



**GROUND CONTAMINATION
RISK ASSESSMENT AND
REMEDiation STRATEGY**

**NASH MANOR
NUTBOURNE LANE
NUTBOURNE
WEST SUSSEX**

PROJECT REFERENCE: P17336

REPORT REFERENCE: R16834

Report Beneficiary: Hunter Development Holdings Ltd

Document Control			
Issue No.	Status	Issue Date	Notes
1	Final	18 th September 2025	
2	Final	29 th September 2025	Minor descriptive changes and edits to remediation strategy
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This report is not intended to be either an ecological, archaeological or flood risk assessment. An appropriate specialist should be consulted about any concerns that may arise in this regard.

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EXECUTIVE SUMMARY

The following presents a summary of the main findings of the report. It is emphasised that no reliance should be placed on any individual point until the whole of the report has been read as other sections of the report may put into context the information contained herein.

The development is to comprise the conversion of an agricultural building to create 2 no. dwellings. Part of the western and eastern elevations of the existing structure will be demolished as part of the works. The nature of proposed landscaping is unclear, however for the purposes of this assessment the provision some degree of soft landscaping has been assumed.

The site is currently occupied by a rectangular shaped agricultural building housing animal pens in the west and tractor attachment/agricultural equipment in the east; the centre of the building is broadly open. The building is fronted to the south by a yard area.

Reference to geological datasets indicates that the site is expected to be underlain by the Hythe Formation, which is classed as a Principal Aquifer. The site does not lie within a SPZ. Groundwater was not encountered during the ground investigation works.

The ground investigation identified concentrations of heavy metals and PAH compounds within the made ground beneath the existing barn that are considered to pose an unacceptable risk to end users where new areas of garden may be formed.

Remedial measures will be required in any such areas to reduce the risk to end users. Details of the remedial works and how they will be verified are provided in this report.

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1. INTRODUCTION

It is proposed to convert an existing agricultural building into 2 no. single-storey residential dwellings with an associated parking area on the southern extent of the building. From information obtained on the local authority's planning portal, it is understood that part of the western elevation and a large portion of the eastern elevation of the existing structure will be demolished, as these were a later addition and predate the Class Q requirements. A copy of the proposed development layout is presented in Appendix A. No details concerning the nature of proposed soft landscaping were observed within the proposed drawing documents.

Ashdown Site Investigation Ltd has previously undertaken a preliminary ground contamination risk assessment in July 2025¹ to assist with the discharge of pre-commencement planning Condition 1(a), imposed by Horsham District Council². A copy of the decision notice can be found in Appendix B. It is noted that the decision notice contains referencing errors; clauses referenced 1a, 1b and 1c should be denoted 1b, 1c and 1d.

The preliminary contamination risk assessment identified potential pollutant linkages relating to proposed end users of the site and recommended an intrusive ground investigation be undertaken in order to allow a quantitative risk assessment of the potential contamination sources identified to be made.

As the nature of proposed soft landscaping was unknown, it was recommended that shallow sampling of soils be undertaken in areas across the curtilage of the proposed building footprint, including the areas of the barn due for demolition, where soft landscaping may be incorporated, to enable the quantitative risk assessment to be undertaken. It was also advised that a limited number of exploratory holes should be undertaken beneath the proposed building footprint.

The scope of the works covered by this report, and the terms and conditions under which they were undertaken, were set out within the offer letter Q15553, dated 5th August 2025. The instruction to proceed was received from the client, Hunter Development Holdings Ltd.

The specific objectives of the works were to:

- a) Establish the expected geology, hydrogeology and hydrology at the site;
- b) Investigate the shallow ground and groundwater conditions in the area of the proposed development;
- c) Test for the presence of contaminants identified by the preliminary conceptual model; and
- d) Develop a quantitative conceptual model of the site, refining the preliminary model to identify any pollutant linkages that may be present.

¹ Ashdown Site Investigation Ltd Project Ref: P17287, Report Ref: R16786, dated 24th July 2025.

² Horsham District Council, Planning Reference, DC/24/1681, Dated 23rd December 2024.

2. SITE CONTEXT

2.1 Site Description

The site is located at Nutbourne Lane, Nutbourne, West Sussex, and is centred on the approximate Ordnance Survey national grid reference 507090, 119419. A site location plan and site plan are presented as Figure 1 and Figure 2, respectively.

The site currently comprises a rectangular shaped agricultural building housing animal pens in the west and tractor attachment/agricultural equipment in the east; the centre of the building is broadly open. The building is fronted to the south by a yard area.

2.2 Geological Data Review

2.2.1 *Expected Geology and Aquifer Designation*

The stratigraphic unit that may be expected to underlie the site has been established by reference to British Geological Survey (BGS) mapping and the BGS Lexicon of Named Rock Units. The expected stratigraphy is presented in the following table.

Table 1. *Expected Strata and Aquifer Designation*

Type	Stratum	Aquifer Designation
Bedrock	Hythe Formation	Principal Aquifer

The Hythe Formation forms part of the Lower Greensand Group. The formation is of Aptian age (113 to 126.3 million years old; Early Cretaceous). In the western Weald, the Hythe Formation comprises mainly fine to medium grained, sparsely glauconitic sands, sandstones and silts. The deposits are locally pebbly, with calcareous or siliceous cement in beds or lenses in some areas. Some clay interbeds are present, including Fuller's Earth. In Kent and eastern Sussex, the formation comprises alternating sandy limestones ("Ragstone") and glauconitic sandy mudstones ("Hassock"). The formation is recorded by the BGS to range in thickness up to 100m.

2.2.2 *Radon*

The site is reported to be within an area where less than 1% of properties are at or above the action level requiring radon gas protection measures to be installed in new buildings and therefore no radon protection measures are reported by the British Geological Survey to be necessary in the construction of new dwellings or extensions.

2.3 Hydrogeological and Hydrological Data

2.3.1 *Groundwater Abstractions*

Two groundwater abstraction licences are indicated within 2km of the site: these are for general farming and domestic use and for trickle irrigation at distances of 973m to the north-west and 1329m to the west, respectively.

2.3.2 ***Surface Water Abstractions***

The closest surface water abstraction licence is recorded to lie 1247m to the south-east of the site for spray irrigation purposes.

2.3.3 ***Potable Abstractions***

No potable abstraction licences are indicated within 2km of the site.

2.3.4 ***Groundwater Vulnerability***

The level of groundwater vulnerability, as reported within the Groundsure data, is High.

2.3.5 ***Groundwater Source Protection Zones (SPZ)***

The Environment Agency defines SPZs as those areas where groundwater supplies are at risk from potentially polluting activities and accidental releases of pollutants. SPZs are primarily a policy tool used to control activities close to water supplies intended for human consumption.

The site does not lie within a SPZ.

2.3.6 ***Surface Water Features***

No significant surface water features are recorded within 250m of the site.

3. SITE WORKS

3.1 Introduction

The intrusive site works comprised the drilling of a series of dynamic sampler boreholes to enable the logging and sampling of soils. The intrusive work was carried out on 20th August 2025. The exploratory hole locations are shown on Figure 2.

Descriptions of the strata encountered and comments on groundwater conditions are shown in the exploratory hole records given in Appendix C, which also includes explanatory notes to assist in their interpretation.

3.2 Exploratory Holes

The following table summarises the intrusive works undertaken at the site.

Table 2. Summary of Intrusive Works Undertaken

Designation	Depth (m bgl)	Method
WS01	2.00	Dynamic Sampler
WS02	1.60	Dynamic Sampler
WS03	2.00	Dynamic Sampler
WS04	2.00	Dynamic Sampler
WS05	1.20	Dynamic Sampler
WS06	0.60	Dynamic Sampler
WS07	0.60	Dynamic Sampler
WS08	0.60	Dynamic Sampler

3.3 Sampling

Samples of soil taken from the exploratory holes at the depths shown in the exploratory hole records. The types of samples taken are indicated on the exploratory hole records. Details on the sample types are provided in the explanatory notes.

Where appropriate, samples were stored in cool boxes with cooling blocks to maintain temperatures below 4°C until transferred to refrigerators upon return to the office and subsequently forwarded to the external accredited chemical testing laboratory.

3.4 Laboratory Testing

Laboratory testing was scheduled by Ashdown Site Investigation Ltd and the results from the laboratory tests are provided in Appendix D.

Chemical testing was undertaken by a laboratory with recognised (UKAS and MCERTS) accreditation for quality control.

4. GROUND CONDITIONS

4.1 Stratigraphy

4.1.1 *Surface Covering*

No specific surfacing materials were encountered in boreholes WS01 to WS05. Boreholes WS06 to WS08 were excavated through a surface cover of topsoil some 100mm to 150mm in thickness.

4.1.2 *Made Ground*

Made ground, comprising gravelly sand and slightly gravelly to gravelly clay, was recorded within boreholes WS01 to WS05 to depths of between 0.20m and 0.55m below ground level. The gravel fraction comprised variable quantities of flint, brick, concrete, asphalt, sandstone and clinker-like material.

No made ground soils were recorded underlying the topsoil encountered within boreholes WS06 to WS08.

4.1.3 *Hythe Formation*

Underlying the topsoil/made ground, the investigation progressed into undisturbed, light brown and orange brown, slightly gravelly, sandy clay soils.

These deposits continued to the final drilling depth of each borehole and are considered to represent the Hythe Formation indicated to underlie the site on BGS geological maps.

4.2 Stability

Each of the boreholes was recorded to remain stable during the course of drilling.

4.3 Groundwater Conditions

Groundwater was not encountered during the short period of the intrusive investigation works.

5. QUANTITATIVE CONTAMINATION ASSESSMENT

5.1 Introduction

The risk assessment for the site considers the sources of contamination identified, the receptors that may be present in view of the development proposals and the contaminant pathways by which these may be linked.

A complete pollutant linkage is only deemed to exist where all three are present and a site is considered suitable for use where no complete pollutant linkages are identified.

Where a complete pollutant linkage is considered to be present, an assessment of the level of risk associated with the pollutant linkage has been carried out in line with published guidance³.

The level of risk is determined using the risk matrix presented in the following table. Classifications of probability, consequence and risk are presented in Appendix E.

Table 3. Risk Assessment Matrix

		Probability			
		Very Low	Low	Moderate	High
Consequence	Very Minor	Negligible	Very Low	Low	Low/Moderate
	Minor	Very Low	Low	Low/Moderate	Moderate
	Moderate	Low	Low/Moderate	Moderate	High
	Severe	Low/Moderate	Moderate	High	Very High

5.2 Preliminary Conceptual Model

A copy of the preliminary conceptual model is presented in Appendix F

5.3 Assessment Strategy

The design of the ground investigation considered the potential contaminant source identified by the preliminary ground contamination risk assessment. The investigation strategy comprised a spread of non-targeted sampling positions across the curtilage of the site, with samples of the shallow soils tested for the potential contaminants identified, to determine whether the historical use of the site has resulted in unacceptable levels of contamination.

³ Contaminated Land Risk Assessment: A guide to good practice, CIRIA C552, 2001.

5.4 Analysis of Contamination Test Results

5.4.1 Method of Assessment

For the assessment of risk to end users, comparison of the results of the laboratory testing has been made against published soil screening values (SSV) comprising the 'Suitable For Use Levels' (S4UL)⁴ or, in lieu of an S4UL being developed for lead, the Category 4 Screening Level (C4SL)⁵.

In view of the development proposal, the SSV utilised in this assessment are those calculated for the generic "Residential with homegrown produce" land use.

For other contaminants where S4UL do not exist, reference has been made to other generic screening values where appropriate.

For the assessment of risk to controlled waters a qualitative assessment has been undertaken based upon the concentrations of contaminants recorded within the soil samples and the information obtained about the sensitivity of the underlying strata or nearby surface water receptors.

5.4.2 Heavy Metals & Polycyclic Aromatic Hydrocarbon (PAH) Compounds

The following table summarises the SSV for heavy metals and PAH compounds, along with the maximum and minimum concentrations recorded.

Table 4. Summary of Test Results – Heavy Metals and PAH Compounds

Contaminant	SSV (mg/kg)	No. of Samples	Minimum Concentration (mg/kg)	Maximum concentration (mg/kg)	Limit of Detection (mg/kg)	No of exceedances
Arsenic	37	5	6	12	< 2	0
Water Soluble Boron	290	5	<LOD	<LOD	< 1	0
Cadmium	11	5	<LOD	0.6	< 0.2	0
Chromium	910	5	8	19	< 2	0
Hexavalent Chromium	6	5	<LOD	<LOD	< 2	0
Copper	2400	5	7	52	< 4	0
Lead	200	5	17	228	< 3	1
Mercury	40	5	<LOD	<LOD	< 1	0
Nickel	180	5	8	16	< 3	0
Selenium	250	5	<LOD	<LOD	< 3	0
Zinc	3700	5	29	116	< 3	0
Naphthalene	2.3	5	<LOD	<LOD	< 0.1	0
Acenaphthylene	170	5	<LOD	<LOD	< 0.1	0

⁴ Nathanail, C.P, et al., The LQM/CIEH S4ULs for Human Health Risk Assessment, 2015, Land Quality Press, Nottingham. Copyright Land Quality Management Limited reproduced with permission; Publication Number S4UL3071.

⁵ SP1010: Development of Category 4 Screening Levels for Assessment of Land Affected by Contamination. Final Project Report, published by DEFRA, 2014.

Contaminant	SSV (mg/kg)	No. of Samples	Minimum Concentration (mg/kg)	Maximum concentration (mg/kg)	Limit of Detection (mg/kg)	No of exceedances
Acenaphthene	210	5	<LOD	0.91	< 0.1	0
Fluorene	170	5	<LOD	1.22	< 0.1	0
Phenanthrene	95	5	<LOD	18.6	< 0.1	0
Anthracene	2400	5	<LOD	4.51	< 0.1	0
Fluoranthene	280	5	<LOD	35.2	< 0.1	0
Pyrene	620	5	<LOD	29.1	< 0.1	0
Benz(a)anthracene	7.2	5	<LOD	13.2	< 0.1	1
Chrysene	15	5	<LOD	10.4	< 0.1	0
Benzo(b)fluoranthene	2.6	5	<LOD	11.2	< 0.1	2
Benzo(k)fluoranthene	77	5	<LOD	4.56	< 0.1	0
Benzo(a)pyrene	2.2	5	<LOD	9.61	< 0.1	2
Indeno(123-cd)pyrene	27	5	<LOD	4.35	< 0.1	0
Dibenz(ah)anthracene	0.24	5	<LOD	0.97	< 0.1	2
Benzo(ghi)perylene	320	5	<LOD	3.75	< 0.1	0

The two samples of made ground, taken from boreholes WS04 and WS05, recorded elevated concentrations of heavy metals and PAH compounds in comparison with the published SSV. The three samples of topsoil from boreholes WS6, WS7 and WS8, located to the west of the existing barn, did not record any concentrations of heavy metals or PAH compounds above their respective SSV.

5.4.3 Asbestos

No suspected asbestos materials were noted within any of the exploratory holes undertaken at the site. None of the five samples screened for asbestos recorded the presence of asbestos.

5.4.4 Petroleum Hydrocarbons, BTEX compounds and other VOC

The following tables lists the SSV for petroleum hydrocarbon equivalent carbon weight fractions and BTEX compounds calculated for 1% organic content.

Table 5. SSV for petroleum hydrocarbon equivalent carbon weight fractions

Petroleum Hydrocarbon Fraction	SSV (mg/kg)	Petroleum Hydrocarbon Fraction	SSV (mg/kg)
Aliphatic EC 5-6	42	Aromatic EC 5-7	70
Aliphatic EC >6-8	100	Aromatic EC >7-8	130
Aliphatic EC >8-10	27	Aromatic EC >8-10	34
Aliphatic EC >10-12	130	Aromatic EC >10-12	74
Aliphatic EC >12-16	1100	Aromatic EC >12-16	140

Aliphatic EC >16-35	65000	Aromatic EC >16-21	260
Aliphatic EC >35-44	65000	Aromatic EC >21-35	1100
		Aromatic EC >35-44	1100

Table 35. SSV for BTEX Compounds

Compound	SSV (mg/kg)	Compound	SSV (mg/kg)
Benzene	0.087	Ethylbenzene	47
Toluene	130	p-Xylene ¹	56

¹ Xylene has three structural isomers, the SSV presented is for p-Xylene, which has the most conservative SSV.

Whilst full speciation of the concentrations of petroleum hydrocarbons by aromatic and aliphatic fractions was not undertaken, the results of the testing undertaken can still be compared with the more stringent of the screening values for the respective equivalent carbon weight fraction and, where the concentration recorded is found to be lower, it can be reasonably concluded that no significant risk is present.

Some of the shallow made ground samples recorded detectable concentrations of petroleum hydrocarbons. However, in each case the concentrations of individual weight fractions were well below the more stringent SSV. None of the samples of the undisturbed soils from below the made ground recorded any detectable concentrations of petroleum hydrocarbons.

No detectable concentrations of any VOC, including BTEX compounds, were recorded in any of the samples tested.

Comparison of the test results for petroleum hydrocarbons has been undertaken with the threshold value for PE water supply pipework⁶. Concentrations exceeding the threshold value have been recorded in some of the samples of made ground. None of the samples of the undisturbed natural soils recorded any concentrations above the threshold values.

5.5 Conclusions

The made ground encountered beneath the eastern end of the existing barn has been recorded to contain concentrations of heavy metals and PAH compound that may pose an unacceptable risk to end users. As this area is understood to form part of the gardens associated with the new houses, remedial works are considered to be necessary in this area to reduce the risk to an acceptable level.

Elsewhere, the contaminant concentrations in the existing topsoil to the west of the barn do not pose an unacceptable risk to end users. There is no evidence of significant petroleum hydrocarbon or VOC contamination either directly under the barn or in the land adjacent to the west.

As no significant contamination was recorded within the undisturbed natural soils, there should not be a need for protective pipework to be used for new water supply runs providing it is installed within the undisturbed natural soils. However, it is strongly recommended that designers consult with the local water

⁶ Set out within Table 3.1 of the Guidance for the Selection of Water Supply Pipes to be used in Brownfield Sites, UK Water Industry Research, 2010.

supply company to confirm the specific water supply pipe material necessary and/or whether they require further laboratory testing and assessment specific to proposed routes of services.

At the concentrations recorded in the made ground, heavy metals and PAH compounds will not exhibit any significant mobility and are not considered to pose an unacceptable risk to controlled waters.

5.6 Quantitative Contamination Risk Assessment

5.6.1 Contaminant Pathways Identified

The development is to comprise the conversion of an agricultural building to create 2 no. dwellings. A final landscaping proposal has not been provided, but it is assumed that the eastern end of the existing barn purposes of this assessment the provision of some degree of soft landscaping has been assumed.

Pathways associated with gas and vapour intrusion into new buildings are considered to be valid, along with direct contact and dust related pathways, and pathways associated with the consumption of home grown produce.

The site is expected to be underlain by the Hythe Formation which is classed as a Principal Aquifer. Although the site is not located within a SPZ, and not located within an urban area, pathways relating to controlled waters may be reasonably considered to be present.

Should the proposed development plans be altered, a revised risk assessment may be required.

5.6.2 Contamination Sources Identified

The following source of contamination has been identified by the quantitative contamination risk assessment:

- Shallow made ground in areas of likely proposed soft landscaping.

It is noted that an asbestos survey of existing structures and infrastructure⁷ was beyond the brief of this report. The risk assessment assumes that, should asbestos be identified within buildings or infrastructure, any such materials will be managed in accordance with current legislation and guidance, to ensure this does not represent an ongoing risk to end users and, specifically, to ensure that asbestos materials are not introduced into the underlying soils.

5.6.3 Quantitative Conceptual Model

The quantitative conceptual model for the proposed development is presented in Appendix G.

⁷ As defined under Section 5(a) of the Control of Asbestos Regulations, 2012.

6. REMEDIATION STRATEGY

Current best practice guidance recommends that any remedial action proposed for the site shall be justified. The pollutant linkages identified by the quantitative risk assessment are considered to provide sufficient justification for remedial works.

The remediation works have been developed to meet the technical objectives for the development, the major drivers behind which are:

- To achieve successful remediation within a particular timescale and budget;
- Familiarity with the methodology by the developer/ground worker;
- Confidence that the remediation can be carried out by good technical practices; and
- Likely success of the style of remediation.

6.1 Options Appraisal

The driver for remediation at the site is the presence of made ground soils containing concentrations of lead and PAH compounds that are considered to pose an unacceptable level of risk to human health in the context of the development. There are no in situ or ex situ remediation techniques available to reduce the concentrations of lead and PAH compounds within the soils to below that of the published screening values.

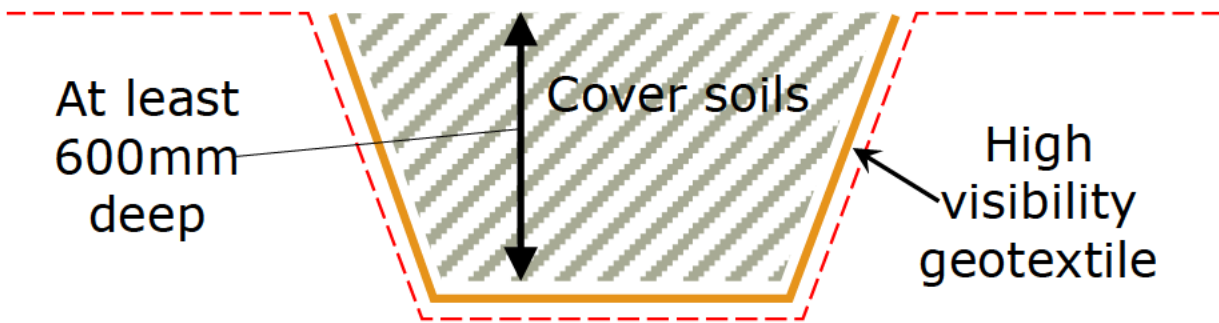
The recommended works must be achievable by the groundworker, using techniques that they are familiar with. It is therefore considered that the remediation proposals could either comprise the complete removal of the contaminant source (the made ground soils), or the provision of a cover system to sever the contaminant pathways in areas where the end users may reasonably be expected to be exposed to the soils or soil derived dust.

Both approaches are considered to be equally straightforward and both would be an effective approach to reducing the risk to end users of the site to an acceptable level.

6.2 Protection of Human Health

Within all proposed areas of garden that are to be created beneath the footprint of the current barn, the made ground soils will be removed either to expose the undisturbed soils, or to a sufficient depth to allow the placement of a cover system of at least 600mm of verified "clean" imported soils. The cover system soils must be underlain by a high visibility geotextile marker which laps up the sides of the excavation to prevent future intermixing between the cover system soils and the residual made ground.

A schematic cross section of the cover system construction is shown below.



The depth of the cover system specified represents “two spade depths” to allow for planting of trees, shrubs etc. without residents coming into contact with the contaminated soils remaining at depth.

Beneath those parts of the barn that are to be converted to provide the new houses, the presence of building cover will act to sever the contaminant pathways and thereby reduce the risk to end users to an acceptable level. Any other areas of hard surfacing outside of the new houses would also sever the contaminant pathway and reduce the risk to an acceptable level.

6.3 Protection of Controlled Waters

The risk assessment did not identify any unacceptable risks to controlled waters beneath the site and therefore no specific remedial works are considered necessary in this regard.

6.4 Protection of Services

All service providers' requirements must be fully adhered to in order to ensure the risk to end users and services is kept to an acceptable level. Details of any measures required by service providers and confirmation of their implementation will be included within the verification report.

6.5 Protection of Construction Workers

All construction workers must undertake their own risk assessment, based upon the works to be carried out and the proposed method by which this will be achieved, in accordance with current health and safety legislation. Their assessment should take into account all available information about the site, including that present within this report.

Appropriate working procedures and PPE should be adopted to ensure the health and safety of the site operatives. Instruction should be given in the recognition of potentially hazardous materials. All site personnel should be appropriately briefed on the discovery strategy, presented below, and what actions they must take in the event that further evidence of contamination is identified or suspected.

6.6 Discovery Strategy

If, during the course of the site clearance and development works, any materials not previously identified by the investigation that are suspected of being 'contaminants' are encountered, then the following procedure will apply:

- All works in that area are to cease and the site manager be informed.

- Advice must be sought from suitably qualified and experienced personnel as to whether any further site inspection, sampling, testing and/or assessment is deemed necessary.
- If required, the conclusions of any assessment and any proposed remedial works (if required) must be agreed by the local authority.
- If necessary, full details of any remedial works must be included in the verification report for the site.

Suspected 'contamination' may take the following form, though it is noted that this list is not exhaustive and site operatives should ask if they are at all unsure of any findings:

- Soil or water looks oily and/or has an oily odour
- Soil or water has a solvent type of odour
- Significant quantities of man-made materials within fill such as paint cans, car parts, glass fragments
- Suspected asbestos containing materials (insulating boards, cement, loose fibres etc.)
- Significant volumes of clinker like or ashy material
- Sand bags, and/or subsurface concrete structures
- Animal carcasses or evidence of animal burial pits

7. VERIFICATION PLAN

A checklist summarising the requirements of the verification report is presented within Appendix H.

7.1 Stripped Formations and Placement of High Visibility Geotextile Marker

For all areas where remediation works are required (reference Figure 3) the formation level will be inspected prior to placement of any cover soils to confirm either the removal of all made ground soils, or that the excavations are sufficiently deep to enable placement of the required thickness of cover soils and to document the placement of the high visibility geotextile marker.

A photographic record of all stripped formations will be maintained for inclusion in the verification report.

If for any reason the above inspections are not undertaken in areas where remediation works are required, then retrospective verification will be carried out by way of the excavation of trial pits to expose the geotextile in representative locations. In such circumstances these works may be undertaken in conjunction with the works detailed in Section 7.2.

7.2 Cover System Depth

Within any area where the cover system is necessary due to locally deeper made ground, the depth of cover soils placed will be confirmed by the excavation of a trial hole within that garden, and measurement of the depth of cover using a tape.

Photographic evidence of the depth of cover soils within each trial excavation will be included in the verification report. Photographs will also show the presence of the geotextile layer at the base of the trial excavation.

For any gardens where all made ground soils have been removed to expose the formation level, the depth of cover soils will not be measured. However, any topsoil placed as a growing medium will still be subject to testing, as discussed below.

7.3 Services

Confirmation of any service providers' requirements and evidence to demonstrate adherence to them must be included in the verification report.

The contractor will provide evidence that the water supply pipe material used is acceptable to the local water supply company.

7.4 Imported Materials

No imported materials will be sourced from potentially contaminated (e.g. industrial) sites. It is recommended that chemical testing results are obtained and supplied for comment prior to accepting the soils on site. Obtaining such results does not negate the need to carry out sampling and testing of the soils, once brought onto the site.

Once imported materials have been brought to site they should ideally be stockpiled and protected from cross contamination with any other materials already on site prior to inspection, sampling and testing by Ashdown Site Investigation Ltd. However, if this is not practical, soils may be placed directly into garden areas and then inspected, sampled and tested.

The table below summarises the soil screening values⁸ against which any imported soils will be assessed.

Table 1. Calculated soil screening values for imported soils

Contaminant	Screening Value (mg/kg)	Contaminant	Screening Value (mg/kg)
Arsenic	37	Fluorene	170
Cadmium	11	Phenanthrene	95
Chromium	910	Anthracene	2400
Copper	2400	Fluoranthene	280
Lead	200	Pyrene	620
Mercury	40	Benz(a)anthracene	7.2
Nickel	180	Chrysene	15
Selenium	250	Benzo(b)fluoranthene	2.6
Zinc	3700	Benzo(k)fluoranthene	77
Hexavalent Chromium	6	Benzo(a)pyrene	2.2
Water Soluble Boron	290	Indeno(123-cd)pyrene	27
Naphthalene	2.3	Dibenz(ah)anthracene	0.24
Acenaphthylene	170	Benzo(ghi)perylene	320
Acenaphthene	210	Asbestos	None detected

⁸ Comprising 'Suitable For Use Levels' (S4ULs), 'The LQM/CIEH Suitable 4 Use Levels, 2015' and for lead, the Category 4 Screening Level (C4SL), SP1010: Development of Category 4 Screening Levels for Assessment of Land Affected by Contamination. Final Project Report, published by DEFRA, 2014.

It is noted that the SSV are only protective of long-term risk to human health and do not necessarily represent suitable concentrations for planting or landscaping. If necessary, a horticulturalist should be consulted in this regard.

All soils must be free from any visual or olfactory evidence of suspected petroleum hydrocarbon contamination and should contain no significant quantity of putrescible material (incl. wood or paper). Along with testing for the contaminants listed above, testing will also be undertaken to confirm the absence of any significant concentrations of petroleum hydrocarbons.

All soils used as surface dressing or as part of the cover system must be free from propagules of aggressive weeds, fragments of glass, bricks, concrete, wire or other potentially hazardous foreign matter and bulk vegetative growth, in order to ensure negligible risk of subsequent weed problems (introduced in the soil) or traumatic injury.

In the event that any individual sample of imported material records concentrations of contaminants above the screening values listed above, the following method of assessment will be undertaken:

- Statistical analysis of the results, along with an assessment of whether any statistical 'outliers' should be removed from the dataset and treated as 'hotspots'. If the data indicates that the majority of the soil mass as a whole may be considered to contain contaminant concentrations below the screening values then it may be deemed suitable to remain.
- Depending on the findings of the analysis additional testing (which may include retests of the original sample) may be undertaken along with further analysis of the results to determine if this is representative of a widespread issue, or may be attributed to a smaller part of the site, or batch of imported soils.
- Liaison with the regulators may be undertaken to agree whether or not the materials are to be considered suitable to remain.

Where testing and analysis identify a significant failure and the procedures above do not provide sufficient evidence that the imported materials are suitable to remain, then the imported soils will be removed and replaced with other suitable soils.

8. POST REMEDIATION RISK ASSESSMENT

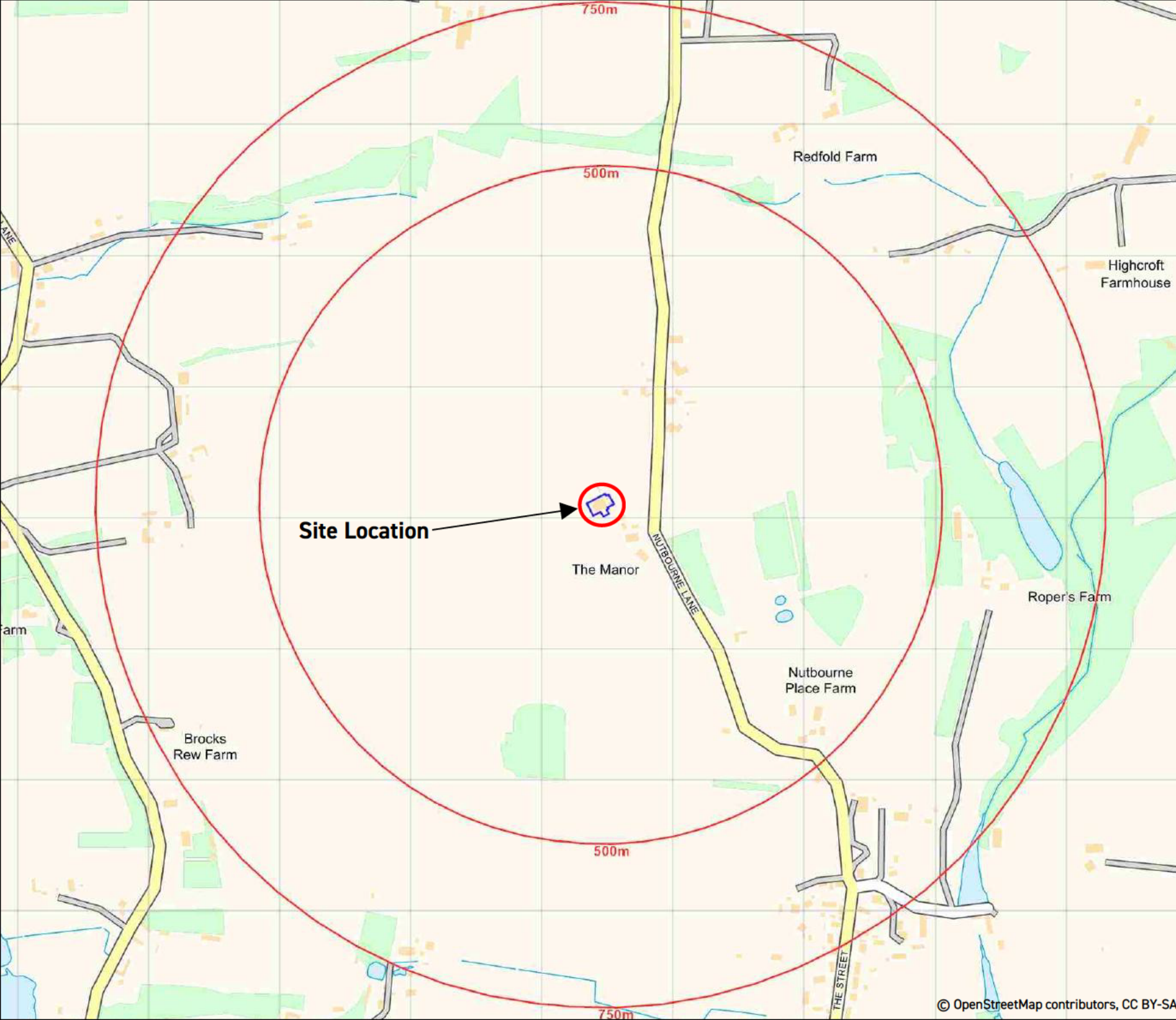
The remedial works set out in this report are considered to remove or sever the identified pollutant linkages. A post remediation conceptual model is presented in the following table.

Table 2. *Post Remediation Conceptual Model for End Users – Potential Pollutant Linkages and Assessment of Risk*

Contaminant Source	Remedial Measures	Potential Pathway(s)	Assessment of Risk to Human Health
Shallow Made Ground Soils	New Garden/Soft Landscaping Areas: Removal of all made ground soils OR Provision of 600mm of verified 'clean' cover soils over a high visibility geotextile marker	N/A - Source Removal OR Pathways severed by remedial measures	No significant pollutant linkages identified.
	Provision of building cover or other hard standing.	Pathways severed by construction works	

FIGURES

- Figure 1 Site Location Plan
- Figure 2 Site Plan
- Figure 3 Remedial Works Plan



Site Location



The Manor

NUTBOURNE LANE

Redfold Farm

Highcroft Farmhouse

Roper's Farm

Nutbourne Place Farm

Brocks Rew Farm

500m

500m

750m

750m

© OpenStreetMap contributors, CC BY-SA



Head Office

Unit 3
The Old Grain Store
Ditchling Common Business Park
Ditchling
East Sussex
BN6 8SG
contact@ashdownsi.co.uk

Site

Nash Manor
Nutbourne Lane
Nutbourne
West Sussex

Project Ref

P17336

Figure No

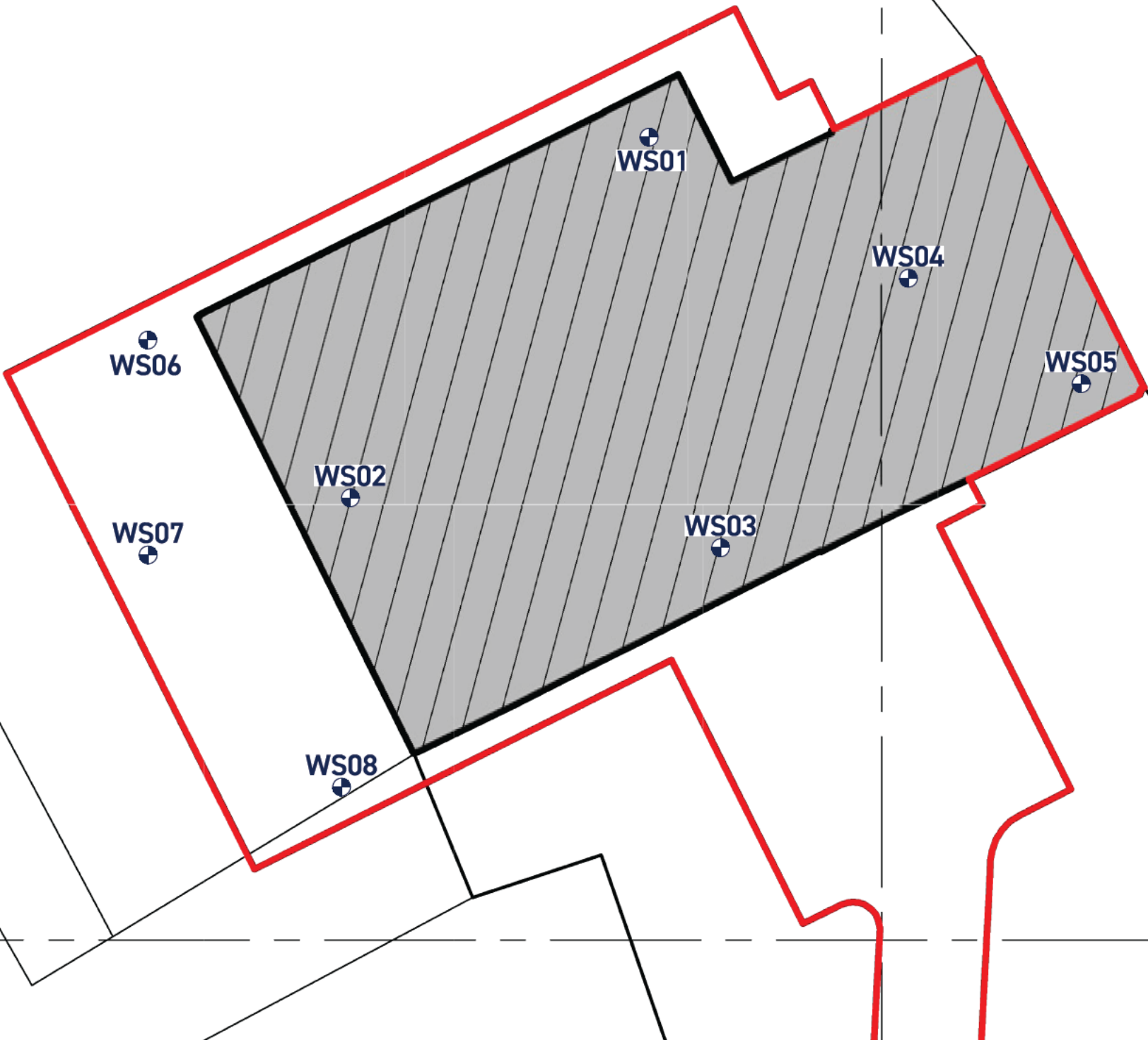
1

Drawing Title

Site Location Plan

Scale

Not To Scale



Head Office

Unit 3
The Old Grain Store
Ditchling Common Business Park
Ditchling
East Sussex
BN6 8SG
contact@ashdownsi.co.uk

Site

Nash Manor
Nutbourne Lane
Nutbourne
West Sussex

Project Ref

P17336

Figure No

2

Drawing Title

Site Plan

Scale

Not To Scale



Area of proposed garden beneath existing building:

Removal of all made ground soils
OR

Provision of 600mm of verified 'clean' cover soils over a high visibility geotextile marker made ground



ASHDOWN SITE INVESTIGATION
L · I · M · I · T · E · D

Unit 3
The Old Grain Store
Ditchling Common Business Park
Ditchling
West Sussex
BN6 8SG
01273 483119
contact@ashdownsi.co.uk

Site:

Nash Manor
Nutbourne Lane
Nutbourne
West Sussex

Report Ref:

P17336

Figure No.

3

Drawing Title

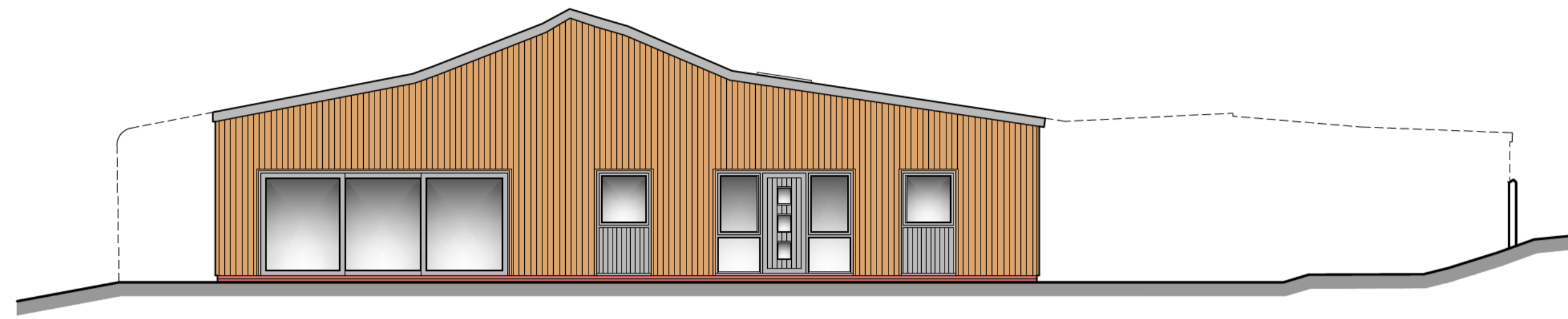
Remedial Works Plan

Scale

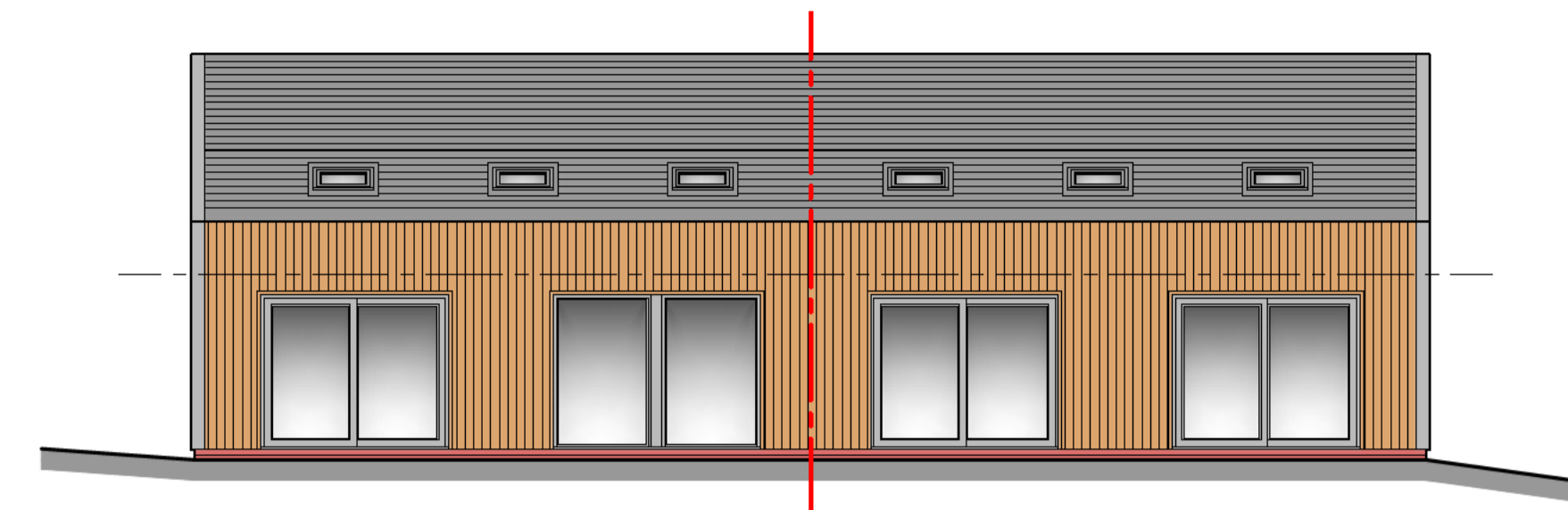
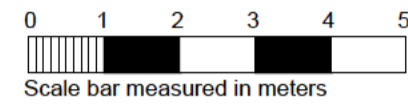
NTS

APPENDIX A

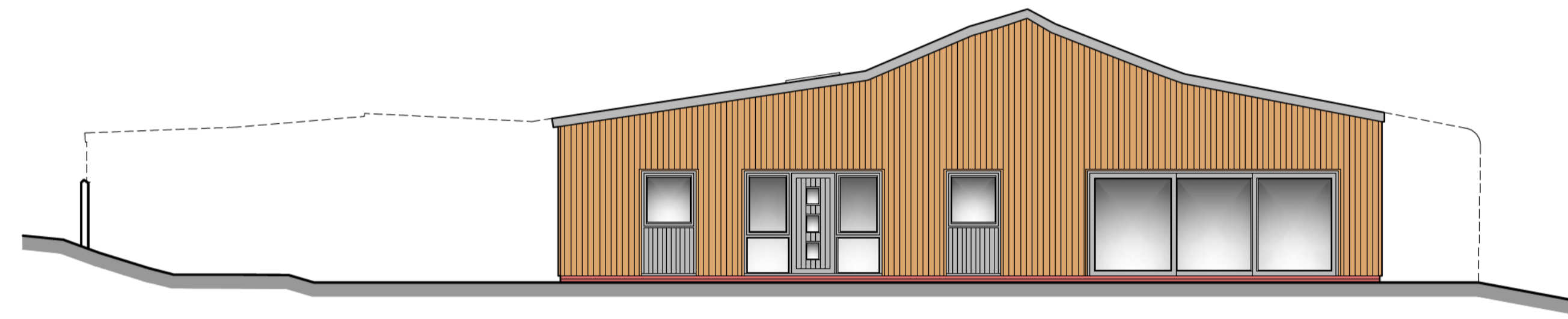
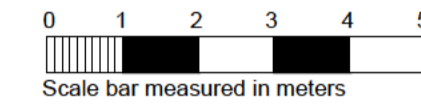
Proposed Development Layout



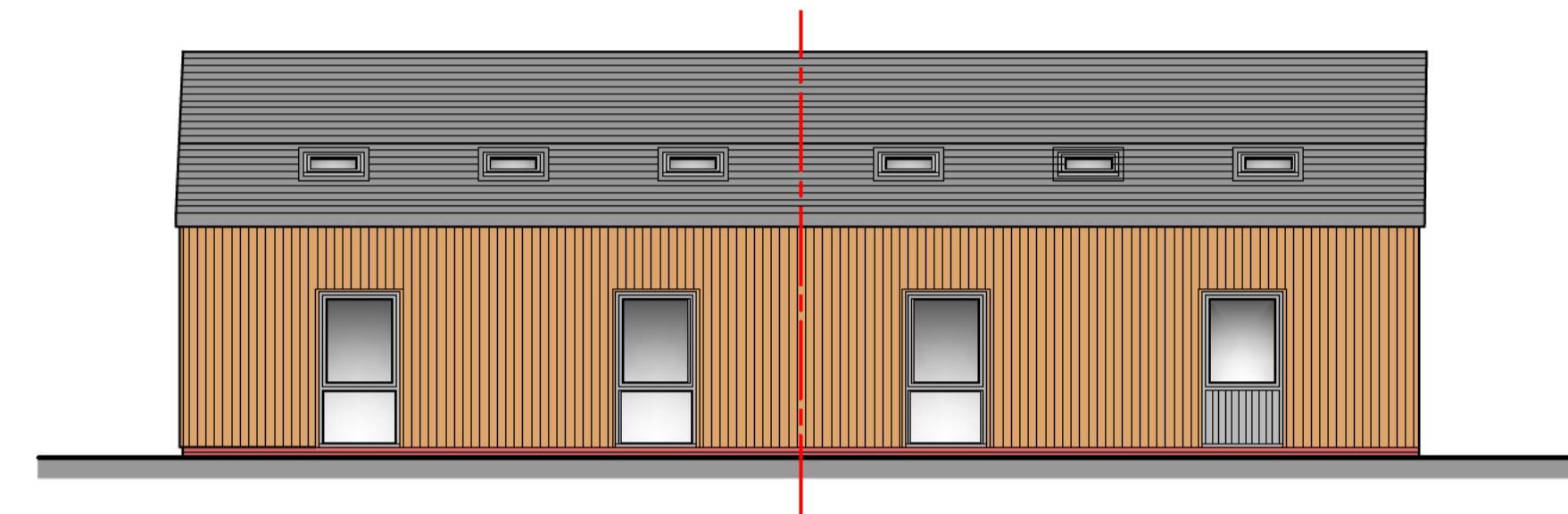
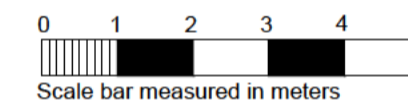
Front (South) Elevation



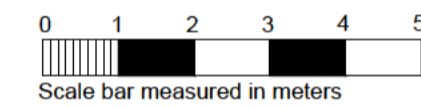
Side (West) Elevation



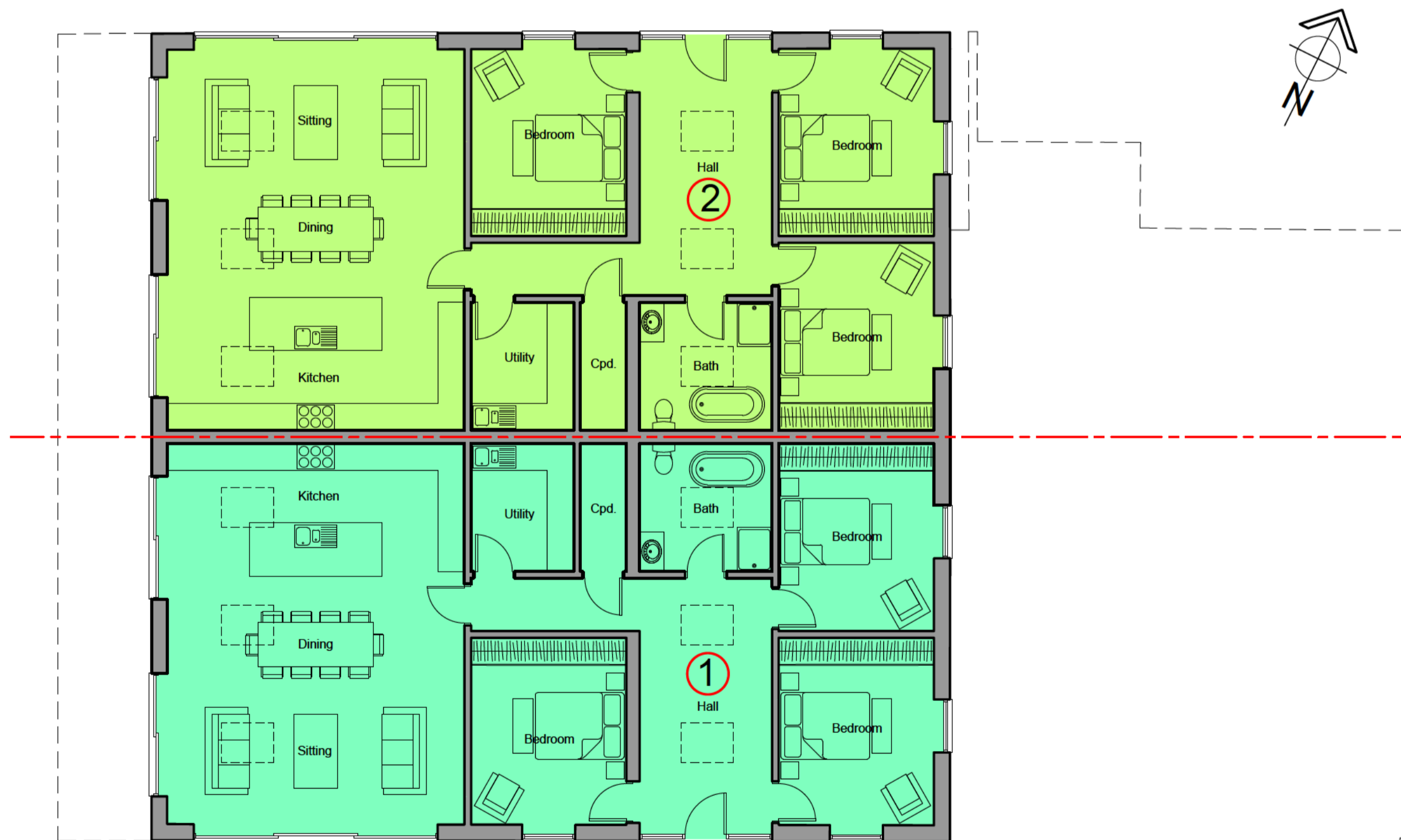
Rear (North) Elevation



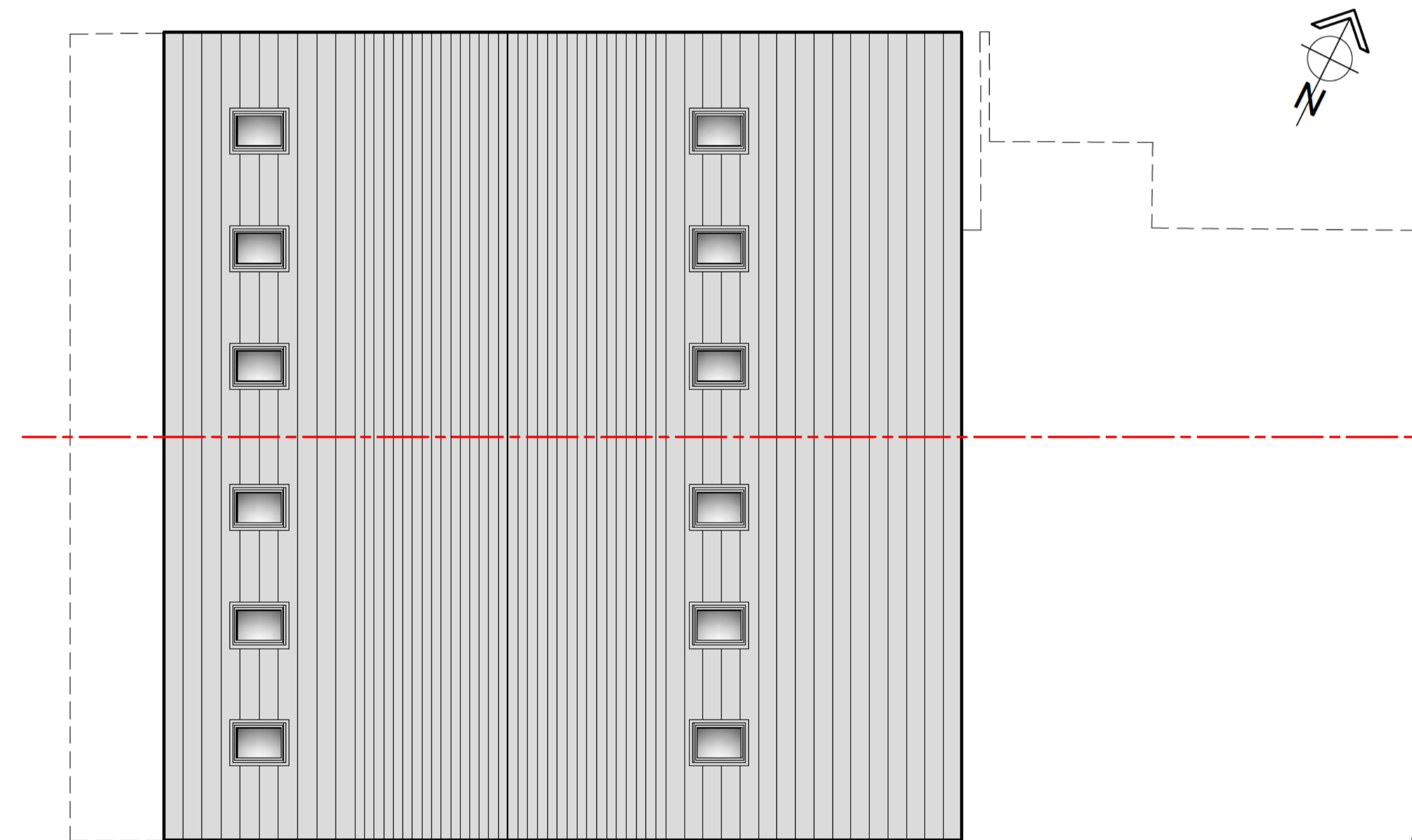
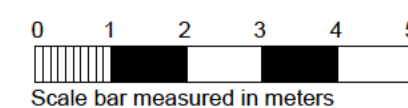
Side (East) Elevation



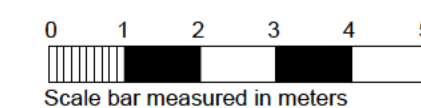
Plot 1 & Plot 2 G.I.A = 150sq.m



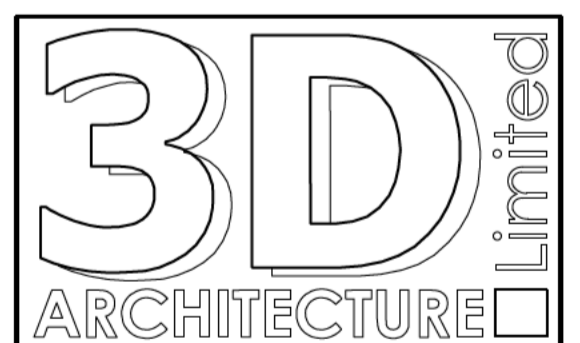
Ground Floor General Arrangement Plans



Roof Plan



PLANNING



3-D Architecture Limited
 Suite G, Kennett House, The Office Village,
 Uckfield, East Sussex. TN22 1SL
 Tel: 01825 764455 Fax: 01825 764455
 Email: info@3d-architecture.co.uk

CLIENT
Mr Lee Goossens

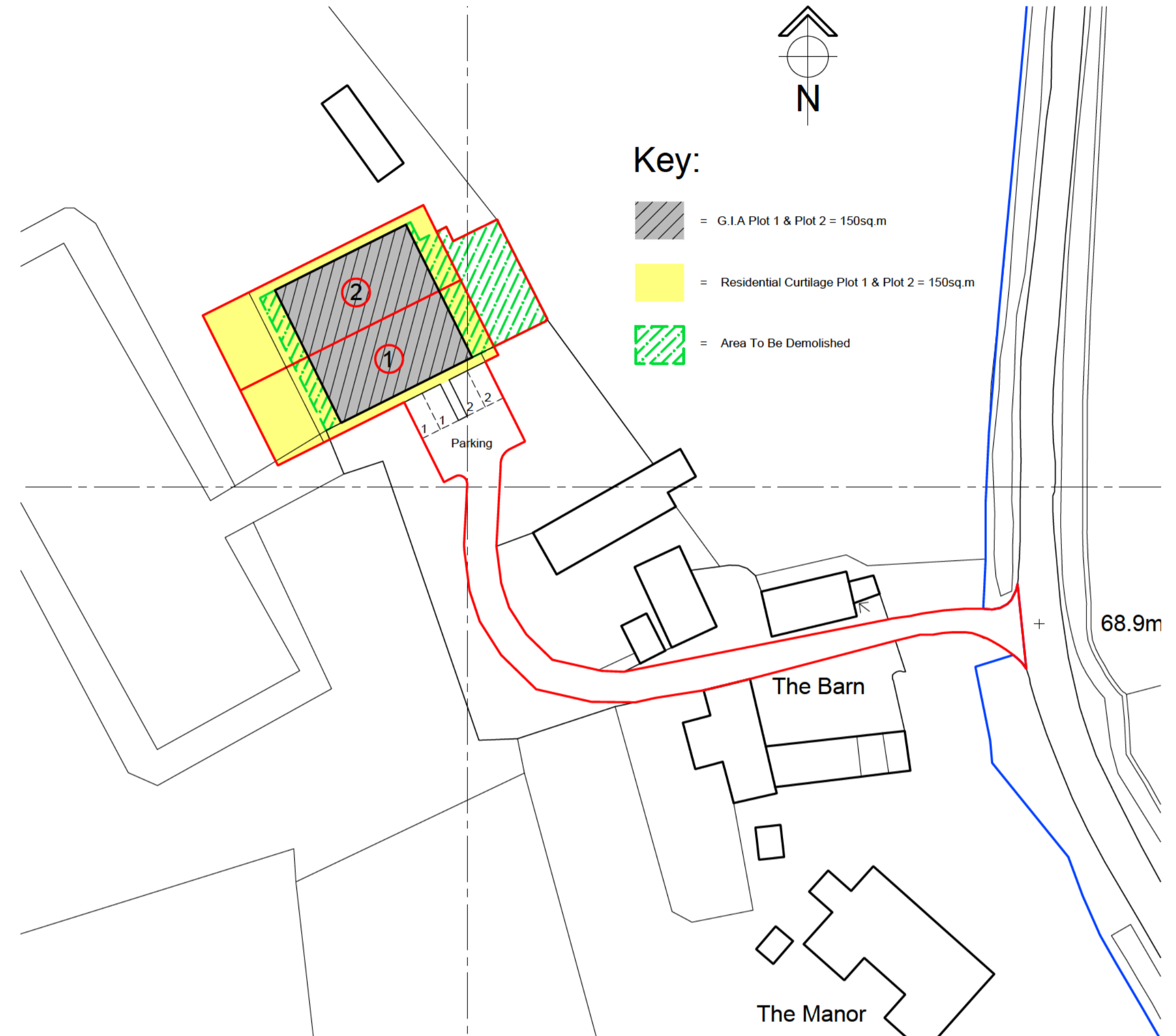
PROJECT
 Nash Manor Farm
 Nutbourne Lane
 Pulborough
 RH20 2HS

DRAWING TITLE
**Plans & Elevations
 As Proposed - Option 1**

SCALE 1:100	DATE November 2021	DRAWN BY ANH
DRAWING NO. 2021/PL2	REVISION E	



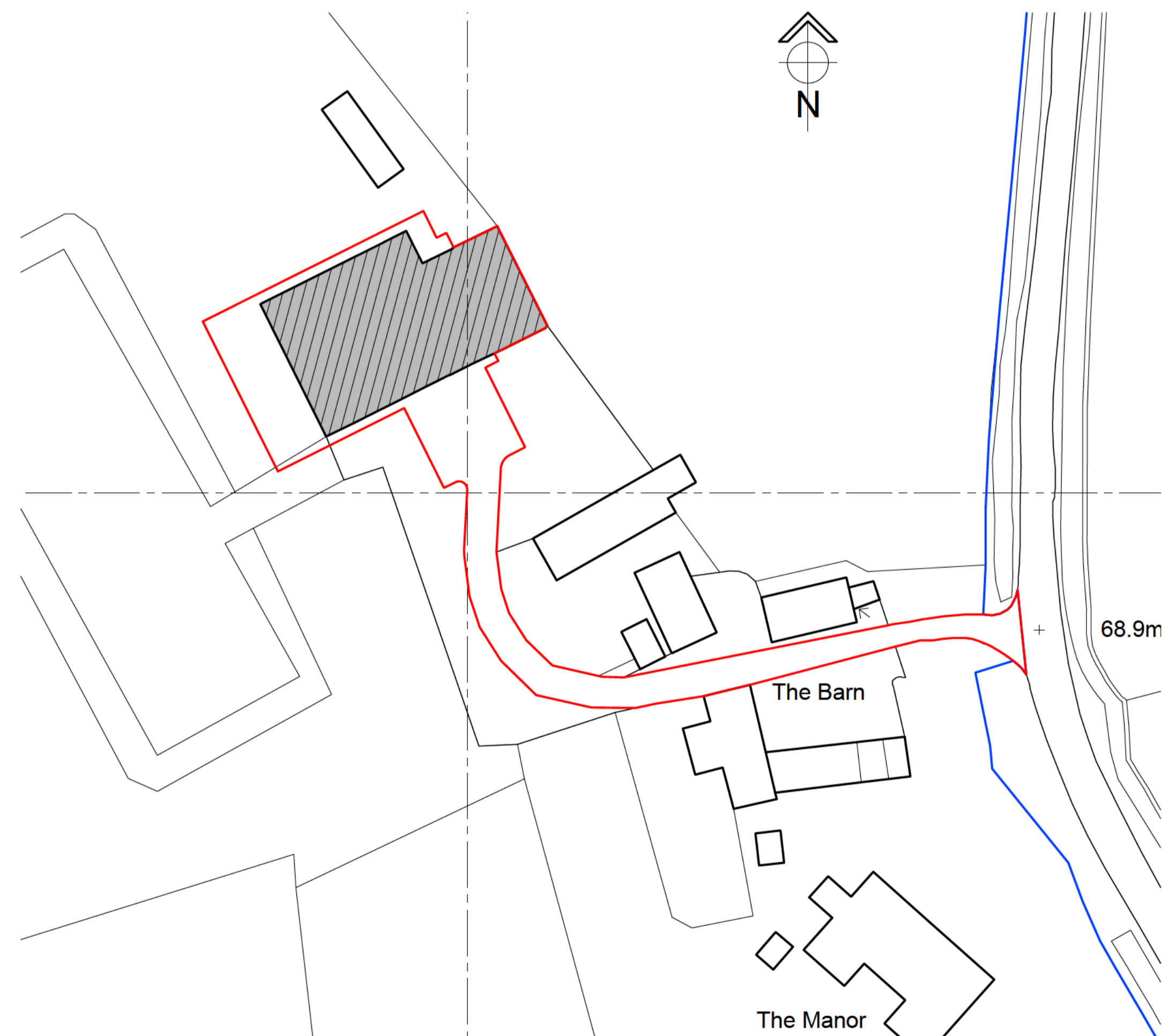
Ordnance Survey (c) Crown Copyright 2021. All rights reserved. Licence number 100022432
Proposed Site Location Plan (1:1250)



Proposed Block Plan (1:500)



Ordnance Survey (c) Crown Copyright 2021. All rights reserved. Licence number 100022432
Existing Site Location Plan (1:1250)



Existing Block Plan (1:500)

PLANNING



3-D Architecture Limited
 Suite G, Kennett House, The Office Village,
 Uckfield, East Sussex. TN22 1SL
 Tel: 01825 764455 Fax: 01825 764455
 Email: info@3d-architecture.co.uk

CLIENT
Mr Lee Goossens

PROJECT
 Nash Manor Farm
 Nutbourne Lane
 Pulborough
 RH20 2HS

DRAWING TITLE
**Site Location & Block Plans
 As Existing & As Proposed**

SCALE 1:100	DATE November 2021	DRAWN BY ANH
DRAWING NO. 2021/PL4	REVISION G	

APPENDIX B

Decision Notice



Mr Chris Barker
ECE Planning Limited
64-68 Brighton Road
Worthing
BN11 2EN

Our ref: DC/24/1681
Your ref: P1903 - Prior Approval Nash
Email: planning@horsham.gov.uk
Direct Line: 01403 215429
If Calling Please ask for: Bethan Tinning
Date: 23rd December 2024

Dear Sir/Madam,

**Town and Country Planning Act 1990 (as amended)
Town and Country Planning (General Permitted Development) (England) Order 2015
Application for Prior Approval under Schedule 2, Part 3, Class Q**

Prior Notification for Change of Use from an Agricultural Building to 2no dwellinghouse (C3 Use Class).

Nash Manor Lower Nash Nutbourne Lane Nutbourne West Sussex

Further to the above prior notification which was received on 29 October 2024, I am writing to confirm that **prior approval is required and granted**. The proposal can now proceed subject to the following conditions:

- 1 **Pre-Commencement Condition:** No development shall commence until the following components of a scheme to deal with the risks associated with contamination, (including asbestos contamination), of the site be submitted to and approved, in writing, by the local planning authority:
 - a) A preliminary risk assessment which has identified:
 - a. all previous uses
 - b. potential contaminants associated with those uses
 - c. a conceptual model of the site indicating sources, pathways, and receptors
 - d. Potentially unacceptable risks arising from contamination at the site.

The following aspects (b) - (d) shall be dependent on the outcome of the above preliminary risk assessment (a) and may not necessarily be required.

- a) An intrusive site investigation scheme, based on (a) to provide information for a detailed risk assessment to the degree and nature of the risk posed by any contamination to all receptors that may be affected, including those off site.
- b) Full details of the remediation measures required and how they are to be undertaken based on the results of the intrusive site investigation (b) and an options appraisal.
- c) A verification plan providing details of the data that will be collected in order to demonstrate that the works set out in (c) are complete and identifying any requirements for

longer-term monitoring of pollutant linkages, maintenance and arrangements for contingency action where required.

The scheme shall be implemented as approved. Any changes to these components require the consent of the local planning authority.

Reason: As this matter is fundamental to ensure that no unacceptable risks are caused to humans, controlled waters, or the wider environment during and following the development works and to ensure that any pollution is dealt with in accordance with Policies 24 and 33 of the Horsham District Planning Framework (2015).

Additional information for applicant

Article 3(1) of the Town and Country Planning (General Permitted Development) (England) Order 2015 as amended states that:

"Subject to the provisions of this Order and regulations 73 to 76 of the Conservation of Habitats and Species Regulations 2010 (general development orders), planning permission is hereby granted for the classes of development described as permitted development in Schedule 2."

Section 75 of the Conservation of Habitats and Species Regulations 2017 states that "it is a condition of any planning permission granted by a general development order made on or after 30th November 2017, that development which -

- (a) Is likely to have a significant effect on a European site or a European offshore marine site (either alone or in combination with other plans or projects), and
- (b) Is not directly connected with or necessary to the management of the site, must not be begun until the developer has received written notification of the approval of the local planning authority under regulation 77 (approval of local planning authority)."

The application site falls within the Sussex North Water Supply Zone as defined by Natural England which draws its water supply from groundwater abstraction at Hardham. Natural England has issued a Position Statement for applications within the Sussex North Water Supply Zone which states that it cannot be concluded with the required degree of certainty that new development in this zone would not have an adverse effect on the integrity of the Arun Valley SAC, SPA and Ramsar sites.

Community Infrastructure Levy (CIL)

Horsham District Council has adopted a Community Infrastructure Levy (CIL) Charging Schedule which took effect on 1st October 2017. **This development constitutes CIL liable development.**

If you have not received a Liability Notice from the Council within 1 month of the decision date please contact the CIL Team at cil@horsham.gov.uk

CIL is a mandatory financial charge on development. To avoid additional financial penalties, the requirements of CIL must be managed before development is commenced (including in the event of any successful appeal).

Payment must be made in accordance with the requirements of the CIL Demand Notice issued.

Schedule of plans/documents

The following plans and document were considered when making the above decision:

Plan Type	Description	Drawing Number	Received Date
Elevation & Floor plan	Plans & Elevations As Existing	2021/PL1 REV A	29.10.2024
Elevation & Floor plan	Plans & Elevations As Proposed - Option 1	2021/PL2 REV E	29.10.2024
Location & Block plan	Site Location & Block Plans As Existing & As Proposed	2021/PL4 REV G	29.10.2024

Appeals to the Secretary of State

If you are aggrieved by the decision to refuse permission for the proposed development or to grant it subject to conditions, then you can appeal to the Secretary of State under Section 78 of the Town and Country Planning Act 1990.

You must appeal within 12 weeks of the date of this decision notice for a 'minor commercial' (shop front) application, and within 6 months for most other types of planning applications. There are different timescale – usually 28 days – if an enforcement notice is/has been served for the same (or very similar) land and development. Please note, only the applicant possesses the right of appeal.

Appeals can be made online at: <https://www.gov.uk/planning-inspectorate>. If you are unable to access the online appeal form, please contact the Planning Inspectorate to obtain a paper copy of the appeal form on tel: 0303 444 5000.

The Secretary of State can allow a longer period for giving notice of an appeal but will not normally be prepared to use this power unless there are special circumstances which excuse the delay in giving notice of appeal.

The Secretary of State need not consider an appeal if it seems to the Secretary of State that the local planning authority could not have granted planning permission for the proposed development or could not have granted it without the conditions they imposed, having regard to the statutory requirements, to the provisions of any development order and to any directions given under a development order.

If you intend to submit an appeal that you would like examined by inquiry then you must notify the Local Planning Authority and Planning Inspectorate (inquiryappeals@planninginspectorate.gov.uk) at least 10 days before submitting the appeal. Further details are at <https://www.gov.uk/government/collections/casework-dealt-with-by-inquiries>

New postal addresses

If this permission relates to new dwellings, commercial premises or other buildings which will require a new postal address you should contact the Council's Street Naming & Numbering Department as soon as possible or before work commences on site. Further details are available on the Street Naming page on the Council's website or alternatively e-mail streetnaming@horsham.gov.uk or telephone 01403 215139.

Waste bins

It is the responsibility of the developer to provide bins for the development. If you are a developer and need to purchase bins, please email hop.oast.admin@horsham.gov.uk.

Yours faithfully

A handwritten signature in black ink, appearing to read 'Emma Parkes', written in a cursive style.

Emma Parkes
Head of Development and Building Control

APPENDIX C

Explanatory Notes
Exploratory Hole Records

EXPLANATORY NOTES

Symbols and abbreviations on Exploratory Hole Records

Samples

U	'Undisturbed' Sample: - 100mm diameter by 450mm long. The number of blows to drive in the sampling tube is shown after the test index letter in the SPT column.
L	Liner sample cut to length indicated.
D	Disturbed Sample
B	Bulk Disturbed Sample
W	Water Sample
ES	Environmental Suite (on older records may be referenced J T)

In Situ Testing

SPT	Standard penetration test (SPT): Using the split spoon sampler.
SPT(C)	Standard Penetration Test (SPT): Using a solid cone instead of the sampler – conducted usually in coarse grained soils or weak rocks.
HV	Shear Vane Test: Undrained shear strength (cohesion).
PP	Hand penetrometer Test: Undrained shear strength (cohesion).
P	Perth Penetrometer Test: Number of blows for 300mm penetration shown under remarks section.

Excavation Method

CP	Cable Percussion Borehole
RC/RO	Rotary Cored Borehole/Rotary Open Hole Borehole
WLS	Dynamic Sampler Borehole using windowless sampler tubes
WS	Dynamic Sampler Borehole using window sampler tubes
TP	Trial Pit excavated using mechanic excavator
HP	Trial Pit excavated using hand tools
HA	Hand Auger borehole

Soil Description

Description and classification of soils has been carried out using as a general basis the British Standard Geotechnical investigation and testing – Identification and classification of soil, Part 1 Identification and description (BS EN ISO 14688-1) and Part 2 Principles of classification (BS EN 14688-2) as well as the BS5930 code of Practice for Ground Investigations.

Rock Description

Description and classification of rocks has been carried out using as a general basis the British Standard Geotechnical investigation and testing – Identification and classification of rock, Part 1 Identification and classification (BS EN ISO 14689-1) as well as the BS5930 code of Practice for Ground Investigations. TCR – Total Core Recovery, SCR – Solid Core Recovery, RQD – Rock Quality Designation, NI – Non Intact, If – indicative fracture spacing (min/ave/max), FI – Fracture Index.

Chalk Description

Chalk description is based on BS EN ISO 14688, BS EN ISO 14689 and BS5930. The classification of chalk generally follows the guidance offered by the Construction Industry Research and Information Association (CIRIA) C574, 'Engineering in Chalk'. This is based on assessment of chalk density, discontinuity and aperture spacing, and the proportion of intact chalk to silt of chalk.

In Situ Strength Testing (where undertaken)

Standard penetration testing (SPT) carried out in accordance with BS EN ISO 22476-3:2005.

Continuous dynamic probe testing conducted using a super heavy DPSH-B (As defined by BS EN ISO 22476-2:2005) probing geometry. The DPSH-B configuration is similar to that of the standard penetration test (SPT); the main differences being that the tip comprises a 90° cone, the driving rods are lighter than those used for SPT testing and the blow counts are recorded over 100mm increments rather than 300mm, as is the case for the SPT.

Perth penetrometer tests carried out in accordance with Australian Standard AS 1289:6.3.3-1997, Method of Testing Soils for Engineering Purposes; no equivalent European or British Standard having been published to date.

Undrained shear strength determinations made in-situ using a Geonor hand shear vane or a hand penetrometer.

Testing to determine the in-situ California Bearing Ratio (CBR) of soils conducted at shallow depths using a hand-held Transport Research Laboratory (TRL) cone penetrometer.

Dynamic (Windowless) Sampler

WS01

Sheet 1 of 1

Hole Type WLS	Easting	Northing	Ground Level (m)	Scale 1:25
Project Name Nash Manor, Nutbourne Lane, Nutbourne, W Sussex	Project No. P17335	Start Date 2025-08-20	End Date 2025-08-20	

Client	Consultant	Contractor
---------------	-------------------	-------------------

Inst/ Backfill	Water Levels	Samples and Tests			Level (m)	Depth (m) <small>(thickness)</small>	Strata	
		Depth (m)	Type/ Ref	Results			Legend	Description
		0.05	ES					MADE GROUND: Dark brown gravelly sandy clay. Gravel is subangular to subrounded fine to medium flint, brick, concrete and asphalt.
		0.15	ES			(0.30)		
		0.35	ES			0.30		Light brown and orange brown slightly gravelly sandy CLAY. Gravel is subangular to subrounded fine to medium sandstone. [Hythe Formation]
		0.50	D					
		1.00	D			(1.70)		
		1.40	D					
		2.00	D			2.00		End of Borehole at 2.00m

Remarks Borehole dry on completion.	Method, Plant, Stability, Dimensions 0.00 - 2.00m WLS Borehole stable on completion.	Logger JW
---	---	---------------------

Hole Type WLS	Easting	Northing	Ground Level (m)	Scale 1:25
Project Name Nash Manor, Nutbourne Lane, Nutbourne, W Sussex	Project No. P17335	Start Date 2025-08-20	End Date 2025-08-20	

Client	Consultant	Contractor
---------------	-------------------	-------------------

Inst/ Backfill	Water Levels	Samples and Tests			Level (m)	Depth (m)	Strata	
		Depth (m)	Type/ Ref	Results			Legend	Description
		0.10	ES			(0.20)		MADE GROUND: Brown gravelly sandy clay. Gravel is subangular to subrounded fine to medium brick, concrete, flint, asphalt, sandstone and clinker-like material.
		0.30	ES			0.20		Orange brown slightly gravelly sandy CLAY. Gravel is subangular to subrounded fine to medium sandstone. [Hythe Formation]
		0.50	D					
		1.10	D			(1.40)		
		1.60	D			1.60		
<i>End of Borehole at 1.60m</i>								

Remarks No further progress below 1.60m depth - too hard/dense. Borehole dry on completion.	Method, Plant, Stability, Dimensions 0.00 - 1.60m WLS Borehole stable on completion.	Logger JW

Hole Type WLS	Easting	Northing	Ground Level (m)	Scale 1:25
Project Name Nash Manor, Nutbourne Lane, Nutbourne, W Sussex	Project No. P17335	Start Date 2025-08-20	End Date 2025-08-20	

Client	Consultant	Contractor
---------------	-------------------	-------------------

Inst/ Backfill	Water Levels	Samples and Tests			Level (m)	Depth (m)	Strata	
		Depth (m)	Type/ Ref	Results			Legend	Description
		0.05	ES			(0.20)		MADE GROUND: Brown gravelly clay. Gravel is subangular to subrounded fine to medium brick, flint, sandstone and clinker-like material.
		0.10	ES			0.20		Light brown and orange brown slightly gravelly sandy CLAY. Gravel is subangular to subrounded fine to medium sandstone. [Hythe Formation]
		0.30	ES					
		0.50	D					
		1.10	D			(1.80)		
		1.50	D					becoming grey brown below 1.50m depth. (1.50m)
		1.90	D			2.00		
							End of Borehole at 2.00m	

Remarks Borehole dry on completion.	Method, Plant, Stability, Dimensions 0.00 - 2.00m WLS Borehole stable on completion.	Logger JW
---	---	---------------------

Hole Type WLS	Easting	Northing	Ground Level (m)	Scale 1:25
Project Name Nash Manor, Nutbourne Lane, Nutbourne, W Sussex	Project No. P17335	Start Date 2025-08-20	End Date 2025-08-20	

Client	Consultant	Contractor
---------------	-------------------	-------------------

Inst/ Backfill	Water Levels	Samples and Tests			Level (m)	Depth (m) <small>(thickness)</small>	Strata	
		Depth (m)	Type/ Ref	Results			Legend	Description
		0.05	ES			(0.10)	[Cross-hatched pattern]	MADE GROUND: Gravelly sand. Gravel is subangular to subrounded fine to medium asphalt, concrete, flint, brick and sandstone.
		0.15	ES			0.10		
						(0.20)	[Cross-hatched pattern]	MADE GROUND: Dark brown and black gravelly sandy clay. Gravel is subangular to subrounded fine to medium asphalt, concrete, flint, brick and sandstone.
		0.45	ES			0.30		
						(0.25)	[Cross-hatched pattern]	MADE GROUND: Grey brown slightly gravelly clay with an organic odour. Gravel is subangular to subrounded fine to coarse clinker-like material and sandstone.
		0.60	ES			0.55		
							[Dotted pattern]	Light brown and orange brown slightly gravelly sandy CLAY. Gravel is subangular to subrounded fine to medium sandstone. [Hythe Formation]
		1.20	D			(1.45)		
		2.00	D			2.00		
End of Borehole at 2.00m								

Remarks Borehole dry on completion.	Method, Plant, Stability, Dimensions 0.00 - 2.00m WLS Borehole stable on completion.	Logger JW
---	---	---------------------

Hole Type WLS	Easting	Northing	Ground Level (m)	Scale 1:25
Project Name Nash Manor, Nutbourne Lane, Nutbourne, W Sussex	Project No. P17335	Start Date 2025-08-20	End Date 2025-08-20	

Client	Consultant	Contractor
---------------	-------------------	-------------------

Inst/ Backfill	Water Levels	Samples and Tests			Level (m)	Depth (m) <small>(thickness)</small>	Strata	
		Depth (m)	Type/ Ref	Results			Legend	Description
		0.05	ES			0.10		MADE GROUND: Gravelly sand. Gravel is subangular to subrounded fine to medium asphalt, concrete, flint, brick and sandstone.
		0.20	ES			0.30		MADE GROUND: Dark brown and black gravelly sandy clay. Gravel is subangular to subrounded fine to medium concrete, brick, flint, sandstone, clinker-like material and asphalt.
		0.45	ES			0.40		Light brown and orange brown slightly gravelly sandy CLAY. Gravel is subangular to subrounded fine to medium sandstone. [Hythe Formation]
		0.60	D			0.80		
		1.00	D					
		1.20	D			1.20		End of Borehole at 1.20m

Remarks No further progress below 1.20m depth - too hard/dense. Borehole dry on completion.	Method, Plant, Stability, Dimensions 0.00 - 1.20m WLS Borehole stable on completion.	Logger JW
--	---	---------------------

Hole Type WLS	Easting	Northing	Ground Level (m)	Scale 1:25
Project Name Nash Manor, Nutbourne Lane, Nutbourne, W Sussex	Project No. P17335	Start Date 2025-08-20	End Date 2025-08-20	

Client	Consultant	Contractor
---------------	-------------------	-------------------

Inst/ Backfill	Water Levels	Samples and Tests			Level (m)	Depth (m) <small>(thickness)</small>	Strata	
		Depth (m)	Type/ Ref	Results			Legend	Description
		0.05	ES		(0.10) 0.10		Topsoil.	
		0.40	ES		(0.50) 0.60		Light brown and orange brown slightly gravelly sandy CLAY. Gravel is subangular to subrounded fine to medium sandstone. [Hythe Formation]	
							----- <i>End of Borehole at 0.60m</i>	

Remarks Borehole dry on completion.	Method, Plant, Stability, Dimensions 0.00 - 0.60m WLS Borehole stable on completion.	Logger JW
---	---	---------------------

Hole Type WLS	Easting	Northing	Ground Level (m)	Scale 1:25
Project Name Nash Manor, Nutbourne Lane, Nutbourne, W Sussex	Project No. P17335	Start Date 2025-08-20	End Date 2025-08-20	

Client	Consultant	Contractor
---------------	-------------------	-------------------

Inst/ Backfill	Water Levels	Samples and Tests			Level (m)	Depth (m)	Strata	
		Depth (m)	Type/ Ref	Results			Legend	Description
		0.05	ES		(0.15)		Topsoil.	
		0.30	ES		(0.45)		Light brown and orange brown slightly gravelly sandy CLAY. Gravel is subangular to subrounded fine to medium sandstone. [Hythe Formation]	
					0.60	----- <i>End of Borehole at 0.60m</i>		

Remarks Borehole dry on completion.	Method, Plant, Stability, Dimensions 0.00 - 0.60m WLS Borehole stable on completion.	Logger JW
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Hole Type WLS	Easting	Northing	Ground Level (m)	Scale 1:25
Project Name Nash Manor, Nutbourne Lane, Nutbourne, W Sussex	Project No. P17335	Start Date 2025-08-20	End Date 2025-08-20	

Client	Consultant	Contractor
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Inst/ Backfill	Water Levels	Samples and Tests			Level (m)	Depth (m)	Strata	
		Depth (m)	Type/ Ref	Results			Legend	Description
		0.10	ES		(0.15)		Topsoil.	
					0.15		Light brown and orange brown slightly gravelly sandy CLAY. Gravel is subangular to subrounded fine to medium sandstone. [Hythe Formation]	
		0.50	ES		(0.45)			
					0.60	----- <i>End of Borehole at 0.60m</i>		

Remarks Borehole dry on completion.	Method, Plant, Stability, Dimensions 0.00 - 0.60m WLS Borehole stable on completion.	Logger JW
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APPENDIX D

Contamination Laboratory Test Results

Alex Bewick
Ashdown Site Investigations Ltd
Unit 3 The Grain Store
Ditchling Common Business Park
Ditchling Common
West Sussex
BN6 8SG

Normec DETS Limited
Unit 1
Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Kent
ME17 2JN
t: 01622 850410

DETS Report No: 25-07610

Site Reference: Nash Manor, Nutbourne Lane, Nutbourne, West Sussex

Project / Job Ref: P17336 2975

Order No: 12366

Sample Receipt Date: 22/08/2025

Sample Scheduled Date: 22/08/2025

Report Issue Number: 1

Reporting Date: 02/09/2025

Authorised by:



Steve Knight
Customer Support Manager

Dates of laboratory activities for each tested analyte are available upon request.

Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Soil Analysis Certificate						
DETS Report No: 25-07610	~Date Sampled	20/08/25	20/08/25	20/08/25	20/08/25	20/08/25
Ashdown Site Investigations Ltd	~Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
~Site Reference: Nash Manor, Nutbourne Lane, Nutbourne, West Sussex	~TP / BH No	WS01	WS01	WS02	WS02	WS03
~Project / Job Ref: P17336_2975	~Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
~Order No: 12366	~Depth (m)	0.15	0.35	0.10	0.30	0.10
Reporting Date: 02/09/2025	DETS Sample No	787281	787282	787283	787284	787285

Determinand	Unit	RL	Accreditation	(n)			(n)
Asbestos Screen ^(S)	N/a	N/a	ISO17025				
pH	pH Units	N/a	MCERTS				
Total Sulphate as SO ₄	mg/kg	< 200	MCERTS				
Total Sulphate as SO ₄	%	< 0.02	MCERTS				
Organic Matter (SOM)	%	< 0.1	MCERTS				
Arsenic (As)	mg/kg	< 2	MCERTS				
W/S Boron	mg/kg	< 1	NONE				
Cadmium (Cd)	mg/kg	< 0.2	MCERTS				
Chromium (Cr)	mg/kg	< 2	MCERTS				
Chromium (hexavalent)	mg/kg	< 2	NONE				
Copper (Cu)	mg/kg	< 4	MCERTS				
Lead (Pb)	mg/kg	< 3	MCERTS				
Mercury (Hg)	mg/kg	< 1	MCERTS				
Nickel (Ni)	mg/kg	< 3	MCERTS				
Selenium (Se)	mg/kg	< 2	MCERTS				
Zinc (Zn)	mg/kg	< 3	MCERTS				

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C. The Method Description page describes if the test is performed on the dried or as-received portion
 Analysis carried out on the dried sample is corrected for the stone content

Soil Analysis Certificate						
DETS Report No: 25-07610	~Date Sampled	20/08/25	20/08/25	20/08/25	20/08/25	20/08/25
Ashdown Site Investigations Ltd	~Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
~Site Reference: Nash Manor, Nutbourne Lane, Nutbourne, West Sussex	~TP / BH No	WS03	WS04	WS04	WS04	WS05
~Project / Job Ref: P17336_2975	~Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
~Order No: 12366	~Depth (m)	0.30	0.15	0.45	0.60	0.20
Reporting Date: 02/09/2025	DETS Sample No	787286	787287	787288	787289	787290

Determinand	Unit	RL	Accreditation				
Asbestos Screen ^(S)	N/a	N/a	ISO17025		Not Detected		Not Detected
pH	pH Units	N/a	MCERTS		8.2		7.9
Total Sulphate as SO ₄	mg/kg	< 200	MCERTS				1401
Total Sulphate as SO ₄	%	< 0.02	MCERTS				0.14
Organic Matter (SOM)	%	< 0.1	MCERTS		9.2		8.7
Arsenic (As)	mg/kg	< 2	MCERTS		12		11
W/S Boron	mg/kg	< 1	NONE		< 1		< 1
Cadmium (Cd)	mg/kg	< 0.2	MCERTS		0.6		0.4
Chromium (Cr)	mg/kg	< 2	MCERTS		17		19
Chromium (hexavalent)	mg/kg	< 2	NONE		< 2		< 2
Copper (Cu)	mg/kg	< 4	MCERTS		52		44
Lead (Pb)	mg/kg	< 3	MCERTS		228		144
Mercury (Hg)	mg/kg	< 1	MCERTS		< 1		< 1
Nickel (Ni)	mg/kg	< 3	MCERTS		13		16
Selenium (Se)	mg/kg	< 2	MCERTS		< 2		< 2
Zinc (Zn)	mg/kg	< 3	MCERTS		116		104

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C. The Method Description page describes if the test is performed on the dried or as-received portion
 Analysis carried out on the dried sample is corrected for the stone content

Soil Analysis Certificate					
DETS Report No: 25-07610	~Date Sampled	20/08/25	20/08/25	20/08/25	20/08/25
Ashdown Site Investigations Ltd	~Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied
~Site Reference: Nash Manor, Nutbourne Lane, Nutbourne, West Sussex	~TP / BH No	WS05	WS06	WS07	WS08
~Project / Job Ref: P17336_2975	~Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied
~Order No: 12366	~Depth (m)	0.45	0.05	0.05	0.10
Reporting Date: 02/09/2025	DETS Sample No	787291	787292	787293	787294

Determinand	Unit	RL	Accreditation	(n)		
Asbestos Screen ^(S)	N/a	N/a	ISO17025	Not Detected	Not Detected	Not Detected
pH	pH Units	N/a	MCERTS	6.6	6.2	6.6
Total Sulphate as SO ₄	mg/kg	< 200	MCERTS	234	< 200	< 200
Total Sulphate as SO ₄	%	< 0.02	MCERTS	0.02	< 0.02	< 0.02
Organic Matter (SOM)	%	< 0.1	MCERTS	3.8	2.6	2.9
Arsenic (As)	mg/kg	< 2	MCERTS	6	6	6
W/S Boron	mg/kg	< 1	NONE	< 1	< 1	< 1
Cadmium (Cd)	mg/kg	< 0.2	MCERTS	< 0.2	< 0.2	< 0.2
Chromium (Cr)	mg/kg	< 2	MCERTS	8	8	9
Chromium (hexavalent)	mg/kg	< 2	NONE	< 2	< 2	< 2
Copper (Cu)	mg/kg	< 4	MCERTS	10	7	9
Lead (Pb)	mg/kg	< 3	MCERTS	23	17	44
Mercury (Hg)	mg/kg	< 1	MCERTS	< 1	< 1	< 1
Nickel (Ni)	mg/kg	< 3	MCERTS	10	8	9
Selenium (Se)	mg/kg	< 2	MCERTS	< 2	< 2	< 2
Zinc (Zn)	mg/kg	< 3	MCERTS	52	29	36

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C. The Method Description page describes if the test is performed on the dried or as-received portion
 Analysis carried out on the dried sample is corrected for the stone content

Soil Analysis Certificate - Speciated PAHs						
DETS Report No: 25-07610	~Date Sampled	20/08/25	20/08/25	20/08/25	20/08/25	20/08/25
Ashdown Site Investigations Ltd	~Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
~Site Reference: Nash Manor, Nutbourne Lane, Nutbourne, West Sussex	~TP / BH No	WS04	WS05	WS06	WS07	WS08
~Project / Job Ref: P17336_2975	~Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
~Order No: 12366	~Depth (m)	0.15	0.20	0.05	0.05	0.10
Reporting Date: 02/09/2025	DETS Sample No	787287	787290	787292	787293	787294

Determinand	Unit	RL	Accreditation	(n)					
Naphthalene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	mg/kg	< 0.1	MCERTS	0.37	0.91	< 0.1	< 0.1	< 0.1	< 0.1
Fluorene	mg/kg	< 0.1	MCERTS	0.53	1.22	< 0.1	< 0.1	< 0.1	< 0.1
Phenanthrene	mg/kg	< 0.1	MCERTS	5.34	18.60	< 0.1	< 0.1	< 0.1	< 0.1
Anthracene	mg/kg	< 0.1	MCERTS	1.57	4.51	< 0.1	< 0.1	< 0.1	< 0.1
Fluoranthene	mg/kg	< 0.1	MCERTS	9.15	35.20	< 0.1	0.12	< 0.1	< 0.1
Pyrene	mg/kg	< 0.1	MCERTS	7.69	29.10	< 0.1	0.11	< 0.1	< 0.1
Benzo(a)anthracene	mg/kg	< 0.1	MCERTS	3.96	13.20	< 0.1	< 0.1	< 0.1	< 0.1
Chrysene	mg/kg	< 0.1	MCERTS	3.54	10.40	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(b)fluoranthene	mg/kg	< 0.1	MCERTS	5.28	11.20	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(k)fluoranthene	mg/kg	< 0.1	MCERTS	1.49	4.56	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(a)pyrene	mg/kg	< 0.1	MCERTS	4.35	9.61	< 0.1	< 0.1	< 0.1	< 0.1
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.1	MCERTS	2.76	4.35	< 0.1	< 0.1	< 0.1	< 0.1
Dibenz(a,h)anthracene	mg/kg	< 0.1	MCERTS	0.55	0.97	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(ghi)perylene	mg/kg	< 0.1	MCERTS	2.62	3.75	< 0.1	< 0.1	< 0.1	< 0.1
**Total EPA-16 PAHs	mg/kg	< 1.6	MCERTS	49.2	148	< 1.6	< 1.6	< 1.6	< 1.6

Soil Analysis Certificate - EPH Banded (Type F)						
DETS Report No: 25-07610	~Date Sampled	20/08/25	20/08/25	20/08/25	20/08/25	20/08/25
Ashdown Site Investigations Ltd	~Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
~Site Reference: Nash Manor, Nutbourne Lane, Nutbourne, West Sussex	~TP / BH No	WS01	WS01	WS02	WS02	WS03
~Project / Job Ref: P17336_2975	~Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
~Order No: 12366	~Depth (m)	0.15	0.35	0.10	0.30	0.10
Reporting Date: 02/09/2025	DETS Sample No	787281	787282	787283	787284	787285

Determinand	Unit	RL	Accreditation	(n)			(n)		
EPH (>C8 - C10) : EH 1D Total	mg/kg	< 1	MCERTS	< 1	< 1	< 1	< 1	< 1	< 1
EPH (>C10 - C12) : EH 1D Total	mg/kg	< 1	MCERTS	3	< 1	3	< 1	< 1	5
EPH (>C12 - C16) : EH 1D Total	mg/kg	< 1	MCERTS	11	< 1	15	< 1	< 1	6
EPH (>C16 - C21) : EH 1D Total	mg/kg	< 1	MCERTS	31	< 1	90	< 1	< 1	13
EPH (>C21 - C40) : EH 1D Total	mg/kg	< 6	MCERTS	223	< 6	338	< 6	< 6	25
EPH (C8 - C40) : EH 1D Total	mg/kg	< 6	MCERTS	268	< 6	446	< 6	< 6	50

Soil Analysis Certificate - EPH Banded (Type F)						
DETS Report No: 25-07610	~Date Sampled	20/08/25	20/08/25	20/08/25	20/08/25	20/08/25
Ashdown Site Investigations Ltd	~Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
~Site Reference: Nash Manor, Nutbourne Lane, Nutbourne, West Sussex	~TP / BH No	WS03	WS04	WS04	WS05	WS05
~Project / Job Ref: P17336_2975	~Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
~Order No: 12366	~Depth (m)	0.30	0.45	0.60	0.20	0.45
Reporting Date: 02/09/2025	DETS Sample No	787286	787288	787289	787290	787291

Determinand	Unit	RL	Accreditation					
EPH (>C8 - C10) : EH 1D Total	mg/kg	< 1	MCERTS	< 1	< 1	< 1	< 1	< 1
EPH (>C10 - C12) : EH 1D Total	mg/kg	< 1	MCERTS	< 1	< 1	< 1	< 1	< 1
EPH (>C12 - C16) : EH 1D Total	mg/kg	< 1	MCERTS	< 1	< 1	< 1	13	< 1
EPH (>C16 - C21) : EH 1D Total	mg/kg	< 1	MCERTS	< 1	< 1	< 1	165	< 1
EPH (>C21 - C40) : EH 1D Total	mg/kg	< 6	MCERTS	< 6	< 6	< 6	282	< 6
EPH (C8 - C40) : EH 1D Total	mg/kg	< 6	MCERTS	< 6	< 6	< 6	461	< 6

Soil Analysis Certificate - EPH Banded (Type F)						
DETS Report No: 25-07610	~Date Sampled	20/08/25	20/08/25	20/08/25		
Ashdown Site Investigations Ltd	~Time Sampled	None Supplied	None Supplied	None Supplied		
~Site Reference: Nash Manor, Nutbourne Lane, Nutbourne, West Sussex	~TP / BH No	WS06	WS07	WS08		
~Project / Job Ref: P17336_2975	~Additional Refs	None Supplied	None Supplied	None Supplied		
~Order No: 12366	~Depth (m)	0.05	0.05	0.10		
Reporting Date: 02/09/2025	DETS Sample No	787292	787293	787294		

Determinand	Unit	RL	Accreditation	(n)				
EPH (>C8 - C10) : EH 1D Total	mg/kg	< 1	MCERTS	< 1	< 1	< 1		
EPH (>C10 - C12) : EH 1D Total	mg/kg	< 1	MCERTS	< 1	< 1	< 1		
EPH (>C12 - C16) : EH 1D Total	mg/kg	< 1	MCERTS	2	< 1	< 1		
EPH (>C16 - C21) : EH 1D Total	mg/kg	< 1	MCERTS	< 1	< 1	< 1		
EPH (>C21 - C40) : EH 1D Total	mg/kg	< 6	MCERTS	7	< 6	< 6		
EPH (C8 - C40) : EH 1D Total	mg/kg	< 6	MCERTS	9	< 6	< 6		

Soil Analysis Certificate - Volatile Organic Compounds (VOC)						
DETS Report No: 25-07610	~Date Sampled	20/08/25	20/08/25	20/08/25	20/08/25	20/08/25
Ashdown Site Investigations Ltd	~Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
~Site Reference: Nash Manor, Nutbourne Lane, Nutbourne, West Sussex	~TP / BH No	WS01	WS02	WS03	WS04	WS05
~Project / Job Ref: P17336_2975	~Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
~Order No: 12366	~Depth (m)	0.35	0.30	0.30	0.60	0.45
Reporting Date: 02/09/2025	DETS Sample No	787282	787284	787286	787289	787291

Determinand	Unit	RL	Accreditation					
Dichlorodifluoromethane	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Vinyl Chloride	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Chloromethane	µg/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	< 10
Chloroethane	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Bromomethane	µg/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	< 10
Trichlorofluoromethane	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,1-Dichloroethene	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
MTBE	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
trans-1,2-Dichloroethene	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,1-Dichloroethane	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
cis-1,2-Dichloroethene	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
2,2-Dichloropropane	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Chloroform	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Bromochloromethane	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,1,1-Trichloroethane	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,1-Dichloropropene	µg/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	< 10
Carbon Tetrachloride	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,2-Dichloroethane	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Benzene	µg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
1,2-Dichloropropane	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Trichloroethene	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Bromodichloromethane	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Dibromomethane	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
TAME	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
cis-1,3-Dichloropropene	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Toluene	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
trans-1,3-Dichloropropene	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,1,2-Trichloroethane	µg/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	< 10
1,3-Dichloropropane	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Tetrachloroethene	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Dibromochloromethane	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,2-Dibromoethane	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Chlorobenzene	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,1,1,2-Tetrachloroethane	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Ethyl Benzene	µg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
m,p-Xylene	µg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
o-Xylene	µg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Styrene	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Bromoform	µg/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	< 10
Isopropylbenzene	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,1,2,2-Tetrachloroethane	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,2,3-Trichloropropane	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
n-Propylbenzene	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Bromobenzene	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
2-Chlorotoluene	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,3,5-Trimethylbenzene	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
4-Chlorotoluene	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
tert-Butylbenzene	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,2,4-Trimethylbenzene	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
sec-Butylbenzene	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
p-Isopropyltoluene	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,3-Dichlorobenzene	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,4-Dichlorobenzene	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
n-Butylbenzene	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,2-Dichlorobenzene	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,2-Dibromo-3-chloropropane	µg/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	< 10
Hexachlorobutadiene	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5

Soil Analysis Certificate - Volatile Organic Compounds (VOC)					
DETS Report No: 25-07610	~Date Sampled	20/08/25	20/08/25		
Ashdown Site Investigations Ltd	~Time Sampled	None Supplied	None Supplied		
~Site Reference: Nash Manor, Nutbourne Lane, Nutbourne, West Sussex	~TP / BH No	WS06	WS08		
~Project / Job Ref: P17336_2975	~Additional Refs	None Supplied	None Supplied		
~Order No: 12366	~Depth (m)	0.05	0.10		
Reporting Date: 02/09/2025	DETS Sample No	787292	787294		

Determinand	Unit	RL	Accreditation	(n)		
Dichlorodifluoromethane	µg/kg	< 5	MCERTS	< 5	< 5	
Vinyl Chloride	µg/kg	< 5	MCERTS	< 5	< 5	
Chloromethane	µg/kg	< 10	MCERTS	< 10	< 10	
Chloroethane	µg/kg	< 5	MCERTS	< 5	< 5	
Bromomethane	µg/kg	< 10	MCERTS	< 10	< 10	
Trichlorofluoromethane	µg/kg	< 5	MCERTS	< 5	< 5	
1,1-Dichloroethene	µg/kg	< 5	MCERTS	< 5	< 5	
MTBE	µg/kg	< 5	MCERTS	< 5	< 5	
trans-1,2-Dichloroethene	µg/kg	< 5	MCERTS	< 5	< 5	
1,1-Dichloroethane	µg/kg	< 5	MCERTS	< 5	< 5	
cis-1,2-Dichloroethene	µg/kg	< 5	MCERTS	< 5	< 5	
2,2-Dichloropropane	µg/kg	< 5	MCERTS	< 5	< 5	
Chloroform	µg/kg	< 5	MCERTS	< 5	< 5	
Bromochloromethane	µg/kg	< 5	MCERTS	< 5	< 5	
1,1,1-Trichloroethane	µg/kg	< 5	MCERTS	< 5	< 5	
1,1-Dichloropropene	µg/kg	< 10	MCERTS	< 10	< 10	
Carbon Tetrachloride	µg/kg	< 5	MCERTS	< 5	< 5	
1,2-Dichloroethane	µg/kg	< 5	MCERTS	< 5	< 5	
Benzene	µg/kg	< 2	MCERTS	< 2	< 2	
1,2-Dichloropropane	µg/kg	< 5	MCERTS	< 5	< 5	
Trichloroethene	µg/kg	< 5	MCERTS	< 5	< 5	
Bromodichloromethane	µg/kg	< 5	MCERTS	< 5	< 5	
Dibromomethane	µg/kg	< 5	MCERTS	< 5	< 5	
TAME	µg/kg	< 5	MCERTS	< 5	< 5	
cis-1,3-Dichloropropene	µg/kg	< 5	MCERTS	< 5	< 5	
Toluene	µg/kg	< 5	MCERTS	< 5	< 5	
trans-1,3-Dichloropropene	µg/kg	< 5	MCERTS	< 5	< 5	
1,1,2-Trichloroethane	µg/kg	< 10	MCERTS	< 10	< 10	
1,3-Dichloropropane	µg/kg	< 5	MCERTS	< 5	< 5	
Tetrachloroethene	µg/kg	< 5	MCERTS	< 5	< 5	
Dibromochloromethane	µg/kg	< 5	MCERTS	< 5	< 5	
1,2-Dibromoethane	µg/kg	< 5	MCERTS	< 5	< 5	
Chlorobenzene	µg/kg	< 5	MCERTS	< 5	< 5	
1,1,1,2-Tetrachloroethane	µg/kg	< 5	MCERTS	< 5	< 5	
Ethyl Benzene	µg/kg	< 2	MCERTS	< 2	< 2	
m,p-Xylene	µg/kg	< 2	MCERTS	< 2	< 2	
o-Xylene	µg/kg	< 2	MCERTS	< 2	< 2	
Styrene	µg/kg	< 5	MCERTS	< 5	< 5	
Bromoform	µg/kg	< 10	MCERTS	< 10	< 10	
Isopropylbenzene	µg/kg	< 5	MCERTS	< 5	< 5	
1,1,2,2-Tetrachloroethane	µg/kg	< 5	MCERTS	< 5	< 5	
1,2,3-Trichloropropane	µg/kg	< 5	MCERTS	< 5	< 5	
n-Propylbenzene	µg/kg	< 5	MCERTS	< 5	< 5	
Bromobenzene	µg/kg	< 5	MCERTS	< 5	< 5	
2-Chlorotoluene	µg/kg	< 5	MCERTS	< 5	< 5	
1,3,5-Trimethylbenzene	µg/kg	< 5	MCERTS	< 5	< 5	
4-Chlorotoluene	µg/kg	< 5	MCERTS	< 5	< 5	
tert-Butylbenzene	µg/kg	< 5	MCERTS	< 5	< 5	
1,2,4-Trimethylbenzene	µg/kg	< 5	MCERTS	< 5	< 5	
sec-Butylbenzene	µg/kg	< 5	MCERTS	< 5	< 5	
p-Isopropyltoluene	µg/kg	< 5	MCERTS	< 5	< 5	
1,3-Dichlorobenzene	µg/kg	< 5	MCERTS	< 5	< 5	
1,4-Dichlorobenzene	µg/kg	< 5	MCERTS	< 5	< 5	
n-Butylbenzene	µg/kg	< 5	MCERTS	< 5	< 5	
1,2-Dichlorobenzene	µg/kg	< 5	MCERTS	< 5	< 5	
1,2-Dibromo-3-chloropropane	µg/kg	< 10	MCERTS	< 10	< 10	
Hexachlorobutadiene	µg/kg	< 5	MCERTS	< 5	< 5	

Soil Analysis Certificate - Sample Descriptions

DETS Report No: 25-07610	
Ashdown Site Investigations Ltd	
~Site Reference: Nash Manor, Nutbourne Lane, Nutbourne, West Sussex	
~Project / Job Ref: P17336_2975	
~Order No: 12366	
Reporting Date: 02/09/2025	

DETS Sample No	~TP / BH No	~Additional Refs	~Depth (m)	Moisture Content (%)	Sample Matrix Description
787281	WS01	None Supplied	0.15	7.6	Brown sandy gravel with stones and concrete
787282	WS01	None Supplied	0.35	13.1	Light brown sandy clay
787283	WS02	None Supplied	0.10	11.3	Brown sandy clay with stones
787284	WS02	None Supplied	0.30	15.4	Orange sandy clay
787285	WS03	None Supplied	0.10	11.3	Brown sandy gravel with stones
787286	WS03	None Supplied	0.30	18	Brown sandy clay with stones
787287	WS04	None Supplied	0.15	10.9	Black loamy sand with stones and concrete
787288	WS04	None Supplied	0.45	15.5	Brown sandy clay
787289	WS04	None Supplied	0.60	16.3	Brown sandy clay with stones
787290	WS05	None Supplied	0.20	12	Brown loamy sand with stones and concrete
787291	WS05	None Supplied	0.45	12.7	Brown loamy sand with stones and concrete
787292	WS06	None Supplied	0.05	4.9	Brown sandy gravel with stones
787293	WS07	None Supplied	0.05	5.2	Light grey sandy clay
787294	WS08	None Supplied	0.10	5.5	Light grey sandy clay with vegetation

Moisture content is part of procedure E003 & is not an accredited test

Soil Analysis Certificate - Methodology & Miscellaneous Information

DETS Report No: 25-07610

Ashdown Site Investigations Ltd

~Site Reference: Nash Manor, Nutbourne Lane, Nutbourne, West Sussex

~Project / Job Ref: P17336_2975

~Order No: 12366

Reporting Date: 02/09/2025

Matrix	Analysed On	Determinand	Brief Method Description	Method No
Soil	D	Boron - Water Soluble	Determination of water soluble boron in soil by 2:1 hot water extract followed by ICP-OES	E012
Soil	AR	BTEX	Determination of BTEX by headspace GC-MS	E001
Soil	D	Cations	Determination of cations in soil by aqua-regia digestion followed by ICP-OES	E002
Soil	D	Chloride - Water Soluble (2:1)	Determination of chloride by extraction with water & analysed by ion chromatography	E009
Soil	AR	Chromium - Hexavalent	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry	E016
Soil	AR	Cyanide - Complex	Determination of complex cyanide by distillation followed by colorimetry	E015
Soil	AR	Cyanide - Free	Determination of free cyanide by distillation followed by colorimetry	E015
Soil	AR	Cyanide - Total	Determination of total cyanide by distillation followed by colorimetry	E015
Soil	D	Cyclohexane Extractable Matter (CEM)	Gravimetrically determined through extraction with cyclohexane	E011
Soil	AR	Diesel Range Organics (C10 - C24)	Determination of hexane/acetone extractable hydrocarbons by GC-FID	E004
Soil	AR	Electrical Conductivity	Determination of electrical conductivity by addition of saturated calcium sulphate followed by electrometric measurement	E022
Soil	AR	Electrical Conductivity	Determination of electrical conductivity by addition of water followed by electrometric measurement	E023
Soil	D	Elemental Sulphur	Determination of elemental sulphur by solvent extraction followed by GC-MS	E020
Soil	AR	EPH (C10 - C40)	Determination of acetone/hexane extractable hydrocarbons by GC-FID	E004
Soil	AR	EPH Product ID	Determination of acetone/hexane extractable hydrocarbons by GC-FID	E004
Soil	AR	EPH TEXAS (C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C40)	Determination of acetone/hexane extractable hydrocarbons by GC-FID for C8 to C40. C6 to C8 by headspace GC-MS	E004
Soil	D	Fluoride - Water Soluble	Determination of Fluoride by extraction with water & analysed by ion chromatography	E009
Soil	D	Fraction Organic Carbon (FOC)	Determination of FOC by combustion analyser.	E027
Soil	D	Organic Matter (SOM)	Determination of TOC by combustion analyser.	E027
Soil	D	TOC (Total Organic Carbon)	Determination of TOC by combustion analyser.	E027
Soil	AR	Exchangeable Ammonium	Determination of ammonium by discrete analyser.	E029
Soil	D	FOC (Fraction Organic Carbon)	Determination of fraction of organic carbon by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	D	Loss on Ignition @ 450oC	Determination of loss on ignition in soil by gravimetrically with the sample being ignited in a muffle furnace	E019
Soil	D	Magnesium - Water Soluble	Determination of water soluble magnesium by extraction with water followed by ICP-OES	E025
Soil	D	Metals	Determination of metals by aqua-regia digestion followed by ICP-OES	E002
Soil	AR	Mineral Oil (C10 - C40)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge	E004
Soil	AR	Moisture Content	Moisture content; determined gravimetrically	E003
Soil	D	Nitrate - Water Soluble (2:1)	Determination of nitrate by extraction with water & analysed by ion chromatography	E009
Soil	D	Organic Matter	Determination of organic matter by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	AR	PAH - Speciated (EPA 16)	Determination of PAH compounds by extraction in acetone and hexane followed by GC-MS with the use of surrogate and internal standards	E005
Soil	AR	PCB - 7 Congeners	Determination of PCB by extraction with acetone and hexane followed by GC-MS	E008
Soil	D	Petroleum Ether Extract (PEE)	Gravimetrically determined through extraction with petroleum ether	E011
Soil	AR	pH	Determination of pH by addition of water followed by electrometric measurement	E007
Soil	AR	Phenols - Total (monohydric)	Determination of phenols by distillation followed by colorimetry	E021
Soil	D	Phosphate - Water Soluble (2:1)	Determination of phosphate by extraction with water & analysed by ion chromatography	E009
Soil	D	Sulphate (as SO4) - Total	Determination of total sulphate by extraction with 10% HCl followed by ICP-OES	E013
Soil	D	Sulphate (as SO4) - Water Soluble (2:1)	Determination of sulphate by extraction with water & analysed by ion chromatography	E009
Soil	D	Sulphate (as SO4) - Water Soluble (2:1)	Determination of water soluble sulphate by extraction with water followed by ICP-OES	E014
Soil	AR	Sulphide	Determination of sulphide by distillation followed by colorimetry	E018
Soil	D	Sulphur - Total	Determination of total sulphur by extraction with aqua-regia followed by ICP-OES	E024
Soil	AR	SVOC	Determination of semi-volatile organic compounds by extraction in acetone and hexane followed by GC-MS	E006
Soil	AR	Thiocyanate (as SCN)	Determination of thiocyanate by extraction in caustic soda followed by acidification followed by addition of ferric nitrate followed by colorimetry	E017
Soil	D	Toluene Extractable Matter (TEM)	Gravimetrically determined through extraction with toluene	E011
Soil	D	Total Organic Carbon (TOC)	Determination of organic matter by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	AR	TPH CWG (ali: C5- C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C34, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge for C8 to C35. C5 to C8 by headspace GC-MS	E004
Soil	AR	TPH LQM (ali: C5-C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C35, C35-C44, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35, C35-C44)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge for C8 to C44. C5 to C8 by headspace GC-MS	E004
Soil	AR	VOCs	Determination of volatile organic compounds by headspace GC-MS	E001
Soil	AR	VPH (C6-C8 & C8-C10)	Determination of hydrocarbons C6-C8 by headspace GC-MS & C8-C10 by GC-FID	E001

List of HWOL Acronyms and Operators
DETS Report No: 25-07610
Ashdown Site Investigations Ltd
~Site Reference: Nash Manor, Nutbourne Lane, Nutbourne, West Sussex
~Project / Job Ref: P17336_2975
~Order No: 12366
Reporting Date: 02/09/2025

Acronym	Description
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
2D	GC-GC - Double coil gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics only
AR	Aromatics only
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
	Operator - underscore to separate acronyms (exception for +)
+	Operator to indicate cumulative eg. EH+HS_Total or EH_CU+HS_Total
~	Sample details provided by customer and can affect the validity of results

EPH Banded (C10 - C12) - EH_1D_Total
EPH Banded (C12 - C16) - EH_1D_Total
EPH Banded (C16 - C21) - EH_1D_Total
EPH Banded (C21 - C40) - EH_1D_Total
EPH Banded (C8 - C10) - EH_1D_Total
EPH Banded (C8 - C40) - EH_1D_Total

Normec DETS Limited
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410

Certificate Key

Symbol	Description
F	Filtered sample
UF	Unfiltered sample
D	Dried sample
AR	As received sample
RL	Reporting limit
~	Sample details provided by customer and can affect the validity of results
M/S	Missing Sample
*	The Dutch 10 PAH compounds consist of Naphthalene, Anthracene, Phenanthrene, Fluoranthene, Benz(a)anthracene, Chrysene, Benzo(k)fluoranthene, Benzo(a)pyrene, Benzo(g,h,i)perylene, and Indeno(1,2,3-cd)pyrene
**	Total EPA-16 PAHs consist of the following polycyclic aromatic hydrocarbons: Naphthalene, Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Anthracene, Fluoranthene, Pyrene, Benzo(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1,2,3-cd)pyrene, Dibenz(a,h)anthracene, and Benzo(ghi)perylene.
***	Total WAC-17 PAHs consist of the following polycyclic aromatic hydrocarbons: Naphthalene, Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Anthracene, Fluoranthene, Pyrene, Benzo(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1,2,3-cd)pyrene, Dibenz(a,h)anthracene, Benzo(ghi)perylene and Coronene.
^	No sampling date provided; unable to confirm if samples are within acceptable holding times
n	Please note that we are MCERTS soil accredited (UK soils only) for sand, loam, and clay, and UKAS accredited for groundwater, tap water, surface water, and generated leachates. Other matrices are outside our scope of accreditation.
S	Subcontracted analysis
M	MCERTS accredited test
U	UKAS accredited test

APPENDIX E

Classification of Probability, Consequence and Risk

Probability Of Risk Being Realised	
Classification	Definition
High	There is a pollution linkage and an event that either appears very likely in the short term and almost inevitable over the long term or there is evidence at the receptor of harm or pollution.
Moderate	There is a pollution linkage and all the elements are present and in the right place, which means that it is probable that an event will occur. Circumstances are such that an event is not inevitable, but possible in the short term and likely over the long term.
Low	There is a pollution linkage and circumstances are possible under which an event could occur. However, it is by no means certain that even over a longer period such event would take place and is less likely in the shorter term.
Very Low	There is a pollution linkage but circumstances are such that it is improbable that an event would occur even in the very long term.

Consequence Of Risk Being Realised		
Classification	Category	Definition
Severe	Human Health	Short term (acute) risk to human health likely to result in "significant harm" as defined by the Environment Protection Act 1990, Part IIA.
	Controlled Waters	Short term risk of pollution (note: Water Resources Act contains no scope for considering significance of pollution) of sensitive water resource.
	Property	Catastrophic damage to buildings/property.
	Ecological Systems	A short term risk to a particular ecosystem or organisation forming part of such ecosystem.
Moderate	Human Health	Chronic damage to Human Health.
	Controlled Waters	Pollution of sensitive water resources (note: Water Resources Act contains no scope for considering significance of pollution).
	Ecological System	A significant change in a particular ecosystem or organism forming part of such ecosystem.
Minor	Controlled Waters	Pollution of non-sensitive water resources.
	Property	Significant damage to crops, buildings, structures and services.
	Ecological Systems	Damage to sensitive buildings/structures/services or the environment.
Very Minor	Human Health	Non-permanent health effects to human health (easily prevented by means such as personal protective clothing, etc).
	Property	Easily repairable effects of damage to buildings, structures and services.
	Project	Harm, although not necessarily significant harm, which may result in a financial loss or expenditure to resolve.

Risk Classification Definitions	
Very High	There is a high probability that severe harm could arise to a designated receptor from an identified hazard, OR, there is evidence that severe harm to a designated receptor is currently happening. This risk, if realised, is likely to result in a substantial liability. Urgent investigation (if not undertaken already) and remediation are likely to be required.
High	Harm is likely to arise to a designated receptor from an identified hazard. Realisation of the risk is likely to present a substantial liability. Urgent investigation (if not undertaken already) is required and remedial works may be necessary in the short term and are likely over the long term.
Moderate	It is possible that harm could arise to a designated receptor from an identified hazard. However, it is relatively unlikely that any such harm would be severe, or if any harm were to occur it is more likely that the harm would be relatively mild. Investigation (if not already undertaken) is normally required to clarify the risk and to determine the potential liability. Some remedial works may be required in the longer term.
Low	It is possible that harm could arise to a designated receptor from an identified hazard, but there is a low likelihood of this hazard occurring and if realised, harm would at worst normally be mild.
Very Low	There is a low possibility that harm could arise to a receptor. In the event of such harm being realised, it is not likely to be severe.

APPENDIX F

Preliminary Conceptual Model

Site: Nash Manor, Nutbourne Lane, Nutbourne, West Sussex

Project Ref: P17287

Potential Source	Potential Receptor	Potential Contaminants	Potential Pathway	Complete Linkage Present?	Probability	Consequence	Risk
Light agricultural land use for the past 30 years.	End Users	Heavy Metals, PAH Compounds, Petroleum Hydrocarbons, VOC Compounds and Asbestos	Dermal contact with soil and dust (indoor & outdoor)	Yes	P3: Moderate	C3: Moderate	Moderate
			Ingestion of soil and indoor dust	Yes	P2: Low	C3: Moderate	Low/Moderate
			Consumption of home-grown produce and attached soil	Yes	P2: Low	C3: Moderate	Low/Moderate
			Inhalation of soil dust (indoor and outdoor)	Yes	P2: Low	C3: Moderate	Low/Moderate
			Inhalation of soil vapours	Yes	P1: Very Low	C3: Moderate	Low
			Inhalation of soil gases/ Risk of explosion	No potential gas source identified			N/A
	End Users (via Water Supply Pipework)	Petroleum Hydrocarbons and VOC Compounds	Contamination of incoming services	Yes	P2: Low	C3: Moderate	Low/Moderate
	Groundwater	Heavy Metals, PAH Compounds, Petroleum Hydrocarbons and VOC Compounds	Migration to groundwater	Yes	P1: Very Low	C1: Very Minor	Negligible

APPENDIX G

Quantitative Conceptual Model

Site: Nash Manor, Nutbourne Lane, Nutbourne, West Sussex

Project Ref: P17336

Source	Receptor	Contaminants	Pathway	Complete Linkage Present?	Probability	Consequence	Risk
Shallow made ground in areas of likely proposed soft landscaping.	End Users	Heavy Metals and PAH Compounds	Dermal contact with soil and dust (indoor & outdoor)	Yes	P3: Moderate	C3: Moderate	Moderate
			Ingestion of soil and indoor dust	Yes	P3: Moderate	C3: Moderate	Moderate
			Consumption of home-grown produce and attached soil	Yes	P3: Moderate	C3: Moderate	Moderate
			Inhalation of soil dust (indoor and outdoor)	Yes	P3: Moderate	C3: Moderate	Moderate
			Inhalation of soil vapours	Identified contaminant(s) do not pose a risk via this pathway			N/A
			Inhalation of soil gases/ Risk of explosion	Identified contaminant(s) do not pose a risk via this pathway			N/A
	End Users (via Water Supply Pipework)		Contamination of incoming services	No contaminants present above screening criteria			N/A
	Groundwater	Heavy Metals and PAH Compounds	Migration to groundwater	Yes	P1: Very Low	C1: Very Minor	Negligible

APPENDIX H

Checklist for Verification Report(s)

Item	Tick (☐)
Documentation (Including Photographs) of Stripped Formation	
Documentation (Including Photographs) of Placed Geotextile and Geogrid (if required)	
Documentation (Including Photographs) Confirming Depth of Cover Soils	
Laboratory Test Data for Imported Materials	