

Lovell Partnerships

RINGLAND REGENERATION, NEWPORT

Outline Remediation Strategy Report

14049/GNS/22/ORS/Rev B

CLIENT: Lovell Partnerships

PROJECT: Ringland Regeneration, Newport

TITLE: Outline Remediation Strategy Report

JOB NO: 14049

DOCUMENT REF: 14049/GNS/22/ORS/Rev B

Revision	Purpose Description	Originated	Reviewed	Authorised	Date
0	Issue	GNS	HP	RB	Nov '22
A	Issue	GNS	HP	RB	Dec '22
B	Addressing NHBC comments	GNS/LP	HP	RB	Aug'25

Geotechnical Engineers:

Intégral Géotechnique (Wales) Limited
Integral House
7 Beddau Way
Castlegate Business Park
Caerphilly
CF83 2AX

Tel: 029 2080 7991

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1.0 INTRODUCTION

1.1 GENERAL

Intégral Géotechnique (Wales) Limited (IG) have been appointed as Geotechnical and Geoenvironmental Consultants by Lovell Partnerships to prepare a remediation strategy for the redevelopment of a site in Ringland, Newport to a standard suitable for proposed mixed commercial and residential end use.

The proposed scheme includes the demolition of an existing retail development, followed by the construction of several mixed-use retail/apartment blocks (referenced Block A to E, Block R1 to R3) and 42 No. residential dwellings (referenced Plot 1 to 42).

The following reports are available for the site:

- Curtins report titled: Ringland, Newport, Phase 1 Preliminary Site Assessment, Ref: B065384.000-CUR-00-XX-RP-GE-001-V03 dated 24 July 2017
- Curtins report titled: Ringland, Newport, Phase 2 Ground Investigation Report, Ref: 066799-CUR-00-XX-RP-GE-002-V01, dated 16 March 2020.

The above reports have been relied upon as part of this remediation strategy and should be read in conjunction with this report.

The purpose of this report is to provide a remediation strategy for the delivery of the site to a standard suitable for the proposed mixed commercial and residential end use and details how the remediation works will be supervised and validated.

This report (including all appendices to it and any subsequent addendums or correspondence) has been prepared for the sole benefit, use and information of Lovell Partnerships and no third party is entitled or permitted to rely on it. This report may not be used, reproduced or circulated (in whole or part) for any purpose without the written consent of Intégral Géotechnique (Wales) Limited. Intégral Géotechnique (Wales) Limited shall not be liable to any third party who does not have such express written permission to rely on the report for any losses they may suffer.

1.2 PROPOSED DEVELOPMENT

The proposed scheme includes the demolition of an existing retail development, followed by the construction of several mixed-use retail/apartment blocks (referenced Block A to E, Block R1 to R3) and 42 No. residential dwellings (referenced Plot 1 to 42).

2.0 BACKGROUND

2.1 SITE LOCATION AND DESCRIPTION

The site is located with the Ringland estate on the eastern edge of the city of Newport, See Figure 1.

The site is situated around 26m AOD and is generally level.

The eastern third of the site consists of open grassland with a single terrace of Local Authority housing. The remaining western two thirds of the site is dominated by a public courtyard surrounded by retail units, which in turn are surrounded by residential housing. There is also a tower block on the western edge.

Car parking and vacant grassland is also located in the western area of the site. Part of the grassland area was formerly occupied by housing which was previously demolished.

A site plan is provided as Figure 2.

2.2 AVAILABLE SITE INVESTIGATION DATA

The following reports has been reviewed as part of these works.

- Curtins report titled: Ringland, Newport, Phase 1 Preliminary Site Assessment, Ref: B065384.000-CUR-00-XX-RP-GE-001-V03 dated 24 July 2017
- Curtins report titled: Ringland, Newport, Phase 2 Ground Investigation Report, Ref: 066799-CUR-00-XX-RP-GE-002-V01, dated 16 March 2020.

The above reports should be reviewed in conjunction with this report to gain a detailed appraisal of the site and the works completed to date.

The reports produced by Curtins provide the information on which this Outline Remediation Strategy report is based.

2.3 SITE HISTORY

The site history was summarised by Curtins as part of their Phase 1 Preliminary Site Assessment and was based on historical Ordnance Survey Maps available for the site. A summary of the site history is provided below.

Date	Description
1880-1950's	Site is set in open farmland with no development on the site.
1960's -1970's	Extensive housing estate constructed on and around the site during the 1960's to early 1970's. The onsite buildings include a short terrace of houses in the eastern part of the site and a larger area of housing including a tower block in the western part of the site. A garage was shown in the north-east corner of the site.
1980's – Present day	The garage was demolished and replaced by six rectangular houses in the 1990's. No other significant changes are noted on mapping during this period. During the site walkover by Curtins in 2017, it was noted that two terraces had recently been demolished.

It should be noted the Environmental Health department at Newport City Council have been contacted to confirm if there are any records of fuel tanks associated with the garage. Their response was as follows:

“I have searched all of the available archive folders and no historical petroleum file information is held by Newport City Council for this site.

Please note that petroleum licensing used to be undertaken by Gwent Fire Brigade back in the 1980's. This was then transferred to Gwent County Council, then Newport Borough Council and finally to Newport City Council in 2002. We are limited to the information that has been transferred during these changes, which occurred a long time before any of the current team were in post. I have spoken with a colleague who has worked for the authority over 30 years, and they can't recall any petrol station on the site, so any potential use would be prior to this.

There is no current petroleum storage certificate for the site, and we have not been notified of any such storage.”

A copy of the email response is provided within Appendix A.

2.4 SUMMARY GROUND CONDITIONS

The fieldworks carried out by Curtins were completed in December 2019 and comprised the following:

2.4 SUMMARY GROUND CONDITIONS (CONTINUED)

- Eight machine excavated trial pits to 2.5m depth. Soil infiltration tests were undertaken at two trial pit locations.
- Four CBR tests were undertaken.
- Fifteen windowless sample holes were drilled on site to 4.5m depth.
- Four dynamic sampling/rotary boreholes drilled on site to 15.5m depth.
- Four ground gas and groundwater monitoring standpipes were installed on site.
- Six return visits to the site to monitor ground gases in the standpipes installed in the four boreholes.
- Structural investigations were also completed involving hand pitting and breaking out of concrete and brickwork.

The ground conditions recorded made ground across the site and comprised macadam and concrete hardstanding, reworked natural topsoil, and reworked natural clay with an anthropogenic component of clinker, brick, limestone aggregate, concrete and timber.

The made was encountered to depths of between 0.2m and 2.3m below existing ground level, but typically between 0.2m and 1.0m depth.

The greatest thickness of made ground appeared to be located in the landscaped area in the north of the site which was formerly occupied by a residential block that was demolished around 2016. The made ground local to this area predominantly comprised demolition and could be thickened within former basements or foundations.

The made ground was underlain by solid strata of the Mercia Mudstone, which generally consisted of firm becoming very stiff, red brown, slightly gravelly clay near surface, which graded into mudstone gravel. The completely weathered clay was indicated to be Grade 1Vb, whilst the gravel was interpreted as weathered grade II Mercia Mudstone.

The Mercia Mudstone was proven to 15.0m depth in the deeper boreholes.

Groundwater was recorded as perched groundwater at depths of between 0.4m and 2.37m, and at deeper depths within the rotary boreholes drilled into the Mercia Mudstone at 7.37m and 11.97m.

Return visits to the site to monitor groundwater levels in the standpipes installed in the windowless sample holes and the rotary boreholes recorded groundwater levels at between 0.25m and 2.48m below ground level.

Full details of the ground conditions are recorded in the Phase 2 Curtins report.

2.5 IDENTIFIED CONTAMINATION

Soils

During the investigation undertaken by Curtins in March 2020 twenty-five representative samples were taken from across the site tested for a range of chemical elements/compounds, including asbestos and screened against residential end use values.

Curtins compared the laboratory chemical results against the generic assessment criteria (GAC) for residential with home grown produce, in the following order of preference:

1. Environment Agency Soil Guideline Values,
2. CL:AIRE, AGS, EIC. Soil Generic Assessment Criteria for Human Health Risk Assessments,
3. LQM.CIEH 2015 S4ULS for Human Health Risk Assessment, and
4. DEFRA Category 4 Screening Levels

The soils tested generally showed very low levels of contaminants from the 25 soil samples taken from across the site.

Asbestos described as chrysotile and loose fibres was identified in WS05. Further quantification testing to determine the percentage weight of asbestos was conducted and recorded asbestos quantification of <0.001%.

One sample from WS09 at 0.4m showed exceedances of the PAHs benzo(a)pyrene, benzo(b)fluoranthene and dibenzo(ah)anthracene.

No other contaminant of concern analysed was detected above the adopted Tier 1 assessment criteria.

Groundwater

With regards to groundwater analysis, of the determinants analysed, only a single elevated sulphate concentration was recorded above the drinking water standard in WS04.

Ground Gases

Methane and hydrogen sulphide were recorded below the gas monitoring instruments detection limit within all the monitoring wells during the monitoring period.

Carbon dioxide was recorded in steady flow concentrations between 0.15 and 3.8%. maximum positive gas flow was recorded at 2.5l/hr in BH02.

2.5 IDENTIFIED CONTAMINATION (CONTINUED)

Gas screening value (GSV) calculated at 0.0950l/hr for carbon dioxide. In accordance with CIRIA C665, this GSV indicates a Characteristic Situation 2 gas regime requiring CS2 gas protection measures.

2.6 DETAILED SITE SPECIFIC RISK ASSESSMENT

The general approach for assessing the potential risk to a receptor is by a combination of qualitative and quantitative risk assessment.

A quantitative risk assessment would involve selecting and deriving generic assessment criterion to compare low risk substances, based on the fate, transport and toxicological properties and the exposure scenario being considered.

Elevated concentrations of asbestos and the speciated PAHs benzo(a)pyrene, benzo(b)fluoranthene and dibenzo(ah)anthracene were detected within the made ground during Curtins ground investigation in March 2020.

Given the contamination recorded within the made ground it is considered that a potential risk to human health may exist via the following relevant contamination pathways:

- Dermal contact
- Ingestion of soil or soil derived dust
- Ingestion of soil attached to homegrown produce
- Inhalation of soil bourn dust
- Indoor inhalation of ground gas
- Migration of contaminants in ground to drinking water supply pipes

It is considered that remedial measures will be necessary to protect future site users and construction site operatives from the contamination recorded within the made ground.

The remedial measures to be carried out have been designed to address the identified potential active contaminant pathways listed above.

No significant risks to groundwater has been identified on site.

Ground gas protective measures will be required on site and should conform to those required based on a Characteristic Situation 2 and in accordance with CIRIA C665.

3.0 REMEDIATION STRATEGY

A remediation strategy is proposed such that the site is prepared to a standard suitable for the proposed residential end use.

It is recommended that further intrusive site investigation works are undertaken in conjunction with the clearance works in the area of the former buildings to further assess and define the risk to human health and controlled waters.

This remediation process will ensure the delivery of a suitably remediated site for development and is of critical importance to the robustness of the remediation strategy.

The following remediation strategy is proposed:

- Remnant floor slabs, foundations, pits, basements and any buried obstructions etc., should be broken out and removed. These works should be monitored for evidence of any unforeseen contamination. The acceptable and suitable excavated materials/arising, are to be processed and crushed to a suitable grade and stockpiled on site for testing and future re-use as granular fill.
- Following site clearance works, the exposed formation should be inspected, sampled and tested for a range of contaminants including asbestos on an approximately 25m grid basis. Following completion of the post site clearance sampling and testing a risk assessment should be undertaken.
- Following site strip, the formations should be visually inspected and handpicked of any identified Asbestos Containing Materials (ACM). Additionally, any excavated made ground materials, any encountered buried foundations, service runs/ducts, pipework etc. should be visually inspected and handpicked of any identified ACM. These works should be carried out by a suitably licensed contractor in accordance with an appropriate risk assessment and managed in accordance with the requirement of the Control of Asbestos Regulations (2012). All buried obstructions should then be removed from beneath the development area.
- Any handpicked ACM should be disposed off-site at a suitable licensed facility as hazardous waste. Daily records and waste transfer notes should be kept in order to document the identification and subsequent removal of any ACM. These records and waste transfer notes should be made available for review as they will be required for remediation verification.

3.0 REMEDIATION STRATEGY (CONTINUED)

- Following completion of the asbestos clearance works appropriate validation sampling will be required. Note that soils that contain no visible asbestos but have trace asbestos quantified at less than 0.01% may be and PAH the contaminated soils may be safely encapsulated below hard finished areas.
- Further sampling should be undertaken within the vicinity of WS05 to delineate the extent of any asbestos in this area, be it ACM or fibrous form.
- Further sampling should be undertaken within the vicinity of WS09 to delineate the extent of PAH contamination in this area.
- Following completion of formation checks, grid sampling and remedial works, all private gardens and areas of soft landscaping will require provision of clean capping/cover system in order to break the link between future site end-users and any residual contamination within the underlying made ground. This capping system will take the form of a minimum 600mm of clean topsoil and subsoil, either imported or site won, placed over a geotextile separation/alert membrane.
- Hard finished areas adequately break the link between future site end-users and any residual contamination within the underlying made ground
- Drinking water supply pipe specification to be agreed between Lovell Partnerships and Welsh Water.

4.0 REMEDIATION IMPLEMENTATION

4.1 OBJECTIVES

The main objective of the proposed remediation works is to render the site suitable for residential end use. In order to achieve this objective, it is necessary to break any potential pathways between proposed site end users and contaminated made ground.

4.2 METHODOLOGY

The remediation works required in order to meet the objectives defined above will be undertaken as follows:

- The removal of all residual obstructions from below proposed buildings such as foundations, floor slabs, pits, walls, etc, associated with the former site use.
- Following site clearance works, the exposed formation should be inspected, sampled and tested for a range of contaminants including asbestos on an approximately 25m grid basis. The detailed human health risk assessments will be reviewed as further data is obtained. Note it is anticipated that soils that contain no visible asbestos but have trace asbestos quantified at less than 0.01% may be and PAH the contaminated soils may be safely encapsulated below hard finished areas.
- Following site clearance works and during construction, all exposed formations within the site should be visually inspected by an asbestos awareness trained ground worker. Any identified asbestos containing materials (ACM) should be reported to the site management and picked/disposed of by a licensed asbestos contractor.
- Any excavated material (e.g. arisings from foundation and drainage run excavations, site strip etc.) from within the site should be visually inspected by an asbestos awareness trained ground worker. Any identified ACM should be reported to the site management and picked/disposed of by a licensed asbestos contractor.
- All of the above works should be carried out under an appropriate risk assessment and managed in accordance with the Control of Asbestos Regulations 2012. Any handpicked ACM should be disposed off-site at a suitable licensed facility as hazardous waste.

4.2 METHODOLOGY (CONTINUED)

- Daily records and waste transfer notes should be kept in order to document the identification and subsequent removal of any ACM. These records and waste transfer notes should be made available for review as they will be required for potential remediation verification.
- A system should be established by which any 'unusual' materials and potential hotspots of contamination that may be encountered are reported rapidly to the site management, so that the appropriate action may be taken, following specialist advice if necessary. An unusual material may be identified on site by colour, odour or physical nature.
- During excavation, in order to prevent cross contamination of materials, the arisings should be segregated from any underlying natural soils..
- All private gardens and soft landscaped areas will require provision of a clean capping/cover system in order to break the link between future site end-users and any residual contamination within the underlying made ground. This capping system should form a minimum of 600mm of clean topsoil and subsoil, either imported or site won, placed over a geotextile separation/alert membrane.
- Adoption of Welsh Water agreed drinking water supply pipe.

The site will be deemed remediated by the following active remedial measures:

- Breaking out and removal of redundant foundation, floor slabs, walls, etc.
- Post site clearance sampling along a 25m grid
- Handpicking and removal of any encountered visible ACM by a licenced asbestos contractor
- Further testing and remediation if necessary of WS05 asbestos hotspot and WS09 PAH hotspot
- Incorporation of a robust clean 600mm thick capping layer within proposed gardens and soft landscaped areas, with a geotextile separation/alert membrane at the base
- Provision of Dwr Cymru Welsh Water agreed drinking water supply pipe.

Review of the methodologies will be a continuing process and subject to findings of the proposed validation works, and if necessary, further quantitative and qualitative risk assessments.

4.3 OPERATIONS

The works are to be undertaken by a specialist contractor experienced in brownfield reclamation/remediation. The remediation works will be monitored by Intégral Géotechnique (Wales) Limited.

Site preparation and operational constraints will be covered in the contractor's method statements. These should include the contractor's proposals for controls and monitoring of dust, noise, vibrations and odour.

Site procedures for managing the remedial works in a manner that will not cause pollution to controlled waters will be covered in the contractor's method statements which will be submitted in discharge of the Conditions of Planning.

The proposed remediation works will be controlled by the appropriate mobile treatment license to be held by the remediation contractor, if such works become necessary. The conditions imposed under the planning process will be considered adequate to control the works.

An appropriately licensed asbestos contractor will be required to deal with and dispose of identified asbestos containing materials (ACM).

Additionally, a system should be established by which any 'unusual' materials that may be encountered are reported rapidly to the site management, so that the appropriate action may be taken, following specialist advice if necessary. An unusual material may be identified on site by colour, odour or physical nature.

5.0 REMEDIATION VERIFICATION

5.1 OBJECTIVES

A remediation verification report is required in order to record the data gathering necessary to demonstrate that the works have been carried out in accordance with the agreed strategy, confirm that the works satisfy the site remediation criteria and that the site is suitable for the proposed development.

5.2 REMEDIATION VERIFICATION METHODOLOGY AND DATA GATHERING REQUIREMENTS

The site reclamation/remediation will be verified by the following measures:

- Validation of the exposed formations following site clearance with sampling and testing undertaken on a 25m grid basis
- Evidence to be provided of site records and waste transfer notes relating to identification and subsequent removal of any asbestos containing materials (ACM)
- Evidence of further testing and remediation as necessary at WS05 and WS09
- Validations of the chemistry and thickness of the proposed 600mm thick inert clean capping layer to be placed within garden and landscaped areas
- Validation of the geotextile separation/alert membrane at the base of the capping soils
- Notification in the CDM file of residual risks associated with the remediated site
- Certification by Lovells Partnership of installation of Welsh Water agreed drinking water supply pipe

6.0 FINAL REMEDIATION VALIDATION

The development will not be complete, in accordance with the remediation strategy for the site, until all buried obstructions have been removed, post site clearance validation check and testing have been carried out, all visible ACM has been handpicked and placement of the final 600mm (minimum thickness) of clean either imported or site won capping soils over a geotextile separation/alert membrane to gardens and soft finished areas. In order to validate these works a series of hand dug pits will be excavated to confirm an adequate thickness of inert soils are in place. A photographic record will be kept. The capping system is to comprise imported clean inert materials conforming to the Requirements for the Chemical Testing of Imported Materials for Various End Uses and satisfy appropriate soil guideline values for residential development with gardens. Samples of topsoil and subsoil will be taken for laboratory analysis, at a rate of 4 per 250m³.

Placement of the required final 600mm capping layer will be the responsibility of the developer and is usually undertaken on a plot-by-plot basis, late in the development programme, as plots are completed.

Reporting of the clean capping to garden areas will be submitted independently of the remediation works.

APPENDIX A

RESPONSE FROM ENVIRONMENTAL HEALTH OFFICER AT NEWPORT CITY COUNCIL

Laura Pullin

From: Born, Suzanne (Environmental Health Officer) <Suzanne.Born@newport.gov.uk>
Sent: 07 July 2025 12:41
To: Laura Pullin
Subject: Site at Ringland, Newport (NGR 335730, 188820)

Good afternoon, Laura,
Apologies for the delay in getting this information to you, as you know there have been some issues with the online process.

I have searched all of the available archive folders and no historical petroleum file information is held by Newport City Council for this site. Please note that petroleum licensing used to be undertaken by Gwent Fire Brigade back in the 1980's. This was then transferred to Gwent County Council, then Newport Borough Council and finally to Newport City Council in 2002. We are limited to the information that has been transferred during these changes, which occurred a long time before any of the current team were in post. I have spoken with a colleague who has worked for the authority over 30 years, and they can't recall any petrol station on the site, so any potential use would be prior to this.

There is no current petroleum storage certificate for the site, and we have not been notified of any such storage.

Sorry we can't be of further assistance.

Yours sincerely

Suzanne Born
Environmental Health Officer/Swyddog Iechyd yr Amgylchedd – Food, Safety and Public Health Team
Port Health Officer – Newport Port Health Authority

Environment & Public Protection / Amgylchedd a Diogelu'r Cyhoedd
Newport City Council/Cyngor Dinas Casnewydd
Civic Centre/Canolfan Ddinesig
Newport/Casnewydd
NP20 4UR
Tel/Ffôn: 01633 839860 (NOTE: New number from Oct 2024)
E-Mail/E-Bost: suzanne.born@newport.gov.uk



Registered Environmental
Health Practitioner

Mae'r Cyngor yn croesawu gohebiaeth yn Gymraeg, Saesneg neu yn y ddwy iaith. Byddwn yn cyfathrebu â chi yn ôl eich dewis. Ni fydd gohebu yn Gymraeg yn arwain at oedi.

The Council welcomes correspondence in English or Welsh or both, and will respond to you according to your preference. Corresponding in Welsh will not lead to delay.

Disclaimer/Ymwadiad

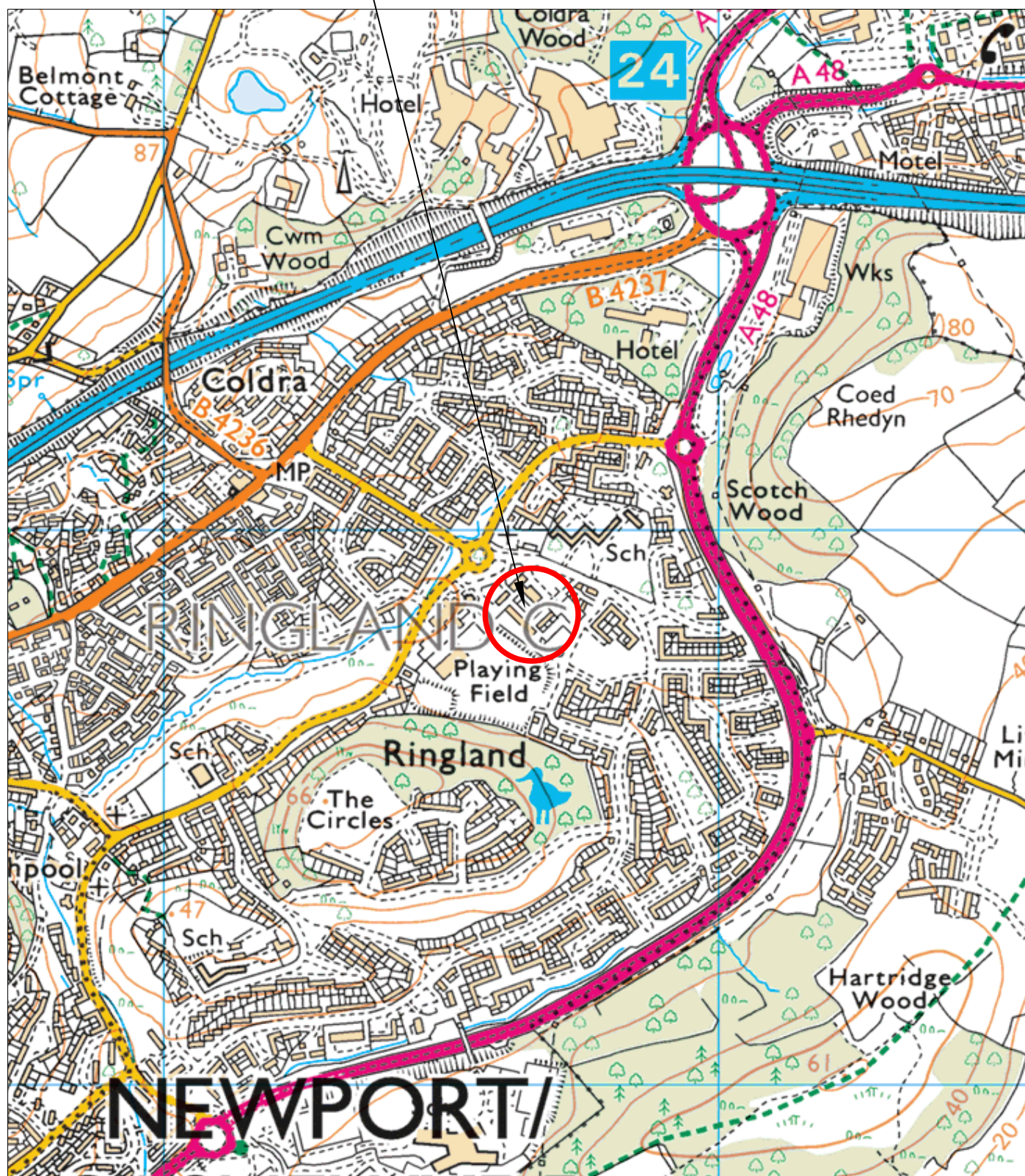
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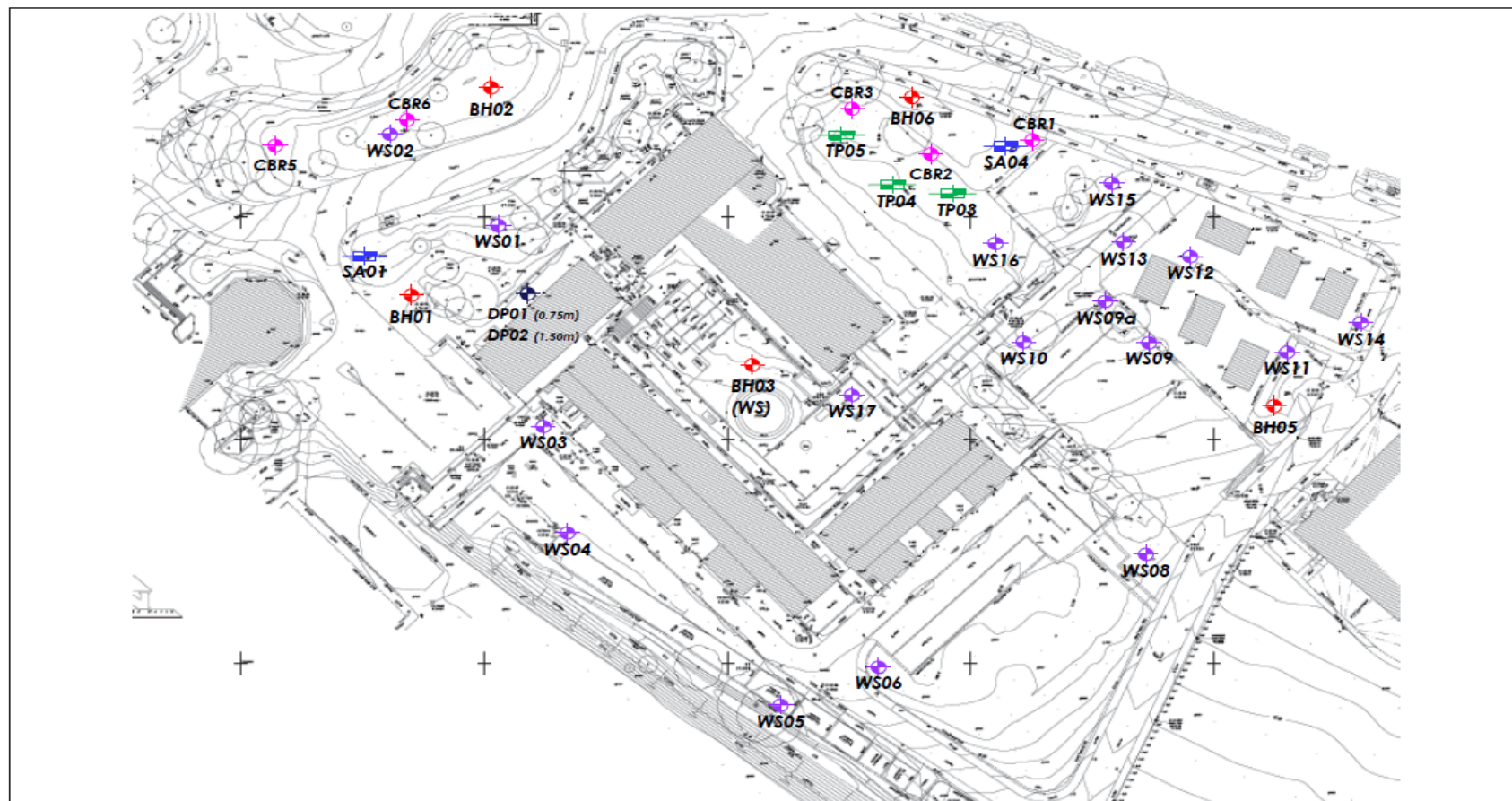
Mae'r e-bost hwn yn cynnwys gwybodaeth y bwriedir ar gyfer y derbynnydd yn unig a gall fod yn gyfrinachol, yn destun ragorffaint gyfreithiol neu broffesiynol, neu fel arall wedi'i diogelu rhag cael ei rhyddhau. Os nad chi yw derbynnydd bwriadedig y neges hon, a fydddech cystal â rhoi gwybod i'r anfonwr ar unwaith a pheidio â datgelu, dosbarthu neu gopïo'r e-bost i unrhyw barti arall. Mae'r e-bost hon ac unrhyw ffeiliau atodedig yn eiddo i Gyngor Dinas Casnewydd.

Pan fyddwch yn anfon e-bost at Gyngor Dinas Casnewydd, rydych yn cydsynio i'r Cyngor fonitro a darllen unrhyw e-byst o'r fath at ddibenion cydymffurfio â diogelwch ac â deddfwriaeth. I weld yr ymwadiad llawn ewch i <http://www.newport.gov.uk/ymwadiad>

FIGURES



Integral House,
7 Beddau Way,
Castlegate Business Park,
Caerphilly,
CF83 2AX.
Tel: 029 2080 7991



Date Drawn: 23-02-2020	Scale: NTS	Title: Exploratory Hole Location Plan	
		Site: Ringlands Centre, Newport	
		Client: Curtins	Job No: C2260193
		Figure: A1.2	

14049 - Site Plan - Curtins Exploratory Points

Ringland Regeneration, Newport

Intégral
Géotechnique

Intégral House
7 Beddau Way
Castlegate Business Park
Caerphilly
CF83 2AX
Tel: 029 2080 7991