



AMG Architectural Limited on behalf of
Mr J. Wood

Bylands, Coach House
Remediation Method Statement
Rev 1

November, 2023



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EXECUTIVE SUMMARY

Card Geotechnics Limited (CGL) has been commissioned by AMG Architectural Limited, on behalf of Mr J. Wood ("the Client"), to produce a Remediation Method Statement (RMS) for its site known as 'Bylands', located off Hopton Hall Lane, Upper Hopton, WF14 9EL. This RMS is required to meet Condition 9 of Kirklees Council Planning Decision 2022/70/94042/E.

This RMS presents a summary of data obtained from previous investigations and contamination risk assessment and provides a remediation strategy to facilitate the proposed residential redevelopment. The redevelopment comprises the demolition of an existing stable and construction of a single detached residential dwelling.

The contamination risk assessment identified unacceptable risks to future occupiers and construction workers associated with elevated lead in Topsoil at one location (borehole BH01). A summary of the remediation measures required is set out below:

-  Removal of the lead hotspot at borehole BH01;
-  Verification testing of underlying and surrounding soils; and
-  Importation of clean material to replace excavated soils.

A watching brief is required during the excavation works to verify the soil removal, collect samples for laboratory testing and in the event that visual / olfactory evidence of unexpected contamination is identified.

Potential risks to ground workers must be managed through the implementation of appropriate working practices, the use of health and safety risk assessment and appropriate personal protective equipment (PPE).

On completion of the remediation works a Verification Report must be compiled for regulatory approval to meet Conditions 10 and 11 of Kirklees Council Planning Decision 2022/70/94042/E .

1. INTRODUCTION

1.1 Background and Objective

Card Geotechnics Limited (CGL) has been commissioned by AMG Architectural Limited, on behalf of Mr J. Wood, to produce a Remediation Method Statement (RMS) for the 'Coach House' located at Bylands, 11a Hopton Hall Lane, Hopton Hall, Mirfield WF14 8EL, herein after referred to as 'the site'. The site location is shown on Figure 1 of this report.

This RMS presents a summary of the findings of previous reports made available to CGL by the client and presents a scope of remediation works to mitigate previously identified unacceptable risks to future end users from a lead hotspot. This RMS is required to facilitate the development of the site for a continued residential end use.

1.2 Development Proposal

It is understood the proposed development will comprise the demolition of an existing stable building and erection of a detached residential dwelling. Proposed development plans are presented in Appendix A.

1.3 Planning Condition

This RMS is intended to support discharge of planning condition 9 of Kirklees Council Approval Notice 2022/70/94042/E which requires a Remediation Strategy to present remediation works recommended following previous ground investigation works¹.

This RMS report also sets out the Verification Plan to subsequently assist with the discharge of conditions 10 and 11 of the same application once the remediation works have been completed.

1.4 Sources of Information

The site has been subject to a previous Phase 1 Desk Study and a Phase 2 Ground Investigation, which are referenced below. Pertinent information from these reports is summarised within, however reference should be made to the original report for full details.



Geol Consultant Ltd. (2023) Phase I Preliminary Contamination Risk Assessment BYLANDS, 11A, HOPTON HALL LANE, UPPER HOPTON, MIRFIELD, WF14 8EL. *GEOL23-7915*.

¹ Geol Consultant Ltd. (2023) Phase II Ground Investigation Report BYLANDS, 11A, HOPTON HALL LANE, UPPER HOPTON, MIRFIELD, WF14 8EL. *GEOL23-7915*



Geol Consultant Ltd. (2023) Phase II Ground Investigation Report BYLANDS, 11A, HOPTON HALL LANE, UPPER HOPTON, MIRFIELD, WF14 8EL. *GEOL23-7915*.

1.5 Report Format

This RMS report has been undertaken with reference to the findings of the previous reports listed above. A strategy for remediation is presented to address unacceptable risks identified to site receptors from lead based on these previous assessments. Verification procedures are also presented to be adopted during and following remediation based on UK good practice guidance^{2,3,4}.

This report also presents a Discovery Strategy outlining site procedures to be adopted in the event unexpected contamination is encountered during remediation and/or construction works.

² Environment Agency. *Verification of remediation land contamination*. Report SC030114/R1. February 2010.

³ Environment Agency. *Guiding Principles for Land Contamination Reports*. March 2010.

⁴ Land contamination risk management (LCRM)- [Land contamination risk management \(LCRM\)](https://www.gov.uk/government/publications/land-contamination-risk-management-lcrm) - GOV.UK (www.gov.uk)

2. SITE CONTEXT

2.1 Site Location

The site is located on Hopton Hall Lane, Hopton Hall, Mirfield WF14 8EL. The site is bound on three sides by residential dwellings, with agricultural fields to the south. The National Grid Reference for the approximate centre of the site is 419760, 418470.

A site location plan is included as Figure 1.

2.2 Site Description

The site covers an area of approximately 0.05ha. The topography of the site is generally flat, with a small retaining wall noted during a walkover by Geol Consultants in 2023. The site is understood to be currently occupied by a single-storey residential building and two outbuildings formerly used as stables, with associated gardens and hardstanding surrounding.

2.3 Desk Study Summary

The following information is summarised from the previous Geol Consultant Ltd Phase 1 report, which should be read in conjunction with this report for further details.

2.3.1 Historical Summary

The site was undeveloped in the late 19th Century when a single building was constructed on the site within the settlement of Hopton Fold (later Upper Hopton). The mapped building footprint changed in 1968, after which no more change was observed.

2.3.2 Geology, Hydrogeology and Hydrology

British Geological Survey (BGS) mapping⁵ indicates that the site is underlain by the solid geology of the Pennine Lower Coal Measures Formation, which comprises sandstone, mudstone and siltstone with coal horizons. On-site superficial deposits and Made Ground are not recorded by the BGS.

The Pennine Lower Coal Measures are designated by the Environment Agency (EA) as a Secondary A aquifer. The site is not located within a groundwater Source Protection Zone⁶.

⁵ <http://mapapps2.bgs.ac.uk/geoindex/home.html> (accessed October 2023)

⁶ <https://magic.defra.gov.uk/MagicMap.aspx>

2.4 Previous Ground Investigation

A ground investigation was undertaken at the site by Geol Consultant Ltd in 2023 and comprised the following scope of works:

-  Three (3No.) shallow windowless sample boreholes;
-  Two (2No.) rotary open hole boreholes;
-  Two (2No.) soil samples taken from the windowless sample boreholes and tested for a suite of contaminants;
-  Three (3No.) soil samples tested for geotechnical properties; and,
-  Six (6No.) return ground gas and water monitoring visits.

2.4.1 Ground Conditions

The ground conditions encountered during the Geol Consultant Ltd investigation¹ indicated the presence of superficial and Made Ground deposits that were not recorded within the published geology. The Pennine Lower Coal Measures Formation encountered during the investigation was in accordance with the published geology.

Topsoil was encountered in all windowless sample boreholes to a maximum depth of 0.45m below ground level (bgl). The Topsoil was recorded to comprise dark brown slightly clayey sandy gravelly Topsoil with brick fragments and rootlets. Made Ground was encountered in all rotary borehole locations to a maximum depth of 0.3m bgl and comprised dark brown sandy gravelly brick/rubble fill. No visible or olfactory evidence of contamination was recorded. Given the distribution of the Geol Consultant investigation locations, and the difficult nature of logging arisings from rotary open hole boreholes, it is considered probable the Made Ground and Topsoil strata logged by the site engineer are the same strata.

Topsoil deposits were underlain by superficial deposits, to a maximum depth of 1.83m bgl. The superficial deposits are recorded to comprise firm light brown and light grey mottled orange slightly silty sandy gravelly clay, with varying sand and gravel content.

Solid geology deposits of the Pennine Lower Coal Measures Formation were proven to the maximum depth of investigation at 30.48mbgl; the base of these strata was not proven. The Pennine Lower Coal Measures Formation were recorded to comprise sandstone and siltstone with occasional mudstone bands. Intact coal seams were recorded and there was no evidence of mine workings recorded.

Groundwater was not encountered during the investigation.

2.4.2 Contamination Assessment

A summary of the contamination assessment completed by Geol Consultants Ltd¹ is presented in the following sections. All conclusions are those of Geol Consultants Ltd and no interpretation of the data has been undertaken by CGL as part of this report.

2.4.2.1 Risks from Soil Contaminants

The laboratory test results for two soil samples were compared by Geol Consultants Ltd to Generic Assessment Criteria (GAC) protective of human health for a “*residential with homegrown produce*” land-use category, which was considered to be the most applicable GAC based on the proposed end use.

A total of two (2No.) samples of Topsoil were analysed for a suite of contaminants: one sample was from borehole BH01 and one from borehole BH02. Testing undertaken on the sample collected from borehole BH01 at 0.2m to 0.3m bgl reported an exceedance in the GAC for lead. No other exceedances were recorded in either of the samples. Two (2No.) samples of Topsoil were also submitted for an asbestos screen, and asbestos was not detected in either sample.

Geol Consultants Ltd considered that there is an unacceptable risk to human health from lead in soil at borehole BH01, and therefore hotspot removal should be undertaken of the contaminated soils¹.

2.5 Relevant Contaminant Linkages (RCLs)

Based on the conclusions of the Geol Consultants Ltd report¹, the relevant contaminant linkages that are to be considered further under a remediation options appraisal are summarised below in Table 1.

Table 1. Relevant Contaminant Linkages (RCLs)

Contaminant Linkage	Source	Pathway	Receptor(s)
RCL1	Elevated lead within Topsoil at borehole BH01	Direct contact	Future site users and construction workers

A plan indicating the location of borehole BH01 is included as Figure 2.

3. REMEDIAL OPTIONS APPRISAL

3.1 Introduction

According to the principles of risk-based assessment, a number of remedial approaches may be adopted for the mitigation of identified relevant pollutant linkages. They include:

-  Addressing the source by either removal or treatment;
-  Breaking the linkage between the source and receptor by using some form of pathway interception or containment system; and/or
-  Protection of the receptor either through design, institutional control or through control of future redevelopment.

3.2 Relevant Contaminant Linkage – RCL1

RCL1 relates to a contaminant (lead) that is potentially harmful to human health within Topsoil at borehole BH01.

The following outline remedial options are proposed to address RCL1:

-  Excavation and off-site disposal of Topsoil from the location of borehole BH01; and/or
-  Use of a clean soil layer / planting medium in areas where unacceptable Topsoil remains exposed at surface following redevelopment.

It is assumed that potential short term risk of exposure to construction workers will be dealt with through site management protocols including health and safety risk assessment and use of PPE.

3.2.1 Evaluation of Remediation Options

Options considered in Section 3.2 above are considered to be feasible at the site. The first option is to excavate and dispose of Topsoil from borehole BH01 to remove the source of lead contamination. This option will require disposal of contaminated soil, and importation of replacement clean soil. The soil volumes are likely to be limited due to the size of the hotspot.

The second option considers the covering of the affected hotspot area with clean imported material, where Topsoil remains at the surface following redevelopment. This action will provide a clean cover system to act as a barrier to prevent direct contact with lead impacted Topsoil. However, residual risks

will remain and use of a capping layer will result in either a change in site level, or the excavation of shallow soils in order to replace them with the capping layer (as per option 1).

Therefore excavation and disposal is considered to be the preferred option with respect to effectiveness, logistics and sustainability.

Potential acute risks to construction workers and members of the public during the construction stage are assumed to be mitigated through the use of industry good practice construction methodologies (e.g. dust control and mitigation) and the adoption of appropriate health and safety precautions under the CDM⁷ regulations. Site workers would be expected to employ appropriate health and safety practices and adopt the use of adequate PPE during the construction works.

⁷ HSE. (2015). Construction (Design and Management) Regulations 2015. Guidance on Regulations.

4. REMEDIATION STRATEGY

4.1 Overview of RCL Specific Remedial Works

The remedial strategy with respect to the identified RCLs is summarised in Table 2 below:

Table 2. RCL Specific Works

Contaminant Linkage Ref;	Remedial Objective	Remedial Action
RCL1	To remove the lead contamination source.	Contamination hotspot removal, export of the contaminated soils off-site, and replacement with clean imported material.

4.1 Removal of Soil Contamination Hotspot

The Topsoil at borehole BH01 will be excavated to remove the identified hotspot of lead contamination and a watching brief will be carried out during the works by a qualified geoenvironmental engineer.

The soils will be excavated to the base of the Topsoil at borehole BH01 and disposed of off-site by a licensed contractor to an appropriate licensed waste facility. It is recommended the excavation is a minimum of approximately 1.0m by 1.0m in plan area around borehole BH01 and extended to the depth of the Topsoil (recorded by Geol Consultants to be approximately 0.4m). This is expected to generate a volume of approximately 0.4m³ of excavated soil for off-site disposal.

Following excavation, environmental soil samples will be taken from the base and sides of the excavation (2 No. from the underlying soils, and 4 No. from surrounding soils). These soil samples will be tested for total lead concentrations at a UKAS and MCERTS accredited laboratory to assess if remaining soils, following hotspot excavation, contain lead at concentrations below an appropriate GAC. Should testing determine that lead concentrations exceed the GAC in remaining soils, additional excavation will be required.

Based on the chemical testing data to date, soils excavated from the hotspot at borehole BH01 will qualify for disposal at a licensed Non-Hazardous waste facility (see Section 4.2 below). Chemical data must be provided to the waste disposal destination prior to disposal.

Pre-import chemical data for imported backfill materials will be required to demonstrate suitability before arrival at the site. The chemical data provided by the supplier must be reviewed by a qualified geoenvironmental engineer prior to import to assess its chemical suitability.

4.2 Material Management

To minimise the volume of material generated for off-site disposal, all potential waste should be processed prior to disposal in accordance with the waste hierarchy, summarised below:

-  Prevention - using less material in the design and manufacture, keeping products for longer, re-use, using less hazardous materials;
-  Preparing for re-use - checking, segregated storage;
-  Recycling/recovery - turning waste into a new substance or product, includes composting if it meets quality protocols. Disposal to soil treatment facility; and
-  Disposal – landfill.

However, due to the nature of hotspot excavation it is not possible to re-use the excavated material. It may be possible to recover the material to a soil recycling facility however, where landfill tax and gate fees are not incurred. This should be discussed with a suitable facility prior to excavation of the hotspot material.

Excavated soil arisings destined for disposal will require WAC sampling in accordance with the Environmental Permitting Regulations prior to disposal. The Main Contractor will be responsible for appropriate classification of the excavated soil / waste. As indicated above, soil material removed during the hotspot excavation at borehole BH01 is likely to be classified as Non-Hazardous waste based on the chemical results presented in the Geol Consultant Ltd report¹.

Wastes also require pre-treatment before they can be disposed of to a licensed landfill. However, pre-treatment includes selective segregation and the selective hotspot excavation is therefore appropriate and no further pre-treatment is considered to be required prior to disposal.

4.3 Health and Safety and Environmental Controls

All site works must be undertaken in accordance with the Construction (Design and Management) Regulations 2015 and guidelines prepared by the Health and Safety Executive (HSE, 1991)⁸ and CIRIA Reports 132⁹ and C650¹⁰.

⁸ HSE (1991). Protection of Workers and the General Public during the development of contaminated land. Guidance Note HS(G)66, Health and Safety Executive, HMSO, 1991.

⁹ CIRIA (1996). A guide for safe working on contaminated sites. Steeds JE, Shepherd E & Barry DL. CIRIA Report 132.

¹⁰ CIRIA (2005) Environmental good practice – Site guide, 2nd Edition. CIRIA Report C650.

During the redevelopment, precautions must be taken to minimise exposure of workers and the general public to potentially harmful substances. Attention must be paid to restricting possible off-site nuisances such as dust and odour emissions during excavation. Such precautions should include, but not be limited to:

-  Personal hygiene, washing and changing procedures;
-  Adequate PPE including overalls, gloves and face protection, where required;
-  Dust and vapour suppression methods, including dampening down, minimising the working face exposed and covering stockpiles, where required;
-  Regular cleaning of site roads, access roads and the public highway;
-  Safe storage of fuel and other potentially polluting liquids and the provision of spill control and clean up facilities; and
-  Prevention of surface water run-off.

4.4 Post Remedial Monitoring

Based on the selected remedial strategy, post remedial monitoring is not required beyond verification measures presented in this report.

4.5 Discovery Strategy

A watching brief must be maintained by a qualified geoenvironmental engineer during the remediation works. Should areas of unexpected contamination be encountered or suspected the risk associated with the unexpected contamination must be assessed to meet Condition 10 of the planning application. Where necessary, an appropriate remediation strategy will be devised and implemented. The regulators must be informed of additional areas of contamination so identified and will be provided with an updated risk assessment and proposed remediation methodology for agreement before undertaking further works. Appropriate verification works will also be identified and agreed.

The following discovery strategy is recommended in the event of unexpected contamination:

1. Work to cease in that area.
2. Notify geoenvironmental engineer to inspect the area and sample material.
3. Notify the Local Authority.

4. Geoenvironmental engineer to supervise the excavation of contaminated material, which will be placed in a bunded area and covered to prevent rainwater infiltration.
5. Soil samples will be obtained by the geoenvironmental engineer from both the excavated material and the soils in the sides and base of the excavation to demonstrate that the full area of contamination has been excavated. If appropriate, in-situ testing may be undertaken on the sides and base of the excavation to assess the presence of residual contamination in the soils.
6. On receipt of chemical test results, the soils must be appropriately assessed and classified for treatment or disposal and dealt with accordingly.
7. Detailed records, including photographs and duty of care records, must be kept as a record of the works undertaken.

Backfilling must be with material certificated as suitable for the proposed end land use.

To facilitate appropriate waste disposal and potential re-use of soil material, excavated soils shall be segregated and stockpiled depending on their soil classification. If no unexpected contamination is encountered during the watching brief, a confirmation statement will be required to that effect.

5. VERIFICATION

A Verification Plan is presented in Appendix C which outlines the procedures to be undertaken to confirm that the measures detailed in this document have been implemented. This is required to meet planning condition 11. Site inspection and compliance testing should be carried out during the works by a qualified geoenvironmental engineer for the various elements of the remediation works as follows:

-  Site attendance and site inspection records, photographs, measurements and chemical testing results of underlying and surrounding soils for lead hotspot removal from borehole BH01; and,
-  Review of source data for imported soils prior to arrival at the site.

Documentation will also be required to be provided by the Contractor, including:

-  Records of unexpected contamination if encountered (or confirmation that none was encountered);
-  Pre-importation test data for backfill materials and/or imported topsoil;
-  Photographic evidence of the backfill;
-  Material management procedures (i.e. WRAP Protocol, permits, exemption etc.) if appropriate; and
-  Chemical WAC test certificates, waste transfer documents and waste destination details.

On completion of the remediation works, a Verification Report will be prepared. This report will detail the works undertaken with copies of relevant information listed above.

The Verification Report will be made available to the Local Planning Authority to meet Conditions 10 and 11 of Kirklees Council Planning Decision 2022/70/94042/E as evidence of the works carried out and should form part of the health and safety file for the site.

FIGURES



THE SITE

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Client AMG Architectural on behalf of Mr J. Wood	Project Bylands, Coach House	Job No CGN/05203
	Title Site Location Plan	Figure 1

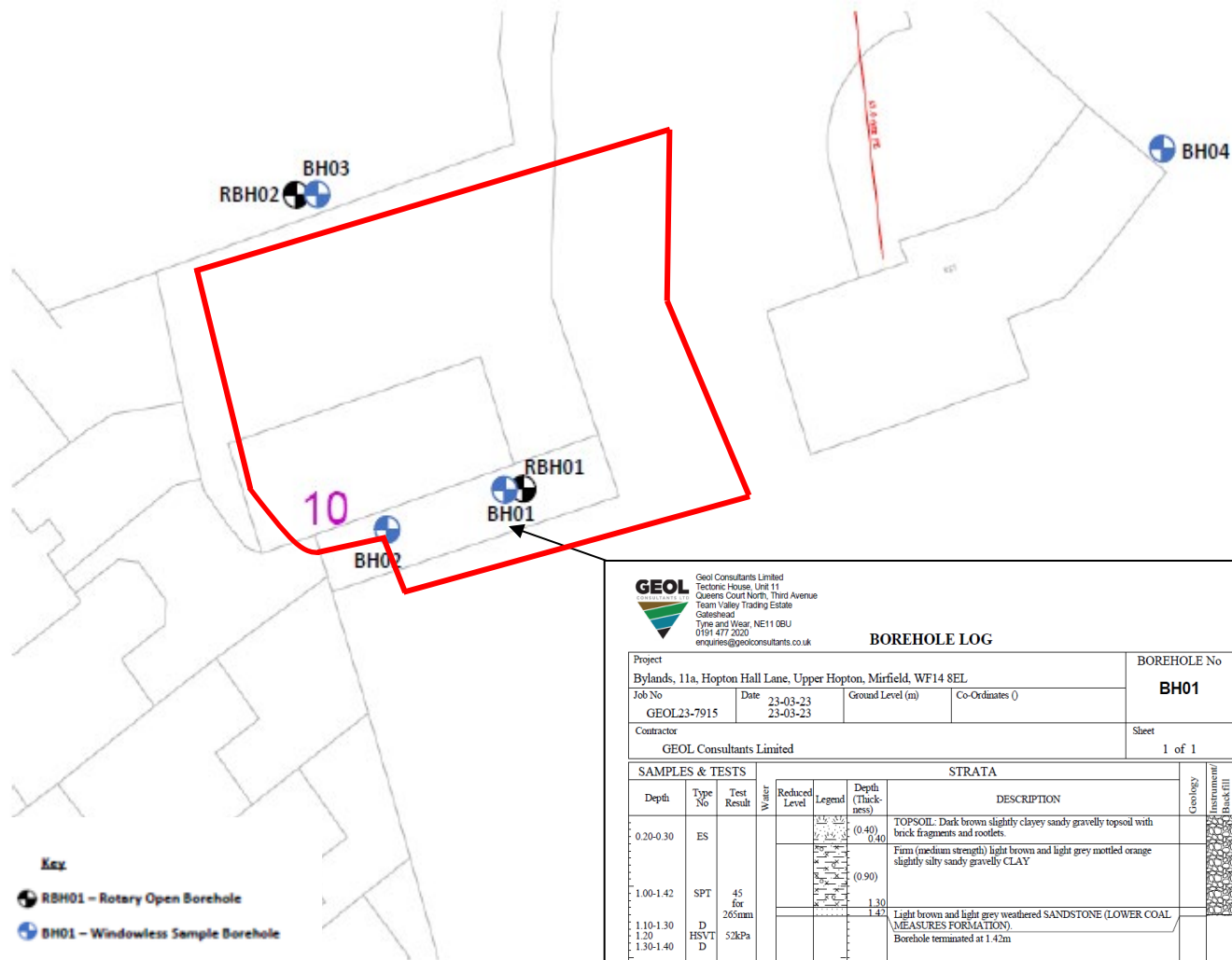


Figure and log replicated from
"Geol Consultant Ltd. (2023)
Phase II Ground Investigation
Report BYLANDS, 11A, HOPTON
HALL LANE, UPPER HOPTON,
MIRFIELD, WF14 8EL. GEOL23-
7915"

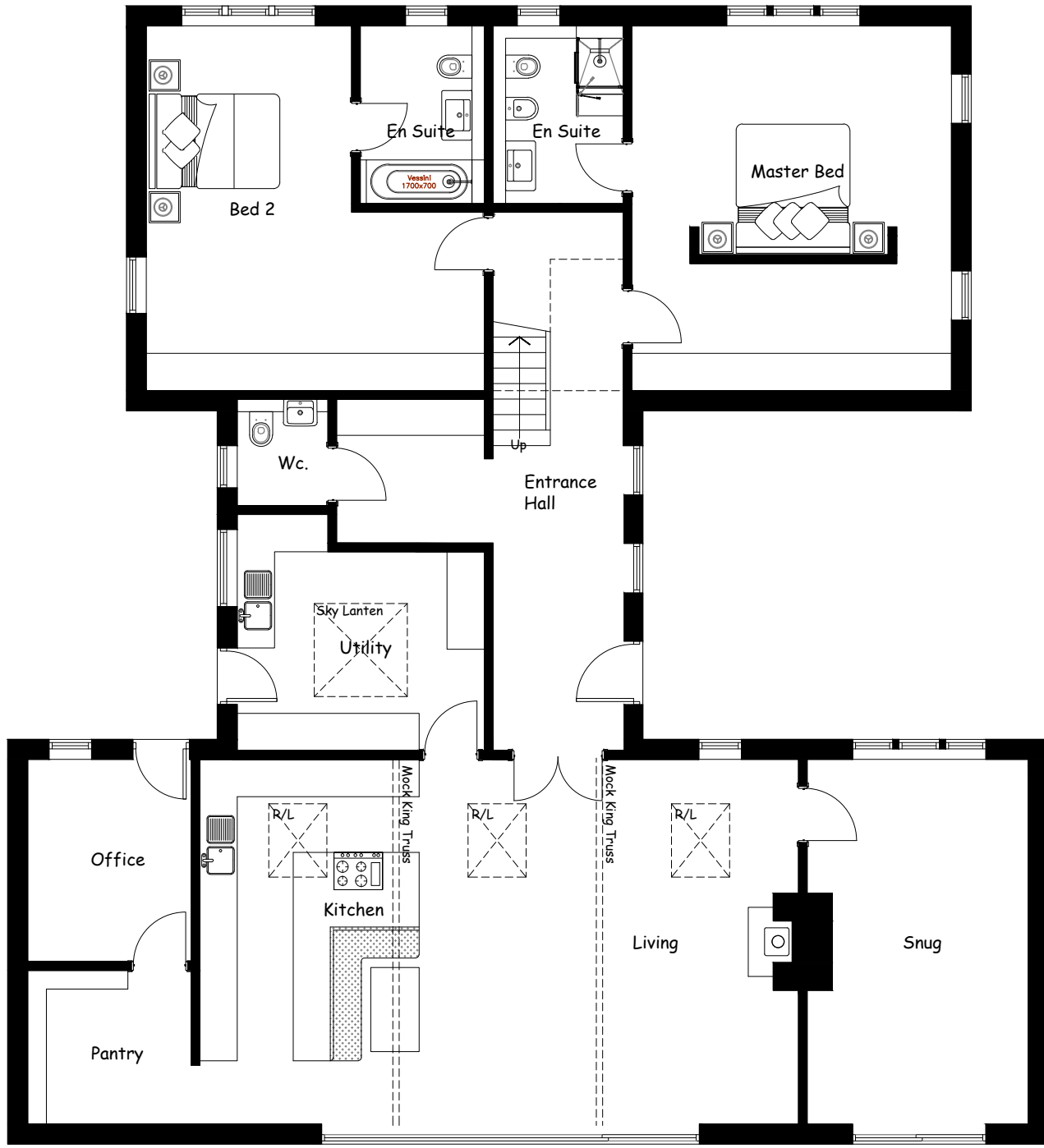
Client AMG Architectural on behalf of Mr J. Wood	Project Bylands, Coach House	Job No CGN/05203
	Title Borehole BH01 Location Plan	Figure 2

APPENDIX A

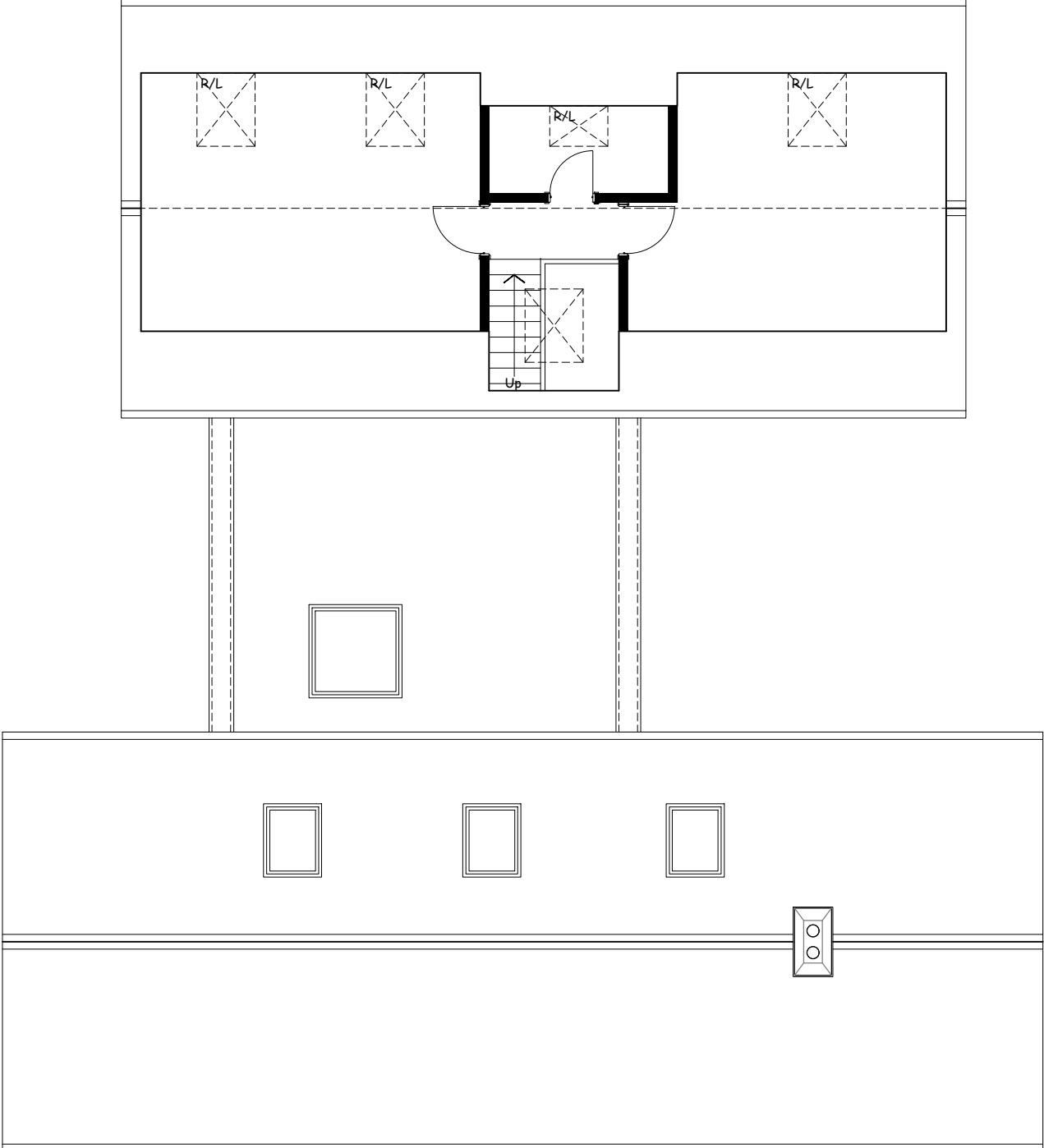
Proposed Development Plan

Notes

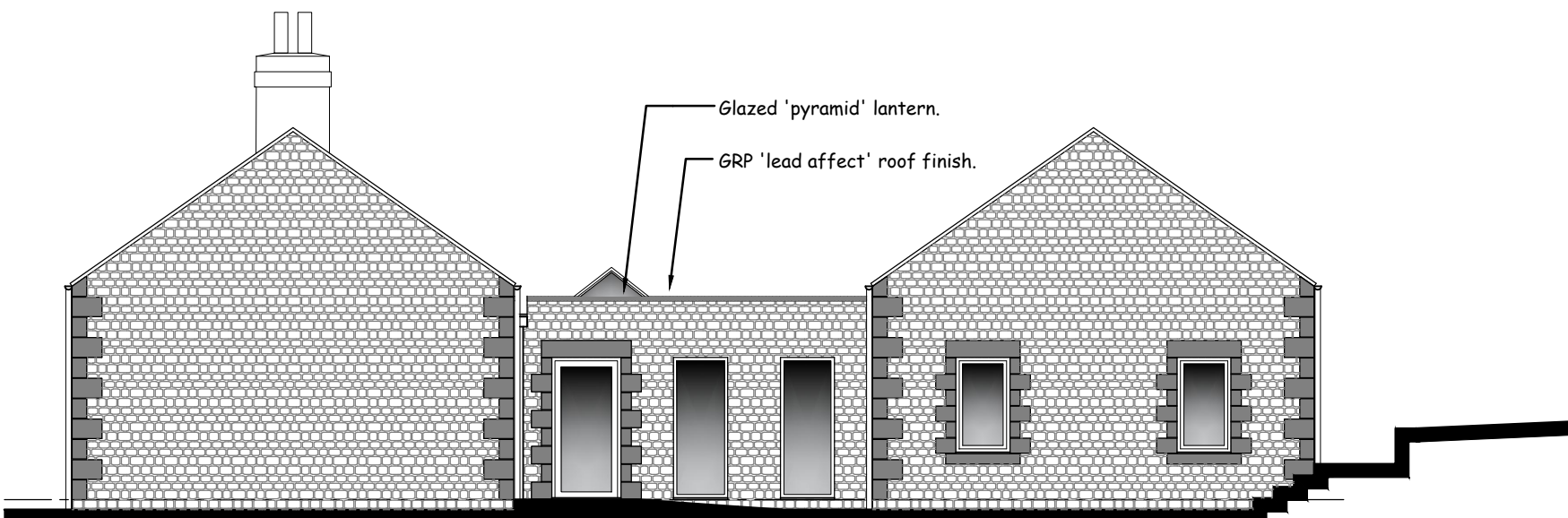
1. Do not scale drawing.
2. All dimensions are in millimeters unless noted otherwise
3. Not for construction unless otherwise shown
4. When appropriate, this drawing to be read in conjunction with project specific Designers Risk Assessments, produced in accordance with requirements of Regulation 13 of the Construction (Design and Management) Regulations 2015.



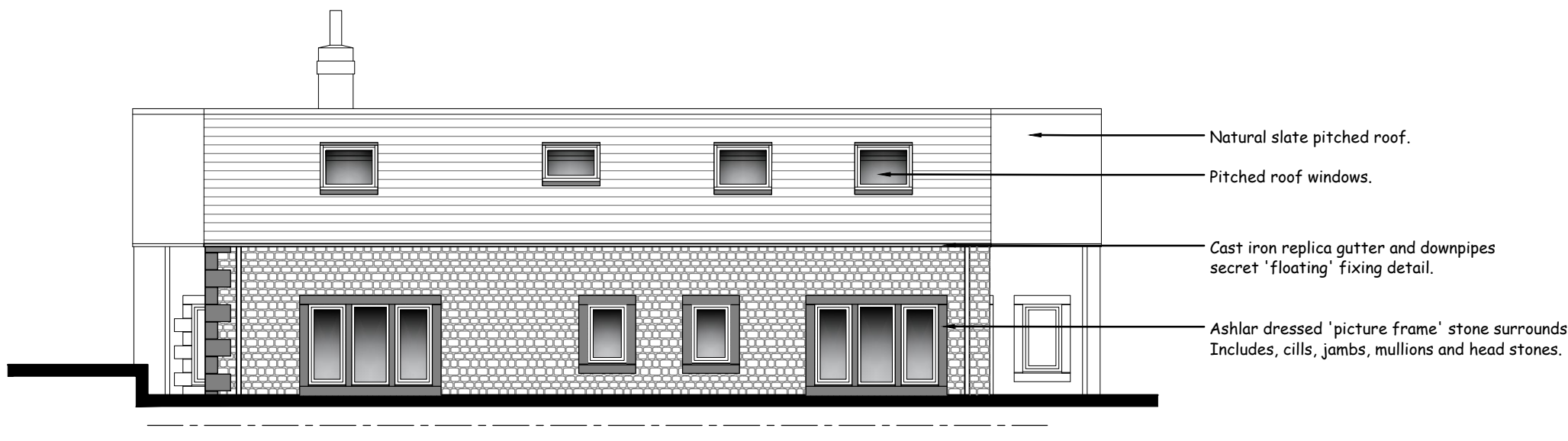
PROPOSED GROUND FLOOR PLAN
Scale 1:100



PROPOSED FIRST FLOOR PLAN
Scale 1:100



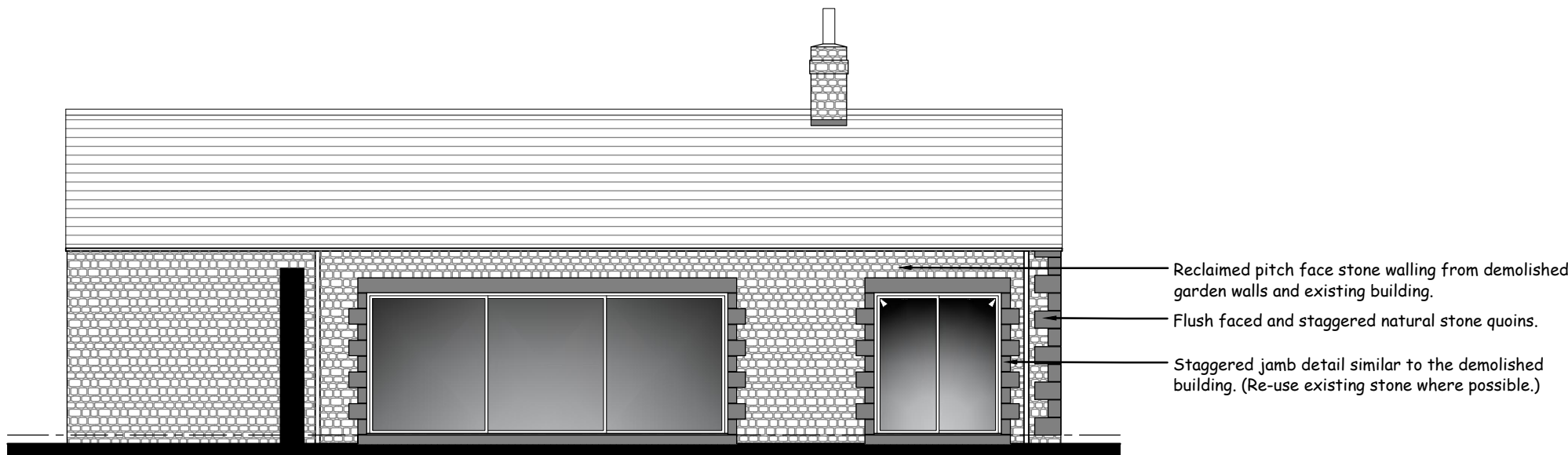
PROPOSED FRONT ELEVATION (EAST)
Scale 1:100



PROPOSED SIDE ELEVATION (NORTH)
Scale 1:100



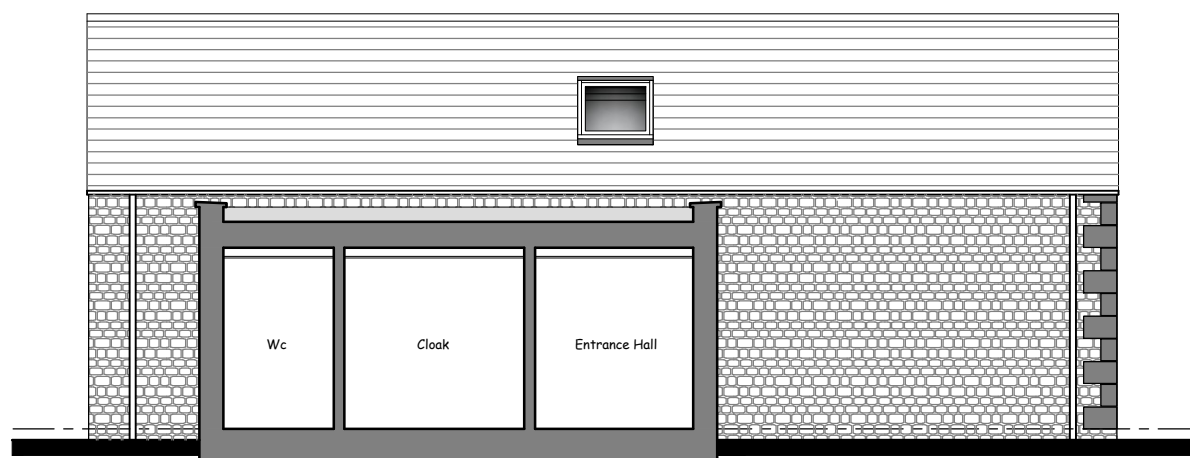
PROPOSED REAR ELEVATION (WEST)
Scale 1:100



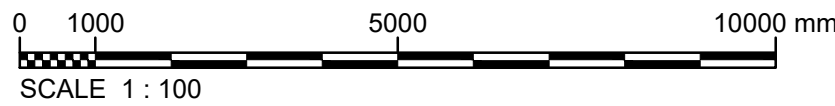
PROPOSED SIDE ELEVATION (SOUTH)
Scale 1:100



PROPOSED INNER SIDE ELEVATION (NORTH)
Scale 1:100



PROPOSED INNER SIDE ELEVATION (SOUTH)
Scale 1:100



B	11.10.23	Updated following client comments received by telephone 11.10.2023.	-	-
A	10.10.23	Updated following client meeting on 09.09.2023.	-	-
REV.	DATE	DESCRIPTION	DRN.	CKD.

PROJECT
MR J. WOOD
PROPOSED NEW DWELLING HOUSE
THE COACH HOUSE
BYLANDS, 11A HOPTON HALL
HALL LANE, UPPER HOPTON
MIRFIELD
WF14 8EL

TITLE
PROPOSED FLOOR PLAN AND ELEVATIONS

STAGE
PLANNING

JOB No. 2023 444	DWG No. 02	REV. -
SCALE 1:100 @ A1	DATE October 2023	
DRAWN JW	CHECKED JW	

APPENDIX B

Soil Import Specification

Table 1. Maximum permissible concentrations for imported capping layer soils.

Determinant		Maximum permissible concentration ¹ (mg/kg) ²		Rationale
		Residential with plant uptake		
			1% SOM	
Arsenic		32		GAC ⁴
Beryllium		56		GAC ⁴
Boron (Water soluble)		5		Limit for phytotoxic effect ⁵
Cadmium		11		GAC ⁴
Chromium (III)		3,200		GAC ⁴
Chromium (VI)		6.3		GAC ⁴
Lead		200		C4SL ¹⁰
Mercury		180		GAC ⁴
Selenium		350		GAC ⁴
Copper		135 ³		BS 3882:2015 Specification for Topsoil ³
Nickel		75 ³		BS 3882:2015 Specification for Topsoil ³
Zinc		200 ³		BS 3882:2015 Specification for Topsoil ³
Vanadium		720		GAC ⁴
Benzo(a)pyrene		2.4		GAC ⁴
Benzo(a)anthracene		11		GAC ⁴
Benzo(b)fluoranthene		14		
Benzo(k)fluoranthene		16		
Chrysene		100		
Dibenzo(a,h)anthracene		1.7		
Indeno(1,2,3-cd)pyrene		13		
Naphthalene		5		
TPH aliphatic ⁶	EC5-6	80		GAC ⁴
	EC>6-8	160		GAC ⁴
	EC>8-10	34		GAC ⁴
	EC>10-12	1,000 ⁷		Hazardous waste threshold ⁷
	EC>12-16	1,000 ⁷		Hazardous waste threshold ⁷
	EC>16-35	1,000 ⁷		Hazardous waste threshold ⁷
TPH aromatic ⁶	EC5-7	0.10		GAC ⁴
	EC>7-8	140		GAC ⁴ / Hazardous waste threshold ⁷
	EC>8-10	37		GAC ⁴
	EC>10-12	75		GAC ⁴ / Hazardous waste threshold ⁷
	EC>12-16	140	GAC ⁴ / Hazardous waste threshold ⁷	
	EC>16-21	290		GAC ⁴ / Hazardous waste threshold ⁷
	EC>21-35	1,000 ⁷		Hazardous waste threshold ⁷
Sum of TPH aliphatic & aromatic C5-C10		< 1,000		Hazardous waste thresholds ⁸ (C10+ MPC based on threshold for C25+)
Sum of TPH aliphatic & aromatic C10+		< 1,000		
pH		5-10		
Phenols		280		GAC ⁴
Cyanide		34		GAC ¹¹
Asbestos		No detectable fibres ⁹		

Notes:

- These maximum permissible concentrations (MPCs) are import criteria only and are not necessarily appropriate for human health risk assessment.
- In mg/kg dry soil except pH and asbestos.
- British Standard BS3882:2015 Specification for Topsoil and requirements for use. Table 1. Values taken for pH 6-7.
- Generic Assessment Criteria generated 'in-house' based on CLEA model Version 1.06.
- Nable, Banuelos and Paul. (1997). *Boron Toxicity*. Plant and Soil, Vol. 193, pp1 81-198.
- Speciated TPH values must not exceed GAC, or hazardous waste threshold, where indicated above. Assessment of TPH must be made against hazardous waste threshold to confirm imported soils do not classify as hazardous material.
- GAC derived MPC for TPH fraction limited to 1,000mg/kg based on 'waste thresholds'.
- Environment Agency. (2007). *A Guide to Hazardous Waste Regulations: How to find out if waste oil and waste that contain oil are hazardous*. HWR08.
- Laboratory screen by microscopy may be required subject to source of material.
- Published C4SL for lead (DEFRA, 2014)
- GAC for cyanide derived by Atkins based on acute exposure for a 0-6 year old child

APPENDIX C

Verification Plan

Reference	Principal Requirements	Remediation/ Construction Related	Site Visit Required by Qualified Geoenvironmental Engineer	Supporting Documentation to be collated for the Verification Report
1.0 General Principles	The proposed redevelopment is understood to comprise the demolition of an existing stable and the construction of a single residential property. The site remediation requirements are as follows: • Watching brief and implementation of a discovery strategy during development; • Removal of lead contamination hotspot (BH01) and verification testing of underlying and surrounding soils; • Importation of clean material to replace removed soils; • Materials management of excavated soils; and • Implementation of Health and Safety controls. Amendments will be made to accord with any differing conditions encountered during the progress of the remediation works.	Site preparation, remediation and construction	YES Observations and inspections during hotspot excavation, sampling, photography and verification reporting.	Remediation Method Statement Details of the construction programme are to be provided by the Main Contractor/Client. Information to be provided prior to and during construction as detailed below.
2.0 Compliance with legalisation	The construction and remediation activities on the site will be undertaken in accordance with all current health and safety and environmental legislation.	Remediation and construction	N/A	N/A
4.0 Removal of Lead Contamination Hotspot	Excavation of lead hotspot at borehole BH01 to the base of the Topsoil. Excavation will be a minimum of 1.0 by 1.0m in plan area. Watching brief to be carried out by geoenvironmental specialist and the excavation will be extended, and additional chemical testing undertaken should evidence of further lead contamination be identified.	Remediation	Yes	• Site visit records including photographs • Chemical test results • Duty of care records for disposal of waste
7.0 Waste Disposal and Materials Management	Material bound for disposal to landfill will require characterisation in accordance with the Environmental Permitting Regulations and	Remediation and Construction	No	• Duty of care records for disposal of waste.

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	disposal in accordance with the requirements of the Environmental Protection (Duty of Care) Regulations, 1991.		Should additional classification of arisings be required prior to disposal or sampling of soils/hardcore prior to re-use on site	- Evidence of material management procedures in place for reuse of materials (i.e. permit, exemption etc.) - Laboratory test results
8.0 Imported Material	The pre-delivery chemical test results will be reviewed by a qualified geoenvironmental engineer prior to the material being brought onto site. Photographs of the backfilled area must be obtained for the verification report.	Remediation	No	- Source certificates and pre-delivery test data (to be provided by Contractor) - Site visit records including photographs - Pre-import chemical test results
12.0 Health and Safety requirements	Tol be addressed in the Contractor's Health and Safety Plan.	Remediation & construction	N/A	N/A