

15th April 2024

Andrea Peak
Great Places Housing Group
2a Derwent Avenue
Manchester
M21 7QP

Dear Andrea

**RE: NX418 PLOTS 1, 2, 3, 4, 5, 6 & 7 GAS & COVER SYSTEM VALIDATION REPORT –
LAND AT RECTORY LANE, EAST LANCASHIRE PAPER MILL ISLAND SITE, RADCLIFFE**

NX have been requested by Great Places 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, and gas protection measures suitable for Amber 1 conditions which deal with low levels of methane, CO2 and radon.

Great Places 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.

Inspection & Ground Conditions

We can confirm 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.

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, Great Places 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.

The Final NX Verification report will include the following:

- Site and development details.
- Summary of Gas Risk Assessment
- Details of who carried out installation.

NX418 Land at Rectory Lane, ELPM Radcliffe

- Details of who carried out verification.
- Details of the actual verification inspection/s.
- Supporting information, plans, photographs, drawings.
- Summary of verification data (completed proformas, inspection record sheets and non conformance/corrective action record sheets).

Gas Verification

Gas validation assessment was conducted on 15th February 2023 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.

Information provided to date indicates that the cover system and ground gas protection measures has been installed in line the NX Remediation Strategy and the above plots are suitable for occupation in terms of contaminant risk to potential receptors post construction.

Please do not hesitate to call if you have any queries.

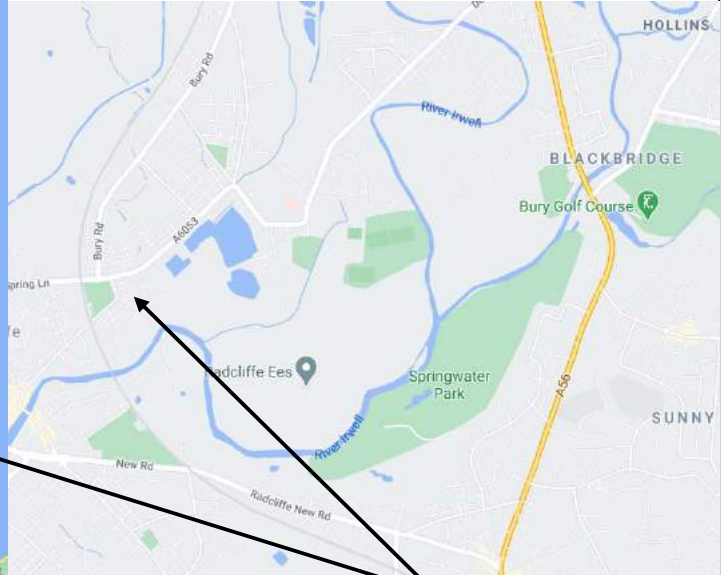
Yours sincerely

for and on behalf of NX Consulting Limited

A handwritten signature in blue ink, appearing to read 'Mark Newton', is written over a faint rectangular stamp.

Mark Newton (Managing Director)

Appendix A Drawings & Gas Protection Verification



**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

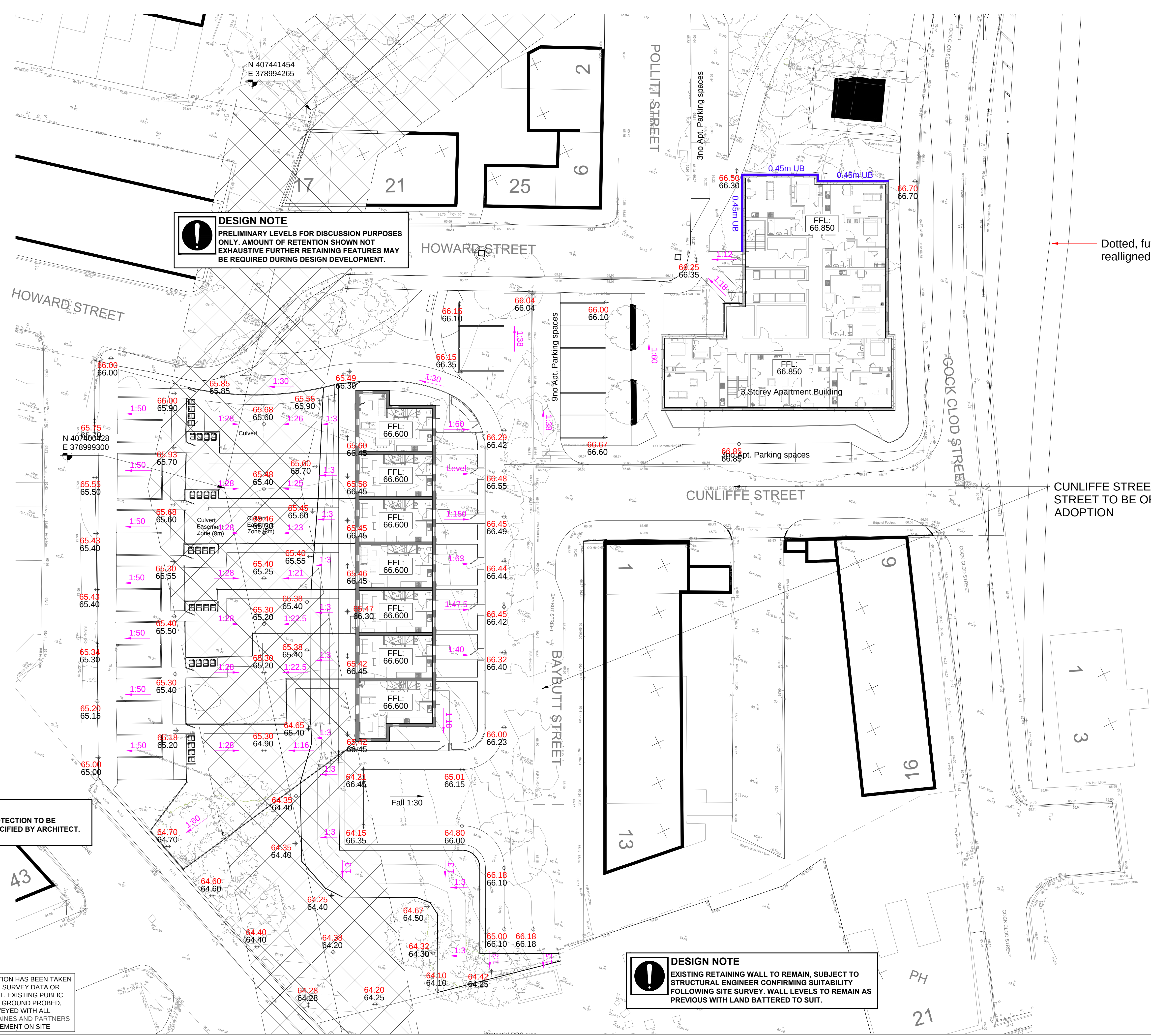
Ref: NX418 Figure 1

Project:

East Lancs Paper Mill

Title:

Site Location Plan



DESIGN NOTE
PRELIMINARY LEVELS FOR DISCUSSION PURPOSES ONLY. AMOUNT OF RETENTION SHOWN NOT EXHAUSTIVE FURTHER RETAINING FEATURES MAY BE REQUIRED DURING DESIGN DEVELOPMENT.

DESIGN NOTE
POTENTIAL FALL PROTECTION TO BE CONFIRMED AND SPECIFIED BY ARCHITECT.

ALL COVER & INVERT LEVEL INFORMATION HAS BEEN TAKEN FROM AVAILABLE TOPOGRAPHICAL SURVEY DATA OR UNITED UTILITIES AND CCTV REPORT. EXISTING PUBLIC WATER SEWERS ARE TO BE ABOVE GROUND PROBED, ROUTED AND INTERNALLY SURVEYED WITH ALL INFORMATION PASSED TO CARLEY DAINES AND PARTNERS FOR REVIEW PRIOR TO COMMENCEMENT ON SITE

NOTES

0m10m20m

1:200 scale bar

SITE LOCATION
FORMER EAST LANCS PAPER MILL, RADCLIFFE, BURY, GREATER MANCHESTER.
M26 2GU.
EASTINGS: 379000;
NORTHINGS: 407400.

FFL: 96.650

97.570
98.140

Fall 1:25

1:25

150mm UB

PROPOSED FFL

EXISTING LEVEL vs PROPOSED LEVEL

PROPOSED ROAD FALL

PROPOSED GARDEN FALL

PROPOSED UNDER-BUILD

C	21/12/21	DESIGN CONFIRMED. ISSUED FOR PLANNING.
B	14/12/21	RETAINING WALL IN REAR GARDENS OMITTED IN LIEU OF 1:3 BATTER.
A	23/11/21	EXTENTS OF RETAINING WALL IN EASEMENT REDUCED.
-	15/11/21	INITIAL ISSUE FOR COMMENT AND DISCUSSION PURPOSES.
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

PROPOSED LEVELS AND
EXTERNAL WORKS DRAWING

Drawn	AM	Checked	DM
Date	11/11/2021	Date	11/11/2021
Scale	1:200	@	A1
Drawing No.	21-B-12866-101		C

17th July 2023

Andrea Peak
Great Places Housing Group
2a Derwent Avenue
Manchester
M21 7QP

Dear Andrea

**RE: NX418 APARTMENT BLOCK 1 TO 20 GAS & COVER SYSTEM VALIDATION REPORT
– LAND AT RECTORY LANE, EAST LANCASHIRE PAPER MILL ISLAND SITE,
RADCLIFFE**

NX have been requested by Great Places 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, and gas protection measures suitable for Amber 1 conditions which deal with low levels of methane, CO2 and radon.

To date, validation testing within the associated garden plots of apartment block 1 to 20 has not yet been completed. NX Consulting Limited will be informed when the gardens are ready for inspection to confirm that a suitable 600mm clean cover system has been adopted within necessary areas, comprising up to 150mm topsoil overlying 450mm+ of subsoils.

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, Great Places 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.

The Final NX Verification report will include the following:

- Site and development details.
- Summary of Gas Risk Assessment
- Details of who carried out installation.
- Details of who carried out verification.
- Details of the actual verification inspection/s.
- Supporting information, plans, photographs, drawings.
- Summary of verification data (completed proformas, inspection record sheets and non-conformance/corrective action record sheets).

NX418 Land at Rectory Lane, ELPM Radcliffe

Gas Verification

Gas validation assessment was conducted on 21st March 2023 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.

In regard to gas validation, NX can therefore confirm that the above plots have been completed in line with the NX remediation strategy. Following validation of the rear gardens cover systems, NX will be able to confirm if the residential plots are considered suitable for occupation in terms of contaminant risk.

Please do not hesitate to call if you have any queries.

Yours sincerely

for and on behalf of NX Consulting Limited

A handwritten signature in blue ink, appearing to read 'Mark Newton', is written over a faint rectangular box.

Mark Newton (Managing Director)

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.

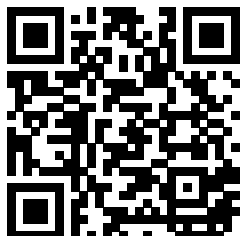
The barrier can also be used as a high performance radon membrane and/or damp proof membrane.

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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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, Hylton, Middlesbrough, LS8 6AK
 Tel: 0151 480 0100 Fax: 0151 481 4976
 Web: www.beeesleyandfildes.co.uk
 Email: creditcontrol@beeesleyandfildes.co.uk

Delivery Note

Branch:
 Walsden Depot
 Lough Street
 Walsden
 M28 3LA
 Tel: 0141 715 1204

Invoice Address:
 Caldwell Construction Ltd
 Great Places
 Access Via Rectory Lane Only
 Radcliffe Meadows
 Salford
 M6 6PU

Delivery Address:
 Caldwell Construction Ltd
 Great Places
 Access Via Rectory Lane Only
 Radcliffe Meadows
 Salford
 M6 6PU

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

Special Instructions
 100 ACCESS VIA RECTORY LANE ONLY

Notes

Item	Description	Qty	Weight
1	3503V13135 - Visqueen Mediane Butyl 2.0MP x 50MP Blue Linc	0.00	0.000
2	3503V15150 - 135MM DIA GX GEOMEMB QAS TOP HAT ING CLIP REF	12.00	0.000
3	3503V15110 - 50mm x 10MP Visqueen Double Sided Butyl Tape Ref R5000343	8.00	0.000
4	3503V15163 - Visqueen GR Detailing Strip 300mm x 46MP Ref	8.00	0.000

Delivered 8/3/23

PLATE 7: Product Delivery Note



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

27th June 2023

Andrea Peak
Great Places Housing Group
2a Derwent Avenue
Manchester
M21 7QP

Dear Andrea

**RE: NX418 PLOTS 1, 2, 3, 4, 5, 6 & 7 GAS & COVER SYSTEM VALIDATION REPORT –
LAND AT RECTORY LANE, EAST LANCASHIRE PAPER MILL ISLAND SITE, RADCLIFFE**

NX have been requested by Great Places 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, and gas protection measures suitable for Amber 1 conditions which deal with low levels of methane, CO2 and radon.

To date, validation testing within the rear garden of Plots 1, 2, 3, 4, 5, 6 & 7 has not yet been completed. NX Consulting Limited will be informed when the gardens are ready for inspection to confirm that a suitable 600mm clean cover system has been adopted within necessary areas, comprising up to 150mm topsoil overlying 450mm+ of subsoils.

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, Great Places 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.

The Final NX Verification report will include the following:

- Site and development details.
- Summary of Gas Risk Assessment
- Details of who carried out installation.
- Details of who carried out verification.
- Details of the actual verification inspection/s.
- Supporting information, plans, photographs, drawings.
- Summary of verification data (completed proformas, inspection record sheets and non conformance/corrective action record sheets).

NX418 Land at Rectory Lane, ELPM Radcliffe

Gas Verification

Gas validation assessment was conducted on 15th February 2023 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.

In regard to gas validation, NX can therefore confirm that the above plots have been completed in line with the NX remediation strategy. Following validation of the rear gardens cover systems, NX will be able to confirm if the residential plots are considered suitable for occupation in terms of contaminant risk.

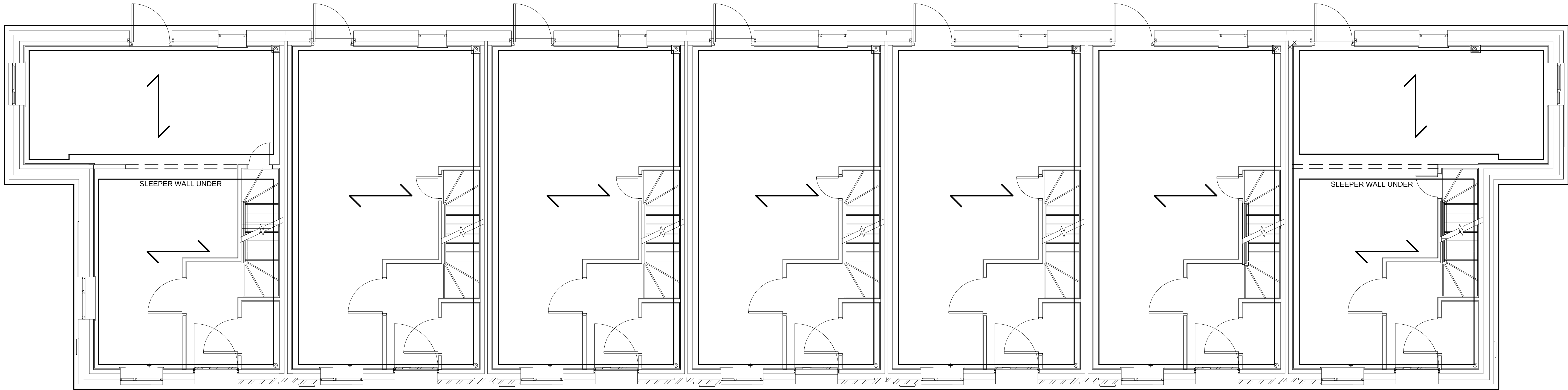
Please do not hesitate to call if you have any queries.

Yours sincerely

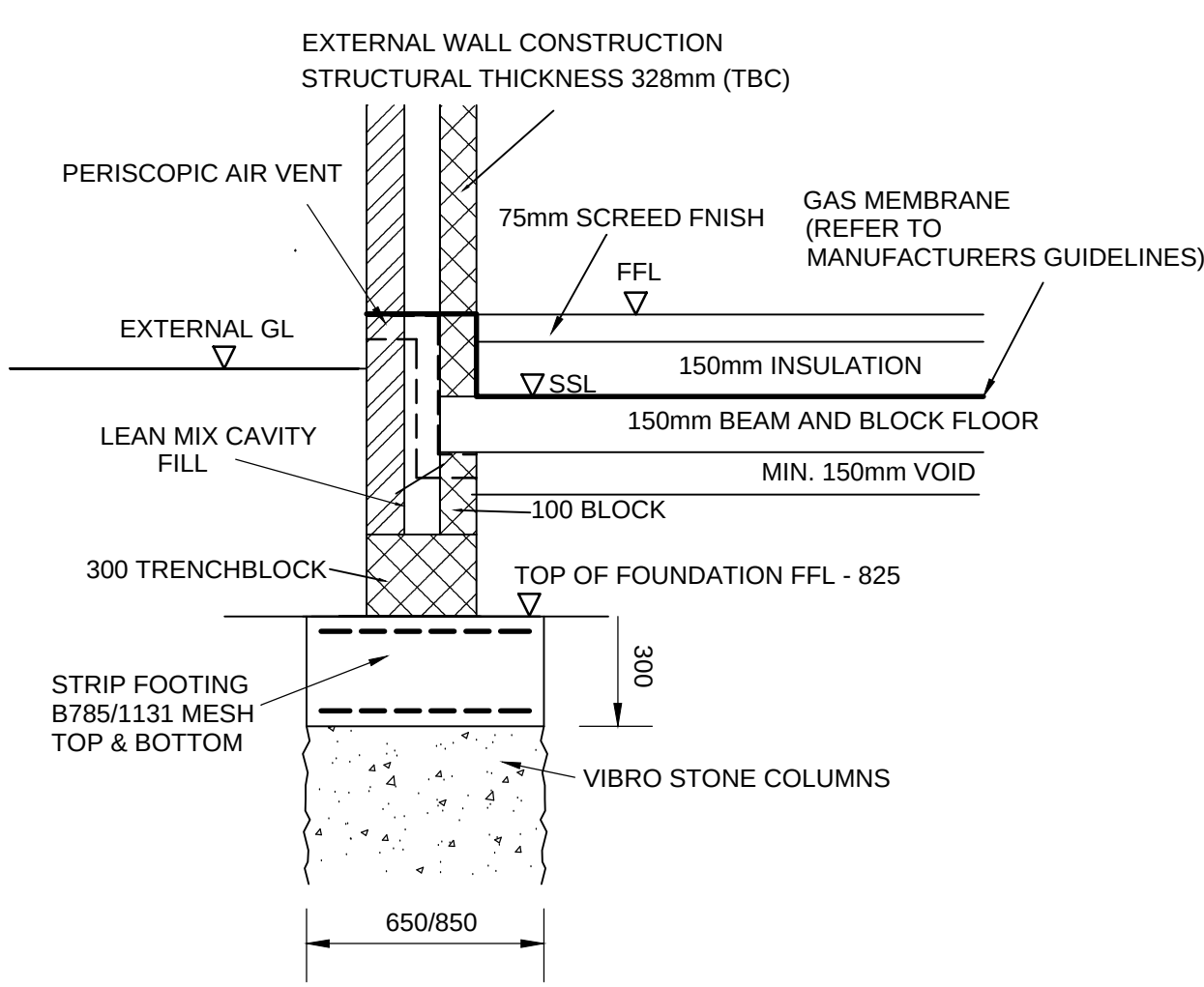
for and on behalf of NX Consulting Limited

A handwritten signature in blue ink, appearing to read 'Mark Newton', is written over a faint rectangular stamp.

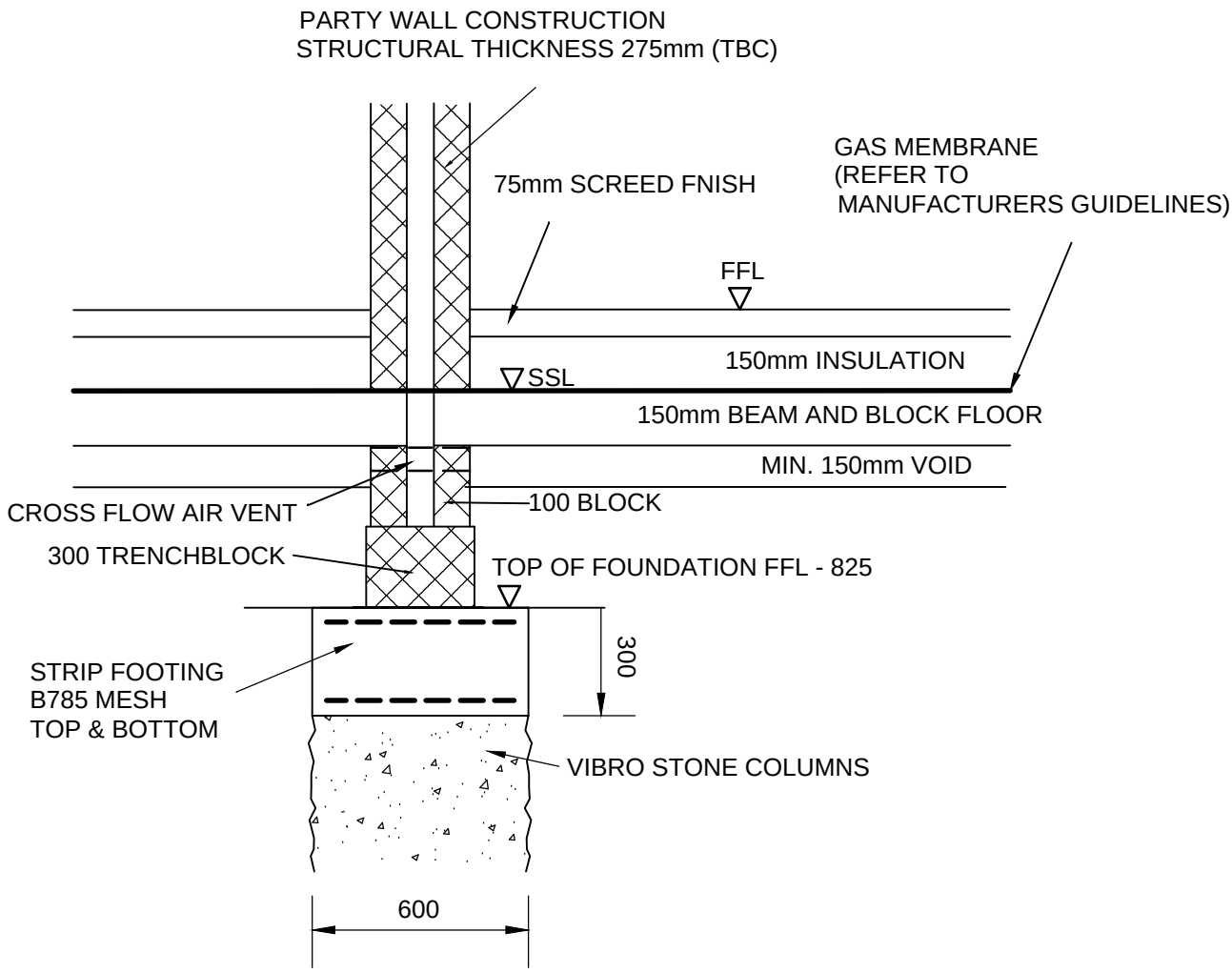
Mark Newton (Managing Director)



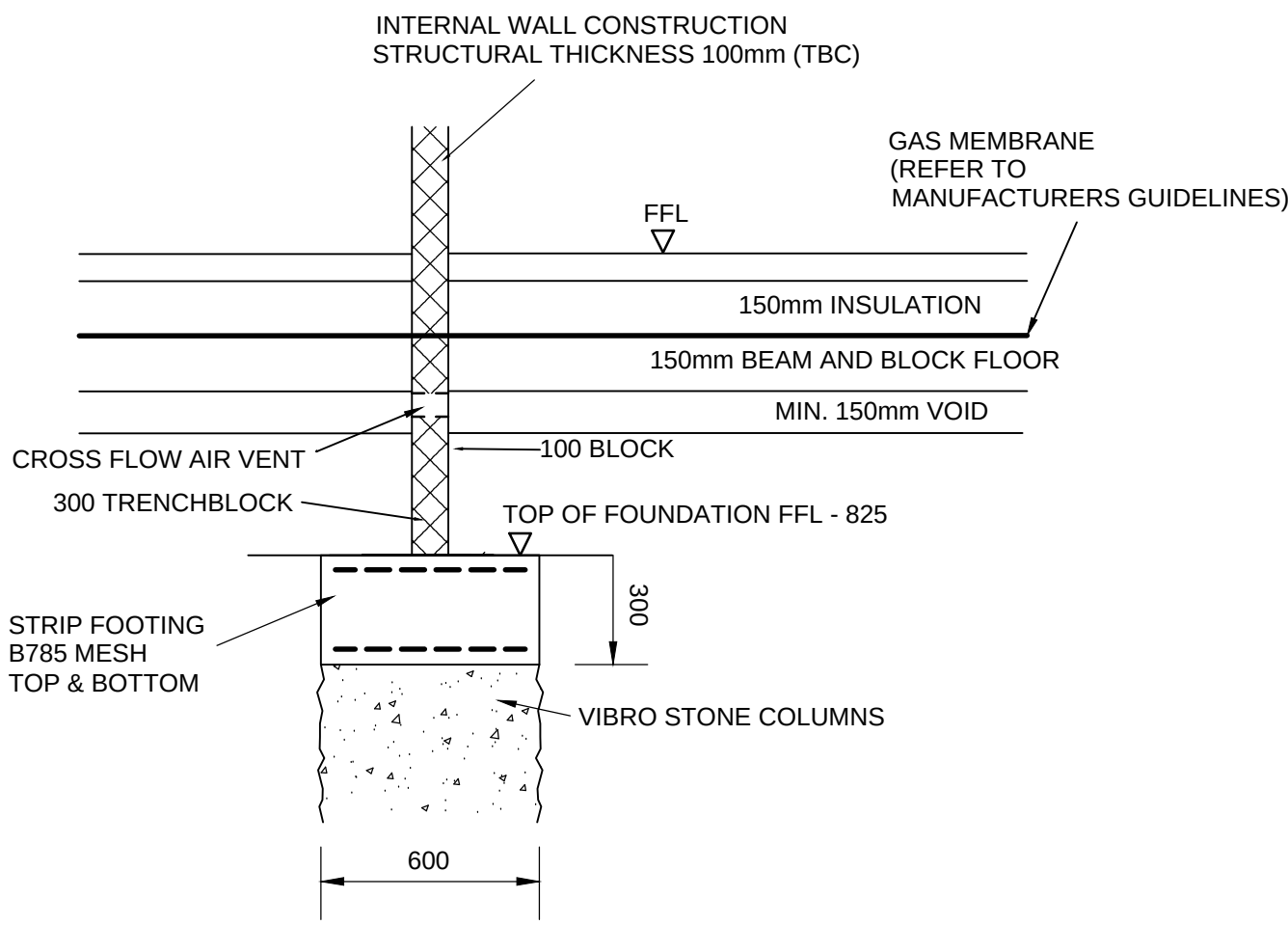
FOUNDATION PLAN SHOWING GROUND FLOOR SPANS OVER



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
- 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.

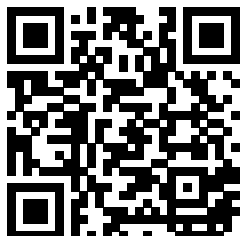
The barrier can also be used as a high performance radon membrane and/or damp proof membrane.

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



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Full Design Liability for Structural Waterproofing
and Gas Protection

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

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

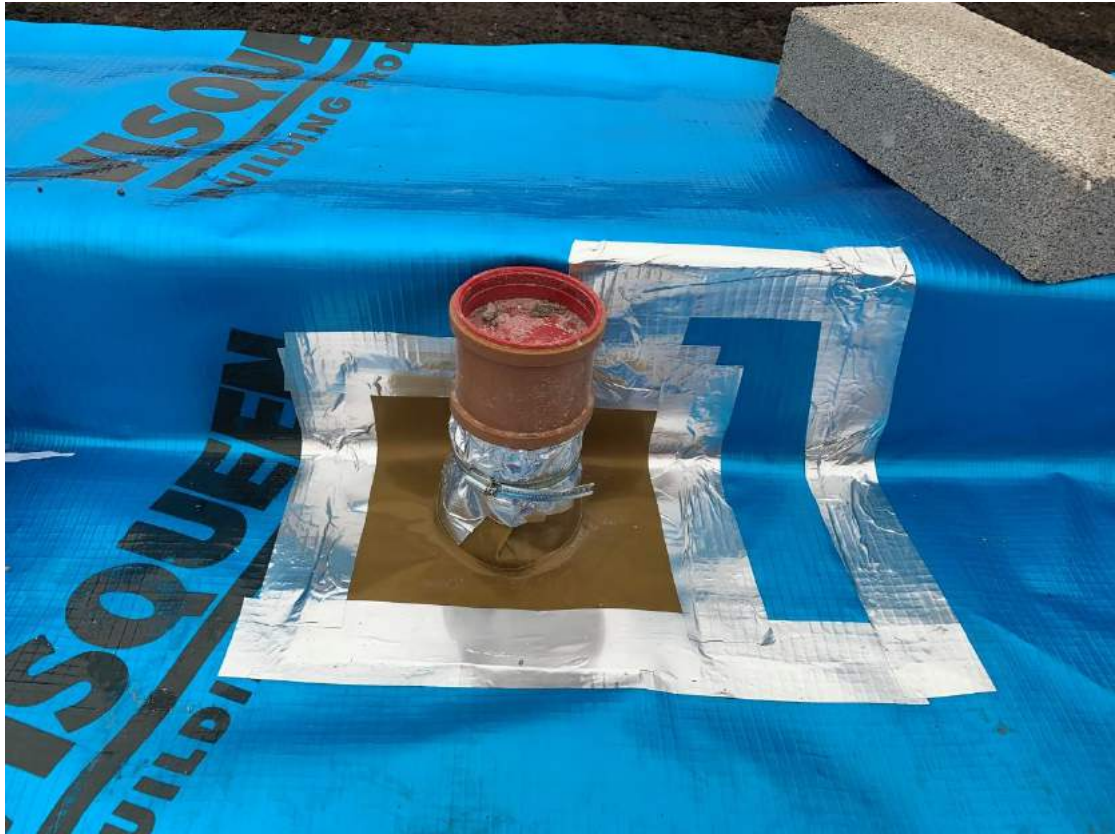


PLATE 7: Tophat Construction



PLATE 8: Subfloor Venting on 2m centres

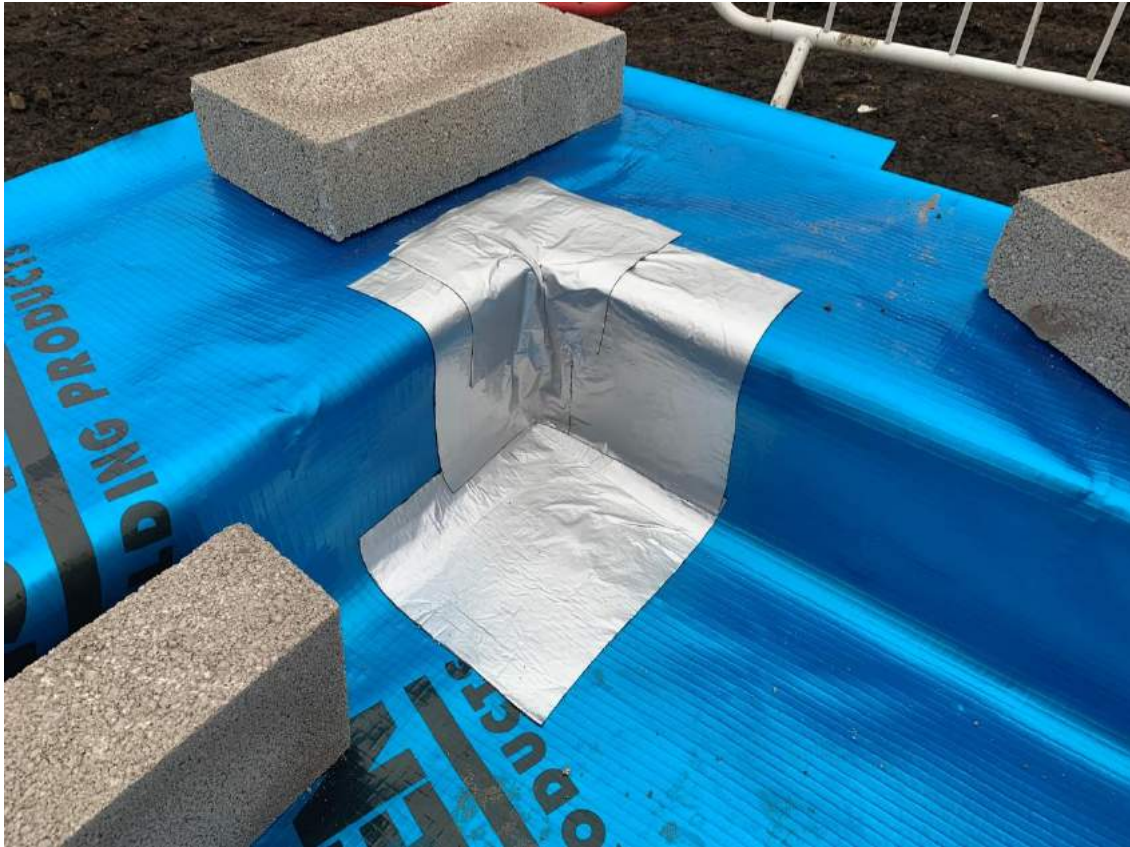


PLATE 9: Corner Detail



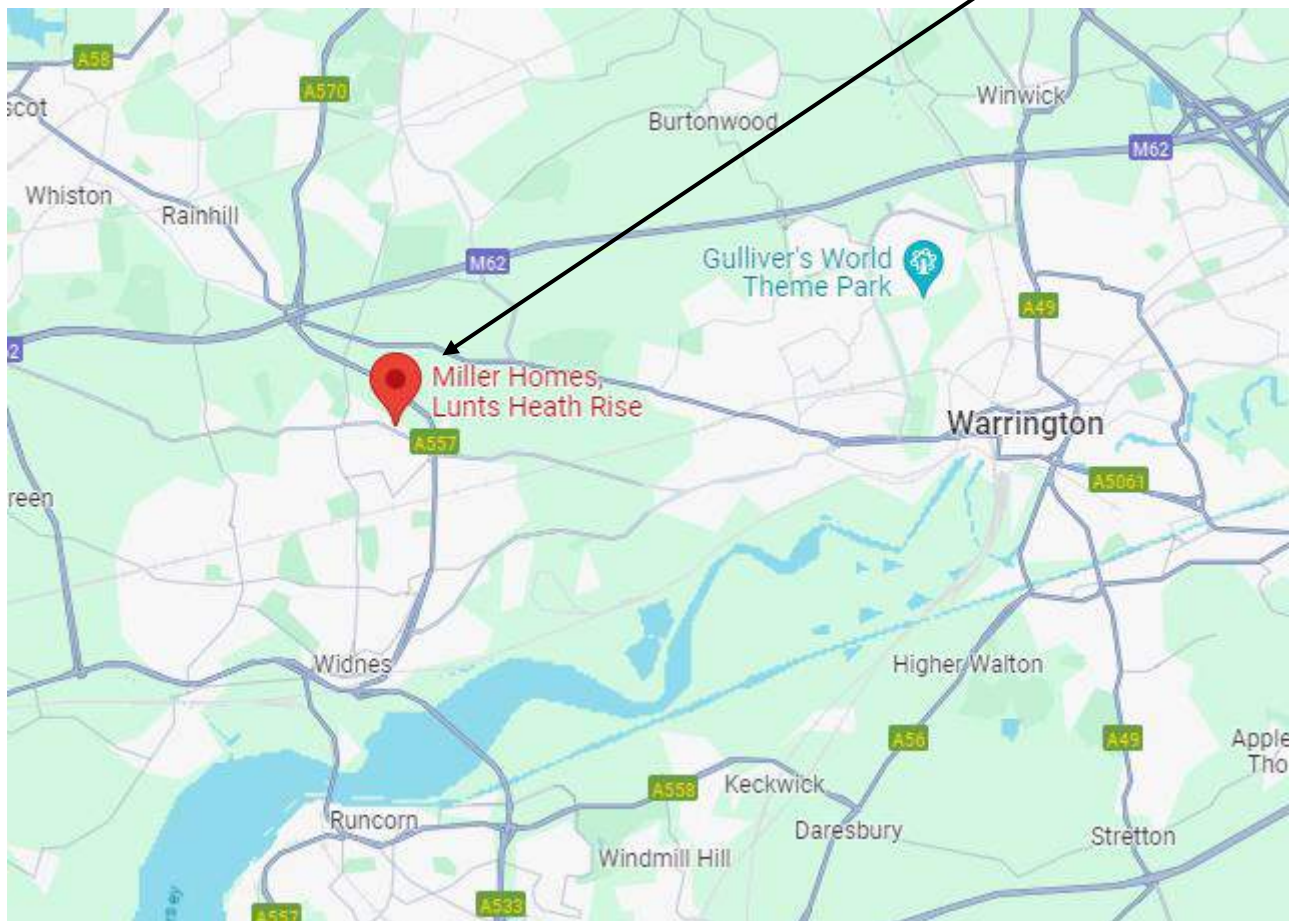
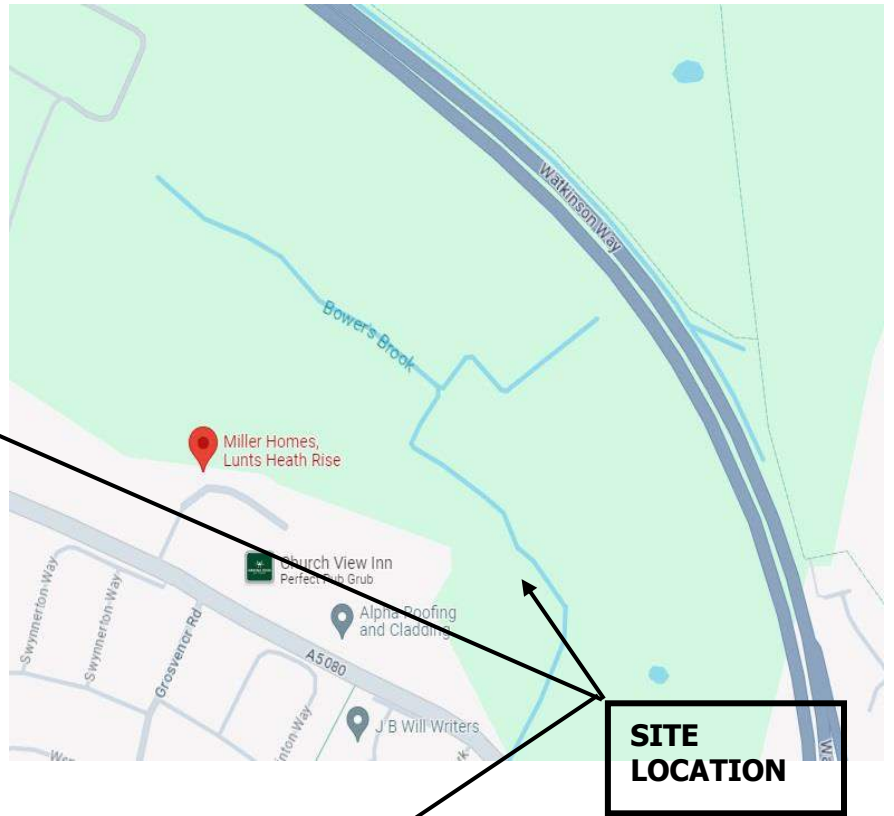
PLATE 10: Clear Cavity

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.

Appendix B Stockpile Photos, Cover System Photos, Logs & Stockpile Verification Results



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



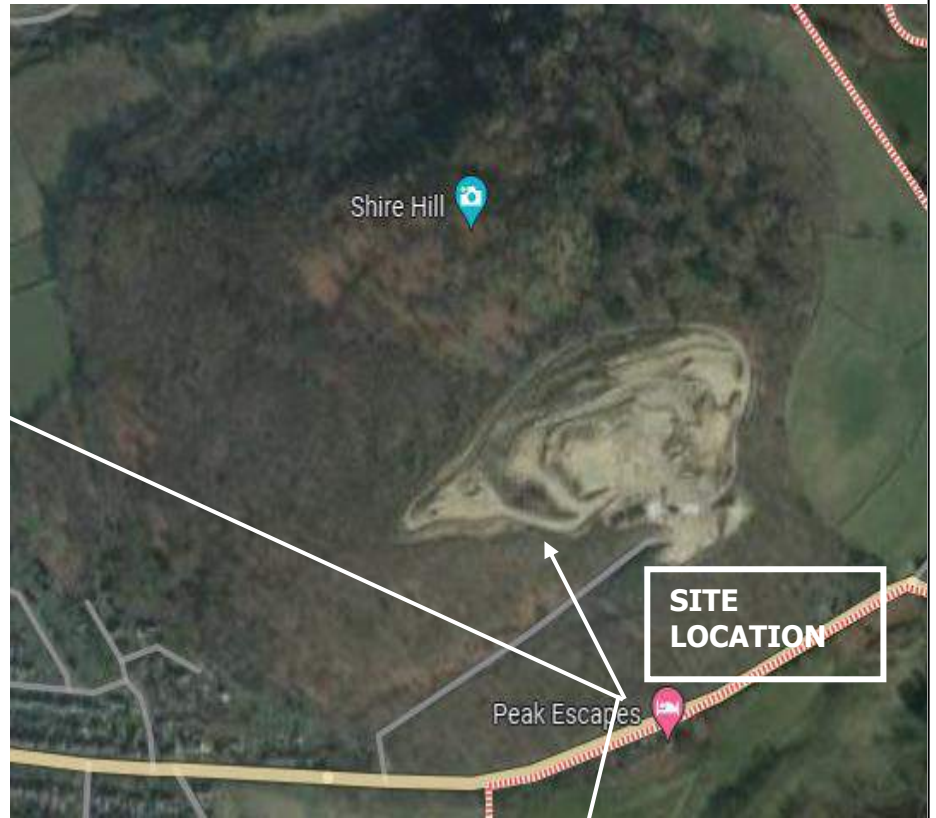
Plate 1 – Millar Homes Topsoil Source, Widnes. NX Inspection 1st March 2024



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



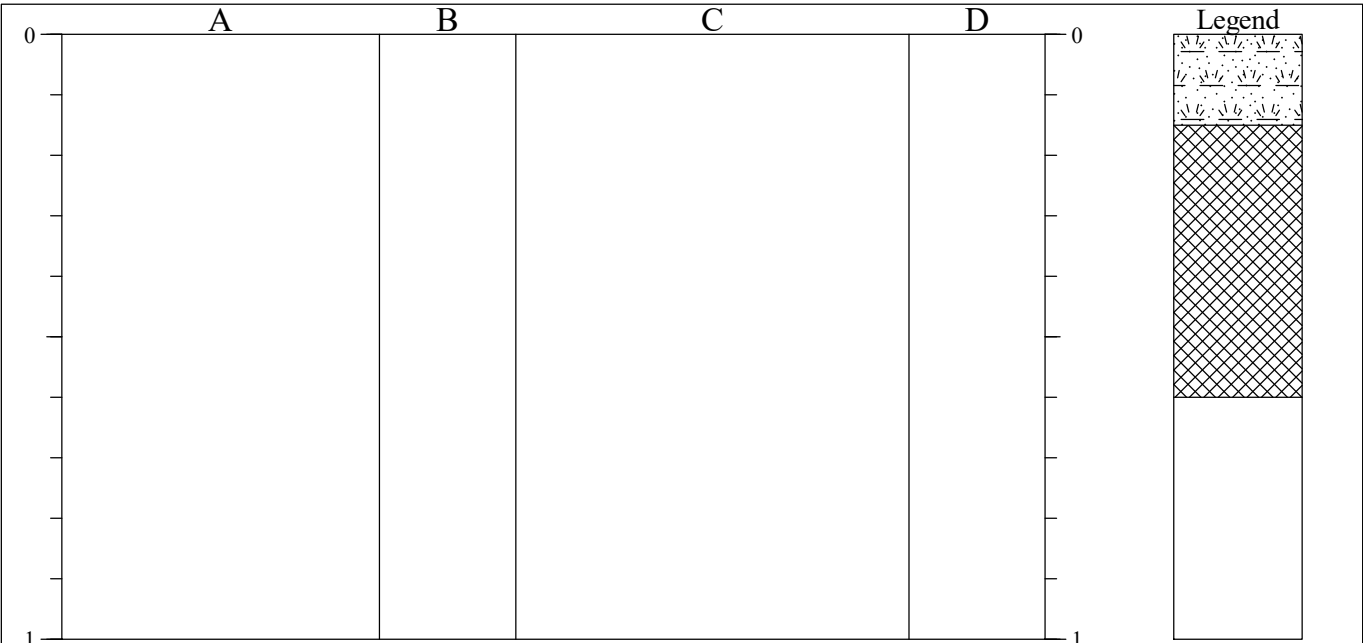
Plate 30 – Plot 6 & 7 Rear Gardens



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	



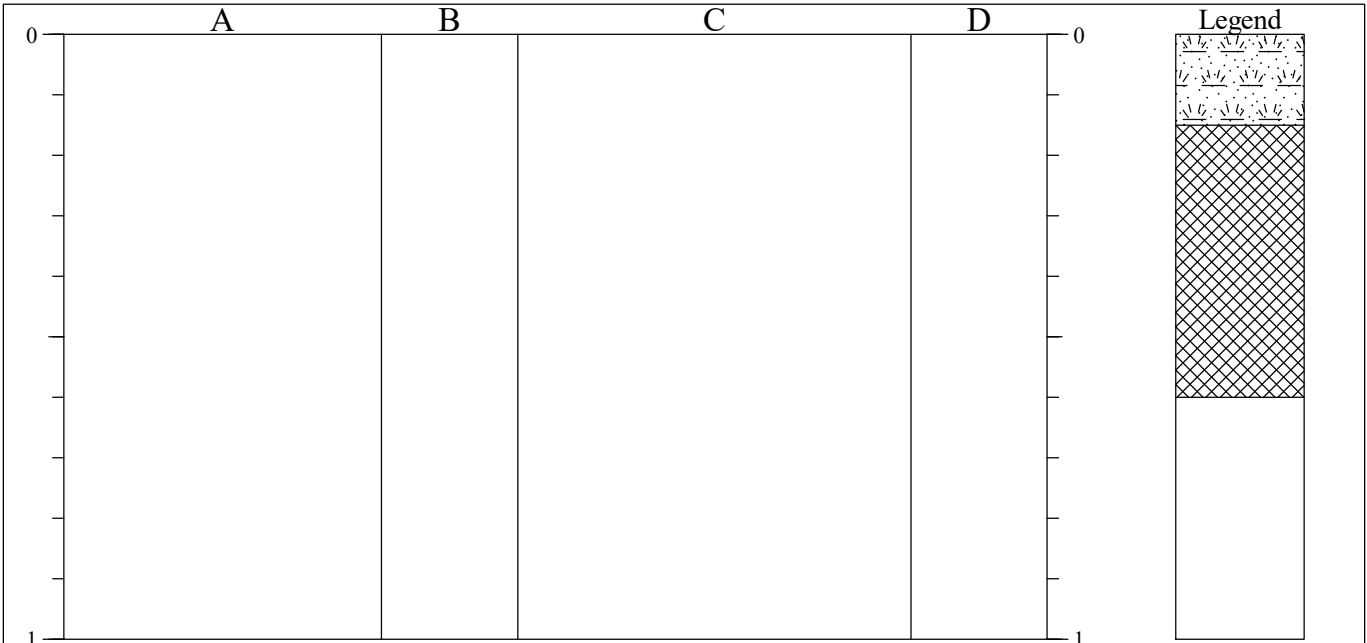
STRATA				SAMPLES & TESTS		
Depth	No	DESCRIPTION	Depth	No	Remarks/Tests	
0.00-0.15		TOPSOIL: Dark grey/black slightly silty CLAY with rare gravel. Gravel is fine to coarse, angular to subrounded of mudstone and other mixed natural lithology. Rare rootlets.				
0.15-0.60		SUBSOIL: Dark grey slightly sandy 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:			GENERAL REMARKS No visual or olfactory evidence of hydrocarbon or solvent contamination. No groundwater recorded.	
The diagram shows a rectangular trial pit with dimensions A (width) and B (depth). A scale bar indicates 0.2m. The labels A, B, C, and D are placed around the rectangle.			N ↑	
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 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:

The diagram shows a rectangular trial pit with dimensions labeled: width is 0.3m (labeled A), depth is 0.3m (labeled B). The corners are labeled C (bottom-left) and D (bottom-right). A north arrow points upwards, labeled 'N'.

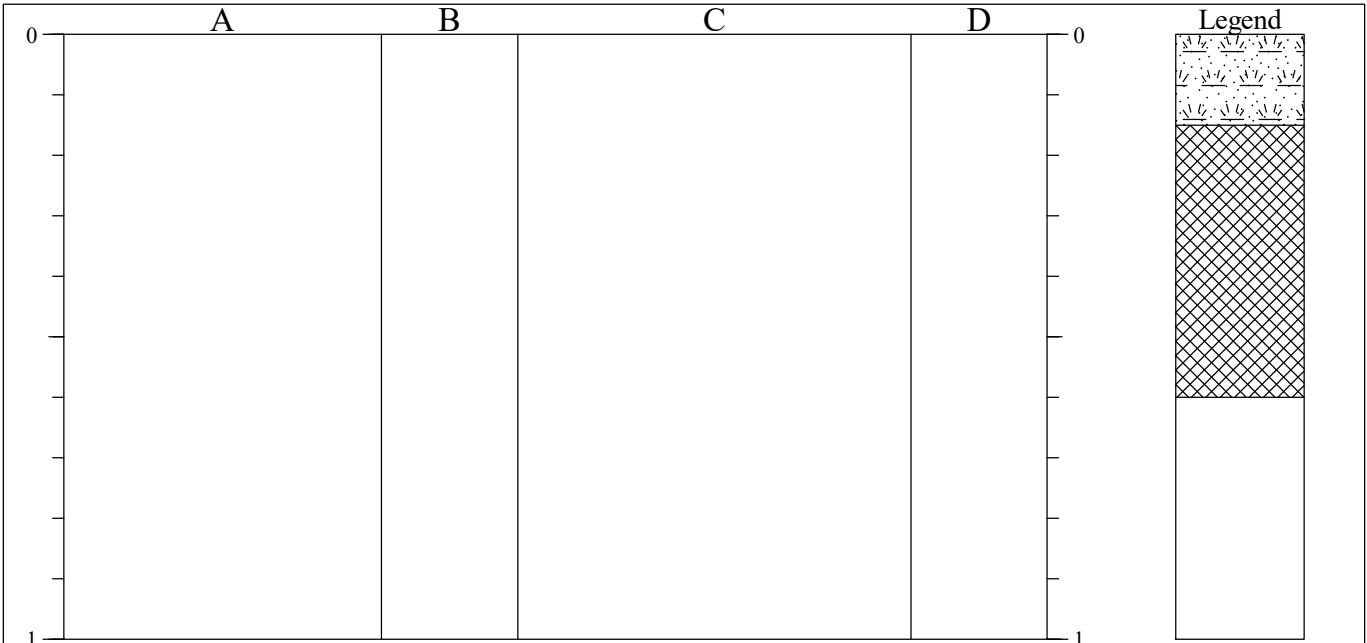
GENERAL REMARKS

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
--	-------------------------	---	-----------------

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:

0.2

A

D

B

0.2

C

N

GENERAL REMARKS

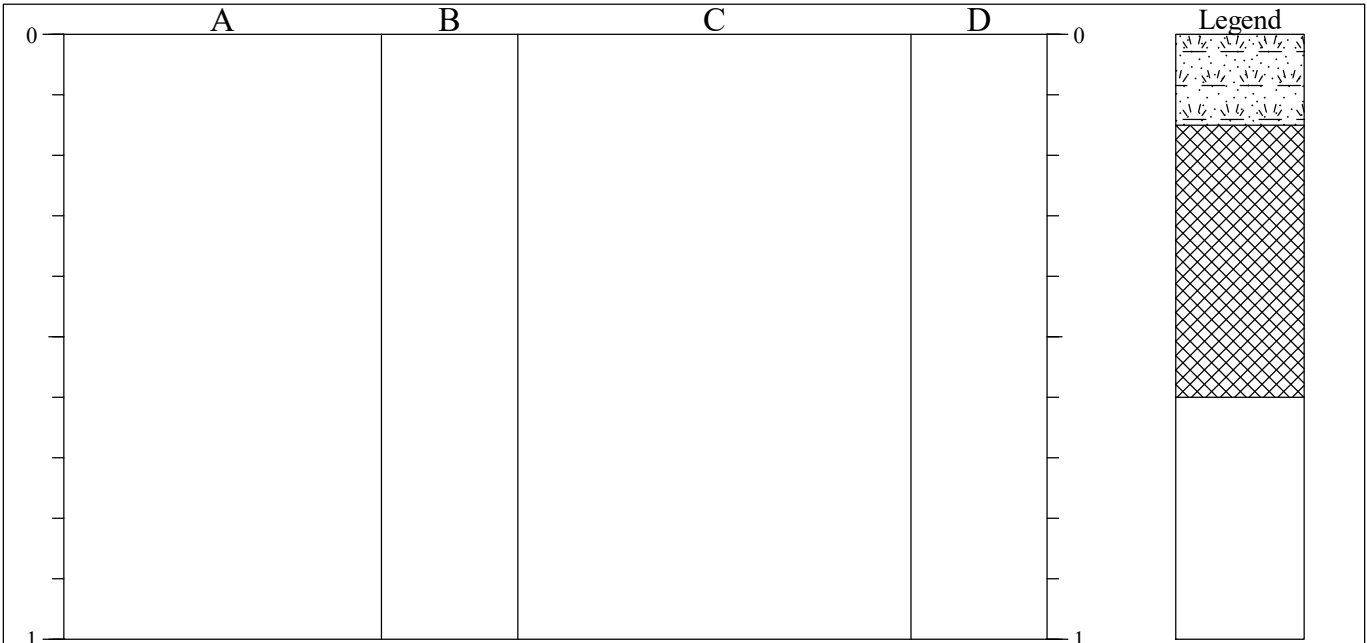
No visual or olfactory evidence of hydrocarbon or solvent contamination. Groundwater recorded at 0.55mbgl.

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

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 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:

The diagram shows a rectangular pit with dimensions A (width), B (depth), and C (length). A scale bar indicates 0.3 metres. A north arrow points upwards.

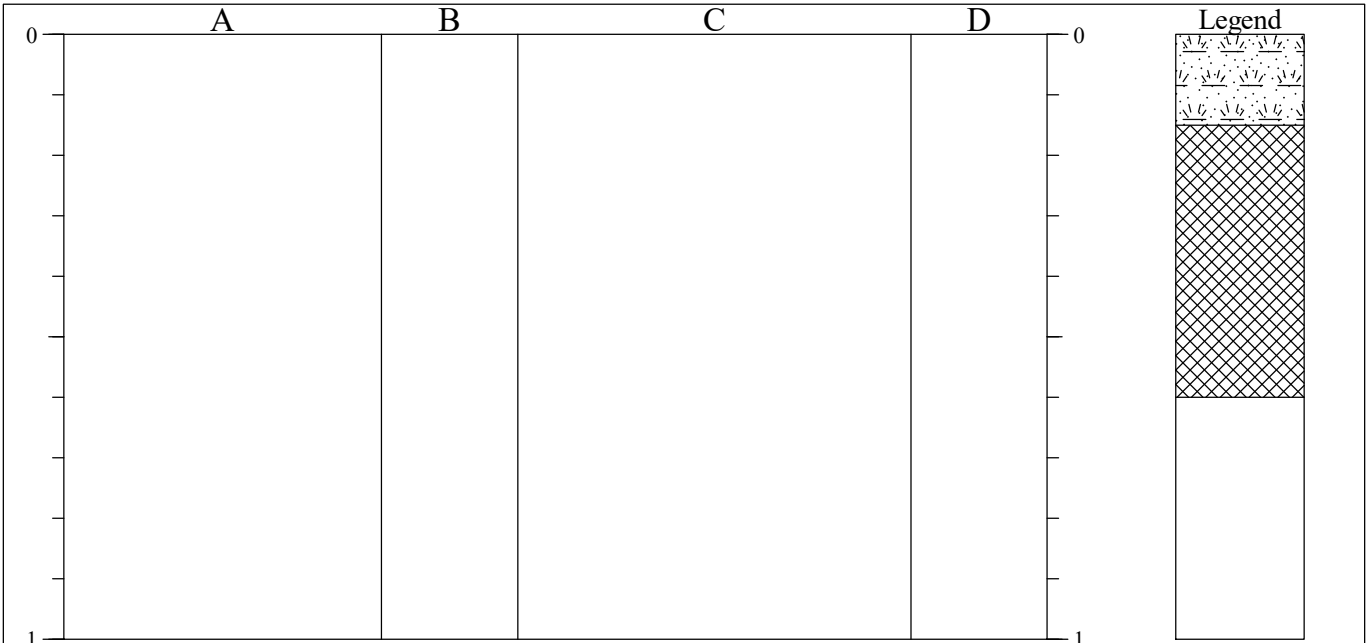
GENERAL REMARKS

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
--	-------------------------	---	-----------------

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

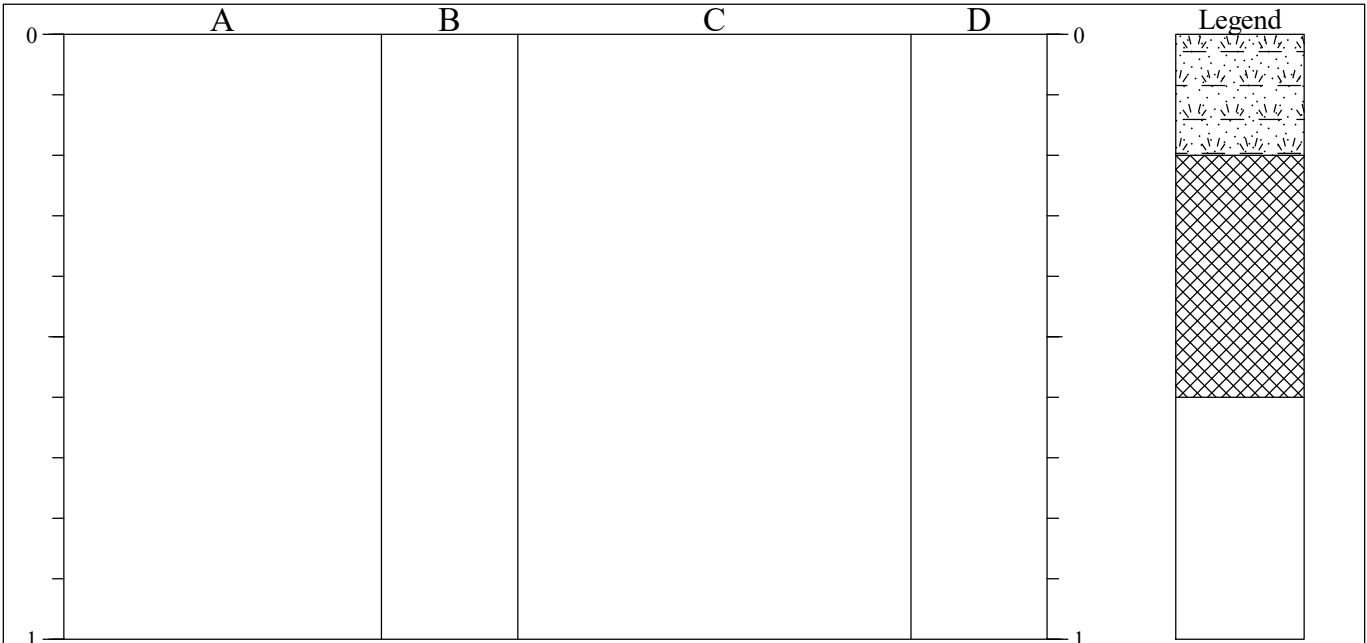
No visual or olfactory evidence of hydrocarbon or solvent contamination. No groundwater recorded.

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

A diagram of a rectangular pit. The top horizontal dimension is labeled 'A' with a double-headed arrow and the value '0.3'. The right vertical dimension is labeled 'B' with a double-headed arrow and the value '0.3'. The bottom horizontal dimension is labeled 'C' and the left vertical dimension is labeled 'D'.

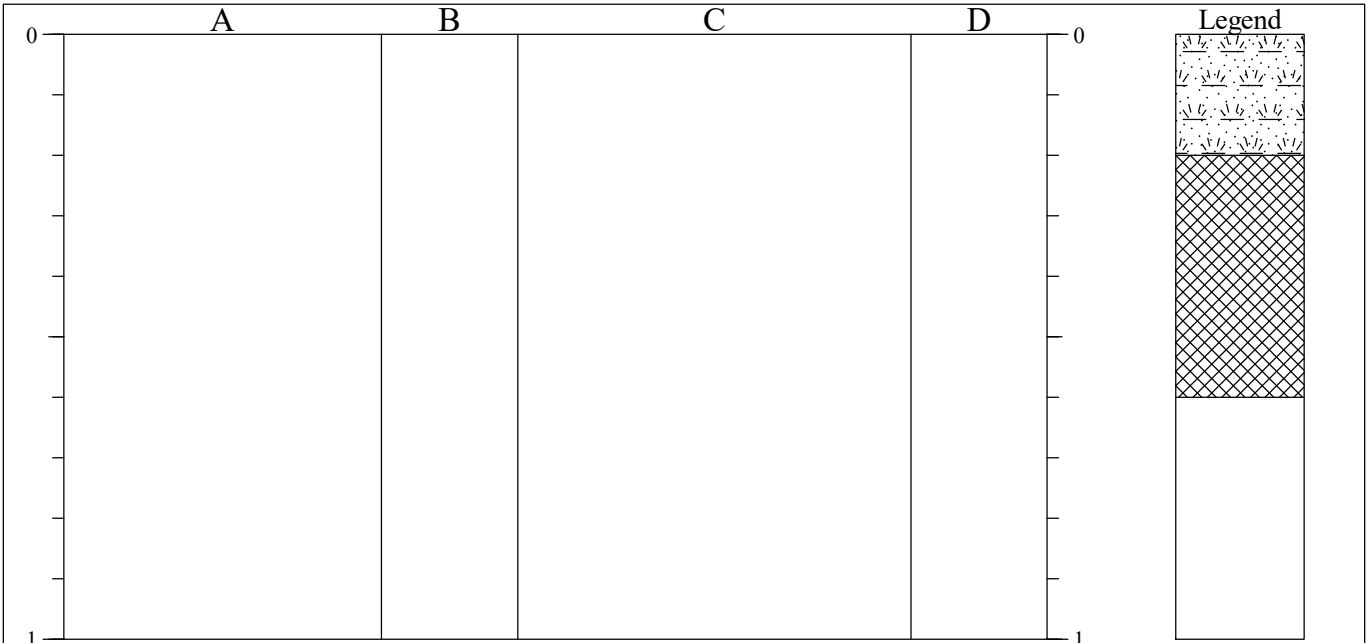
GENERAL REMARKS

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

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 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:

The diagram shows a rectangular trial pit with dimensions labeled A (width), B (depth), C (length), and D (height). A North arrow points upwards.

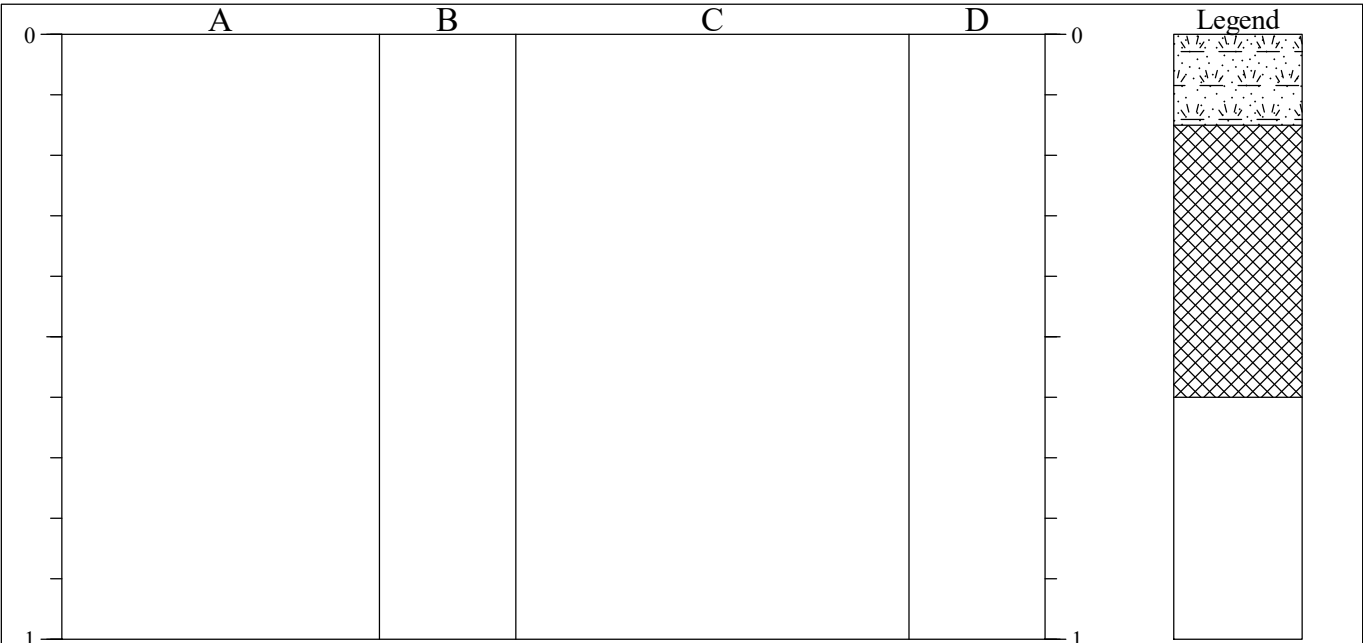
GENERAL REMARKS

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
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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	



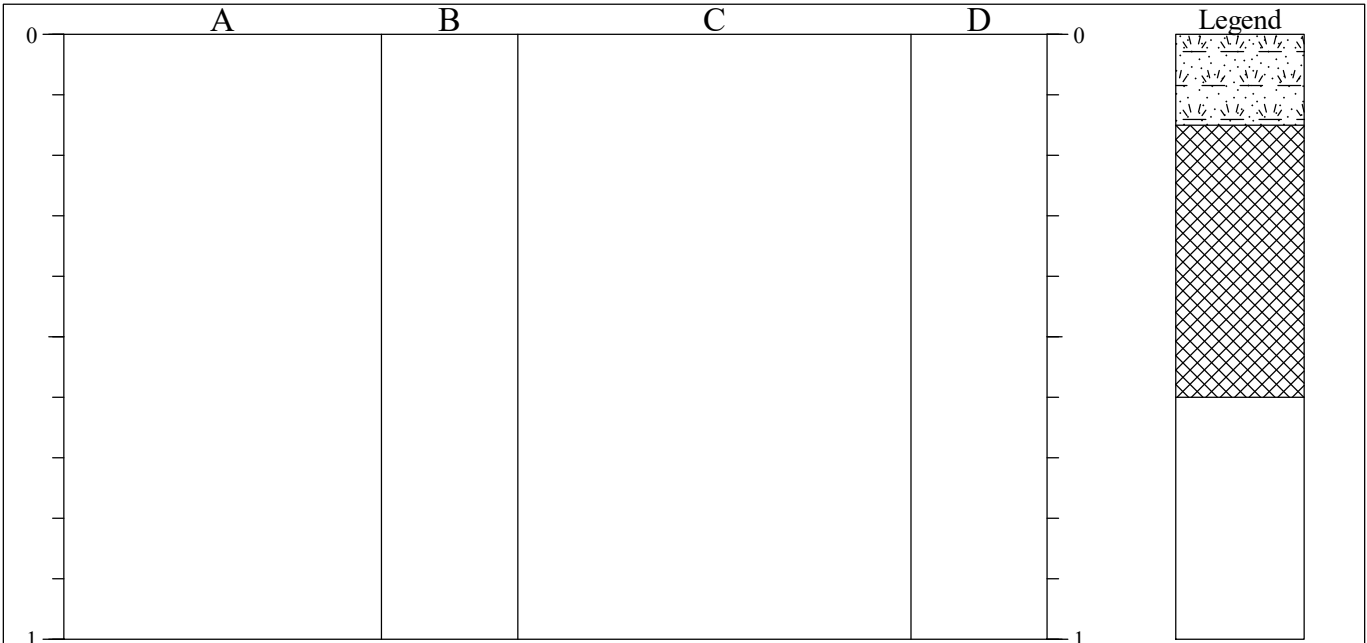
STRATA				SAMPLES & TESTS		
Depth	No	DESCRIPTION	Depth	No	Remarks/Tests	
0.00-0.15		TOPSOIL: Dark grey/black slightly silty CLAY with rare gravel. Gravel is fine to coarse, angular to subrounded of mudstone and other mixed natural lithology. Very rare gravel of brick.				
0.15-0.60		SUBSOIL: Dark grey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

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	



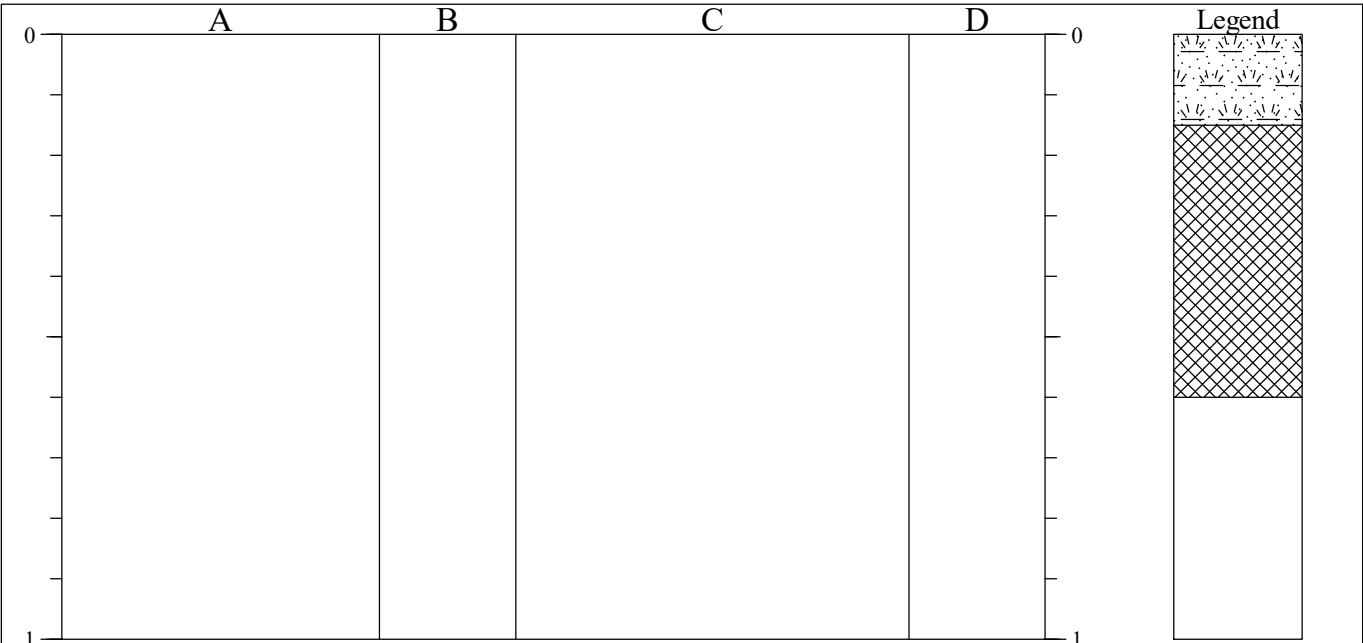
STRATA				SAMPLES & TESTS		
Depth	No	DESCRIPTION	Depth	No	Remarks/Tests	
0.00-0.15		TOPSOIL: Dark grey/black slightly silty CLAY with rare gravel. Gravel is fine to coarse, angular to subrounded of mudstone and other mixed natural lithology. Rare rootlets.				
0.15-0.60		SUBSOIL: Dark grey slightly sandy 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:			Diagram of trial pit layout showing four sections labeled A, B, C, and D. A vertical scale on the left and right indicates depth from 0 to 1 meter. A legend on the right shows two soil types: a top layer with a downward-pointing triangle pattern and a bottom layer with a cross-hatch pattern.		
All dimensions in metres Scale 1:12.5			Client Homes England	Method/ Plant Used Manually excavated	Logged By MT

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

TRIAL PIT LOG

Project East Lancs Paper Mill Island				TRIAL PIT No Plot 5 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. Rare rootlets.				
0.60		...trial pit ends at 0.6m bgl.				

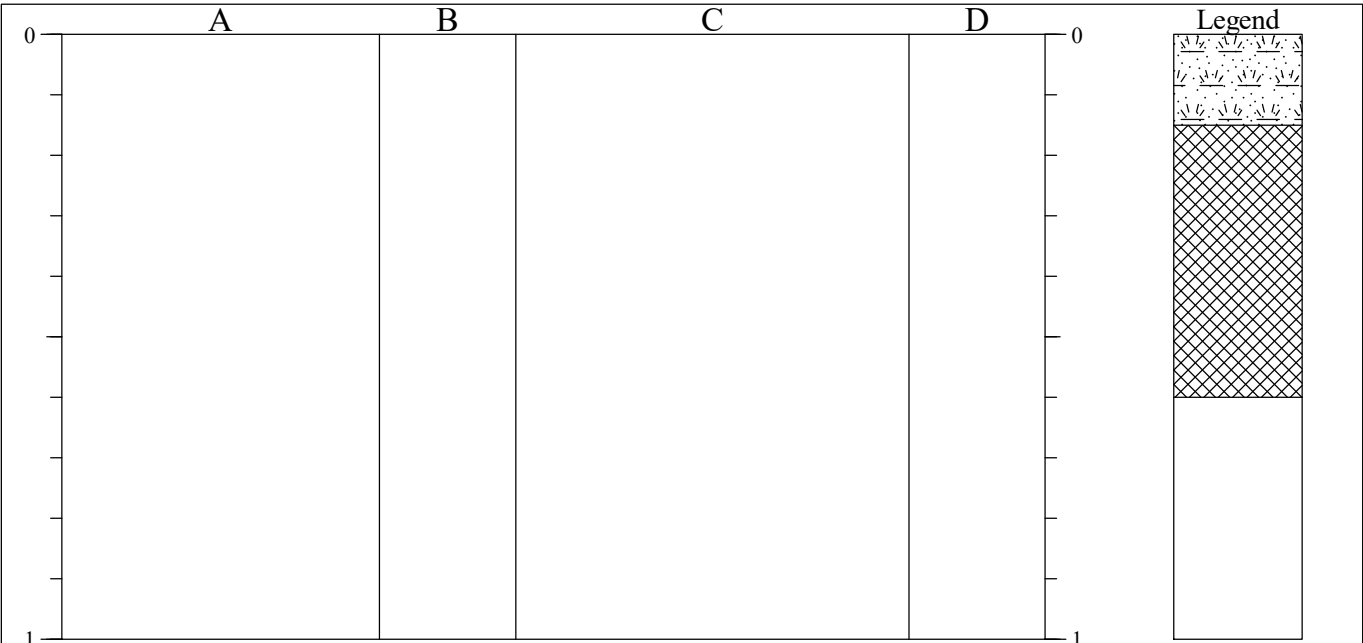
Shoring/Support: Stability:			GENERAL REMARKS No visual or olfactory evidence of hydrocarbon or solvent contamination. No groundwater recorded.	

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

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

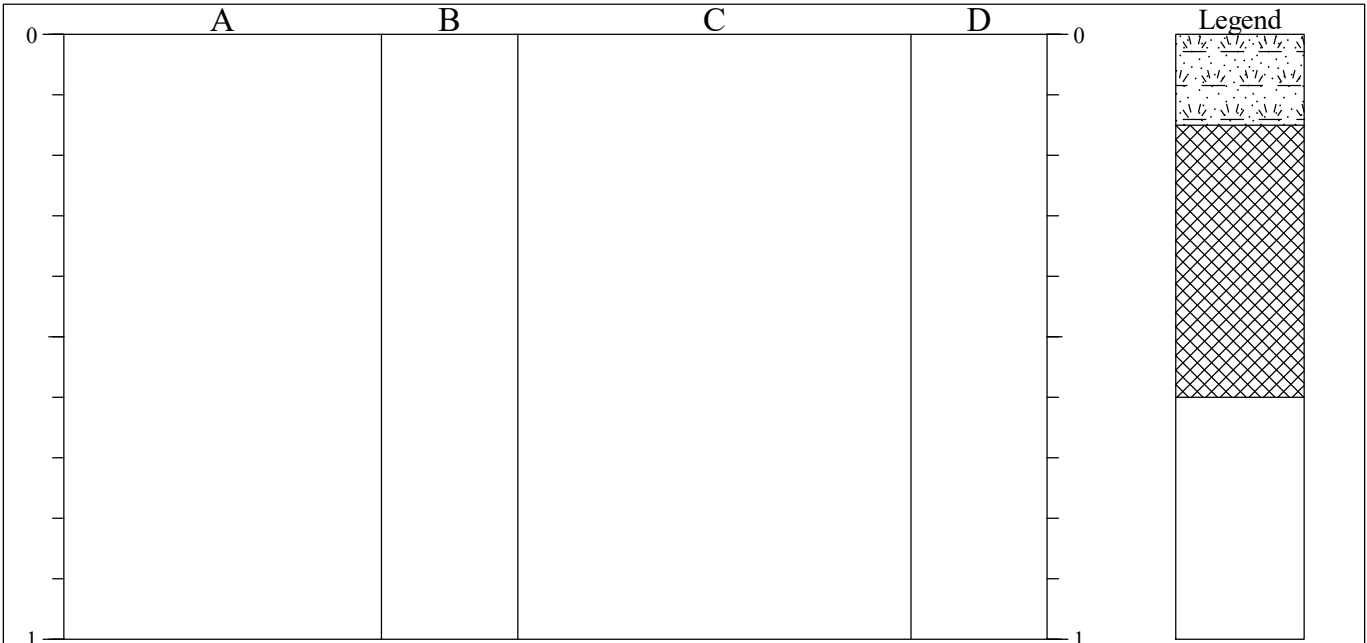
GENERAL REMARKS

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:

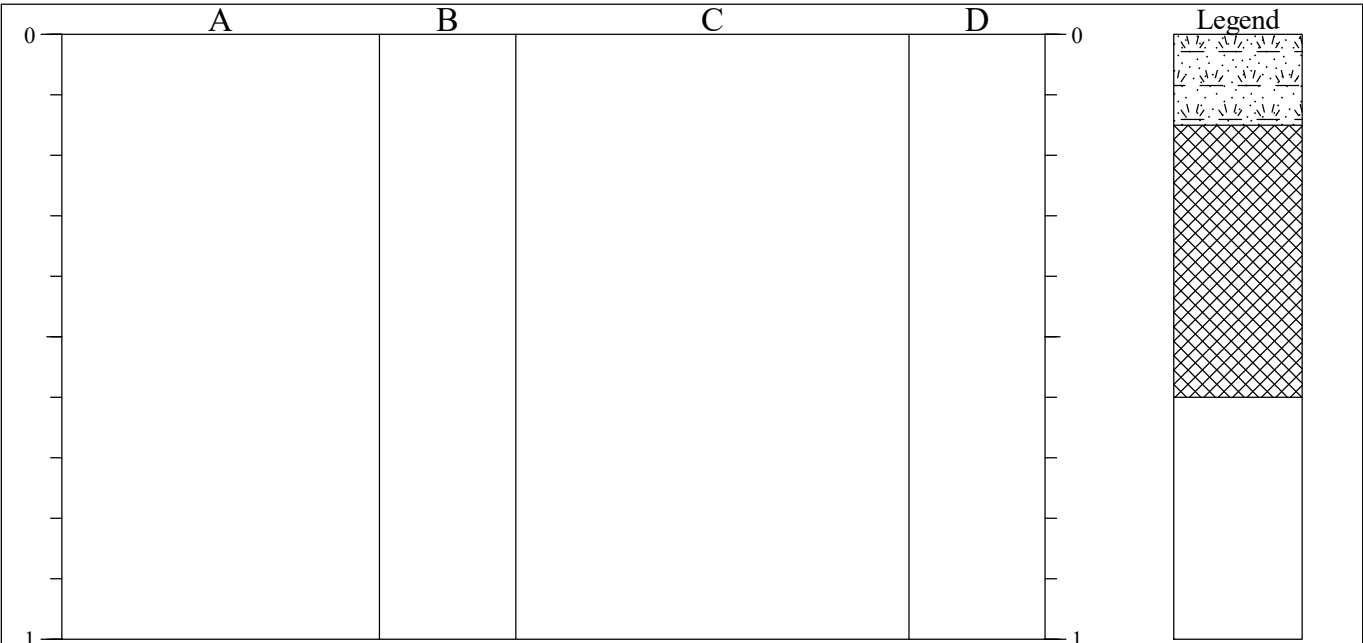
GENERAL REMARKS

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
--	-------------------------	---	-----------------

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 scale bar indicates 0.3 metres. A north arrow points upwards.

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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Certificate of Analysis

Certificate Number 24-04699

Issued: 15-Mar-24

Client NX Consulting Ltd
Station House
Stamford New Road
Altricham
WA14 1EP

Our Reference 24-04699

Client Reference ~ NX418

Order No ~ NX418

Contract Title ~ Widnes Topsoil to East Lancs Paper Mill Site

Description 3 Soil samples.

Date Received 05-Mar-24

Date Started 05-Mar-24

Date Completed 15-Mar-24

Test Procedures Identified by prefix DETSn (details on request).

Notes 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.

Approved By

Kirk Bridgewood
General Manager



Normec DETS Limited

Unit 2, Park Road Industrial Estate South, Consett, Co Durham, DH8 5PY

Symbol key at end of report Tel: 01207 582333 • email: info@dets.co.uk • www.dets.co.uk

Page 1 of 8

Summary of Chemical Analysis

Soil Samples

Our Ref 24-04699

Client Ref ~ NX418

Contract Title ~ Widnes Topsoil to East Lancs Paper Mill Site

Lab No	2307993	2307994	2307995
Sample ID ~	S1	S2	S3
Depth ~	0.20	0.20	0.20
Other ID ~			
Sample Type ~	SOIL	SOIL	SOIL
Sampling Date ~	29/02/2024	29/02/2024	29/02/2024
Sampling Time ~	n/s	n/s	n/s

Test	Method	LOD	Units			
Metals						
Arsenic	DETSC 2301#	0.2	mg/kg	24	22	22
Boron, Water Soluble (2.5:1)	DETSC 2311#	0.2	mg/kg	0.6	0.6	0.5
Cadmium	DETSC 2301#	0.1	mg/kg	0.8	0.9	0.8
Chromium	DETSC 2301#	0.15	mg/kg	23	25	37
Copper	DETSC 2301#	0.2	mg/kg	130	110	120
Lead	DETSC 2301#	0.3	mg/kg	130	140	110
Mercury	DETSC 2325#	0.05	mg/kg	0.20	0.19	0.18
Nickel	DETSC 2301#	1	mg/kg	24	24	24
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Zinc	DETSC 2301#	1	mg/kg	200	180	180
Inorganics						
pH	DETSC 2008#		pH	6.6	6.5	6.6
Cyanide, Total	DETSC 2130#	0.1	mg/kg	11	0.8	0.8
Organic matter	DETSC 2002#	0.1	%	4.1		
Sulphide	DETSC 2024*	10	mg/kg	< 10	< 10	16
Sulphate as SO ₄ , Total	DETSC 2321#	100	mg/kg	428	568	524
Petroleum Hydrocarbons						
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9	< 0.9	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10
PAHs						
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.06	0.06	0.04
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03

Summary of Chemical Analysis Soil Samples

Our Ref 24-04699

Client Ref ~ NX418

Contract Title ~ Widnes Topsoil to East Lancs Paper Mill Site

Lab No	2307993	2307994	2307995
Sample ID ~	S1	S2	S3
Depth ~	0.20	0.20	0.20
Other ID ~			
Sample Type ~	SOIL	SOIL	SOIL
Sampling Date ~	29/02/2024	29/02/2024	29/02/2024
Sampling Time ~	n/s	n/s	n/s

Test	Method	LOD	Units			
Fluoranthene	DETSC 3303#	0.03	mg/kg	0.18	0.16	0.13
Pyrene	DETSC 3303#	0.03	mg/kg	0.16	0.14	0.12
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.06	0.05	0.05
Chrysene	DETSC 3303	0.03	mg/kg	0.07	0.06	0.06
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.09	0.07	0.06
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.03	< 0.03	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.06	0.05	0.04
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.04	< 0.03	< 0.03
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.05	0.03	0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	0.78	0.59	0.50
Phenols						
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	0.7	0.3

BS 3882:2015 Topsoil Analytical Report

Our Ref 24-04699

Client Ref ~ NX418

Contract Title ~ Widnes Topsoil to East Lancs Paper Mill Site

Lab No	2307993
Sample ID ~	S1
Depth ~	0.20
Other ID ~	
Sample Type ~	SOIL
Sampling Date ~	29/02/2024
Sampling Time ~	n/s

Parameter	Method	Result	Compliant with multi purpose range?	Compliant with specific purpose range? (Y/N)				
			(Y/N)	Acid.	Calc	Low F.	Low F. acidic	Low F. calc.
Texture								
Clay content %	\$	0	See Figure 1 on Textural class sheet					
Silt content %	\$	30						
Sand content %	\$	70						
Soil texture – (see figure 1)	\$	Sandy Loam						
Soil organic matter content % (varying with clay content)								
Clay 5-20%	DETSC 2002#	4.1	Y	Y	Y	Y	Y	Y
Clay 20-35%	DETSC 2002#		N/A	N/A	N/A	N/A	N/A	N/A
Maximum coarse fragment - Content % m/m								
>2 mm	\$	6	Y	Y	Y	Y	Y	Y
>20 mm	\$	0	Y	Y	Y	Y	Y	Y
>50 mm	\$	0	Y	Y	Y	Y	Y	Y
Soil pH value	DETSC 2008#	6.6	Y	N	N	Y	N	N
Carbonate (Calcareous only) %	DETSC 2005	0	N/A	N/A	N	N/A	N/A	N
Available plant nutrient content								
Total Nitrogen %	DETSC 2121*	0.4	Y	Y	Y	N/A	N/A	N/A
Extractable phosphate mg/l	DETSC 2310*	44	Y	Y	Y	N	N	N
Extractable potassium mg/l	DETSC 2309*	81	N	N	N	N/A	N/A	N/A
Extractable magnesium mg/l	DETSC 2309*	140	Y	Y	Y	N/A	N/A	N/A
Carbon: Nitrogen ratio		5.95	Y	Y	Y	Y	Y	Y
Electrical Conductivity	DETSC 2009	1900	Y	N/A	N/A	N/A	N/A	N/A
Phytotoxic contaminants (by soil pH) mg/kgDS								
Zinc (Nitric acid extract)	DETSC 2308*	75	Y	Y	Y	Y	Y	Y
Copper (Nitric acid extract)	DETSC 2308*	23	Y	Y	Y	Y	Y	Y
Nickel (Nitric acid extract)	DETSC 2308*	12	Y	Y	Y	Y	Y	Y
Visible contaminants % m/m								
>2 mm	*	0	Y	Y	Y	Y	Y	Y
...of which plastics	*	0	Y	Y	Y	Y	Y	Y
...man made sharps	*	0	Y	Y	Y	Y	Y	Y

Additional analytical certificate(s) for particle size distribution analysis are appended.

- MCERTS (accred. only implied if report carries the MCERTS logo). * - unaccredited test. \$ - completed by approved subcontractor.

DECLARATION: I certify that this sample of soil has been analysed in accordance with BS3882:2015

Signature:



BS 3882: Textural Class

Our Ref 24-04699

Client Ref ~ NX418

Contract Title ~ Widnes Topsoil to East Lancs Paper Mill Site

Results: Proportion in class (%)			Help messages
Clay	Silt	Sand	
0	30	70	

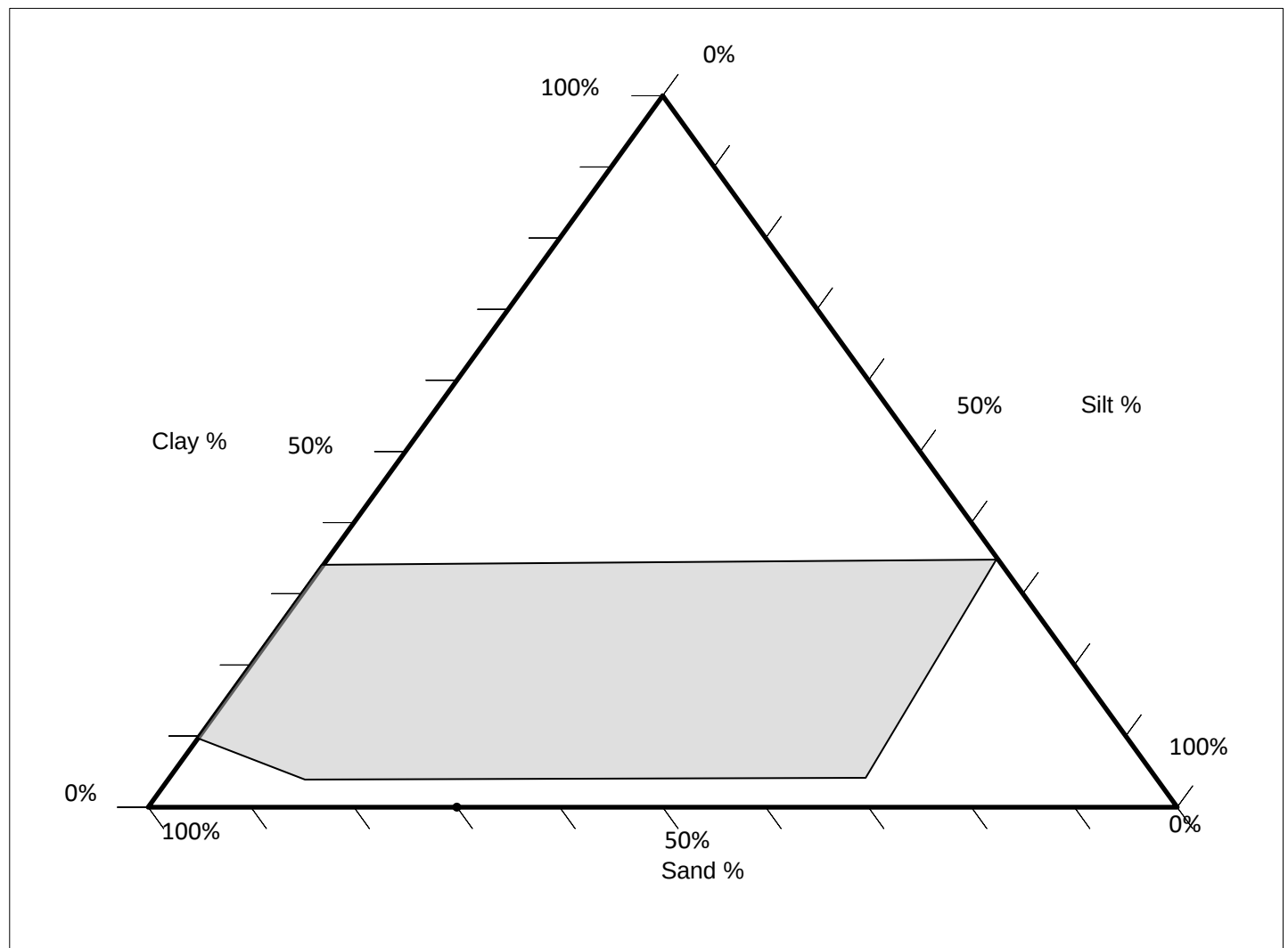


Figure 1

The textural class is required to be in the shaded area to be compliant with BS3882:2015

Results are shown by the grey point in the chart

Plotting parameters		Help messages
Printer correction:	1.1	
Tick interval (0 - 0.5):	0.1	
Tick length (0 - 0.2):	0.03	
Plot lines? (Y or N):	n	

BS 3882:2015 Topsoil

Threshold Values

Parameter	Multipurpose Topsoil	Specific purpose topsoil				
		Acidic	Calcareous	Low fertility	Low fertility acidic	Low fertility calcareous
Soil texture <2mm fraction % m/m						
Clay content %	10 to 35					
Silt content %	0 to 65					
Sand content %	35 to 85					
Maximum coarse fraction % m/m						
>2 mm	30					
>20mm	10					
>50mm	0					
Mass loss on Ignition %						
Clay 5% to 20%	3 to 20	3 to 30	3 to 20	2 to 20	2 to 30	2 to 20
Clay 20% to 35%	5 to 20	5 to 30	5 to 20	2 to 20	2 to 30	2 to 20
Soil pH	5.5 to 8.5	3.5 to5.5	7.5 to 9.0	3.5 to 9.0	3.5 to 5.5	7.5 to 9.0
Carbonate % m/m			>1			>1
Plant nutrient content						
Total nitrogen % m/m	>0.15	>0.15	>0.15	-	-	-
Extractable phosphate mg/l	16 to 140	16 to 140	16 to 140	≤20	≤20	≤20
Extractable potasium mg/l	121 to 1500	121 to 1500	121 to 1500	-	-	-
Extractable magnesium mg/l	51 to 600	51 to 600	51 to 600	-	-	-
Carbon : Nitrogen ratio	<20:1	<20:1	<20:1	<35:1	<35:1	<20:1
Electrical conductivity μS.cm-1	If greater than 3 300, carry out exchangeable sodium					

Multi purpose and specific purpose topsoils			
Potentially Phytotoxic elements (mg/kg dry basis)	Soil pH <6.0	Soil pH 6.0 to 7.0	Soil pH >7.0
Zn	<200	<200	<300
Cu	<100	<135	<200
Ni	<60	<75	<110
Visible contaminants %m/m			
of which plastics	<0.5		
Sharps, number	<0.25		

Summary of Asbestos Analysis Soil Samples

Our Ref 24-04699

Client Ref ~ NX418

Contract Title ~ Widnes Topsoil to East Lancs Paper Mill Site

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
2307993	S1 0.20	SOIL	NAD	none	Josh Best
2307994	S2 0.20	SOIL	NAD	none	Josh Best
2307995	S3 0.20	SOIL	NAD	none	Josh Best

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: * -not included in laboratory scope of accreditation.

Information in Support of the Analytical Results

Our Ref ~ 24-04699
 Client Ref ~ NX418
 Contract ~ Widnes Topsoil to East Lancs Paper Mill Site

Containers Received & Deviating Samples

Lab No	Sample ID ~	Date Sampled ~	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2307993	S1 0.20 SOIL	29/02/24	GJ 250ml, GJ 60ml, PG, PT 1L		
2307994	S2 0.20 SOIL	29/02/24	GJ 250ml, GJ 60ml, PT 1L		
2307995	S3 0.20 SOIL	29/02/24	GJ 250ml, GJ 60ml, PT 1L		

Key: G-Glass P-Plastic J-Jar G-Bag T-Tub

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Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.
 Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.
 The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-
 Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Key:

~ Sample details are provided by the client and can affect the validity of the results
 * -not accredited.
 # -MCERTS (accreditation only applies if report carries the MCERTS logo).
 \$ -subcontracted.
 n/s -not supplied.
 I/S -insufficient sample.
 U/S -unsuitable sample.
 t/f -to follow.
 nd -not detected.

End of Report



Certificate of Analysis

Certificate Number 24-06145

Issued: 02-Apr-24

Client NX Consulting Ltd
Station House
Stamford New Road
Altricham
WA14 1EP

Our Reference 24-06145

Client Reference ~ NX418

Order No ~ NX418

Contract Title ~ Shire Hill Quarry to ELPM

Description 3 Soil samples.

Date Received 22-Mar-24

Date Started 22-Mar-24

Date Completed 02-Apr-24

Test Procedures Identified by prefix DETSn (details on request).

Notes 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.

Approved By

A handwritten signature in black ink, appearing to read "K. Bridgewood".

Kirk Bridgewood
General Manager



Normec DETS Limited

Unit 2, Park Road Industrial Estate South, Consett, Co Durham, DH8 5PY

Symbol key at end of report Tel: 01207 582333 • email: info@dets.co.uk • www.dets.co.uk

Page 1 of 5

Summary of Chemical Analysis

Soil Samples

Our Ref 24-06145

Client Ref ~ NX418

Contract Title ~ Shire Hill Quarry to ELPM

Lab No	2316083	2316084	2316085
Sample ID ~	S1	S2	S3
Depth ~			
Other ID ~			
Sample Type ~	SOIL	SOIL	SOIL
Sampling Date ~	20/03/2024	20/03/2024	20/03/2024
Sampling Time ~	n/s	n/s	n/s

Test	Method	LOD	Units			
Metals						
Arsenic	DETSC 2301#	0.2	mg/kg	2.4	2.5	2.0
Boron, Water Soluble (2.5:1)	DETSC 2311#	0.2	mg/kg	< 0.2	0.2	< 0.2
Cadmium	DETSC 2301#	0.1	mg/kg	0.2	0.4	0.2
Chromium	DETSC 2301#	0.15	mg/kg	15	20	14
Copper	DETSC 2301#	0.2	mg/kg	11	14	9.5
Lead	DETSC 2301#	0.3	mg/kg	10	19	8.5
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Nickel	DETSC 2301#	1	mg/kg	17	23	16
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Zinc	DETSC 2301#	1	mg/kg	54	70	56
Inorganics						
pH	DETSC 2008#		pH	7.3	7.4	7.6
Cyanide, Total	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Total Organic Carbon	DETSC 2084#	0.5	%	< 0.5	0.5	< 0.5
Sulphide	DETSC 2024*	10	mg/kg	12	12	< 10
Sulphate as SO ₄ , Total	DETSC 2321#	100	mg/kg	37900	1240	151
Petroleum Hydrocarbons						
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9	< 0.9	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10
PAHs						
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03

Summary of Chemical Analysis Soil Samples

Our Ref 24-06145

Client Ref ~ NX418

Contract Title ~ Shire Hill Quarry to ELPM

Lab No	2316083	2316084	2316085
Sample ID ~	S1	S2	S3
Depth ~			
Other ID ~			
Sample Type ~	SOIL	SOIL	SOIL
Sampling Date ~	20/03/2024	20/03/2024	20/03/2024
Sampling Time ~	n/s	n/s	n/s

Test	Method	LOD	Units			
Fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03
Pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	< 0.10	< 0.10	< 0.10
Phenols						
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3

Summary of Asbestos Analysis

Soil Samples

Our Ref 24-06145

Client Ref ~ NX418

Contract Title ~ Shire Hill Quarry to ELPM

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
2316083	S1	SOIL	NAD	none	Ben Barsby
2316084	S2	SOIL	NAD	none	Ben Barsby
2316085	S3	SOIL	NAD	none	Ben Barsby

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: * -not included in laboratory scope of accreditation.

Information in Support of the Analytical Results

Our Ref 24-06145
 Client Ref ~ NX418
 Contract ~ Shire Hill Quarry to ELPM

Containers Received & Deviating Samples

Lab No	Sample ID ~	Date Sampled ~	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2316083	S1 SOIL	20/03/24	GJ 250ml, GJ 60ml, PT 1L		
2316084	S2 SOIL	20/03/24	GJ 250ml, GJ 60ml, PT 1L		
2316085	S3 SOIL	20/03/24	GJ 250ml, GJ 60ml, PT 1L		

Key: G-Glass P-Plastic J-Jar T-Tub

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