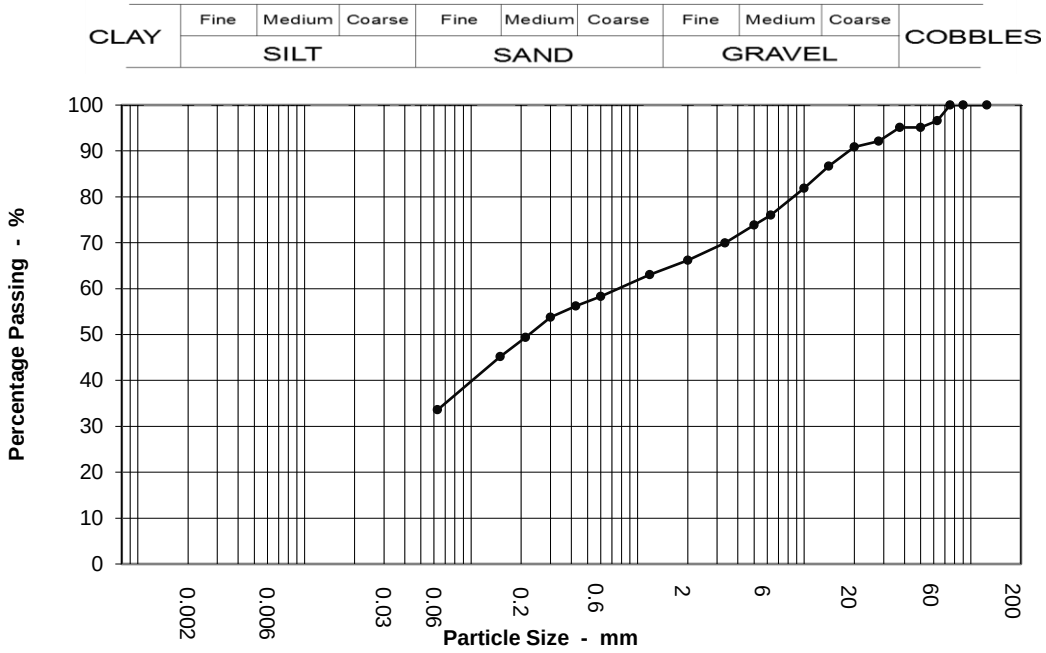
Sample Proportions	
Cobbles	0.0
Gravel	35.0
Sand	27.0
Silt	26.0
Clay	12.0

Grading Analysis	
D100	63.00
D60	0.87
D10	
Uniformity Coefficient	

PARTICLE SIZE DISTRIBUTION

BS 1377 : Part 2 : 1990 : Clause 9

		Job Ref	**P23171**
		Borehole / Pit No	TP06
Location	**Ringwood Blarney**	Sample No	1
		Depth	0.30 m
Soil Description	Slightly sandy slightly gravelly SILT	Sample type	B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	97		
50	95		
37.5	95		
28	92		
20	91		
14	87		
10	82		
6.3	76		
5	74		
3.35	70		
2	66		
1.18	63		
0.6	58		
0.425	56		
0.3	54		
0.212	49		
0.15	45		
0.063	34		

Test Method	
BS 1377 : Part 2 : 1990	
Sieving	Clause 9.3
Sedimentation	N/A

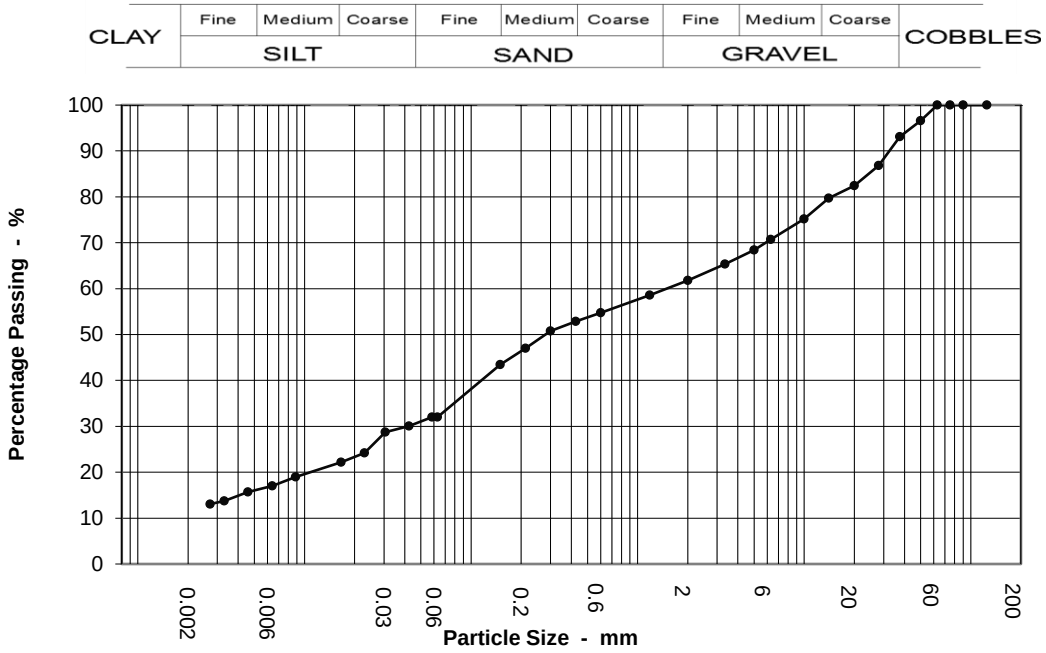
Sample Proportions	
Cobbles	3.0
Gravel	30.0
Sand	33.0
Silt & Clay	34.0

Grading Analysis	
D100	75.00
D60	0.77
D10	
Uniformity Coefficient	

PARTICLE SIZE DISTRIBUTION

BS 1377 : Part 2 : 1990 : Clause 9

		Job Ref	**P23171**
		Borehole / Pit No	TP07
Location	**Ringwood Blarney**	Sample No	2
		Depth	1.50 m
Soil Description	Slightly sandy gravelly CLAY	Sample type	B



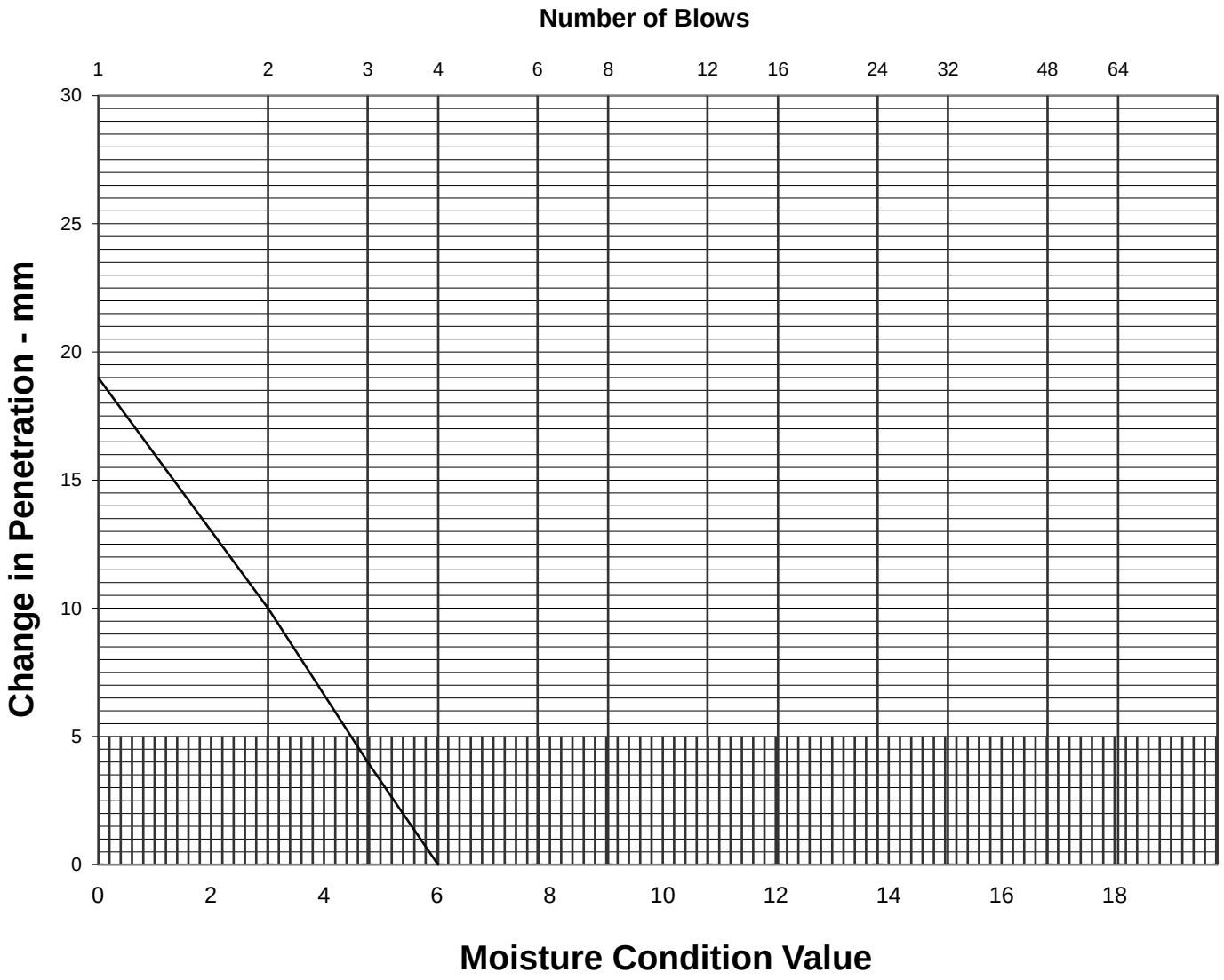
Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.058	32
90	100	0.042	30
75	100	0.031	29
63	100	0.023	24
50	97	0.017	22
37.5	93	0.009	19
28	87	0.006	17
20	82	0.005	16
14	80	0.003	14
10	75	0.003	13
6.3	71	0.001	10
5	68		
3.35	65		
2	62		
1.18	59		
0.6	55		
0.425	53		
0.3	51		
0.212	47		
0.15	43		
0.063	32		

Test Method	
BS 1377 : Part 2 : 1990	
Sieving	Clause 9.5
Sedimentation	Clause 9.5

Sample Proportions	
Cobbles	0.0
Gravel	38.0
Sand	30.0
Silt	20.0
Clay	12.0

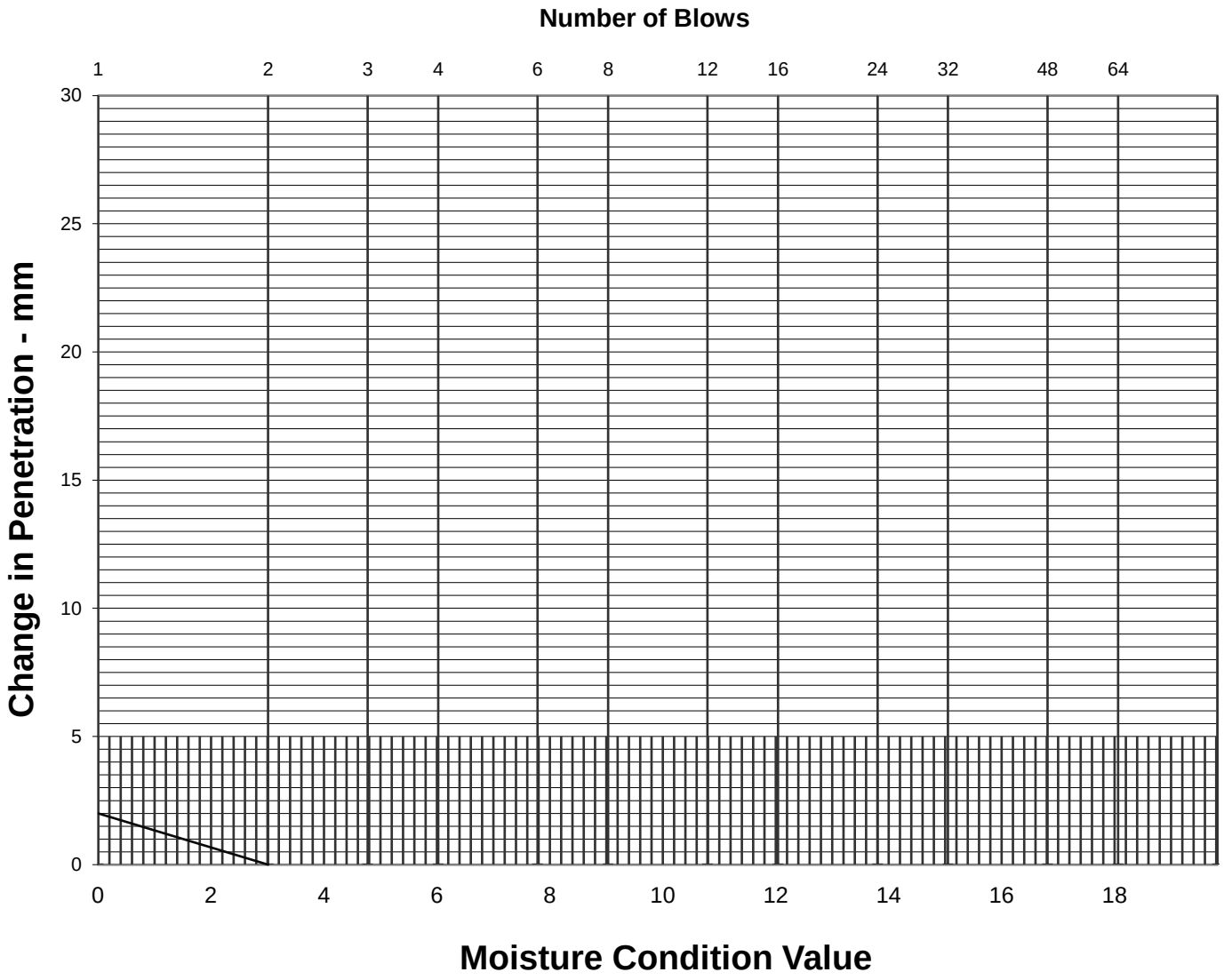
Grading Analysis	
D100	63.00
D60	1.49
D10	
Uniformity Coefficient	

pgl priority geotechnical	**Moisture Condition Value** **BS 1377 : Part 4 : 1990 Clause 5**	**Job Ref**	**P23171**
		Borehole / Pit No	TP05
Location	Ringwood Blarney	Sample No	1
Soil Description	Slightly sandy gravelly CLAY	Sample Type	B
		Depth	0.50 m



Specimen No		1	2	3	4	5	6
Moisture Condition Value		4.5					
Moisture Content	%	27.98					
Bulk density after compaction	Mg/m³	1.89					
Dry density after compaction	Mg/m³	1.48					
Hand vane strength	kPa						
Method of determining MCV		Steeptest fit line	Steeptest fit line	Steeptest fit line	Steeptest fit line	Steeptest fit line	
Mass retained on 20mm sieve	%	30.4					

pgl priority geotechnical	**Moisture Condition Value** **BS 1377 : Part 4 : 1990 Clause 5**	**Job Ref**	**P23171**
		Borehole / Pit No	TP06
Location	Ringwood Blarney	Sample No	1
Soil Description	Slightly sandy slightly gravelly SILT	Sample Type	B
		Depth	0.30 m

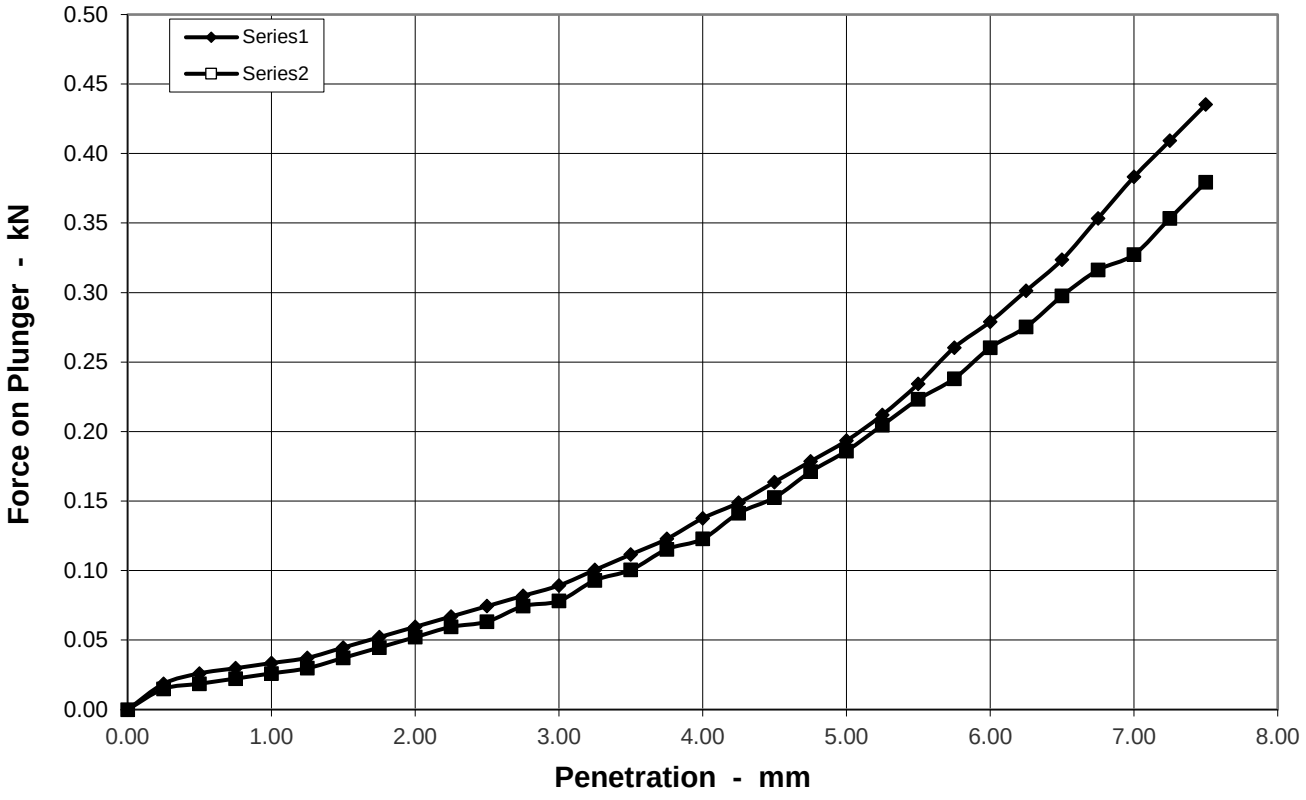


Specimen No		1	2	3	4	5	6
Moisture Condition Value		0.0					
Moisture Content	%	32.41					
Bulk density after compaction	Mg/m³	1.85					
Dry density after compaction	Mg/m³	1.40					
Hand vane strength	kPa						
Method of determining MCV		Steeptest fit line	Steeptest fit line	Steeptest fit line	Steeptest fit line	Steeptest fit line	
Mass retained on 20mm sieve	%	8.2					

CALIFORNIA BEARING RATIO

BS 13377 : Part 4 : 1990 Clause 7.4

		Job Ref	**P23171**
		Borehole / Pit No	TP01
Site Name	**Ringwood Blarney**	Sample No	1
		Depth	0.5 m
Soil Description	Clayey very sandy GRAVEL		



Preparation	Method of Compation		
	Hammer type		2.5kg Rammer
	Soaking Period	days	
	Amount of Swell	mm	

Sample Conditions		
Natural Moisture Content	%	17.0
Moisture Content - TOP	%	16.5
Moisture Content - BASE	%	16.7
Bulk Density	Mg/m³	2.22
Dry Density	Mg/m³	1.91

Test Conditions		
Sample Retained on 20 mm sieve	%	11.0
Seating Load - TOP	N	
Seating Load - BASE	N	
Surcharge	kg	8

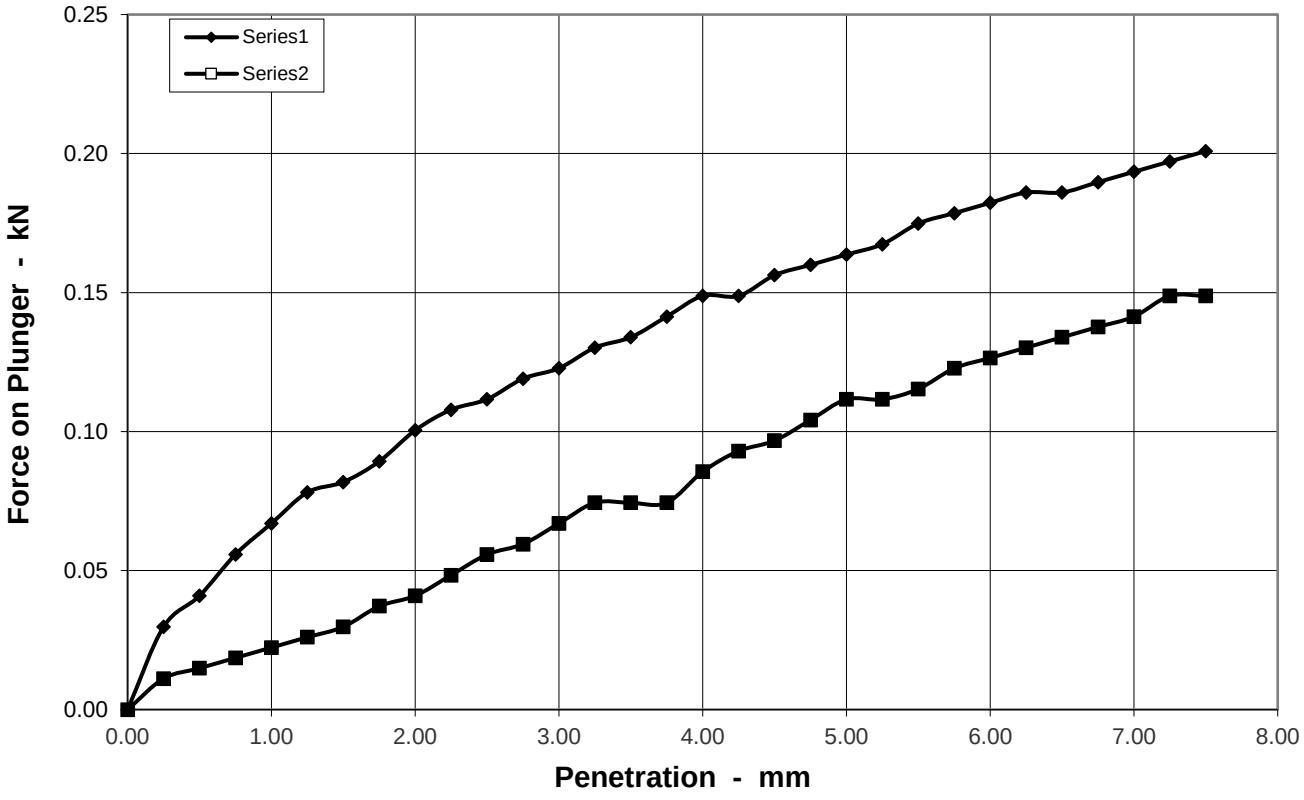
Penetration mm	CBR Values %	
	TOP	BASE
2.5	0.6	0.5
5	1.0	0.9
Accepted CBR	**1.0**	**0.9**

			Remarks	

CALIFORNIA BEARING RATIO

BS 13377 : Part 4 : 1990 Clause 7.4

		Job Ref	**P23171**
		Borehole / Pit No	TP03
Site Name	**Ringwood Blarney**	Sample No	1
		Depth	0.3 m
Soil Description	Slightly sandy gravelly SILT		



Preparation	Method of Compation		
	Hammer type		2.5kg Rammer
	Soaking Period	days	
	Amount of Swell	mm	

Sample Conditions		
Natural Moisture Content	%	26.0
Moisture Content - TOP	%	26.3
Moisture Content - BASE	%	26.4
Bulk Density	Mg/m³	1.93
Dry Density	Mg/m³	1.53

Test Conditions		
Sample Retained on 20 mm sieve	%	17.3
Seating Load - TOP	N	
Seating Load - BASE	N	
Surcharge	kg	8

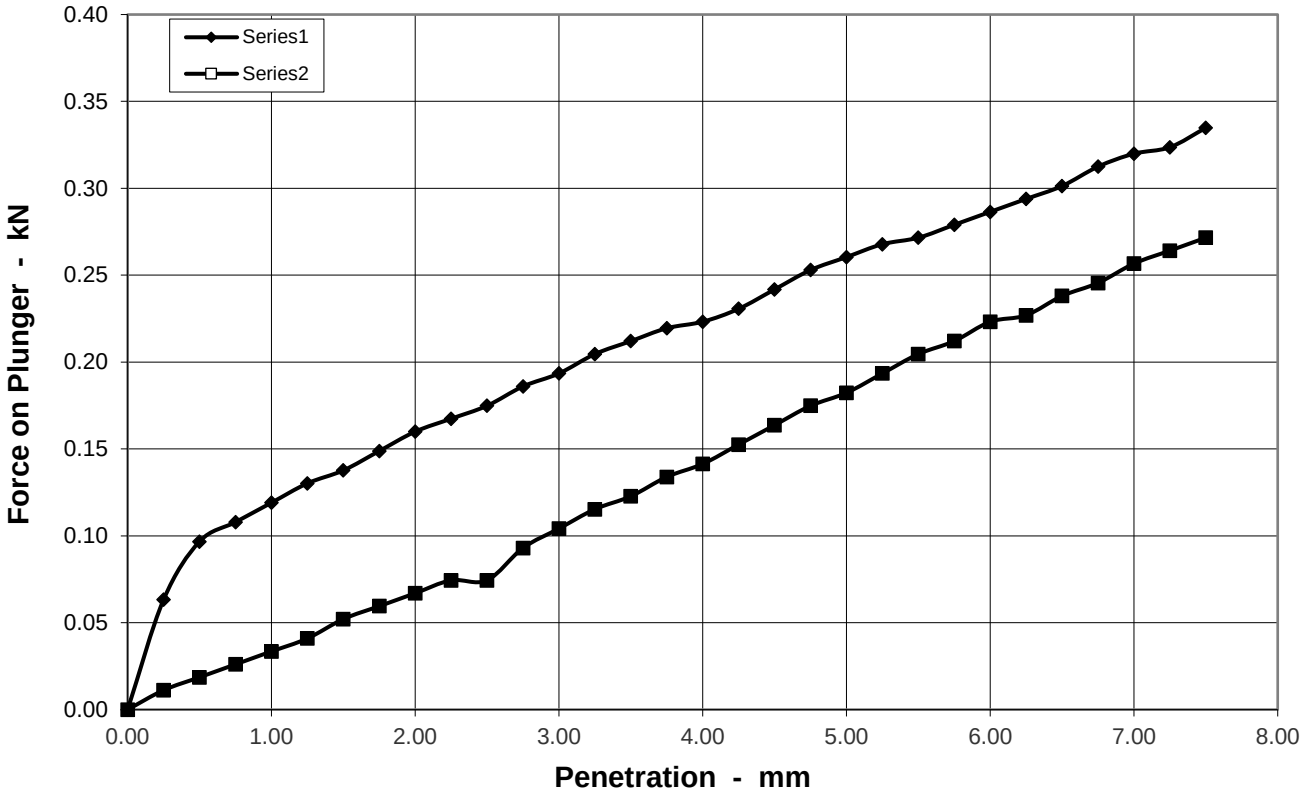
Penetration mm	CBR Values %	
	TOP	BASE
2.5	0.8	0.4
5	0.8	0.6
Accepted CBR	**0.8**	**0.6**

			Remarks	

CALIFORNIA BEARING RATIO

BS 13377 : Part 4 : 1990 Clause 7.4

		Job Ref	**P23171**
		Borehole / Pit No	TP04
Site Name	**Ringwood Blarney**	Sample No	1
		Depth	0.3 m
Soil Description	Slightly sandy gravelly SILT		



Preparation	Method of Compation		
	Hammer type		2.5kg Rammer
	Soaking Period	days	
	Amount of Swell	mm	

Sample Conditions		
Natural Moisture Content	%	24.0
Moisture Content - TOP	%	23.6
Moisture Content - BASE	%	23.6
Bulk Density	Mg/m³	2.01
Dry Density	Mg/m³	1.62

Test Conditions		
Sample Retained on 20 mm sieve	%	16.0
Seating Load - TOP	N	
Seating Load - BASE	N	
Surcharge	kg	8

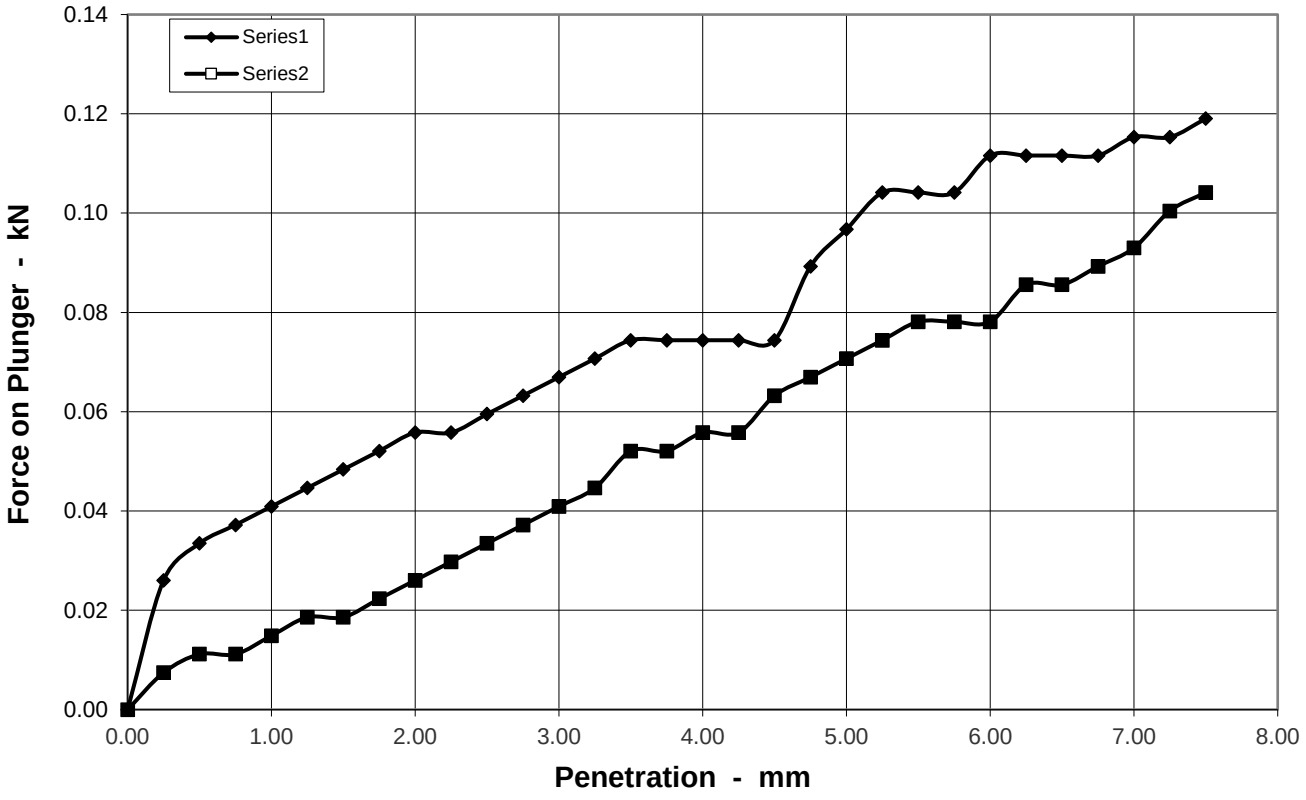
Penetration mm	CBR Values %	
	TOP	BASE
2.5	1.3	0.6
5	1.3	0.9
Accepted CBR	**1.3**	**0.9**

			Remarks

CALIFORNIA BEARING RATIO

BS 13377 : Part 4 : 1990 Clause 7.4

		Job Ref	**P23171**
		Borehole / Pit No	TP05
Site Name	**Ringwood Blarney**	Sample No	1
		Depth	0.5 m
Soil Description	Slightly sandy gravelly CLAY		



Preparation	Method of Compation		
	Hammer type		2.5kg Rammer
	Soaking Period	days	
	Amount of Swell	mm	

Sample Conditions		
Natural Moisture Content	%	28.0
Moisture Content - TOP	%	28.2
Moisture Content - BASE	%	28.3
Bulk Density	Mg/m³	1.97
Dry Density	Mg/m³	1.53

Test Conditions		
Sample Retained on 20 mm sieve	%	30.4
Seating Load - TOP	N	
Seating Load - BASE	N	
Surcharge	kg	8

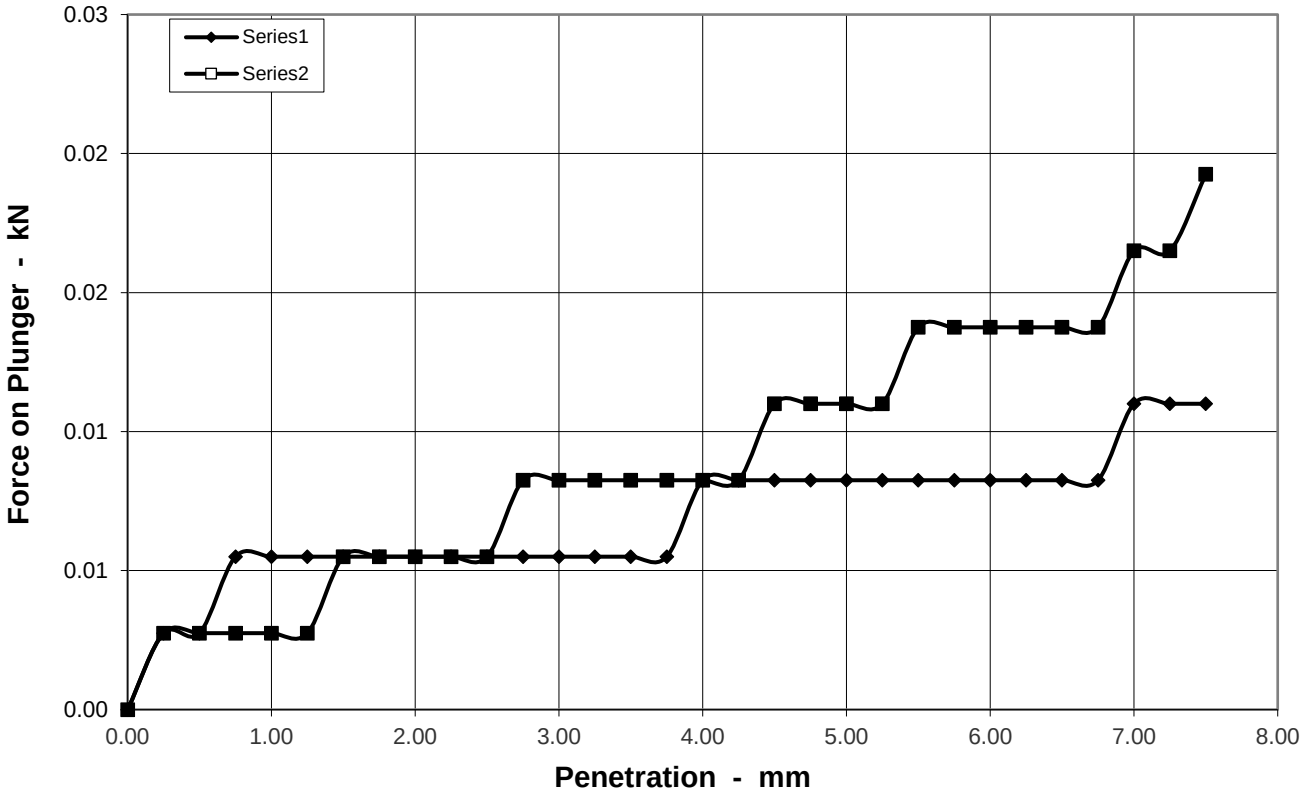
Penetration mm	CBR Values %	
	TOP	BASE
2.5	0.5	0.3
5	0.5	0.4
Accepted CBR	**0.5**	**0.4**

			Remarks	

CALIFORNIA BEARING RATIO

BS 13377 : Part 4 : 1990 Clause 7.4

		Job Ref	**P23171**
		Borehole / Pit No	TP07
Site Name	**Ringwood Blarney**	Sample No	1
		Depth	0.5 m
Soil Description	Slightly sandy gravelly CLAY		



Preparation	Method of Compation		
	Hammer type		2.5kg Rammer
	Soaking Period	days	
	Amount of Swell	mm	

Sample Conditions		
Natural Moisture Content	%	36.0
Moisture Content - TOP	%	35.8
Moisture Content - BASE	%	32.4
Bulk Density	Mg/m³	1.85
Dry Density	Mg/m³	1.36

Test Conditions		
Sample Retained on 20 mm sieve	%	26.0
Seating Load - TOP	N	
Seating Load - BASE	N	
Surcharge	kg	8

Penetration mm	CBR Values %	
	TOP	BASE
2.5	0.0	0.0
5	0.0	0.1
Accepted CBR	**0.0**	**0.1**

			Remarks	

Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Final Report

Report No.:	23-37876-1
Initial Date of Issue:	16-Nov-2023
Re-Issue Details:	
Client	Priority Geotechnical Ltd
Client Address:	Unit 12 Owenacurra Business Park Midleton County Cork Ireland
Contact(s):	Colette Kelly
Project	P23171 Ringwood Blarney

Quotation No.:		**Date Received:**	14-Nov-2023
Order No.:	15720	**Date Instructed:**	14-Nov-2023
No. of Samples:	6		
Turnaround (Wkdays):	5	**Results Due:**	20-Nov-2023
Date Approved:	16-Nov-2023		

Approved By:



Details: Stuart Henderson, Technical Manager

Results - Soil

Project: P23171 Ringwood Blarney

Client: Priority Geotechnical Ltd		**Chemtest Job No.:**			23-37876	23-37876	23-37876	23-37876	23-37876	23-37876
Quotation No.:		**Chemtest Sample ID.:**			1730842	1730843	1730844	1730845	1730846	1730847
		Sample Location:			TP04	TP01	TP01	TP04	TP01	TP02
		Sample Type:			SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
		Top Depth (m):			1.50	0.50	0.50	3.00	1.50	1.00
		Date Sampled:			10-Nov-2023	10-Nov-2023	10-Nov-2023	10-Nov-2023	10-Nov-2023	10-Nov-2023
Determinand	**Accred.**	**SOP**	**Units**	**LOD**						
Moisture	N	2030	%	0.020	16	20	21	20	16	18
Soil Colour	N	2040		N/A	Brown	Brown	Brown	Brown	Brown	Brown
Other Material	N	2040		N/A	Stones	Stones	Stones	Stones	Stones	Stones and Roots
Soil Texture	N	2040		N/A	Loam	Loam	Loam	Clay	Clay	Clay
pH at 20C	M	2010		4.0	8.6	8.8	8.7	8.1	8.8	8.1
Sulphate (2:1 Water Soluble) as SO4	M	2120	g/l	0.010	0.013	< 0.010	< 0.010	< 0.010	0.010	0.011
Total Sulphur	U	2175	%	0.010				< 0.010		
Sulphate (Acid Soluble)	U	2430	%	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010

Test Methods

SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	pH at 20°C	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2175	Total Sulphur in Soils	Total Sulphur	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.

Report Information

Key

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

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

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

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

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

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Final Report

Report No.:	23-33177-1
Initial Date of Issue:	12-Oct-2023
Re-Issue Details:	
Client	Priority Geotechnical Ltd
Client Address:	Unit 12 Owenacurra Business Park Midleton County Cork Ireland
Contact(s):	Colette Kelly
Project	P23171 Ringwood Blarney
Quotation No.:	Q23-32607
Order No.:	15720
No. of Samples:	4
Turnaround (Wkdays):	5
Date Approved:	12-Oct-2023
Approved By:	
Details:	Stuart Henderson, Technical Manager

Date Received:	04-Oct-2023
Date Instructed:	04-Oct-2023
Results Due:	10-Oct-2023

Results - Leachate

Project: P23171 Ringwood Blarney

Client: Priority Geotechnical Ltd				**Chemtest Job No.:**		23-33177	23-33177	23-33177	23-33177
Quotation No.: Q23-32607				**Chemtest Sample ID.:**		1711728	1711729	1711730	1711731
				Sample Location:		TP02	TP03	TP04	TP06
				Sample Type:		SOIL	SOIL	SOIL	SOIL
				Top Depth (m):		0.3	0.3	0.3	0.3
				Date Sampled:		29-Sep-2023	29-Sep-2023	29-Sep-2023	29-Sep-2023
Determinand	**Accred.**	**SOP**	**Type**	**Units**	**LOD**				
Ammonium	U	1220	10:1	mg/l	0.050	0.056	0.074	0.073	0.070
Ammonium	N	1220	10:1	mg/kg	0.10	0.69	0.83	0.77	0.72

Results - Soil

Project: P23171 Ringwood Blarney

Client: Priority Geotechnical Ltd		**Chemtest Job No.:**			23-33177	23-33177	23-33177	23-33177
Quotation No.: Q23-32607		**Chemtest Sample ID.:**			1711728	1711729	1711730	1711731
			Sample Location:		TP02	TP03	TP04	TP06
			Sample Type:		SOIL	SOIL	SOIL	SOIL
			Top Depth (m):		0.3	0.3	0.3	0.3
			Date Sampled:		29-Sep-2023	29-Sep-2023	29-Sep-2023	29-Sep-2023
			Asbestos Lab:		COVENTRY	COVENTRY	COVENTRY	COVENTRY
Determinand	**Accred.**	**SOP**	**Units**	**LOD**				
ACM Type	U	2192		N/A	-	-	-	-
Asbestos Identification	U	2192		N/A	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected
Moisture	N	2030	%	0.020	13	14	15	16
Soil Colour	N	2040		N/A	Brown	Brown	Brown	Brown
Other Material	N	2040		N/A	Stones and Roots	Stones and Roots	Stones	Stones and Roots
Soil Texture	N	2040		N/A	Loam	Loam	Loam	Loam
pH at 20C	M	2010		4.0	7.7	7.8	7.7	7.7
Boron (Hot Water Soluble)	M	2120	mg/kg	0.40	0.49	< 0.40	< 0.40	< 0.40
Sulphur (Elemental)	M	2180	mg/kg	1.0	1.9	< 1.0	< 1.0	< 1.0
Cyanide (Total)	M	2300	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Sulphide (Easily Liberatable)	N	2325	mg/kg	0.50	3.4	9.0	2.4	5.1
Sulphate (Total)	U	2430	%	0.010	0.056	0.063	0.040	0.066
Arsenic	M	2455	mg/kg	0.5	18	11	22	15
Barium	M	2455	mg/kg	0	56	46	27	46
Cadmium	M	2455	mg/kg	0.10	0.13	0.17	0.10	1.5
Chromium	M	2455	mg/kg	0.5	24	17	18	17
Molybdenum	M	2455	mg/kg	0.5	0.7	< 0.5	< 0.5	0.5
Antimony	N	2455	mg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Copper	M	2455	mg/kg	0.50	23	23	10	11
Mercury	M	2455	mg/kg	0.05	0.11	0.09	0.10	0.10
Nickel	M	2455	mg/kg	0.50	24	14	18	11
Lead	M	2455	mg/kg	0.50	25	29	21	43
Selenium	M	2455	mg/kg	0.25	1.5	0.81	1.1	1.0
Zinc	M	2455	mg/kg	0.50	47	38	39	95
Chromium (Trivalent)	N	2490	mg/kg	1.0	24	17	18	17
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Aliphatic VPH >C5-C6	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C6-C7	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C7-C8	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C8-C10	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Total Aliphatic VPH >C5-C10	U	2780	mg/kg	0.25	< 0.25	< 0.25	< 0.25	< 0.25
Aliphatic EPH >C10-C12	M	2690	mg/kg	2.00	< 2.0	< 2.0	< 2.0	< 2.0
Aliphatic EPH >C12-C16	M	2690	mg/kg	1.00	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic EPH >C16-C21	M	2690	mg/kg	2.00	< 2.0	< 2.0	< 2.0	< 2.0
Aliphatic EPH >C21-C35	M	2690	mg/kg	3.00	< 3.0	< 3.0	< 3.0	< 3.0
Aliphatic EPH >C35-C40	N	2690	mg/kg	10.00	< 10	< 10	< 10	< 10
Total Aliphatic EPH >C10-C35	M	2690	mg/kg	5.00	< 5.0	< 5.0	< 5.0	< 5.0

Results - Soil

Project: P23171 Ringwood Blarney

Client: Priority Geotechnical Ltd		**Chemtest Job No.:**			23-33177	23-33177	23-33177	23-33177
Quotation No.: Q23-32607		**Chemtest Sample ID.:**			1711728	1711729	1711730	1711731
			Sample Location:		TP02	TP03	TP04	TP06
			Sample Type:		SOIL	SOIL	SOIL	SOIL
			Top Depth (m):		0.3	0.3	0.3	0.3
			Date Sampled:		29-Sep-2023	29-Sep-2023	29-Sep-2023	29-Sep-2023
			Asbestos Lab:		COVENTRY	COVENTRY	COVENTRY	COVENTRY
Determinand	**Accred.**	**SOP**	**Units**	**LOD**				
Aromatic VPH >C5-C7	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C7-C8	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C8-C10	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Total Aromatic VPH >C5-C10	U	2780	mg/kg	0.25	< 0.25	< 0.25	< 0.25	< 0.25
Aromatic EPH >C10-C12	U	2690	mg/kg	1.00	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic EPH >C12-C16	U	2690	mg/kg	1.00	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic EPH >C16-C21	U	2690	mg/kg	2.00	2.8	4.3	5.2	6.4
Aromatic EPH >C21-C35	U	2690	mg/kg	2.00	3.5	6.7	< 2.0	2.8
Aromatic EPH >C35-C40	N	2690	mg/kg	1.00	1.3	34	< 1.0	< 1.0
Total Aromatic EPH >C10-C35	U	2690	mg/kg	5.00	6.3	11	7.1	9.2
Total VPH >C5-C10	U	2780	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Total EPH >C10-C35	U	2690	mg/kg	10.00	< 10	13	< 10	10
Total Organic Carbon	M	2625	%	0.20	1.4	1.4	0.48	0.48
Mineral Oil (TPH Calculation)	N	2670	mg/kg	10	< 10	< 10	< 10	< 10
Benzene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Methyl Tert-Butyl Ether	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Naphthalene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthylene	N	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluorene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Phenanthrene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Anthracene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluoranthene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Pyrene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[a]anthracene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Chrysene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[b]fluoranthene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[k]fluoranthene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[a]pyrene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Coronene	N	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Total Of 17 PAH's	N	2800	mg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0
PCB 28	U	2815	mg/kg	0.010	< 0.010	< 0.010	< 0.010	< 0.010

Results - Soil

Project: P23171 Ringwood Blarney

Client: Priority Geotechnical Ltd			**Chemtest Job No.:**		23-33177	23-33177	23-33177	23-33177
Quotation No.: Q23-32607			**Chemtest Sample ID.:**		1711728	1711729	1711730	1711731
			Sample Location:		TP02	TP03	TP04	TP06
			Sample Type:		SOIL	SOIL	SOIL	SOIL
			Top Depth (m):		0.3	0.3	0.3	0.3
			Date Sampled:		29-Sep-2023	29-Sep-2023	29-Sep-2023	29-Sep-2023
			Asbestos Lab:		COVENTRY	COVENTRY	COVENTRY	COVENTRY
Determinand	**Accred.**	**SOP**	**Units**	**LOD**				
PCB 52	U	2815	mg/kg	0.010	< 0.010	< 0.010	< 0.010	< 0.010
PCB 90+101	U	2815	mg/kg	0.010	< 0.010	< 0.010	< 0.010	< 0.010
PCB 118	U	2815	mg/kg	0.010	< 0.010	< 0.010	< 0.010	< 0.010
PCB 153	U	2815	mg/kg	0.010	< 0.010	< 0.010	< 0.010	< 0.010
PCB 138	U	2815	mg/kg	0.010	< 0.010	< 0.010	< 0.010	< 0.010
PCB 180	U	2815	mg/kg	0.010	< 0.010	< 0.010	< 0.010	< 0.010
Total PCBs (7 Congeners)	U	2815	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Total Phenols	M	2920	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10

Results - Single Stage WAC

Project: P23171 Ringwood Blarney

					Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	23-33177						
Chemtest Sample ID:	1711728						
Sample Ref:							
Sample ID:							
Sample Location:	TP02						
Top Depth(m):	0.3						
Bottom Depth(m):							
Sampling Date:	29-Sep-2023						
Determinand	**SOP**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625	M	%	1.4	3	5	6
Loss On Ignition	2610	M	%	1.0	--	--	10
Total BTEX	2760	M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	< 10	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	< 2.0	100	--	--
pH at 20C	2010	M		7.7	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.0050	--	To evaluate	To evaluate
Eluate Analysis			**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455	U	0.0003	0.0027	0.5	2	25
Barium	1455	U	< 0.005	< 0.050	20	100	300
Cadmium	1455	U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455	U	< 0.0005	< 0.0050	0.5	10	70
Copper	1455	U	0.0007	0.0075	2	50	100
Mercury	1455	U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455	U	0.0004	0.0037	0.5	10	30
Nickel	1455	U	< 0.0005	< 0.0050	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0050	0.5	10	50
Antimony	1455	U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455	U	< 0.0005	< 0.0050	0.1	0.5	7
Zinc	1455	U	0.011	0.11	4	50	200
Chloride	1220	U	< 1.0	< 10	800	15000	25000
Fluoride	1220	U	0.19	1.9	10	150	500
Sulphate	1220	U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020	N	16	160	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	4.7	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	13

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: P23171 Ringwood Blarney

					Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	23-33177						
Chemtest Sample ID:	1711729						
Sample Ref:							
Sample ID:							
Sample Location:	TP03						
Top Depth(m):	0.3						
Bottom Depth(m):							
Sampling Date:	29-Sep-2023						
Determinand	**SOP**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625	M	%	1.4	3	5	6
Loss On Ignition	2610	M	%	1.0	--	--	10
Total BTEX	2760	M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	< 10	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	< 2.0	100	--	--
pH at 20C	2010	M		7.8	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.0060	--	To evaluate	To evaluate
Eluate Analysis			**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455	U	0.0003	0.0032	0.5	2	25
Barium	1455	U	< 0.005	< 0.050	20	100	300
Cadmium	1455	U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455	U	0.0005	0.0050	0.5	10	70
Copper	1455	U	0.0010	0.010	2	50	100
Mercury	1455	U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455	U	< 0.0002	< 0.0020	0.5	10	30
Nickel	1455	U	< 0.0005	< 0.0050	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0050	0.5	10	50
Antimony	1455	U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455	U	< 0.0005	< 0.0050	0.1	0.5	7
Zinc	1455	U	0.006	0.057	4	50	200
Chloride	1220	U	< 1.0	< 10	800	15000	25000
Fluoride	1220	U	0.31	3.1	10	150	500
Sulphate	1220	U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020	N	13	130	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	4.6	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	14

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: P23171 Ringwood Blarney

					Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	23-33177						
Chemtest Sample ID:	1711730						
Sample Ref:							
Sample ID:							
Sample Location:	TP04						
Top Depth(m):	0.3						
Bottom Depth(m):							
Sampling Date:	29-Sep-2023						
Determinand	**SOP**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625	M	%	0.48	3	5	6
Loss On Ignition	2610	M	%	0.95	--	--	10
Total BTEX	2760	M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	< 10	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	< 2.0	100	--	--
pH at 20C	2010	M		7.7	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.0050	--	To evaluate	To evaluate
Eluate Analysis			**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455	U	0.0005	0.0052	0.5	2	25
Barium	1455	U	< 0.005	< 0.050	20	100	300
Cadmium	1455	U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455	U	0.0006	0.0061	0.5	10	70
Copper	1455	U	0.0010	0.010	2	50	100
Mercury	1455	U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455	U	< 0.0002	< 0.0020	0.5	10	30
Nickel	1455	U	< 0.0005	< 0.0050	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0050	0.5	10	50
Antimony	1455	U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455	U	< 0.0005	< 0.0050	0.1	0.5	7
Zinc	1455	U	0.011	0.11	4	50	200
Chloride	1220	U	< 1.0	< 10	800	15000	25000
Fluoride	1220	U	0.13	1.3	10	150	500
Sulphate	1220	U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020	N	12	120	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	5.7	57	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	15

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: P23171 Ringwood Blarney

					Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	23-33177						
Chemtest Sample ID:	1711731						
Sample Ref:							
Sample ID:							
Sample Location:	TP06						
Top Depth(m):	0.3						
Bottom Depth(m):							
Sampling Date:	29-Sep-2023						
Determinand	**SOP**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625	M	%	0.48	3	5	6
Loss On Ignition	2610	M	%	1.0	--	--	10
Total BTEX	2760	M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	< 10	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	< 2.0	100	--	--
pH at 20C	2010	M		7.7	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.0090	--	To evaluate	To evaluate
Eluate Analysis			**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455	U	0.0003	0.0028	0.5	2	25
Barium	1455	U	< 0.005	< 0.050	20	100	300
Cadmium	1455	U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455	U	< 0.0005	< 0.0050	0.5	10	70
Copper	1455	U	0.0011	0.011	2	50	100
Mercury	1455	U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455	U	< 0.0002	< 0.0020	0.5	10	30
Nickel	1455	U	< 0.0005	< 0.0050	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0050	0.5	10	50
Antimony	1455	U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455	U	< 0.0005	< 0.0050	0.1	0.5	7
Zinc	1455	U	0.008	0.081	4	50	200
Chloride	1220	U	< 1.0	< 10	800	15000	25000
Fluoride	1220	U	0.39	3.9	10	150	500
Sulphate	1220	U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020	N	16	160	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	3.8	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	16

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Test Methods

SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	pH at 20°C	pH Meter
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity at 25°C and Total Dissolved Solids (TDS) in Waters	Conductivity Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1455	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	pH at 20°C	pH Meter
2015	Acid Neutralisation Capacity	Acid Reserve	Titration
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2180	Sulphur (Elemental) in Soils by HPLC	Sulphur	Dichloromethane extraction / HPLC with UV detection
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2325	Sulphide in Soils	Sulphide	Steam distillation with sulphuric acid / analysis by 'Aquakem 600' Discrete Analyser, using N,N–dimethyl-p-phenylenediamine.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2455	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2610	Loss on Ignition	loss on ignition (LOI)	Determination of the proportion by mass that is lost from a soil by ignition at 550°C.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID
2690	EPH A/A Split	Aliphatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40 Aromatics: >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C40	Acetone/Heptane extraction / GCxGC FID detection

Test Methods

SOP	Title	Parameters included	Method summary
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2780	VPH A/A Split	Aliphatics: >C5–C6, >C6–C7,>C7–C8,>C8-C10 Aromatics: >C5–C7,>C7-C8,>C8–C10	Water extraction / Headspace GCxGC FID detection
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.
640	Characterisation of Waste (Leaching C10)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge

Report Information

Key

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

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

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

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

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

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

CHAPTER 17 APPENDICES

Appendix 17.1 Cork City Childcare - Childcare Needs Assessment Blarney Tower Area

Cork City Childcare

Suite 1, John Dunlop House, Marina Commercial Park, Centre Park Road, Cork, T12 P9PV
Tel: 021 4310500, Email: info@corkcitychildcare.ie

Date: 30/05/2025

RE: Planning Referral for LRD Opinion at Ringwood, Shean Upper, Blarney, Cork. (LRD25-05)

To whom it may concern,

Cork City Childcare carried out a childcare needs assessment for the Proposed Large-Scale Residential Development (LRD) at Ringwood, Shean Upper, Blarney, Cork. (LRD25-05) The accompanying table is a list of Childcare Services located within 3 km radius surrounding this area. The childcare needs assessment was conducted with information gathered from the Tusla register on the week of 26/05/2025. The Childcare Assessment reflects the services that are in operation within 3km radius of the Blarney, Cork, area. Please note this is a mix of full day care, sessional preschools, and/or part-time childcare services, combined Early Learning and care/school aged childcare.

According to the ***Childcare Facilities Guidelines for Planning Authorities, 2001,*** a standard of one childcare facility providing for a minimum 20 childcare places per approximately 75 dwellings is a guideline provided. In terms of this development, with 334 no. residential dwellings, proposed (and considerations made for omitting 85 one-bedroom dwellings) , that would average **60 childcare places <u>at a minimum</u>.** Based on the lack of childcare availability surrounding this location there is a need for a larger childcare facility to be considered offering a range of different service types, such as sessional/part time/full day care/drop in/after-school.

It is also relevant to mention this LRD is Phase 2 of another development whereby planning permission was granted on the 12/12/2024 for Ref No .: 24/43031. Planning Approval was granted on the basis of "*the development, to include the childcare facility, shall be carried out in Phase 1A of the proposed development, in accordance with the phasing scheme, as shown on Proposed Site Layout Plan Phasing, lodged with the application, except as otherwise may be required to comply with the following conditions. To ensure the timely provision of services, for the benefit of the occupants of the proposed dwellings. The childcare facility hereby permitted, shall not be converted to any other use without a prior grant of planning permission in the event of the childcare facility ceasing operations. To protect the amenities of residential properties in the vicinity.*"

The childcare assessment reflects the 12 services that are in operation in the Blarney/Tower area. Please note this is a mix of full day care, sessional preschool, and/or part-time or a school aged childcare only capacity.

The following information indicates the level of provision currently in Blarney/Tower:

***From the information outlined there are currently minimal places available in the area.

ELC Childcare Services					
Name	**Address**	**Service Type**	**Age Range**	**Capacity**	**Available places**
McShortall Childcare Ltd.	Woodfield, Station Road, Blarney, Co. Cork	Full Time/Part-Time/ Sessional	0-6 yrs.	43	0
Shournagh Childcare	Elmgrove, Shournagh Road, Blarney, Co. Cork	Full Day Care	0-6yrs	77	0
Shournagh Childcare (Ballyneety)	"Ballyneety", Shournagh Road, Blarney, Co. Cork	Sessional	2-6 yrs.	55	0
Árd Na Laoí Montessori School	Clogheen, Blarney Road, Cork, Co. Cork	Sessional ECCE only	2-6 yrs.	11	0
Blarney Community Playschool CLG	Rooms 1 & 2, Scoil an Chroí Íosa, St Anne's Road, Blarney, Co. Cork	Sessional ECCE only	2-6 yrs.	32	>2
McShorthall Childcare Ltd. Sessional Service	Wood Field, Station Road, Blarney, Co. Cork	Sessional ECCE only	2-6 yrs.	22	0
Blarney Montessori School	Cluain Ard, Monacnappa, Blarney, Co. Cork	Part-Time/Sessional	2-6yrs	33	0
Tiny Toes PreSchool	Kerry Road, Tower, Co. Cork	Sessional/Part-Time	2-6 yrs.	39	0
School Aged Childcare Services					
Name	**Address**	**Service Type**	**Age Range**	**Capacity**	**Available places**
Cloghroe After School Club	Cloghroe National School, Cloghroe, Blarney, Co. Cork	Standalone	4-15yrs	48	0
Sherpa Kids Gaelscoil Mhuscrai	Gaelscoil Mhuscrai Sheanlower, Blarney, Co. Cork	Standalone	4-12yrs	36	0
Sherpa Kids Scoil Chroi Iosa	Scoil Chroi Iosa Blarney 40 The Groves, Shean Lower, , Blarney, Co. Cork	Standalone	4-12yrs	24	0
Shournagh Childcare	Ballyneety, Shournagh Road, Blarney, Co. Cork	Combined	4-12yrs	36	0
Muin Education	Cluain Ard, Monacnappa, Blarney, Co. Cork	Combined	4-12yrs	55	0
Clogheen Kerrypike Breakfast Club and Afterschool	Clogheen Mixed National School, Kerry Pike Cork T23A406	Standalone	4-15yrs	24	0

It is clear from the capacity assessment undertaken by Cork City Childcare that there are minimal places available in the area. There 3 services offering preschool only sessions, operating on only a 15-hour week basis. In most cases additional childcare provision, alongside this three hour per day, is required to meet the needs of working families and parents engaged in training and education.

Within a 3km radius of this proposed development in Ringwood, Shean Upper, Blarney Cork, area there are only two services catering for full day care. We are inundated with parents currently not able to access childcare in a creche setting for care for children under the age of two years. Many childcare services in the 3km radius surrounding this area operate an internal waitlist, to meet the needs of families already within the service, that often **comprises of a two year wait.** Please note this is not inclusive of the external waitlist available to additional children and families in the area. The demand for baby places is at an all-time high. The Annual Early Years Sector Profile Survey 2020/2021 report states that for every two babies enrolled in services, approximately three are placed on a waiting list (154%). A link to the full report is available here: Annual Early Years Sector Profile Survey 2020/2021 report

The Central Statistics Office Ireland (CSO, 2023) also reported there was a total of 666 children aged between 0-4 years, 692 children aged between 5-9 years and 780 children aged between 10-14 years residing within a 3km radius of this proposed development in Blarney Cork, area. as of, 2023. Everchanging dynamics in how young families are now living has also added to the already existing childcare demand associated with the area.

According to *Census of Population 2022 Profile 3 - Households, Families and Childcare* National

- Almost one-third (331,783) of children under the age of 15 in the State were in some form of childcare.
- A crèche or a similar facility was the most common form of childcare (42%), followed by an unpaid relative or family member (28%).
- A crèche was the most common type of childcare used among 0- to 4-year-olds. Over half (56%) used this childcare option and a further 19% used an unpaid relative or family member.
- Primary school children were most likely to be in some type of childcare (52%).

Cork City

- There were 146,235 families in Cork in April 2022, up from 138,895 (+5%) in 2016. The average number of children per family in the county was 1.32, compared with 1.34 nationally.
- There were 113,667 children aged 15 and under in Cork in April 2022. Of these, 38,604 (34%) were in childcare, compared with 33% nationally.

Based on the county average of 1.32 children per family, applying this to 334 family homes (and omitting the 85 one bedroom dwellings) results in an estimated 328.7 children. Given that 34% of these children (the county average for

those requiring childcare) would need childcare within a 15-year cycle, this equates to approximately 111 children. **Therefore, we would recommend and advocate for a large childcare facility that would accommodate this level of proposed childcare need to this area and the previous submission for Phase 1 of the project.** It is vital that Cork City has sufficient capacity to support the growing demand for childcare in lands located at the Greenfield, Ballincollig, Cork, area.

In conclusion, with reference to the Childcare Facilities Guidelines for Planning Authorities (2001), **a capacity of 60 at very minimum would align with the recommendations provided and in regards this project alone.** However, given the intentions from Phase 1 of this project, national demand for childcare services and the significant shortage of spaces for children aged 1-3 years, we would advocate for the development of a larger facility. The area of Blarney has seen substantial housing growth in recent years, yet the availability of childcare services has not kept pace. We are experiencing a high volume of inquiries from parents who are facing long waiting lists, which highlights the pressing need for additional childcare spaces. We would therefore recommend a facility with greater capacity, accommodating a broader range of age groups.

Thank you for the opportunity to submit this proposal and contribute to the development of much-needed childcare services in Cork City. I am enthusiastic about the potential positive impact this facility could have on the community and its families. Please feel free to reach out if you require any further details, clarification, or additional support as you move forward with the planning and implementation of this Childcare Facility. I would be more than happy to assist in any way I can to ensure the successful development and operation of this important project.

Kind regards,

Michelle Lynch

Michelle Lynch

Development Officer

Cork City Childcare Committee

CHAPTER 18 APPENDICES

Appendix 18.1	**Uisce Eireann Pre-Connection Enquiry and Confirmation of Feasibility inclusive of Irish Water/ Uisce Eireann Maps**
Appendix 18.2	**ESB networks utility map/s**
Appendix 18.3	**Utility map/s from EIR**

CONFIRMATION OF FEASIBILITY

David Murphy

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T12 KC66

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Oifig Sheachadta na
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Cathair Chorcaí

Uisce Éireann
PO Box 448
South City
Delivery Office
Cork City

www.water.ie

2 December 2025

Our Ref: CDS24003261 Pre-Connection Enquiry
Ringwood Phase 2, Blarney, Cork, Co. Cork

Dear Applicant/Agent,

We have completed the review of the Pre-Connection Enquiry.

Uisce Éireann has reviewed the pre-connection enquiry in relation to a Water & Wastewater connection for a Multi/Mixed Use Development of 325 unit(s) at Ringwood Phase 2, Blarney, Cork, Co. Cork **(the Development)**.

Based upon the details provided we can advise the following regarding connecting to the networks;

- **Water Connection** - Feasible Subject to Upgrades:

  In order to accommodate the proposed connection, approximately 450m of water network upgrades will be required to provide additional network capacity. Uisce Éireann does not currently have any plans to undertake these works, therefore the applicant will be required to fund these local network upgrades. The fee for these works will be calculated at a connection application stage.

  In addition to this, a supplementary booster pump arrangement will be required to service the extent of the Development and ensure a suitable level of service for the proposed network.

- **Wastewater Connection** - Feasible Subject to Upgrades:

  In order to service a section of the Development (and surrounding masterplan), it will be necessary to provide a wastewater pumping station (WWPS) to collect and discharge wastewater loading to the exiting Uisce Éireann network. This WWPS should be located at a suitable location at the southern boundary of the Development masterplan and sized to allow for modular expansion for potential

Stiúrthóirí / Directors: Niall Gleeson (POF / CEO), Jerry Grant (Cathaoirleach / Chairperson), Gerard Britchfield, Liz Joyce, Michael Nolan, Patricia King, Eileen Maher, Cathy Mannion, Paul Reid, Michael Walsh.
Oifig Chláraithe / Registered Office: Teach Colvill, 24-26 Sráid Thalbóid, Baile Átha Cliath 1, D01 NP86 / Colvill House, 24-26 Talbot Street, Dublin, Ireland D01NP86
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future development phases. The Developer should engage with Uisce Éireann to review pumping station requirements and gravity drainage options through the site to ensure infrastructure provided will be able to maximise the scale of development that can be serviced.

Please note that local sewer upgrades along Station Road may also be necessary to cater for the full proposed gravity discharge from the Development site. This is to be confirmed through hydraulic modelling at connection application stage, at which point masterplan phasing and timeframes should be discussed with Uisce Éireann to determine the upgrade requirements and contributions required.

Please also note that while there is currently capacity in the Blarney wastewater treatment plant to facilitate the proposed connection, this capacity is limited and there are a large number of developments in the Blarney area. Should enough of these developments progress before you make a connection application, this capacity may be utilised by others. In this case it will be necessary for you to enter into an agreement with Uisce Éireann, wherein you, the developer, will fund the necessary upgrades to the wastewater treatment plant and/or surrounding area to facilitate further growth in the area to be carried out by Uisce Éireann.

This letter does not constitute an offer, in whole or in part, to provide a connection to any Uisce Éireann infrastructure. Before the Development can be connected to our network(s) you must submit a connection application and be granted and sign a connection agreement with Uisce Éireann.

As the network capacity changes constantly, this review is only valid at the time of its completion. As soon as planning permission has been granted for the Development, a completed connection application should be submitted. The connection application is available at www.water.ie/connections/get-connected/

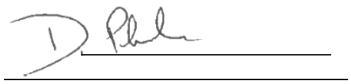
Where can you find more information?

- **Section A -** What is important to know?
- **Section B -** Details of Uisce Éireann's Network(s)

This letter is issued to provide information about the current feasibility of the proposed connection(s) to Uisce Éireann's network(s). This is not a connection offer and capacity in Uisce Éireann's network(s) may only be secured by entering into a connection agreement with Uisce Éireann.

For any further information, visit **www.water.ie/connections**, **email newconnections@water.ie** or contact 1800 278 278**.**

Yours sincerely,



Dermot Phelan
Connections Delivery Manager

Section A - What is important to know?

What is important to know?	Why is this important?
Do you need a contract to connect?	• Yes, a contract is required to connect. This letter does not constitute a contract or an offer in whole or in part to provide a connection to Uisce Éireann's network(s). • Before the Development can connect to Uisce Éireann's network(s), you must submit a connection application and be granted and sign a connection agreement with Uisce Éireann.
When should I submit a Connection Application?	• A connection application should only be submitted after planning permission has been granted.
Where can I find information on connection charges?	• Uisce Éireann connection charges can be found at: https://www.water.ie/connections/information/charges/
Who will carry out the connection work?	• All works to Uisce Éireann's network(s), including works in the public space, must be carried out by Uisce Éireann*. *Where a Developer has been granted specific permission and has been issued a connection offer for Self-Lay in the Public Road/Area, they may complete the relevant connection works
Fire flow Requirements	• The Confirmation of Feasibility does not extend to fire flow requirements for the Development. Fire flow requirements are a matter for the Developer to determine. • **What to do?** - Contact the relevant Local Fire Authority
Plan for disposal of storm water	• The Confirmation of Feasibility does not extend to the management or disposal of storm water or ground waters. • **What to do?** - Contact the relevant Local Authority to discuss the management or disposal of proposed storm water or ground water discharges.
Where do I find details of Uisce Éireann's network(s)?	• Requests for maps showing Uisce Éireann's network(s) can be submitted to: datarequests@water.ie

What are the design requirements for the connection(s)?	• The design and construction of the Water & Wastewater pipes and related infrastructure to be installed in this Development shall comply with ***the Uisce Éireann Connections and Developer Services Standard Details and Codes of Practice,*** available at www.water.ie/connections
Trade Effluent Licensing	• Any person discharging trade effluent** to a sewer, must have a Trade Effluent Licence issued pursuant to section 16 of the Local Government (Water Pollution) Act, 1977 (as amended). • More information and an application form for a Trade Effluent License can be found at the following link: https://www.water.ie/business/trade-effluent/about/ **trade effluent is defined in the Local Government (Water Pollution) Act, 1977 (as amended)

Section B – Details of Uisce Éireann's Network(s)

The map included below outlines the current Uisce Éireann infrastructure adjacent the Development: To access Uisce Éireann Maps email datarequests@water.ie

Existing Water Infrastructure:



Existing Wastewater Infrastructure:



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Note: The information provided on the included maps as to the position of Uisce Éireann's underground network(s) is provided as a general guide only. The information is based on the best available information provided by each Local Authority in Ireland to Uisce Éireann.

Whilst every care has been taken in respect of the information on Uisce Éireann's network(s), Uisce Éireann assumes no responsibility for and gives no guarantees, undertakings or warranties concerning the accuracy, completeness or up to date nature of the information provided, nor does it accept any liability whatsoever arising from or out of any errors or omissions. This information should not be solely relied upon in the event of excavations or any other works being carried out in the vicinity of Uisce Éireann's underground network(s). The onus is on the parties carrying out excavations or any other works to ensure the exact location of Uisce Éireann's underground network(s) is identified prior to excavations or any other works being carried out. Service connection pipes are not generally shown but their presence should be anticipated.

CONFIRMATION OF FEASIBILITY

Uisce Éireann
Bosca OP 448
Oifig Sheachadta na
Cathrach Theas
Cathair Chorcaí

Uisce Éireann
PO Box 448
South City
Delivery Office
Cork City

www.water.ie

David Murphy

MHL & Associates Ltd
Unit 1B
The Atrium
Blackpool
Co. Cork
T23T2VY

2 October 2025

Our Ref: CDS24003261 Pre-Connection Enquiry
Blarney, Co. Cork

Dear Applicant/Agent,

We have completed the review of the Pre-Connection Enquiry.

Uisce Éireann has reviewed the pre-connection enquiry in relation to a Water & Wastewater connection for a Housing Development of 301 unit(s) at Blarney, Co. Cork **(the Development)**.

Based upon the details provided we can advise the following regarding connecting to the networks;

- **Water Connection** - Feasible Subject to Upgrades:

  In order to accommodate the proposed connection, approximately 450m of water network upgrades will be required to provide additional network capacity. Uisce Éireann does not currently have any plans to undertake these works, therefore the applicant will be required to fund these local network upgrades. The fee for these works will be calculated at a connection application stage.

  In addition to this, a supplementary booster pump arrangement will be required to service the extent of the Development and ensure a suitable level of service for the proposed network.

- **Wastewater Connection** - Feasible Subject to Upgrades:

  In order to service a section of the Development (and surrounding masterplan), it will be necessary to provide a wastewater pumping station (WWPS) to collect and discharge wastewater loading to the exiting Uisce Éireann network. This WWPS should be located at a

Stiúrthóirí / Directors: Niall Gleeson (POF / CEO), Jerry Grant (Cathaoirleach / Chairperson), Gerard Britchfield, Liz Joyce, Michael Nolan, Patricia King, Eileen Maher, Cathy Mannion, Paul Reid, Michael Walsh.
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suitable location at the southern boundary of the Development masterplan and sized to allow for modular expansion for potential future development phases. The Developer should engage with Uisce Éireann to review pumping station requirements and gravity drainage options through the site to ensure infrastructure provided will be able to maximise the scale of development that can be serviced.

Please note that local sewer upgrades along Station Road may also be necessary to cater for the full proposed gravity discharge from the Development site. This is to be confirmed through hydraulic modelling at connection application stage, at which point masterplan phasing and timeframes should be discussed with Uisce Éireann to determine the upgrade requirements and contributions required.

Please also note that while there is currently capacity in the Blarney wastewater treatment plant to facilitate the proposed connection, this capacity is limited and there are a large number of developments in the Blarney area. Should enough of these developments progress before you make a connection application, this capacity may be utilised by others. In this case it will be necessary for you to enter into an agreement with Uisce Éireann, wherein you, the developer, will fund the necessary upgrades to the wastewater treatment plant and/or surrounding area to facilitate further growth in the area to be carried out by Uisce Éireann.

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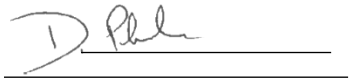
Where can you find more information?

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- **Section B -** Details of Uisce Éireann's Network(s)

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For any further information, visit **www.water.ie/connections**, **email newconnections@water.ie** or contact 1800 278 278**.**

Yours sincerely,



Dermot Phelan
Connections Delivery Manager

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Existing Water Infrastructure:



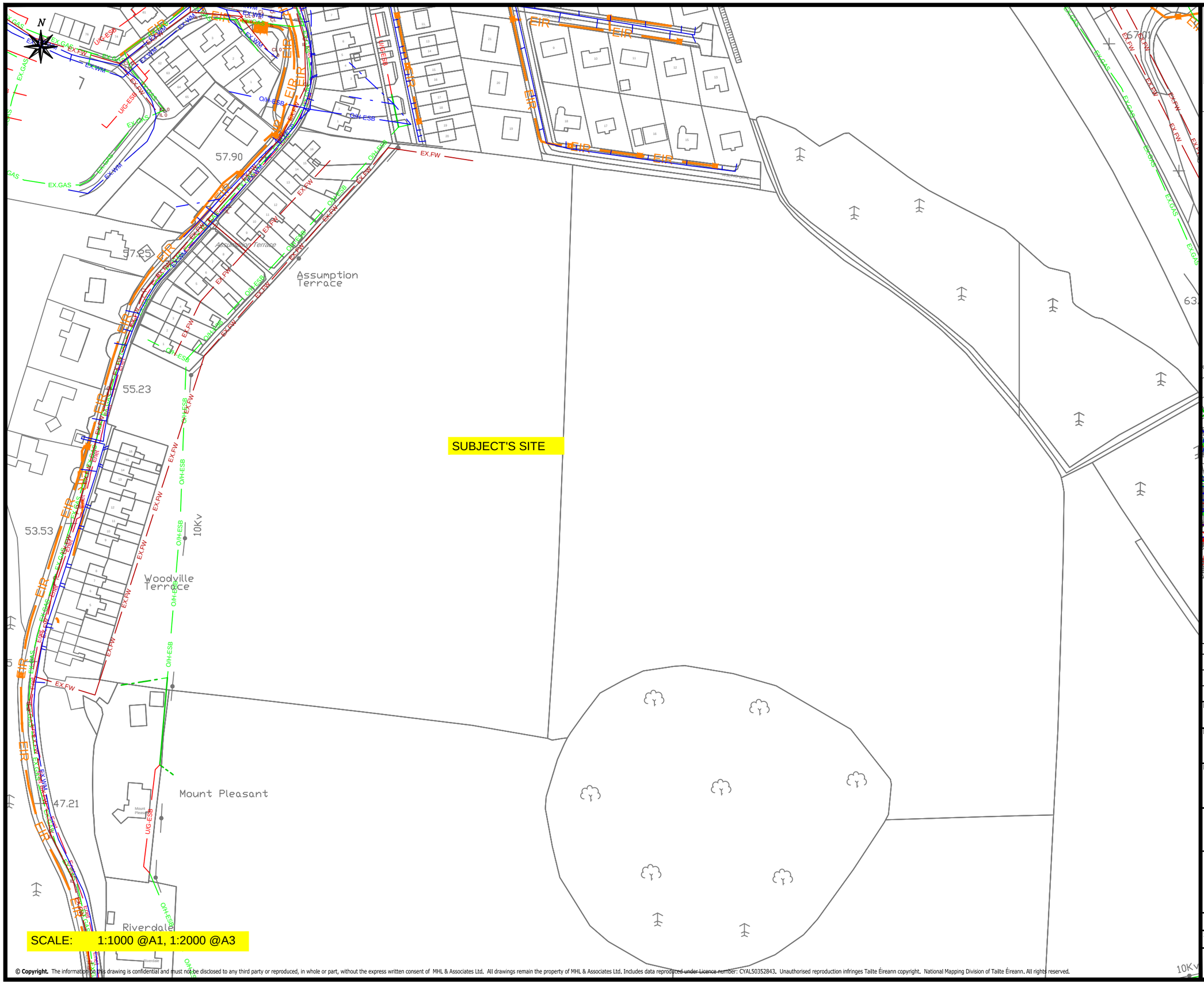
Existing Wastewater Infrastructure:



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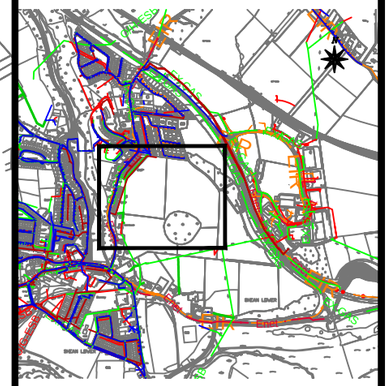


SCALE: 1:1000 @A1, 1:2000 @A3

Notes:

Do not scale from drawing.
For Planning Purposes only. Not for Construction.
All dimensions are in metres.
Any discrepancies found consult with design office.
Main sewer tie in invert levels to be verified by SI.

EIR	EXISTING EIR NETWORK
Enet	EXISTING Enet NETWORK
O/H-ESB	EXISTING MV(10KV/20KV) OVERHEAD LINE
O/H-ESB	EXISTING LV (400V/230V) OVERHEAD LINE
U/G-ESB	EXISTING MV/LV (10KV / 20KV / 400V / 230V) UNDERGROUND CABLE ROUTE
EX.FW	EXISTING FOUL SEWER
EX.WM	EXISTING WATERMAIN
H	HYDRANT
M	WATER METER
EX.GAS	EXISTING GAS MAIN



Rev	By	Date	Description

Drawing Status:
PLANNING
NOT CERTIFIED FOR CONSTRUCTION

Project Title:
PROPOSED RESIDENTIAL DEVELOPMENT (PHASE 2)
AT RINGWOOD, BLARNEY, CO. CORK

Drawing Title:
EXISTING SERVICES
GENERAL ARRANGEMENT
SHEET 2

Client:
CLOCKSTRIKE LTD.

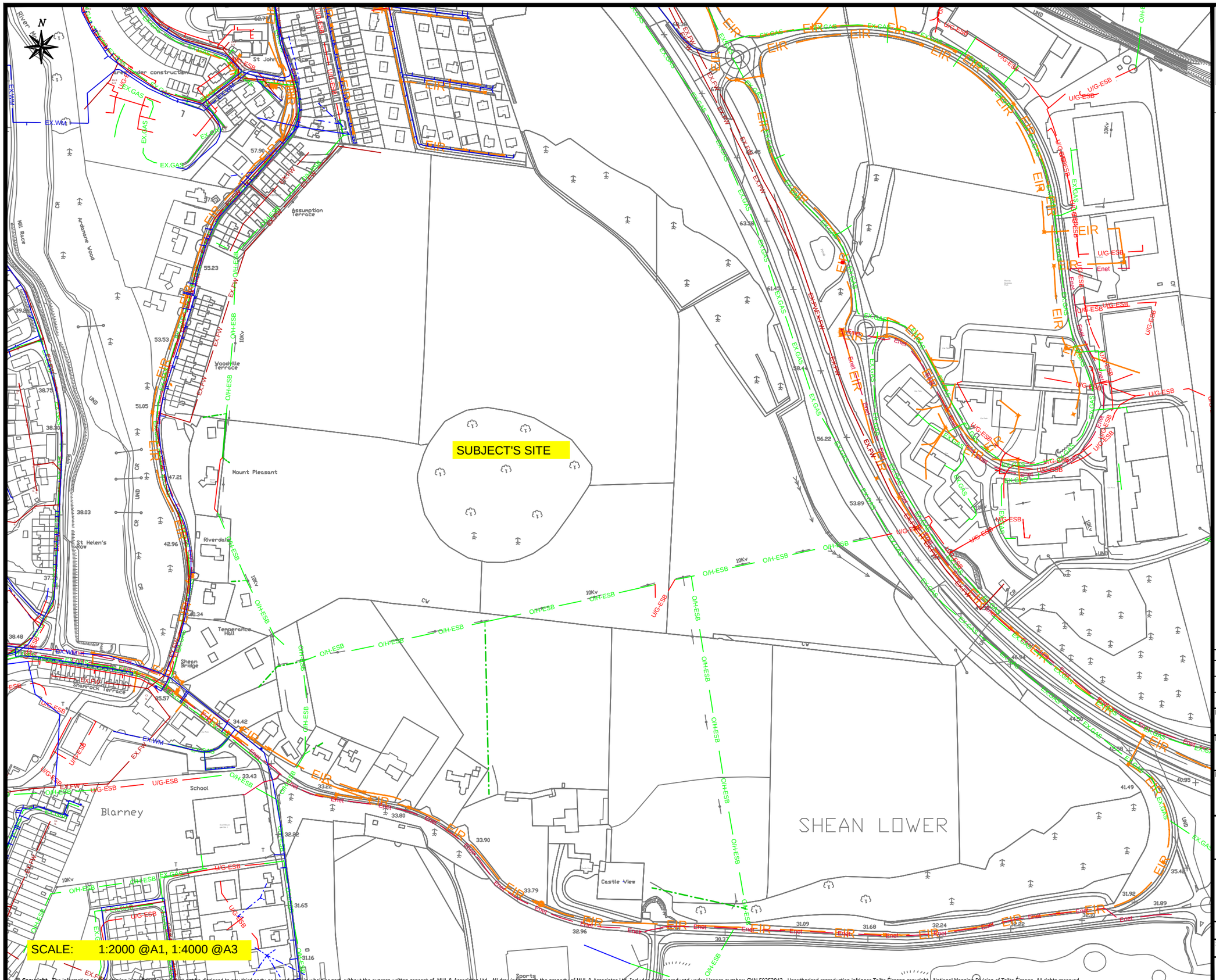
M.H.L & Associates Ltd.
Consulting Engineers
Unit 1B,
The Atrium,
Blackpool,
Cork
Tel: 021-4840214
Fax: 021-4840215
E-Mail:info@mhl.ie

Job No:	Designed:	Drawn:	Checked:
21079DEV	DM	DM	BM

Scale:	Date:
AS SHOWN @ A3	Nov. 2025

Drawing No:	Rev.:
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SCALE: 1:2000 @A1, 1:4000 @A3

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Main sewer tie in invert levels to be verified by SI.

EIR	EXISTING EIR NETWORK
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O/H-ESB	EXISTING MV(10KV/20KV) OVERHEAD LINE
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EX.FW	EXISTING FOUL SEWER
EX.WM	EXISTING WATERMAIN
H	HYDRANT
M	WATER METER
EX.GAS	EXISTING GAS MAIN

Rev	By	Date	Description

Drawing Status:
PLANNING
NOT CERTIFIED FOR CONSTRUCTION

Project Title:
PROPOSED RESIDENTIAL DEVELOPMENT (PHASE 2)
AT RINGWOOD, BLARNEY, CO. CORK

Drawing Title:
EXISTING SERVICES
GENERAL ARRANGEMENT
SHEET 1

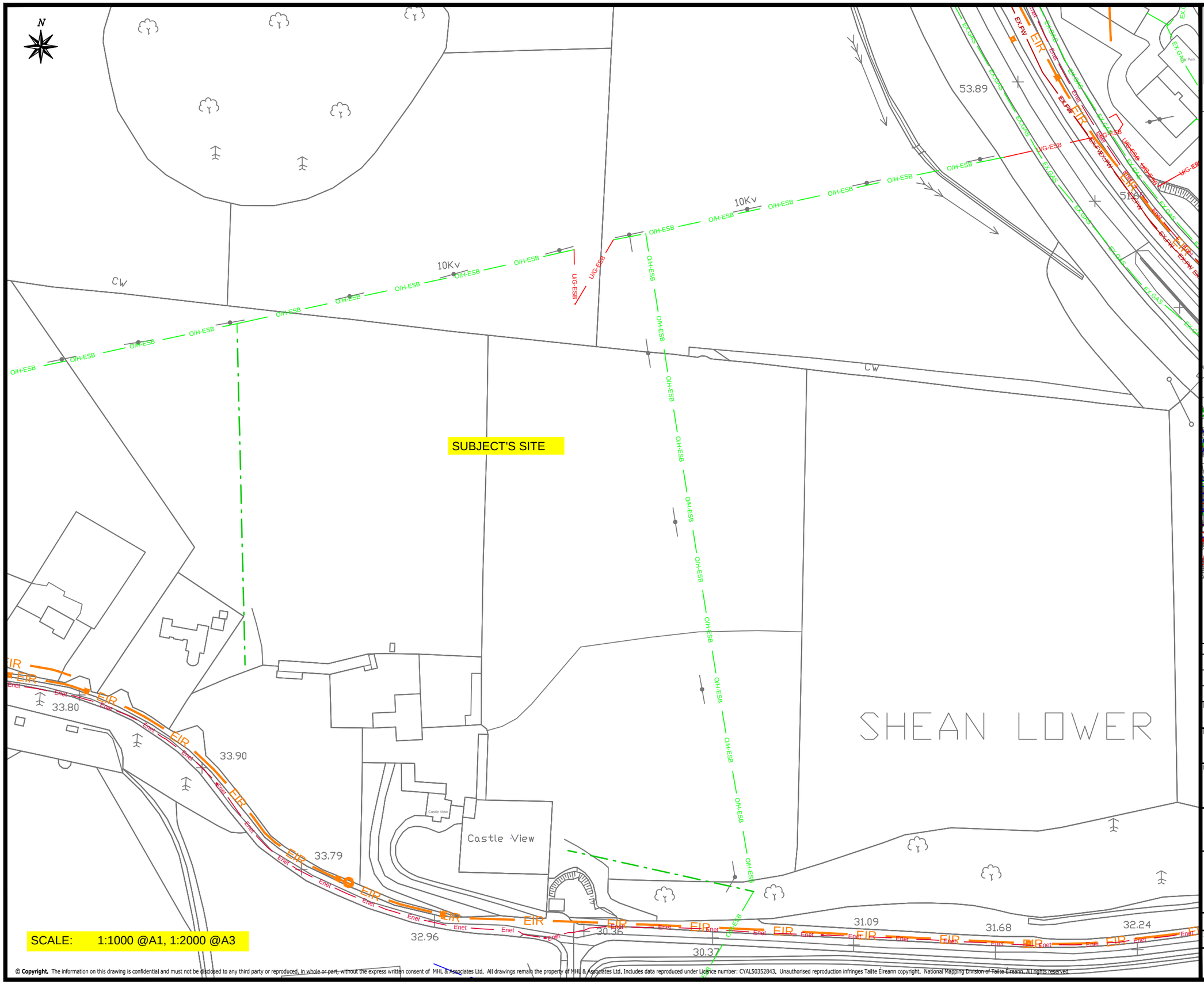
Client:
CLOCKSTRIKE LTD.

M.H.L & Associates Ltd.
Consulting Engineers
Unit 1B, The Atrium, Blackpool, Cork
Tel: 021-4840214
Fax: 021-4840215
E-Mail:info@mhl.ie

Job No:	Designed:	Drawn:	Checked:
21079DEV	DM	DM	BM

Scale:	Date:
AS SHOWN @ A3	Nov. 2025

Drawing No:	Rev.:
BLR-2-02-SW-ZZZ-DR-MHL-CE-00100	_03



Notes:

Do not scale from drawing.
For Planning Purposes only. Not for Construction.
All dimensions are in metres.
Any discrepancies found consult with design office.
Main sewer tie in invert levels to be verified by SI.

EIR	EXISTING EIR NETWORK
Enet	EXISTING Enet NETWORK
O/H-ESB	EXISTING MV(10KV/20KV) OVERHEAD LINE
O/H-ESB	EXISTING LV (400V/230V) OVERHEAD LINE
U/G-ESB	EXISTING MV/LV (10KV / 20KV / 400V / 230V) UNDERGROUND CABLE ROUTE
EX.FW	EXISTING FOUL SEWER
EX.WM	EXISTING WATERMAIN
H	HYDRANT
M	WATER METER
EX.GAS	EXISTING GAS MAIN



Rev	By	Date	Description

Drawing Status:
PLANNING
NOT CERTIFIED FOR CONSTRUCTION

Project Title:
PROPOSED RESIDENTIAL DEVELOPMENT (PHASE 2)
AT RINGWOOD, BLARNEY, CO. CORK

Drawing Title:
EXISTING SERVICES
GENERAL ARRANGEMENT
SHEET 3

Client:
CLOCKSTRIKE LTD.

M.H.L & Associates Ltd.
Consulting Engineers
Unit 1B,
The Atrium,
Blackpool,
Cork
Tel: 021-4840214
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Job No:	Designed:	Drawn:	Checked:
21079DEV	DM	DM	BM

Scale:	Date:
AS SHOWN @ A3	Nov. 2025

Drawing No:
BLR-2-02-SW-ZZZ-DR-MHL-CE-00102

Rev.:
_03

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ESB Networks

TITLE:

20210706-030_A0

COLOUR CODE:

- BLACK - 38KV & HIGHER VOLTAGE OVERHEAD LINES
- GREEN - MV(10KV/20KV) OVERHEAD LINES
- BLUE - LV (400V/230V) OVERHEAD LINES
- CYAN - 38KV & HIGHER VOLTAGE UNDERGROUND CABLE ROUTES
- RED - MV/LV (10KV/20KV/400V/230V) UNDERGROUND CABLE ROUTES

DATE: 06-Jul-2021

** SCALE: 1:2500

** SCALE WHEN PRINTED ON AN A0 PAGE
XY COORDINATES DISPLAYED IN IRISH GRID COORDINATE SYSTEM

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WARNING

THIS MAP INDICATES THE APPROXIMATE LOCATION OF ESB TRANSMISSION (400KV, 220KV, 110KV, 38KV) AND DISTRIBUTION (20KV, 10KV, 230V/400V) UNDERGROUND CABLES AND OVERHEAD LINES IN THE GENERAL AREA OF THE PROPOSED WORKS. ESB NETWORKS TAKES NO RESPONSIBILITY FOR THE ACCURACY OF COMPLETENESS OF THE MAP. IT IS THE USER'S RESPONSIBILITY TO INDEPENDENTLY VERIFY THE INFORMATION AND THE LOCATION OF UNDERGROUND CABLES AND OVERHEAD LINES. LOW VOLTAGE (230V/400V) SERVICE CABLES (E.G. HOUSE SERVICES, FACTORY/SHOP SERVICES, PUBLIC LIGHTING LAMP SERVICES, ETC) ARE NOT INCLUDED BUT THEIR PRESENCE SHOULD BE ANTICIPATED. THE DEPTHS OF UNDERGROUND CABLES MUST NEVER BE ASSUMED. ADDITIONAL MORE DETAILED INFORMATION IS AVAILABLE FOR HIGH VOLTAGE TRANSMISSION UNDERGROUND CABLES (38KV, 110KV, 220KV, 400KV) FROM THE LOCAL ESB NETWORKS TRANSMISSION REPRESENTATIVE - SEE ATTACHED LIST FOR CONTACT DETAILS OR CALL 1850 372 757. NO WORK SHOULD BE CARRIED OUT IN THE VICINITY OF 38KV OR HIGHER VOLTAGE UNDERGROUND CABLES WITHOUT PRIOR CONSULTATION WITH ESB NETWORKS. BEFORE ANY MECHANICAL EXCAVATION IS UNDERTAKEN, THE ACTUAL LOCATION OF ALL UNDERGROUND ELECTRICITY CABLES MUST BE ESTABLISHED AND VERIFIED ON THE SITE USING:
(A) UP-TO-DATE MAP RECORDS; (B) CABLE LOCATER EQUIPMENT OPERATED IN BOTH POWER AND RADIO MODES;
(C) CAREFUL HAND DIGGING OF TRIAL HOLES USING 'SAFE DIGGING PRACTICE'. REFER ALSO TO 'HSA CODE OF PRACTICE FOR AVOIDING DANGER FROM UNDERGROUND SERVICES'. ESB TAKES NO RESPONSIBILITY FOR AND SHALL BEAR NO LIABILITY, HOWSOEVER ARISING, IN RELATION TO ANY DAMAGE, INJURY/DEATH OR LOSS OF SUPPLY AS A RESULT OF DAMAGE OR INTERFERENCE WITH ITS NETWORKS.

ESB NETWORKS HAS ISSUED THIS MAP AS A PDF DOCUMENT. IF VIEWING A PAPER VERSION OF THIS MAP, THE VIEWER MUST ENSURE THAT IT HAS BEEN PRINTED IN COLOUR TO FIT TO AN A0 (OR LARGER) PAGESIZE AND THAT EACH OF THE COLOURS INDICATED ON THE COLOUR CODE LEGEND ABOVE ARE CLEAR AND DISTINCT FROM EACH OTHER TO MAINTAIN A CORRECT REPRESENTATION OF THE ELECTRICAL NETWORK INFORMATION.

X,Y: 160802 , 76818

X,Y: 163703 , 76818

X,Y: 163703 , 74894

KNOCKACORBALLY LWR
KNOCKACORBALLY MID
KNOCKNACORBALLY S
SHEAN WEST
WOODFIELD
SHEAN NORTH
SHEAN UPPER
WOODVILLE BLARNEY
BRACKEN WOOD
MONACNAPA
COLEMANS FARM
SHEAN MID
SHEAN EAST
CASTLEOWEN
CASTLEOWEN EST
SHEAN CENTRAL
SUNBERRY HTS
BLARNEY MILLS
CHRISTYS BLARNEY
SHEAN LR
CASTLE VIEW
BLARNEY PRI.SCH.
IRISH POLLYSACKS
MAXOL GARAGE
BLARNEY TELE EXCH.
THE GROVES
CASTLE CLOSE 1
BAR BRIDGE
GOTHIC BRIDGE
KILLARD
FORREST IFT
SHEAN LWR E
FORREST
COURSING FIELD
BLD 4 BBPK
BLD 3 BBPK
BLARNEY BP PLOT 9000
BLD 2 BBPK
B8001 BLARNEY BP
BLD 1 BLARNEY BUS PK
CLOGHEENMILCON
ROSSES WOOD UPPER
TWEEDMOUNT E
TWEEDMOUNT
ROSS WOOD VIEW
HORGANS BRIDGE NORTH
HORGANS BR
EXAMPLE FAR
EXAMPLE
EXA

PLEASE NOTE THAT THERE ARE: HIGH VOLTAGE (38KV AND HIGHER VOLTAGES) OVERHEAD LINES AND UNDERGROUND CABLES ON THIS MAP. IF YOU INTEND WORKING, OR UNDERTAKING DEVELOPMENT WITHIN A CORRIDOR EXTENDING 40 METRES ON EITHER SIDE OF ANY HIGH VOLTAGE OVERHEAD LINES OR WITHIN A CORRIDOR EXTENDING 5 METRES ON EITHER SIDE OF ANY HIGH VOLTAGE UNDERGROUND CABLES YOU MUST CONTACT THE DESIGNATED PARTIES (PLEASE SEE ENCLOSED SHEET) IN ADVANCE OF THE WORKS

A3

Aislingdale

St Johns Terrace

Assumption Terrace

1935 1936 1937 1938 1939 1941 1942 1943 1944 1945 1946 1947 1948 1949 1950 1206 1701 1707

1 x 10/8 Single
1 x 1-way MD (10/8)

1 x 100PP
1 x 10/8 Single
1 x 1-way MD (10/8)

1x100PP

2 x 1-way MD (10/8)
1 x 10/8 Single
1 x 100PP

1 x 1-way MD (10/8)
1 x 10/8 Single
1 x 100PP

1 x 100PP
1 x 10/8 Single
3 x 1-way MD (10/8)

1 x 100PP
1 x 10/8 Single
1 x 3-way MD
3 x 1-way MD (10/8)

1 x 100PP
1 x 10/8 Single
1 x 3-way MD
1 x 1-way MD (10/8)

1 x 100PP
1 x 10/8 Single

A3

Mount Pleasant

Riverdale

Temperance Hall

Shean

10Kv

1 x 10/8 Single
1 x 100PP
1 x 3-way MD
1 x 1-way MD (10/8)

1 x 10/8 Single
1 x 1-way MD (10/8)
1213

1 x 100CD
1 x 3-way MD
1 x 7-way MD
1215

1 x 100PP

1 x 100CD
3 x 1-way MD (10/8)

2198

1 x 100CD
3 x 1-way MD (10/8)
1 x 1-way MD (14/10)

1290

1289

1 x 100CD
3 x 1-way MD (10/8)

1293

1 x 100CD
1 x 7-way MD

2200 1 x 100CD
4 x 100PP
1 x 7-way MD
1 x 1-way MD (10/8) 2241

1294

1 x 1-way MD (10/8)
1 x 10/8 Single

1 x 100CD
1 x 3-way MD

open eir Civil Engineering Infrastructure Service

Scale: 1:1000	Irish National Grid Co-Ordinates Centre XY: 161589 m, 75885 m
Date 22/07/2021	Smallworld Powered by GE

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A3

1 x 3-way MD (1410)

1 x 1-way MD (1410)

1 x 1-way MD (1410)

1 x 3-way MD (1410)

1 x 1-way MD (1410)

1 x 1-way MD (1410)

1 x 3-way MD (1410)

1 x 1-way MD (1410)

1 x 1-way MD (1410)

1 x 1