



Specialists in Ground Engineering & Energy

Remediation Verification Report for East Lancashire Paper Mill Island Site, Rectory Lane, Radcliffe, M26 2QU



Client

Project No: NX418



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EXECUTIVE SUMMARY

NX Consulting Limited (NX) has been commissioned by Terra Nova Construction Limited Housing Association (The Client) to produce a remedial verification report; for the land at Rectory Lane, Radcliffe, M26 2QU.

It is understood that the site is to be developed for residential purposes with associated gardens, landscaping areas and access roads.

The construction works were conducted by Terra Nova Construction Limited.

The above approach involved a 'best sustainable approach' to remediation of potential contamination; involving a minimal approach with respect to the removal and disposal of contaminated materials from site. Minimum material will be taken off site thus conserving landfill space locally and minimising lorry movements onto local roads from the site.

NX developed a remediation strategy (Ref: NX418/R1 dated 13th April 2021) for the site which should be ready in conjunction with this assessment.

No significant remediation works were envisaged with the exception of the adoption of a minimum 600mm of clean cover system within landscaped areas, a contamination watching brief and importation of landscaped soils for clean cover systems.

Terra Nova Construction Limited confirmed that approximately 288m³ of topsoil from a Greenfield source was imported to site. NX Consulting attended the Lunts Heath source and conducted soil sampling on 1st March 2024. The topsoil used was brought to site under 'Direct Transfer' from Millar Homes, Lunts Heath, WA8 5RY.

Terra Nova Construction Limited confirmed that approximately 198m³ of subsoil was imported to site from a Greenfield source. NX attended site and conducted soil sampling on 20th March 2024. The subsoil used was brought to site under 'Direct Transfer' from Shire Hill Quarry, Sheffield Rd, Glossop SK13 7PU.

Simple precautionary measures were recommended during the construction phase i.e. good personal hygiene, provision of suitable welfare facilities and basic personnel protective equipment, to protect site workers coming into contact with soils containing unrecorded slightly elevated concentrations of inorganic and organic contaminants and asbestos.

To date, NX have not been provided with information on soil disposal from site.

Gas protection measures have been installed generally in accordance with BS8485: 2015 and Ciria 735 Guidance. NX observed a generally excellent level of workmanship from the specialist installer SPS.

This report should be issued to the Directorate of Planning of Bury Council for approval and to discharge outlying planning conditions relating to ground contamination.



1.0 INTRODUCTION

1.1 The Commission & Brief

NX Consulting Limited (NX) has been commissioned by Terra Nova Construction Limited Housing Association (The Client) to produce a remedial verification report; for the development on land at Rectory Lane, Radcliffe, M26 2QU.

It is understood that the site is to be developed for residential purposes with associated gardens, landscaping areas and access roads.

1.2 Previous Surveys

Previous assessments conducted upon the site comprise the following; which should be read in conjunction with this study.

- NX418 Revision 2 - Rectory Lane, Radcliffe Phase 1 & Phase 2 Geoenvironmental Report; dated 30.07.2021.
- NX Consulting Limited – Rectory Lane, Radcliffe, M26 2QU. Remediation Strategy Report. Reference NX418/R1 dated 13th April 2022.
- United Utilities – Rectory Lane, Radcliffe, M26 2QU. NX418 Risk Assessment for Water Pipes. Reference NX418 dated 13th April 2022.

White Young Green (WYG) carried out a Phase 1 desk Study of the larger East Lancashire Paper mill site to the southwest. The report included a review of a number of reports, made available by the Homes and Communities Agency (HCA), these include;

- Remedial Strategy for land at East Lancashire Paper Mill, Radcliffe. Prepared by Encia Consulting Limited for P&F Properties Limited. (Report ref: 5996/3/Rev-A, July 2005);
- East Lancashire Paper Mill, Radcliffe. Report on Supplementary Groundwater/ Ground Gas Monitoring. Prepared by Encia Consulting Limited for P&F Properties Limited. (Report ref: 5996/BRB, November 2005); and,
- Summary Status Report for The East Lancashire Paper Mill Site. Prepared by ADM Regeneration Limited for P&F Properties Limited. (Report ref: 10109_SSR_01, August 2013).

The above reports should be read in conjunction with the reports listed above and drawings provided in Appendix A.

1.3 Enabling Works

NX were not employed to provide any verification of enabling works or the MMP undertaken upon the site.

NX have not been alerted of any areas of contamination discovered during the enabling works.

Prior to the enabling works, the remediation strategy advised that any infilled demolition arisings (typically recorded within the area of WS1/TP01) were recommended to undergo pre-treatment (excavation/screening/crushing and replacement).



1.4 Limitations

The accuracy of the data supplied by third parties should be considered in the context of any known site conditions for which NX Consulting Limited cannot be held liable.

The comments given in this report and the opinions expressed assume that the ground conditions (geology, hydrogeology, contamination) do not vary beyond the range revealed by this assessment. There may be, however, conditions within the site, which have not been identified from the information reviewed and consequently have not been considered in this report: confirmation of such uncertainties should be the focus of any future intrusive investigations.

The comments made in this report are based on the data available at the time of its completion. Any unusual or conflicting evidence discovered during any future site works must be presented to NX Consulting as soon as possible so that any implications may be considered.

This report is provided for the benefit only of the party to whom it is addressed. NX Consulting does not extend responsibility to any third party for the whole or any part of the contents. NX Consulting owes no duty of care in relation to this report to any third party. The investigation and reportage has been undertaken with all reasonable skill, care and due diligence. NX Consulting disclaims any responsibility to the client or others in respect of any matter(s) outside this agreed scope of the above works.

In addition to the above it should be noted that when investigating or developing land, sub-surface conditions might vary both spatially and over time. Whilst this investigation and subsequent interpretation has been undertaken to reasonably characterise current sub-surface conditions at the site within the scope of works and agreed budget, the absence of certain ground, contamination or groundwater conditions at the individual locations is not a guarantee that these conditions do not exist elsewhere on the site. Additional information, changes in legislation or revised practices may necessitate re-interpretation of part or all of this report.

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2.0 BACKGROUND

2.1 Site Description & Setting

This report is intended to support an application relating to the development of the of land on land at Rectory Lane, Radcliffe, M26 2QU.

The site is irregular in shape, generally level and comprises a combination of car parks and open landscaped areas (NGR: E379021, N407407). At the time of drafting this report the buildings are fully constructed with cover systems installation on going.

A culverted brook runs through the central landscaped (park) area trending north to south.

A Site Location Plan, site photographs and a site layout drawing are presented as Figure 01 in Appendix A of the NX site investigation report and more recent photographs provided within Appendix A of this report.

2.2 The Proposed Development

It is understood that the site is to be developed for residential purposes, involving the construction of 27 no. houses and apartments with associated gardens, landscaping areas and access roads.



3.0 ENVIRONMENTAL SETTING & PREVIOUS INTRUSIVE WORKS

3.1 Site History

Previous investigations of the site have comprised a Phase 1 desk study and intrusive site investigation works as referenced in Section 1.2 of this text. A summary of findings relevant to the proposed remediation of the site is given in the following sections.

The NX Consulting revised desk study carried out in March 2021, established that there are a number of reports of potentially contaminative site activities that have taken place historically. Those areas of concern relative to the proposed development comprised the following:

Brewery and Works (north of site)

A brewery and works formerly occupied the land in the northeast of the site. A chimney was also present in the north of the site associated with the brewery. The north of the site was cleared circa by 2003 and an electricity substation was present. Tier 1 values were exceeded for a residential end use with plant uptake scenario, within shallow Made Ground soils, beneath the site. PCBs were found to be absent within the samples obtained from the area of the existing electricity substation.

Allotments and Previous Housing Developments

Allotments and residential housing were recorded within historical mapping within in the center and south of the site, up until 1952 where the site was cleared and undeveloped land was recorded.

3.2 Environmental Setting

A summary of the environmental setting of the site pertinent to this report has been summarised below.

Issue	Summary
Geology & Mining	Drift – On site and surrounding area: Glaciofluvial sheet deposits, Devensian – Sand and Gravel Solid – Pennine Middle Coal Measures Formation (Mudstone, Siltstone and Sandstone). Faults – There are 3no. bedrock faults identified within 250m of the site: • 139m NE • 142m N • 208m E Coal Mining – The site was observed to be in a surface area that could be affected by underground mining in 5 seams of coal at 150m to 350m depth, and last worked in 1893. The Coal Authority Interactive Map indicated that the site was not within a defined Coal Authority High Risk Area. The Coal Authority report indicates that no recorded coal seams subcrop beneath the site. The nearest outcropping seam situated approximately 150m to the north west is shown to be present at 61m below ground level. A mine entry is present 150m to the north west. Several further mine entries are recorded approximately 500m northwest of the site. A series of coal seams striking northeast - southwest outcrops at the surface approximately 250m north west of site and dips towards the south east towards the site.

	Coal Mining (Wider Site) – The WYG report referenced a BGS record of one mine shaft, located approximately 350m northwest of the site at Withins Lane Colliery and two water well boreholes which have been drilled at the site. The Withins Colliery Shaft (BGS Reference: SD70NE25) record shows that the coal seams encountered in the Withins Colliery shaft are not considered a risk to the proposed future site development. Based on the observations identified on the Encia rotary borehole logs and from a water well borehole (BGS Reference: SD70NE28, bored 1954) (broken ground and loss of drilling flush) was recorded in 3no seams of coal at approximate depths of 17.00m bgl, 51.00 and 84.00m (Possibly Top Three Yard Mine or Top Yard Mine, RAMS mine and unnamed coal seam respectively) may have been worked beneath the East Lancashire Paper Mill site. In summary, the report found that the Top Three Yard Mine has been possibly identified beneath the ELPM site sub-cropping at the top of bedrock to 19m below the top of bedrock in the south east corner. The Top Yard Mine may be present on site above the Top Three Yard Mine and if present would be to the south of the identified sub-crop. The Rams Mine is found beneath the Top Three Yard Seam. The fault indicated on the geological map may lie further south based on the geology encountered within the exploratory holes. If this is the case, then the potential exists for the Top Five Quarters Mine to sub crop beneath the south east corner of the ELPM site and further intrusive works and possible remedial drill and grout works were recommended. Brine Mining - None recorded within 250m.
Hydrology	GroundSure records indicate that there is a narrow-culverted watercourse passes under the site running north to south. The watercourse is an inland river not influenced by tidal action flows underground on site but flows at surface level 16m NW, which outfalls to River Irwell approximately 110m to south. The River Irwell is situated 107m SE.
Hydrogeology	Superficial deposits - Secondary A Aquifer (Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers). Bedrock deposits - Secondary A Aquifer (Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers).
Landfills	The Groundsure report indicated that no recorded landfill/waste disposal facilities are present within 250m of the site. A scrap yard was recorded 204m SW.
Flooding	According to Groundsure data, the site is within an Environment Agency indicative Zone 2 & Zone 3 flood plain. The site located in an EA defined Zone 2 and Zone 3 flood risk area (from fluvial/tidal models) and high risk from rivers and sea. There have been 3 recent flood events within 200m: 80m SW, January 2008, River Irwell unknown cause 122m SE, December 2015, River Irwell channel capacity exceeded 165m SE, October 1998, River Irwell obstruction/blockage of channel

	The site is stated to be at risk from surface water flooding. The risk of surface flooding is deemed to be 1 in 30 year event (0.3 – 1.0 m). The Groundsure data indicates that the Environment Agency has classified a moderate risk of groundwater flooding on the site.
Radon	The property was not within a Radon Affected Area, as less than 1% of properties are above the Action Level. As such no radon protection measures were deemed to be required.

3.2 Fieldworks

An intrusive investigation was carried by Taylor Drilling Services Ltd and monitored by an engineer from NX Consulting between the 26th April 2021 and 28th April 2021.

Underground services were surveyed, and hand dug trial pits formed to a depth of 1.20metres below ground level (m bgl) prior to the intrusive investigation; in line with NX Consulting health and safety methodology.

4no machine excavated hand pits were undertaken to a maximum depth of 2.00m bgl to establish top of foundation depths.

7no windowless sample boreholes were undertaken across the site to a maximum depth of 5.00m bgl.

2no rotary core boreholes were undertaken across the site to a maximum depth of 40.00mbgl.

The exploratory holes retrieved continuous soil samples; these were then logged by an on-site engineer and representative samples were taken for geotechnical and chemical analysis.

Groundwater monitoring wells were installed in WS1, WS3, WS4 & WS7 to a maximum depth of 4.50mbgl on completion. The response zones were kept within the Made Ground and comprised an upper 0.50m of plain pipe connected to a length of slotted pipe with a pea gravel surround. Groundwater was recorded between 1.44m and 2.75mbgl during monitoring within these installations.

Environmental sample collection was carried out in accordance with BS EN ISO 22475-1:2006. All soil and groundwater samples were collected using either clean stainless-steel utensils or clean disposable gloves and placed directly into clean containers provided by the laboratory. Samples obtained during the investigation were subjected to a range of geochemical testing at appropriate UKAS accredited laboratories.

Testing was carried out in accordance with the procedures outlined in BS EN ISO14688-1:2002, 14688-2:2004, and 14689-1:2003.

Soil samples were tested for speciated PAH, asbestos screen, arsenic, boron (water soluble), cadmium, copper, chromium, lead, mercury, nickel, selenium, silver, zinc, total cyanide, free cyanide, phenols, pH, asbestos, total sulphur, sulphide, total sulphur, total organic carbon and nitrate analysis.

3.3 Ground Conditions

General

Made Ground was recorded within all exploratory hole locations to maximum proven depths of 2.40m bgl. A surface cover of concrete was observed within areas of hardstanding, and within grassy areas a brown/black slightly organic sand with a fine gravel was recorded.



Made Ground typically comprised dark brown/red/black fine to coarse (occasionally organic) sand with subangular to subrounded gravel and cobbles. Infilled demolition arisings were recorded within the area of WS1/TP01.

3no distinct types of Made Ground were observed and frequently encountered during the intrusive drilling works:

- MG1: Black/brown slightly organic sand with gravel of clinker, coal and brick.
- MG2: Light brown sand with gravel and cobbles of brick and sandstone.
- MG3: Brown/red sand with gravel of brick, coal, clinker, slate and sandstone, and cobbles of brick.

Deposits were noted to comprise sands and gravels with occasional cobbles which comprised sandstone, brick, slate, mudstone, and general demolition backfill.

Underlying the Made Ground, by generally interbedded firm to stiff or stiffer Glacial Clay and sand/sand and gravel between 0.50m bgl to 2.40m and 3.50m bgl to 5.00m bgl. SPT N values within the clay deposits were in the range 8-43 indicting firm to stiff to very stiff conditions. SPT N values within the granular deposits were in the range 6-19 indicting loose to medium dense.

In WS5 & WS6, fine to coarse sand with a fine gravel was recorded between 2.1mbgl and 5.0mbgl, interbedded with the glacial clay. In WS2, WS3, WS5 & WS6, a layer of yellow/brown silty clayey angular sand and gravel of coal, slate and sandstone was recorded at depths between 0.5mbgl and 2.3mbgl, overlying the glacial till.

Mudstone bedrock was 'tentatively' but not definitively proven in window sampler boreholes WS6 & WS7 between at depths of 3.50m & 5.00 mbgl. RBH01 & RBH02 recorded interbedded siltstone, mudstone and sandstone bedrock at depths ranging from 8.70m bgl (RBH01) & 5.80m bgl (RBH02).

No obstructions were encountered within the made ground and superficial deposits and excavations should be achievable with conventional plant.

The presence of other relic below ground structures should be anticipated beneath the former school and associated infrastructure having previously occupied the site.

3.4 Groundwater

Groundwater was recorded in WS4, WS5, WS6 & WS7 between 1.94mbgl (WS5) and 3.97mbgl (WS4). Groundwater was found to be absent in WS1, WS2, WS3, TP1, TP2, TP3, & TP4.

3.5 Contamination Observations

No visual or olfactory evidence of hydrocarbon or solvent contamination was identified throughout the site investigation.

3.6 Underground Service Plans

Underground services, BT Lines, gas mains, combined and foul sewers, CCTV, electric cables and possible fibre optic cables may all impact the site and the design team and Client should familiarise themselves with their presence.

3.7 Below ground obstructions

No obstructions were encountered within the made ground and superficial deposits and excavations should be achievable with conventional plant.



The presence of other relic below ground structures should be anticipated beneath the former school and associated infrastructure having previously occupied the site.

3.8 Contamination

The chemistry analysis results have been compared against the Tier 1 criteria for a *residential* end use (conservative due to the sensitivity of site receptors) to reflect the development proposals.

For risk assessment purposes a soil organic matter value of 1.0% has been calculated.

Tier 1 exceedances of PAH, arsenic and lead contaminants have been recorded in excess of tier 1 for a residential end use with plant uptake scenario, in the shallow Made Ground soils beneath the site.

PCBs were found to be absent within the samples obtained from area of the existing electricity substation.

No asbestos was recorded during soil screening, although given the nature of previous development on the site, it could not be discounted and mitigation measures were recommended by NX.

3.8.1 Water Supply

A potable water risk assessment was carried out by NX within April 2023. The risk assessment was carried out along the proposed pipeline to the satisfaction of United Utilities. The assessment established, that specialist measures relating to pipework are deemed unnecessary.

3.8.2 Phytotoxicity

Phytotoxicity Guidance on the effects of metal contamination on plant growth is provided within the Ministry of Agriculture, Fisheries and Food (MAFF) Code of Good Agricultural Practice for the Protection of Soil.

Thresholds were not been exceeded within all samples analysed within the made-ground or natural soils with respect to the end use of the site.

3.8.3 Controlled Waters

The risks presented to controlled water receptors were deemed to be low post construction as the proposed development area would comprise majority building and hardstanding cover which would restrict vertical and lateral percolation to the underlying aquifer and any surface water features.

3.9 Ground Gas & Hydrocarbons

Certification of ground gas measures were classified as Characteristic Situation 2 (Amber 1) conditions and Low-level ground gas protection measures were adopted, utilising Low Permeability membrane and ventilated sub-floor void that created a permeability contrast to limit the ingress of gas into buildings. Service entries were sealed with appropriate Visqueen or similar specialist proprietary equipment.

No radon protective measures are necessary.

Soil testing to date indicated that there is a low risk of vapour generation and migration into the proposed buildings. No specific protection measures were envisaged in relation to hydrocarbon contamination.



4.0 REMEDIATION STRATEGY

4.1 Overview Of Remediation Strategy

Potential risks to human health associated with the identified potential contamination by PAH, arsenic and lead were identified within the NX remediation strategy.

Furthermore, Characteristic Situation 2 (Amber 1) were deemed to be required for all proposed buildings upon site.

A UKWIR potable water risk assessment established that no specialist protection measures were necessary.

A summary of the required remediation measures were recommended for the development site.

- Placement of clean soil cover in landscaped areas. To protect end users from isolated areas of PAH, arsenic and lead contamination, a 'clean' soil cover system (consisting of a minimum 600mm thick layer including 150mm of topsoil) is required over deposits of Made Ground, in all new gardens and landscaped areas.
- Gas protection measure installation in accordance with BS8485: 2015. Suspended block and beam flooring with suspended ventilated void, and full gas membrane installed and validated to CIRIA 735. Independent validation of gas protection measures is needed to achieve the required points score.
- Validation of the remediated site in the form of a detailed Completion Statement confirming that the works set out in this document and agreed were completed and that the site is suitable for its intended residential end use.

5.0 OBSERVATIONS AND RECORDS OF ACTIVITY

5.1 Imported Soils & Clean Cover Systems

NX have been requested by Terra Nova Construction Limited Housing Association to assess the suitability of a cover systems on site and gas protection measures, in line with NX Consulting Remedial Strategy, East Lancashire Paper Mill Island Site (Dated: April 2022, Ref: NX418/R1); whereby a 600mm thick, clean cover system is to be installed across all soft landscaping private garden areas of the residential development.

Terra Nova Construction Limited have confirmed that subsoils has been imported to site from a Greenfield Source at Marchington Stone Quarry, Glossop under 'Direct Transfer'. They also confirmed that topsoil was imported to site from a Greenfield Source at Millar Homes, Lunts Heath, WA8 5RY, NX has carried out validation testing of the topsoil and subsoil (photographs and chemical test results are appended to this document). The chemical test results have been compared to LQM/CIEH Suitable 4 Use Levels' and with respect to lead, the current Category 4 Screening Level has been used for a residential development; with gardens scenario.

Terra Nova Construction Limited confirmed that approximately 288m³ of the Lunts Heath topsoil was imported to site. NX Consulting attended the Lunts Heath source and conducted soil sampling on 1st March 2024. Three samples were analysed which equates to an approximate sampling frequency of 1 sample per 96m³ of topsoil being imported (from a Greenfield source). The topsoil used was brought to site under 'Direct Transfer' from Millar Homes, Lunts Heath, WA8 5RY.

Terra Nova Construction Limited confirmed that approximately 198m³ of subsoil was obtained from Shire Hill Quarry, Glossop and planned to be used upon site. NX Consulting attended site and and conducted soil sampling on 20th March 2024. Three samples were analysed which equates to an approximate sampling frequency of 1 sample per 66m³ of subsoil being imported (from a Greenfield source). The subsoil used was brought to site under 'Direct Transfer' from Shire Hill Quarry, Sheffield Rd, Glossop SK13 7PU.

A map provided to NX is provided below showing the source of where the topsoil and subsoil were obtained.

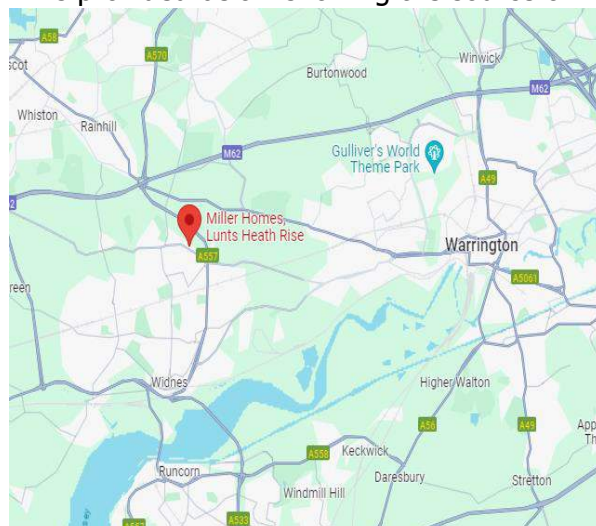


Figure 4.1.1 Topsoil Source: Lunts Heath Rise, Widnes



Figure 4.1.2 Subsoil Source: Shire Hill Quarry, Glossop

The verification samples were sent to a UKAS and MCERTS accredited laboratory and the results compare to human health and metals considered toxic to plants. In the absence of site-specific criteria, the concentrations that affect human health have been assessed for a residential end-use against CLEA UK and the DEFRA SP1010: Development of Category 4 Screening Levels for Assessment of Land Affected by Contamination – Policy Companion Document (2014).

Of the potential contaminants determined, none was found at levels that exceeded their guideline values. Of the phytotoxic (toxic to plants) contaminants determined (copper, nickel, zinc), none was found at levels that exceeded the maximum permissible levels specified in BS3882:2007 – Table 1.

Inspection & Ground Conditions

Plots 1 to 7

A suitably qualified engineer from NX consulting has visited site that a cover system inspection of the above plots was conducted on the 5th & 11th April 2024. An engineer from NX Consulting visited site and recorded a 600mm+ cover system in rear gardens of Plots 1, 2, 3, 4, 5, 6, 7.

Ground conditions comprised up to 150mm of saturated black slightly organic slightly silty slightly sandy clay with rare gravel (Topsoil) over grey brown clayey sand and gravel subsoil. The contractor has confirmed that the hard to dig layer is present beneath the gardens of Plots 1 to 6 at a depth below the hand pit formed for NX during our visit.

An engineer from NX Consulting visited site on the 5th April 2024 and carried out a cover system inspection within the new landscaping areas of the front and rear gardens of 1 through



to 7. The engineer recorded a minimum of 150mm of clean imported topsoil cover overlying 450mm+ of clean imported subsoil within all front gardens (Plots 1-7), and the rear gardens of Plots 1-5. Plots 6 & 7 rear gardens were not ready, so a revisit was undertaken on the 9th April 2024. During the second visit the engineer recorded a minimum of 150mm of clean imported topsoil cover overlying 450mm+ of clean imported subsoil within the rear gardens of Plots 6 & 7. Terra Nova Construction Limited has confirmed that the hard to dig layer is present beneath the gardens of Plots 1 to 7 at a depth below the hand pit formed for NX during our visit. Photographs appended to this document have been provided by Terra Nova Construction Limited to verify the apparent hard to dig layer.

The visual assessment of the topsoil confirmed the material was within the textural classification as topsoil in accordance with BS3882 (2015). The topsoil being described as a dark grey/black slightly silty CLAY with rare gravel. Gravel was recorded to be fine to coarse, angular to subrounded of mudstone and other mixed natural lithology, with rare rootlets observed too. No unusual odours or deleterious materials were observed.

Plots 1 to 20 – Apartment Block and Substation Area Landscaping

An engineer from NX Consulting carried out an initial site visit to on June 5th 2024 to inspect 3no Hand pits (HP01, 02, 03) around Plots 1 to 20. Hand pits demonstrated a maximum depth of 400mm of clean cover system soils within thin narrow landscaping strips around plots 1 to 20. An additional 5no pits were undertaken (HP04-08) on the 13th June 2024 within another 2no landscaped area around the existing substation. Clean cover system soils were recorded to 300mm within each pit. The Site Manager confirmed that due to the presence of below ground services and kerb edge foundations they could not establish the minimum 600mm depth specified within the NX remediation strategy. He also confirmed that, as part of the works the groundworker has excavated, crushed & screened the brick and other demolition arisings which were present which are now underlaid by the crushed demolition arisings.

Exported Soils & Imported Topsoil

NX Consulting have not been provided with information regarding imported soils from the Main Contractor, Terra Nova Construction Limited. It is understood that Caldwell Construction are responsible for the Material Management Pla for the site and NX have not been provided with details of exported soils related to site development. Further details can be obtained from Terra Nova Construction Limited Housing Group 2a Derwent Avenue, Manchester, M21 7QP. Tel: 0300 123 1966.

Soil Source	Date of Activity	Nature of Materials	Volume	No of Validation Sampled
Millar Homes, Lunts Heath Rise, Widnes	01/03/2024	Topsoil for Garden & landscape areas	288m ³	3
Marchington. Shire Hill Quarry, Glossop	20/03/2024	Subsoil for Garden & landscape areas	198m ³	3

Based upon the cover system inspections and information provided to NX date we consider the site do not pose a significant risk to human health and controlled water receptors. Verification testing of the subsoil and topsoil materials have been recorded below Tier 1 values



for a residential end use with plant uptake. Whilst the required 600m+ clean cover system has not been recorded within the landscaping areas around Apartment No's 1 to 20, in line with NX Consulting Cover System Protocol document the contractor has confirmed that the a note will be made within the O&M manual to inform maintenance and construction workers of the potential to come into contact with potentially localised inorganic and organic contamination and asbestos fibres so that appropriate PPE can be used during any works.. This will effectively mitigate potential migration pathways to potential receptors associated with this apartment block.

Other soils imported to site were carried out under the Wrap protocol and deemed to be 'first generation' by the contractor and validation by NX Consulting was not requested.

5.2 Gas Protection Measures

The conditions in which gas membranes are installed are often difficult, at times this can adversely compromise the designed integrity of the manufacturer's product. The purpose of the recommended visual inspection is to ascertain the integrity following the membrane installation and provide third party certification.

CIRIA C735 (Good practice on the testing and verification of protection systems for buildings against hazardous ground gases).

The visual inspection and testing was to be undertaken by a suitably qualified and experienced engineer from NX Consulting Ltd immediately after the installation of the membrane. NX were not requested to inspect the sub floor voids. However, Terra Nova Construction Limited Housing Association have confirmed that the works were carried out as per the structural engineers details.

For the inspection, the seams along the propriety gas resistant membrane were to be subjected to a visual inspection. It was recommended that the engineer should inspect the membrane and selected seams/penetration. Attention being paid to areas most likely to cause failure.

The visual inspection was recorded on a visual inspection/test sheet. Any failures were noted along with the corrective action to be undertaken by the contractor and their installers SPS Substructure Protection Limited.

Gas Verification

Gas validation assessment of Plots 1 to 7 and Plots 1 to 20 was conducted on 15th February 2023 and 21st March 2024 respectively, by NX Consulting staff and gas protection measures were deemed to have been suitable for their intended purpose. Photographs and NX Consulting's Gas Verification proforma are appended to this document.

On arrival our engineer found the membrane to be placed and comprise a blue Visqueen Gas Barrier across the full extent of the slab with internal curtain walls formed. It was therefore, considered suitable by the engineer, to adopt a process of a visual inspection and pick test on selected joints to the membrane; where possible.

During the inspection, the seams along the membrane were subjected to a visual inspection and pick test. The engineer slowly walked along all the seams focusing on points where integrity of the membrane showed damage and whether the membrane needed repairing.



Particular attention was paid to critical points and junctions formed between the membrane material and other structural elements; such as corners and service entries. Any seam failures were marked, sealed and then re-examined on site before the membrane was passed.

Areas of non-conformances were identified during the visual and pick test and inspection of services penetrations. The installed protection measures were generally installed with an excellent level of workmanship and meet a satisfactory standard in line with typical manufacturer requirements.

Appended photographs provide some photos detailing the generally excellent level of workmanship witnessed by NX.

We can confirm that visqueen sealant and bond has been used to seal seams and service penetrations and to a suitable overlap. A limited number of non-conformances were notified to for repair.

Prior to the laying of the protection membrane, all surfaces were apparently checked and suitably cleared of any debris by the Contractor.

Where visible, it would appear that the appropriate gas membrane has been installed in accordance with the manufacturer's specification with taped joints, seals to all penetrations.

Appendix A contains a copy of the inspection reports completed by NX.

6.0 REFINED CONCEPTUAL MODEL

The development involved a 'best sustainable approach' to remediation of contamination; involving a minimal approach with respect to the removal and disposal of contaminated materials from site. Minimum volumes of material were moved around the site, limiting site workers and neighbours to dust, noise and visual intrusion. Where possible minimum materials were taken off site thus conserving landfill space locally and minimising lorry movements onto local roads from the site.

Risks posed to each of the identified potential receptors are discussed separately and assessed against a low, moderate or high scale.

Site Occupiers/Groundworkers/Landscape Contractors

The site comprises majority building cover and hardstanding, which would break the pollutant linkage between any contaminated soils and end users of the site. A 600mm+ clean cover systems have been adopted in Plots 1 to 7. Whilst the required 600mm+ clean cover system has not been recorded within the landscaping areas around Apartment No's 1 to 20, in line with NX Consulting Cover System Protocol document, Terra Nova Construction Limited has confirmed that a note will be made within the O&M manual to inform maintenance and construction workers of the potential to come into contact with potentially localised inorganic and organic contamination and asbestos fibres so that appropriate PPE can be used during any works.. This will effectively mitigate potential migration pathways to potential receptors associated with this apartment block.

Characteristic situation 2 ground gas protection measures have been adopted and NX Consulting inspections of accessible areas indicates that these measures have been installed into the structure of the building.

It is considered that the site is unlikely to pose significant risk to current and future end users and the risks to identified human health receptors are deemed to be low post construction.

Risk is assessed as low post construction.

Underlying Groundwater

The NX site investigation works has encountered ground conditions comprising Made Ground over relatively impervious cohesive interbedded firm to stiff or stiffer Glacial Clay and sand/sand and gravel; restricting vertical and vertical and lateral percolation to the underlying aquifer and any surface water features.

As such, the risks to the underlying aquifer post construction is deemed to be negligible.

Risk is assessed as low post construction.

Surface Waters

There is a narrow culverted watercourse which passes under the site running north to south (Inland river not influenced by tidal action flows underground on site but flows at surface level 16m NW). This watercourse outfalls to River Irwell which is situated 110m to south.

Based upon the total soils concentrations, lack of groundwater within the interbedded sand and gravel/clay deposits and predominantly low permeability clay and mudstone deposits we



consider there to be a negligible risk to controlled water receptors. The nearby unnamed surface water course crossing through the site is culverted and unlikely to be in hydraulic connectivity with groundwater and site soils.

Risk is assessed as low post construction.

Water Supply

A potable water risk assessment was carried out by NX within April 2023. The risk assessment was carried out along the proposed pipeline to the satisfaction of United Utilities. The assessment established, that specialist measures relating to pipework are deemed unnecessary.

Risk is assessed as low post construction.

Occupiers of Adjacent Land

No significant risks to occupiers of adjacent land have been identified.

Risk is assessed as low post construction.

Flora and Fauna

Imported topsoil is suitable for a commercial end use in terms of phytotoxic risk to identified receptors.

Risk is assessed as low post construction.



Specialists in Ground Engineering & Energy

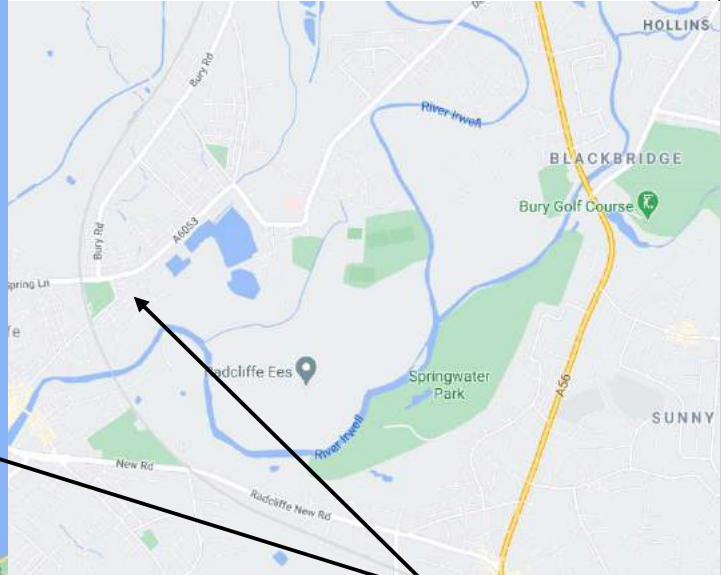
APPENDICES

- A - Drawings, Cover System & Ground Gas Verification Photographs**
- B - NX Topsoil Verification Testing Results & Contractor Consignment Notes**



Specialists in Ground Engineering & Energy

A - Drawings, Cover System & Ground Gas Verification Photographs



**SITE
LOCATION**



Site Centre:
OS X (Eastings) 379021
OS Y (Northings) 407407



Next Generation Engineering Consultancy Services

Tel: 0161 904 0187
E-mail: admin@nxconsulting.org.uk
Web: www.nxconsulting.org.uk

Ref: NX418 Figure 1

Project:

East Lancs Paper Mill

Title:

Site Location Plan

Visqueen Gas Barrier

Features and benefits

- BBA certified - third party accreditation
- Complies with BS 8485:2015 + A1:2019 - industry standard for methane and carbon dioxide protection
- Flexible - easy to detail and install on site
- Multi functional - also acts as a radon and damp proof membrane
- Dual jointing methods - lap joints can be taped or heat welded

Product description

Visqueen Gas Barrier is a multi-layer reinforced polyethylene gas barrier with a 20 micron aluminium foil. The barrier is coloured blue on the upper surface and silver on the reverse. The product is supplied in single wound rolls (not folded), 2m x 50m.

Approvals and standards

- Third party accreditation (BBA 13/5069)
- Conforms to the specification requirements of BS 8485:2015 + A1:2019
- Suitable for all Characteristic Gas Situation (CS) ground gas regimes
- Conforms to the specification requirements of NHBC Amber 1 and Amber 2 applications
- Conforms to the specification requirements of BR 211:2015
- CE Mark EN 13967:2017
- Quality Management System ISO 9001:2015
- Occupational Health and Safety System ISO 45001:2018
- Environmental Management System ISO 14001:2015

Usage

Visqueen Gas Barrier is suitable for use in all types of buildings to prevent the ingress of harmful levels of ground gases e.g. methane, carbon dioxide and radon.

The barrier can be positioned above or below a solid concrete ground floor slab or above a precast suspended segmental ground floor system, e.g. beam and block floor.

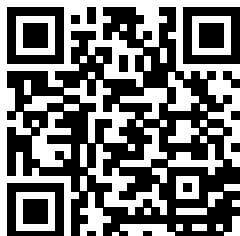
The barrier can also be used as a high performance radon membrane and/or damp proof membrane.

The product is not intended for use where there is a risk of hydrostatic pressure.

System components

- VisqueenPro Double Sided Jointing Tape, 50mm x 10m
- Visqueen Gas Resistant Foil Lap Tape, 75mm x 50m
- Visqueen GR Lap Tape, 150mm x 10m
- Visqueen Ultimate Top Hat Units
- Visqueen Preformed Units
- VisqueenPro Detailing Strip, 300mm x 10m, 500mm x 10m
- Visqueen TreadGUARD 300, 2m x 75m
- Visqueen TreadGUARD 1500, 1m x 2m

Find your local stockist



Professional Indemnity Design
Full Design Liability for Structural Waterproofing
and Gas Protection

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PROFESSIONAL SERVICES

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www.visqueen.com or call us on +44 (0) 333 202 6800



Visqueen Gas Barrier

Storage and handling

Visqueen Gas Barrier should be stored horizontally, under cover in its original packaging.

Care should be taken when handling the product in line with current manual handling regulations.

Preparation

Visqueen Gas Barrier should be installed on a smooth continuous surface e.g. grouted beam and block floor, a compacted blinding layer e.g. 50mm thick sand blinding, or smooth concrete blinding. The substrate should be free from irregularities such as voids or protrusions.

The barrier can be cut with a sharp retractable safety knife or robust scissors.

When installing the membrane in demanding site conditions, use Visqueen GR Lap Tape in place of Visqueen Gas Resistant Foil Lap Tape.

Installation

Visqueen Gas Barrier should be loose laid on the substrate with the blue side up so as to avoid sunlight glare.

The barrier should be clean and dry at the time of jointing. It should be overlapped by at least 150mm, bonded with Visqueen Pro Double Sided Jointing Tape and sealed with Visqueen Gas Resistant Foil Lap Tape.

Alternatively lap joints can be heat welded to achieve an effective seal. Welded lap joints can be less than 150mm provided the joint integrity is not compromised.

Airtight seals should be formed around all service entry points. Visqueen Preformed Top Hat Units should be used for sealing service entry pipes. The base of the top hat and the upstand should be bonded using Visqueen Pro Double Sided Jointing Tape and sealed with Visqueen Gas Resistant Foil Lap Tape. The upstand should be secured with the supplied jubilee clip.

Forming an effective barrier to gases may give rise to complex three-dimensional detailing where, it is recommended Visqueen Preformed Units are used e.g. corners. Alternatively Visqueen Pro Detailing Strip can be used to seal awkward junctions.

If the barrier is punctured or perforated a patch of the same material should be lapped at least 150mm beyond the limits of the puncture and bonded with Visqueen Pro Double Sided Jointing Tape and sealed with Visqueen Gas Resistant Foil Lap Tape. Alternatively a patch can be formed using Visqueen Pro Detailing Strip and lapped at least 150mm beyond the extents of the puncture.

Long periods of exposure to ultraviolet light will reduce the effectiveness of the membrane. The membrane should be covered by a protective layer immediately after installation to prevent damage from following trades, ultraviolet light, etc. Care should be taken to ensure that the membrane is not punctured, stretched or displaced when applying a screed or final floor covering. A minimum thickness of 50mm screed is recommended. When reinforced concrete is to be laid over the barrier the wire reinforcements and spacers must be prevented from puncturing the barrier. Where there is a high risk of potential damage, the barrier should be covered with Visqueen TreadGuard protection, screed, or other approved protection material before positioning the reinforcement.

Usable temperature range

It is recommended that Visqueen Gas Barrier and all associated system components should not be installed below 5°C.

Additional information

When used in accordance BS8485:2015 + A1:2019 a subfloor ventilation system or pressure relief maybe required
Where hydrocarbon or VOC contamination is present use Visqueen Ultimate VOC or HC Blok gas protection systems
To assist build sequencing, Visqueen GR DPC is available for gas protection through the wall constructions
For suspended beam and block floor detailing see GB-01
Visqueen Preformed Top Hat Units should be used at service pipe penetrations see GB-51
For internal and external corners Visqueen Ultimate Preformed Units should be used see PFU-553
To seal around steel columns use Visqueen Pro Detailing Strip see GB-52
For additional detailing information, contact Visqueen Technical Services +44 (0) 333 202 6800

The information in this datasheet was correct at the time of publication. It is the user's responsibility to obtain the latest version of the datasheet as it is updated on a regular basis. The information contained in the latest datasheet supersedes all previously published editions.

Visqueen Gas Barrier

Property	Test method	Units	Compliance criteria	Result
Dimensions	EN 1848-2	m		2 x 50
Overall thickness including scrim mesh	EN 1849-2	mm	+/-10%	0.52
Mass	EN 1849-2	g/m ²	-0%/+5%	400
Tensile strength - MD	EN 12311	N	MLV	350
Tensile strength - CD	EN 12311	N	MLV	350
Tensile elongation - MD	EN 12311	%	MLV	20
Tensile elongation - CD	EN 12311	%	MLV	21
Joint strength	EN 12317-2	N	MLV	332
Watertightness 2kPa	EN 1928	-	Pass/Fail	Pass
Resistance to impact	EN 12691	mm	MDV	150
Dart impact	BS 2782	g	MDV	731
Low temperature flexibility	EN 495-5	°C	MDV	-40
Durability against ageing	EN 1296 and EN 1928	-	Pass/Fail	Pass
Durability chemical resistance	EN 1847	-	Pass/Fail	Pass
Resistance to tearing (nail shank) CD	EN 12310-1	N	MDV	358
Resistance to tearing (nail shank) MD	EN 12310-1	N	MDV	368
Resistance to static loading	EN 12730	kg	MLV	20
Water vapour transmission - resistance	EN 1931	MNs/g	MDV	7000
Water vapour transmission - permeability	EN 1931	g/m ² /d	MDV	0.03
Visible defects	EN 1850 -2	-	Pass/Fail	Pass
Reaction to fire	EN 13501-1	Class	MDV	F
BS 8485:2015 + A1:2019 testing requirements				
Mass	EN 1849-2	g/m ²	Average >370	400
Methane permeability	ISO 15105-1	mls/m ² /d/atm	Pass/Fail	<0.15
Puncture CBR	BS EN ISO 12236	N	MDV	1114
Tensiles yield strength MD	ASTM D4885-01	kN/m	MDV	12.5
Tensiles yield strength CD	ASTM D4885-02	kN/m	MDV	7.3
Resistance to static loading	EN 12730	kg	>MLV	20
Yield elongation CD	ASTM D4885-04	%	MDV	19
Tear resistance - trouser method A - MD	BS ISO 34-1	kN/m	MDV	48.2
Tear resistance - trouser method A - CD	BS ISO 34-1	kN/m	MDV	44.8
Tear resistance - angle method B - MD	BS ISO 34-1	N	MDV	53.5
Tear resistance - angle method B - CD	BS ISO 34-1	N	MDV	60.6

Health and safety information

Refer to the Visqueen Gas Barrier material safety datasheet (MSDS).

Visqueen Gas Barrier

About Visqueen

The Visqueen name has long been recognised as one of the leading manufacturers of high quality advanced membrane technologies and design based solutions by specifiers, distributors, builders merchants and contractors throughout the UK and Europe.

For further guidance on the Visqueen services shown below, please refer to the relevant section of the Visqueen website (www.visqueen.com) or contact Visqueen Technical Services on +44 (0) 333 202 6800 or enquiries@visqueen.com

Complete Range, Complete Solution



Structural
Waterproofing



Gas
Protection



Damp Proof
Membrane



Tapes



Damp Proof
Course



Stormwater



Vapour
Control

Visqueen Technical Support

Visqueen combine an extensive product portfolio with industry leading levels of service and support which includes guidance over the phone, bespoke CAD drawings to help with complex detailing, electronic NBS specifications and access to a dedicated team of highly knowledgeable and experienced field based Technical Support Managers.

Visqueen Technical Support is available to all our customers including architects, specifiers, distributors, builders merchants, contractors and end users. All of our technical team have been awarded the industry recognised qualification Certificated Surveyor in Structural Waterproofing (CSSW).

Visqueen CPD Seminars

The Visqueen Continuing Professional Development (CPD) Seminars provide up-to-date information on changes within Building Regulations/Building Standards and nationally recognised industry guidance affecting damp proofing, water vapour control, hazardous ground gas protection and below ground structural waterproofing.

The one hour seminars have been produced for design specialists within the construction sector and are delivered by our team of Technical Support Managers.

Visqueen PI designs and special projects

From initial design to the completed project, Visqueen are with you every step of the way. Whether it be hazardous ground gas protection and/or below ground waterproofing protection employing barrier, structurally integral or drained systems, Visqueen can offer professional indemnity (PI) insurance for bespoke Visqueen design solutions.

Visqueen Technical Support Managers work with all stakeholders to provide cost effective Visqueen solutions offering complete peace of mind throughout the construction phase and beyond.

Visqueen Training Academy

Based at our manufacturing facility in Derbyshire, the Visqueen Training Academy is available to support Visqueen customers throughout the UK by providing a wide range of both theory and practical skills related training.

Courses include one day product awareness training for our distributors and builders merchants to help them in their day-to-day jobs, through to intensive three day courses giving detailed hands-on training in the practical skills required for safe and robust product installation.

Record sheet to be completed for each property and inspected by a NX Consulting engineer

Job number & date	NX418: 15.02.2023
Site name / location	Land at Rectory LANE, EAST LANCASHIRE PAPER MILL ISLAND SITE, RADCLIFFE
Plot number/s	Apartment Block Apt 1 to Apt 20
Compiled by:	MN

Sub-floor & Ventilation

Notes/recommendations (see guide notes)

State void former type and whether present	N/A
State void space & height if present	150mm – Client confirmed present
State nature of subgrade	Sub floor void over subgrade
State if ventilation pipe present and size/spacing	Telescopic vents on the elevations. 2m to 3m centres
State if external wall airbricks constructed and	Yes, see above
State if internal sleeper walls & if pipework vents present	Client confirmed present
State if any vents/ trenches / ducts	None.

Membrane Details

Notes/recommendations

State membrane manufacturer & specification	Visqueen gas barrier.
State extent of coverage	Full.
State nature of slab/sub-base below membrane	N/A.
State slab/membrane condition	Good, no visible tears or punctures.
State if laps and joints are as per manufacturers detail	Yes. Heat sealed to an excellent standard.
damp-proof course	N/A
service entries and seals	Top hats used, sealed in a good order.
cavity Inspection	Sealed with insulation across all elevations.

Guide notes:

void former details	proprietary type - manufacturer and specification, in accordance with design?, installed properly without damage?
Void depth details	height of proprietary former or constructed ventilation space below suspended floor - note any debris on void / obstructions to air flow, note formation surface soil type (e.g. crushed concrete/brick), any evidence of flooding
Sub-grade	gravel type, if used (limestone / granite etc.) and any specification (e.g. 6F2), typical particle dimensions (mm), apparent fines content (low/high), compaction (loose/dense), waterlogging / contamination by clay, organic matter, other debris. Take photographs of stockpile close up shot of stone with tape measure. Alternatively check details on delivery tickets for stone. Take photographs of adjacent plots if at this stage of construction. Check depth of stone conforms to at least 300mm if visible.
Ventilation spacing	diameter in mm; material type (e.g. PVC); slotted or perforated; positioning and spacing / separation and jointing as on design drawing - if not sketch arrangement - do pipes connect with external (telescopic / swan-neck) vents? Take photographs of vents on external walls for each plot. (May be possible to photograph other plots on site which are at stage of installing vents. Will be useful for these plots later on).
airbricks	check numbers, size and positions as design drawing (if not shown, make sketch; check for blockage, e.g. by mortar, or soil / pavings etc.
internal sleeper walls	check for ventilation holes - e.g. honeycombe brickwork or pipe crossings - note size, spacing and location - in accordance with design?
Vents, ducts/ trenches	check whether located and constructed in accordance with design drawings; if open-topped gravel, note gravel type and presence of fines / contamination; if pipe or other vents - check positions and construction for functionality and absence of blockages - vents may be built over
Membrane details	note manufacturer and product specification, including batch / roll numbers if present - in accordance with specification? Check stock storage arrangements - protected from dirt and damage?
Coverage	if membrane is incomplete, further inspection will be required - note areas completed / incomplete - is membrane fully visible or have internal walls been constructed over membrane / screed placed?
Underside of membrane	Where necessary , for example, when using a granular blanket as a ventilation layer, check the underside of the membrane has adequate protection e.g. minimum 50mm no fines concrete blinding layer or appropriate geo-textile (see also below)

11	slab/membrane condition	record presence of debris / rough surfaces, in particular sharp projections, below or above membrane; record locations of all punctures or repairs, note arrangements to protect membrane surface from traffic / tools and equipment / materials, and temporary weighting down of membrane, e.g. use of boards - record evidence of footprints / tracks on membrane surface, creases or water/wind damage. Take photographs of each plot inspected.
12	laps and joints	check the all joints are lapped and sealed in accordance with manufacturer's requirements / specification, particularly where creases/folds are present (usually minimum 150mm laps with double-sided tape between sheets, and single-sided tape on top surface; note size of sheets and frequency of edge seals). Take photographs of jointing for each plot.
13	damp-proof course	record DPC manufacturer and product code - usually integrated with the membrane; measure the DPC projection from external wall in mm; check laps and seals between membrane and DPC - note any potential stress points and tension between the two; check for damage to DPC
14	service entries and seals	note number, position and diameter of service entries - check top hat seal arrangements in accordance with design / specification (laps and seals between top hat and floor membrane, pipe upstand is usually a minimum 150mm) check , with jubilee clips to secure top hat seal to pipe - note presence of clips and tightness of connections. Take photographs for all plots inspected.
15	cavity inspection	check gas membrane or gas resistant dpc is taken across cavity. Check for rips across cavity. Check for jointing detail of gas resistant dpc or membrane across cavity to main membrane. Take photographs for all plots inspected.

Non - Conformance Record			Repair Record			Photo Reference	
Non - Conformance Reference (NC)	Type of Non - Conformance	Description of Non - Conformance	Repair Type	Pass	Repairs	NC	
NC1	Lapping tape	Tape used as lap on a joint	Patch	✓	Repaired on site	NC1	✓
Generally, an excellent level of workmanship demonstrated.							



PLATE 1: Apt 1 to 20 with Full Visqueen Barrier Coverage



PLATE 2: Apt 1 to 20 with Full Visqueen Barrier Coverage



PLATE 3: NC1 Patch Repair



PLATE 4: Service Entry Detail Example



PLATE 5: Membrane Coverage and internal Wall lapping



PLATE 6: Visqueen Product

BEESELEY & FILDES LTD
 Builders, Plumbers, Roofing & Timber Merchants
 Head Office:
 Wilson Road, Hutton, Macclesfield, Cheshire, L26 6AK
 Tel: 0161 480 0100 Fax: 0161 481 4976
 Web: www.beeesleyandfildes.co.uk
 Email: creditcontrol@beeesleyandfildes.co.uk

Delivery Note

Branch:
 Watlington Depot
 Watlington
 M28 3LA
 Tel: 01491 711 1204

Invoice Address:
 Caldwell Construction Ltd
 Great Placis
 Access Via Rectory Lane Only
 Radcliffe M28 2PS S/G 908 87535 517233

Delivery Address:
 Caldwell Construction Ltd
 Great Placis
 Access Via Rectory Lane Only
 Radcliffe M28 2PS S/G 908 87535 517233

Order processed by:
 Order No.
 Order Date
 Customer
 Your Ref
 Delivery
 Sale Type
 Our Ref

Special Instructions
 R44 ACCESS VIA RECTORY LANE ONLY

Notes

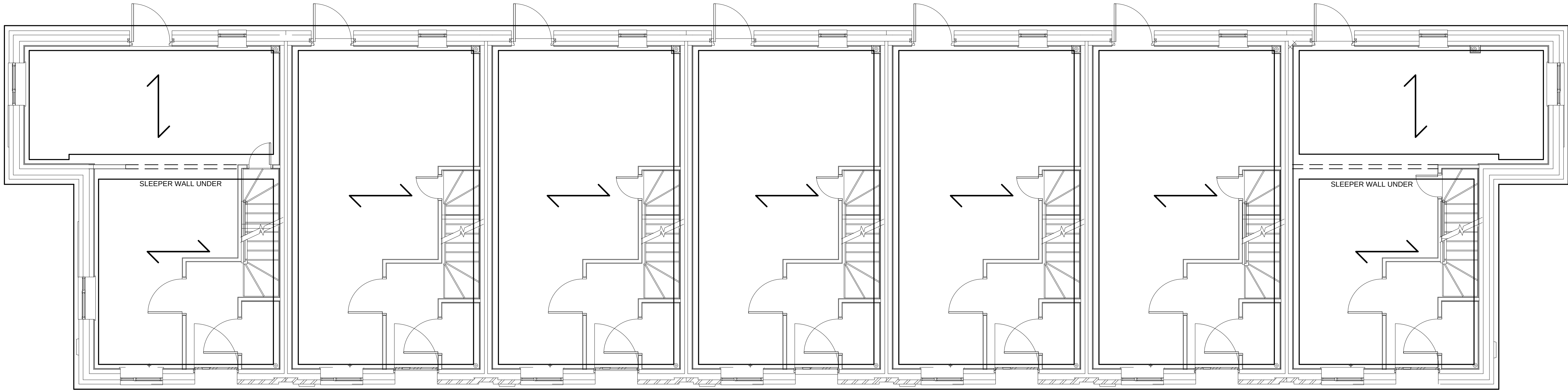
Item	Description	Qty	Weight
1	3503V13135 - Visqueen Mediane Butyl 2.0M x 50M Blue Lge	0.00	0.000
2	3503V15150 - 135MM DIA GX GEOMEMB QAS TOP HAT ING CLIP REF R5008703	12.00	0.000
3	3503V15110 - 50mm x 10M Visqueen Double Sided Butyl Tape Ref R5000943	8.00	0.000
4	3503V15163 - Visqueen GR Detailing Strip 300mm x 40M Ref R5051393	8.00	0.000

Delivered 8/3/23

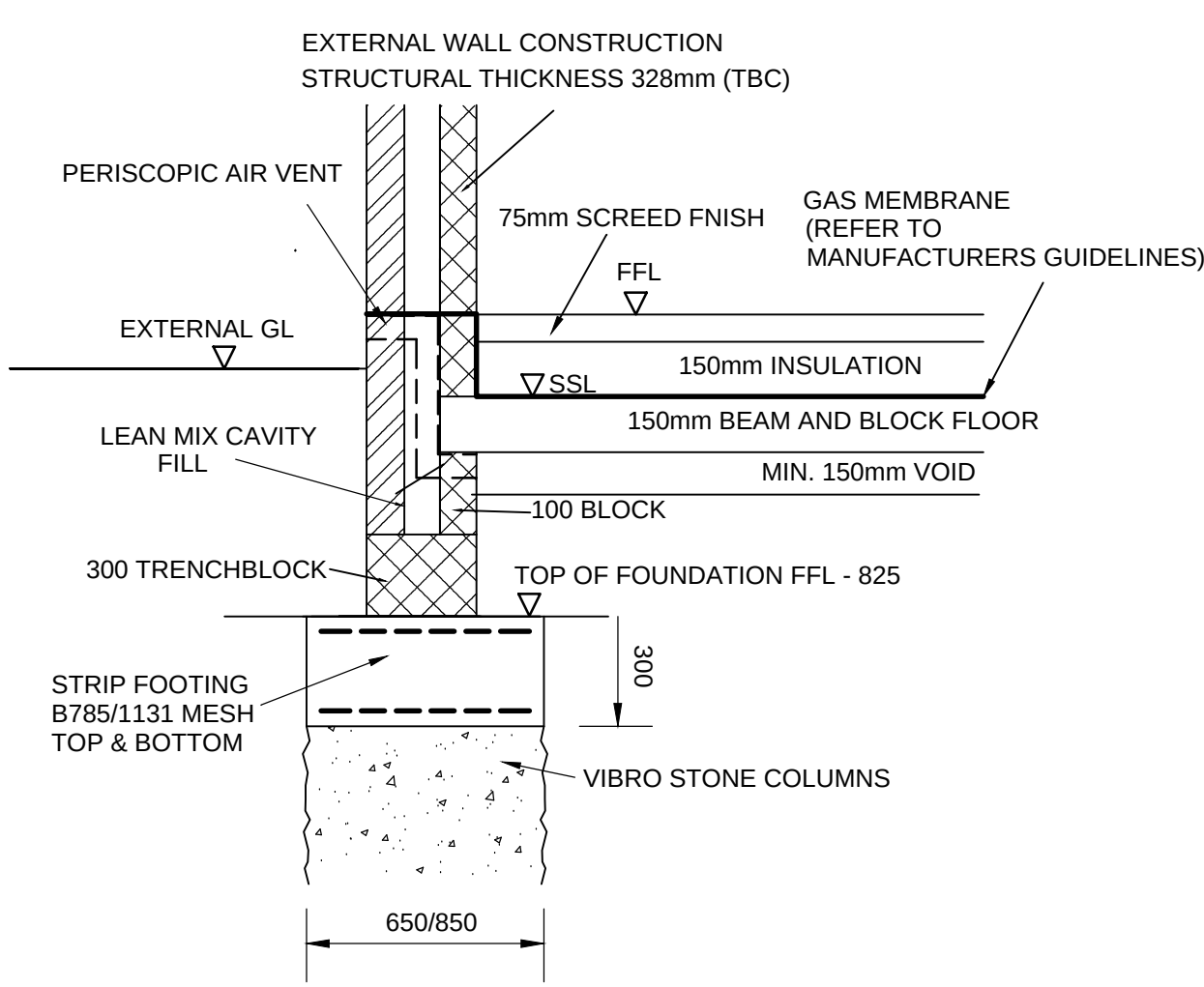
PLATE 7: Product Delivery Note



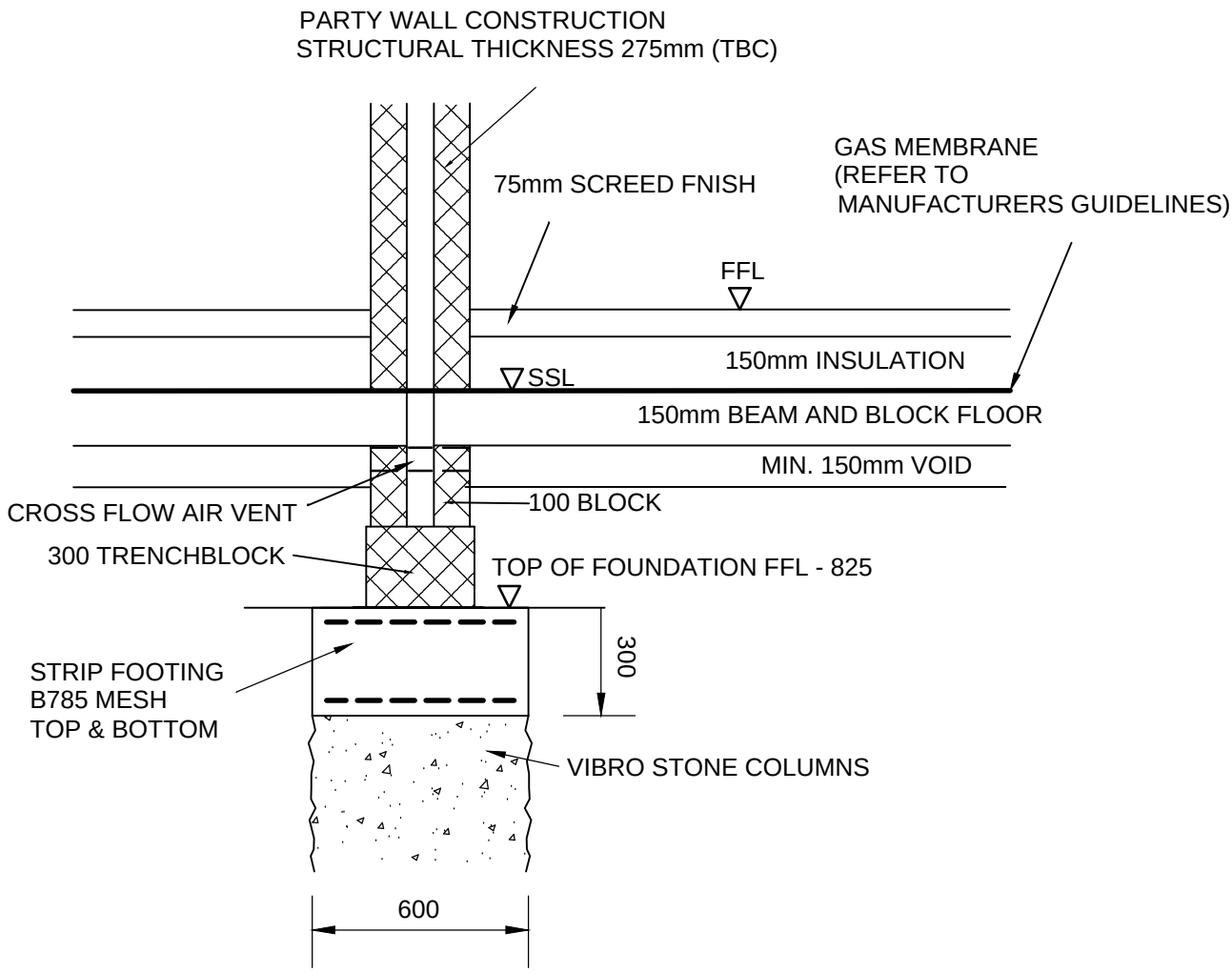
PLATE 8: Subfloor Venting on 2m to 3m centres



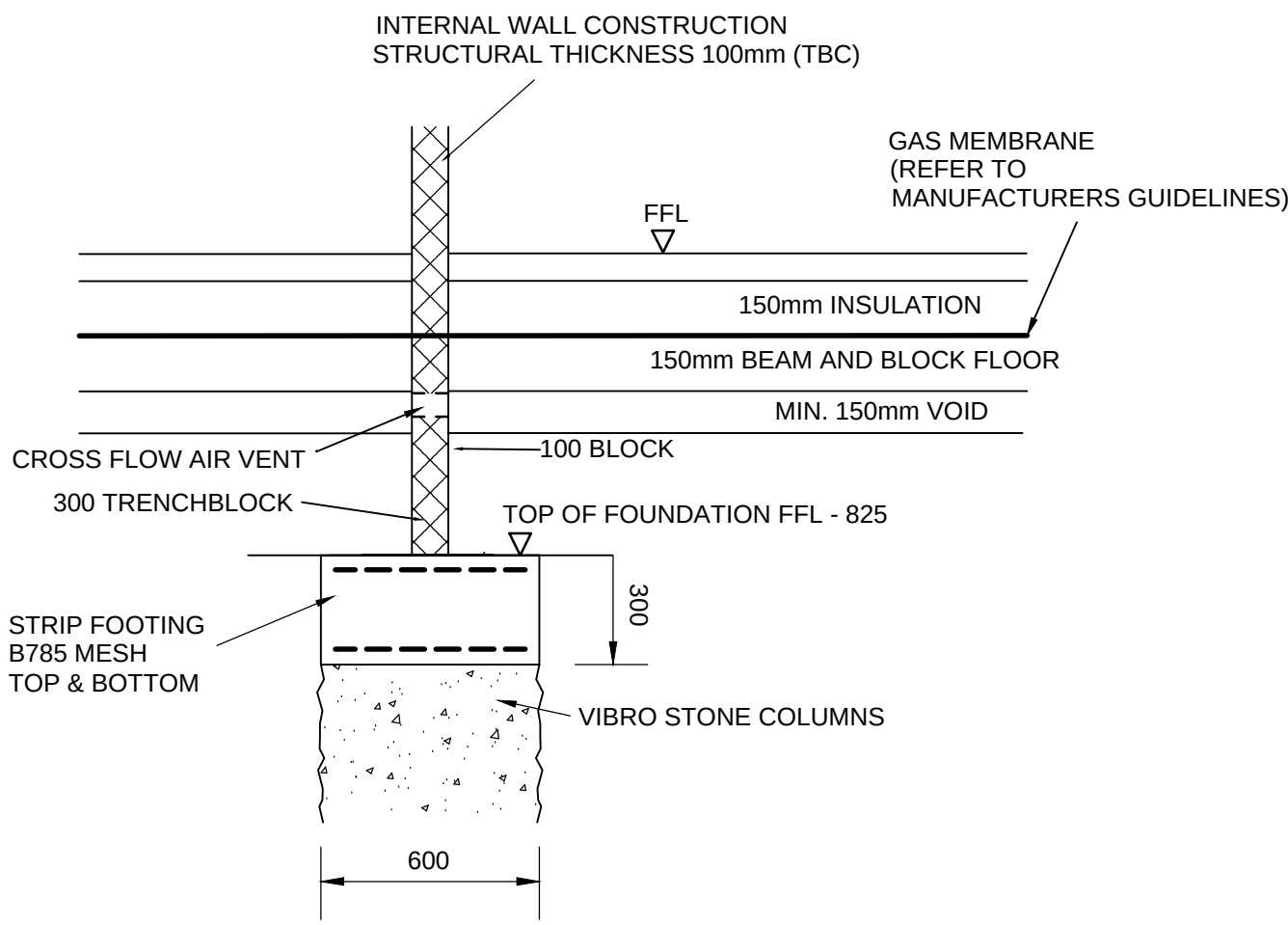
FOUNDATION PLAN SHOWING GROUND FLOOR SPANS OVER



TYPICAL VIBRO FOUNDATION PERIMETER WALL DETAIL



TYPICAL VIBRO FOUNDATION PARTY WALL DETAIL



TYPICAL VIBRO FOUNDATION INTERIOR WALL DETAIL

BEAM AND BLOCK FLOOR
DESIGN LOADINGS
SUPERIMPOSED:
DOMESTIC 1.5kN/m²
PARTITIONS 1.0kN/m²

GAS MEMBRANE
A GAS MEMBRANE IS REQUIRED TO MITIGATE THE FOLLOWING FLOWS & CONCENTRATIONS:
RADON NO
METHANE NO
CARBON DIOXIDE CS2

- NOTES
- THIS DRAWING TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECT'S, ENGINEER'S AND SPECIALIST'S DRAWINGS AND SPECIFICATIONS.
 - WORK TO BE CARRIED OUT IN ACCORDANCE WITH CURRENT GOOD PRACTICE, BUILDING REGULATIONS AND SUBSEQUENT AMENDMENTS, THE PROJECT SPECIFICATION, RELEVANT BRITISH STANDARDS AND CODES OF PRACTICE. MATERIALS AND COMPONENTS TO BE SUITABLE FOR THEIR INTENDED USE.
 - FOR SETTING OUT REFER TO ARCHITECTS DRAWINGS.
 - SUB-STRUCTURE BLOCKWORK TO BE A MIN. 7N/mm² STRENGTH
 - BELOW DPC MORTAR DESIGNATION M6(ii), ABOVE DPC M4(iii).
 - DPC TYPE AND POSITION TBC BY ARCHITECT
 - 2No. SUB-FLOOR VENTS PER ELEVATION
 - CONCRETE TO FOUNDATIONS TO BE SULPHATE CLASS DS-1.
 - WHERE APPLICABLE COMPRESSIVE STRENGTH OF ABOVE GROUND MASONRY TO BE AS FOLLOWS:-
 - EXTERNAL BRICKWORK 30N/mm²
 - INTERNAL/EXTERNAL BLOCKWORK 7.2N/mm²

MASONRY SPECIFICATION
EXTERNAL WALLS
102.5mm BRICK (30N, CLASS M4(iii) MORTAR)
125mm CAVITY
100mm BLOCK (7.3N, CLASS M4(iii) MORTAR)
PARTY WALL
100mm BLOCK (7.3N, CLASS M4(iii) MORTAR)
75mm CAVITY
100mm BLOCK (7.3N, CLASS M4(iii) MORTAR)

FOUNDATIONS DESIGNED ON A BASIS OF A SAFE BEARING CAPACITY OF 150kN/m²

B	01/02/23	GAS MEMBRANE REPOSITIONED ON DETAIL FLOOR PLAN & FOUNDS REVISED INITIAL ISSUE FOR TENDER PURPOSES.
A	10/06/22	
-	08/11/21	
REV.	DATE	DESCRIPTION
CLIENT		
GREAT PLACES HOUSING GROUP AEW ARCHITECTS		
Carley Daines and Partners Limited Consulting Civil and Structural Engineers 11 Bridgewater Road Walkden Worsley Manchester M28 3JE Tel 0161 799 2720 Fax 0161 790 3474 E-mail mail@carleydaines.co.uk		
TITLE		
EAST LANCS PAPER MILL RADCLIFFE, MANCHESTER		
HOUSE FOUNDATIONS		
Drawn	M.HOLE	Checked D.MIDDLETON
Date	NOVEMBER 2021	Date NOVEMBER 2021
Scale	1:50 @ A1	
Drawing No.	21-B-12866/300	
		B

Visqueen Gas Barrier

Features and benefits

- BBA certified - third party accreditation
- Complies with BS 8485:2015 + A1:2019 - industry standard for methane and carbon dioxide protection
- Flexible - easy to detail and install on site
- Multi functional - also acts as a radon and damp proof membrane
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- Suitable for all Characteristic Gas Situation (CS) ground gas regimes
- Conforms to the specification requirements of NHBC Amber 1 and Amber 2 applications
- Conforms to the specification requirements of BR 211:2015
- CE Mark EN 13967:2017
- Quality Management System ISO 9001:2015
- Occupational Health and Safety System ISO 45001:2018
- Environmental Management System ISO 14001:2015

Usage

Visqueen Gas Barrier is suitable for use in all types of buildings to prevent the ingress of harmful levels of ground gases e.g. methane, carbon dioxide and radon.

The barrier can be positioned above or below a solid concrete ground floor slab or above a precast suspended segmental ground floor system, e.g. beam and block floor.

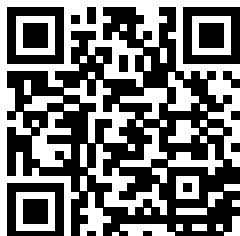
The barrier can also be used as a high performance radon membrane and/or damp proof membrane.

The product is not intended for use where there is a risk of hydrostatic pressure.

System components

- VisqueenPro Double Sided Jointing Tape, 50mm x 10m
- Visqueen Gas Resistant Foil Lap Tape, 75mm x 50m
- Visqueen GR Lap Tape, 150mm x 10m
- Visqueen Ultimate Top Hat Units
- Visqueen Preformed Units
- VisqueenPro Detailing Strip, 300mm x 10m, 500mm x 10m
- Visqueen TreadGUARD 300, 2m x 75m
- Visqueen TreadGUARD 1500, 1m x 2m

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Record sheet to be completed for each property and inspected by a NX Consulting engineer

Job number & date	NX418: 15.02.2023
Site name / location	Land at Rectory LANE, EAST LANCASHIRE PAPER MILL ISLAND SITE, RADCLIFFE
Plot number/s	1, 2, 3, 4, 5, 6 & 7
Compiled by:	MN

Sub-floor & Ventilation

Notes/recommendations (see guide notes)

State void former type and whether present	N/A
State void space & height if present	150mm – However, unable to verify. Photographs provided by client shows present
State nature of subgrade	Sub floor void. Photographs indicates subgrade
State if ventilation pipe present and size/spacing	Telescopic vents on the elevations. 2m to 3m centres
State if external wall airbricks constructed and	Yes, see above
State if internal sleeper walls & if pipework vents present	Photographs provided by client shows present
State if any vents/ trenches / ducts	None.

Membrane Details

Notes/recommendations

State membrane manufacturer & specification	Visqueen gas barrier.
State extent of coverage	Full.
State nature of slab/sub-base below membrane	N/A.
State slab/membrane condition	Good, no visible tears or punctures.
State if laps and joints are as per manufacturers detail	Yes, 75mm visible throughout. Heat sealed to an excellent standard.
damp-proof course	N/A
service entries and seals	Top hats used, sealed in a good order.
cavity Inspection	Sealed with insulation across all elevations.



PLATE 1: Plot 1 with Full Visqueen Barrier Coverage



PLATE 2: Plots 2, 3, 4 with Full Visqueen Barrier Coverage



PLATE 3: Plot 5 with Full Visqueen Barrier Coverage



PLATE 4: Plot 6 with Full Visqueen Barrier Coverage



PLATE 5: Plot 7 with Full Visqueen Barrier Coverage



PLATE 6: Visqueen Product

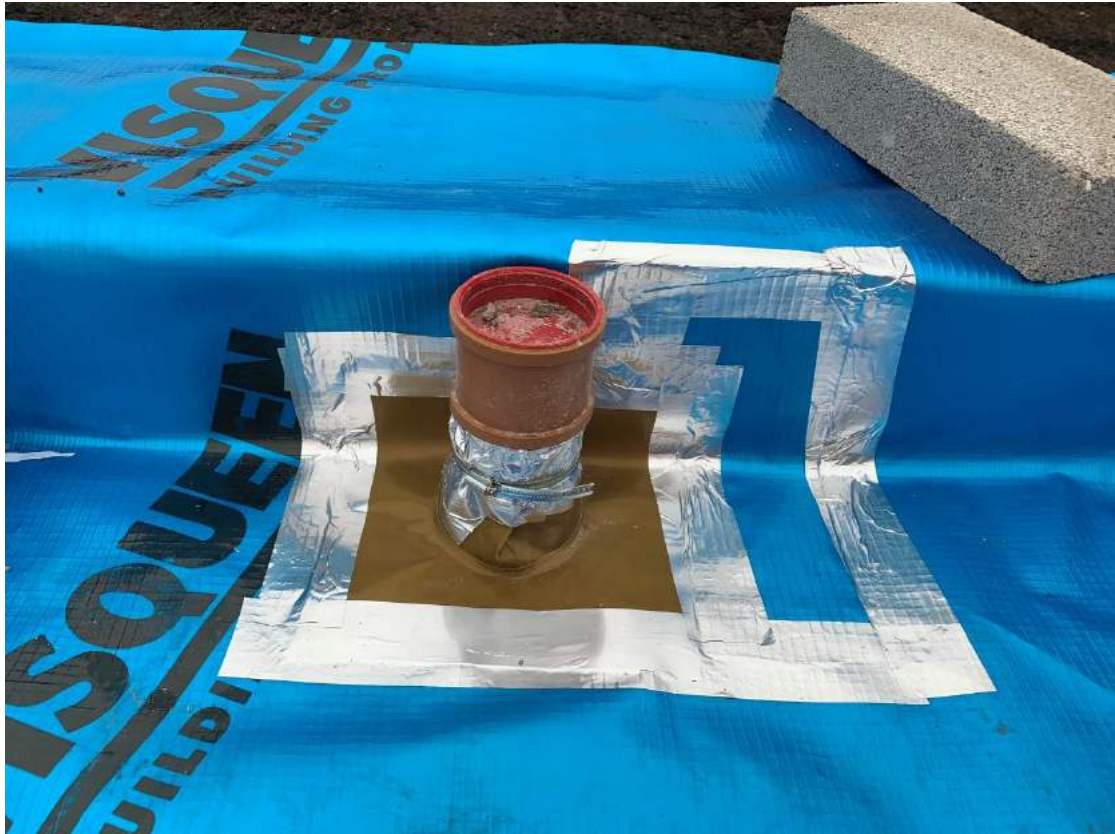


PLATE 7: Tophat Construction



PLATE 8: Subfloor Venting on 2m centres

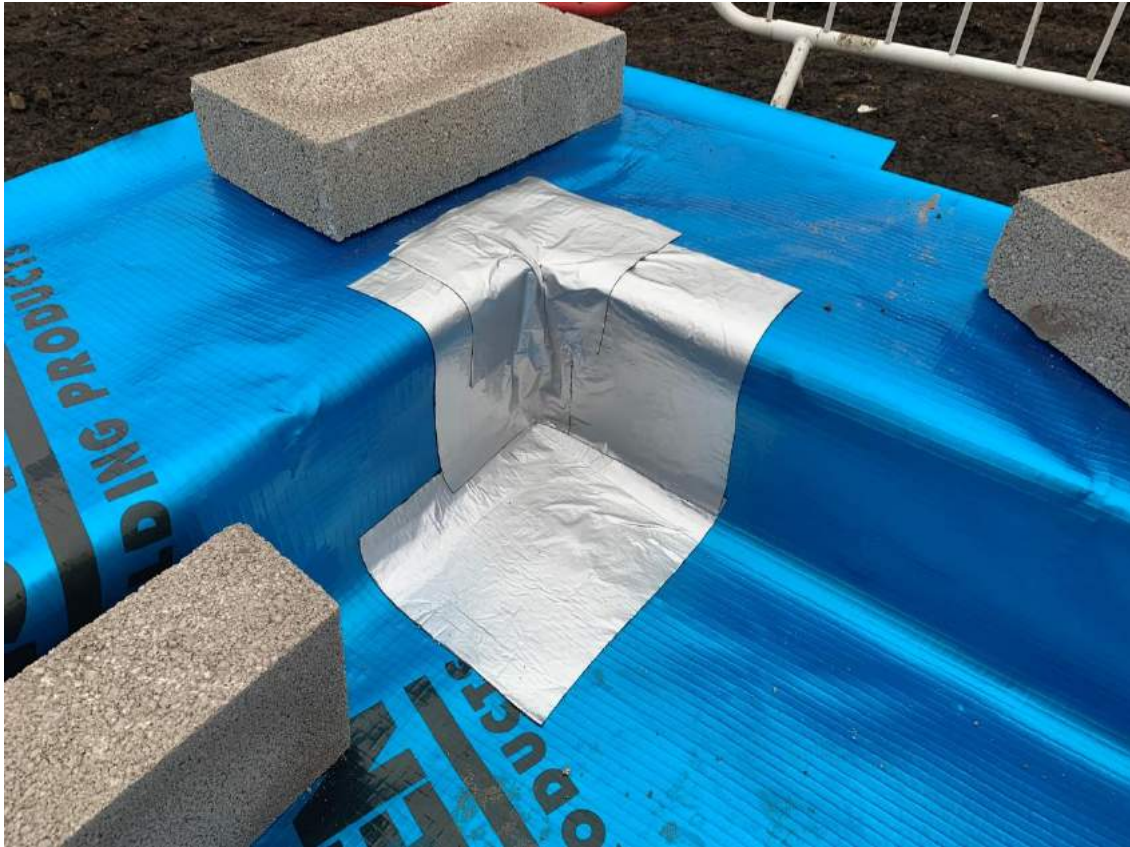


PLATE 9: Corner Detail

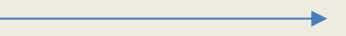
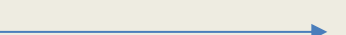


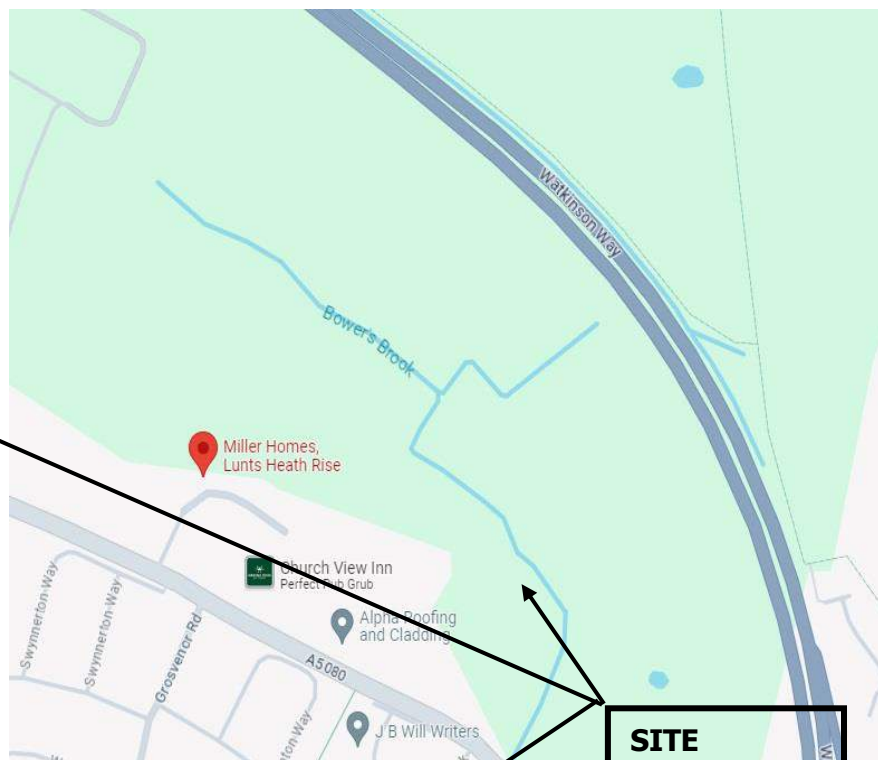
PLATE 10: Clear Cavity

Guide notes:

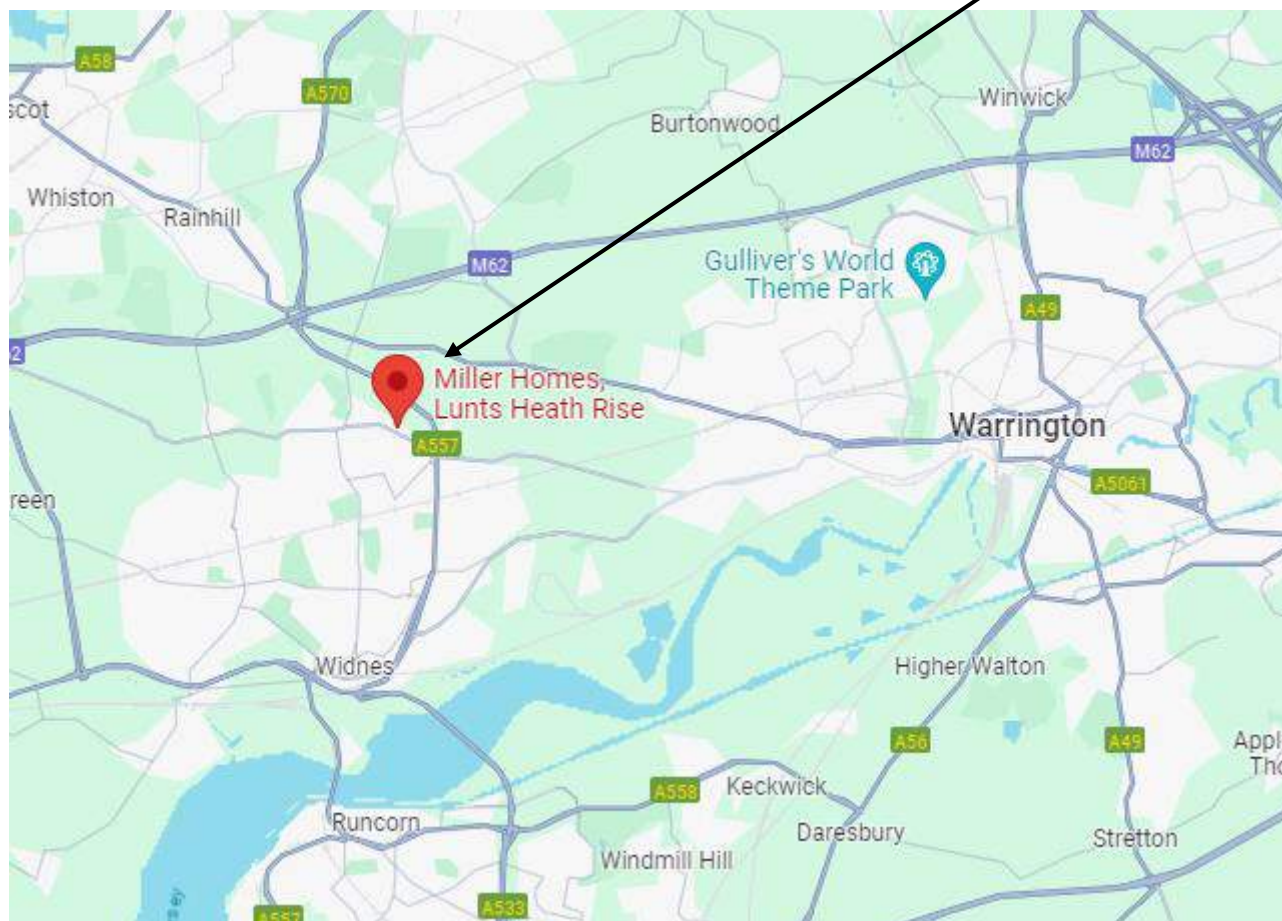
void former details	proprietary type - manufacturer and specification, in accordance with design?, installed properly without damage?
Void depth details	height of proprietary former or constructed ventilation space below suspended floor - note any debris on void / obstructions to air flow, note formation surface soil type (e.g. crushed concrete/brick), any evidence of flooding
Sub-grade	gravel type, if used (limestone / granite etc.) and any specification (e.g. 6F2), typical particle dimensions (mm), apparent fines content (low/high), compaction (loose/dense), waterlogging / contamination by clay, organic matter, other debris. Take photographs of stockpile close up shot of stone with tape measure. Alternatively check details on delivery tickets for stone. Take photographs of adjacent plots if at this stage of construction. Check depth of stone conforms to at least 300mm if visible.
Ventilation spacing	diameter in mm; material type (e.g. PVC); slotted or perforated; positioning and spacing / separation and jointing as on design drawing - if not sketch arrangement - do pipes connect with external (telescopic / swan-neck) vents? Take photographs of vents on external walls for each plot. (May be possible to photograph other plots on site which are at stage of installing vents. Will be useful for these plots later on).
airbricks	check numbers, size and positions as design drawing (if not shown, make sketch; check for blockage, e.g. by mortar, or soil / pavings etc.
internal sleeper walls	check for ventilation holes - e.g. honeycombe brickwork or pipe crossings - note size, spacing and location - in accordance with design?
Vents, ducts/ trenches	check whether located and constructed in accordance with design drawings; if open-topped gravel, note gravel type and presence of fines / contamination; if pipe or other vents - check positions and construction for functionality and absence of blockages - vents may be built over
Membrane details	note manufacturer and product specification, including batch / roll numbers if present - in accordance with specification? Check stock storage arrangements - protected from dirt and damage?
Coverage	if membrane is incomplete, further inspection will be required - note areas completed / incomplete - is membrane fully visible or have internal walls been constructed over membrane / screed placed?
Underside of membrane	Where necessary , for example, when using a granular blanket as a ventilation layer, check the underside of the membrane has adequate protection e.g. minimum 50mm no fines concrete blinding layer or appropriate geo-textile (see also below)

11	slab/membrane condition	record presence of debris / rough surfaces, in particular sharp projections, below or above membrane; record locations of all punctures or repairs, note arrangements to protect membrane surface from traffic / tools and equipment / materials, and temporary weighting down of membrane, e.g. use of boards - record evidence of footprints / tracks on membrane surface, creases or water/wind damage. Take photographs of each plot inspected.
12	laps and joints	check the all joints are lapped and sealed in accordance with manufacturer's requirements / specification, particularly where creases/folds are present (usually minimum 150mm laps with double-sided tape between sheets, and single-sided tape on top surface; note size of sheets and frequency of edge seals). Take photographs of jointing for each plot.
13	damp-proof course	record DPC manufacturer and product code - usually integrated with the membrane; measure the DPC projection from external wall in mm; check laps and seals between membrane and DPC - note any potential stress points and tension between the two; check for damage to DPC
14	service entries and seals	note number, position and diameter of service entries - check top hat seal arrangements in accordance with design / specification (laps and seals between top hat and floor membrane, pipe upstand is usually a minimum 150mm) check , with jubilee clips to secure top hat seal to pipe - note presence of clips and tightness of connections. Take photographs for all plots inspected.
15	cavity Inspection	check gas membrane or gas resistant dpc is taken across cavity. Check for rips across cavity. Check for jointing detail of gas resistant dpc or membrane across cavity to main membrane. Take photographs for all plots inspected.

Non - Conformance Record			Repair Record			Photo Reference	
Non - Conformance Reference (NC)	Type of Non - Conformance	Description of Non - Conformance	Repair Type	Pass	Repairs	NC	
Plot 3 - NC1	Lapping tape		Patch	✓	Repaired on site	NC1	✓
Plot 7 - NC1	Lapping tape		Patch	✓	Repaired on site	NC1	✓
Generally, an excellent level of workmanship demonstrated.							



**SITE
LOCATION**



Next Generation Engineering Consultancy Services

Tel: 0161 904 0187
E-mail: admin@nxconsulting.org.uk
Web: www.nxconsulting.org.uk

Ref: NX418 Figure 1

Project:

East Lancs Paper Mill

Title:

Stockpile Location Plan, Lunts Heth Rise,
Widnes



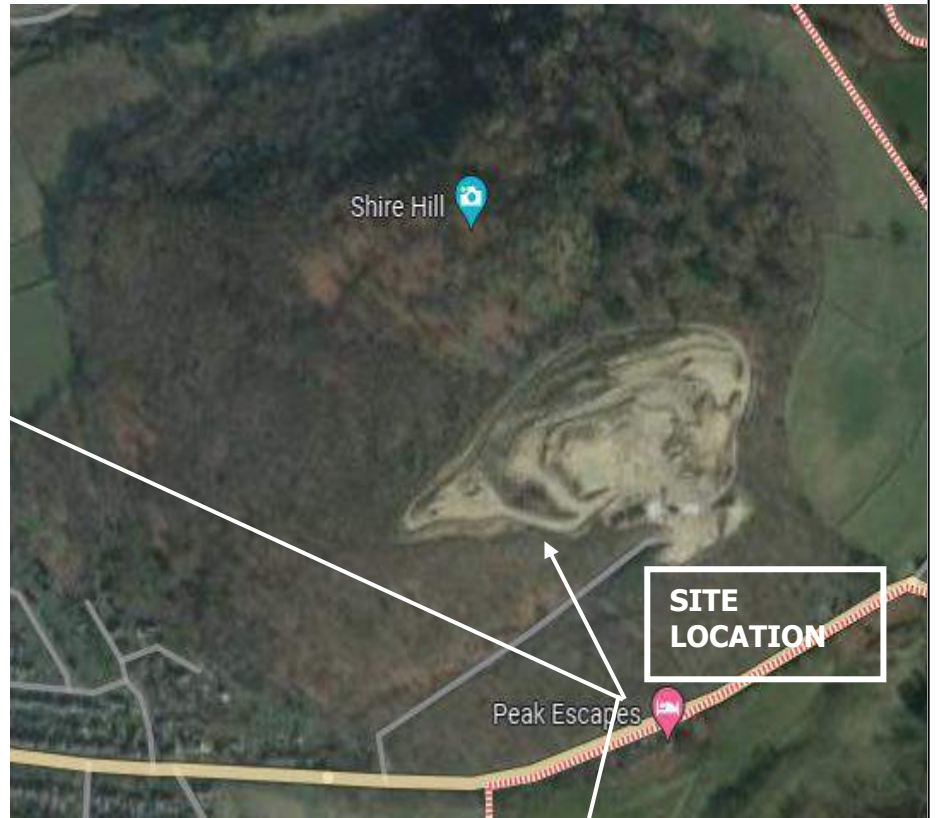
Plate 1 – Millar Homes Topsoil Source, Widnes. NX Inspection 1st March 2024



Plate 2 – Millar Homes Topsoil Source, Widnes. NX Inspection 1st March 2024



Plate 3 – Millar Homes Topsoil Source, Widnes. NX Inspection 1st March 2024



Next Generation Engineering Consultancy Services

Tel: 0161 904 0187
E-mail: admin@nxconsulting.org.uk
Web: www.nxconsulting.org.uk

Ref: NX418 Figure 1

Project:

East Lancs Paper Mill

Title:

Stockpile Location Plan, Shire Hill Quarry,
Glossop



Plate 1 – Marchington Quarry, Glossop. NX Inspection 20th March 2024



Plate 2 – Marchington Quarry, Glossop. NX Inspection 20th March 2024



Plate 3 – Marchington Quarry, Glossop. NX Inspection 20th March 2024



Plate 1 – Plot 1



Plate 2 – Plot 1 front garden



Plate 3 – Plot 1 front garden cover system GL to 0.60mbgl with 0.15m of topsoil.



Plate 4 – Plot 1 rear garden



Plate 5 – Plot 1 rear garden cover system GL to 0.60mbgl with 0.15m of topsoil.



Plate 6 – Plot 2



Plate 7 – Plot 2 front garden



Plate 8 – Plot 2 front garden cover system GL to 0.60mbgl with 0.15m of topsoil.



Plate 9 – Plot 2 rear garden



Plate 10 – Plot 2 rear garden cover system GL to 0.60mbgl with 0.15m of topsoil.



Plate 11 – Plot 3



Plate 12 – Plot 3 front garden



Plate 13 – Plot 3 front garden cover system GL to 0.60mbgl with 0.15m of topsoil.



Plate 14 – Plot 3 rear garden



Plate 15 – Plot 3 rear garden cover system GL to 0.60mbgl with 0.15m of topsoil.



Plate 16 – Plot 4



Plate 17 – Plot 4 front garden



Plate 18 – Plot 4 front garden cover system GL to 0.60mbgl with 0.15m of topsoil.



Plate 19 – Plot 4 rear garden



Plate 20 – Plot 4 rear garden cover system GL to 0.60mbgl with 0.15m of topsoil.



Plate 21 – Plot 5



Plate 22 – Plot 5 front garden



Plate 23 – Plot 5 front garden cover system GL to 0.60mbgl with 0.15m of topsoil.



Plate 24 – Plot 5 rear garden



Plate 25 – Plot 5 rear garden cover system GL to 0.60mbgl with 0.15m of topsoil.



Plate 26 – Plot 6



Plate 27 – Plot 6 rear & 7 Front Garden



Plate 28 – Plot 5 front garden cover system GL to 0.60mbgl with 0.15m of topsoil.



Plate 29 – Plot 7



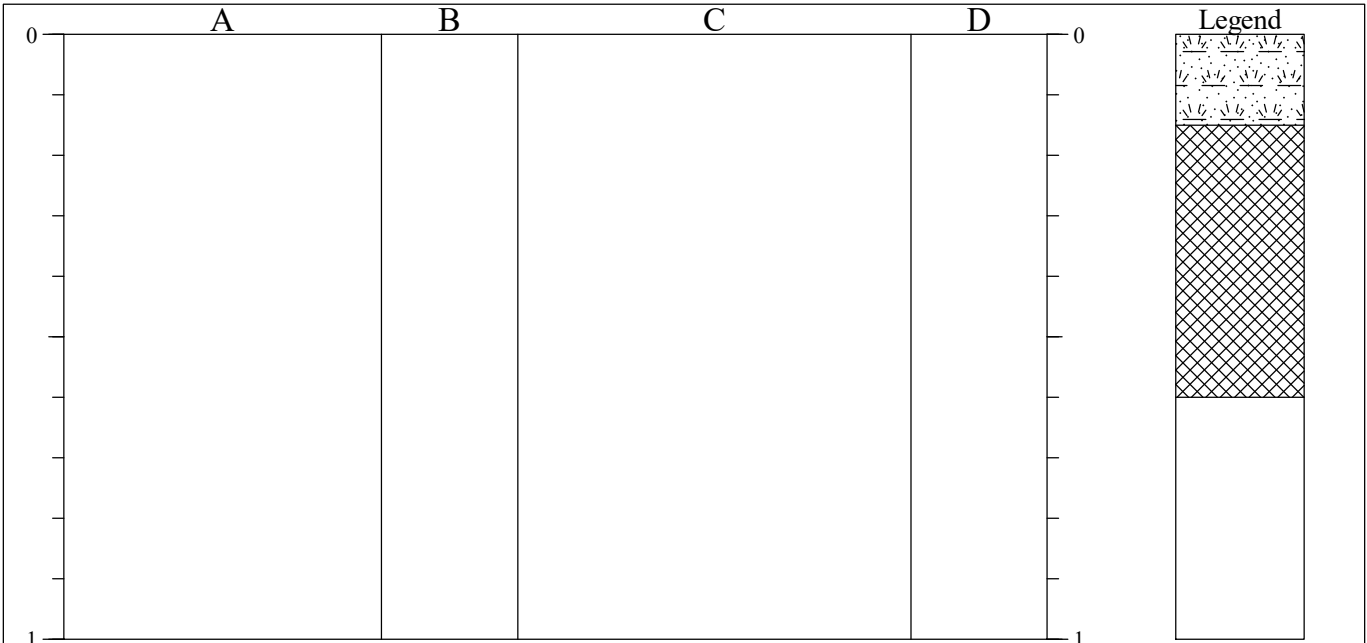
Plate 30 – Plot 6 & 7 Rear Gardens



Plate 31 – Plot 6 & 7 rear garden cover system GL to 0.60mbgl with 0.15m of topsoil.

TRIAL PIT LOG

Project East Lancs Paper Mill Island				TRIAL PIT No Plot 1 Front Garden	
Job No NX418	Date 05-04-24	Ground Level (m)	Co-Ordinates ()		
Contractor Taylor Drilling Ltd				Sheet 1 of 1	



STRATA				SAMPLES & TESTS		
Depth	No	DESCRIPTION	Depth	No	Remarks/Tests	
0.00-0.15		TOPSOIL: Dark grey/black slightly silty CLAY with rare gravel. Gravel is fine to coarse, angular to subrounded of mudstone and other mixed natural lithology. Rare rootlets.				
0.15-0.60		SUBSOIL: Dark grey slightly sandy silty CLAY with rare gravel. Gravel is fine to coarse, angular to subrounded of limestone, sandstone, mudstone and other mixed natural lithology.				
0.60		...trial pit ends at 0.6m bgl.				

Shoring/Support:
Stability:

0.2

A

D

B

0.2

C

N

GENERAL REMARKS

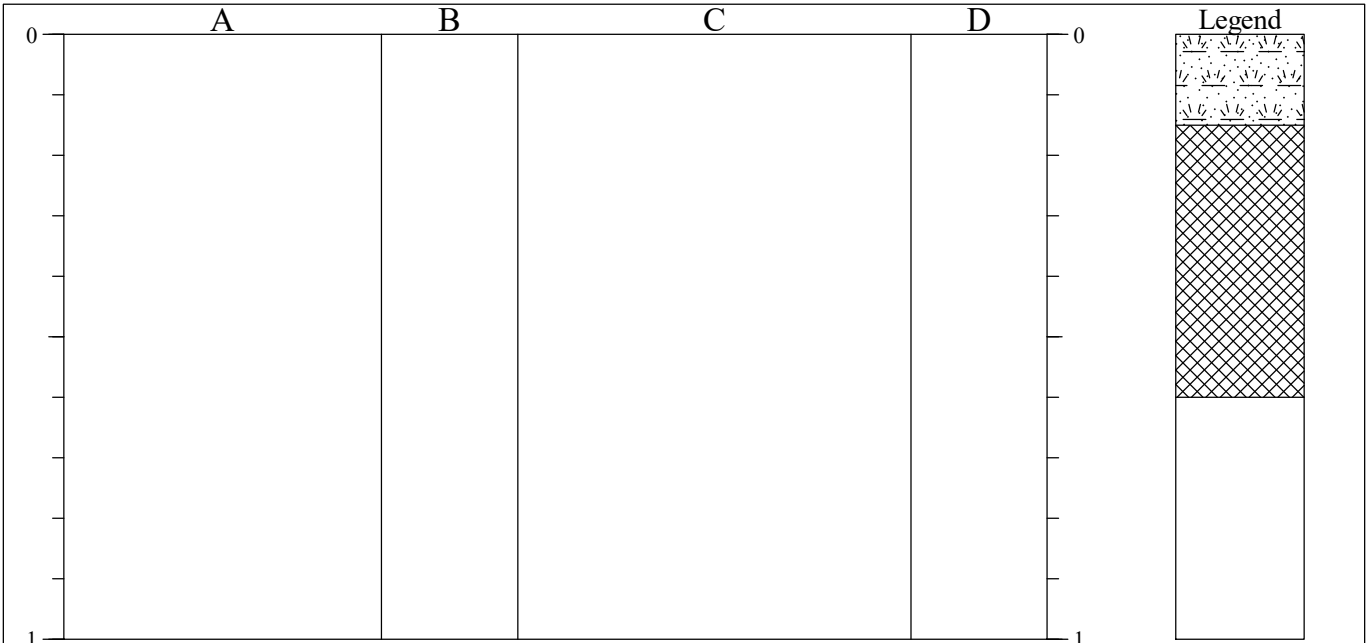
No visual or olfactory evidence of hydrocarbon or solvent contamination. No groundwater recorded.

All dimensions in metres Scale 1:12.5	Client Homes England	Method/ Plant Used Manually excavated	Logged By MT
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TRIAL PIT LOG

Project East Lancs Paper Mill Island				TRIAL PIT No Plot 1 Rear Garden	
Job No NX418	Date 05-04-24	Ground Level (m)	Co-Ordinates ()		
Contractor Taylor Drilling Ltd				Sheet 1 of 1	



STRATA				SAMPLES & TESTS		
Depth	No	DESCRIPTION	Depth	No	Remarks/Tests	
0.00-0.15		TOPSOIL: Dark grey/black slightly silty CLAY with rare gravel. Gravel is fine to coarse, angular to subrounded of mudstone and other mixed natural lithology. Rare rootlets.				
0.15-0.60		SUBSOIL: Dark grey slightly sandy silty CLAY with rare gravel. Gravel is fine to coarse, angular to subrounded of limestone, sandstone, mudstone and other mixed natural lithology. Very rare gravel of brick.				
0.60		...trial pit ends at 0.6m bgl.				

Shoring/Support:
Stability:

0.3

A

D

B

0.3

C

N

GENERAL REMARKS

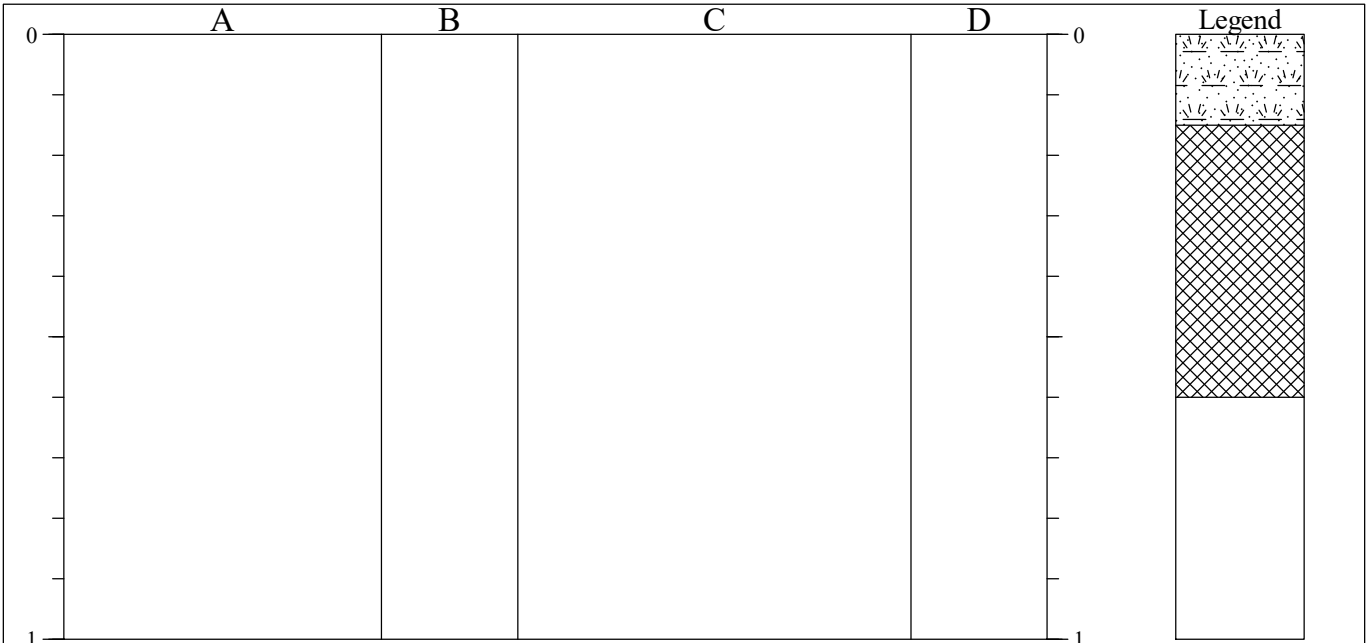
No visual or olfactory evidence of hydrocarbon or solvent contamination. No groundwater recorded.

All dimensions in metres Scale 1:12.5	Client Homes England	Method/ Plant Used Manually excavated	Logged By MT
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AGS3 UK TP NX418 RECTORY LANE, RADCLIFFE.GPJ AGS 3_1.GDT 10/4/24

TRIAL PIT LOG

Project East Lancs Paper Mill Island				TRIAL PIT No Plot 2 Front Garden	
Job No NX418	Date 05-04-24	Ground Level (m)	Co-Ordinates ()		
Contractor Taylor Drilling Ltd				Sheet 1 of 1	



STRATA				SAMPLES & TESTS		
Depth	No	DESCRIPTION	Depth	No	Remarks/Tests	
0.00-0.15		TOPSOIL: Dark grey/black slightly silty CLAY with rare gravel. Gravel is fine to coarse, angular to subrounded of mudstone and other mixed natural lithology. Rare rootlets.				
0.15-0.60		SUBSOIL: Dark grey slightly sandy silty CLAY with rare gravel. Gravel is fine to coarse, angular to subrounded of limestone, sandstone, mudstone and other mixed natural lithology.				
0.60		...trial pit ends at 0.6m bgl.				

Shoring/Support:
Stability:

The diagram shows a rectangular trial pit with dimensions A (width), B (depth), and C (length). A scale bar indicates 0.2 metres. A north arrow points upwards.

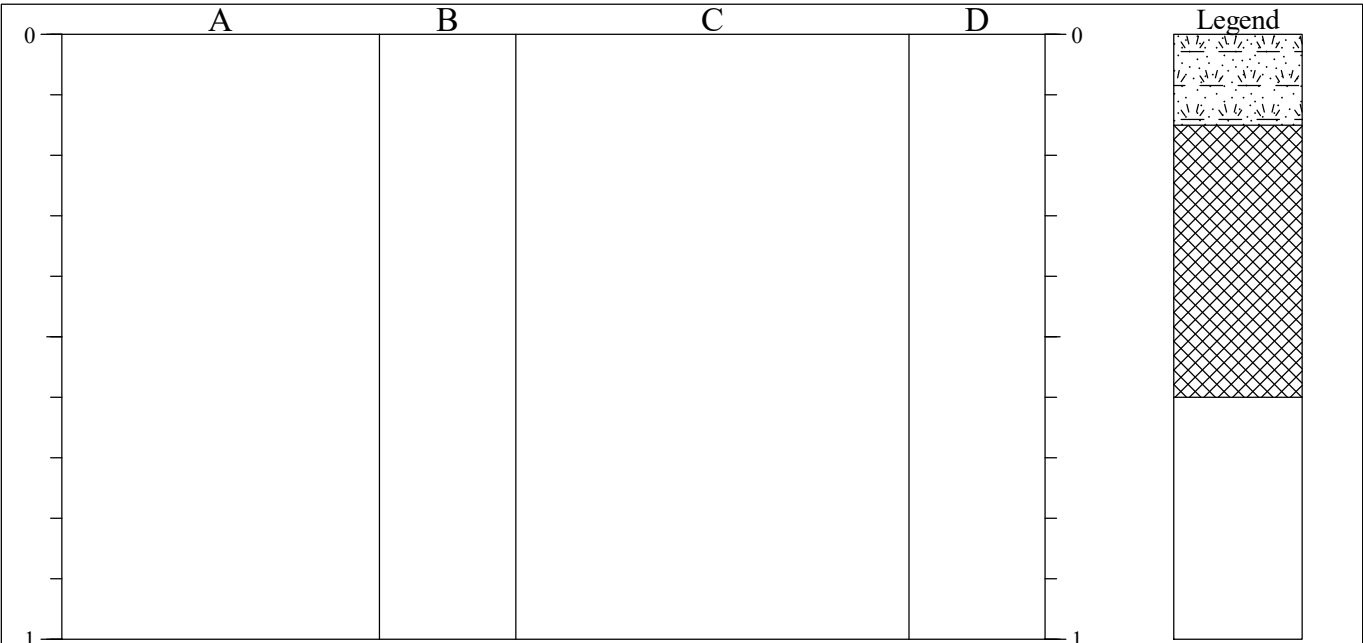
GENERAL REMARKS

No visual or olfactory evidence of hydrocarbon or solvent contamination. Groundwater recorded at 0.55mbgl.

All dimensions in metres Scale 1:12.5	Client Homes England	Method/ Plant Used Manually excavated	Logged By MT
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TRIAL PIT LOG

Project East Lancs Paper Mill Island				TRIAL PIT No Plot 2 Rear Garden	
Job No NX418	Date 05-04-24	Ground Level (m)	Co-Ordinates ()		
Contractor Taylor Drilling Ltd				Sheet 1 of 1	



STRATA				SAMPLES & TESTS		
Depth	No	DESCRIPTION	Depth	No	Remarks/Tests	
0.00-0.15		TOPSOIL: Dark grey/black slightly silty CLAY with rare gravel. Gravel is fine to coarse, angular to subrounded of mudstone and other mixed natural lithology. Rare rootlets.				
0.15-0.60		SUBSOIL: Dark grey slightly sandy silty CLAY with rare gravel. Gravel is fine to coarse, angular to subrounded of limestone, sandstone, mudstone and other mixed natural lithology.				
0.60		...trial pit ends at 0.6m bgl.				

Shoring/Support:
Stability:

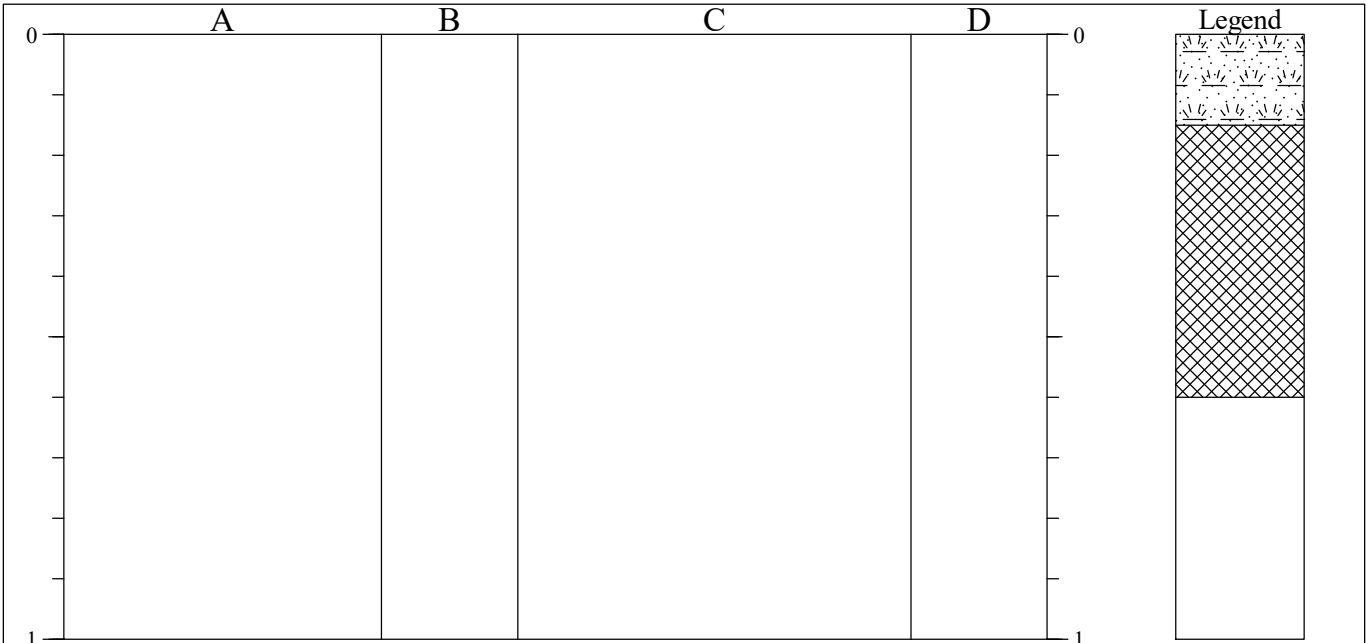
GENERAL REMARKS

No visual or olfactory evidence of hydrocarbon or solvent contamination. No groundwater recorded.

All dimensions in metres Scale 1:12.5	Client Homes England	Method/ Plant Used Manually excavated	Logged By MT
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TRIAL PIT LOG

Project East Lancs Paper Mill Island				TRIAL PIT No Plot 3 Front Garden	
Job No NX418	Date 05-04-24	Ground Level (m)	Co-Ordinates ()		
Contractor Taylor Drilling Ltd				Sheet 1 of 1	



STRATA				SAMPLES & TESTS		
Depth	No	DESCRIPTION	Depth	No	Remarks/Tests	
0.00-0.15		TOPSOIL: Dark grey/black slightly silty CLAY with rare gravel. Gravel is fine to coarse, angular to subrounded of mudstone and other mixed natural lithology. Rare rootlets.				
0.15-0.60		SUBSOIL: Dark grey slightly sandy silty CLAY with rare gravel. Gravel is fine to coarse, angular to subrounded of limestone, sandstone, mudstone and other mixed natural lithology.				
0.60		...trial pit ends at 0.6m bgl.				

Shoring/Support:
Stability:

0.2

A

D

B

0.2

C

N

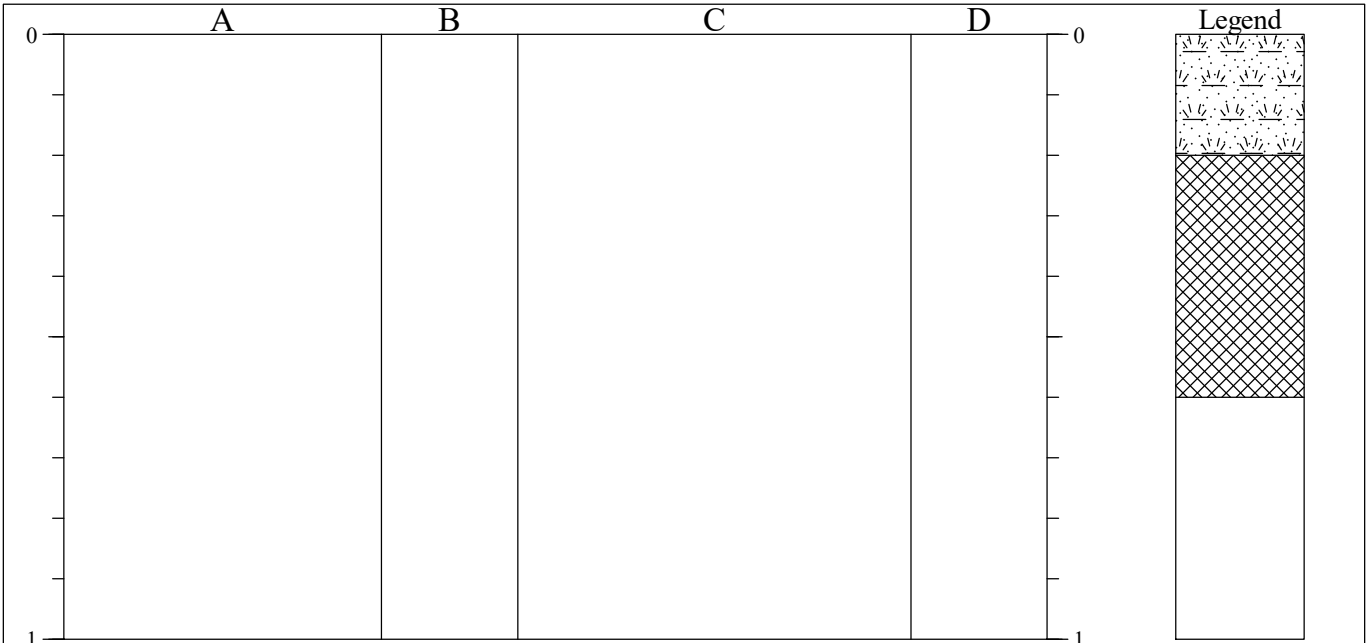
GENERAL REMARKS

No visual or olfactory evidence of hydrocarbon or solvent contamination. No groundwater recorded.

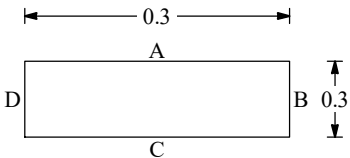
All dimensions in metres Scale 1:12.5	Client Homes England	Method/ Plant Used Manually excavated	Logged By MT
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TRIAL PIT LOG

Project East Lancs Paper Mill Island				TRIAL PIT No Plot 3 Rear Garden	
Job No NX418	Date 05-04-24	Ground Level (m)	Co-Ordinates ()		
Contractor Taylor Drilling Ltd				Sheet 1 of 1	

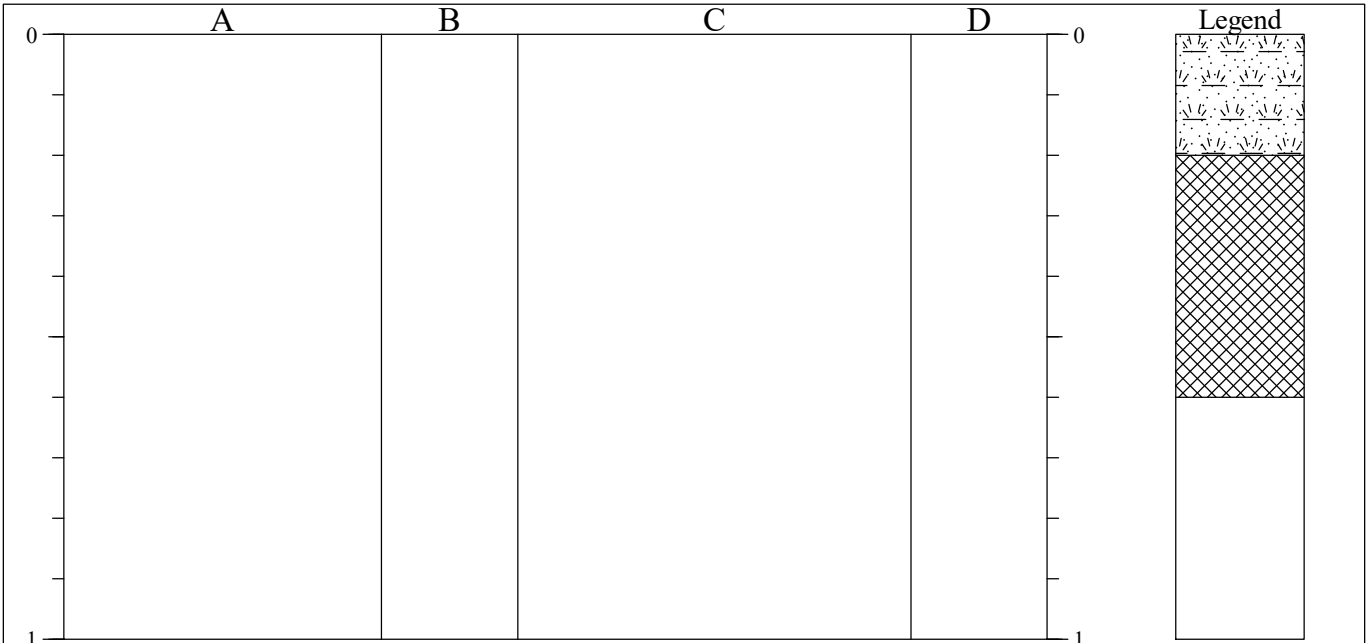


STRATA				SAMPLES & TESTS		
Depth	No	DESCRIPTION	Depth	No	Remarks/Tests	
0.00-0.20		TOPSOIL: Dark grey/black slightly silty CLAY with rare gravel. Gravel is fine to coarse, angular to subrounded of mudstone and other mixed natural lithology. Rare rootlets.				
0.20-0.60		SUBSOIL: Dark grey slightly sandy silty CLAY with rare gravel. Gravel is fine to coarse, angular to subrounded of limestone, sandstone, mudstone and other mixed natural lithology.				
0.60		...trial pit ends at 0.6m bgl.				

Shoring/Support: Stability:  All dimensions in metres Scale 1:12.5			Client Homes England		Method/ Plant Used Manually excavated		GENERAL REMARKS No visual or olfactory evidence of hydrocarbon or solvent contamination. No groundwater recorded.	
							Logged By MT	

TRIAL PIT LOG

Project East Lancs Paper Mill Island				TRIAL PIT No Plot 4 Front Garden	
Job No NX418	Date 05-04-24	Ground Level (m)	Co-Ordinates ()		
Contractor Taylor Drilling Ltd				Sheet 1 of 1	

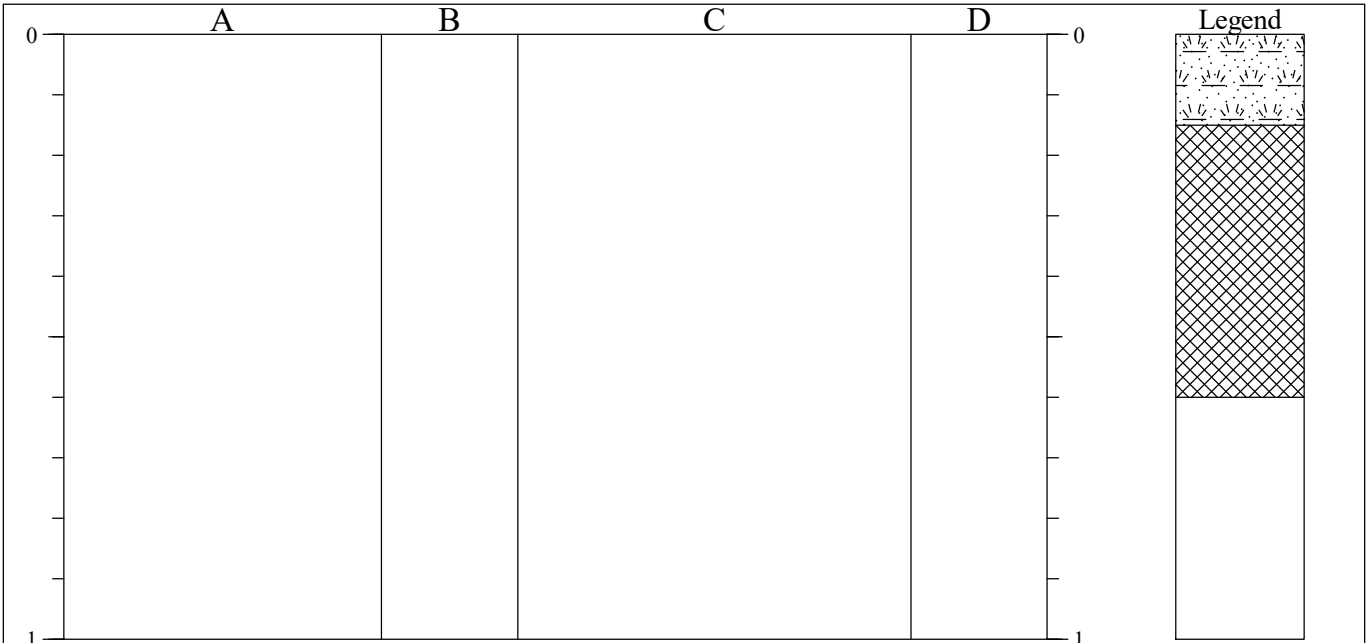


STRATA				SAMPLES & TESTS		
Depth	No	DESCRIPTION	Depth	No	Remarks/Tests	
0.00-0.20		TOPSOIL: Dark grey/black slightly silty CLAY with rare gravel. Gravel is fine to coarse, angular to subrounded of mudstone and other mixed natural lithology. Rare rootlets.				
0.20-0.60		SUBSOIL: Dark grey slightly sandy silty CLAY with rare gravel. Gravel is fine to coarse, angular to subrounded of limestone, sandstone, mudstone and other mixed natural lithology.				
0.60		...trial pit ends at 0.6m bgl.				

Shoring/Support: Stability: A diagram of a rectangular trial pit. The top horizontal dimension is labeled 'A' with a double-headed arrow and '0.2' above it. The right vertical dimension is labeled 'B' with a double-headed arrow and '0.2' to its right. The bottom horizontal dimension is labeled 'C' and the left vertical dimension is labeled 'D'.			GENERAL REMARKS No visual or olfactory evidence of hydrocarbon or solvent contamination. Groundwater recorded at 0.5mbgl.	
All dimensions in metres Scale 1:12.5	Client Homes England	Method/ Plant Used Manually excavated	Logged By MT	

TRIAL PIT LOG

Project East Lancs Paper Mill Island				TRIAL PIT No Plot 4 Rear Garden	
Job No NX418	Date 05-04-24	Ground Level (m)	Co-Ordinates ()		
Contractor Taylor Drilling Ltd				Sheet 1 of 1	



STRATA				SAMPLES & TESTS		
Depth	No	DESCRIPTION	Depth	No	Remarks/Tests	
0.00-0.15		TOPSOIL: Dark grey/black slightly silty CLAY with rare gravel. Gravel is fine to coarse, angular to subrounded of mudstone and other mixed natural lithology. Very rare gravel of brick.				
0.15-0.60		SUBSOIL: Dark grey slightly sandy silty CLAY with rare gravel. Gravel is fine to coarse, angular to subrounded of limestone, sandstone, mudstone and other mixed natural lithology.				
0.60		...trial pit ends at 0.6m bgl.				

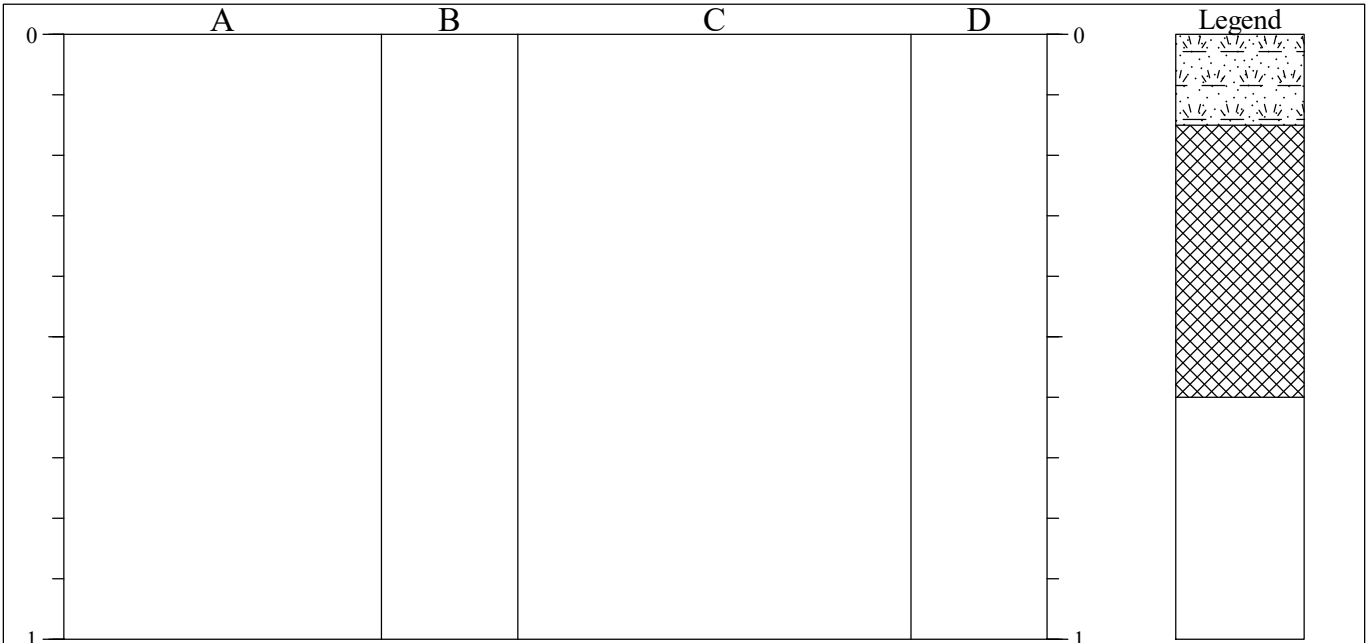
Shoring/Support: Stability:			GENERAL REMARKS No visual or olfactory evidence of hydrocarbon or solvent contamination. No groundwater recorded.	

All dimensions in metres Scale 1:12.5	Client Homes England	Method/ Plant Used Manually excavated	Logged By MT
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TRIAL PIT LOG

Project East Lancs Paper Mill Island				TRIAL PIT No Plot 5 Front Garden	
Job No NX418	Date 05-04-24	Ground Level (m)	Co-Ordinates ()		
Contractor Taylor Drilling Ltd				Sheet 1 of 1	



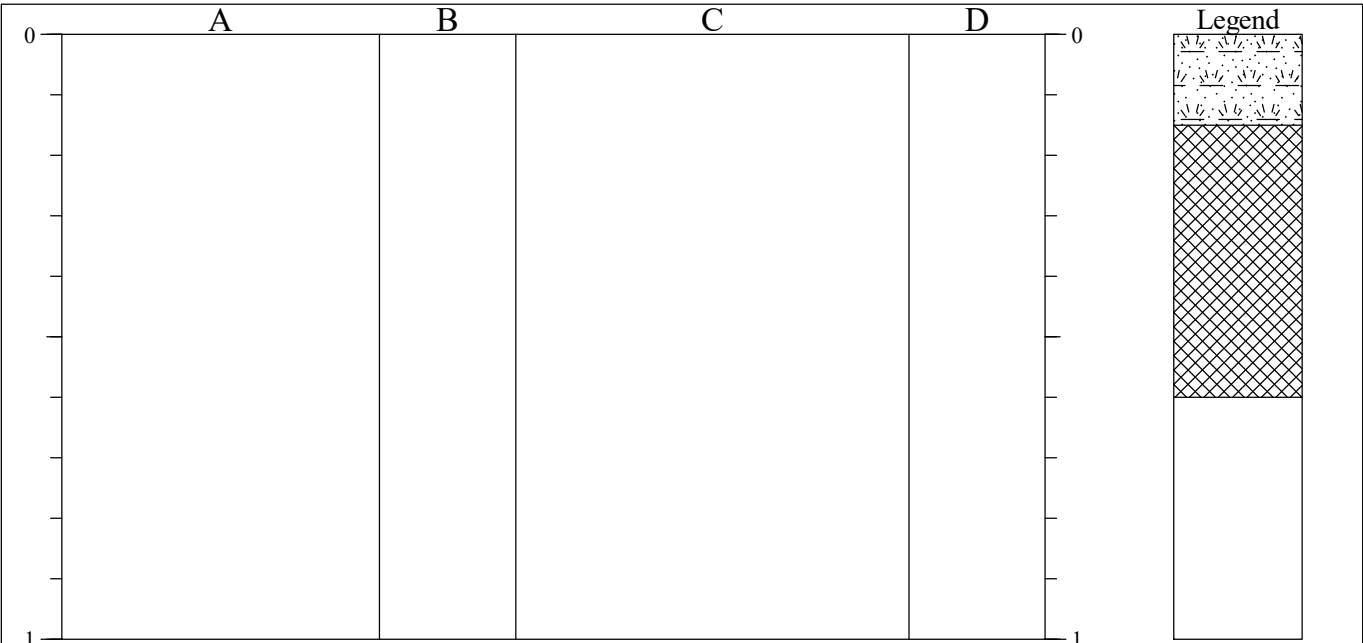
STRATA			SAMPLES & TESTS		
Depth	No	DESCRIPTION	Depth	No	Remarks/Tests
0.00-0.15		TOPSOIL: Dark grey/black slightly silty CLAY with rare gravel. Gravel is fine to coarse, angular to subrounded of mudstone and other mixed natural lithology. Rare rootlets.			
0.15-0.60		SUBSOIL: Dark grey slightly sandy silty CLAY with rare gravel. Gravel is fine to coarse, angular to subrounded of limestone, sandstone, mudstone and other mixed natural lithology.			
0.60		...trial pit ends at 0.6m bgl.			

Shoring/Support: Stability:			GENERAL REMARKS No visual or olfactory evidence of hydrocarbon or solvent contamination. No groundwater recorded.	
0.2 A D B 0.2 C N				
All dimensions in metres Scale 1:12.5	Client Homes England	Method/ Plant Used Manually excavated	Logged By MT	

AGS3 UK TP NX418 RECTORY LANE, RADCLIFFE.GPJ AGS 3_1.GDT 10/4/24

TRIAL PIT LOG

Project East Lancs Paper Mill Island				TRIAL PIT No	
Job No NX418	Date 05-04-24	Ground Level (m)	Co-Ordinates ()	Plot 5 Rear Garden	
Contractor Taylor Drilling Ltd				Sheet 1 of 1	



STRATA			SAMPLES & TESTS		
Depth	No	DESCRIPTION	Depth	No	Remarks/Tests
0.00-0.15		TOPSOIL: Dark grey/black slightly silty CLAY with rare gravel. Gravel is fine to coarse, angular to subrounded of mudstone and other mixed natural lithology. Rare rootlets.			
0.15-0.60		SUBSOIL: Dark grey slightly sandy silty CLAY with rare gravel. Gravel is fine to coarse, angular to subrounded of limestone, sandstone, mudstone and other mixed natural lithology. Rare rootlets.			
0.60		...trial pit ends at 0.6m bgl.			

Shoring/Support: Stability:		GENERAL REMARKS	
		No visual or olfactory evidence of hydrocarbon or solvent contamination. No groundwater recorded.	

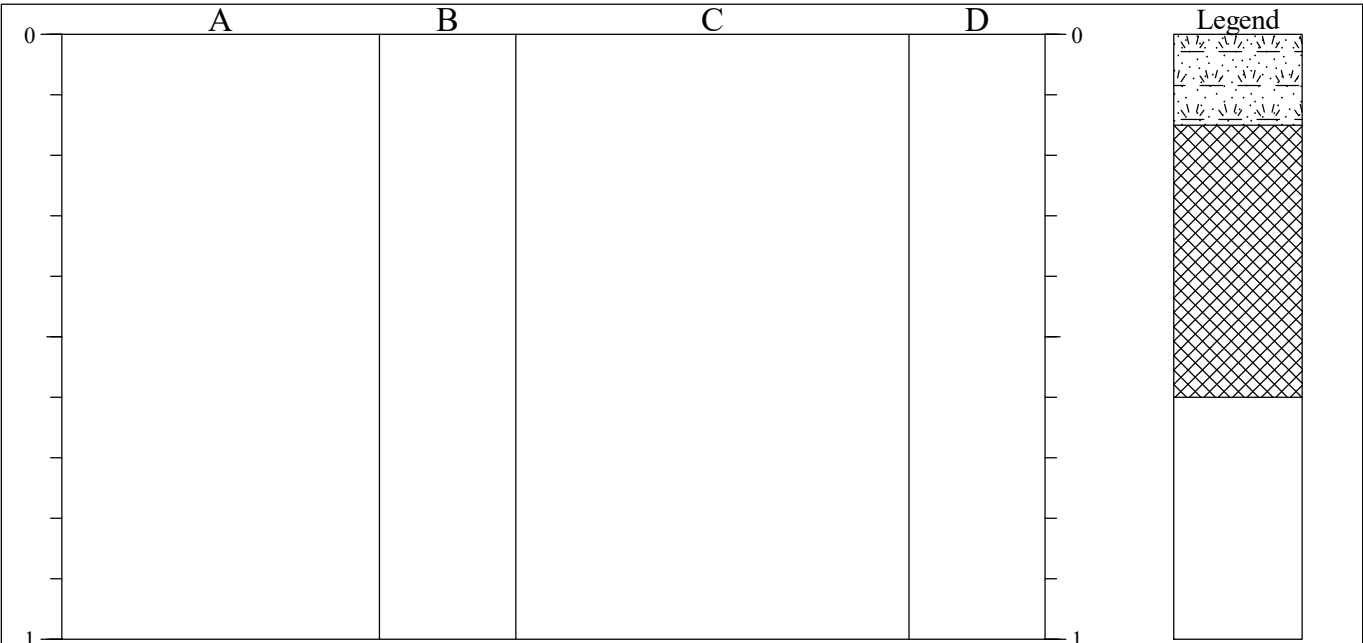
All dimensions in metres Scale 1:12.5	Client Homes England	Method/ Plant Used Manually excavated	Logged By MT
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AGS3 UK TP NX418 RECTORY LANE, RADCLIFFE.GPJ AGS 3_1.GDT 10/4/24

TRIAL PIT LOG

Plot 6 & 7 Front Garden

Project East Lancs Paper Mill Island				TRIAL PIT No	
Job No NX418	Date 05-04-24	Ground Level (m)	Co-Ordinates ()		
Contractor Taylor Drilling Ltd				Sheet 1 of 1	



STRATA				SAMPLES & TESTS		
Depth	No	DESCRIPTION	Depth	No	Remarks/Tests	
0.00-0.15		TOPSOIL: Dark grey/black slightly silty CLAY with rare gravel. Gravel is fine to coarse, angular to subrounded of mudstone and other mixed natural lithology. Rare rootlets.				
0.15-0.60		SUBSOIL: Dark grey slightly sandy silty CLAY with rare gravel. Gravel is fine to coarse, angular to subrounded of limestone, sandstone, mudstone and other mixed natural lithology.				
0.60		...trial pit ends at 0.6m bgl.				

Shoring/Support:
Stability:

A: 0.2
B: 0.2

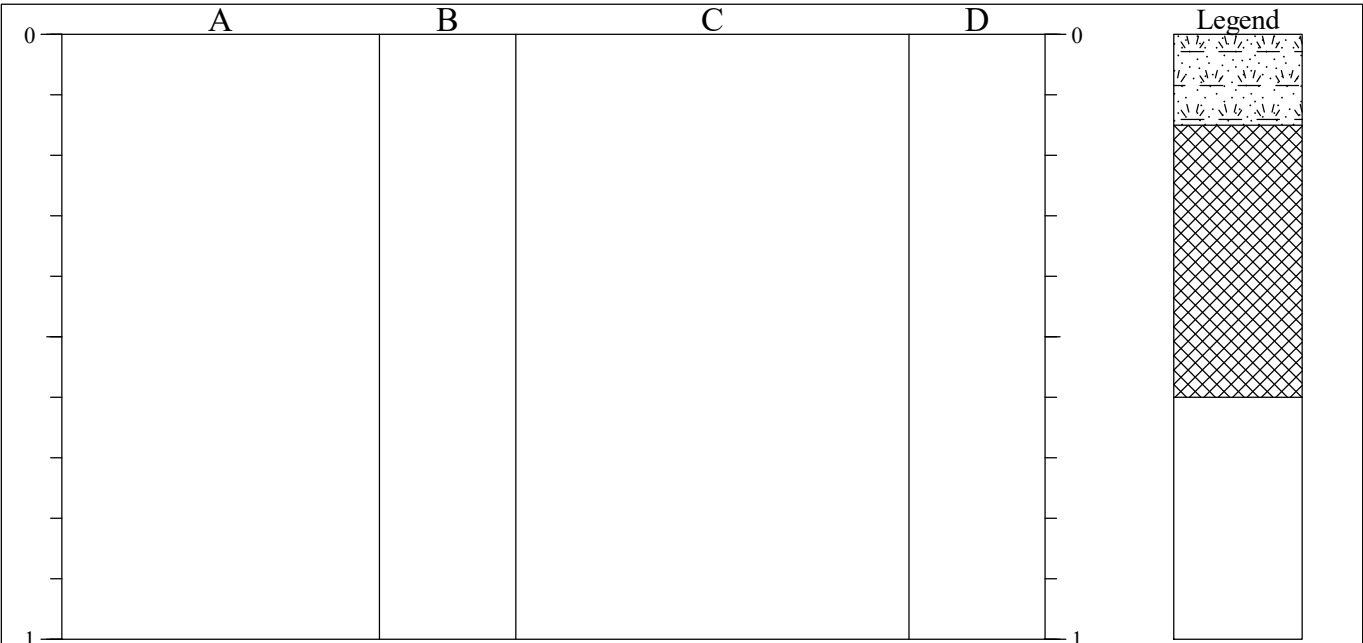
GENERAL REMARKS

No visual or olfactory evidence of hydrocarbon or solvent contamination. No groundwater recorded.

All dimensions in metres Scale 1:12.5	Client Homes England	Method/ Plant Used Manually excavated	Logged By MT
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TRIAL PIT LOG

Project East Lancs Paper Mill Island				TRIAL PIT No Plot 6 Rear Garden	
Job No NX418	Date 11-04-24	Ground Level (m)	Co-Ordinates ()		
Contractor Taylor Drilling Ltd				Sheet 1 of 1	



STRATA				SAMPLES & TESTS		
Depth	No	DESCRIPTION	Depth	No	Remarks/Tests	
0.00-0.15		TOPSOIL: Dark grey/black slightly silty CLAY with rare gravel. Gravel is fine to coarse, angular to subrounded of mudstone and other mixed natural lithology. Rare rootlets.				
0.15-0.60		SUBSOIL: Dark grey slightly sandy silty CLAY with rare gravel. Gravel is fine to coarse, angular to subrounded of limestone, sandstone, mudstone and other mixed natural lithology. Rare rootlets.				
0.60		...trial pit ends at 0.6m bgl.				

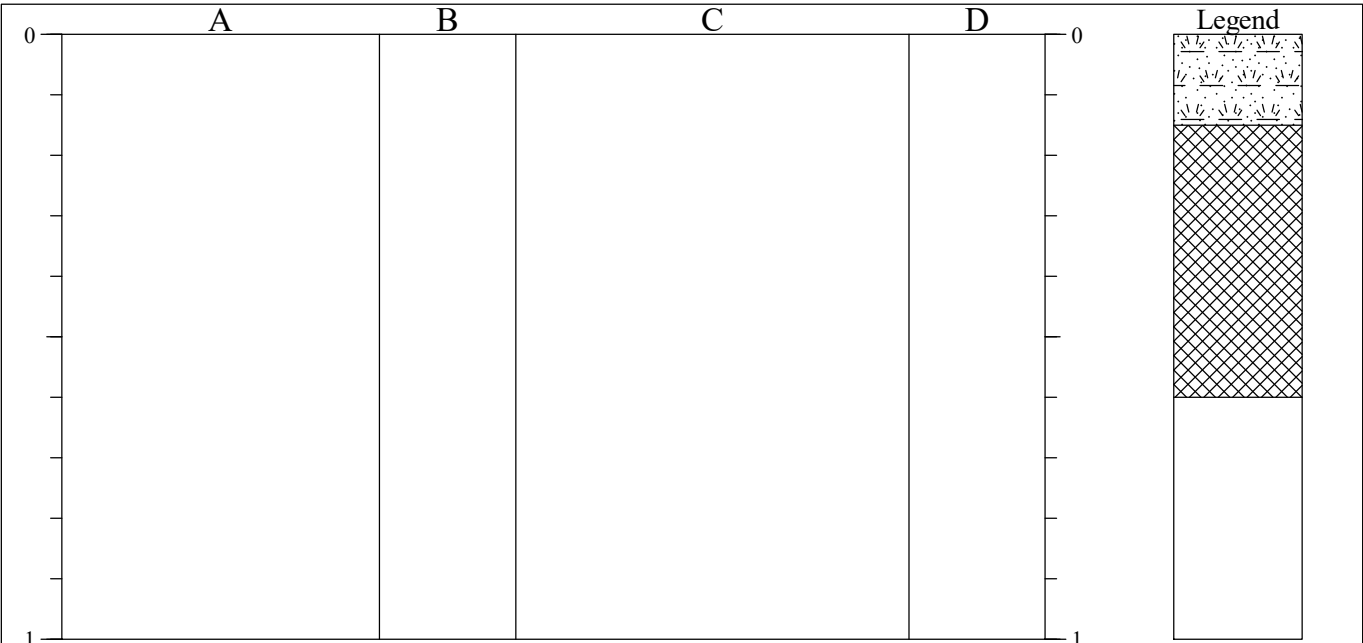
Shoring/Support: Stability:			GENERAL REMARKS No visual or olfactory evidence of hydrocarbon or solvent contamination. No groundwater recorded.	

All dimensions in metres Scale 1:12.5	Client Homes England	Method/ Plant Used Manually excavated	Logged By MT
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AGS3 UK TP NX418 RECTORY LANE, RADCLIFFE.GPJ AGS 3_1.GDT 10/4/24

TRIAL PIT LOG

Project East Lancs Paper Mill Island				TRIAL PIT No Plot 7 Rear Garden	
Job No NX418	Date 11-04-24	Ground Level (m)	Co-Ordinates ()		
Contractor Taylor Drilling Ltd				Sheet 1 of 1	



STRATA			SAMPLES & TESTS		
Depth	No	DESCRIPTION	Depth	No	Remarks/Tests
0.00-0.15		TOPSOIL: Dark grey/black slightly silty CLAY with rare gravel. Gravel is fine to coarse, angular to subrounded of mudstone and other mixed natural lithology. Rare rootlets.			
0.15-0.60		SUBSOIL: Dark grey slightly sandy silty CLAY with rare gravel. Gravel is fine to coarse, angular to subrounded of limestone, sandstone, mudstone and other mixed natural lithology. Rare rootlets.			
0.60		...trial pit ends at 0.6m bgl.			

Shoring/Support: Stability:		The diagram shows a rectangular trial pit with dimensions A (width), B (depth), and C (length). A north arrow points upwards, labeled 'N'. The dimensions are indicated as 0.3 for A and 0.3 for B.		GENERAL REMARKS No visual or olfactory evidence of hydrocarbon or solvent contamination. No groundwater recorded.	
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All dimensions in metres Scale 1:12.5	Client Homes England	Method/ Plant Used Manually excavated	Logged By MT
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