

Remediation Strategy

For a site at

Hilltop Cottage, Glossop

Undertaken for

Mrs P Sykes

Report Title:	Hilltop Cottage, Glossop Remediation Strategy
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1.0 INTRODUCTION

Appointment

- 1.1 WML Consulting has been commissioned by Mrs P Sykes to prepare a Remediation Strategy at the site at Hilltop Cottage Stables, Hilltop Road, Glossop, SK13 7QJ.

Proposed Development

- 1.2 The proposed development includes the demolition of the existing stable and construction of a new residential bungalow, with external hardstanding for access and parking together with private garden areas.
- 1.3 The proposed development plan by Creative Architecture, referenced 22-005-1005-A, is presented in Appendix 01.

Background

- 1.4 WML were initially commissioned to undertake a Phase 1 Desk Study and Phase 2 Investigation and Assessment. These culminated in the following reports.
- Phase 1 Desk Study and Preliminary Geoenvironmental Assessment, Reference 10391G-WML-00-XX RP-G-0001, dated February 2022.
 - Phase 2 Geo-environmental Investigation and Assessment, reference 10391G-WML-XX-ZZ-RP-G-0002, dated February 2025.
- 1.5 It is understood that the reports will be presented to High Peak Borough Council in support of the relevant planning application.
- 1.6 This report has been compiled in consideration of the need for remedial measures to be outlined and agreed as a pre-development requirement.
- 1.7 The findings of the Phase 1 and Phase 2 reports are summarised in the following sections.

2.0 SITE LOCATION AND DESCRIPTION

Site Location

- 2.1 The site comprises land at Hilltop Cottage Stables, located on Hilltop Road, Glossop, SK13 7QJ. It is centred on approximate Ordnance Survey National Grid Reference 402692E, 395162N.

Site Description

- 2.2 At the time of the site investigation in January 2025, the site comprised single-storey stables of timber and blockwork construction surrounded by concrete yards.
- 2.3 The eastern part of the site formed an area of car parking with a gravel surface accessed from Hilltop Road to the east via a sloping asphalt drive.
- 2.4 The northern and western site boundaries are formed by wooden fences with the southern site boundary formed by a mixture of wooden fencing and a low stone wall. The eastern site boundary is formed by a stone retaining wall.
- 2.5 Stands of semi-mature to mature deciduous trees are located on the eastern and southern site boundaries.
- 2.6 The site generally slopes from the north-west at approximately 248.40m, Above Ordnance Datum (AOD) to 245.40m AOD in the south-east and is commensurate with the surrounding area. The eastern site boundary is formed by a stone retaining wall accommodating a reduction in elevation to the neighbouring Hilltop Road between 245m and 244m AOD along its eastern boundary.
- 2.7 The site is accessed via a steep asphalt ramp increasing in elevation from 243.15m Above Ordnance Datum (AOD) on Hilltop Road, to 245.40m AOD at the top of the ramp.

Summary of Salient Environmental Considerations

- 2.8 The BGS plans show that the eastern part of the site is underlain by the Huddersfield White Rock indicated to comprise sandstone. The western part of the site is underlain by the Marsden Formation, indicated to comprise mudstone and siltstone.
- 2.9 The risk from shallow coal mining activity at the site has been discounted. Although the BGS records indicate the site is within an area where sporadic underground mining of restricted extent may have occurred, the potential for difficult ground conditions is considered unlikely and localised.
- 2.10 The site is not in a Radon Affected Area as defined by the UK Health Security Agency where less than 1% of properties are above the Action Level of exposure. Therefore, no radon protection measures are necessary for new structures as described in publication BR211 by the Building Research Establishment.
- 2.11 The bedrock underlying the site is classified as a 'Secondary A Aquifer'. The site is not within an Environment Agency Source Protection Zone (SPZ). No active groundwater abstraction licenses are located within 500m of the site.
- 2.12 The nearest surface watercourses are located 166m north-east and 179m south-east.
- 2.13 There are no active or historic landfills located within 500m of the site. Mouselow Quarry, an active Part B IPPC Authorised Activity, is located 221m west.

Site History

- 2.14 The earliest map dated 1879 indicates the site to comprise undeveloped land in rural / agricultural use with a field boundary crossing the middle of the site and Hilltop Road forming the eastern site boundary.
- 2.15 Sometime prior to 1974, the field boundary crossing the site had been modified. Although no structures are shown on historical maps, a stable of unknown age is currently located in the western part of the site.
- 2.16 It is understood that the stables currently occupying the site are a relatively recent replacement for an older set of stables which burnt down in a fire.
- 2.17 The area surrounding the site has historically comprised predominantly undeveloped land in rural/agricultural use, with the exception of the quarry.

Summary of Phase 2 Investigation

- 2.18 Ground investigations were undertaken by LOT Geotechnics Ltd on 27th January 2025. This comprised the formation of 3no window sample probeholes to a maximum depth of 1.70 metres below ground level (mbgl) and 2no hand excavated trial pits to a maximum depth of 0.30mbgl.
- 2.19 Ground conditions encountered during the intrusive investigation generally comprised made ground to depths of between 0.15m and 0.30mbgl, underlain by strata considered to represent the weathered Marsden Formation to a maximum proven depth of 1.70mbgl.
- 2.20 No groundwater was encountered during the formation of the exploratory holes.
- 2.21 AS part of the investigations 5no soil samples were analysed for a suite of Contaminants of Concern (CoC). The majority of the concentrations were measured below the SL's for a "Residential with home-grown produce" end-use with the exception of mercury within all of the samples tested from ground level to a depth of 0.20mbgl. The samples ranged between 1.5 to 3.45mg/kg compared to the screening level of 1.20mg/kg.
- 2.22 The source of the elevated mercury is not known, although given the sites rural setting it may be as a result of the historic use of fertiliser and/or wood preservative/fungicide. It is understood that a previous stable block at the site was destroyed in a fire, which may also have resulted in the release and distribution of mercury from treated timber.
- 2.23 Asbestos was detected within one of the samples analysed (WS03 – 0.10m) in the form of loose fibres of chrysotile. Subsequent quantification analysis recorded a concentration of <0.001% weight by weight.
- 2.24 Risks to controlled waters from the site were considered low with no specific environmental remediation considered necessary.

Ground Gas

- 2.25 In consideration of the ground gas risk assessment the risk to the development from landfill type ground gas was considered very low with no gas monitoring or specific remedial measures required.
- 2.26 Risks from radon have also been discounted.

3.0 REMEDIATION STRATEGY

Asbestos Control Measures

General

- 3.1 Although asbestos within shallow soils was not indicated to be widespread it cannot be discounted that further unidentified ground contamination could be exposed during groundworks operations such as beneath / post demolition of the structure in the northern section.
- 3.2 Therefore, site operations will be under the full-time control of Site Manager who will ensure that all asbestos management personnel hold necessary certificates relating to asbestos awareness.
- 3.3 Site induction for site operatives and visitors will include a specific tool box talk relating to asbestos. This will cover basic identification of possible Asbestos Containing Material (ACM) and the procedure to be adopted if any such material is suspected.

Additional Suspected Asbestos

- 3.4 Although not anticipated, based on the additional chemical analyses, if it is suspected that asbestos contamination is more widespread across the site a specialist consultant in the identification of ACM should be present during any significant earth moving operations and the reduction of garden areas.
- 3.5 The asbestos specialist will be UKAS accredited and will set up perimeter background monitoring stations around the site boundary and at strategic locations within the site as considered necessary during the earthworks. In addition, personal monitoring equipment will be deployed around working areas for work location monitoring.
- 3.6 It is envisaged that air tests will be undertaken with asbestos fibre counting being undertaken in consultation with the asbestos specialist.
- 3.7 Furthermore, during periods of dry weather, the site surface will be dampened down to minimise the potential for airborne dust. Water sprays may also be employed at excavation locations to minimise the production of airborne dust. A detailed Method Statement for the control and management of dust on site will be contained within the main contractor's Environmental Management Plan.
- 3.8 The asbestos consultant will initially undertake a detailed walk-over of the site with selected samples of any suspected fibrous material so identified on the surface being sent to the laboratory for asbestos identification.
- 3.9 Where such materials are identified as ACM, similar fragments identified by further inspection will be located on plan and marked on site for subsequent removal by a licensed asbestos contractor. Where considered appropriate, further samples of such materials will be taken for laboratory identification.
- 3.10 The consultant will similarly identify any suspected ACM during the subsequent earthworks/groundworks. Where obvious fragments of ACM are identified, they will be hand-picked where practical and removal from site by the licensed asbestos contractor as soon as reasonably practical. Where such materials cannot be removed immediately, the ACM will be covered by impermeable membrane and clearly marked on site for subsequent removal.
- 3.11 Following the surface hand-picking exercise, samples of soil will be taken from the surface over the site and subjected to asbestos quantification analysis in the laboratory. Where the percentage of asbestos fibres are identified to be in excess of 0.1% by volume of the sample, further inspection of the soil in that area will be undertaken with removal of identified ACM where appropriate.

- 3.12 At the discretion of the asbestos consultant further samples may also be taken for quantification analysis at the laboratory.
- 3.13 The licensed asbestos contractor will arrange for the necessary disposal of hand-picked ACM to an appropriately licensed landfill facility. Records in the form of Duty of Care documentation will be kept by the site manager for presentation where required.

Capping Requirements for Landscaped Areas

- 3.14 As the level of contamination in the Topsoil and made ground renders it unsuitable for direct use beneath proposed garden and landscaped areas, development will need to include the provision of a clean cover over the made ground to break the direct contact pollution linkage as set out below.
- 3.15 Therefore, new garden and landscaped areas will need to be capped with a nominal 600mm clean cover over the existing made ground to break the direct contact pollution linkage. The make-up of the 600mm cover would be expected to consist of:
- 150mm of clean imported Topsoil;
 - 450mm of clean imported sub-soil.
- 3.16 However, across the majority of the site the made ground is less than 600mm thick, so it will be more appropriate to excavate and expose the underlying natural soils prior to placement of a suitable thickness of sub-soil/Topsoil.

Unexpected Ground Contamination - Soils

- 3.17 It cannot be wholly discounted that unidentified contamination sources could be encountered during site development.
- 3.18 Should any visual / olfactory evidence of contamination be encountered, WML will advise of the most appropriate measures to deal with such contamination. This may include taking samples for chemical analysis and advising of appropriate routes for disposal to landfill.
- 3.19 Any unsuitable contaminated soil encountered will be segregated and stockpiled on impermeable sheeting and demarcated as contaminated soil for removal off-site.
- 3.20 Any contaminated soil will be stockpiled a sufficient distance from any other stockpiled clean soil such as arisings of natural soils, to prevent cross-contamination if immediate disposal to landfill is not possible.
- 3.21 A photographic record of any should be made available for inclusion within the validation report.
- 3.22 Removal dockets and receiving landfill information for any contaminated materials removed from the site will need to be retained for inclusion in the validation report.

Unexpected Ground Contamination - Groundwater

- 3.23 If mobile contaminants, or localised groundwater suspected to be contaminated, were encountered during the redevelopment ground works', the following actions should be undertaken.
- 3.24 Works should cease and the suspect groundwater should be sampled and submitted for chemical analyses. The results of which would allow the most appropriate remedial action to be determined and undertaken.
- 3.25 A photographic record of any groundwater removal should be made available for inclusion within the validation report.

- 3.26 Removal dockets and disposal information for any contaminated materials removed from the site will need to be retained for inclusion in the Validation report.

Water Supply Pipes

- 3.27 United Utilities Water will need to be consulted with regards the selection of suitable water supply pipe materials for the development. However, in light of the ground conditions encountered, the requirement for specific materials and measures to protect the water supply from ground contamination is not anticipated.

4.0 VALIDATION

Asbestos Control Measures

- 4.1 If / where required the validation that the asbestos control measures have been successfully implemented will be recorded in the Health and Safety File which will be held by the Client at their premises or other designated location.
- 4.2 Such documentation will primarily include:
- A record of the extent and results of all asbestos monitoring carried out to demonstrate that the concentration of asbestos in air have not exceeded the control limit of 0.1 fibres per cubic centimetre of air averaged over a continuous period of 4 hours.
 - A record of physical control measures which have been adopted to minimise the risk of the control limit being exceeded.
 - A record of ACM encountered and the measures adopted to deal with such materials.
 - A record of all ACM removed from site and details of the Duty of Care documentation identifying the licensed facility to which it has been disposed to.
 - A record of any incidents, accidents and emergencies.
 - Photographic evidence of material movement and remedial works such as hand-picking activities.

Unexpected Ground Contamination

- 4.3 It cannot be wholly discounted that unidentified contamination sources could be encountered during site works. The removal of ground contamination would need to be witnessed by a geoenvironmental engineer who would take independent site records, including photographs to demonstrate appropriate compliance with the Remediation Strategy and subsequent Method Statements.
- 4.4 Removal of hotspots would also need to be validated by visual inspection to include photographs and measurements of the resulting excavations and / or sampling of suspected groundwater. Samples will be taken from the sides and, where practical, the bases of excavations for chemical analysis to demonstrate that remaining soils do not exceed the SAC.
- 4.5 Records of all material removed from site will be kept by the Site Manager to demonstrate compliance with Duty of Care regulations. This will include a record of volumes of waste taken from site and details of the landfill facility receiving the waste.
- 4.6 Where necessary, EA pre-notification requirements will be complied with for the removal and disposal of waste considered to be Hazardous, backed up where necessary by Waste Acceptance Criteria (WAC) testing.

Imported Topsoil / Subsoil

- 4.7 As no site won Topsoil suitable for use as a capping soil is available for reuse, it is considered that all capping soils for use in private gardens and landscaped areas will need to be imported.
- 4.8 The source of all imported materials will be clearly identified by reference to the site of origin. This will be accompanied by the results of appropriate chemical analysis from the supplier to certify material suitability. Certificates will be required for inspection prior to any imported material being brought to site.
- 4.9 Imported soils should be as specified in BS 3882:2015 for topsoil and BS8601:2013 for subsoil as 'suitable for their intended purpose' in accordance with the YALPAG Guidance 'Verification requirements for cover systems' (version 4.1, June 2021).

- 4.10 Imported Topsoil and sub-soil will be stockpiled separately from other materials and clearly marked on site.
- 4.11 The site manager will keep records of the volumes of all imported Topsoil and sub-soil delivered to site in the form of delivery slips. The records will be presented as confirmation that sufficient analysis has been undertaken on imported Topsoil/sub-soil.
- 4.12 Notwithstanding the above, material delivered to site will be subject to further chemical analysis to confirm suitability. In this respect, the following testing strata per soil source will be required.

Source	Soils	Testing Regime
Greenfield	Topsoil / subsoil	1:200m ³ (minimum 3no samples per source)
Remediated		1:100m ³ (minimum 3no samples per source)
Brownfield/unknown		1:50m ³ (minimum 3no samples per source)

- 4.13 The results of the analysis will be compared against Site Specific Assessment Criteria for 'Residential with home-grown produce' as presented in Appendix 02.
- 4.14 Should the results of such analysis exceed the relevant Site-Specific Assessment Criteria in a significant number of samples the soil will be removed from site and replaced with material which meets the site requirements.

Clean Cover Thickness

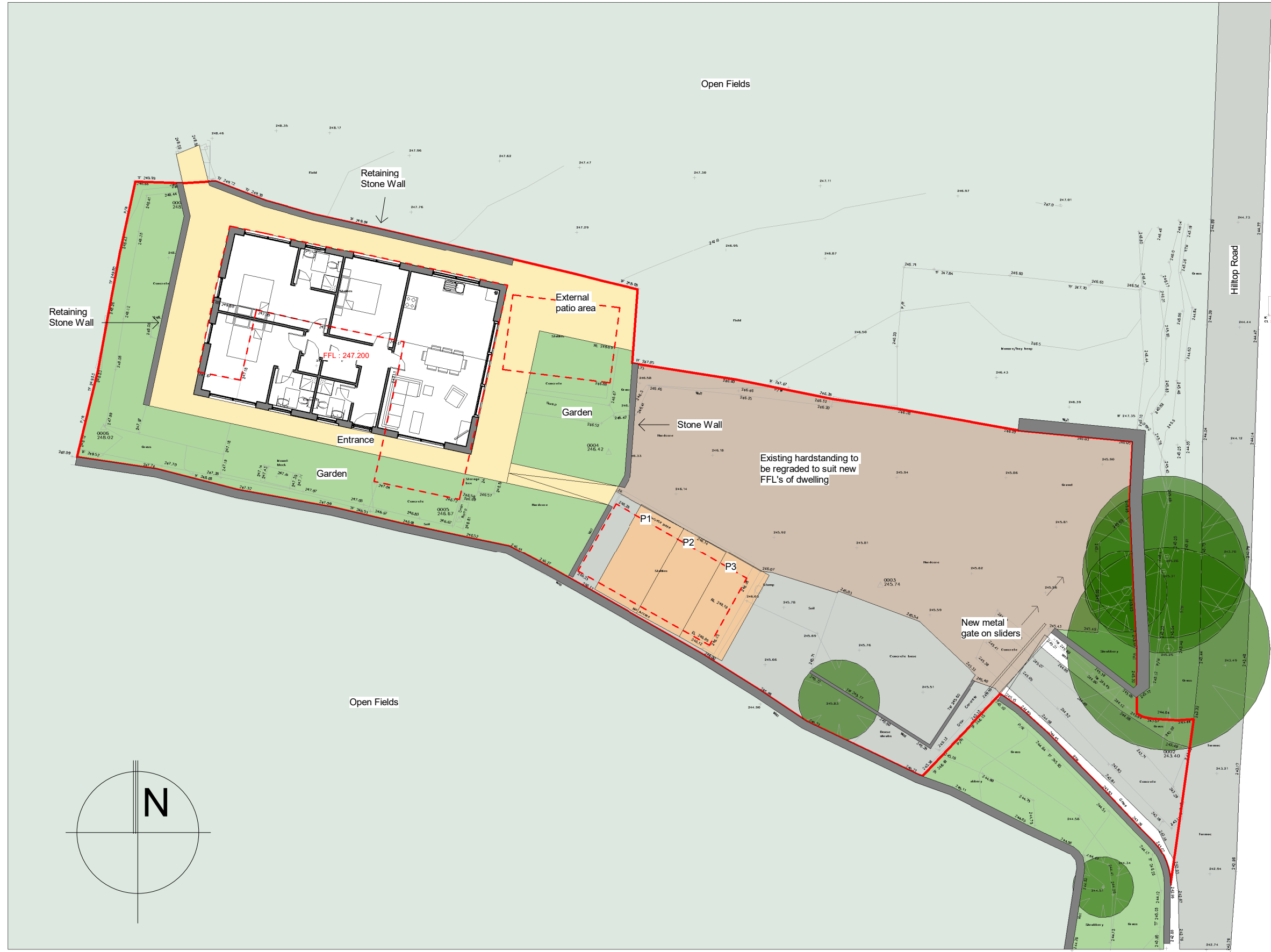
- 4.15 Where a clean cover is to be incorporated over areas of remaining made ground, the thickness of sub-soil and Topsoil will be validated by undertaking hand-dug trial pits with photographic records following placement.
- 4.16 Hand dug trial pits will be undertaken through the full thickness of the capping soils at a frequency of one in each rear garden. The current layouts indicate that front gardens are to be hardstanding for use as car parking.
- 4.17 The photographic record will confirm the required clean cover thickness by use of a levelling staff. Each photograph will also clearly show the location of the trial pit excavation relative to its surroundings.

5.0 VALIDATION REPORT

- 5.1 On completion of the Remediation Works to the site, a Validation Report will be produced by the geo-environmental engineer, which will be submitted to the Local Authority for approval.
- 5.2 Where applicable the Validation Report will include:
- Documentation in relation to asbestos control measures.
 - Details of any unexpected ground contamination and the measures undertaken to deal with this, to include records of excavation, the results of chemical analysis resulting from the removal of contaminated soil and / or groundwater.
 - Results of subsequent chemical analysis of imported Topsoil/sub-soil to confirm compliance with the Site Specific Assessment Criteria.
 - Records of the volumes and suitability of all imported fill, Topsoil and sub-soil delivered to site in the form of delivery slips and certificates.
 - Sample waste management records confirming compliance with Duty of Care regulations;
 - Photographic evidence of suitable imported sub-soil/Topsoil cover in gardens where underlain by made ground or evidence that existing Topsoil and made ground has been removed to expose underlying natural glacial strata.
 - Confirmation of potable water supply pipe materials.

APPENDIX 01

Drawings



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PROJECT

Hill Top Cottage Stables

CLIENT

Mrs P Sykes

DRAWING

Proposed Site Plan

SCALE	SHEET SIZE	DRAWN	CHECKED	DATE
1 : 200	@ A3	AH	CA	02.03.22

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Proposed Site Plan

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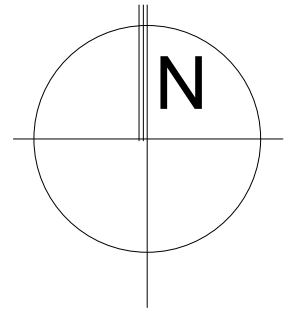
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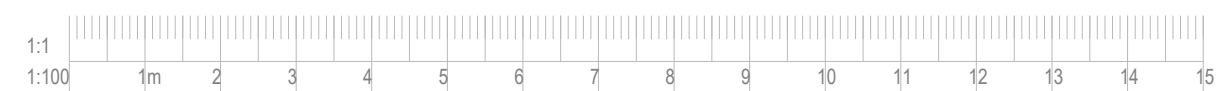
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Topographical Survey

1 : 200



A 21.03.22 AH Title block amended CA

REV. DATE DRN. CHKD.

PROJECT
Hill Top Cottage Stables

CLIENT
Mrs P Sykes

DRAWING
Topographical Survey

SCALE
1 : 200

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STATUS
Planning

APPENDIX 02

Soil Assessment Criteria

Screening Levels for Residential (with homegrown produce) assuming a 6% SOM for PAH

Contaminant	Screening Levels for Residential (mg/kg)
Metals	
Arsenic	37
Boron	290
Cadmium	26
Chromium III	910
Chromium VI	21
Copper	2,400
Lead*	200
Mercury	1.2
Nickel	130
Selenium	250
Vanadium	410
Zinc	3,700
Non – Metals	
Phenol	120
Polyaromatic Hydrocarbons (PAH)	
Benz[a]anthracene	13
Benzo[a]pyrene	3.0
Benzo[b]fluoranthene	3.7
Benzo[ghi]perylene	350
Benzo[k]fluoranthene	100
Chrysene	27
Dibenz[ah]anthracene	0.30
Fluoranthene	890
Indeno[123-cd]pyrene	41
Naphthalene	13
Pyrene	2,000

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* Where not included in the S4UL's criteria for a limited number of contaminants, namely lead, have been derived by DEFRA in their document entitled SP1010: Development of Category 4 Screening Levels for Assessment of Land Affected by Contamination, April 2014.