

Validation Completion Report

Site: Sonnet Gate, Prescott

Reference:15-292-R1

Date: July 2025



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QUALITY ASSURANCE

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This report has been prepared for the sole benefit, use, and information of the client. The liability of Environmental Engineering Partnership Limited T/A E3P with respect to the information contained in the report will not extend to any third party. This report has been prepared by the qualified persons as listed below.

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1. INTRODUCTION

1.1. BACKGROUND

E3P Ltd has been commissioned by Miller Homes (North West) to produce a Completion Report in relation to the validation of the garden plots and gas membrane installations at their recently constructed site at Sonnet Gate, Prescott.

Knowsley District Council have previously confirmed their general acceptance of the remediation works and subsequent validation works for the proposed residential development, pending the following information:

- ✿ Validation of the 600mm cover system; and
- ✿ Validation of the ground gas protection measures.

Interim validation letters pertaining to the above have been produced previously; however, all outstanding information is included and consolidated within this report.

All acronyms used within this report are defined in the Glossary presented in Appendix II.

1.2. OBJECTIVES

E3P have been instructed to develop a detailed Validation Completion Report associated with the validation of the residential development that will incorporate the following:

- ✿ Overview of the validation works undertaken on the development site within the garden areas.
- ✿ Chemical laboratory analysis was undertaken of the materials utilised within the cover system;
- ✿ Overview of the validation works undertaken on the development site pertaining to the installation of gas protection measures to CS2/Amber 1 where required.

1.3. LIMITATIONS

The limitations of this report are presented in Appendix I.

1.4. CONFIDENTIALITY

E3P has prepared this report solely for the use of the client and those parties with whom a warranty agreement has been executed, or with whom an assignment has been agreed. Should any third party wish to use or rely upon the contents of the report, written approval must be sought from E3P; a charge may be levied against such approval.



2. GARDEN VALIDATION

Independent validation of plots 1-17, 20-59 & 63-81 was undertaken between 15th March 2022 and 4th December 2023. In total, thirty-one visits were made during which the depth of the cover system was measured to confirm the installation of 450mm subsoil and 150mm topsoil, with photographs taken by way of validation.

All material used for the cover system was confirmed chemically suitable for use through chemical analysis, discussed further in Section 3.0. All validation works have been completed in strict accordance with the specification previously agreed with Knowsley Metropolitan Borough Council.

Table 2.1 below shows the Garden Validation reference and date of validation for each garden and landscaped area.

TABLE 2.1 SUMMARY OF GARDEN VALIDATIONS

DATE	REPORT NUMBER	PLOT NUMBER
15 th March 2022	V1	1-4
5 th April 2022	V2	5-6
8 th June 2022	V3	7-8 & 16-17
9 th June 2022	V4	18-19
7 th July 2022	V5	9-13
9 th September 2022	V6	34-35
21 st September 2022	V7	33
30 th September 2022	V8	30-32
8 th November 2022	V9	20-21 & 26-29
22 nd November 2022	V10	36
15 th December 2022	V11	37-43
16 th December 2022	V12	22-24
20 th December 2022	V13	25
30 th January 2023	V14	44-45
3 rd March 2023	V15	46-48
10 th March 2023	V16	49
17 th April 2023	V17	14 & 50-52



DATE	REPORT NUMBER	PLOT NUMBER
28 th April 2023	V18	53
23 rd May 2023	V19	15
31 st May 2023	V20	54-55
26 th June 2023	V21	56
27 th June 2023	V22	56
11 th July 2023	V23	57-59
10 th October 2023	V24	60-62
25 th August 2023	V25	63-65
5 th September 2023	V26	64
12 th October 2023	V27	66, 70, 72
24 th October 2023	V28	71
17 th October 2023	V29	67-69
22 nd November 2023	V30	74-76
4 th December 2023	V31	77-81
10 th November 2023	V32	73

The full details of the cover system depths of each plot garden area are detailed within the individual letters issued, as per the report reference listed within Table 2.1.

All garden validation letter reports are available on request and have previously been submitted on an individual basis to the warranty provider.



3. CHEMICAL VALIDATION

3.1. TOPSOIL AND SUBSOIL

All gardens and landscaped areas require a 600mm chemically suitable cover system comprising at least 450mm subsoil and 150mm topsoil.

Topsoil

Topsoil was stockpiled towards the end of the earthworks for use within the upper 150mm cover system. Four topsoil samples were submitted for chemical analysis prior to the commencement of works. Topsoil was imported to site under an MMP.

Subsoil

During the earthworks to create a developable platform, install highways and complete drainage trenches the natural cohesive site won materials were stockpiled on-site for use as subsoil within garden and landscaped areas. The subsoils have subsequently been placed within garden plots during development. Generally subsoils were imported to site under an MMP.

Subsoil and topsoil materials were tested prior to use within the proposed cover system to confirm their chemical suitability for use within the development.

3.2. CHEMICAL VALIDATION

Twelve topsoil samples were submitted for chemical analysis, and the results confirmed that the material is suitable for use within the 600mm cover system within the residential development.

Laboratory certificates 22-42746, 22-62748 and 22-12541 provide the results for the topsoil testing.

Twelve samples of subsoil were collected from the stockpile and analysed in accordance with the regulatory approved Remediation Strategy. Chemical analysis identified no contaminant exceedances; therefore, it has been determined that the subsoil would be suitable for utilisation within the proposed gardens.

Laboratory certificates 22-49723, 22-77275, 22-93528 and 22-12541 provide analysis of the subsoils that were stockpiled during the remediation and enabling works.

All samples were analysed in accordance with the regulatory approved Remediation Strategy.

Furthermore, E3P inspected the materials intended for topsoil and subsoil. Chemical analysis identified no contaminant exceedances, therefore it has been determined that the topsoil and subsoil is suitable for utilisation within the proposed gardens.

Sufficient samples have been obtained and analysed to meet the agreed sample frequency of 1 sample per 50m³ topsoil and 1 sample per 100m³ subsoil. Laboratory certificates have been attached within the individual garden validation letters and are also included within Appendix IV of this report.



4. GAS MEMBRANE VALIDATION

4.1. SUMMARY OF GROUND GAS RISK ASSESSMENT

E3P completed ground gas monitoring across the site which identified the presence of CH₄ and CO₂.

In accordance with the methodology outlined with the CIRIA publication C665, E3P have utilised the results of the ground gas monitoring surveys to calculate a tentative Gas Screening Value (GSV). The maximum GSV calculated for methane was 0.02 l/hr (CP101) and for carbon dioxide was 0.0041 l/hr (CP102).

Based on the 6 No. gas monitoring surveys, the site is classified as CS2/Amber 1 which will require specialist mitigation measures to be constructed in accordance with BS8485 (2015).

In this instance BS8485 requires a minimum of 3.5 points be achieved by installation of a suitable combination of measures as prescribed within the 2015 version of this specification.

4.2. GAS MEMBRANE VALIDATION

Independent validation of plots 1-81 was undertaken between 24th November 2021 and 3rd July 2023. In total, thirty-one visits were made during which the validation of the gas membrane, the works included:

-  General condition of the membrane;
-  Verification of the joints; and
-  Verification of service entries and top hats.

With photographs taken by a way of validation. Full details within the Gas Membrane Validation Certificates are included in Appendix V.

Following the completion of the above, E3P can confirm that Plots 1-81 have been installed with gas protection measures in accordance with CS2 to an acceptable level of workmanship.

Table 4.1 below shows the Gas Membrane Validation reference and date of validation for each gas membrane.

TABLE 4.1 SUMMARY OF GAS MEMBRANE VALIDATIONS

DATE	REPORT NUMBER	PLOT NUMBER
24 th November 2021	V1	1-3
7 th December 2021	V2	4-5
21 st December 2021	V3	6
12 th January 2022	V4	7-8
28 th January 2022	V5	9 & 16-19
14 th February 2022	V6	10-11



DATE	REPORT NUMBER	PLOT NUMBER
17 th February 2022	V7	12-13
25 th March 2022	V8	34-35
5 th April 2022	V9	32-33
25 th April 2022	V10	27-31
1 st June 2022	V11	20 & 26
8 th June 2022	V12	21
9 th June 2022	V13	36-38
15 th June 2022	V14	38-43
29 th June 2022	V15	47-49
7 th July 2022	V16	23 & 25
12 th July 2022	V17	44-46
21 st July 2022	V18	22 & 24
25 th July 2022	V19	50-52
1 st August 2022	V20	53
24 th August 2022	V21	14-15
10 th November 2022	V22	54
22 nd November 2022	V23	55-59
10 th February 2023	V24	60-62
23 rd February 2023	V25	65-67
27 th March 2023	V26	63-64
19 th May 2023	V27	70-71
23 rd May 2023	V28	72 & 80-81
30 th May 2023	V29	73-74
5 th June 2023	V30	77-79



DATE	REPORT NUMBER	PLOT NUMBER
3 rd July 2023	V31	68-69

The full details of the gas membrane validation of each plot are detailed within the individual letters issued, as per the report reference listed within Table 4.1. All gas membrane validation letter reports are available on request.



5. CONCLUSIONS

On completion of the validation works undertaken in relation to the installation of a chemically suitable cover system and gas protection measures, E3P can confirm that all works were undertaken in strict accordance with the agreed Remediation Strategy and therefore would deem the site suitable for use as a residential development.

E3P do not consider that any further work is necessary.

END OF REPORT



APPENDIX I

LIMITATIONS

REPORT LIMITATIONS

GENERAL

1. This report and any associated works (together comprising the "Services") were compiled and carried out by E3P for the client (as present in Section 1) under the E3P "Terms of Business" or with those parties with whom a warranty agreement has been executed, or with whom an assignment has been agreed and outlined in the body of the report.
2. Unless explicitly agreed otherwise, in writing, this report has been prepared under E3P Standard Terms and Business as included within our proposal to the Client.
3. Project-specific appointment documents may be agreed upon at our discretion and a charge may be levied for both the time to review and finalise appointment documents and also for associated changes to the appointment terms. E3P reserves the right to amend the fee should any changes to the appointment terms create an increased risk to E3P.
4. The report needs to be considered in light of the proposal and associated limitations of scope. The report needs to be read in full and isolated sections cannot be used without full reference to other elements of the report and any previous works referenced within the report.

PHASE 1 GEOENVIRONMENTAL AND PRELIMINARY RISK ASSESSMENTS

5. Coverage: This section covers reports with the following titles or combination of titles: Phase 1; Desktop Study; Geoenvironmental Assessment; Development Appraisal; Preliminary Environmental Risk Assessment; Constraints Report; Due Diligence Report; Geotechnical Development Review; Environmental Statement; Environmental Chapter; Baseline Environmental Assessment; Project Scope Summary Report (PSSR), Program Environmental Impact Report (PEIR), Geotechnical Development Risk Register; Agricultural Land Assessment; Mineral Safeguarding Assessment; Desk Top Coal Mining Risk Assessment; Hydrogeological Appraisal; Construction Environmental Management Plan; and Site Water Management Plan.
6. The works undertaken to prepare this report comprised a study of available and easily documented information from a variety of sources (including the Client), together with (where appropriate) a brief walkover inspection of the Site and correspondence with relevant authorities and other interested parties. Due to the short timescales associated with these projects responses may not have been received from all parties. E3P cannot be held responsible for any disclosures that are provided post-production of our report and will not automatically update our report.



7. The opinions given in this report have been dictated by the finite data on which they are based and are relevant only for the purpose for which the report was commissioned. The information reviewed should not be considered exhaustive and has been accepted in good faith as providing true and representative data pertaining to site conditions. Should additional information become available which may affect the opinions expressed in this report, E3P reserves the right to review such information and, if warranted, to modify the opinions accordingly.
8. It should be noted that any risks identified in this report are perceived risks based on the information reviewed. Actual risks can only be assessed following intrusive investigations of the site.
9. Where mention has been made to the identification of Japanese Knotweed and other invasive plant species and asbestos or asbestos-containing materials, this is for indicative purposes only and does not constitute or replace full and proper surveys completed by suitably qualified and experienced specialists in these fields.
10. E3P does not warrant work/data undertaken/provided by others.

INTRUSIVE INVESTIGATION REPORTS

11. Coverage: The following report titles (or combination) may cover this category of work: Geoenvironmental Site Investigation; Geotechnical Assessment; GIR (Ground Investigation Reports); Preliminary Environmental And Geotechnical Risk Assessment; Preliminary Summary; Coal Mining Risk Assessment, Ground Gas Addendum; and, Geotechnical Risk Register.
12. The investigation has been undertaken to provide information concerning either:
 - I. The type and degree of contamination present at the site in order to allow a generic quantitative risk assessment to be undertaken; or
 - II. Information on the soil properties present at the site to allow for geotechnical development constraints to be considered.
13. The scope of the investigation was selected on the basis of the specific development and land use scenario proposed by the Client and may be inappropriate to another form of development or scheme. If the development layout was not known at the time of the investigation the report findings may need revisiting once the development layout is confirmed.
14. Unless otherwise specified in the scope of works, any site drawing(s) provided in this report is (are) not meant to be an accurate base plan but is (are) used to present the general relative locations of features on, and surrounding, the site. Features (intrusive and sample locations etc) annotated on site plans are not drawn to scale but are centred over the approximate location. Such features should not be used for setting out and should be considered indicative only.



15. For contamination purposes, the objectives of the investigation are limited to establishing the risks associated with potential contamination sources with the potential to cause harm to human health, building materials, the environment (including adjacent land), or controlled waters.
16. For geotechnical investigations, the purpose is to broadly consider potential development constraints associated with the physical property of the soils underlying the site within the context of the proposed future or continued use of the site, as stated within the report.
17. The amount of exploratory work, soil property testing and chemical testing undertaken has necessarily been restricted by various factors which may include accessibility, the presence of services; existing buildings; current site usage or short timescales. The exploratory holes completed assess only a small percentage of the area in relation to the overall size of the Site, and as such can only provide a general indication of conditions.
18. The number of sampling points and the methods of sampling and testing do not preclude the possible existence of contamination where concentrations may be significantly higher than those actually encountered or ground conditions that vary from those identified. In addition, there may be exceptional ground conditions elsewhere on the site which have not been disclosed by this investigation and which have therefore not been taken into account in this report.
19. The inspection, testing and monitoring records relate specifically to the investigation points and the timeframe that the works were undertaken. They will also be limited by the techniques employed. As part of this assessment, E3P has used reasonable skill and care to extrapolate conditions between these points based on assumptions to develop our interpretation and conclusions.
20. The assumption made in forming our conclusions is that the ground and groundwater conditions (both chemically and physically) are the same as have been encountered during the works undertaken at the specific points of investigation and at the time of the investigation.
21. Conditions can change between investigation points both spatially and over time and these interpretations should therefore be considered indicative. The assessment of extreme weather events and their impact on ground conditions is not within the scope of E3P's work.
22. The risk assessment and opinions provided are based on currently available guidance relating to acceptable contamination concentrations; no liability can be accepted for the retrospective effects of any future changes or amendments to these values. Specific assumptions associated with the risk assessment process have been outlined within the body or associated appendix of the report.
23. Additional investigations may be required in order to satisfy relevant planning conditions or to resolve any engineering and environmental issues.



24. Where soil contamination concentrations recorded as part of this investigation are used for commentary on the potential waste classification of soils for disposal purposes, these should be classed as indicative only. Due consideration should be given to the variability of contaminant concentrations taken from targeted samples versus bulk excavated soils and the potential variability of contaminant concentrations between sampling locations. Where major waste disposal operations are considered, targeted waste classification investigations should be designed and the waste classification and any subsequent disposal option agreed upon with licenced subcontractors and/or the relevant regulators.
25. The results of the asbestos testing are factually reported and interpretation is given as to how this relates to the previous use of the site, the types of ground encountered and site conceptualisation. This does not however constitute a formal asbestos assessment. These results should be treated cautiously and should not be relied upon to provide detailed and representative information on the delineation, type and extent of bulk ACMs and/or trace loose asbestos fibres within the soil matrix at the site.
26. If costs have been included in relation to additional site works, and/or site remediation works these must be considered as indicative only and must be confirmed by a qualified quantity surveyor.

EUROCODE 7: GEOTECHNICAL DESIGN

27. On 1st April 2010, BS EN 1997-1:2004 (Eurocode 7: Geotechnical Design – Part 1) became the mandatory baseline standard for geotechnical ground investigations.
28. In terms of geotechnical design for foundations, slopes, retaining walls and earthworks, EC7 sets guidance on design procedures including specific guidance on the numbers and spacings of boreholes for geotechnical design, there are limits to methods of ground investigation and the quality of data obtained and there are also prescriptive methods of assessing soil strengths and methods of design. Unless otherwise explicitly stated, the work has not been undertaken in accordance with EC7. A standard geotechnical interpretative report will not meet the requirements of the Geotechnical Design Report (GDR) under Eurocode 7. The GDR can only be prepared following confirmation of all structural loads and serviceability requirements. The report is likely to represent a Ground Investigation Report (GIR) under the Eurocode 7 guidance.

DETAILED QUANTITATIVE RISK ASSESSMENTS AND REMEDIATION AND ENABLING WORK STRATEGY REPORTS



29. These reports build upon previous report versions and associated notes. The scope of the investigation, further testing and monitoring and associated risk assessments were selected based on the specific development and land use scenario proposed by the Client and may not be appropriate to another form of development or scheme layout. The risk assessment and opinions provided are based on currently available approaches in the generation of Site Specific Assessment Criteria relating to contamination concentrations and are not considered to represent a risk in a specific land use scenario to a specific receptor. No liability can be accepted for the retrospective effects of any future changes or amendments to these values, associated models or associated guidance.
30. The outputs of the Detailed Quantitative Risk Assessments are based upon the manipulation of standard risk assessment models. These are our interpretation of the risk assessment criteria.
31. Before adoption on-site, assessment criteria will need to be discussed and agreed upon with the Regulatory Authorities prior to adoption on site. The regulatory discussion and engagement process may result in an alternative interpretation being determined and agreed. The process and timescales associated with the Regulatory Authority engagement are not within the control of E3P. All costs and programmes presented as a result of this process should be validated by a quantity surveyor and should be presumed to be indicative.
32. E3P does not accept liability for any subcontract work that has not been completed in strict accordance with an approved E3P Remediation and Enabling Works Strategy.

GEOTECHNICAL DESIGN REPORT (GDR)

33. The GDR can only be prepared following confirmation of all structural loads and serviceability requirements. All the relevant information needs to be provided to allow for a GDR to be produced.

MONITORING (INCLUDING REMEDIATION MONITORING REPORTS AND BUILD PHASE MITIGATION)

34. These reports are factual and comprise monitoring, normally groundwater and ground gas and data provided by contractors as part of earthworks or remedial works.
35. The data is presented and will be compared with assessment criteria.



APPENDIX II

GLOSSARY

TERMS

ACM	Asbestos-containing material	MMP	Materials management plan
ADS	Acoustic design statement	ND	Not detected
AST	Above-ground storage tank	NDP	Nuclear density probe
BGS	British Geological Survey	NMP	Noise management plan
BSI	British Standards Institute	NPSE	Noise policy statement for England
BTEX	Benzene, toluene, ethylbenzene, xylenes	NR	Not recorded
CA	Coal Authority	PAH	Polycyclic aromatic hydrocarbon
CBR	California bearing ratio	PCB	Polychlorinated biphenyl
CIEH	Chartered Institute of Environmental Health	PI	Plasticity index
CIRIA	Construction Industry Research Association	PID	Photo ionisation detector
CLEA	Contaminated land exposure assessment	POS	Public open space
CML	Council of Mortgage Lenders	PPE	Personnel protective equipment
CoC	Contaminants of concern	ProPG	Professional practice guidance
CSM	Conceptual site model	QA	Quality assurance
DNAPL	Dense non-aqueous phase liquid (chlorinated solvents, PCB)	SGV	Soil guideline value
DWS	Drinking water standard	SPH	Separate-phase hydrocarbon
EA	Environment Agency	SPT	Standard penetration test
EQS	Environmental quality standard	SVOC	Semi-volatile organic compound
FFL	Finished floor level	TPH	Total and speciated petroleum hydrocarbon
GAC	General assessment criteria	TPH CWG	Total Petroleum Hydrocarbon (Criteria Working Group)
GL	Ground level	UKWIR	United Kingdom Water Infrastructure Risk
GSV	Gas screening value	UST	Underground storage tank
HCV	Health criteria value	VCC	Vibro-concrete column
ICSM	Initial conceptual site model	VOC	Volatile organic compound
LEL	Lower explosive limit	VRSC	Vibro-replacement stone columns
LMRL	Lower method reporting limit	VSC	Vibro-stone columns
LNAPL	Light non-aqueous phase liquid (petrol, diesel, kerosene)	WHO	World Health Organisation



MCV	Moisture condition value	WRAP	Waste and Resources Action Programme
MIBK	Methyl isobutyl ketone	WTE	Water table elevation
m	Metres	ppm	Parts per million
km	Kilometres	mg/m³	Milligram per metre cubed
% v/v	Percent volume in air	m bgl bgl	Metres below ground level
mb	Millibars (atmospheric pressure)	m bcl	Metre below cover level
l/hr	Litres per hour	mAOD	Metres above ordnance datum (sea level)
µg/l	Micrograms per litre (parts per billion)	kN/m²	Kilonewtons per metre squared
ppb	Parts per billion	µm	Micrometre
mg/kg	Milligrams per kilogram (parts per million)	SSRT	Site Specific Remediation Target
PSD	Particle Size Distribution	DD	Dry Density
CL:AIRE	Contaminated Land: Applications in Real Environments	Mc	Moisture Content
ρ	Bulk Density	GPR	Ground Penetrating Radar
NDP	Nuclear Density Probe	FFL	Finished Floor Level
LEL	Lower Explosive Limit	UKWIR	UK Water Industry Research
CIRIA	Construction Industry Research and Information Association	LOD	Limit of Detection



APPENDIX III

DRAWINGS

APPENDIX IV

CHEMICAL TESTING

RESULTS

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Analytical Report Number : 22-42746

Project / Site name:	Sonnet Gate	Samples received on:	01/03/2022
Your job number:	15 292	Samples instructed on/ Analysis started on:	01/03/2022
Your order number:	000 772	Analysis completed by:	07/03/2022
Report Issue Number:	1	Report issued on:	07/03/2022
Samples Analysed:	3 soil samples		

Signed: *Karolina Marek*

Karolina Marek
PL Head of Reporting Team
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils - 4 weeks from reporting
leachates - 2 weeks from reporting
waters - 2 weeks from reporting
asbestos - 6 months from reporting

Excel copies of reports are only valid when accompanied by this PDF certificate.

Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: 22-42746

Project / Site name: Sonnet Gate

Your Order No: 000 772

Lab Sample Number				2190106	2190107	2190108
Sample Reference				SP201	SP202	SP203
Sample Number				None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied
Date Sampled				28/02/2022	28/02/2022	28/02/2022
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status			
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	16	17	12
Total mass of sample received	kg	0.001	NONE	0.30	0.30	0.30

Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	KSZ	KSZ	KSZ

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	9.0	8.9	8.4
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
Total Sulphate as SO ₄	mg/kg	50	MCERTS	550	760	520
Water Soluble SO ₄ (2:1 Leach. Equiv.) 1hr extraction	g/l	0.00125	MCERTS	0.16	0.24	0.16
Water Soluble SO ₄ (2:1 Leach. Equiv.) 1hr extraction	mg/kg	2.5	MCERTS	330	470	320
Water Soluble SO ₄ (2:1 Leach. Equiv.) 1hr extraction	mg/l	1.25	MCERTS	163	236	159
Sulphide	mg/kg	1	MCERTS	6.7	6.7	11
Total Sulphur	mg/kg	50	MCERTS	270	480	310
Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	0.3	0.9	0.7

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	0.40	0.90
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.31
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	0.58	1.1
Pyrene	mg/kg	0.05	MCERTS	< 0.05	0.55	0.98
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	0.37	0.65
Chrysene	mg/kg	0.05	MCERTS	< 0.05	0.29	0.49
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	0.34	0.50
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	0.12	0.24
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	0.31	0.59
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	< 0.80	2.96	5.76
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Analytical Report Number: 22-42746
Project / Site name: Sonnet Gate
Your Order No: 000 772

Lab Sample Number				2190106	2190107	2190108
Sample Reference				SP201	SP202	SP203
Sample Number				None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied
Date Sampled				28/02/2022	28/02/2022	28/02/2022
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status			

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	7.6	10	7.7
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	0.4
Chromium (hexavalent)	mg/kg	4	NONE	< 4.0	< 4.0	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	34	27	24
Copper (aqua regia extractable)	mg/kg	1	MCERTS	29	59	51
Lead (aqua regia extractable)	mg/kg	1	MCERTS	17	39	26
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	31	26	22
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	55	97	64

Petroleum Hydrocarbons

TPH (C5 - C6) HS_ID_TOTAL	mg/kg	1	NONE	< 1.0	< 1.0	< 1.0
TPH (C6 - C8) HS_ID_TOTAL	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1
TPH (C8 - C10) HS_ID_TOTAL	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1
TPH (C10 - C12) EH_CU_ID_TOTAL	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0
TPH (C12 - C16) EH_CU_ID_TOTAL	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0
TPH (C16 - C21) EH_CU_ID_TOTAL	mg/kg	1	MCERTS	< 1.0	8.4	12
TPH (C21 - C35) EH_CU_ID_TOTAL	mg/kg	1	MCERTS	< 1.0	69	91
TPH (C35 - C40) EH_CU_ID_TOTAL	mg/kg	10	MCERTS	< 10	32	42
TPH Total C5 - C40 EH_CU+HS_ID_TOTAL	mg/kg	10	MCERTS	< 10	110	140

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number : 22-42746

Project / Site name: Sonnet Gate

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
2190106	SP201	None Supplied	None Supplied	Brown clay and loam with gravel and vegetation.
2190107	SP202	None Supplied	None Supplied	Brown clay and loam with gravel and vegetation.
2190108	SP203	None Supplied	None Supplied	Brown clay and loam with gravel and vegetation.

Analytical Report Number : 22-42746

Project / Site name: Sonnet Gate

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazine followed by colorimetry.	In-house method	L080-PL	W	NONE
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	MCERTS
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In house method.	L099-PL	D	MCERTS
Sulphide in soil	Determination of sulphide in soil by acidification and heating to liberate hydrogen sulphide, trapped in an alkaline solution then assayed by ion selective electrode.	In-house method	L010-PL	D	MCERTS
Total sulphate (as SO ₄ in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In house method.	L038-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Total Sulphur in soil	Determination of total sulphur in soil by extraction with aqua-regia, potassium bromide/bromate followed by ICP-OES.	In house method.	L038-PL	D	MCERTS
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
Total organic carbon (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In house method.	L009-PL	D	MCERTS
TPH in (Soil)	Determination of TPH bands by HS-GC-MS/GC-FID	In-house method, TPH with carbon banding and silica gel split/cleanup.	L076-PL	D	MCERTS
D.O. for Gravimetric Quant if Screen/ID positive	Dependent option for Gravimetric Quant if Screen/ID positive scheduled.	In house asbestos methods A001 & A006.	A006-PL	D	NONE
Sulphate, water soluble, in soil (1hr extraction)	Sulphate, water soluble, in soil (1hr extraction)	In-house method	L038-PL	D	MCERTS

Analytical Report Number : 22-42746

Project / Site name: Sonnet Gate

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
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For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.

For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Information in Support of Analytical Results

List of HWOL Acronyms and Operators

Acronym	Descriptions
HS	Headspace Analysis
MS	Mass spectrometry
FID	Flame Ionisation Detector
GC	Gas Chromatography
EH	Extractable Hydrocarbons (i.e. everything extracted by the solvent(s))
CU	Clean-up - e.g. by Florisil®, silica gel
1D	GC - Single coil/column gas chromatography
2D	GC-GC - Double coil/column gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics
AR	Aromatics
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
-	Operator - understore to separate acronyms (exception for +)
+	Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total

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e:

Analytical Report Number : 22-49723

Project / Site name:	Prescot Parcel C Sonnet Gate	Samples received on:	04/04/2022
Your job number:	15 292	Samples instructed on/ Analysis started on:	04/04/2022
Your order number:	001190	Analysis completed by:	12/04/2022
Report Issue Number:	1	Report issued on:	12/04/2022
Samples Analysed:	3 soil samples		

Martyna Langer

Signed:

Martyna Langer
Junior Reporting Specialist
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils - 4 weeks from reporting
leachates - 2 weeks from reporting
waters - 2 weeks from reporting
asbestos - 6 months from reporting

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Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: 22-49723
Project / Site name: Prescott Parcel C Sonnet Gate
Your Order No: 001190

Lab Sample Number				2227031	2227032	2227033
Sample Reference				Plot 5-6 (1)	Plot 5-6 (2)	Plot 5-6 (3)
Sample Number				None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied
Date Sampled				04/04/2022	04/04/2022	04/04/2022
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status			
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	16	14	17
Total mass of sample received	kg	0.001	NONE	0.5	0.5	0.5

Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	SPU	SPU	SPU

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	7.1	7	6.4
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
Total Sulphate as SO ₄	mg/kg	50	MCERTS	190	420	270
Water Soluble SO ₄ (2:1 Leach. Equiv.) 1hr extraction	g/l	0.00125	MCERTS	0.01	0.086	0.091
Water Soluble SO ₄ (2:1 Leach. Equiv.) 1hr extraction	mg/kg	2.5	MCERTS	20	170	180
Water Soluble SO ₄ (2:1 Leach. Equiv.) 1hr extraction	mg/l	1.25	MCERTS	10	86.3	90.7
Sulphide	mg/kg	1	MCERTS	5.2	3.7	< 1.0
Total Sulphur	mg/kg	50	MCERTS	120	260	140
Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	0.3	1.5	0.7

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Chrysene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	< 0.80	< 0.80	< 0.80
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Analytical Report Number: 22-49723

Project / Site name: Prescott Parcel C Sonnet Gate

Your Order No: 001190

Lab Sample Number				2227031	2227032	2227033
Sample Reference				Plot 5-6 (1)	Plot 5-6 (2)	Plot 5-6 (3)
Sample Number				None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied
Date Sampled				04/04/2022	04/04/2022	04/04/2022
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status			

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	3.4	12	4.7
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	4	NONE	< 4.0	< 4.0	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	20	26	33
Copper (aqua regia extractable)	mg/kg	1	MCERTS	13	35	19
Lead (aqua regia extractable)	mg/kg	1	MCERTS	9.2	49	13
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	26	21	28
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	45	74	72

Petroleum Hydrocarbons

TPH (C5 - C6) HS_ID_TOTAL	mg/kg	1	NONE	< 1.0	< 1.0	< 1.0
TPH (C6 - C8) HS_ID_TOTAL	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1
TPH (C8 - C10) HS_ID_TOTAL	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1
TPH (C10 - C12) EH_CU_ID_TOTAL	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0
TPH (C12 - C16) EH_CU_ID_TOTAL	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0
TPH (C16 - C21) EH_CU_ID_TOTAL	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
TPH (C21 - C35) EH_CU_ID_TOTAL	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
TPH (C35 - C40) EH_CU_ID_TOTAL	mg/kg	10	MCERTS	< 10	< 10	< 10
TPH Total C5 - C40 EH_CU+HS_ID_TOTAL	mg/kg	10	MCERTS	< 10	< 10	< 10

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number : 22-49723

Project / Site name: Prescott Parcel C Sonnet Gate

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
2227031	Plot 5-6 (1)	None Supplied	None Supplied	Brown clay and loam with vegetation and gravel
2227032	Plot 5-6 (2)	None Supplied	None Supplied	Brown clay and loam with vegetation and gravel
2227033	Plot 5-6 (3)	None Supplied	None Supplied	Brown clay and loam with vegetation and gravel

Analytical Report Number : 22-49723

Project / Site name: Prescott Parcel C Sonnet Gate

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	MCERTS
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In house method.	L099-PL	D	MCERTS
Sulphide in soil	Determination of sulphide in soil by acidification and heating to liberate hydrogen sulphide, trapped in an alkaline solution then assayed by ion selective electrode.	In-house method	L010-PL	D	MCERTS
Total sulphate (as SO ₄ in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In house method.	L038-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Total Sulphur in soil	Determination of total sulphur in soil by extraction with aqua-regia, potassium bromide/bromate followed by ICP-OES.	In house method.	L038-PL	D	MCERTS
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
Total organic carbon (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In house method.	L009-PL	D	MCERTS
TPH in (Soil)	Determination of TPH bands by HS-GC-MS/GC-FID	In-house method, TPH with carbon banding and silica gel split/cleanup.	L076-PL	D	MCERTS
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazine followed by colorimetry.	In-house method	L080-PL	W	NONE
D.O. for Gravimetric Quant if Screen/ID positive	Dependent option for Gravimetric Quant if Screen/ID positive scheduled.	In house asbestos methods A001 & A006.	A006-PL	D	NONE
Sulphate, water soluble, in soil (1hr extraction)	Sulphate, water soluble, in soil (1hr extraction)	In-house method	L038-PL	D	MCERTS

Analytical Report Number : 22-49723

Project / Site name: Prescott Parcel C Sonnet Gate

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
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For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.

For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Information in Support of Analytical Results

List of HWOL Acronyms and Operators

Acronym	Descriptions
HS	Headspace Analysis
MS	Mass spectrometry
FID	Flame Ionisation Detector
GC	Gas Chromatography
EH	Extractable Hydrocarbons (i.e. everything extracted by the solvent(s))
CU	Clean-up - e.g. by Florisil®, silica gel
1D	GC - Single coil/column gas chromatography
2D	GC-GC - Double coil/column gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics
AR	Aromatics
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
-	Operator - understore to separate acronyms (exception for +)
+	Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total

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Analytical Report Number : 22-62748

Project / Site name:	Prescott	Samples received on:	01/06/2022
Your job number:	13128	Samples instructed on/ Analysis started on:	01/06/2022
Your order number:	13128 JJ	Analysis completed by:	08/06/2022
Report Issue Number:	1	Report issued on:	08/06/2022
Samples Analysed:	6 soil samples		

Signed: 

Zina Abdul Razzak
Senior Quality Specialist
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils - 4 weeks from reporting
leachates - 2 weeks from reporting
waters - 2 weeks from reporting
asbestos - 6 months from reporting

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Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: 22-62748

Project / Site name: Prescott

Your Order No: 13128 JJ

Lab Sample Number				2301428	2301429	2301430	2301431	2301432
Sample Reference				TS101	TS102	TS103	TS104	TS105
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				31/05/2022	31/05/2022	31/05/2022	31/05/2022	31/05/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	18	12	18	17	16
Total mass of sample received	kg	0.001	NONE	0.3	0.3	0.3	0.4	0.4

Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	DSA	DSA	DSA	DSA	DSA

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	7.2	7.0	7.6	7.2	7.0
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Sulphate as SO ₄	mg/kg	50	MCERTS	370	300	410	370	410
Water Soluble SO ₄ (2:1 Leach. Equiv.) 1hr extraction	g/l	0.00125	MCERTS	0.018	0.017	0.025	0.016	0.026
Water Soluble SO ₄ (2:1 Leach. Equiv.) 1hr extraction	mg/kg	2.5	MCERTS	36	35	50	33	51
Water Soluble SO ₄ (2:1 Leach. Equiv.) 1hr extraction	mg/l	1.25	MCERTS	18.1	17.4	24.8	16.4	25.6
Sulphide	mg/kg	1	MCERTS	10	2.4	1.6	3.5	3.5
Total Sulphur	mg/kg	50	MCERTS	280	220	260	260	240
Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	2.3	1.7	2.2	1.9	1.9

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	0.85	0.18	< 0.05	< 0.05
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	0.32	1	0.41	< 0.05	< 0.05
Pyrene	mg/kg	0.05	MCERTS	0.32	0.99	0.36	< 0.05	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	0.41	0.19	< 0.05	< 0.05
Chrysene	mg/kg	0.05	MCERTS	< 0.05	0.39	0.24	< 0.05	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	0.37	0.26	< 0.05	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	0.21	0.13	< 0.05	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	0.29	0.2	< 0.05	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	< 0.80	4.54	1.97	< 0.80	< 0.80
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Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	11	9.5	10	11	9.7
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	24	26	23	24	24
Copper (aqua regia extractable)	mg/kg	1	MCERTS	32	26	30	30	30
Lead (aqua regia extractable)	mg/kg	1	MCERTS	43	36	42	43	39
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	19	23	18	19	19
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Analytical Report Number: 22-62748

Project / Site name: Prescott

Your Order No: 13128 JJ

Lab Sample Number				2301428	2301429	2301430	2301431	2301432
Sample Reference				TS101	TS102	TS103	TS104	TS105
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				31/05/2022	31/05/2022	31/05/2022	31/05/2022	31/05/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	57	51	53	54	52

Petroleum Hydrocarbons

TPH (C5 - C6) HS_ID_TOTAL	mg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH (C6 - C8) HS_ID_TOTAL	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH (C8 - C10) HS_ID_TOTAL	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH (C10 - C12) EH_CU_ID_TOTAL	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
TPH (C12 - C16) EH_CU_ID_TOTAL	mg/kg	4	MCERTS	11	< 4.0	< 4.0	< 4.0	< 4.0
TPH (C16 - C21) EH_CU_ID_TOTAL	mg/kg	1	MCERTS	32	6.1	7.2	7.1	< 1.0
TPH (C21 - C35) EH_CU_ID_TOTAL	mg/kg	1	MCERTS	77	18	21	18	< 1.0
TPH (C35 - C40) EH_CU_ID_TOTAL	mg/kg	10	MCERTS	26	< 10	< 10	< 10	< 10
TPH Total C5 - C40 EH_CU+HS_ID_TOTAL	mg/kg	10	MCERTS	150	24	29	25	< 10

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number: 22-62748

Project / Site name: Prescott

Your Order No: 13128 JJ

Lab Sample Number				2301433
Sample Reference				TS106
Sample Number				None Supplied
Depth (m)				None Supplied
Date Sampled				31/05/2022
Time Taken				None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status	
Stone Content	%	0.1	NONE	< 0.1
Moisture Content	%	0.01	NONE	17
Total mass of sample received	kg	0.001	NONE	0.3

Asbestos in Soil	Type	N/A	ISO 17025	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	DSA

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	6.8
Total Cyanide	mg/kg	1	MCERTS	< 1.0
Total Sulphate as SO ₄	mg/kg	50	MCERTS	450
Water Soluble SO ₄ (2:1 Leach. Equiv.) 1hr extraction	g/l	0.00125	MCERTS	0.014
Water Soluble SO ₄ (2:1 Leach. Equiv.) 1hr extraction	mg/kg	2.5	MCERTS	28
Water Soluble SO ₄ (2:1 Leach. Equiv.) 1hr extraction	mg/l	1.25	MCERTS	14.2
Sulphide	mg/kg	1	MCERTS	4.6
Total Sulphur	mg/kg	50	MCERTS	270
Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	2.3

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05
Anthracene	mg/kg	0.05	MCERTS	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	0.93
Pyrene	mg/kg	0.05	MCERTS	0.89
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.22
Chrysene	mg/kg	0.05	MCERTS	0.21
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	0.31
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	0.13
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.22
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	2.91
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Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	11
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	24
Copper (aqua regia extractable)	mg/kg	1	MCERTS	32
Lead (aqua regia extractable)	mg/kg	1	MCERTS	42
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	19
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0

Analytical Report Number: 22-62748

Project / Site name: Prescott

Your Order No: 13128 JJ

Lab Sample Number				2301433
Sample Reference				TS106
Sample Number				None Supplied
Depth (m)				None Supplied
Date Sampled				31/05/2022
Time Taken				None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status	
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	56

Petroleum Hydrocarbons

TPH (C5 - C6) HS_1D_TOTAL	mg/kg	1	NONE	< 1.0
TPH (C6 - C8) HS_1D_TOTAL	mg/kg	0.1	MCERTS	< 0.1
TPH (C8 - C10) HS_1D_TOTAL	mg/kg	0.1	MCERTS	< 0.1
TPH (C10 - C12) EH_CU_1D_TOTAL	mg/kg	2	MCERTS	< 2.0
TPH (C12 - C16) EH_CU_1D_TOTAL	mg/kg	4	MCERTS	< 4.0
TPH (C16 - C21) EH_CU_1D_TOTAL	mg/kg	1	MCERTS	9.4
TPH (C21 - C35) EH_CU_1D_TOTAL	mg/kg	1	MCERTS	23
TPH (C35 - C40) EH_CU_1D_TOTAL	mg/kg	10	MCERTS	< 10
TPH Total C5 - C40 EH_CU+HS_1D_TOTAL	mg/kg	10	MCERTS	33

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number : 22-62748

Project / Site name: Prescott

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
2301428	TS101	None Supplied	None Supplied	Brown loam and clay with vegetation and gravel
2301429	TS102	None Supplied	None Supplied	Brown clay and loam with vegetation and gravel
2301430	TS103	None Supplied	None Supplied	Brown loam and clay with vegetation and gravel
2301431	TS104	None Supplied	None Supplied	Brown loam and clay with vegetation and gravel
2301432	TS105	None Supplied	None Supplied	Brown loam and clay with vegetation and gravel
2301433	TS106	None Supplied	None Supplied	Brown loam and sand with vegetation and gravel.

Analytical Report Number : 22-62748

Project / Site name: Prescott

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	MCERTS
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In house method.	L099-PL	D	MCERTS
Sulphide in soil	Determination of sulphide in soil by acidification and heating to liberate hydrogen sulphide, trapped in an alkaline solution then assayed by ion selective electrode.	In-house method	L010-PL	D	MCERTS
Total sulphate (as SO4 in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In house method.	L038-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Total Sulphur in soil	Determination of total sulphur in soil by extraction with aqua-regia, potassium bromide/bromate followed by ICP-OES.	In house method.	L038-PL	D	MCERTS
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
Total organic carbon (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In house method.	L009-PL	D	MCERTS
TPH in (Soil)	Determination of TPH bands by HS-GC-MS/GC-FID	In-house method, TPH with carbon banding and silica gel split/cleanup.	L076-PL	D	MCERTS
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in NaOH and addition of 1,5 diphenylcarbazine followed by colorimetry.	In-house method	L080-PL	W	MCERTS
Sulphate, water soluble, in soil (1hr extraction)	Sulphate, water soluble, in soil (1hr extraction)	In-house method	L038-PL	D	MCERTS

Analytical Report Number : 22-62748

Project / Site name: Prescott

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
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For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.

For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Information in Support of Analytical Results

List of HWOL Acronyms and Operators

Acronym	Descriptions
HS	Headspace Analysis
MS	Mass spectrometry
FID	Flame Ionisation Detector
GC	Gas Chromatography
EH	Extractable Hydrocarbons (i.e. everything extracted by the solvent(s))
CU	Clean-up - e.g. by Florisil®, silica gel
1D	GC - Single coil/column gas chromatography
2D	GC-GC - Double coil/column gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics
AR	Aromatics
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
_	Operator - understore to separate acronyms (exception for +)
+	Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total

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Analytical Report Number : 22-77275

Project / Site name:	Prescot	Samples received on:	10/08/2022
Your job number:		Samples instructed on/ Analysis started on:	10/08/2022
Your order number:		Analysis completed by:	18/08/2022
Report Issue Number:	1	Report issued on:	18/08/2022
Samples Analysed:	3 soil samples		



Signed:

Anna Goc
Junior Reporting Specialist
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting

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Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement. Application of uncertainty of measurement would provide a range within which the true result lies. An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: 22-77275
Project / Site name: Prescot

Lab Sample Number				2383907	2383908	2383909
Sample Reference				SS101	SS102	SS103
Sample Number				None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied
Date Sampled				09/08/2022	09/08/2022	09/08/2022
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status			
Stone Content	%	0.1	NONE	< 0.1	21	< 0.1
Moisture Content	%	0.01	NONE	12	11	12
Total mass of sample received	kg	0.001	NONE	0.2	0.3	0.3

Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	JMA	JMA	JMA

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	8.5	7.8	8.1
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
Total Sulphate as SO ₄	mg/kg	50	MCERTS	1600	880	1400
Water Soluble SO ₄ (2:1 Leach. Equiv.) 1hr extraction	g/l	0.00125	MCERTS	0.51	0.29	0.58
Water Soluble SO ₄ (2:1 Leach. Equiv.) 1hr extraction	mg/kg	2.5	MCERTS	1000	570	1200
Water Soluble SO ₄ (2:1 Leach. Equiv.) 1hr extraction	mg/l	1.25	MCERTS	509	287	584
Sulphide	mg/kg	1	MCERTS	7.1	23	10
Total Sulphur	mg/kg	50	MCERTS	760	780	750
Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	1	0.9	1.3

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	0.61	0.5	0.51
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	1.3	1.2	1
Pyrene	mg/kg	0.05	MCERTS	1.3	1.1	0.97
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.83	0.71	0.61
Chrysene	mg/kg	0.05	MCERTS	0.54	0.58	0.56
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	0.61	0.62	0.66
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	0.45	0.33	0.27
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.58	0.55	0.41
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.29	0.22	0.32
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.4	0.29	0.38

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	6.9	6.04	5.72
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Analytical Report Number: 22-77275
Project / Site name: Prescott

Lab Sample Number				2383907	2383908	2383909
Sample Reference				SS101	SS102	SS103
Sample Number				None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied
Date Sampled				09/08/2022	09/08/2022	09/08/2022
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status			

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	7.9	7.7	10
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8	< 1.8	< 1.8
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	25	27	29
Copper (aqua regia extractable)	mg/kg	1	MCERTS	29	28	47
Lead (aqua regia extractable)	mg/kg	1	MCERTS	25	21	34
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	23	26	24
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	54	52	73

Petroleum Hydrocarbons

TPH (C5 - C6) HS_ID_TOTAL	mg/kg	1	NONE	< 1.0	< 1.0	< 1.0
TPH (C6 - C8) HS_ID_TOTAL	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1
TPH (C8 - C10) HS_ID_TOTAL	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1
TPH (C10 - C12) EH_CU_ID_TOTAL	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0
TPH (C12 - C16) EH_CU_ID_TOTAL	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0
TPH (C16 - C21) EH_CU_ID_TOTAL	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
TPH (C21 - C35) EH_CU_ID_TOTAL	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
TPH (C35 - C40) EH_CU_ID_TOTAL	mg/kg	10	MCERTS	< 10	< 10	< 10
TPH Total C5 - C40 EH_CU+HS_ID_TOTAL	mg/kg	10	MCERTS	< 10	< 10	< 10

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number : 22-77275

Project / Site name: Prescott

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
2383907	SS101	None Supplied	None Supplied	Brown loam and clay with gravel and glass.
2383908	SS102	None Supplied	None Supplied	Brown clay and loam with brick and stones.
2383909	SS103	None Supplied	None Supplied	Brown clay and loam with gravel.

Analytical Report Number : 22-77275

Project / Site name: Prescott

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with dispersion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	MCERTS
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In house method.	L099-PL	D	MCERTS
Sulphide in soil	Determination of sulphide in soil by acidification and heating to liberate hydrogen sulphide, trapped in an alkaline solution then assayed by ion selective electrode.	In-house method	L010-PL	D	MCERTS
Total sulphate (as SO4 in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In house method.	L038-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Total Sulphur in soil	Determination of total sulphur in soil by extraction with aqua-regia, potassium bromide/bromate followed by ICP-OES.	In house method.	L038-PL	D	MCERTS
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
Total organic carbon (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In house method.	L009-PL	D	MCERTS
TPH in (Soil)	Determination of TPH bands by HS-GC-MS/GC-FID	In-house method, TPH with carbon banding and silica gel split/cleanup.	L076-PL	D	MCERTS
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in NaOH and addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	MCERTS
Sulphate, water soluble, in soil (1hr extraction)	Sulphate, water soluble, in soil (1hr extraction)	In-house method	L038-PL	D	MCERTS

Analytical Report Number : 22-77275
Project / Site name: Prescott

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
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For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.

For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Information in Support of Analytical Results

List of HWOL Acronyms and Operators

Acronym	Descriptions
HS	Headspace Analysis
MS	Mass spectrometry
FID	Flame Ionisation Detector
GC	Gas Chromatography
EH	Extractable Hydrocarbons (i.e. everything extracted by the solvent(s))
CU	Clean-up - e.g. by Florisil®, silica gel
1D	GC - Single coil/column gas chromatography
2D	GC-GC - Double coil/column gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics
AR	Aromatics
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
-	Operator - understore to separate acronyms (exception for +)
+	Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total

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Analytical Report Number : 22-93528

Project / Site name:	Sonnet Gate	Samples received on:	28/10/2022
Your job number:		Samples instructed on/ Analysis started on:	31/10/2022
Your order number:		Analysis completed by:	07/11/2022
Report Issue Number:	1	Report issued on:	07/11/2022
Samples Analysed:	3 soil samples		


Signed:

Joanna Wawrzeczko
Reporting Specialist
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting

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Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement. Application of uncertainty of measurement would provide a range within which the true result lies. An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: 22-93528
Project / Site name: Sonnet Gate

Lab Sample Number				2481418	2481419	2481420
Sample Reference				SS101	SS102	SS103
Sample Number				None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied
Date Sampled				27/10/2022	27/10/2022	27/10/2022
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status			
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	16	18	18
Total mass of sample received	kg	0.001	NONE	0.3	0.3	0.3

Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	DSO	DSO	DSO

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	8.4	7.7	8.7
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
Total Sulphate as SO ₄	mg/kg	50	MCERTS	870	520	1700
Water Soluble SO ₄ (2:1 Leach. Equiv.) 1hr extraction	g/l	0.00125	MCERTS	0.22	0.13	0.29
Water Soluble SO ₄ (2:1 Leach. Equiv.) 1hr extraction	mg/kg	2.5	MCERTS	440	260	580
Water Soluble SO ₄ (2:1 Leach. Equiv.) 1hr extraction	mg/l	1.25	MCERTS	218	129	288
Sulphide	mg/kg	1	NONE	11	17	47
Total Sulphur	mg/kg	50	MCERTS	570	510	950
Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	1.3	1.4	1.8

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
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Speciated PAHs

Naphthalene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	NONE	0.16	< 0.05	0.05
Fluorene	mg/kg	0.05	NONE	0.09	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	NONE	0.92	< 0.05	0.29
Anthracene	mg/kg	0.05	NONE	0.26	< 0.05	0.1
Fluoranthene	mg/kg	0.05	NONE	1.2	0.25	0.45
Pyrene	mg/kg	0.05	NONE	1.1	0.25	0.43
Benzo(a)anthracene	mg/kg	0.05	NONE	0.39	0.1	0.12
Chrysene	mg/kg	0.05	NONE	0.64	0.16	0.31
Benzo(b)fluoranthene	mg/kg	0.05	NONE	0.49	0.11	0.19
Benzo(k)fluoranthene	mg/kg	0.05	NONE	0.23	0.09	0.13
Benzo(a)pyrene	mg/kg	0.05	NONE	0.43	< 0.05	0.19
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	NONE	0.21	< 0.05	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	NONE	0.26	< 0.05	< 0.05

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	NONE	6.33	0.96	2.26
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Analytical Report Number: 22-93528
Project / Site name: Sonnet Gate

Lab Sample Number				2481418	2481419	2481420
Sample Reference				SS101	SS102	SS103
Sample Number				None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied
Date Sampled				27/10/2022	27/10/2022	27/10/2022
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Limit of detection	Accreditation Status

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	8.4	7.9	6.7
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	1.5	0.4	0.3
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8	< 1.8	< 1.8
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	30	21	19
Copper (aqua regia extractable)	mg/kg	1	MCERTS	340	14	20
Lead (aqua regia extractable)	mg/kg	1	MCERTS	62	26	25
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	32	18	15
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	120	49	46

Petroleum Hydrocarbons

TPH (C5 - C6) HS_ID_TOTAL	mg/kg	1	NONE	< 1.0	< 1.0	< 1.0
TPH (C6 - C8) HS_ID_TOTAL	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1
TPH (C8 - C10) HS_ID_TOTAL	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1
TPH (C10 - C12) EH_CU_ID_TOTAL	mg/kg	2	NONE	< 2.0	< 2.0	< 2.0
TPH (C12 - C16) EH_CU_ID_TOTAL	mg/kg	4	NONE	< 4.0	< 4.0	< 4.0
TPH (C16 - C21) EH_CU_ID_TOTAL	mg/kg	1	NONE	10	< 1.0	2.7
TPH (C21 - C35) EH_CU_ID_TOTAL	mg/kg	1	NONE	60	5.8	16
TPH (C35 - C40) EH_CU_ID_TOTAL	mg/kg	10	NONE	29	< 10	< 10
TPH Total C5 - C40 EH_CU+HS_ID_TOTAL	mg/kg	10	NONE	99	< 10	19

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number : 22-93528

Project / Site name: Sonnet Gate

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
2481418	SS101	None Supplied	None Supplied	Brown clay and sand with gravel and vegetation.
2481419	SS102	None Supplied	None Supplied	Brown clay and sand with gravel and vegetation.
2481420	SS103	None Supplied	None Supplied	Brown clay and sand with gravel and vegetation.

Analytical Report Number : 22-93528

Project / Site name: Sonnet Gate

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with dispersion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	MCERTS
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	NONE
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In house method.	L099-PL	D	MCERTS
Sulphide in soil	Determination of sulphide in soil by acidification and heating to liberate hydrogen sulphide, trapped in an alkaline solution then assayed by ion selective electrode.	In-house method	L010-PL	D	NONE
Total sulphate (as SO4 in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In house method.	L038-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Total Sulphur in soil	Determination of total sulphur in soil by extraction with aqua-regia, potassium bromide/bromate followed by ICP-OES.	In house method.	L038-PL	D	MCERTS
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
Total organic carbon (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In house method.	L009-PL	D	MCERTS
TPH in (Soil)	Determination of TPH bands by HS-GC-MS/GC-FID	In-house method, TPH with carbon banding and silica gel split/cleanup.	L076-PL	D	NONE
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in NaOH and addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	MCERTS
Sulphate, water soluble, in soil (1hr extraction)	Sulphate, water soluble, in soil (1hr extraction)	In-house method	L038-PL	D	MCERTS

Analytical Report Number : 22-93528

Project / Site name: Sonnet Gate

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
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For method numbers ending in 'UK or A' analysis have been carried out in our laboratory in the United Kingdom (WATFORD).

For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).

For method numbers ending in 'PL or B' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Information in Support of Analytical Results

List of HWOL Acronyms and Operators

Acronym	Descriptions
HS	Headspace Analysis
MS	Mass spectrometry
FID	Flame Ionisation Detector
GC	Gas Chromatography
EH	Extractable Hydrocarbons (i.e. everything extracted by the solvent(s))
CU	Clean-up - e.g. by Florisil®, silica gel
1D	GC - Single coil/column gas chromatography
2D	GC-GC - Double coil/column gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics
AR	Aromatics
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
_	Operator - underscore to separate acronyms (exception for +)
+	Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total

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Analytical Report Number : 22-12541

Project / Site name:	Prescot	Samples received on:	09/12/2022
Your job number:	15292	Samples instructed on/ Analysis started on:	12/12/2022
Your order number:		Analysis completed by:	19/12/2022
Report Issue Number:	1	Report issued on:	19/12/2022
Samples Analysed:	6 soil samples		

Signed:



Adam Fenwick
Technical Reviewer
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :	soils	- 4 weeks from reporting
	leachates	- 2 weeks from reporting
	waters	- 2 weeks from reporting
	asbestos	- 6 months from reporting

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Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: 22-12541
Project / Site name: Prescot

Lab Sample Number				2528656	2528657	2528658	2528659	2528660
Sample Reference				TS101	TS102	TS103	SS101	SS102
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				07/12/2022	07/12/2022	07/12/2022	07/12/2022	07/12/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	14	14	14	13	13
Total mass of sample received	kg	0.001	NONE	0.3	0.3	0.3	0.3	0.3

Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	DSA	DSA	DSA	DSA	DSA

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	7.0	7.5	7.3	7.8	7.8
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Sulphate as SO ₄	mg/kg	50	MCERTS	600	390	440	< 50	85
Water Soluble SO ₄ (2:1 Leach. Equiv.) 1hr extraction	g/l	0.00125	MCERTS	0.14	0.088	0.089	0.0039	0.0046
Water Soluble SO ₄ (2:1 Leach. Equiv.) 1hr extraction	mg/kg	2.5	MCERTS	290	180	180	7.7	9.2
Water Soluble SO ₄ (2:1 Leach. Equiv.) 1hr extraction	mg/l	1.25	MCERTS	144	88.1	88.6	3.9	4.6
Sulphide	mg/kg	1	MCERTS	3.2	1.7	2.1	1.4	< 1.0
Total Sulphur	mg/kg	50	MCERTS	280	240	220	< 50	< 50
Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	2.1	2.3	2.2	0.3	0.2

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	0.14	0.11	0.27	< 0.05	< 0.05
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	0.24	0.23	0.5	< 0.05	< 0.05
Pyrene	mg/kg	0.05	MCERTS	0.23	0.25	0.5	< 0.05	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.19	0.14	0.29	< 0.05	< 0.05
Chrysene	mg/kg	0.05	MCERTS	0.12	0.17	0.24	< 0.05	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	0.23	0.25	0.38	< 0.05	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	0.06*	0.06*	0.11*	< 0.05*	< 0.05*
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.16	0.15	0.27	< 0.05	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	0.09	0.15	< 0.05	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	0.13	0.2	< 0.05	< 0.05

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	1.37*	1.58*	2.91*	< 0.80*	< 0.80*
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Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	8.2	8.9	8.2	2.1	2.6
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	8.3	7.8	7.7	4.8	5.1
Copper (aqua regia extractable)	mg/kg	1	MCERTS	42	34	34	7.9	9.6
Lead (aqua regia extractable)	mg/kg	1	MCERTS	63	64	60	3.9	4.5
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	9.2	9.9	8.7	4.5	4.4

Analytical Report Number: 22-12541
Project / Site name: Prescott

Lab Sample Number				2528656	2528657	2528658	2528659	2528660
Sample Reference				TS101	TS102	TS103	SS101	SS102
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				07/12/2022	07/12/2022	07/12/2022	07/12/2022	07/12/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	81	73	75	12	12

Petroleum Hydrocarbons

TPH (C5 - C6) HS_ID_TOTAL	mg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH (C6 - C8) HS_ID_TOTAL	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH (C8 - C10) HS_ID_TOTAL	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH (C10 - C12) EH_CU_ID_TOTAL	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
TPH (C12 - C16) EH_CU_ID_TOTAL	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
TPH (C16 - C21) EH_CU_ID_TOTAL	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	5.6
TPH (C21 - C35) EH_CU_ID_TOTAL	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	4.5
TPH (C35 - C40) EH_CU_ID_TOTAL	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	< 10
TPH Total C5 - C40 EH_CU+HS_ID_TOTAL	mg/kg	10	NONE	< 10	< 10	< 10	< 10	10

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected
*Data reported unaccredited due to quality control parameter failure associated with this result; other checks applied prior to reporting the data have been accepted and the failure justified as having no significant impact on sample data reported.

Analytical Report Number: 22-12541
Project / Site name: Prescot

Lab Sample Number				2528661
Sample Reference				SS103
Sample Number				None Supplied
Depth (m)				None Supplied
Date Sampled				07/12/2022
Time Taken				None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status	
Stone Content	%	0.1	NONE	< 0.1
Moisture Content	%	0.01	NONE	13
Total mass of sample received	kg	0.001	NONE	0.3

Asbestos in Soil	Type	N/A	ISO 17025	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	DSA

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	8.4
Total Cyanide	mg/kg	1	MCERTS	< 1.0
Total Sulphate as SO ₄	mg/kg	50	MCERTS	59
Water Soluble SO ₄ (2:1 Leach. Equiv.) 1hr extraction	g/l	0.00125	MCERTS	0.011
Water Soluble SO ₄ (2:1 Leach. Equiv.) 1hr extraction	mg/kg	2.5	MCERTS	22
Water Soluble SO ₄ (2:1 Leach. Equiv.) 1hr extraction	mg/l	1.25	MCERTS	11.1
Sulphide	mg/kg	1	MCERTS	4.9
Total Sulphur	mg/kg	50	MCERTS	< 50
Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	0.2

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05
Anthracene	mg/kg	0.05	MCERTS	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05
Pyrene	mg/kg	0.05	MCERTS	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05
Chrysene	mg/kg	0.05	MCERTS	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05*
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	< 0.80*
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Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	2.5
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	5.3
Copper (aqua regia extractable)	mg/kg	1	MCERTS	10
Lead (aqua regia extractable)	mg/kg	1	MCERTS	5.6
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	4.8

Analytical Report Number: 22-12541
Project / Site name: Prescott

Lab Sample Number				2528661
Sample Reference				SS103
Sample Number				None Supplied
Depth (m)				None Supplied
Date Sampled				07/12/2022
Time Taken				None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status	
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	14

Petroleum Hydrocarbons

TPH (C5 - C6) HS_ID_TOTAL	mg/kg	1	NONE	< 1.0
TPH (C6 - C8) HS_ID_TOTAL	mg/kg	0.1	NONE	< 0.1
TPH (C8 - C10) HS_ID_TOTAL	mg/kg	0.1	NONE	< 0.1
TPH (C10 - C12) EH_CU_ID_TOTAL	mg/kg	2	MCERTS	< 2.0
TPH (C12 - C16) EH_CU_ID_TOTAL	mg/kg	4	MCERTS	< 4.0
TPH (C16 - C21) EH_CU_ID_TOTAL	mg/kg	1	MCERTS	< 1.0
TPH (C21 - C35) EH_CU_ID_TOTAL	mg/kg	1	MCERTS	< 1.0
TPH (C35 - C40) EH_CU_ID_TOTAL	mg/kg	10	MCERTS	< 10
TPH Total C5 - C40 EH_CU+HS_ID_TOTAL	mg/kg	10	NONE	< 10

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected
*Data reported unaccredited due to quality control parameter failure associated with this result; other checks applied prior to reporting the data have been accepted and the failure justified as having no significant impact on sample data reported.

Analytical Report Number : 22-12541

Project / Site name: Prescott

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
2528656	TS101	None Supplied	None Supplied	Brown loam and sand with gravel and vegetation.
2528657	TS102	None Supplied	None Supplied	Brown loam and sand with gravel and vegetation.
2528658	TS103	None Supplied	None Supplied	Brown loam and sand with gravel and vegetation.
2528659	SS101	None Supplied	None Supplied	Brown sand with gravel.
2528660	SS102	None Supplied	None Supplied	Brown sand with gravel.
2528661	SS103	None Supplied	None Supplied	Brown sand with gravel.

Analytical Report Number : 22-12541

Project / Site name: Prescott

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with dispersion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	MCERTS
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In house method.	L099-PL	D	MCERTS
Sulphide in soil	Determination of sulphide in soil by acidification and heating to liberate hydrogen sulphide, trapped in an alkaline solution then assayed by ion selective electrode.	In-house method	L010-PL	D	MCERTS
Total sulphate (as SO4 in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In house method.	L038-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Total Sulphur in soil	Determination of total sulphur in soil by extraction with aqua-regia, potassium bromide/bromate followed by ICP-OES.	In house method.	L038-PL	D	MCERTS
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
Total organic carbon (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In house method.	L009-PL	D	MCERTS
TPH in (Soil)	Determination of TPH bands by HS-GC-MS/GC-FID	In-house method, TPH with carbon banding and silica gel split/cleanup.	L076-PL	D	MCERTS
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in NaOH and addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	MCERTS
Sulphate, water soluble, in soil (1hr extraction)	Sulphate, water soluble, in soil (1hr extraction)	In-house method	L038-PL	D	MCERTS

Analytical Report Number : 22-12541

Project / Site name: Prescott

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
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For method numbers ending in 'UK or A' analysis have been carried out in our laboratory in the United Kingdom (WATFORD).

For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).

For method numbers ending in 'PL or B' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

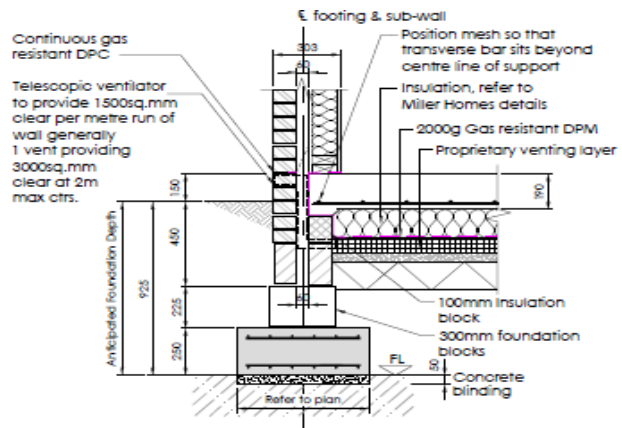
Information in Support of Analytical Results

List of HWOL Acronyms and Operators

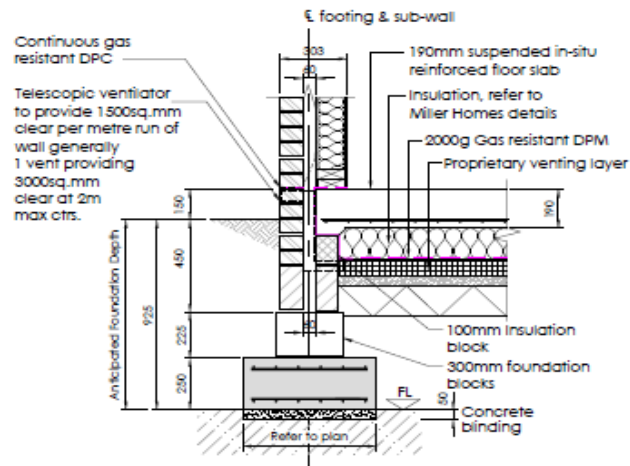
Acronym	Descriptions
HS	Headspace Analysis
MS	Mass spectrometry
FID	Flame Ionisation Detector
GC	Gas Chromatography
EH	Extractable Hydrocarbons (i.e. everything extracted by the solvent(s))
CU	Clean-up - e.g. by Florisil®, silica gel
1D	GC - Single coil/column gas chromatography
2D	GC-GC - Double coil/column gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics
AR	Aromatics
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
_	Operator - underscore to separate acronyms (exception for +)
+	Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total

APPENDIX V GAS MEMBRANE VALIDATION CERTIFICATES

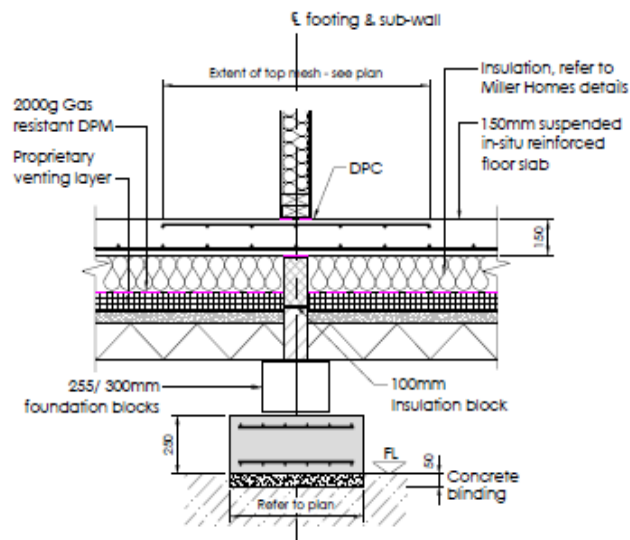
GAS MEMBRANE VALIDATION

Site Name: Parcel C, Prescott	Project Number: 15-292
Project Manager: R. Walker	Date: 24-11-2021
PM Qualifications: BSc (Hons) FGS, AIEMA, MICE, MIEEnvSc, CEnv	E3P Engineer: R. Webster
Engineer Qualifications: Verification of Gas Protection Systems Feb 2020	
Ground Gas Risk Assessment: Characteristic Situation 2	
Overview: The membrane comprised a JUTA GP1 gas membrane (Black) resistant to radon, carbon dioxide and low levels of methane. E3P can confirm there were no holes or rips at the time of inspection. Upon being laid the membrane is to be covered with a Celotex (closed Cell) floor insulation material which is considered to provide a high degree of protection. All external joints were inspected and E3P can confirm that the membrane was overlapped and double taped to external and internal gas resistant DPM. The membrane was taped to the gas resistant DPM using a double-sided jointing tape. All the overlaps were then additionally taped using foil backed girth tape. Each unit has a service duct located to the front and outer edge of the property. E3P inspected each one and can confirm that the top-hats have been adequately sealed against the membrane. Based on the information provided within this report, the site inspections and validation checklists, E3P can confirm that Plots 1-3 have been installed with gas protection measures in accordance with Characteristic Situation 2 to an acceptable level of workmanship.	
 Section 1-1 Scale 1:25	





Section 2-2
Scale 1:25



Section 3-3
Scale 1:25



Plot - 1

General Condition of Membrane-Good Condition



Verification of Joints and Seals-Good Condition



Verification of Service Penetrations-Good Condition



Verification of Ventilation-Good Condition



Plot - 2

General Condition of Membrane-Good Condition



Verification of Joints and Seals-Good Condition



Verification of Service Penetrations-Good Condition



Verification of Ventilation-Good Condition



Plot - 3

General Condition of Membrane-Good Condition



Verification of Joints and Seals-Good Condition



Verification of Service Penetrations-Good Condition



Verification of Ventilation-Good Condition



Juta GP[®] 1 - Gas Barrier is a multi-layer, low density polyethylene membrane, reinforced with a polypropylene reinforcing grid with an integral aluminium foil. GP[®] 1 is specifically designed and manufactured to perform as a Methane, Carbon Dioxide, Radon, Ground Gas, VOC /Hydrocarbon vapors, air & moisture protection system.

JUTA GP [®] 1			
Characteristics	Test Method	Unit	JUTA GP [®] 1
Physical Properties			
Thickness	EN 1849-2	mm	0.6
Thickness - Between Scrim	BS EN ISO 9863-1:2016	Mm	0.4
Width	EN 1849-2	m	Various
Length	EN 1849-2	m	Various
Weight	EN 1849-2	G/M2	370
Hydraulic Properties			
Thickness	EN 20811	-	>300
Resistance to Water Penetration	EN 13967, EN 1928	-	Pass
Water Tightness	EN 1296, EN 1367, EN 1928	-	Pass
Hydraulic Properties			
Resistance to Static Load	EN 12730-B	Kg	20
Tensile Strength (MD)	EN 12311-1	N/50mm	600
Tensile Strength (CMD)	EN 12311-1	N/50mm	480
Tensile Elongation (MD)	EN 12310-1	%	20
Tensile Elongation (CMD)	EN 12310-1	%	20
Puncture Resistance	EN 12236	kN	1.25
Resistance to Tearing (Nail Shank) MD	EN 12310-1	N	330
Resistance to Tearing (Nail Shank) CMD	EN 12310-1	N	400
Durability and Chemical Resistance			
Transmission Rate of Volatile Liquids - Diesel	ISO 6179:2010 (B)	g/m ² /h	0.246
Transmission Rate of Volatile Liquids - Xylene	ISO 6179:2010 (B)	g/m ² /h	0.571
Transmission Rate of Volatile Liquids - Toluene	ISO 6179:2010 (B)	g/m ² /h	0.583
Transmission Rate of Volatile Liquids - Petrol	ISO 6179:2010 (B)	g/m ² /h	0.135
Gas Permeability			
Methane Permeability	BS EN ISO 15105-1	ml/m ² /day/atm	<0.09
Carbon Dioxide Permeability	BS EN ISO 15105-1	ml/m ² /day/atm	<0.09
Radon Permeability	K124/02/95	m ² /s	8.0 x 10 ⁻¹⁵
Compliance and Certification			
CE Mark - EN13967:2012			
NHBC Standards Compliant			
BS 8485:2015 + A1 2019 Accordant			
BBA Certified - Certificate No. 12/4912			

Contact us to find out more information.
info@juta.co.uk | 01772 754177 | JUTA.CO.UK
Melton Grove Works, Church Road, Lytham, FY8 5PL

JUTA



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Additional Information

HANDLING

Roll weights can be in excess of 20kg and hence appropriate care and equipment is required for unloading and handling.

STORAGE

Rolls of JUTA GP® 1 should be stored on stable/level ground and stacked not more than five rolls high, with no other material stacked on top. The rolls can be stored outdoors when packaged, but should be protected from exposure to UV.

INSTALLATION

JUTA GP® 1 should be installed in accordance with the product installation guidelines, and in accordance with BS 8485:2015.

JOINTING AND SEALING

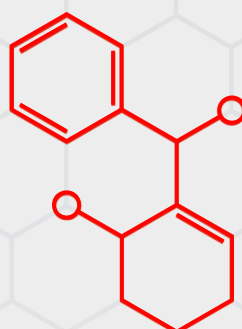
It is recommended JUTA GP® 1 be heat welded where possible, with welding carried out by competent personnel with suitable qualifications in accordance with best practice, and guidance contained within BS 8485:2015. JUTA GP® 1 should be overlapped by at least 100mm. If taping joints, only suitable tape must be used, ensuring application with a silicone roller to remove trapped air. JUTA pre-formed details, or Self Adhesive Gas Membrane are available for sealing around protuberances.

ACCESSORY PRODUCTS

-  JUTA GP® 1 Starter Band
-  JUTA GP® Tape
-  JUTA GP® Self Adhesive Membrane
-  JUTA GP® Primer
-  JUTA GP® Top Hats and Preformed Corners
-  JUTA GP® Protection Fleece
-  JUTA GP® Void Vent (25/40mm)

PLEASE CONTACT JUTA UK DIRECTLY FOR MORE INFORMATION ON JUTA GP® 1

Contact us to find out more information.
info@juta.co.uk | 01772 754177 | JUTA.CO.UK
Melton Grove Works, Church Road, Lytham, FY8 5PL

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Gas Protection Validation Site Record

Inspection date/time:	24/11/21	Inspected by:	P. Webster	Photographed:	✓/x ✓
Type of development:	resid	Plot number:	1	Developer:	

Notes/recommendations	Comments
Membrane Type	Extra CP1
Extent of Coverage	fully extends
Underside of Membrane	
Slab / membrane condition (is membrane clear of debris or insulation)	Good
Type of joints	☐ Tape Joint ☒ Welded Joint ☐ Other (please state)
Service entries - Jubilee clips, Top hats installed correctly	yes
External Wall Air bricks Present?	yes
Corners inspected?	yes
Membrane joints inspected has Double -sided butyl tape been used?	NO
Folds in membrane inspected?	yes
Has the membrane been installed as per the design detail drawing?	yes

This Plot has ~~PASSED~~ **FAILED** * inspection. (Any proposed remedial works will be noted in the "Remarks" column on this form). An additional inspection visit IS/IS NOT required for this Plot.

Inspection by: P. Webster Signed: [Signature]

Gas Protection Validation Site Record

Inspection date/time:	24/11/21	Inspected by:	P. Webster	Photographed:	✓/x ✓
Type of development:	resid	Plot number:	1	Developer:	

Notes/recommendations	Comments
Membrane Type	Extra CP1
Extent of Coverage	fully extends
Underside of Membrane	
Slab / membrane condition (is membrane clear of debris or insulation)	Good
Type of joints	☐ Tape Joint ☒ Welded Joint ☐ Other (please state)
Service entries - Jubilee clips, Top hats installed correctly	yes
External Wall Air bricks Present?	yes
Corners inspected?	yes
Membrane joints inspected has Double -sided butyl tape been used?	NO
Folds in membrane inspected?	yes
Has the membrane been installed as per the design detail drawing?	yes

This Plot has ~~PASSED~~ **FAILED** * inspection. (Any proposed remedial works will be noted in the "Remarks" column on this form). An additional inspection visit IS/IS NOT required for this Plot.

Inspection by: P. Webster Signed: [Signature]

Inspection date/time:	24/11/21	Inspected by:	P. Webster	Photographed:	✓/x ✓
Type of development:	resc	Plot number:	2	Developer:	

Notes/recommendations	Comments
Membrane Type	Data CAP1
Extent of Coverage	fully extends
Underside of Membrane	
Slab / membrane condition (is membrane clear of debris or insulation)	Good
Type of joints	☐ Tape Joint ☒ Welded Joint ☐ Other (please state)
Service entries – Jubilee clips, Top hats installed correctly	yes
External Wall Air bricks Present?	yes
Corners inspected?	yes
Membrane joints inspected has Double –sided butyl tape been used?	NO
Folds in membrane inspected?	yes
Has the membrane been installed as per the design detail drawing?	yes

This Plot has ~~PASSED~~ **FAILED** * inspection. (Any proposed remedial works will be noted in the "Remarks" column on this form). An additional inspection visit IS/IS NOT required for this Plot.

Inspection by: *P. Webster* Signed: *[Signature]*

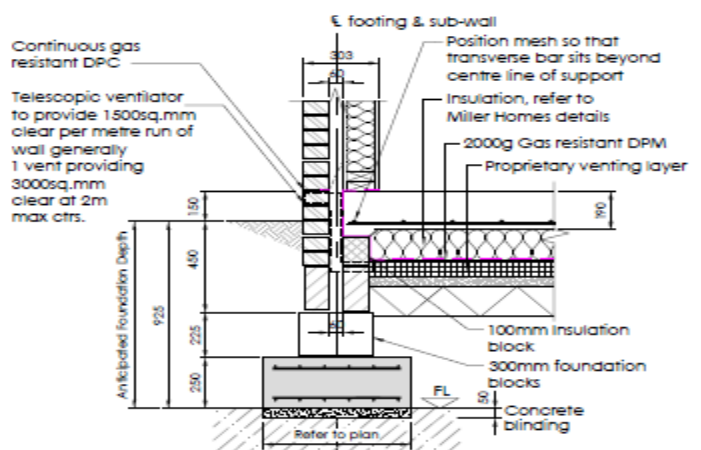
Inspection date/time:	24/11/21	Inspected by:	P. Webster	Photographed:	✓/x ✓
Type of development:	resid	Plot number:	3	Developer:	

Notes/recommendations	Comments
Membrane Type	Dura CP1
Extent of Coverage	fully extends
Underside of Membrane	
Slab / membrane condition (is membrane clear of debris or insulation)	Good
Type of joints	☐ Tape Joint ☒ Welded Joint ☐ Other (please state)
Service entries – Jubilee clips, Top hats installed correctly	yes
External Wall Air bricks Present?	yes
Corners inspected?	yes
Membrane joints inspected has Double – sided butyl tape been used?	NO
Folds in membrane inspected?	yes
Has the membrane been installed as per the design detail drawing?	yes

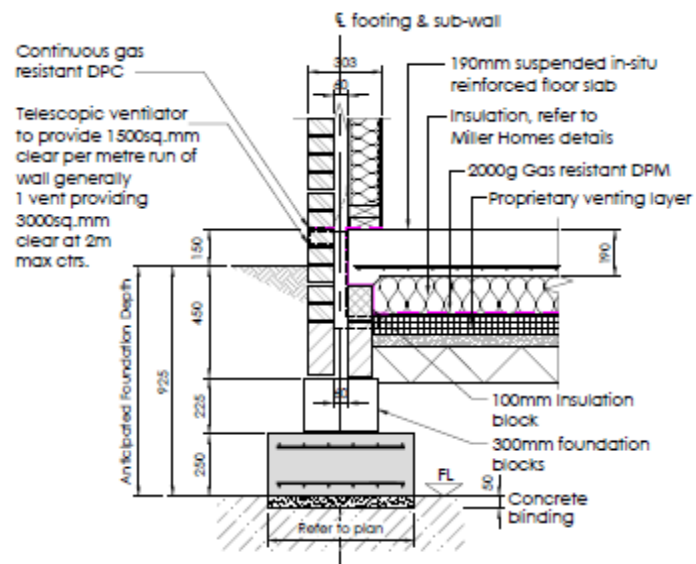
This Plot has ~~PASSED~~ **FAILED** inspection. (Any proposed remedial works will be noted in the "Remarks" column on this form). An additional inspection visit IS/IS NOT required for this Plot.

Inspection by: *P. Webster* Signed: *[Signature]*

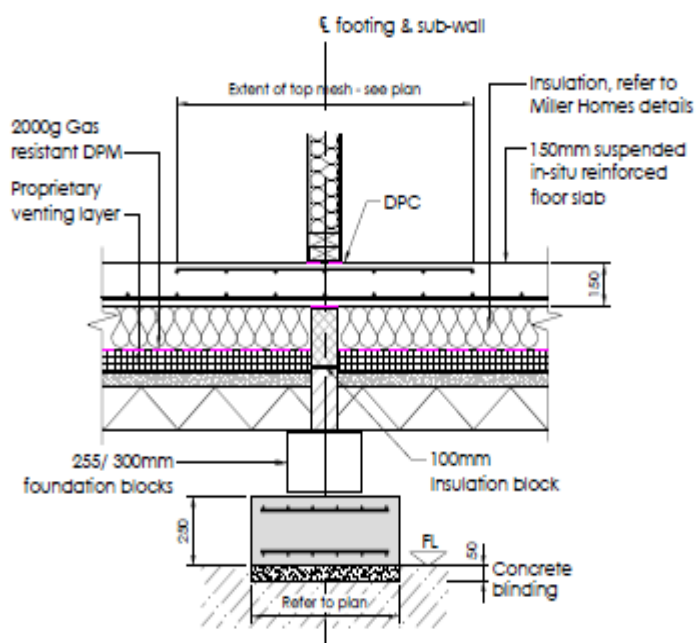
GAS MEMBRANE VALIDATION

Site Name: Parcel C, Prescott	Project Number: 15-292
Project Manager: R. Walker	Date: 07-12-2021
PM Qualifications: BSc (Hons) FGS, AIEMA, ICE, MIEEnvSc, CEnv	E3P Engineer: J. James
Engineer Qualifications: Verification of Gas Protection Systems Feb 2020	
Ground Gas Risk Assessment: Characteristic Situation 2	
Overview: The membrane comprised a JUTA GP1 gas membrane (Black) resistant to radon, carbon dioxide and low levels of methane. E3P can confirm there were no holes or rips at the time of inspection. Upon being laid the membrane is to be covered with a Celotex (closed Cell) floor insulation material which is considered to provide a high degree of protection. All external joints were inspected and E3P can confirm that the membrane was overlapped and double taped to external and internal gas resistant DPM. The membrane was taped to the gas resistant DPM using a double-sided jointing tape. All the overlaps were then additionally taped using foil backed girth tape. Each unit has a service duct located to the front and outer edge of the property. E3P inspected each one and can confirm that the top-hats have been adequately sealed against the membrane. Based on the information provided within this report, the site inspections and validation checklists, E3P can confirm that Plots 4-5 Parcel C have been installed with gas protection measures in accordance with Characteristic Situation 2 to an acceptable level of workmanship.	
 Section 1-1 Scale 1:25	





Section 2-2
Scale 1:25



Section 3-3
Scale 1:25



Plot - 4

General Condition of Membrane-Good Condition



Verification of Joints and Seals-Good Condition



Verification of Service Penetrations-Good Condition



Verification of Ventilation-Good Condition



Plot - 5

General Condition of Membrane-Good Condition



Verification of Joints and Seals-Good Condition



Verification of Service Penetrations-Good Condition



Verification of Ventilation-Good Condition



Juta GP[®] 1 - Gas Barrier is a multi-layer, low density polyethylene membrane, reinforced with a polypropylene reinforcing grid with an integral aluminium foil. GP[®] 1 is specifically designed and manufactured to perform as a Methane, Carbon Dioxide, Radon, Ground Gas, VOC /Hydrocarbon vapors, air & moisture protection system.

JUTA GP [®] 1			
Characteristics	Test Method	Unit	JUTA GP [®] 1
Physical Properties			
Thickness	EN 1849-2	mm	0.6
Thickness - Between Scrim	BS EN ISO 9863-1:2016	Mm	0.4
Width	EN 1849-2	m	Various
Length	EN 1849-2	m	Various
Weight	EN 1849-2	G/M2	370
Hydraulic Properties			
Thickness	EN 20811	-	>300
Resistance to Water Penetration	EN 13967, EN 1928	-	Pass
Water Tightness	EN 1296, EN 1367, EN 1928	-	Pass
Hydraulic Properties			
Resistance to Static Load	EN 12730-B	Kg	20
Tensile Strength (MD)	EN 12311-1	N/50mm	600
Tensile Strength (CMD)	EN 12311-1	N/50mm	480
Tensile Elongation (MD)	EN 12310-1	%	20
Tensile Elongation (CMD)	EN 12310-1	%	20
Puncture Resistance	EN 12236	kN	1.25
Resistance to Tearing (Nail Shank) MD	EN 12310-1	N	330
Resistance to Tearing (Nail Shank) CMD	EN 12310-1	N	400
Durability and Chemical Resistance			
Transmission Rate of Volatile Liquids - Diesel	ISO 6179:2010 (B)	g/m ² /h	0.246
Transmission Rate of Volatile Liquids - Xylene	ISO 6179:2010 (B)	g/m ² /h	0.571
Transmission Rate of Volatile Liquids - Toluene	ISO 6179:2010 (B)	g/m ² /h	0.583
Transmission Rate of Volatile Liquids - Petrol	ISO 6179:2010 (B)	g/m ² /h	0.135
Gas Permeability			
Methane Permeability	BS EN ISO 15105-1	ml/m ² /day/atm	<0.09
Carbon Dioxide Permeability	BS EN ISO 15105-1	ml/m ² /day/atm	<0.09
Radon Permeability	K124/02/95	m ² /s	8.0 x 10 ⁻¹⁵
Compliance and Certification			
CE Mark - EN13967:2012			
NHBC Standards Compliant			
BS 8485:2015 + A1 2019 Accordant			
BBA Certified - Certificate No. 12/4912			

Contact us to find out more information.
info@juta.co.uk | 01772 754177 | JUTA.CO.UK
Melton Grove Works, Church Road, Lytham, FY8 5PL

JUTA



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Additional Information

HANDLING

Roll weights can be in excess of 20kg and hence appropriate care and equipment is required for unloading and handling.

STORAGE

Rolls of JUTA GP® 1 should be stored on stable/level ground and stacked not more than five rolls high, with no other material stacked on top. The rolls can be stored outdoors when packaged, but should be protected from exposure to UV.

INSTALLATION

JUTA GP® 1 should be installed in accordance with the product installation guidelines, and in accordance with BS 8485:2015.

JOINTING AND SEALING

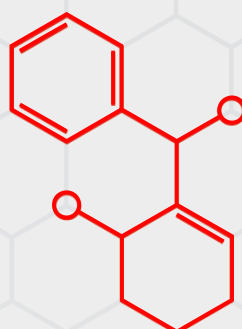
It is recommended JUTA GP® 1 be heat welded where possible, with welding carried out by competent personnel with suitable qualifications in accordance with best practice, and guidance contained within BS 8485:2015. JUTA GP® 1 should be overlapped by at least 100mm. If taping joints, only suitable tape must be used, ensuring application with a silicone roller to remove trapped air. JUTA pre-formed details, or Self Adhesive Gas Membrane are available for sealing around protuberances.

ACCESSORY PRODUCTS

-  JUTA GP® 1 Starter Band
-  JUTA GP® Tape
-  JUTA GP® Self Adhesive Membrane
-  JUTA GP® Primer
-  JUTA GP® Top Hats and Preformed Corners
-  JUTA GP® Protection Fleece
-  JUTA GP® Void Vent (25/40mm)

PLEASE CONTACT JUTA UK DIRECTLY FOR MORE INFORMATION ON JUTA GP® 1

Contact us to find out more information.
info@juta.co.uk | 01772 754177 | JUTA.CO.UK
Melton Grove Works, Church Road, Lytham, FY8 5PL

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Gas Protection Validation Site Record

Inspection date/time:	7/12/21	Inspected by:	J JAMES	Photographed:	✓ M. Miller
Type of development:	Housing	Plot number:	483	Developer:	Hornby
Notes/recommendations	Comments				
Membrane Type	Jubilee CP1				
Extent of Coverage	Full				
Underside of Membrane	✓				
Slab / membrane condition (is membrane clear of debris or insulation)	✓				
Type of joints	☒ Tape Joint ☒ Welded Joint ☐ Other (please state)				
Service entries – Jubilee clips, Top hats installed correctly	✓				
External Wall Air bricks Present?	✓				
Corners inspected?	✓				
Membrane joints inspected has Double –sided butyl tape been used?	✓				
Welds in membrane inspected?	✓				
Has the membrane been installed as per the design detail drawing?	✓				

This Plot has PASSED/FAILED* inspection. (Any proposed remedial works will be noted in the "Remarks" column on this form). An additional inspection visit IS/IS NOT* required for this Plot

Inspected by: J JAMES Signed: M. Miller

Inspection date/time:	7/12/21	Inspected by:	J J AMRIS	Photographed:	✓ 1x ✓ M. H. 11/02/21
Type of development:	Housing	Plot number:	513	Developer:	

Notes/recommendations	Comments
Membrane Type	Sub CP1
Extent of Coverage	Full ✓
Underside of Membrane	✓
Slab / membrane condition (is membrane clear of debris or insulation)	✓
Type of joints	☒ Tape Joint ☒ Welded Joint ☐ Other (please state)
Service entries – Jubilee clips, Top hats installed correctly	✓
External Wall Air bricks Present?	✓
Corners inspected?	✓
Membrane joints inspected has Double –sided butyl tape been used?	✓
Folds in membrane inspected?	✓
Has the membrane been installed as per the design detail drawing?	✓

This Plot has PASSED/FAILED* inspection. (Any proposed remedial works will be noted in the "Remarks" column on this form). An additional inspection visit NOT* required for this Plot.

Inspection by: J. J. AMRIS Signed: J. J. AMRIS

GAS MEMBRANE VALIDATION

Site Name: Parcel C, Prescott	Project Number: 15-292
Project Manager: R. Walker	Date: 21-12-2021
PM Qualifications: BSc (Hons) FGS, AIEMA, ICE, MEnvSc, CEnv	E3P Engineer: N. Dawson

Ground Gas Risk Assessment: **Characteristic Situation 2**

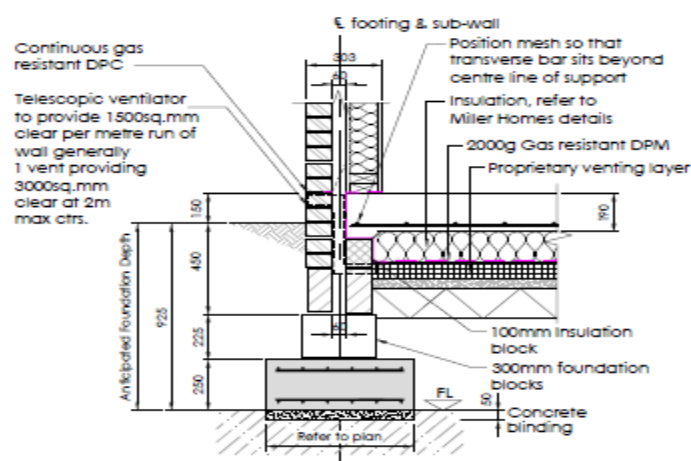
Overview:

The membrane comprised a JUTA GP1 gas membrane (Black) resistant to radon, carbon dioxide and low levels of methane. E3P can confirm there were no holes or rips at the time of inspection. Upon being laid the membrane is to be covered with a Celotex (closed Cell) floor insulation material which is considered to provide a high degree of protection.

All external joints were inspected and E3P can confirm that the membrane was overlapped and double taped to external and internal gas resistant DPM. The membrane was taped to the gas resistant DPM using a double-sided jointing tape. All the overlaps were then additionally taped using foil backed girth tape.

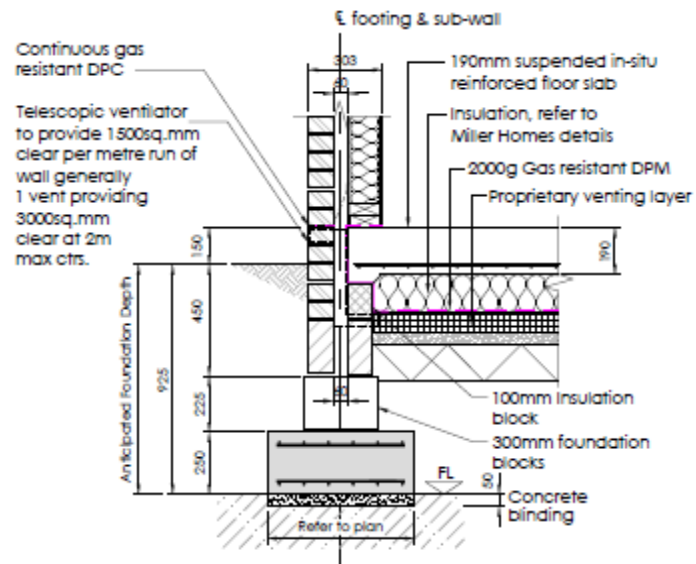
Each unit has a service duct located to the front and outer edge of the property. E3P inspected each one and can confirm that the top-hats have been adequately sealed against the membrane.

Based on the information provided within this report, the site inspections and validation checklists, E3P can confirm that **Plot 6** has been installed with gas protection measures in accordance with Characteristic Situation 2 to an acceptable level of workmanship.

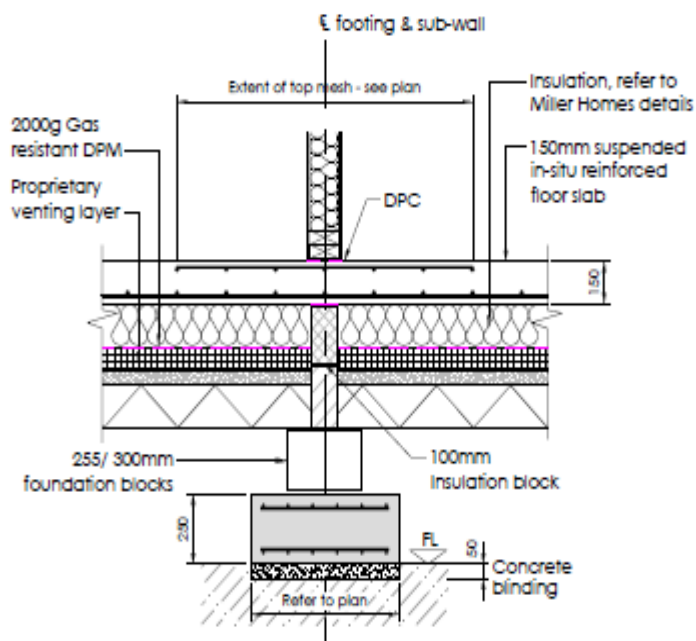


Section 1-1
Scale 1:25





Section 2-2
Scale 1:25



Section 3-3
Scale 1:25



Plot - 6

General Condition of Membrane-Good Condition



Verification of Joints and Seals-Good Condition



Verification of Service Penetrations-Good Condition





Gas Protection Validation Site Record

Plot No: 6.....

Inspection date/time:	21/12/21	Inspected by:	N Dawson	Photographed:	☒
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✓/x Notes/recommendations

Membrane Type Correct	✓	
Extent of Coverage Correct	✓	
Underside of Membrane	✓	
Slab / membrane condition	✓	
Laps and joints	✓	
Damp-proof course	✓	
Service entries	✓	
Folded Membrane Joint Taped & inspected	✓	

This Plot has PASSED ~~FAILED~~* inspection. (Any proposed remedial works will be noted in the "Remarks" column on this form).

An additional inspection visit IS NOT required for this Plot.

Inspection by: NICOLA DAWSON Signed: N Dawson

One record sheet to be completed for each plot – To be completed by E3P Professional Inspecting.

GAS MEMBRANE VALIDATION

Site Name: Parcel C, Prescott	Project Number: 15-292
Project Manager: R. Walker	Date: 12-01-2022
PM Qualifications: BSc (Hons) FGS, AIEMA, ICE, MEnvSc, CEnv	E3P Engineer: R. Webster

Ground Gas Risk Assessment: **Characteristic Situation 2**

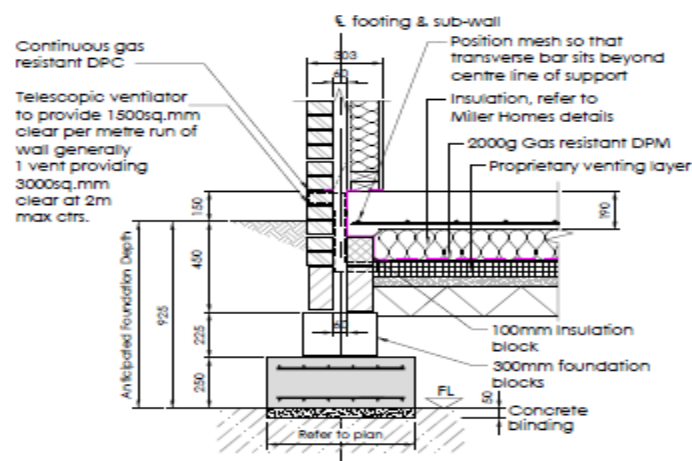
Overview:

The membrane comprised a JUTA GP1 gas membrane (Black) resistant to radon, carbon dioxide and low levels of methane. E3P can confirm there were no holes or rips at the time of inspection. Upon being laid the membrane is to be covered with a Celotex (closed Cell) floor insulation material which is considered to provide a high degree of protection.

All external joints were inspected and E3P can confirm that the membrane was overlapped and double taped to external and internal gas resistant DPM. The membrane was taped to the gas resistant DPM using a double-sided jointing tape. All the overlaps were then additionally taped using foil backed girth tape.

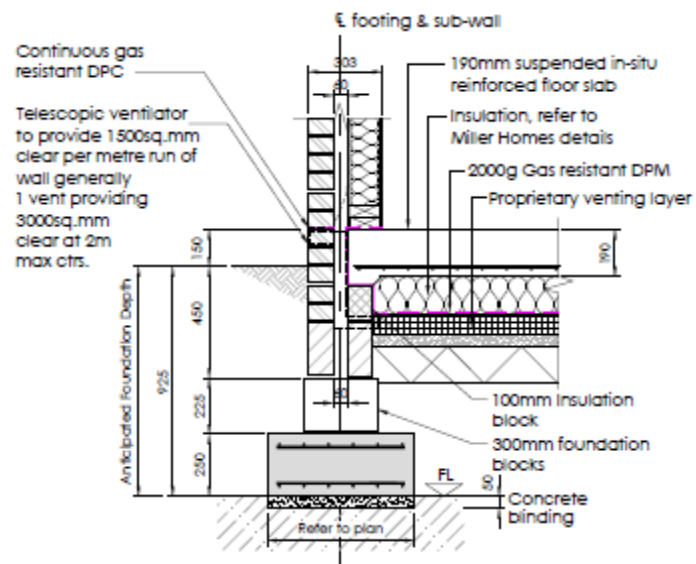
Each unit has a service duct located to the front and outer edge of the property. E3P inspected each one and can confirm that the top-hats have been adequately sealed against the membrane.

Based on the information provided within this report, the site inspections and validation checklists, E3P can confirm that **Plots 7 & 8** has been installed with gas protection measures in accordance with Characteristic Situation 2 to an acceptable level of workmanship.

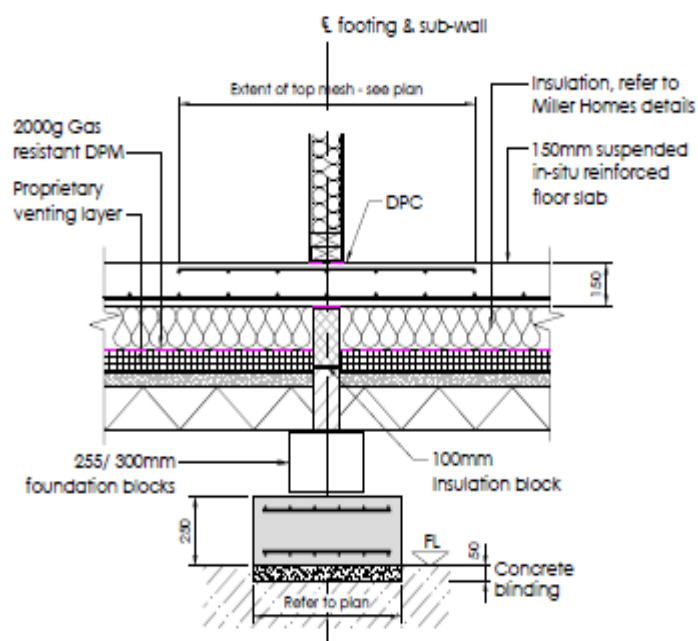


Section 1-1
Scale 1:25





Section 2-2
Scale 1:25



Section 3-3
Scale 1:25

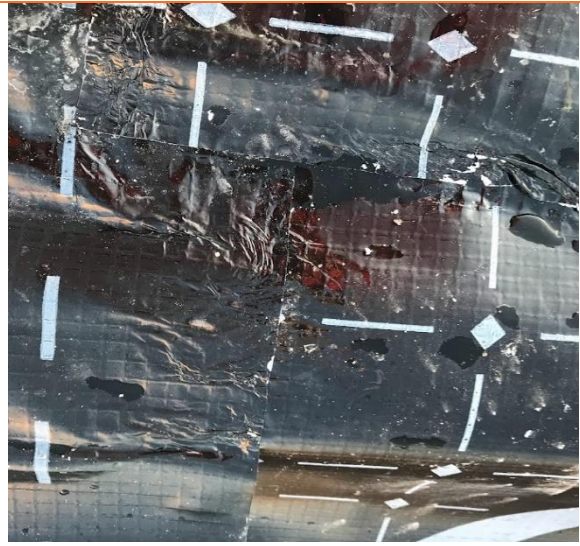


Plot - 7

General Condition of Membrane-Good Condition



Verification of Joints and Seals-Good Condition



Verification of Service Penetrations-Good Condition



Plot - 8

General Condition of Membrane-Good Condition



Verification of Joints and Seals-Good Condition



Verification of Service Penetrations-Good Condition



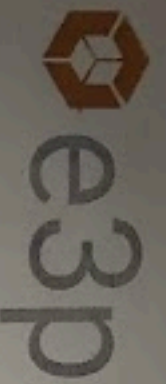


Gas Protection Validation Site Record

Inspection date/time:	12 th Jan	Inspected by:	R Webster	Photographed:	✓/x ✓
Type of development:	Small C&S	Plot number:	7	Developer:	

Notes/recommendations	Comments
Membrane Type	Just a C&P
Extent of Coverage	fully extend
Underside of Membrane	
Slab / membrane condition (is membrane clear of debris or insulation)	Good
Type of joints	☐ Tape Joint ☒ Welded Joint ☒ Other (please state) (detailing strips)
Service entries - Jubilee clips, Top hats installed correctly	yes
External Wall Air bricks Present?	no
Corners inspected?	yes
Membrane joints inspected has Double -sided butyl tape been used?	no
Folds in membrane inspected?	yes
Has the membrane been installed as per the design detail drawing?	yes

This Plot has ~~PASSED~~/FAILED* inspection. (Any proposed remedial works will be noted in the "Remarks" column on this form). An additional inspection visit IS/IS NOT required for this Plot.
Inspection by: R Webster Signed: R Webster



Gas Protection Validation Site Record

Inspection date/time:	12 th Jan	Inspected by:	R Webster	Photographed:	✓/x ✓
Type of development:	Small C&S	Plot number:	2	Developer:	

Notes/recommendations	Comments
Membrane Type	Juba GPl
Extent of Coverage	fully extends
Underside of Membrane	
Slab / membrane condition (is membrane clear of debris or insulation)	Good
Type of joints	☐ Tape Joint ☒ Welded Joint ☒ Other (please state) (detailing strips)
Service entries - Jubilee clips, Top hats installed correctly	yes
External Wall Air bricks Present?	yes
Corners inspected?	yes
Membrane joints inspected has Double -sided butyl tape been used?	yes
Folds in membrane inspected?	yes
Has the membrane been installed as per the design detail drawing?	yes

This Plot has ~~PASSED~~/FAILED* inspection. (Any proposed remedial works will be noted in the "Remarks" column on this form). An additional inspection visit IS/IS NOT required for this Plot.
Inspection by: R Webster Signed: R Webster

GAS MEMBRANE VALIDATION

Site Name: Parcel C, Prescott	Project Number: 15-292
Project Manager: R. Walker	Date: 28-01-2022
PM Qualifications: BSc (Hons) FGS, AIEMA, ICE, MIEEnvSc, CEnv	E3P Engineer: R. Webster

Ground Gas Risk Assessment: **Characteristic Situation 2**

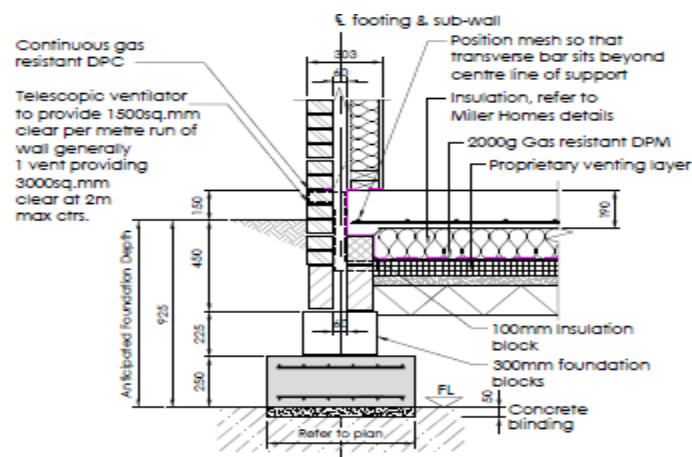
Overview:

The membrane comprised a JUTA GP1 gas membrane (Black) resistant to radon, carbon dioxide and low levels of methane. E3P can confirm there were no holes or rips at the time of inspection. Upon being laid the membrane is to be covered with a Celotex (closed Cell) floor insulation material which is considered to provide a high degree of protection.

All external joints were inspected and E3P can confirm that the membrane was overlapped and double taped to external and internal gas resistant DPM. The membrane was taped to the gas resistant DPM using a double-sided jointing tape. All the overlaps were then additionally taped using foil backed girth tape.

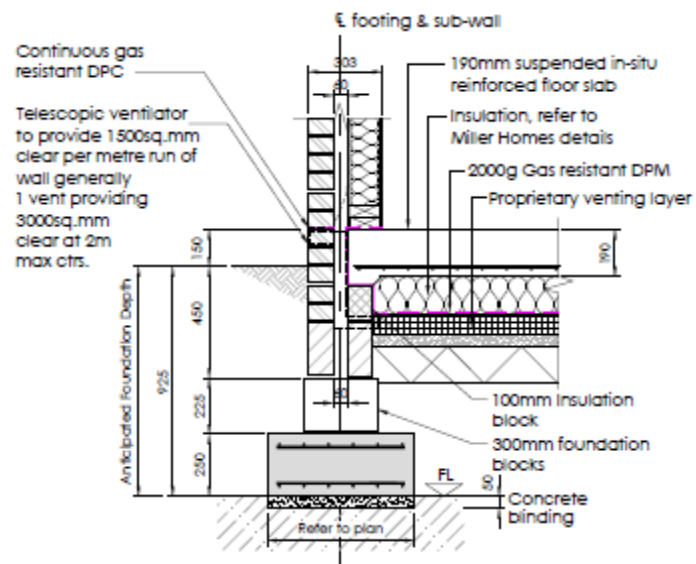
Each unit has a service duct located to the front and outer edge of the property. E3P inspected each one and can confirm that the top-hats have been adequately sealed against the membrane.

Based on the information provided within this report, the site inspections and validation checklists, E3P can confirm that **Plots 9, 16-19** has been installed with gas protection measures in accordance with Characteristic Situation 2 to an acceptable level of workmanship.

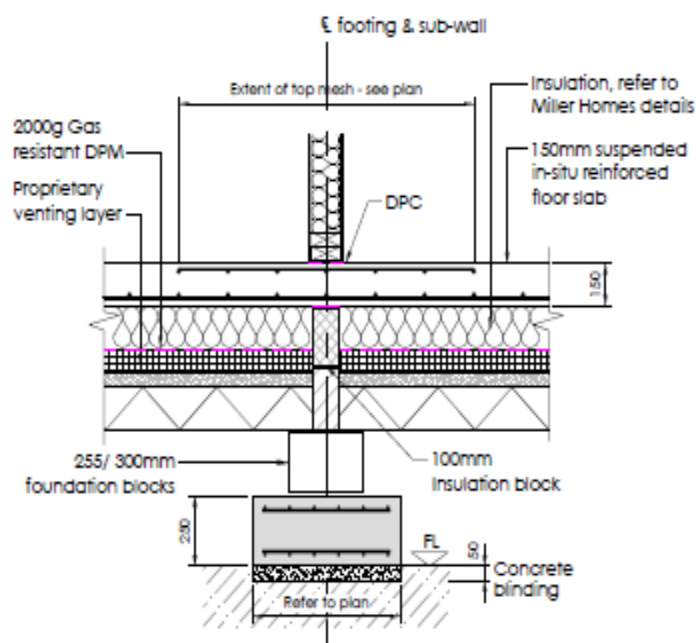


Section 1-1
Scale 1:25





Section 2-2
Scale 1:25



Section 3-3
Scale 1:25



Plot - 9

General Condition of Membrane-Good Condition



Verification of Joints and Seals-Good Condition



Verification of Service Penetrations-Good Condition



Plot - 16

General Condition of Membrane-Good Condition



Verification of Joints and Seals-Good Condition



Verification of Service Penetrations-Good Condition



Plot - 17

General Condition of Membrane-Good Condition



Verification of Joints and Seals-Good Condition



Verification of Service Penetrations-Good Condition



Plot - 18

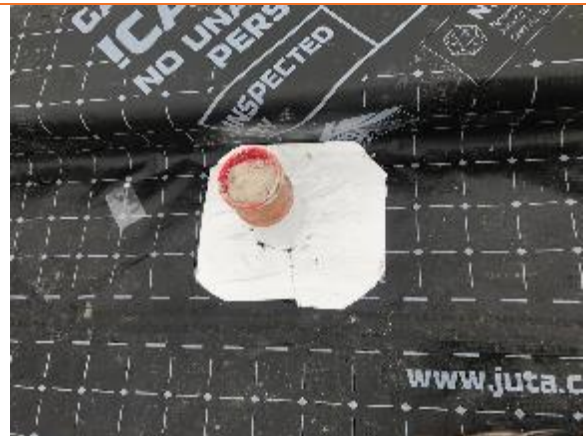
General Condition of Membrane-Good Condition



Verification of Joints and Seals-Good Condition



Verification of Service Penetrations-Good Condition



Plot - 19

General Condition of Membrane-Good Condition



Verification of Joints and Seals-Good Condition



Verification of Service Penetrations-Good Condition



Verification of Ventilation- Good Condition



Gas Protection Validation Site Record

Inspection date/time:	28th Jan	Inspected by:	R. Webster	Photographed:	✓/x ✓
Type of development:	Sonnet Gate	Plot number:	9	Developer:	

Notes/recommendations

Comments

Membrane Type	Jura GP1
Extent of Coverage	fully extends
Underside of Membrane	
Slab / membrane condition (is membrane clear of debris or insulation)	Good
Type of joints	☐ Tape Joint ☒ Welded Joint ☒ Other (please state) (detailing strips)
Service entries – Jubilee clips, Top hats installed correctly	yes
External Wall Air bricks Present?	No
Corners inspected?	yes
Membrane joints inspected has Double –sided butyl tape been used?	No
Folds in membrane inspected?	yes
Has the membrane been installed as per the design detail drawing?	yes

This Plot has **PASSED/FAILED*** inspection. (Any proposed remedial works will be noted in the "Remarks" column on this form). An additional inspection visit IS/IS NOT* required for this Plot.

Inspection by: R. Webster Signed: [Signature]

Gas Protection Validation Site Record

Inspection date/time:	28th Jan	Inspected by:	R. Wicks	Photographed:	V1x ✓
Type of development:	Small Ctr	Plot number:	16	Developer:	
Notes/recommendations					
Membrane Type	Dura GFL				
Extent of Coverage	Fully extend				
Underside of Membrane					
Slab / membrane condition (is membrane clear of debris or insulation)	Good				
Type of joints	☐ Tape Joint ☒ Welded Joint ☒ Other (please state) (detailing strips)				
Service entries – Jubilee clips, Top hats installed correctly	Yes				
External Wall Air bricks Present?	No				
Corners inspected?	Yes				
Membrane joints inspected has Double –sided butyl tape been used?	No				
Folds in membrane inspected?	Yes				
Has the membrane been installed as per the design detail drawing?	Yes				

This Plot has **PASSED/FAILED** inspection. (Any proposed remedial works will be noted in the "Remarks" column on this form). An additional inspection visit is/NOT* required for this Plot.

Inspection by: *R. Wicks* Signed: *[Signature]*

Inspection date/time:	28th Jan	Inspected by:	R. Widdowson	Photographed:	✓/x ✓
Type of development:	Small Cota	Plot number:	17	Developer:	
Notes/recommendations					
Membrane Type	Dura GFL				
Extent of Coverage	Fully extends				
Underside of Membrane					
Slab / membrane condition (is membrane clear of debris or insulation)	Good				
Type of joints	☐ Tape Joint ☒ Welded Joint ☒ Other (please state) (detailing strips)				
Service entries – Jubilee clips, Top hats installed correctly	Yes				
External Wall Air bricks Present?	No				
Corners inspected?	Yes				
Membrane joints inspected has Double – sided butyl tape been used?	No				
Folds in membrane inspected?	Yes				
Has the membrane been installed as per the design detail drawing?	Yes				

This Plot has PASSED/FAILED* inspection. (Any proposed remedial works will be noted in the "Remarks" column on this form). An additional inspection visit IS/IS NOT* required for this Plot.

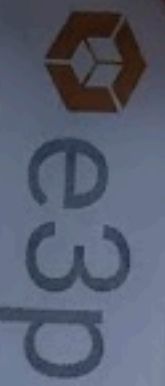
Inspection by: R. Widdowson Signed: [Signature]



Gas Protection Validation Site Record

Inspection date/time:	28th Jan	Inspected by:	R. Walsby	Photographed:	✓/x ✓
Type of development:	Small C&A	Plot number:	18	Developer:	
Notes/recommendations					
Membrane Type	Dura GFL				
Extent of Coverage	Fully extend				
Underside of Membrane					
Slab / membrane condition (is membrane clear of debris or insulation)	Good				
Type of joints	☐ Tape Joint ☒ Welded Joint ☒ Other (please state) (detailing strips)				
Service entries – Jubilee clips, Top hats installed correctly	yes				
External Wall Air bricks Present?	No				
Corners inspected?	yes				
Membrane joints inspected has Double – sided butyl tape been used?	No				
Folds in membrane inspected?	yes				
Has the membrane been installed as per the design detail drawing?	yes				

This Plot has PASSED/FAILED* inspection. (Any proposed remedial works will be noted in the "Remarks" column on this form). An additional inspection visit IS/IS NOT* required for this Plot.
Inspection by: R. Walsby Signed: [Signature]



Gas Protection Validation Site Record

Inspection date/time:	28th Jan	Inspected by:	R. Nickerson	Photographed:	V/x ✓
Type of development:	Small Gate	Plot number:	19	Developer:	
Notes/recommendations					
Membrane Type	Dura GFL				
Extent of Coverage	Fully extend				
Underside of Membrane					
Slab / membrane condition (is membrane clear of debris or insulation)	Good				
Type of joints	☐ Tape Joint ☒ Welded Joint ☒ Other (please state) (detailing strips)				
Service entries – Jubilee clips, Top hats installed correctly	Yes				
External Wall Air bricks Present?	Yes				
Corners inspected?	Yes				
Membrane joints inspected has Double – sided butyl tape been used?	No				
Folds in membrane inspected?	Yes				
Has the membrane been installed as per the design detail drawing?	Yes				

This Plot has PASSED/FAILED* inspection. (Any proposed remedial works will be noted in the "Remarks" column on this form). An additional inspection visit IS NOT* required for this Plot.

Inspection by: R. Nickerson

Signed: [Signature]

GAS MEMBRANE VALIDATION

Site Name: Parcel C, Prescott	Project Number: 15-292
Project Manager: R. Walker	Date: 14-02-2022
PM Qualifications: BSc (Hons) FGS, AIEMA, ICE, MEnvSc, CEnv	E3P Engineer: R. Webster

Ground Gas Risk Assessment: **Characteristic Situation 2**

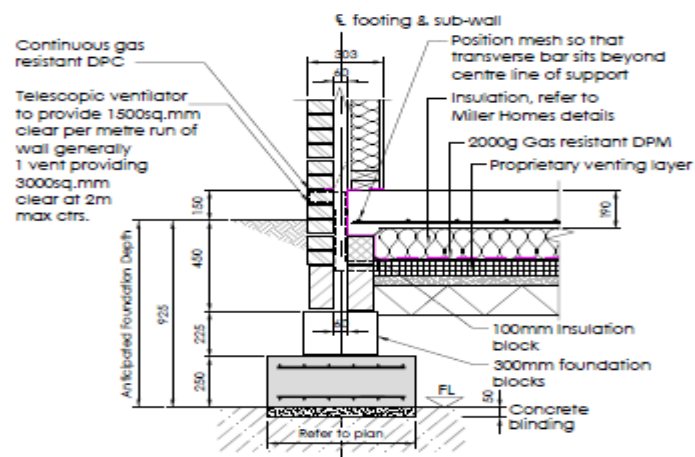
Overview:

The membrane comprised a JUTA GP1 gas membrane (Black) resistant to radon, carbon dioxide and low levels of methane. E3P can confirm there were no holes or rips at the time of inspection. Upon being laid the membrane is to be covered with a Celotex (closed Cell) floor insulation material which is considered to provide a high degree of protection.

All external joints were inspected and E3P can confirm that the membrane was overlapped and double taped to external and internal gas resistant DPM. The membrane was taped to the gas resistant DPM using a double-sided jointing tape. All the overlaps were then additionally taped using foil backed girth tape.

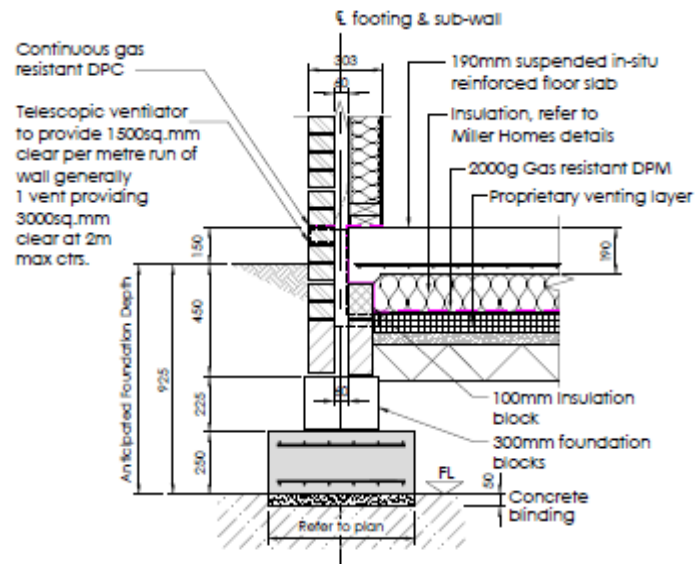
Each unit has a service duct located to the front and outer edge of the property. E3P inspected each one and can confirm that the top-hats have been adequately sealed against the membrane.

Based on the information provided within this report, the site inspections and validation checklists, E3P can confirm that **Plots 10-11** has been installed with gas protection measures in accordance with Characteristic Situation 2 to an acceptable level of workmanship.

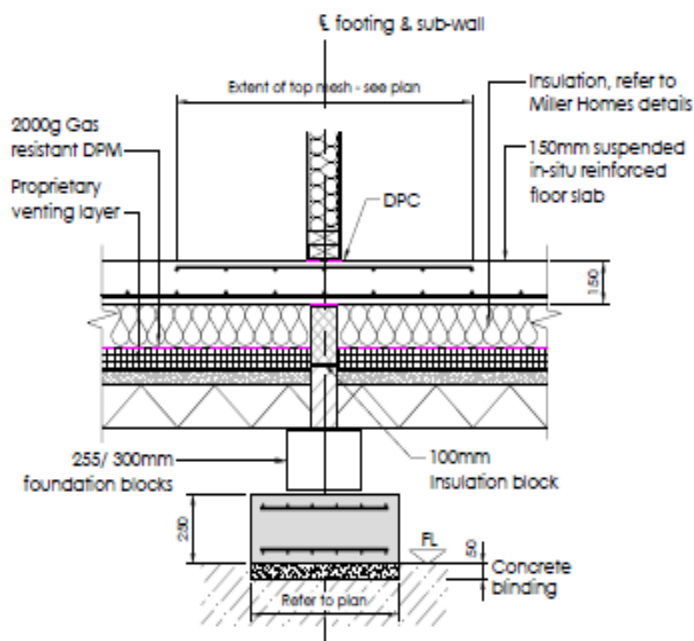


Section 1-1
Scale 1:25





Section 2-2
Scale 1:25



Section 3-3
Scale 1:25



Plot - 10

General Condition of Membrane-Good Condition



Verification of Joints and Seals-Good Condition



Verification of Service Penetrations-Good Condition



Verification of Service Penetrations-Good Condition



Plot - 11

General Condition of Membrane-Good Condition



Verification of Joints and Seals-Good Condition



Verification of Service Penetrations-Good Condition



Verification of Service Penetrations-Good Condition





Gas Protection Validation Site Record

Inspection date/time:	14th Feb	Inspected by:	R Webster	Photographed:	y/x ✓
Type of development:	Scrub	Plot number:	10	Developer:	

Notes/recommendations

Membrane Type

Extent of Coverage

Underside of Membrane

Slab / membrane condition (is membrane clear of debris or insulation)

Type of joints

Service entries - Jubilee clips, Top hats installed correctly

External Wall Air bricks Present?

Corners inspected?

Membrane joints inspected has Double -sided butyl tape been used?

Folds in membrane inspected?

Has the membrane been installed as per the design detail drawing?

Comments

Subs GP1

Fully exposed

Good

☐ Tape Joint ☒ Welded Joint ☒ Other (please state) (during strip)

y/x

y/x

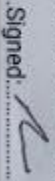
N/A

y/x

y/x

This Plot has ~~passed~~ **FAILED** inspection. (Any proposed remedial works will be noted in the 'Remarks' column on this form). An additional inspection visit IS/IS NOT required for this Plot.

Inspected by: R Webster

Signed: 

Environmental Engineering Partnership Limited trading as E3P
Registered in England No. 08725262 Registered Office: Exp. Taylor Road, Trafford Park, Urmston, Manchester M41 7JQ


Gas Protection Validation Site Record

Inspection date/time:	14th Feb	Inspected by:	R Webster	Photographed:	1/1 ✓
Type of development:	Storage	Plot number:	11	Developer:	

Notes/recommendations	Comments
Membrane Type	
Extent of Coverage	
Underside of Membrane	
Slab / membrane condition (is membrane clear of debris or insulation)	Good
Type of joints	☐ Tape Joint ☒ Welded Joint ☐ Other (please state) (detailing sheet)
Service entries – Jubilee clips, Top hats installed correctly	yes
External Wall Air bricks Present?	yes
Corners inspected?	yes
Membrane joints inspected has Double – sided butyl tape been used?	No
Folds in membrane inspected?	yes
Has the membrane been installed as per the design detail drawing?	yes

This Plot has ~~passed~~ **FAILED** inspection. (Any proposed remedial works will be noted in the "Remarks" column on this form). An additional inspection visit IS/IS NOT required for this Plot.

Inspected by: *R Webster* Signed: *[Signature]*

Environmental Engineering Partnership Limited trading as E3P
Registered in England No: 08720202 Registered Office: E3P, Taylor Road, Trafford Park, Urmston, Manchester M41 7JQ



GAS MEMBRANE VALIDATION

Site Name: Parcel C, Prescott	Project Number: 15-292
Project Manager: R. Walker	Date: 17-02-2022
PM Qualifications: BSc (Hons) FGS, AIEMA, ICE, MEnvSc, CEnv	E3P Engineer: R. Webster

Ground Gas Risk Assessment: **Characteristic Situation 2**

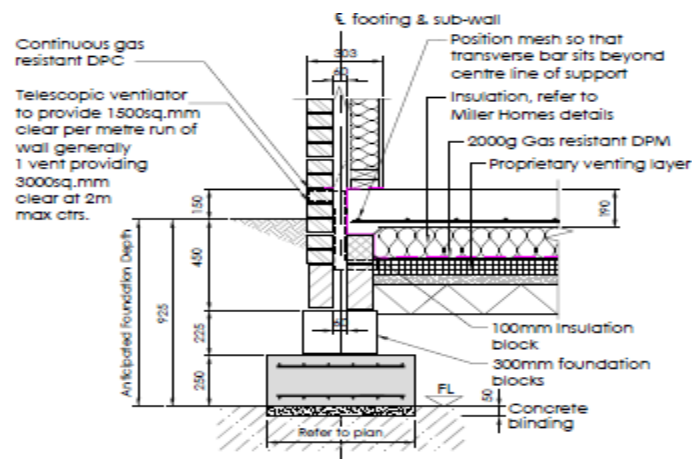
Overview:

The membrane comprised a JUTA GP1 gas membrane (Black) resistant to radon, carbon dioxide and low levels of methane. E3P can confirm there were no holes or rips at the time of inspection. Upon being laid the membrane is to be covered with a Celotex (closed Cell) floor insulation material which is considered to provide a high degree of protection.

All external joints were inspected and E3P can confirm that the membrane was overlapped and double taped to external and internal gas resistant DPM. The membrane was taped to the gas resistant DPM using a double-sided jointing tape. All the overlaps were then additionally taped using foil backed girth tape.

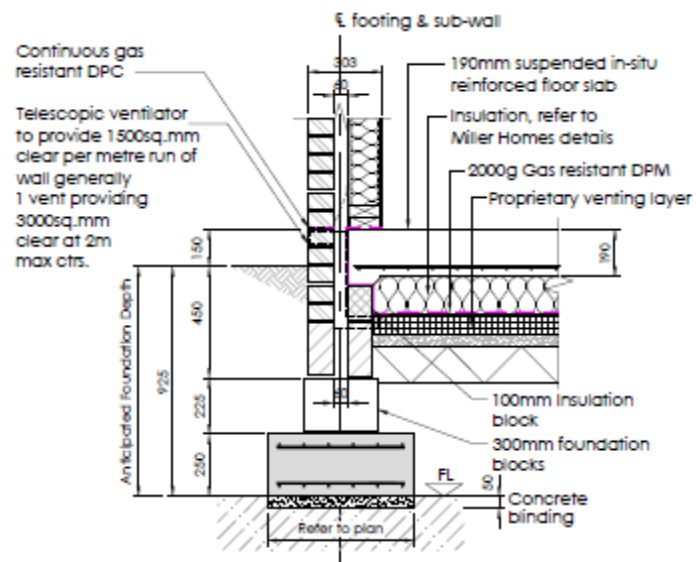
Each unit has a service duct located to the front and outer edge of the property. E3P inspected each one and can confirm that the top-hats have been adequately sealed against the membrane.

Based on the information provided within this report, the site inspections and validation checklists, E3P can confirm that **Plots 12-13** has been installed with gas protection measures in accordance with Characteristic Situation 2 to an acceptable level of workmanship.

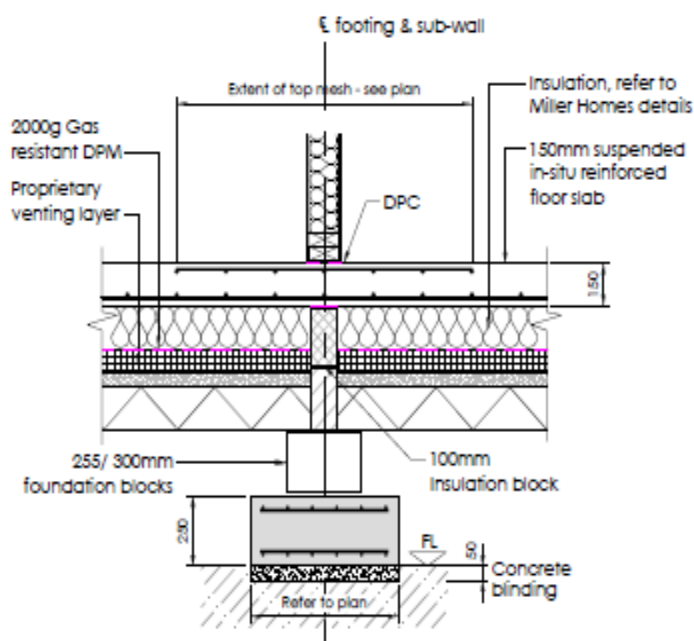


Section 1-1
Scale 1:25





Section 2-2
Scale 1:25



Section 3-3
Scale 1:25



Plot - 12

General Condition of Membrane-Good Condition



Verification of Joints and Seals-Good Condition



Verification of Service Penetrations-Good Condition



Verification of Service Penetrations-Good Condition



Plot - 13

General Condition of Membrane-Good Condition



Verification of Joints and Seals-Good Condition

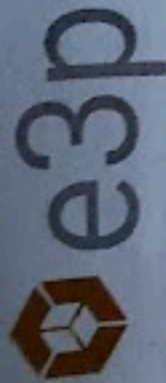


Verification of Service Penetrations-Good Condition



Verification of Service Penetrations-Good Condition





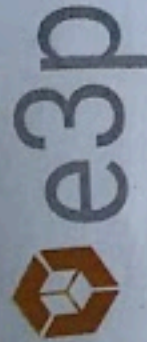
Gas Protection Validation Site Record

Inspection date/time:	17/12/22	Inspected by:	Tom Preston	Photographed:	✓/x ✓
Type of development:	Residential	Plot number:	12	Developer:	

Notes/recommendations	Comments
Membrane Type	Black BBA
Extent of Coverage	Full Plot
Underside of Membrane	✓
Slab / membrane condition (is membrane clear of debris or insulation)	✓
Type of joints	☐ Tape Joint ☒ Welded Joint ☐ Other (please state)
Service entries - Jubilee clips, Top hats installed correctly	✓
External Wall Air bricks Present?	✓
Corners inspected?	✓
Membrane joints inspected has Double -sided butyl tape been used?	✓
Folds in membrane inspected?	✓
Has the membrane been installed as per the design detail drawing?	✓

This Plot has ~~PASSED~~/FAILED* inspection. (Any proposed remedial works will be noted in the "Remarks" column on this form). An additional inspection visit IS/IS NOT required for this Plot.

Inspection by: Tom Preston Signed: Tom Preston



Gas Protection Validation Site Record

Inspection date/time:	17/12/22	Inspected by:	Tom Preston	Photographed:	✓/x ✓
Type of development:	Residential	Plot number:	13	Developer:	

Notes/recommendations	Comments
Membrane Type	Black BBA
Extent of Coverage	Full Plot
Underside of Membrane	✓
Slab / membrane condition (is membrane clear of debris or insulation)	✓
Type of joints	☐ Tape Joint ☒ Welded Joint ☐ Other (please state)
Service entries - Jubilee clips, Top hats installed correctly	✓
External Wall Air bricks Present?	✓
Corners inspected?	✓
Membrane joints inspected has Double -sided butyl tape been used?	✓
Folds in membrane inspected?	✓
Has the membrane been installed as per the design detail drawing?	✓

This Plot has ~~FAILED~~ **PASSED** inspection. (Any proposed remedial works will be noted in the "Remarks" column on this form). An additional inspection visit IS/IS NOT required for this Plot.

Inspection by: Tom Preston Signed: Tom Preston

GAS MEMBRANE VALIDATION

Site Name: Parcel C, Prescott	Project Number: 15-292
Project Manager: R. Walker	Date: 25-03-2022
PM Qualifications: BSc (Hons) FGS, AIEMA, ICE, MIEEnvSc, CEnv	E3P Engineer: J. James

Ground Gas Risk Assessment: **Characteristic Situation 2**

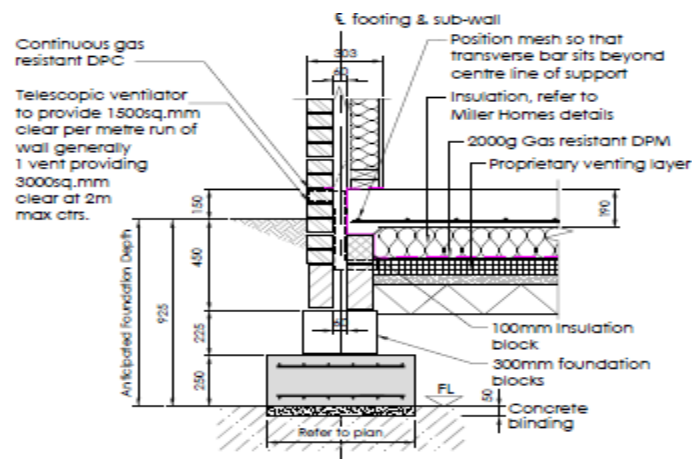
Overview:

The membrane comprised a JUTA GP1 gas membrane (Black) resistant to radon, carbon dioxide and low levels of methane. E3P can confirm there were no holes or rips at the time of inspection. Upon being laid the membrane is to be covered with a Celotex (closed Cell) floor insulation material which is considered to provide a high degree of protection.

All external joints were inspected and E3P can confirm that the membrane was overlapped and double taped to external and internal gas resistant DPM. The membrane was taped to the gas resistant DPM using a double-sided jointing tape. All the overlaps were then additionally taped using foil backed girth tape.

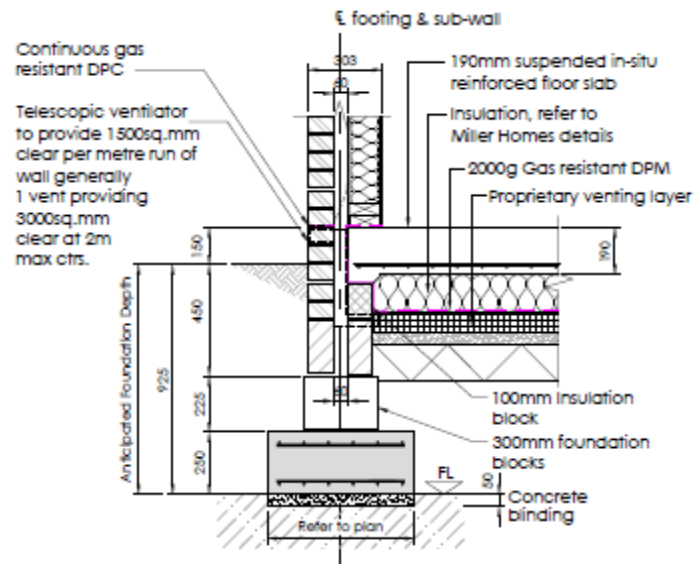
Each unit has a service duct located to the front and outer edge of the property. E3P inspected each one and can confirm that the top-hats have been adequately sealed against the membrane.

Based on the information provided within this report, the site inspections and validation checklists, E3P can confirm that **Plots 34-35** has been installed with gas protection measures in accordance with Characteristic Situation 2 to an acceptable level of workmanship.

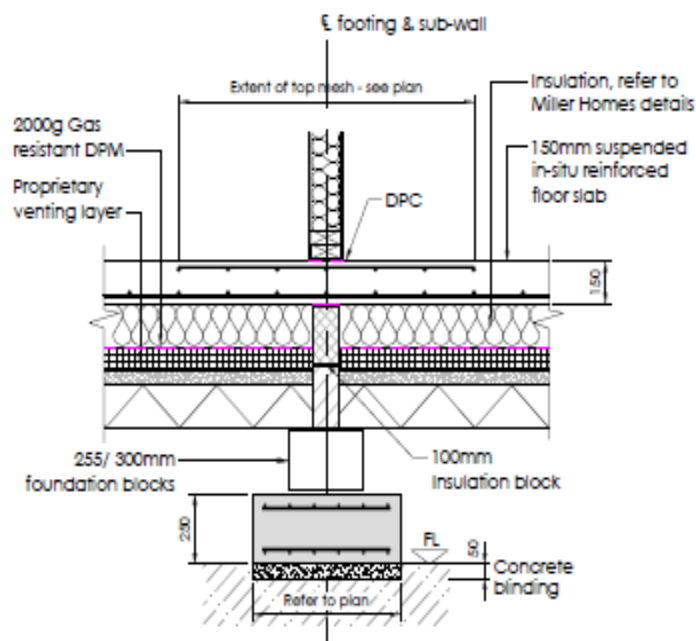


Section 1-1
Scale 1:25





Section 2-2
Scale 1:25



Section 3-3
Scale 1:25



Plot - 34

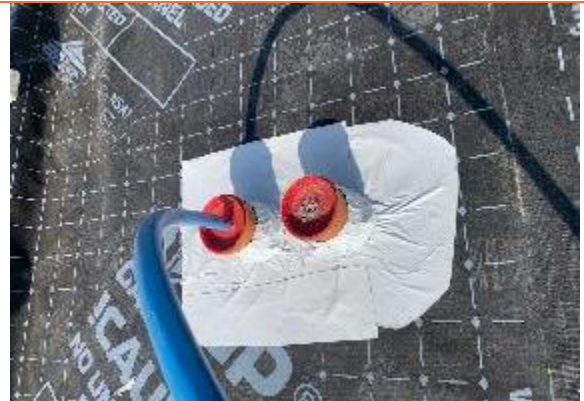
General Condition of Membrane-Good Condition



Verification of Joints and Seals-Good Condition



Verification of Service Penetrations-Good Condition



Verification of Service Penetrations-Good Condition



Plot - 35

General Condition of Membrane-Good Condition



Verification of Joints and Seals-Good Condition



Verification of Service Penetrations-Good Condition



Verification of Service Penetrations-Good Condition



Inspection date/time:	28/3/22	Inspected by:	J. S. H. A. G. S.	Photographed:	✓ 1x ✓
Type of development:	Fluorising	Plot number:	34	Developer:	Miller Honey

Notes/recommendations	Comments
Membrane Type	Suta (P1)
Extent of Coverage	Full
Underside of Membrane	✓
Slab / membrane condition (Is membrane clear of debris or insulation)	✓
Type of joints	☐ Tape Joint ☒ Welded Joint ☐ Other (please state)
Service entries – Jubilee clips, Top hats installed correctly	✓
External Wall Air bricks Present?	✓
corners inspected?	✓
Membrane joints inspected has Double – sided butyl tape been used?	✓
Welds in membrane inspected?	✓
Has the membrane been installed as per the design detail drawing?	✓

This Plot has **PASSED/FAILED*** inspection. (Any proposed remedial works will be noted in the "Remarks" column on this form). An additional inspection visit IS/IS NOT required for this Plot.

Inspection by: J. S. H. A. G. S. Signed: J. S. H. A. G. S.

Inspection date/time:	28/3/22	Inspected by:	JSAHES	Photographed:	✓
Type of development:	Fluorising	Plot number:	3511	Developer:	Miller Henry 28/3/22
Notes/recommendations	Comments				
Membrane Type	Sutex (LPI)				
Extent of Coverage	Full				
Underside of Membrane	✓				
Slab / membrane condition (is membrane clear of debris or insulation)	✓				
Type of joints	☐ Tape Joint ☒ Welded Joint ☐ Other (please state)				
Service entries – Jubilee clips, Top hats installed correctly	✓				
External Wall Air bricks Present?	✓				
Roofers inspected?	✓				
Membrane joints inspected has Double –sided butyl tape been used?	✓				
Welds in membrane inspected?	✓				
Has the membrane been installed as per the design detail drawing?	✓				

This Plot has **PASSED/FAILED** inspection. (Any proposed remedial works will be noted in the "Remarks" column on this form). An additional inspection visit IS/IS NOT required for this Plot.

Inspection by: JSAHES Signed: JSAHES

GAS MEMBRANE VALIDATION

Site Name: Parcel C, Prescott	Project Number: 15-292
Project Manager: R. Walker	Date: 05-04-2022
PM Qualifications: BSc (Hons) FGS, AIEMA, ICE, MEnvSc, CEnv	E3P Engineer: R. Webster

Ground Gas Risk Assessment: **Characteristic Situation 2**

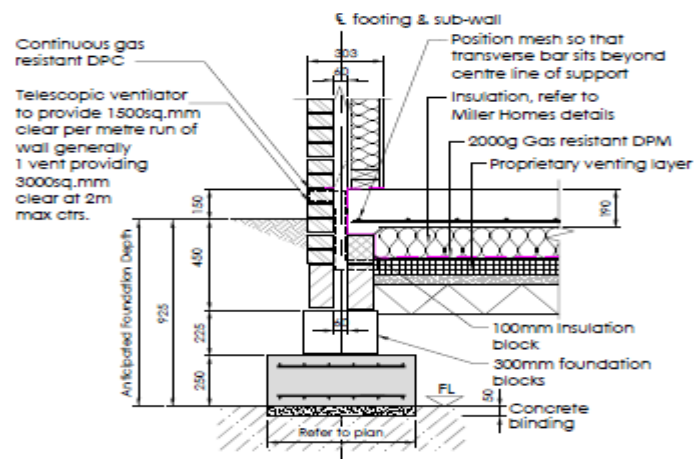
Overview:

The membrane comprised a JUTA GP1 gas membrane (Black) resistant to radon, carbon dioxide and low levels of methane. E3P can confirm there were no holes or rips at the time of inspection. Upon being laid the membrane is to be covered with a Celotex (closed Cell) floor insulation material which is considered to provide a high degree of protection.

All external joints were inspected and E3P can confirm that the membrane was overlapped and double taped to external and internal gas resistant DPM. The membrane was taped to the gas resistant DPM using a double-sided jointing tape. All the overlaps were then additionally taped using foil backed girth tape.

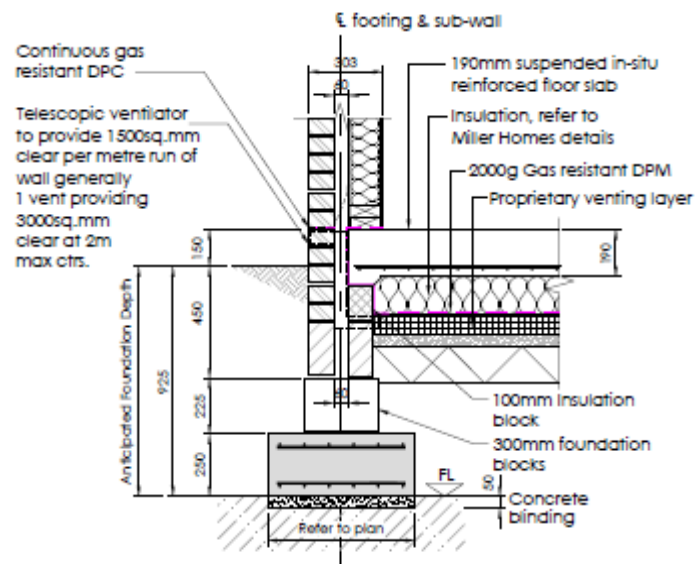
Each unit has a service duct located to the front and outer edge of the property. E3P inspected each one and can confirm that the top-hats have been adequately sealed against the membrane.

Based on the information provided within this report, the site inspections and validation checklists, E3P can confirm that **Plots 32-33** has been installed with gas protection measures in accordance with Characteristic Situation 2 to an acceptable level of workmanship.

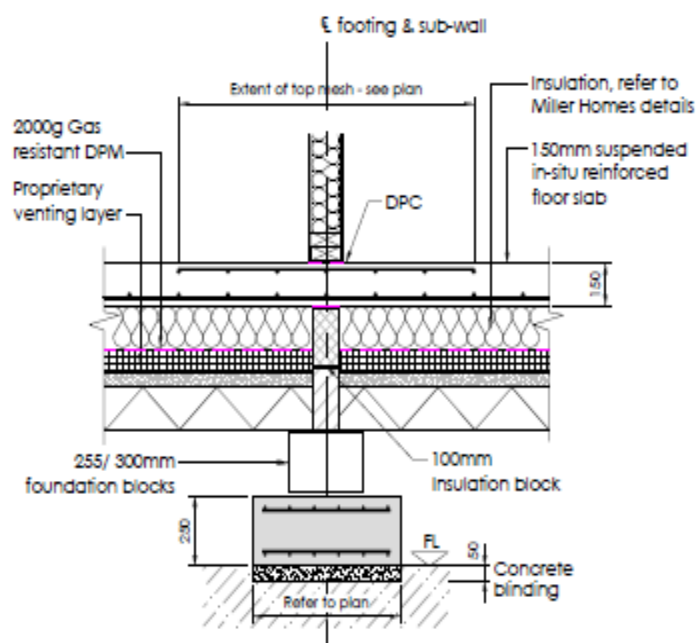


Section 1-1
Scale 1:25





Section 2-2
Scale 1:25



Section 3-3
Scale 1:25



Plot - 32

General Condition of Membrane-Good Condition



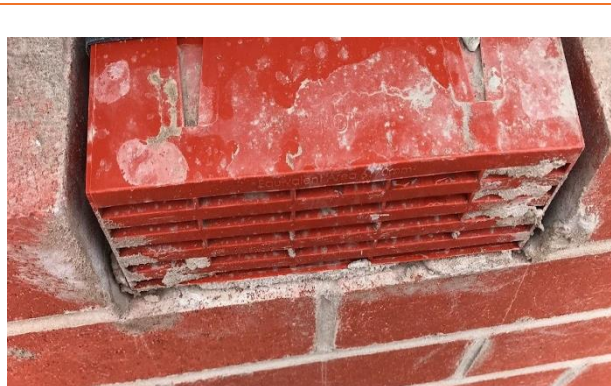
Verification of Joints and Seals-Good Condition



Verification of Service Penetrations-Good Condition



Verification of Service Penetrations-Good Condition



Plot - 33

General Condition of Membrane-Good Condition



Verification of Joints and Seals-Good Condition



Verification of Service Penetrations-Good Condition



Verification of Service Penetrations-Good Condition





Gas Protection Validation Site Record

Inspection date/time:	5 th April	Inspected by:	R Webster	Photographed:	✓/x ✓
Type of development:	Private	Plot number:	32	Developer:	

Notes/recommendations	Comments
Membrane Type	Juta GFI
Extent of Coverage	fully extends
Underside of Membrane	
Slab / membrane condition (is membrane clear of debris or insulation)	Good
Type of joints	☐ Tape joint ☒ Welded joint ☒ Other (please state) (detailing strips)
Service entries – Jubilee clips, Top hats installed correctly	yes
External Wall Air bricks Present?	yes
Corners inspected?	yes
Membrane joints inspected has Double –sided butyl tape been used?	No
Folds in membrane inspected?	yes
Has the membrane been installed as per the design detail drawing?	yes

This Plot has ~~PASS~~/FAILED* inspection. (Any proposed remedial works will be noted in the "Remarks" column on this form). An additional inspection visit IS/IS NOT required for this Plot.
 Inspection by: R Webster Signed: [Signature]





Gas Protection Validation Site Record

Inspection date/time:	5 th April	Inspected by:	R Webster	Photographed:	✓/x ✓
Type of development:	Pre-war	Plot number:	33	Developer:	
Notes/recommendations	Comments				
Membrane Type	Juba GPl				
Extent of Coverage	fully extends				
Underside of Membrane					
Slab / membrane condition (is membrane clear of debris or insulation)	Good				
Type of joints	☐ Tape Joint ☒ Welded Joint ☒ Other (please state) (detailing strips)				
Service entries – Jubilee clips, Top hats installed correctly	yes				
External Wall Air bricks Present?	yes				
Corners inspected?	yes				
Membrane joints inspected has Double –sided butyl tape been used?	No				
Folds in membrane inspected?	yes				
Has the membrane been installed as per the design detail drawing?	yes				

This Plot has ~~PASS~~/FAILED* inspection. (Any proposed remedial works will be noted in the "Remarks" column on this form). An additional inspection visit (S/S NOT required for this Plot.
Inspection by: R Webster Signed: [Signature]

Environmental Engineering Partnership Limited trading as E3P
Registered in England No: 08725262 Registered Office: E3P Taylor Road, Trafford Park, Urmston, Manchester M41 7JQ



GAS MEMBRANE VALIDATION

Site Name: Parcel C, Prescott	Project Number: 15-292
Project Manager: R. Walker	Date: 25-04-2022
PM Qualifications: BSc (Hons) FGS, AIEMA, ICE, MEnvSc, CEnv	E3P Engineer: J.James

Ground Gas Risk Assessment: **Characteristic Situation 2**

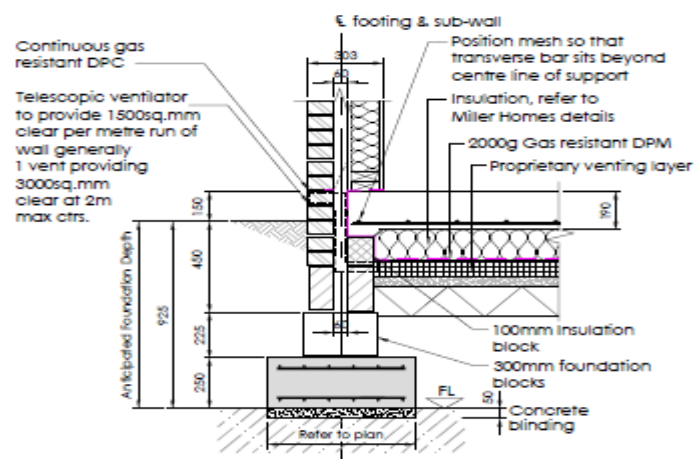
Overview:

The membrane comprised a JUTA GP1 gas membrane (Black) resistant to radon, carbon dioxide and low levels of methane. E3P can confirm there were no holes or rips at the time of inspection. Upon being laid the membrane is to be covered with a Celotex (closed Cell) floor insulation material which is considered to provide a high degree of protection.

All external joints were inspected and E3P can confirm that the membrane was overlapped and double taped to external and internal gas resistant DPM. The membrane was taped to the gas resistant DPM using a double-sided jointing tape. All the overlaps were then additionally taped using foil backed girth tape.

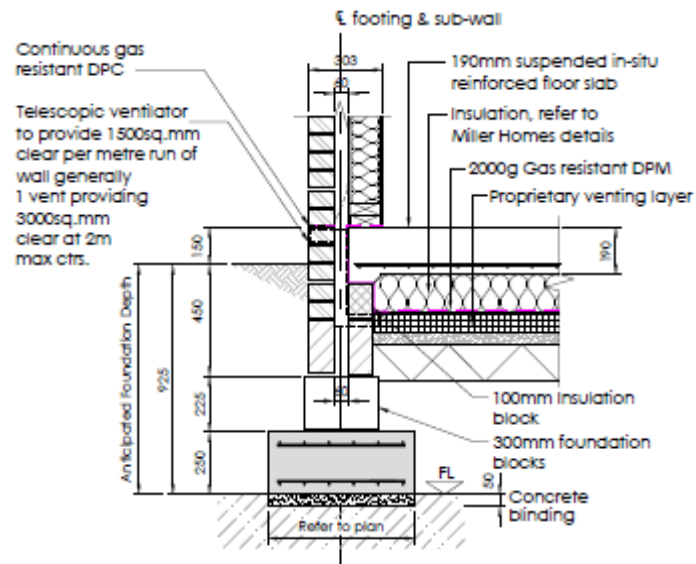
Each unit has a service duct located to the front and outer edge of the property. E3P inspected each one and can confirm that the top-hats have been adequately sealed against the membrane.

Based on the information provided within this report, the site inspections and validation checklists, E3P can confirm that **Plots 27-31** has been installed with gas protection measures in accordance with Characteristic Situation 2 to an acceptable level of workmanship.

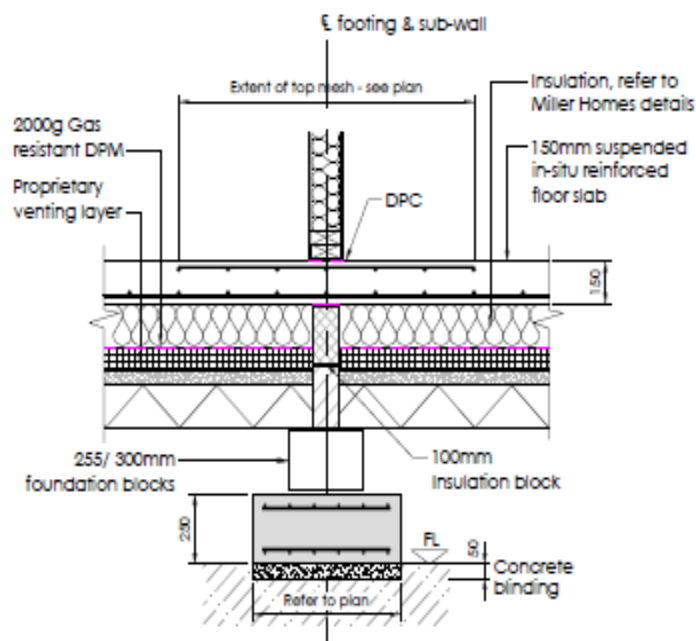


Section 1-1
Scale 1:25





Section 2-2
Scale 1:25



Section 3-3
Scale 1:25



Plot - 27

General Condition of Membrane-Good Condition



Verification of Joints and Seals-Good Condition



Verification of Service Penetrations-Good Condition



Verification of Service Penetrations-Good Condition



Plot - 28

General Condition of Membrane-Good Condition



Verification of Joints and Seals-Good Condition



Verification of Service Penetrations-Good Condition



Verification of Service Penetrations-Good Condition



Plot - 29

General Condition of Membrane-Good Condition



Verification of Joints and Seals-Good Condition



Verification of Service Penetrations-Good Condition



Verification of Service Penetrations-Good Condition



Plot - 30

General Condition of Membrane-Good Condition



Verification of Joints and Seals-Good Condition



Verification of Service Penetrations-Good Condition



Verification of Service Penetrations-Good Condition



Plot - 31

General Condition of Membrane-Good Condition



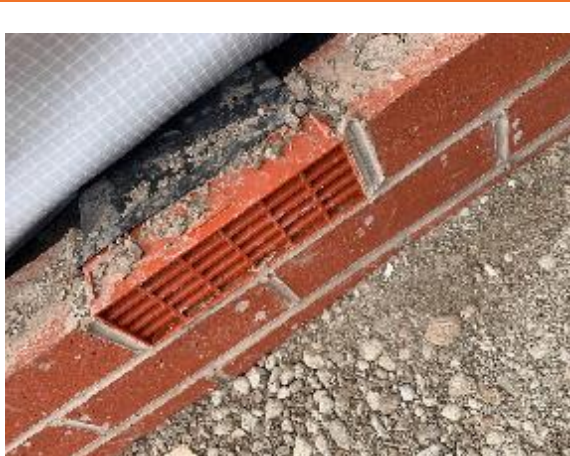
Verification of Joints and Seals-Good Condition



Verification of Service Penetrations-Good Condition



Verification of Service Penetrations-Good Condition



e3p Gas Protection Validation Site Record

Inspection date/time: 25/4/22 Inspected by: S S A H G S Photographed: Miller Homes

Site of development: Housing Plot number: 27 Developer:

Inspection/recommendations	Comments
Membrane Type	50ft x 10ft
Extent of Coverage	Full
Condition of Membrane	✓
Sub / membrane condition (Is membrane clear of debris or contamination)	✓
Seal of joints	☐ Tape Joint ☒ Welded Joint ☐ Other (please state)
Service entries – Jubilee clips, Top hats installed correctly	✓
Internal Wall Air bricks Present?	✓
Drains inspected?	✓
Membrane joints inspected has Double-sided butyl tape been used?	✓
Is membrane inspected?	✓
Is the membrane been installed as per the design detail drawing?	✓

Site has PASSED/FAILED* Inspection. (Any proposed remedial works will be noted in the "Remarks" column on this form). An additional inspection visit IS/IS NOT required for this Plot. 25/4/22 S A H G S Signed: [Signature]

Environmental Engineering Partnership Limited trading as E3P
Registered in England No: 08725162 Registered Office: E3P, 106/108, Traction Park, Limerick, Manchester M44 7JQ



Gas Protection Validation Site Record

Inspection date/time: <u>28/4/22</u>	Inspected by: <u>J S A G S</u>	Photographed: <u>✓</u>	
Type of development: <u>Flattening</u>	Plot number: <u>78</u>	Developer: <u>Miller Homes</u>	

Notes/recommendations

Comments	Type of joints
Membrane Type <u>Subs. GFI</u>	
Extent of Coverage <u>811</u>	
Underside of Membrane <u>✓</u>	
Gap / membrane condition (Is membrane clear of debris or insulation) <u>✓</u>	
Type of joints <u>✓</u>	☐ Tape Joint ☒ Welded Joint ☐ Other (please state)
Twice entries - Jubilee clips, Top butts installed correctly <u>✓</u>	
Internal Wall Air bricks Present? <u>✓</u>	
Terminals inspected? <u>✓</u>	
Membrane joints inspected has Double-sided butyl tape been used? <u>✓</u>	
Is the membrane inspected? <u>✓</u>	
Is the membrane been installed as per the design detail drawing? <u>✓</u>	

Plot has PASSED/FAILED* inspection. (Any proposed remedial works will be noted in the "Remarks" column on this form). An additional inspection visit IS/IS NOT required for this Plot.

Inspected by: J S A G S Signed: [Signature]

Environmental Engineering Practices Limited trading as E3P
Registered in England No. 0872562 Registered Office: E3P, Taylor Road, Trafford Park, Urmston, Manchester M41 7JQ



Gas Protection Validation Site Record

Inspection date/time: 28/4/22 Inspected by: S.A.H.S. Photographed: ✓
 Site of development: Huddersley Plot number: 29 Developer: Miller Homes

Notes/recommendations

Comments	Inspected by	Plot number	Photographed	Developer
Membrane Type	✓	29	✓	Miller Homes
Extent of Coverage	✓	29	✓	Miller Homes
Underside of Membrane	✓	29	✓	Miller Homes
Sub / membrane condition (Is membrane clear of debris or insulation)	✓	29	✓	Miller Homes
Type of joints	✓	29	✓	Miller Homes
Service entries - Jubilee clips, Top hats installed correctly	✓	29	✓	Miller Homes
Internal Wall Air Bricks Present?	✓	29	✓	Miller Homes
Roofers inspected?	✓	29	✓	Miller Homes
Membrane joints inspected has Double -sided butyl tape been used?	✓	29	✓	Miller Homes
Is the membrane been installed as per the design detail showing?	✓	29	✓	Miller Homes

Plot has PASSED/FAILED* Inspection. (Any proposed remedial works will be noted in the "Remarks" column on this form). An additional inspection visit is/are required for the Plot.

Inspected by: S.A.H.S. Signed: [Signature] Date: 28/4/22

Environmental Engineering Partnership Limited trading as E3P
 Registered in England No: 08725562 Registered Office E3P: Teyate Road, Trafford Park, Urmston, Manchester M41 7JQ



e3p

Gas Protection Validation Site Record

Inspection date/time:	25/4/22	Inspected by:	J SARGES	Photographed:	✓
Type of development:	Housing	Plot number:	30	Developer:	Miller Homes

Notes/recommendations	Comments
Membrane Type	5 x 2.6m
Percent of Coverage	100%
Underside of Membrane	✓
Sub / membrane condition (is membrane clear of debris or insulation)	✓
Type of joints	☐ Tape Joint ☒ Welded Joint ☐ Other (please state)
Twice entries - Jubilee clips, Top hats installed correctly	✓
External Wall Air bricks Present?	✓
Terminals inspected?	✓
Membrane joints inspected has Double -sided butyl tape been used?	✓
Is membrane inspected?	✓
Is the membrane been installed as per the design detail drawing?	✓

Plot has **PASSED/FAILED** inspection. (Any proposed remedial works will be noted in the "Remarks" column on this form). An additional inspection visit IS/IS NOT required for this Plot.

Inspection by: Surfer 3013 Signed: [Signature]

Environmental Engineering Partnership Limited trading as E3P
 Registered in England No: 08725202 Registered Office: E3P, Taylor Road, Trafford Park, Urmston, Manchester M41 7AQ



e3p

Gas Protection Validation Site Record

Inspection date/time: 28/4/22	Inspected by: J. JAMES	Photographed: ✓
Type of development: Housing	Plot number: 31	Developer: Miller Homes

Notes/recommendations	Comments
Membrane Type	Solo 6/11
Extent of Coverage	Full ✓
Underside of Membrane	✓
Sub / membrane condition (Is membrane clear of debris or insulation)	✓
Type of joints	✓
Service entries - Jubilee clips, Top hats installed correctly	✓
External Wall Air bricks Present?	✓
Roofers inspected?	✓
Membrane joints inspected Has Double - sided butyl tape been used?	✓
Is membrane inspected?	✓
Is the membrane been installed as per the design detail drawing?	✓

☐ Tape Joint ☒ Welded Joint ☐ Other (please state)

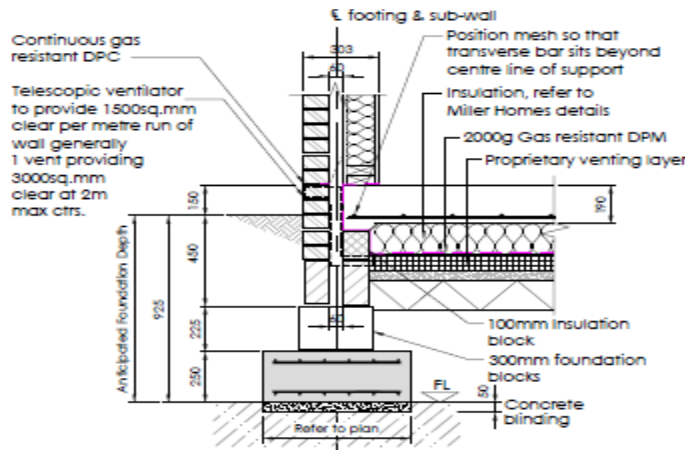
This Plot has PASSED/FAILED* inspection. (Any proposed remedial works will be noted in the "Remarks" column on this form). An additional inspection visit IS/IS NOT required for this Plot.

Inspection by: Simon James Signed: [Signature]

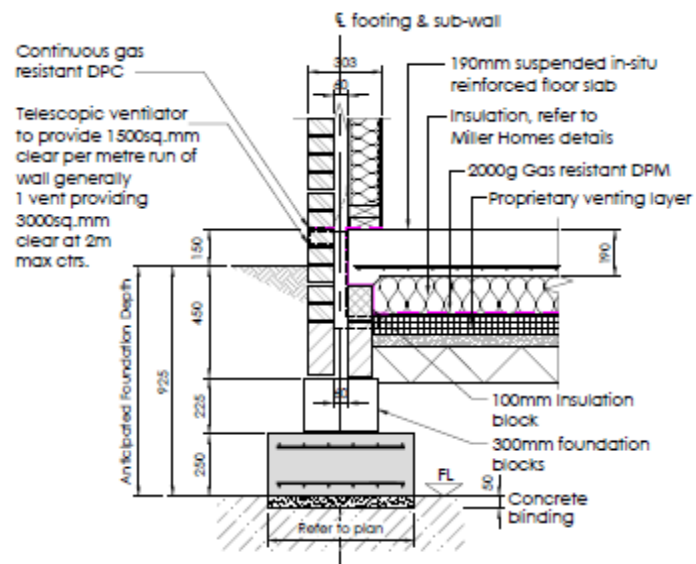
Environmental Engineering Partnership Limited trading as E3p
 Registered in England No: 08725262 Registered Office: E3p, Taylor Road, Trafford Park, Urmston, Manchester M41 7JQ



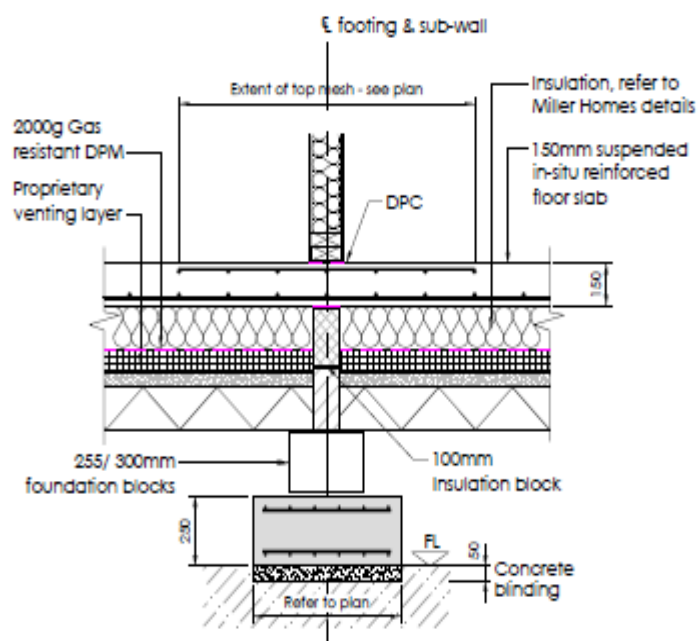
GAS MEMBRANE VALIDATION

Site Name: Parcel C, Prescott	Project Number: 15-292
Project Manager: R. Walker	Date: 01-06-2022
PM Qualifications: BSc (Hons) FGS, AIEMA, ICE, MIEEnvSc, CEnv	E3P Engineer: T. Preston
Ground Gas Risk Assessment: Characteristic Situation 2	
Overview: The membrane comprised a visqueen gas membrane (Black) resistant to radon, carbon dioxide and low levels of methane. E3P can confirm there were no holes or rips at the time of inspection. Upon being laid the membrane is to be covered with a Celotex (closed Cell) floor insulation material which is considered to provide a high degree of protection. Each unit has a service duct located to the front and outer edge of the property. E3P inspected each one and can confirm that the top-hats have been adequately sealed against the membrane. Based on the information provided within this report, the site inspections and validation checklists, E3P can confirm that Plots 20 + 26 has been installed with gas protection measures in accordance with Characteristic Situation 2 to an acceptable level of workmanship.	
 Section 1-1 Scale 1:25	





Section 2-2
Scale 1:25



Section 3-3
Scale 1:25



Plot - 20

General Condition of Membrane-Good Condition



Verification of Joints and Seals-Good Condition



Verification of Service Penetrations-Good Condition



Verification of Service Penetrations-Good Condition



Plot - 26

General Condition of Membrane-Good Condition



Verification of Joints and Seals-Good Condition



Verification of Service Penetrations-Good Condition



Verification of Service Penetrations-Good Condition





Gas Protection Validation Site Record

Environmental Engineering Partnership Limited trading as E3P
200, 2nd Floor, Park View, Manchester M14 7JQ



Gas Protection Validation Site Record

Inspection date/time:	11/6/22	Inspected by:	Tom Preston	Photographed:	✓/x
Type of development:	Residential	Plot number:	26	Developer:	

Notes/recommendations

Comments

Membrane Type		Black Visqueen
Extent of Coverage		Full Plot
Underside of Membrane		✓
Slab / membrane condition (is membrane clear of debris or insulation)		✓
Type of joints	☒ Tape Joint ☒ Welded Joint ☐ Other (please state)	
Service entries - Jubilee clips, Top hats installed correctly		✓
External Wall Air bricks Present?		✓
Corners inspected?		✓
Membrane joints inspected has Double ~sided butyl tape been used?		✓
Folds in membrane inspected?		✓
Has the membrane been installed as per the design detail drawing?		✓

This Plot has ~~PASSED~~/FAILED inspection. (Any proposed remedial works will be noted in the "Remarks" column on this form). An additional inspection visit IS NOT required for this Plot.

Inspection by: Tom Preston Signed: *Tom Preston*

GAS MEMBRANE VALIDATION

Site Name: Parcel C, Prescott	Project Number: 15-292
Project Manager: R. Walker	Date: 08-06-2022
PM Qualifications: BSc (Hons) FGS, AIEMA, ICE, MEnvSc, CEnv	E3P Engineer: T. Preston

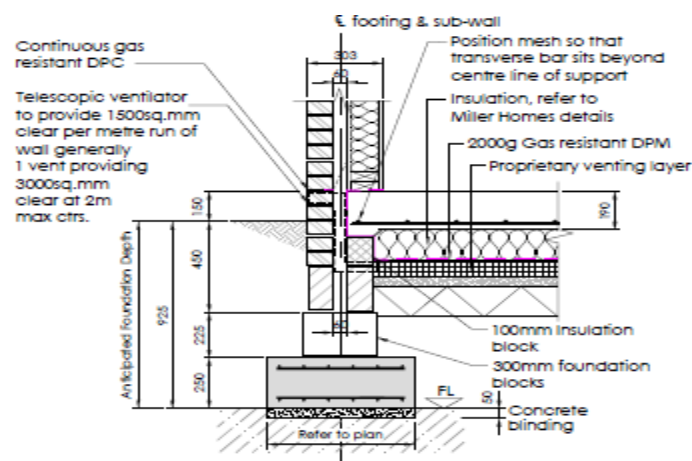
Ground Gas Risk Assessment: **Characteristic Situation 2**

Overview:

The membrane comprised a visqueen membrane (Black) resistant to radon, carbon dioxide and low levels of methane. E3P can confirm there were no holes or rips at the time of inspection. Upon being laid the membrane is to be covered with a Celotex (closed Cell) floor insulation material which is considered to provide a high degree of protection.

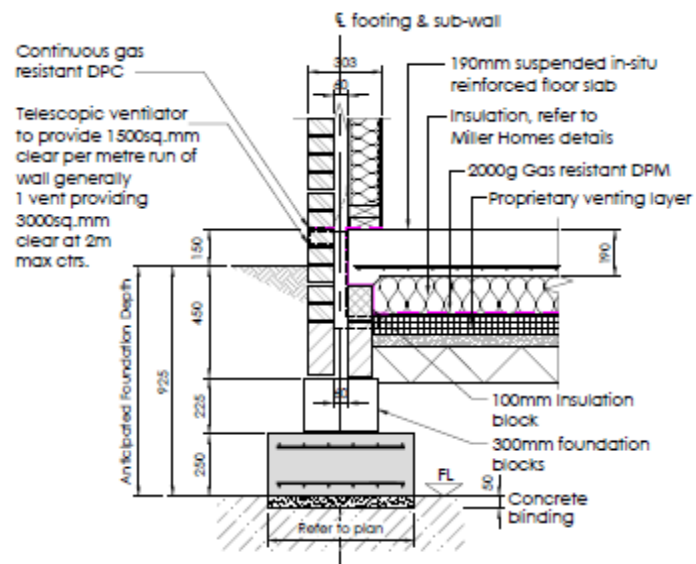
Each unit has a service duct located to the front and outer edge of the property. E3P inspected each one and can confirm that the top-hats have been adequately sealed against the membrane.

Based on the information provided within this report, the site inspections and validation checklists, E3P can confirm that **Plot 21** has been installed with gas protection measures in accordance with Characteristic Situation 2 to an acceptable level of workmanship.

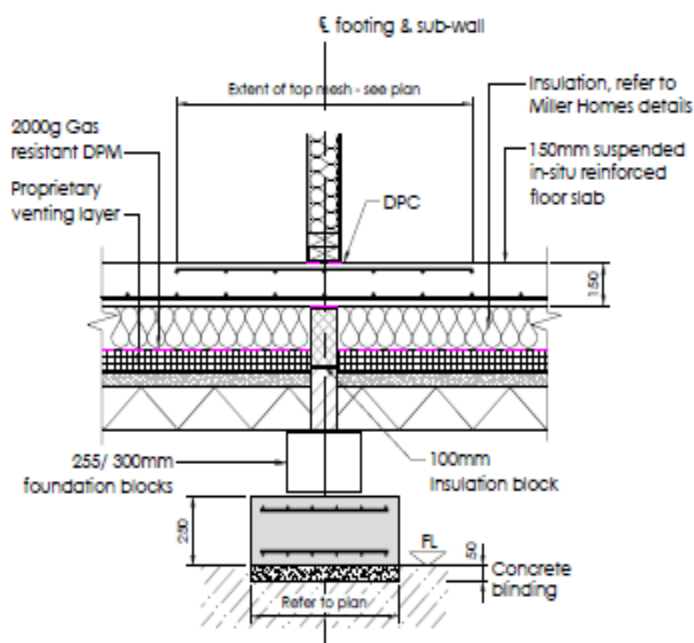


Section 1-1
Scale 1:25





Section 2-2
Scale 1:25



Section 3-3
Scale 1:25



Plot - 21

General Condition of Membrane-Good Condition



Verification of Joints and Seals-Good Condition

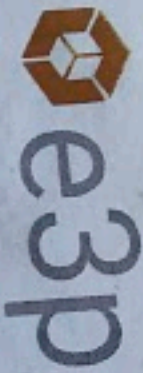


Verification of Service Penetrations-Good Condition



Verification of Service Penetrations-Good Condition





Gas Protection Validation Site Record

Inspection date/time:	8/6/22	Inspected by:	Tom Preston	Photographed:	✓
Type of development:	Residential	Plot number:	21A	Developer:	
Notes/recommendations	Comments				
Membrane Type	Black Viqueen				
Extent of Coverage	Full Plot				
Underside of Membrane	✓				
Slab / membrane condition (is membrane clear of debris or insulation)	☐ Tape Joint ☒ Welded Joint ☐ Other (please state)				
Type of joints	✓				
Service entries - Jubilee clips, Top hats installed correctly	✓				
External Wall Air bricks Present?	✓				
Corners inspected?	✓				
Membrane joints inspected has Double-sided butyl tape been used?	✓				
Folds in membrane inspected?	✓				
Has the membrane been installed as per the design detail drawing?					

This Plot has PASSED/FAILED* inspection. (Any proposed remedial works will be noted in the "Remarks" column on this form). An additional inspection visit IS/IS NOT* required for this Plot

Inspected by: Tom Preston Signed: [Signature]

GAS MEMBRANE VALIDATION

Site Name: Parcel C, Prescott	Project Number: 15-292
Project Manager: R. Walker	Date: 09-06-2022
PM Qualifications: BSc (Hons) FGS, AIEMA, ICE, MEnvSc, CEnv	E3P Engineer: J. James

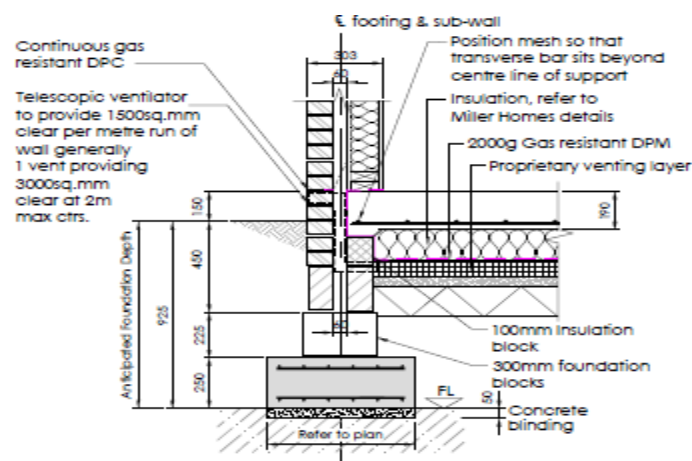
Ground Gas Risk Assessment: **Characteristic Situation 2**

Overview:

The membrane comprised a JUTA GP1 gas membrane (Black) resistant to radon, carbon dioxide and low levels of methane. E3P can confirm there were no holes or rips at the time of inspection. Upon being laid the membrane is to be covered with a Celotex (closed Cell) floor insulation material which is considered to provide a high degree of protection.

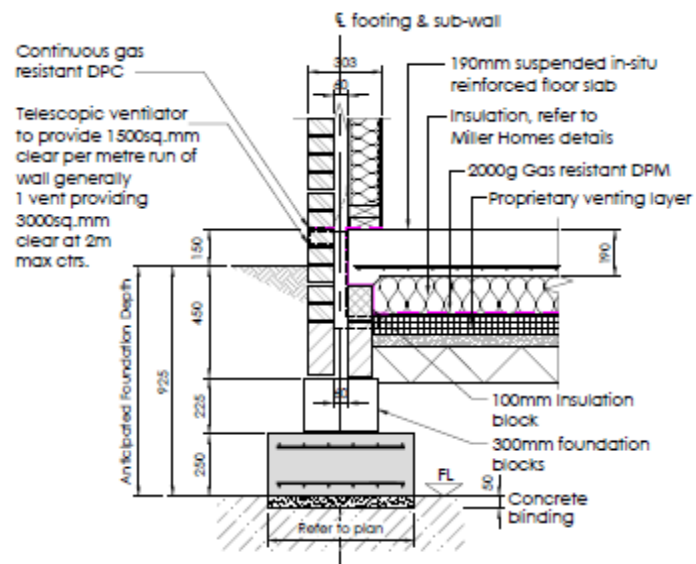
Each unit has a service duct located to the front and outer edge of the property. E3P inspected each one and can confirm that the top-hats have been adequately sealed against the membrane.

Based on the information provided within this report, the site inspections and validation checklists, E3P can confirm that **Plots 36-38** has been installed with gas protection measures in accordance with Characteristic Situation 2 to an acceptable level of workmanship.

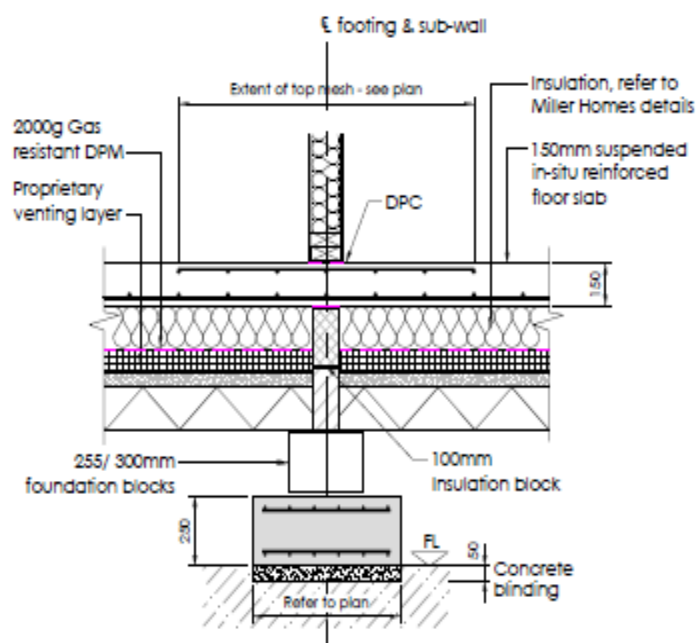


Section 1-1
Scale 1:25





Section 2-2
Scale 1:25



Section 3-3
Scale 1:25



Plot - 36

General Condition of Membrane-Good Condition



Verification of Joints and Seals-Good Condition



Verification of Service Penetrations-Good Condition



Verification of Service Penetrations-Good Condition



Plot - 37

General Condition of Membrane-Good Condition



Verification of Joints and Seals-Good Condition



Verification of Service Penetrations-Good Condition



Verification of Service Penetrations-Good Condition



Plot - 38

General Condition of Membrane-Good Condition



Verification of Joints and Seals-Good Condition



Verification of Service Penetrations-Good Condition



Verification of Service Penetrations-Good Condition



Gas Protection Validation Site Record

e3p

Gas Protection Validation Site Record

Inspection date/time:	18/6/22	Inspected by:	J. SANEI	Photographed:	✓
Type of development:	Housing	Plot number:	364	Developer:	Miller Homes
Notes/recommendations					
Membrane Type	Sota (P1)				
Extent of Coverage	Full				
Underside of Membrane	✓				
Slab / membrane condition (is membrane clear of debris or insulation)	✓				
Type of joints	☒ Tape Joint ☒ Welded Joint ☐ Other (please state)				
Service entries – Jubilee clips, Top hats installed correctly	✓				
External Wall Air bricks Present?	✓				
Corners inspected?	✓				
Membrane joints inspected has Double –sided butyl tape been used?	✓				
Folds in membrane inspected?	✓				
Has the membrane been installed as per the design detail drawing?	✓				

This Plot has **PASSED/FAILED*** inspection. (Any proposed remedial works will be noted in the "Remarks" column on this form). An additional inspection visit IS/IS NOT required for this Plot.

Inspection by: J. SANEI Signed: J. SANEI

e3p

Gas Protection Validation Site Record

Type of development:	18/6/22	Inspected by:	J. JAMES	Photographed:	✓
Notes/recommendations:	Housing	Plot number:	181		
Inspection date/time:	9/8/22	Inspected by:	J. JAMES	Photographed:	✓
Type of development:	Housing	Plot number:	374	Developer:	Millers (Huro)
Notes/recommendations	Comments				
Membrane Type	Suta (F1)				
Extent of Coverage	Full				
Underside of Membrane	✓				
Slab / membrane condition (is membrane clear of debris or insulation)	✓				
Type of joints	☒ Tape Joint ☒ Welded Joint ☐ Other (please state)				
Service entries – Jubilee clips, Top hats installed correctly	✓				
External Wall Air bricks Present?	✓				
Corners inspected?	✓				
Membrane joints inspected has Double –sided butyl tape been used?	✓				
Folds in membrane inspected?	✓				
Has the membrane been installed as per the design detail drawing?	✓				

This Plot has **PASSED/FAILED*** inspection. (Any proposed remedial works will be noted in the "Remarks" column on this form). An additional inspection visit IS/IS NOT required for this Plot.

Inspected by: *J. James* Signed: *J. James*

e3p

Gas Protection Validation Site Record

Inspection date/time:	18/6/22	Inspected by:	J. SAMES	Photographed:	✓
Type of development:	Housing	Plot number:	18		✓
Notes/recommendations:					

e3p

Gas Protection Validation Site Record

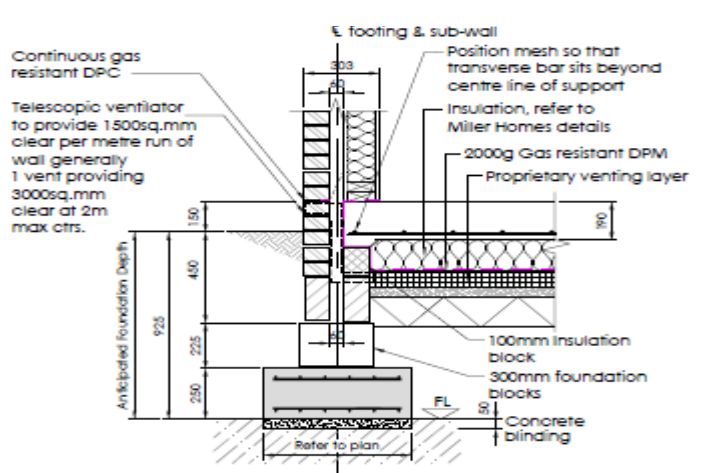
Inspection date/time:	9/8/22	Inspected by:	J. SAMES	Photographed:	✓
Type of development:	Housing	Plot number:	38	Developer:	Miller/Hunter
Notes/recommendations:					

Notes/recommendations	Comments
Membrane Type	Subs (P1)
Extent of Coverage	Full
Underside of Membrane	✓
Slab / membrane condition (Is membrane clear of debris or insulation)	✓
Type of joints	☒ Tape Joint ☒ Welded Joint ☐ Other (please state)
Service entries – Jubilee clips, Top hats installed correctly	✓
External Wall Air bricks Present?	✓
Corners inspected?	✓
Membrane joints inspected has Double –sided butyl tape been used?	✓
Folds in membrane inspected?	✓
Has the membrane been installed as per the design detail drawing?	✓

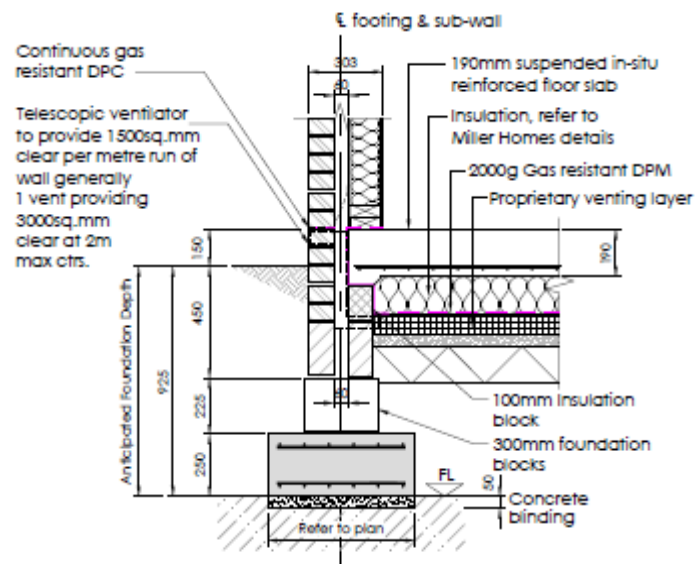
This Plot has **PASSED/FAILED** inspection. (Any proposed remedial works will be noted in the "Remarks" column on this form). An additional inspection visit IS/IS NOT required for this Plot. **IS/IS NOT**

Inspection by: *S. Jones* Signed: *[Signature]*

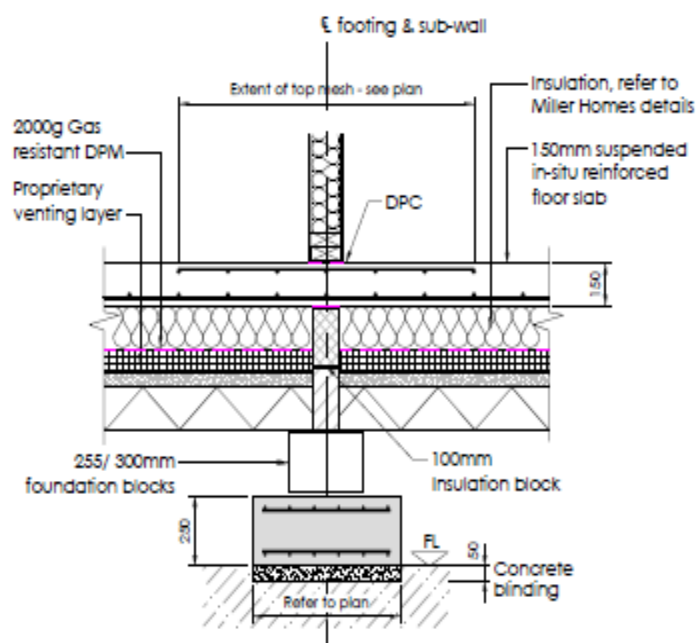
GAS MEMBRANE VALIDATION

Site Name: Parcel C, Prescott	Project Number: 15-292
Company: Miller Homes	Date: 29-06-2022
Project Manager: R. Walker	E3P Engineer: T. Preston
PM Qualifications: BSc (Hons) FGS, AIEMA, ICE, MIEEnvSc, CEnv	Engineer Qualifications: Ground Gas Protection Training July 2018
Overview: The membrane comprised a visqueen gas resistant membrane (Blue) resistant to radon, carbon dioxide and low levels of methane. E3P can confirm there were no holes or rips at the time of inspection. Upon being laid the membrane is to be covered with a Celotex (closed Cell) floor insulation material which is considered to provide a high degree of protection. Each unit has a service duct located to the front and outer edge of the property. E3P inspected each one and can confirm that the top-hats have been adequately sealed against the membrane. Based on the information provided within this report, the site inspections and validation checklists, E3P can confirm that Plots 47-49 have been installed with gas protection measures in accordance with Characteristic Situation 2 to an acceptable level of workmanship.	
 Section 1-1 Scale 1:25	





Section 2-2
Scale 1:25



Section 3-3
Scale 1:25

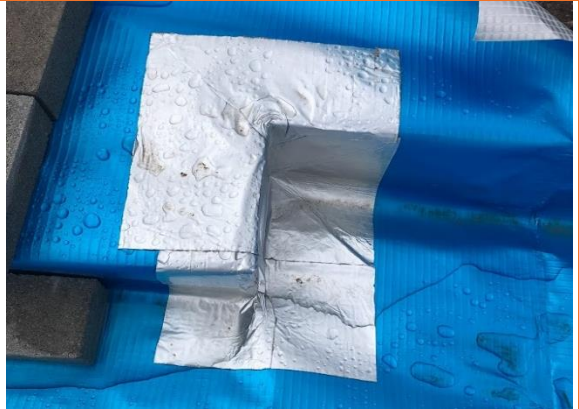


Plot - 47

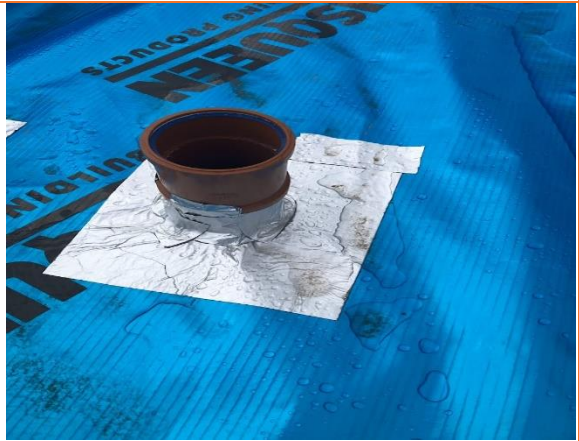
General Condition of Membrane-Good Condition



Verification of Joints and Seals-Good Condition



Verification of Service Penetrations-Good Condition



Verification of Service Penetrations-Good Condition

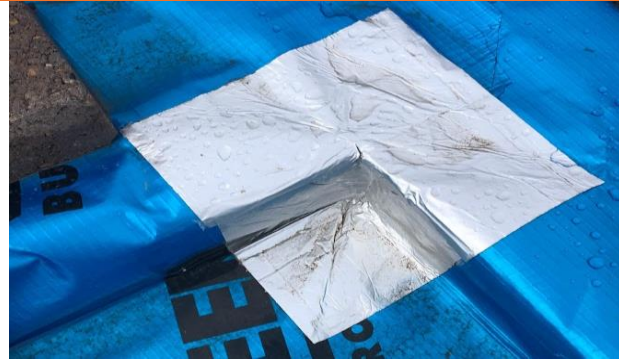


Plot – 48

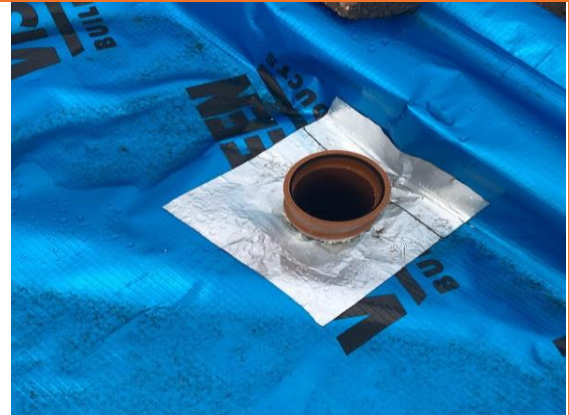
General Condition of Membrane-Good Condition



Verification of Joints and Seals-Good Condition



Verification of Service Penetrations-Good Condition

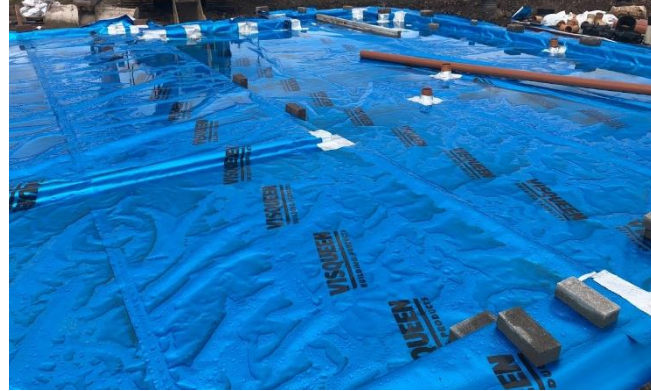


Verification of Service Penetrations-Good Condition



Plot - 49

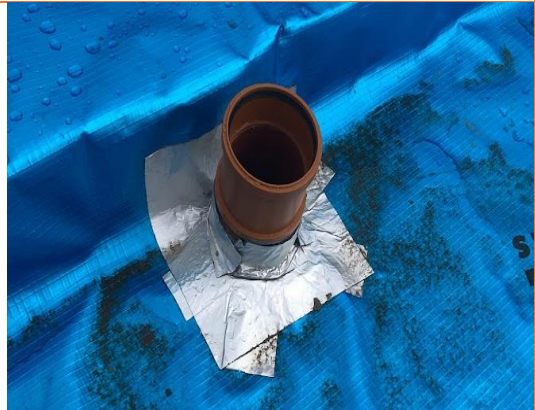
General Condition of Membrane-Good Condition



Verification of Joints and Seals-Good Condition

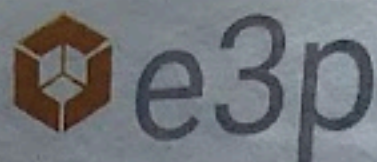


Verification of Service Penetrations-Good Condition



Verification of Service Penetrations-Good Condition





Gas Protection Validation Site Record

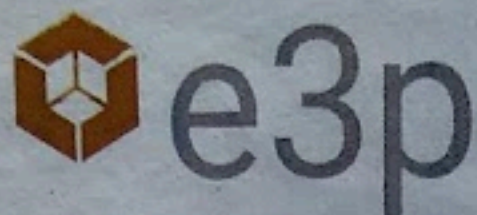
Inspection date/time:	29/6/22	Inspected by:	Tom Preston	Photographed:	✓/x ✓
Type of development:	Residential	Plot number:	47	Developer:	

Notes/recommendations	Comments
Membrane Type	Blue Visqueen
Extent of Coverage	Full Plot
Underside of Membrane	✓
Slab / membrane condition (is membrane clear of debris or insulation)	✓
Type of joints	☐ Tape Joint ☒ Welded Joint ☐ Other (please state)
Service entries - Jubilee clips, Top hats installed correctly	✓
External Wall Air bricks Present?	✓
Corners inspected?	✓
Membrane joints inspected has Double -sided butyl tape been used?	✓
Folds in membrane inspected?	✓
Has the membrane been installed as per the design detail drawing?	✓

This Plot has PASSED ~~FAILED~~ inspection. (Any proposed remedial works will be noted in the "Remarks" column on this form). An additional inspection visit IS/IS NOT required for this Plot.
Inspection by: Tom Preston Signed:

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Environmental Engineering Partnership Limited trading as E3P
Registered in England No: 08725262 Registered Office: E3P, Taylor Road, Trafford Park, Urmston, Manchester M41 7JQ



Gas Protection Validation Site Record

Inspection date/time:	29/6/22	Inspected by:	Tom Preston	Photographed:	✓/x ✓
Type of development:	Residential	Plot number:	49	Developer:	

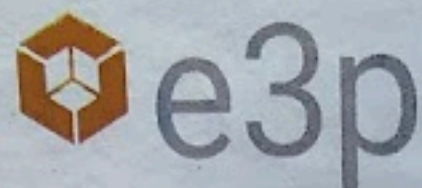
Notes/recommendations

Comments

Membrane Type	Blue Visqueen
Extent of Coverage	Full Plot
Underside of Membrane	✓
Slab / membrane condition (is membrane clear of debris or insulation)	✓
Type of joints	☐ Tape Joint ☒ Welded Joint ☐ Other (please state)
Service entries – Jubilee clips, Top hats installed correctly	✓
External Wall Air bricks Present?	✓
Corners inspected?	✓
Membrane joints inspected has Double –sided butyl tape been used?	✓
Folds in membrane inspected?	✓
Has the membrane been installed as per the design detail drawing?	✓

This Plot has PASSED / FAILED* inspection. (Any proposed remedial works will be noted in the "Remarks" column on this form). An additional inspection visit IS/ (S) NOT required for this Plot.

Inspection by: Tom Preston Signed:



Gas Protection Validation Site Record

Inspection date/time:	29/6/22	Inspected by:	Tom Preston	Photographed:	✓/x ✓
Type of development:	Residential	Plot number:	48	Developer:	

Notes/recommendations

Comments

Membrane Type

Extent of Coverage

Underside of Membrane

Slab / membrane condition (is membrane clear of debris or insulation)

Type of joints

Service entries - Jubilee clips, Top hats installed correctly

External Wall Air bricks Present?

Corners inspected?

Membrane joints inspected has Double -sided butyl tape been used?

Folds in membrane inspected?

Has the membrane been installed as per the design detail drawing?

Blue Visqueen
Full Plot

☐

Tape Joint

☒

Welded Joint

☐

Other (please state)

This Plot has **FAILED*** inspection. (Any proposed remedial works will be noted in the "Remarks" column on this form). An additional inspection visit IS/IS NOT required for this Plot.
Inspection by: Tom Preston Signed: [Signature]

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Environmental Engineering Partnership Limited trading as E3P
Registered in England No: 08725262 Registered Office: E3P, Taylor Road, Trafford Park, Urmston, Manchester M41 7JQ

Ref: QY14-1 - January 2014 - Pre-Installation
Environmental Engineering Partnership Limited trading as E3P
Registered in England No: 08725262 Registered Office: Taylor Road, Trafford Park, Urmston, Manchester M41 7JQ

GAS MEMBRANE VALIDATION

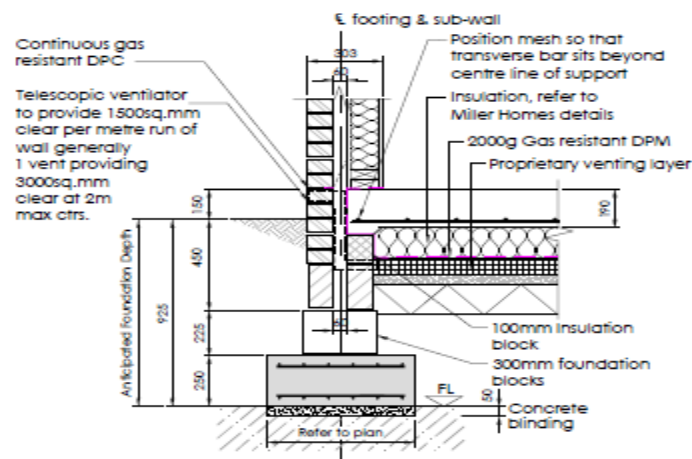
Site Name: Parcel C, Prescott	Project Number: 15-292
Company: Miller Homes	Date: 07-07-2022
Project Manager: R. Walker	E3P Engineer: J. James
PM Qualifications: BSc (Hons) FGS, AIEMA, ICE, MIEEnvSc, CEnv	Engineer Qualifications: GGS Gas Training Feb 22

Overview:

The membrane comprised a visqueen gas resistant membrane (Blue) resistant to radon, carbon dioxide and low levels of methane. E3P can confirm there were no holes or rips at the time of inspection. Upon being laid the membrane is to be covered with a Celotex (closed Cell) floor insulation material which is considered to provide a high degree of protection.

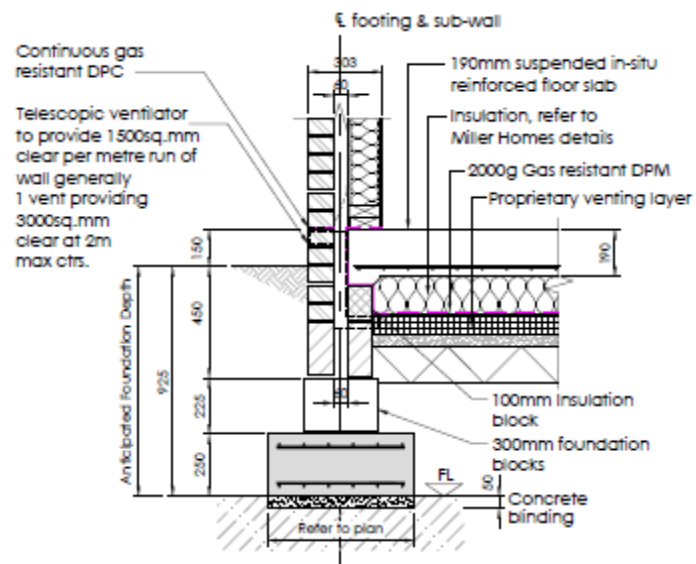
Each unit has a service duct located to the front and outer edge of the property. E3P inspected each one and can confirm that the top-hats have been adequately sealed against the membrane.

Based on the information provided within this report, the site inspections and validation checklists, E3P can confirm that **Plots 23 & 25** have been installed with gas protection measures in accordance with Characteristic Situation 2 to an acceptable level of workmanship.

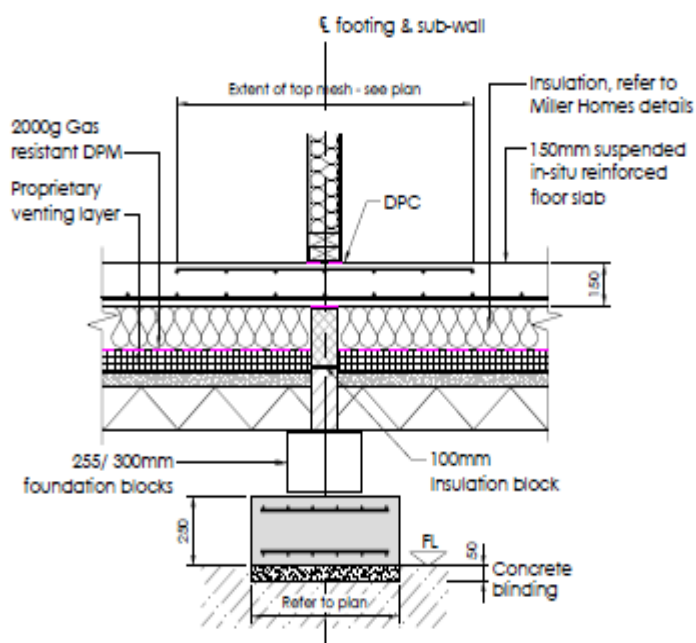


Section 1-1
Scale 1:25





Section 2-2
Scale 1:25



Section 3-3
Scale 1:25



Plot - 23

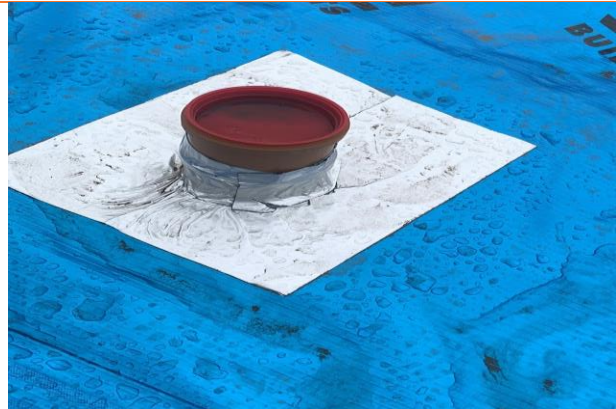
General Condition of Membrane-Good Condition



Verification of Joints and Seals-Good Condition



Verification of Service Penetrations-Good Condition



Verification of Service Penetrations-Good Condition

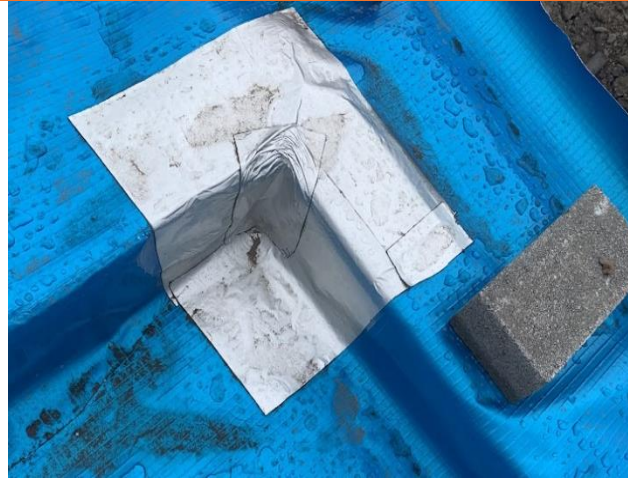


Plot – 25

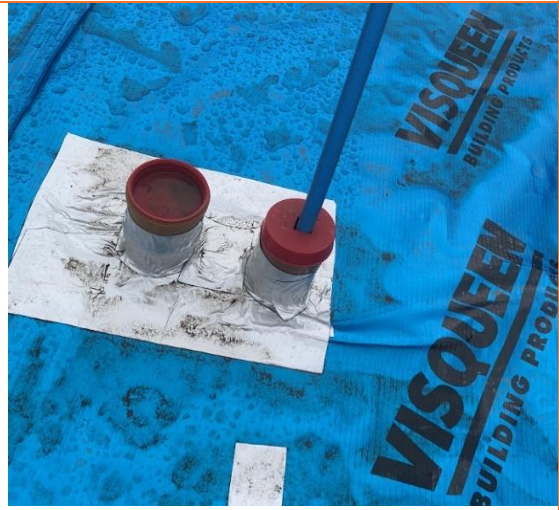
General Condition of Membrane-Good Condition

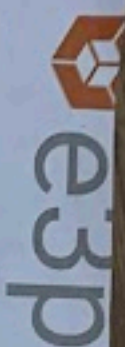


Verification of Joints and Seals-Good Condition



Verification of Service Penetrations-Good Condition





Gas Protection Validation Site Record

Inspection date/time:	7/17/22	Inspected by:	JSA MES	Photographed:	1/1x Miller
Type of development:	Housing	Plot number:	23	Developer:	

Notes/recommendations	Comments
Membrane Type	Rob Visgoren
Extent of Coverage	Full
Underside of Membrane	✓
Slab / membrane condition (is membrane clear of debris or insulation)	✓
Type of joints	☒ Tape Joint ☒ Welded Joint ☐ Other (please state)
Service entries - Jubilee clips, Top hats installed correctly	✓
External Wall Air bricks Present?	✓
Corners inspected?	✓
Membrane joints inspected has Double-sided butyl tape been used?	✓
Folds in membrane inspected?	✓
Has the membrane been installed as per the design detail drawing?	✓

This Plot has **PASSED/FAILED** inspection. (Any proposed remedial works will be noted in the "Remarks" column on this form). An additional inspection visit IS/IS NOT required for this Plot.
Inspection by: Jordan Jones Signed: J Jones

Gas Protection Validation Site Record

Inspection date/time:	7/7/22	Inspected by:	J. JAMES	Photographed:	✓ M. Miller
Type of development:	Housing	Plot number:	25	Developer:	
Notes/recommendations					
Membrane Type	Comments				
Extent of Coverage	Full				
Underside of Membrane	✓				
Slab / membrane condition (is membrane clear of debris or insulation)	✓				
Type of joints	✓				
Service entries - Jubilee clips, Top hats installed correctly	☒ Tape Joint ☒ Welded Joint ☐ Other (please state)				
External Wall Air bricks Present?	✓				
Corners inspected?	✓				
Membrane joints inspected has Double-sided butyl tape been used?	✓				
Folds in membrane inspected?	✓				
Has the membrane been installed as per the design detail drawing?	✓				

This Plot has PASSED/FAILED* inspection. (Any proposed remedial works will be noted in the "Remarks" column on this form). An additional inspection visit IS/IS NOT* required for this Plot.

Inspection by: Jordan Jones Signed: J. James

GAS MEMBRANE VALIDATION

Site Name: Parcel C, Prescott	Project Number: 15-292
Company: Miller Homes	Date: 15-06-2022
Project Manager: R. Walker	E3P Engineer: P. Lavelle
PM Qualifications: BSc (Hons) FGS, AIEMA, ICE, MIEEnvSc, CEnv	Engineer Qualifications: GGS Gas training Feb 22

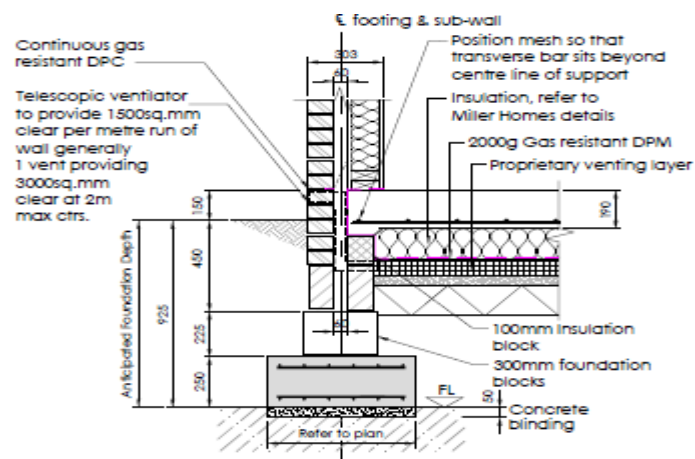
Overview:

The membrane comprised a Visqueen gas barrier (Blue) resistant to radon, carbon dioxide and low levels of methane. E3P can confirm there were no holes or rips at the time of inspection. Upon being laid the membrane is to be covered with a Celotex (closed Cell) floor insulation material which is considered to provide a high degree of protection.

All external joints were inspected and E3P can confirm that the membrane was overlapped and double taped to external and internal gas resistant DPM. The membrane was taped to the gas resistant DPM using a double-sided jointing tape. All the overlaps were then additionally taped using foil backed girth tape.

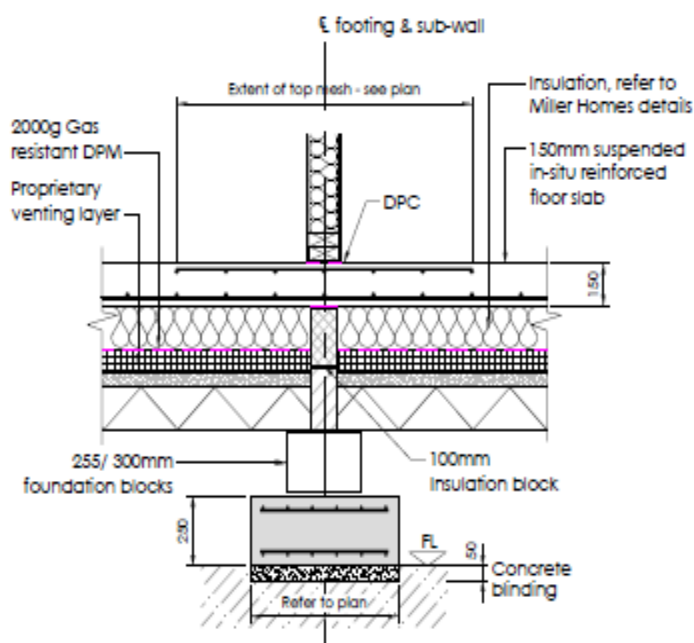
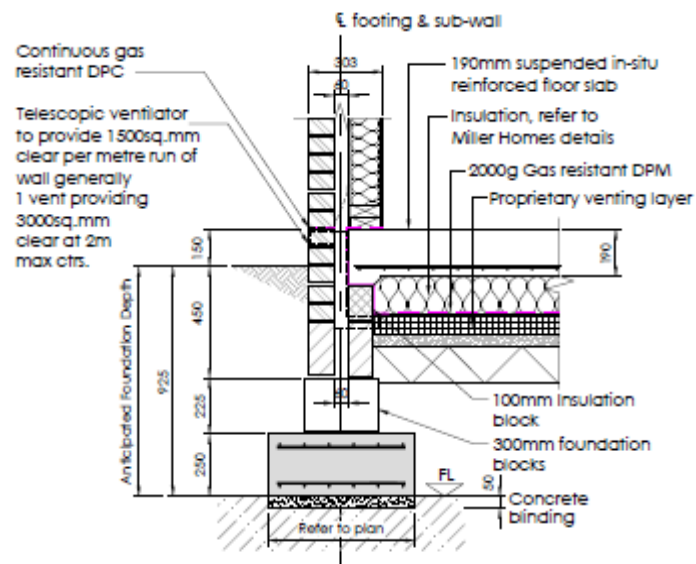
Each unit has a service duct located to the front and outer edge of the property. E3P inspected each one and can confirm that the top-hats have been adequately sealed against the membrane.

Based on the information provided within this report, the site inspections and validation checklists, E3P can confirm that **Plots 44-46** have been installed with gas protection measures in accordance with Characteristic Situation 2 to an acceptable level of workmanship.



Section 1-1
Scale 1:25





Plot - 44

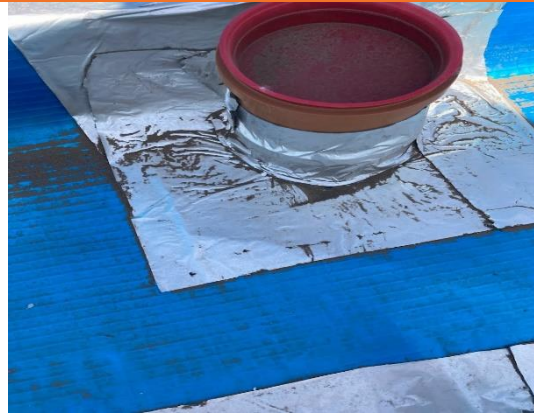
General Condition of Membrane-Good Condition



Verification of Joints and Seals-Good Condition



Verification of Service Penetrations-Good Condition



Verification of Service Penetrations-Good Condition

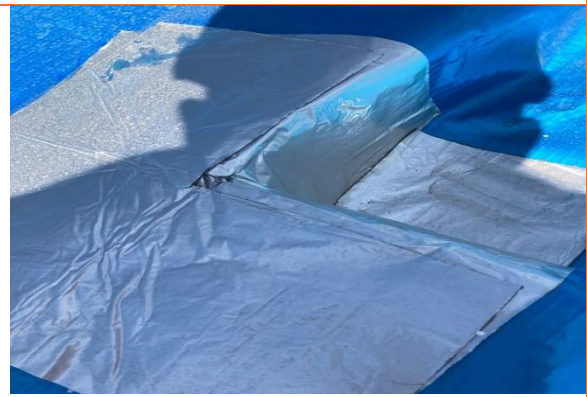
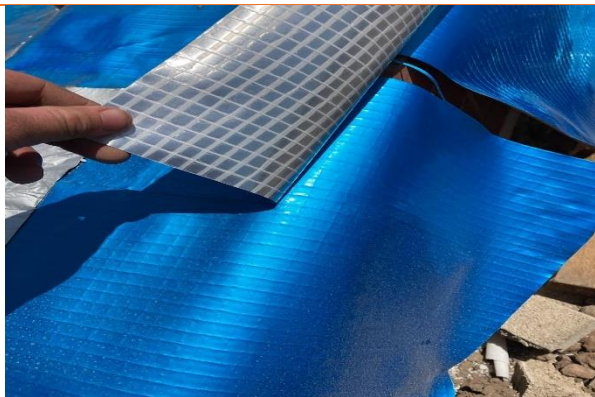


Plot – 45

General Condition of Membrane-Good Condition



Verification of Joints and Seals-Good Condition



Verification of Service Penetrations-Good Condition



Verification of Service Penetrations-Good Condition



Plot - 46

General Condition of Membrane-Good Condition



Verification of Joints and Seals-Good Condition



Verification of Service Penetrations-Good Condition



Verification of Service Penetrations-Good Condition



e3p Gas Protection Validation Site Record

Inspection date/time: 21/6/22	Inspected by: P. Lally	Photographed: (initials)
Type of development: Residential	Plot number: 44	Developer:

Notes/recommendations	Comments
Membrane Type	Blue Visqueen
Extent of Coverage	Full coverage
Underside of Membrane	Clear
Slab / membrane condition (is membrane clear of debris or insulation)	Clear
Type of joints	☒ Tape Joint ☐ Welded Joint ☐ Other (please state)
Service entries - Jubilee clips, Top hats installed correctly	Yes
External Wall Air Bricks Present?	Yes
Corners inspected?	Yes
Membrane joints inspected has Double -sided butyl tape been used?	Yes
Seals in membrane inspected?	Yes
Has the membrane been installed as per the design detail detailing?	Yes

As Plot has PASSED Inspection, any proposed remedial works will be noted in the "Remarks" column on this form). An additional inspection visit is required for this Plot.

Inspection by: (signature) Signed: Paddy Lally

Environmental Engineering Partnership Limited trading as E3P
Registered in England No: 0872520 Registered Office: E3P, Tollymore Park, London, Manchester M41 7JQ



e3p Gas Protection Validation Site Record

Inspection date/time: 21/06/22	Inspected by: P. Lately	Photographed: 01*
Type of development: 103 Vernal	Plot number: 46	Developer:
Notes/recommendations	Comments	
Membrane Type	Blue VLS 9 Veen	
Extent of Coverage	Full coverage	
Underside of Membrane	Clear	
Slab / membrane condition (is membrane clear of debris or insulation)	Clear	
Type of joints	☐ Tape Joint ☒ Welded Joint ☐ Other (please state)	
Service entries - Jubilee clips, Top hats installed correctly	Yes	
External Wall Air bricks Present?	Yes	
Corners inspected?	Yes	
Membrane joints inspected has Double -sided butyl tape been used?	Yes	
Falls in membrane inspected?	Yes	
Has the membrane been installed as per the design detail drawing?	Yes	
This Plot has PASSED / FAIL Inspection. (Any proposed remedial works will be noted in the "Remarks" column on this form). An additional inspection visit IS/IS NOT required for this Plot.		
Inspection by: P. Lately	Signed: P. Lately	

Environmental Engineering Partnership Limited trading as E3P
Registered in England No: 105723202 Registered Office: C/O, Trenchard, Trenchard Park, Litherley, Leicestershire LE15 7JG



e3p Gas Protection Validation Site Record

Inspection date/time:	2/6/22	Inspected by:	P. Lavelle	Photographed:	☒
Type of development:	Residential	Plot number:	45	Developer:	
Notes/recommendations	Comments				
Membrane Type	Blue Visqueen				
Extent of Coverage	Full coverage				
Underside of Membrane	Clear				
Slab / membrane condition (is membrane clear of debris or insulation)	Clear				
Type of joints	☐ Tape Joint ☒ Welded Joint ☐ Other (please state)				
Service entries - Jubilee clips, Top hats installed correctly	yes				
External Wall Air bricks Present?	yes				
Roofers inspected?	yes				
Membrane joints inspected has Double-sided butyl tape been used?	yes				
Seals in membrane inspected?	yes				
Has the membrane been installed as per the design detail relating?	yes				
This Plot has PASSED/FAILED inspection. (Any proposed remedial work will be noted in the "Remarks" column on this form). An additional inspection is required for this Plot.					
Inspected by:	Signed: [Signature]				

Environmental Engineering Partnership Limited trading as e3p
Registered in England No: 08725262 Registered Office: e3p, Tolly Road, Trafford Park, Urmston, Manchester M41 7 JQ



GAS MEMBRANE VALIDATION

Site Name: Parcel C, Prescott	Project Number: 15-292
Company: Miller Homes	Date: 21-07-2022
Project Manager: R. Walker	E3P Engineer: R. Webster
PM Qualifications: BSc (Hons) FGS, AIEMA, ICE, MIEEnvSc, CEnv	Engineer Qualifications: GGS Gas training Feb 22

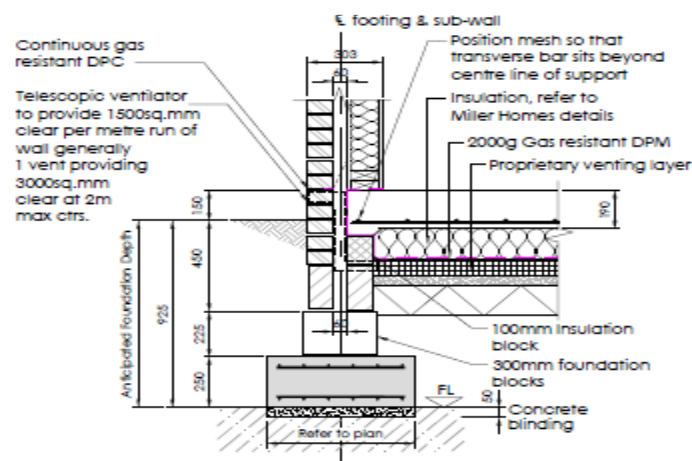
Overview:

The membrane comprised a JUTA GP1 gas membrane (Black) resistant to radon, carbon dioxide and low levels of methane. E3P can confirm there were no holes or rips at the time of inspection. Upon being laid the membrane is to be covered with a Celotex (closed Cell) floor insulation material which is considered to provide a high degree of protection.

All external joints were inspected and E3P can confirm that the membrane was overlapped and double taped to external and internal gas resistant DPM. The membrane was taped to the gas resistant DPM using a double-sided jointing tape. All the overlaps were then additionally taped using foil backed girth tape.

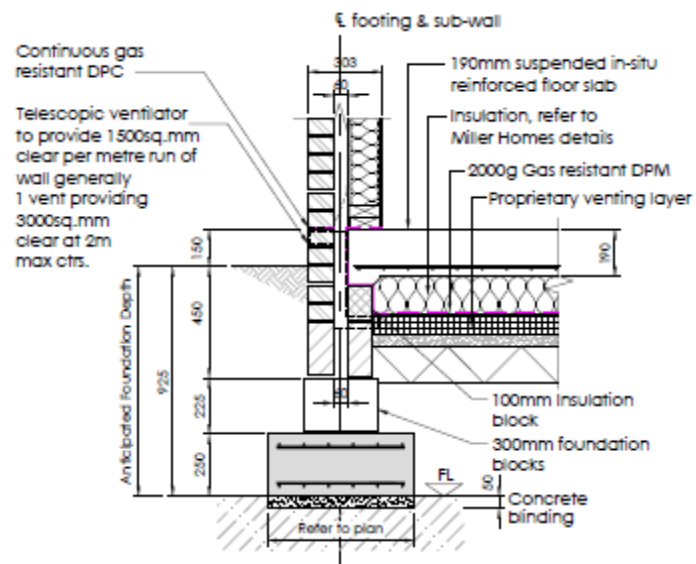
Each unit has a service duct located to the front and outer edge of the property. E3P inspected each one and can confirm that the top-hats have been adequately sealed against the membrane.

Based on the information provided within this report, the site inspections and validation checklists, E3P can confirm that **Plots 22-24** have been installed with gas protection measures in accordance with Characteristic Situation 2 to an acceptable level of workmanship.

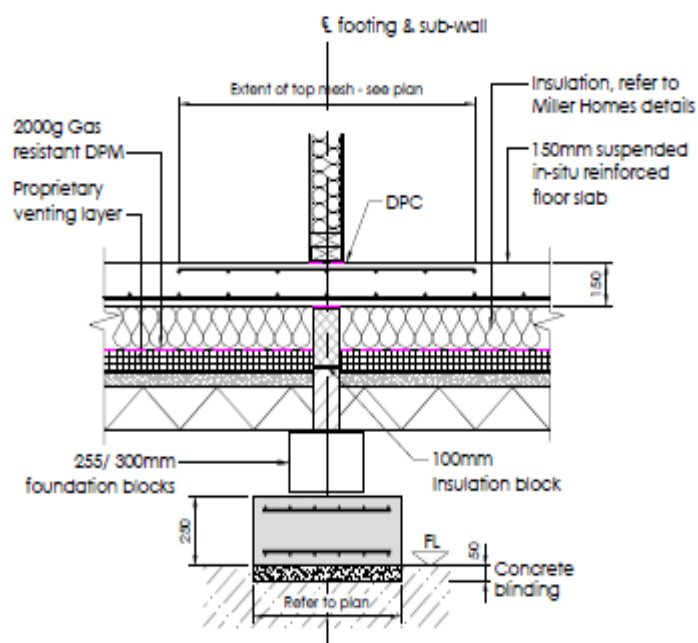


Section 1-1
Scale 1:25





Section 2-2
Scale 1:25



Section 3-3
Scale 1:25



Plot - 22

General Condition of Membrane-Good Condition



Verification of Joints and Seals-Good Condition



Verification of Service Penetrations-Good Condition



Verification of Service Penetrations-Good Condition



Plot – 24

General Condition of Membrane-Good Condition



Verification of Joints and Seals-Good Condition



Verification of Service Penetrations-Good Condition



Verification of Service Penetrations-Good Condition



Gas Protection Validation Site Record

Inspection date/time:	21 st July	Inspected by:	P. V. Roberts	Photographed:	✓/x ✓
Type of development:	Small Gate	Plot number:	22	Developer:	

Notes/recommendations	Comments
Membrane Type	Virginian blue
Extent of Coverage	fully exposed
Underside of Membrane	
Slab / membrane condition (is membrane clear of debris or insulation)	Good
Type of joints	☐ Tape Joint ☒ Welded Joint ☐ Other (please state)
Service entries – Jubilee clips, Top hats installed correctly	yes
External Wall Air bricks Present?	yes
Corners inspected?	yes
Membrane joints inspected has Double –sided butyl tape been used?	No
Folds in membrane inspected?	yes
Has the membrane been installed as per the design detail drawing?	yes

This Plot has ~~PASSED~~/FAILED* inspection. (Any proposed remedial works will be noted in the "Remarks" column on this form). An additional inspection visit IS/IS NOT* required for this Plot.

Inspection by: P. V. Roberts Signed: 

Gas Protection Validation Site Record

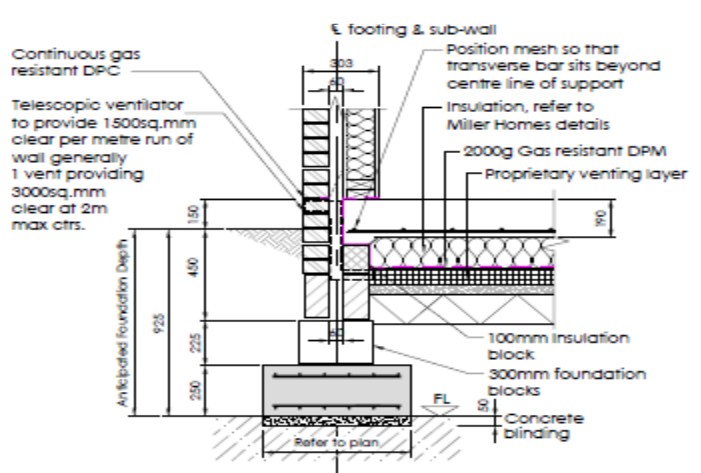
Inspection date/time:	21 st July	Inspected by:	RV Roberts	Photographed:	✓/x ✓
Type of development:	Small Gate	Plot number:	24	Developer:	

Notes/recommendations	Comments
Membrane Type	Uniquem blue
Extent of Coverage	fully exposed
Underside of Membrane	
Slab / membrane condition (is membrane clear of debris or insulation)	Good
Type of joints	☐ Tape Joint ☒ Welded Joint ☐ Other (please state)
Service entries – Jubilee clips, Top hats installed correctly	yes
External Wall Air bricks Present?	yes
Corners inspected?	yes
Membrane joints inspected has Double – sided butyl tape been used?	No
Folds in membrane inspected?	yes
Has the membrane been installed as per the design detail drawing?	yes

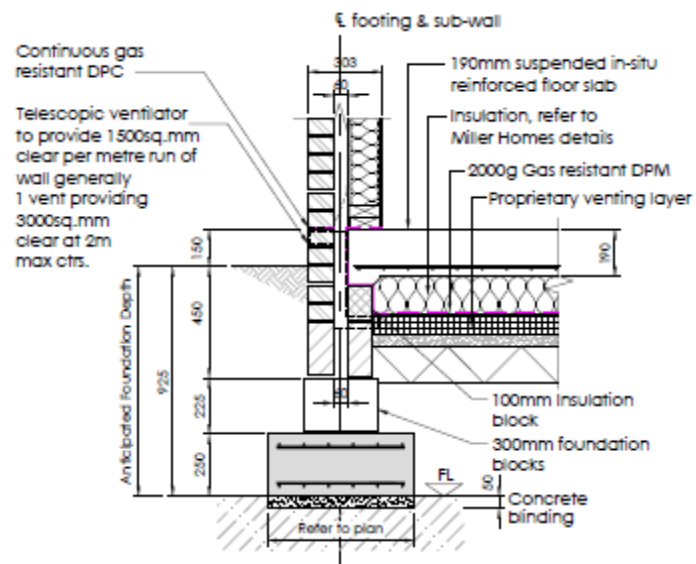
This Plot has **PASSED/FAILED*** inspection. (Any proposed remedial works will be noted in the "Remarks" column on this form). An additional inspection visit IS/IS NOT* required for this Plot.

Inspection by: *RV Roberts* Signed: *RV Roberts*

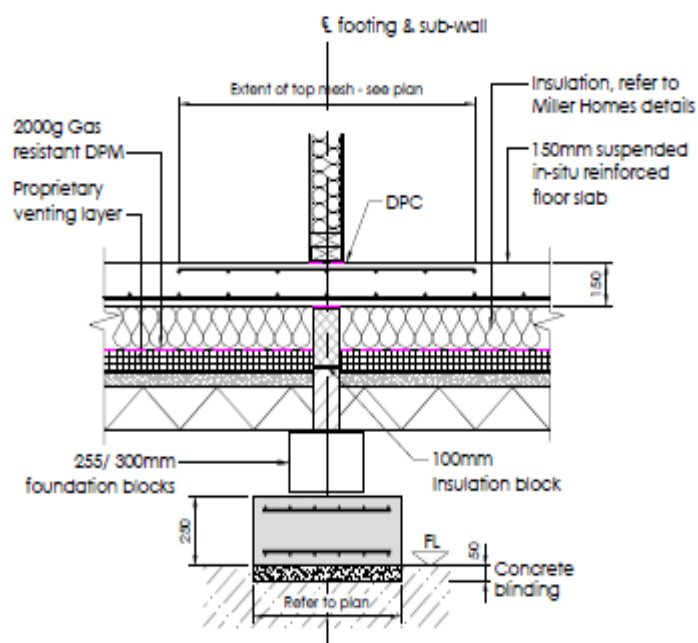
GAS MEMBRANE VALIDATION

Site Name: Parcel C, Prescott	Project Number: 15-292
Company: Miller Homes	Date: 25-07-2022
Project Manager: R. Walker	E3P Engineer: R. Webster
PM Qualifications: BSc (Hons) FGS, AIEMA, ICE, MIEEnvSc, CEnv	Engineer Qualifications: GGS Gas training Feb 22
Overview: The membrane comprised a Visqueen gas protection (Blue) resistant to radon, carbon dioxide and low levels of methane. E3P can confirm there were no holes or rips at the time of inspection. Upon being laid the membrane is to be covered with a Celotex (closed Cell) floor insulation material which is considered to provide a high degree of protection. Each unit has a service duct located to the front and outer edge of the property. E3P inspected each one and can confirm that the top-hats have been adequately sealed against the membrane. Based on the information provided within this report, the site inspections and validation checklists, E3P can confirm that Plots 50-52 have been installed with gas protection measures in accordance with Characteristic Situation 2 to an acceptable level of workmanship.	
 Section 1-1 Scale 1:25	





Section 2-2
Scale 1:25



Section 3-3
Scale 1:25



Plot - 50

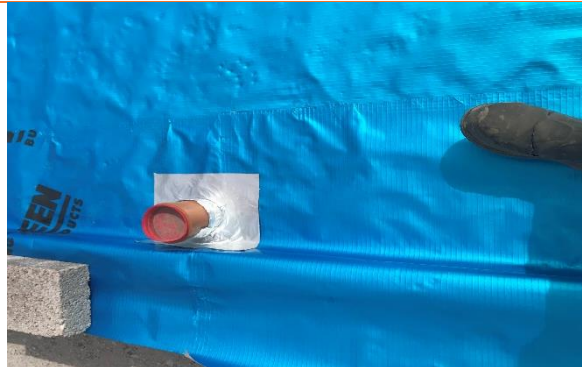
General Condition of Membrane-Good Condition



Verification of Joints and Seals-Good Condition



Verification of Service Penetrations-Good Condition

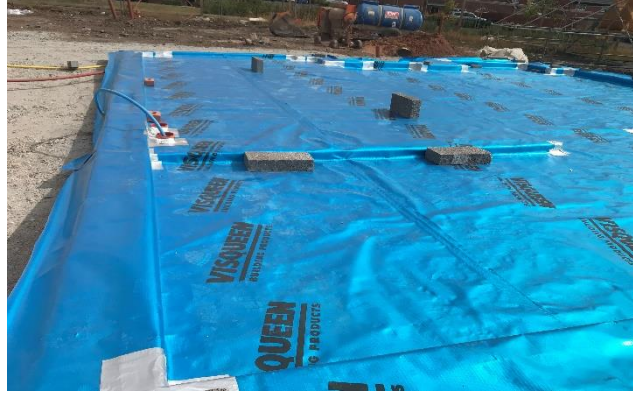


Verification of Service Penetrations-Good Condition

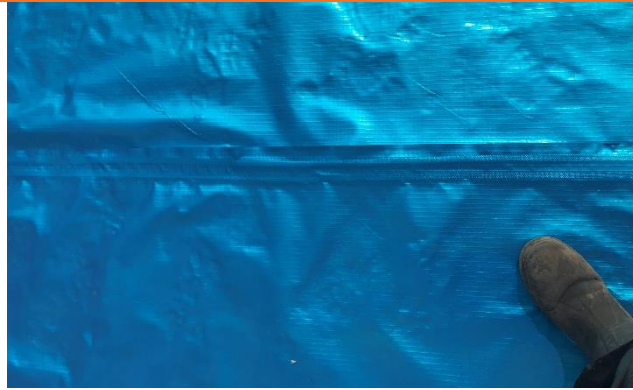


Plot - 51

General Condition of Membrane-Good Condition



Verification of Joints and Seals-Good Condition



Verification of Service Penetrations-Good Condition



Verification of Service Penetrations-Good Condition



Plot - 52

General Condition of Membrane-Good Condition



Verification of Joints and Seals-Good Condition

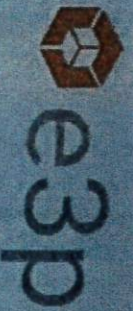


Verification of Service Penetrations-Good Condition



Verification of Service Penetrations-Good Condition



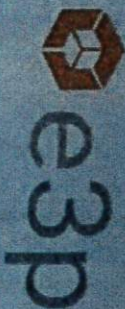


Gas Protection Validation Site Record

Inspection date/time:	25 th July	Inspected by:	R. Velez	Photographed:	✓/x ✓
Type of development:	Small Coker	Plot number:	50%	Developer:	
Notes/recommendations	Comments				
Membrane Type	Unpaved blue fully sealed				
Extent of Coverage					
Underside of Membrane					
Slab / membrane condition (Is membrane clear of debris or insulation)	Good				
Type of joints	☒ Tape Joint ☒ Welded Joint ☐ Other (please state)				
Service entries - Jubilee clips, Top hats installed correctly	yes				
External Wall Air bricks Present?	yes				
Corners inspected?	yes				
Membrane joints inspected has Double-sided butyl tape been used?	no				
Folds in membrane inspected?	yes				
Has the membrane been installed as per the design detail drawing?	yes				

This Plot has ~~PASSED~~ **FAILED** Inspection. (Any proposed remedial works will be noted in the "Remarks" column on this form). An additional inspection visit (S/N) **NOT** required for this Plot.

Inspection by: *R. Velez* Signed: *[Signature]*



Gas Protection Validation Site Record

Inspection date/time:	25 th July	Inspected by:	R. Webster	Photographed:	✓/x ✓
Type of development:	Small Coker	Plot number:	50%	Developer:	
Notes/recommendations	Comments				
Membrane Type	Vapour barrier				
Extent of Coverage	fully sealed				
Underside of Membrane					
Slab / membrane condition (is membrane clear of debris or insulation)	Good				
Type of joints	☒ Tape Joint ☒ Welded Joint ☐ Other (please state)				
Service entries - Jubilee clips, Top hats installed correctly	yes				
External Wall Air bricks Present?	yes				
Corners inspected?	yes				
Membrane joints inspected has Double-sided butyl tape been used?	no				
Folds in membrane inspected?	yes				
Has the membrane been installed as per the design detail drawing?	yes				

This Plot has PASSED/FAILED* inspection. (Any proposed remedial works will be noted in the "Remarks" column on this form). An additional inspection visit IS/NOT* required for this Plot.

Inspection by: R. Webster Signed: [Signature]

GAS MEMBRANE VALIDATION

Site Name: Parcel C, Prescott	Project Number: 15-292
Company: Miller Homes	Date: 01-08-2022
Project Manager: R. Walker	E3P Engineer: J. Newall
PM Qualifications: BSc (Hons) FGS, AIEMA, AMICE, MIEEnvSc, CEnv	Engineer Qualifications: GGS Gas training Feb 22

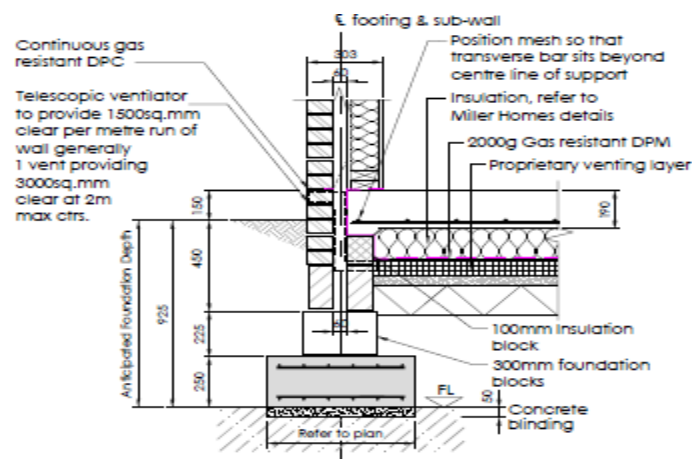
Overview:

The membrane comprised a Visqueen Blue gas membrane resistant to radon, carbon dioxide and low levels of methane. E3P can confirm there were no holes or rips at the time of inspection. Upon being laid the membrane is to be covered with a Celotex (closed Cell) floor insulation material which is considered to provide a high degree of protection.

All external joints were inspected. The membrane was taped to the gas resistant DPM using a double-sided jointing tape. All the overlaps were then additionally taped using foil backed girth tape.

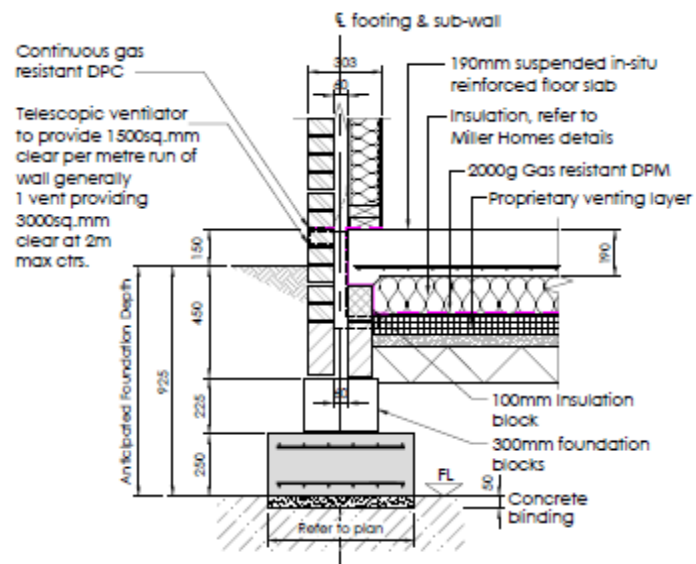
Each unit has a service duct located to the front and outer edge of the property. E3P inspected each one and can confirm that the top-hats have been adequately sealed against the membrane.

Based on the information provided within this report, the site inspections and validation checklists, E3P can confirm that **Plot 53** has been installed with gas protection measures in accordance with Characteristic Situation 2 to an acceptable level of workmanship.

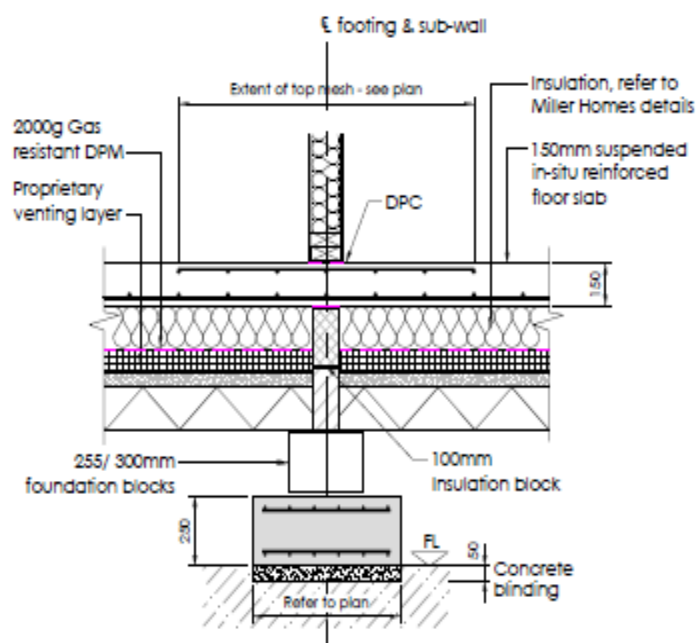


Section 1-1
Scale 1:25





Section 2-2
Scale 1:25



Section 3-3
Scale 1:25

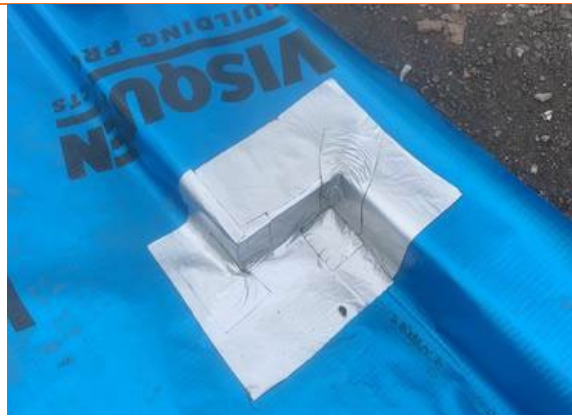


Plot - 53

General Condition of Membrane-Good Condition



Verification of Joints and Seals-Good Condition



Verification of Service Penetrations-Good Condition



Verification of Service Penetrations-Good Condition





Gas Protection Validation Site Record

Inspection date/time:	1st Aug	Inspected by:	J Mcwall	Photographed:	01x
Type of development:	House	Plot number:	53	Developer:	

Notes/recommendations	Comments
Membrane Type	Blue Visqueen
Extent of Coverage	Full
Underside of Membrane	clear
Slab / membrane condition (is membrane clear of debris or insulation)	yes
Type of joints	☐ Tape Joint ☒ Welded Joint ☐ Other (please state)
Service entries – Jubilee clips, Top hats installed correctly	yes
External Wall Air bricks Present?	✓
Corners inspected?	yes
Membrane joints inspected has Double –sided butyl tape been used?	yes
Folds in membrane inspected?	yes
Has the membrane been installed as per the design detail drawing?	yes

This Plot has **PASSED/FAILED*** inspection. (Any proposed remedial works will be noted in the "Remarks" column on this form). An additional inspection visit IS/IS NOT* required for this Plot. J Mcwall
Inspection by: J Mcwall Signed: [Signature]

GAS MEMBRANE VALIDATION

Site Name: Parcel C, Prescott	Project Number: 15-292
Company: Miller Homes	Date: 24-08-2022
Project Manager: R. Walker	E3P Engineer: P. Lavelle
PM Qualifications: BSc (Hons) FGS, AIEMA, ICE, MIEEnvSc, CEnv	Engineer Qualifications: GGS Gas training Feb 22

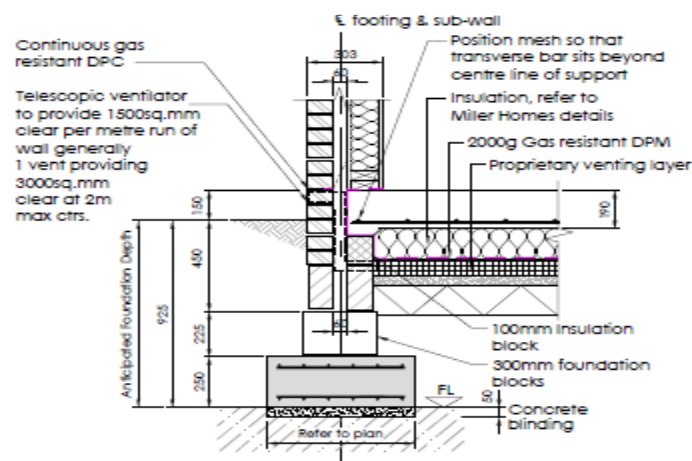
Overview:

The membrane comprised a Visqueen gas membrane (Blue) resistant to radon, carbon dioxide and low levels of methane. E3P can confirm there were no holes or rips at the time of inspection. Upon being laid the membrane is to be covered with a Celotex (closed Cell) floor insulation material which is considered to provide a high degree of protection.

All external joints were inspected and E3P can confirm that the membrane was overlapped and double taped. All the overlaps were then additionally taped using foil backed girth tape.

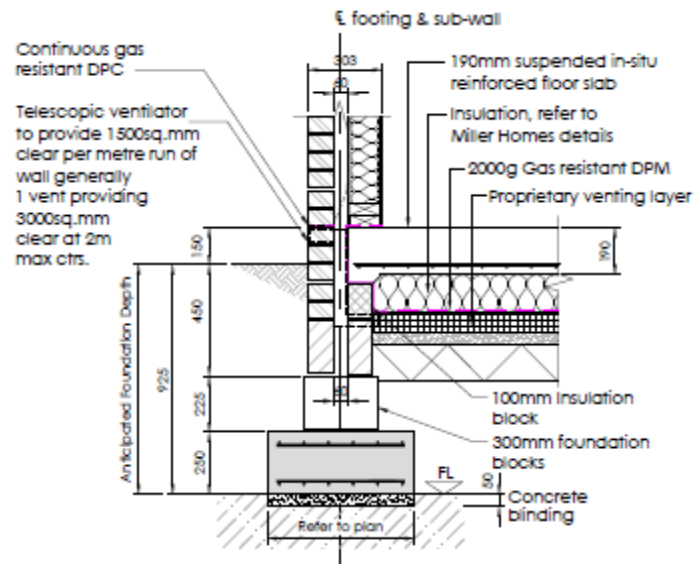
Each unit has a service duct located to the front and outer edge of the property. E3P inspected each one and can confirm that the top-hats have been adequately sealed against the membrane.

Based on the information provided within this report, the site inspections and validation checklists, E3P can confirm that **Plots 14-15** have been installed with gas protection measures in accordance with Characteristic Situation 2 to an acceptable level of workmanship.

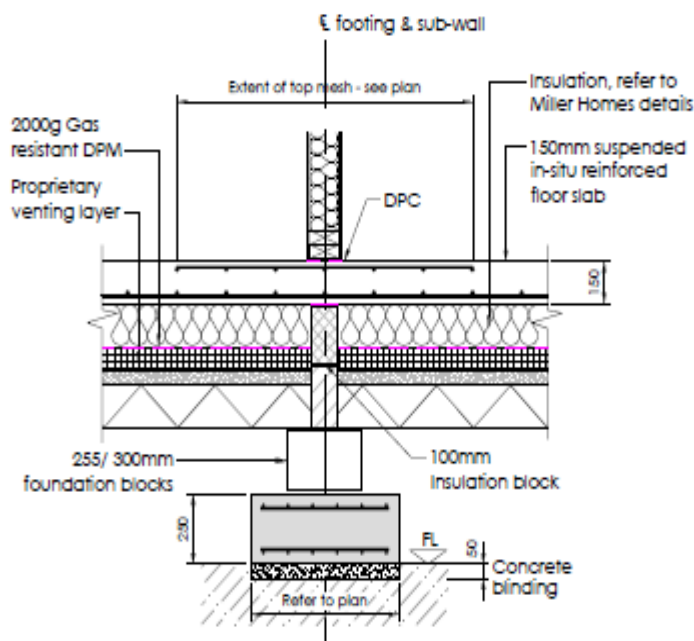


Section 1-1
Scale 1:25





Section 2-2
Scale 1:25



Section 3-3
Scale 1:25

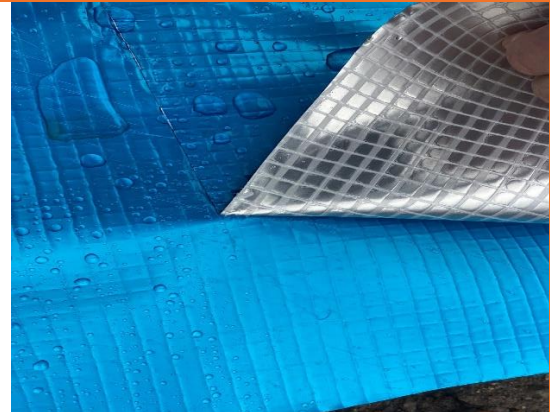


Plot - 14

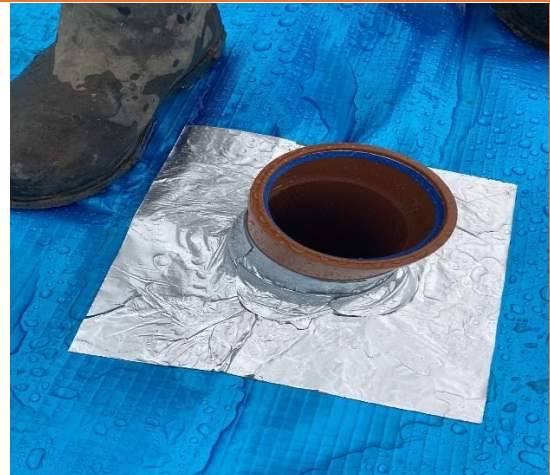
General Condition of Membrane-Good Condition



Verification of Joints and Seals-Good Condition



Verification of Service Penetrations-Good Condition



Verification of Service Penetrations-Good Condition



Plot - 15

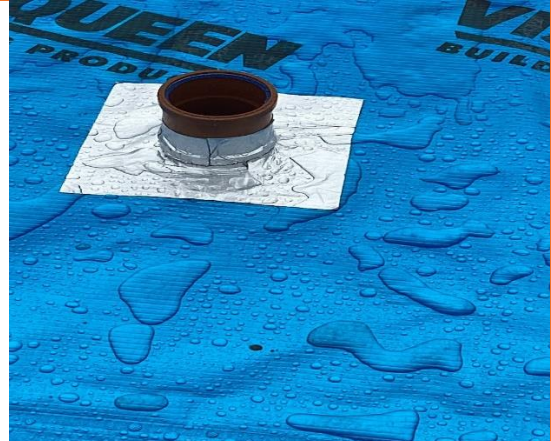
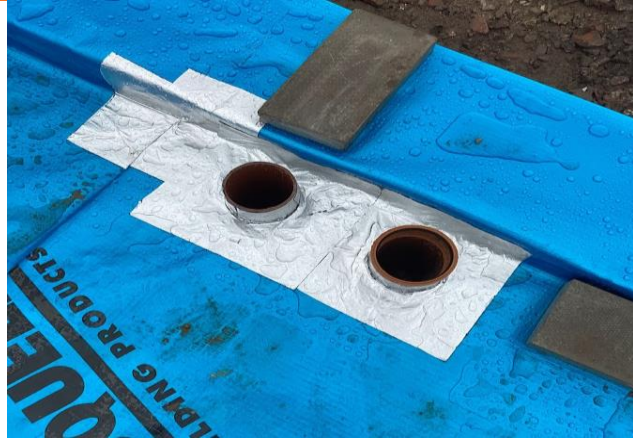
General Condition of Membrane-Good Condition



Verification of Joints and Seals-Good Condition



Verification of Service Penetrations-Good Condition



Verification of Service Penetrations-Good Condition



Gas Protection Validation Site Record

Inspection date/time:	24/8/22	Inspected by:	14	Photographed:	1
Type of development:	Residential	Plot number:	p.L	Developer:	
Notes/recommendations	Comments				
Membrane Type					
Extent of Coverage	Blue Visaveeh				
Underside of Membrane	Full coverage				
Slab / membrane condition (Is membrane clear of debris or insulation)	Clear				
Type of joints	Clear				
Service entries - Jubilee clips, Top hats installed correctly	☒ Tape Joint ☒ Welded Joint ☐ Other (please state)				
External Wall Air bricks Present?	Yes				
Corners inspected?	Yes				
Membrane joints inspected has Double -sided butyl tape been used?	Yes				
Folds in membrane inspected?	Yes				
Has the membrane been installed as per the design detail drawing?	Yes				

This Plot has **PASSED/FAILED** inspection. (Any proposed remedial works will be noted in the "Remarks" column on this form). An additional inspection visit IS/IS NOT* required for this Plot.

Inspection by: P. A. White Signed: P. A. White



Gas Protection Validation Site Record

Inspection date/time:	24/8/22	Inspected by:	P.L	Photographed:	⓪
Type of development:	Residential	Plot number:	15	Developer:	
Notes/recommendations	Comments				
Membrane Type		Blue Visqueen			
Extent of Coverage		Full Coverage			
Underside of Membrane		clear			
Slab / membrane condition (is membrane clear of debris or insulation)		clear			
Type of joints		☒ Tape Joint ☒ Welded Joint ☐ Other (please state)			
Service entries - Jubilee clips, Top hats installed correctly		yes			
External Wall Air bricks Present?		yes			
Corners inspected?		yes			
Membrane joints inspected has Double -sided butyl tape been used?		yes			
Folds in membrane inspected?		yes			
Has the membrane been installed as per the design detail drawing?		yes			

This Plot has PASSED inspection. (Any proposed remedial works will be noted in the "Remarks" column on this form). An additional inspection visit IS/IS NOT* required for this Plot.

Inspection by: P. Lavelle Signed: P. Lavelle

GAS MEMBRANE VALIDATION

Site Name: Parcel C, Prescott	Project Number: 15-292
Company: Miller Homes	Date: 10-11-2022
Project Manager: R. Walker	E3P Engineer: R. Webster
PM Qualifications: BSc (Hons) FGS, AIEMA, ICE, MIEEnvSc, CEnv	Engineer Qualifications: GGS Gas training Feb 22

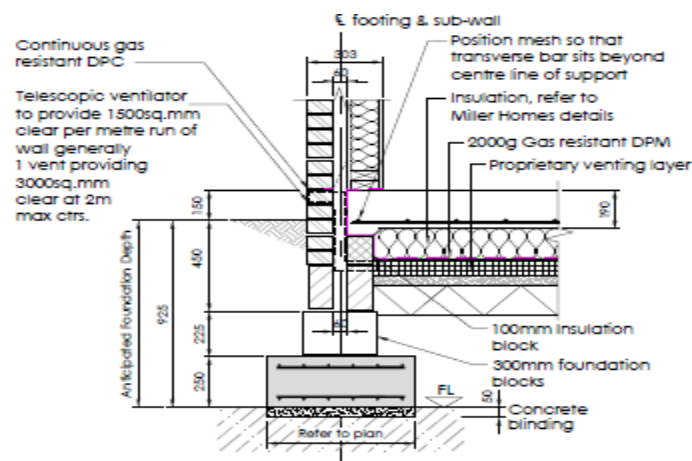
Overview:

The membrane comprised a JUTA GP1 gas membrane (Black) resistant to radon, carbon dioxide and low levels of methane. E3P can confirm there were no holes or rips at the time of inspection. Upon being laid the membrane is to be covered with a Celotex (closed Cell) floor insulation material which is considered to provide a high degree of protection.

All external joints were inspected and E3P can confirm that the membrane was overlapped and double taped to external and internal gas resistant DPM. The membrane was taped to the gas resistant DPM using a double-sided jointing tape. All the overlaps were then additionally taped using foil backed girth tape.

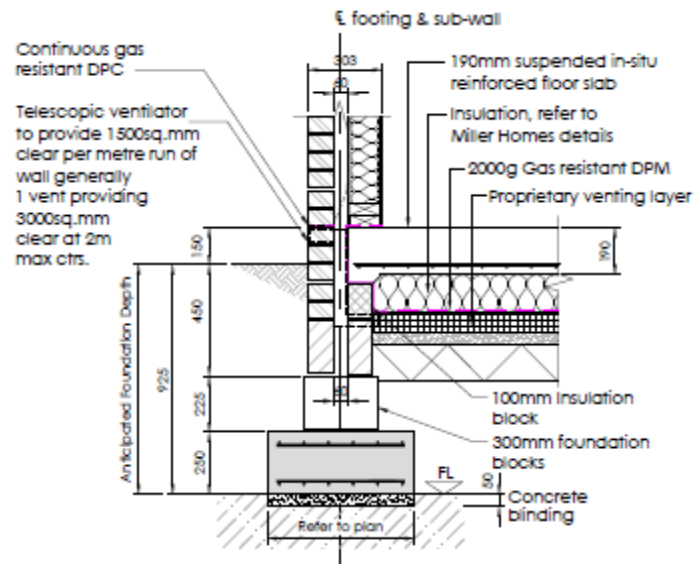
Each unit has a service duct located to the front and outer edge of the property. E3P inspected each one and can confirm that the top-hats have been adequately sealed against the membrane.

Based on the information provided within this report, the site inspections and validation checklists, E3P can confirm that **Plot 54** have been installed with gas protection measures in accordance with Characteristic Situation 2 to an acceptable level of workmanship.

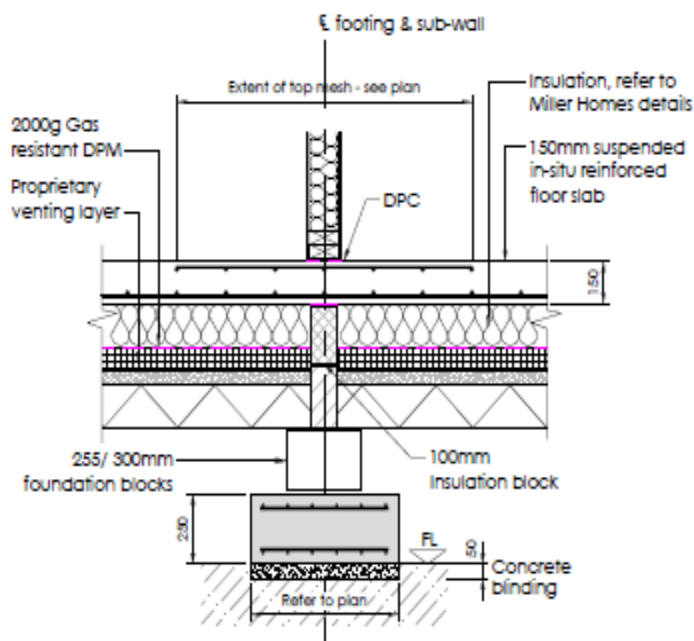


Section 1-1
Scale 1:25





Section 2-2
Scale 1:25



Section 3-3
Scale 1:25



GAS MEMBRANE VALIDATION

Complete

Score	100%
-------	------

Site Name	Sonnet gate
-----------	-------------

Location	Prescot Park Way Knowsley England L34 United Kingdom (53.42216046754849, - 2.80923588783989)
----------	--

Project Manager	Roy walker
-----------------	------------

Project number	15-292
----------------	--------

Developer	Miller
-----------	--------

Site representative Signature	
-------------------------------	--

Steven dean
10 Nov 2022 3:32 PM GMT

Conducted on	10 Nov 2022 3:28 PM GMT
--------------	-------------------------

Prepared by	Richard Webster
-------------	-----------------



Inspection Gas Membrane - 100%

100%

Plot Inspection - 100%

100%

Plot Inspection 1 - 100%

100%

Plot Number

54

Type of Development: Other add note

House

Gas Characteristic Situation

CS2

Foundation Type: Other add note

Suspended Floor

Gas Membrane Type: Manufacturer, gauge, and colour.

Visqueen blue

Gas Membrane Condition: Open punctures, tears, rips, stretching, Presence of debris, Repairs, Signs of weakness such as raised or sunken indentations, Protection plan in place to restrict access to lain gas membrane? IF FAIL DESCRIPTION IN ACTIONS AND PHOTOS REQUIRED

Pass



Photo 1

Photo 2

Laps, welds, and joints seals: Joints lapped and sealed in accordance with manufacturer's requirements/ specification? Minimum overlap insured? Sections taped twice? Are welds complete? Appropriate joining/double-sided tape used, Folds running in line with joints? (no joints cutting across folds)

Pass

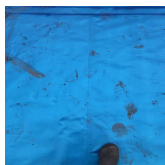


Photo 3



Photo 4



Photo 5



Photo 6

Service entries seals: Top hats seal arrangements fixed around service entries? Use of Jubilee clips?

Yes





Photo 7



Photo 8



Photo 9



Photo 10

Type of joints/ Lapping

Welded

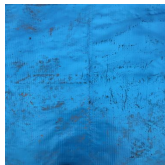


Photo 11

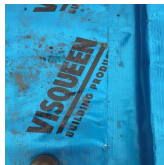


Photo 12

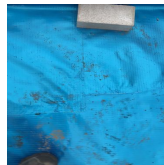


Photo 13

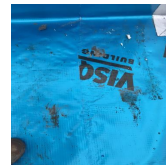


Photo 14



Photo 15

Corners / Internal joints: Check all corners are correctly formed or contractor has used performed corners.

Pass



Photo 16



Photo 17



Photo 18



Photo 19

Extent of Coverage: Is the membrane covering the entire plot? Does membrane span over outside walls?

Yes

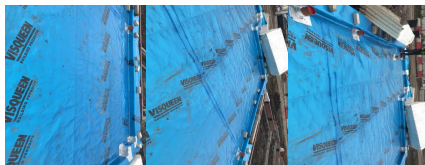


Photo 20

Photo 21

Photo 22

Condition of sub-grade and underside of gas membrane: Check that the subgrade does not contain rough/uneven surfaces, is appropriately clean and that there are no hard/sharp objects. That protective sand blinding or geotextile (if specified) is present and meets the design criteria.

Pass

Slab / membrane condition (is membrane clear of debris or insulation): Can membrane be fully seen and photographed – ask contractor to remove an debris so membrane can be fully seen an inspected – this is a requirement of NHBC and local authorities.

Pass

External Wall Air bricks: Numbers, size. positions as design drawing? (Minimum of 3 walls)

Pass





Photo 23



Photo 24



Photo 25



Photo 26

Passive Venting

Sub-floor Void: Is a check possible on future plots (insert Plot number or NO in text box)

No



Appendix



Photo 1



Photo 2

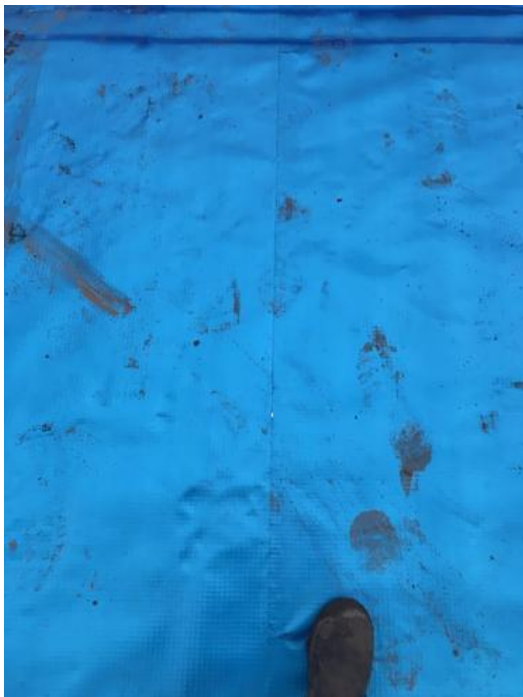


Photo 3



Photo 4





Photo 5



Photo 6



Photo 7



Photo 8





Photo 9



Photo 10



Photo 11



Photo 12





Photo 13



Photo 14



Photo 15



Photo 16





Photo 17



Photo 18



Photo 19



Photo 20





Photo 21

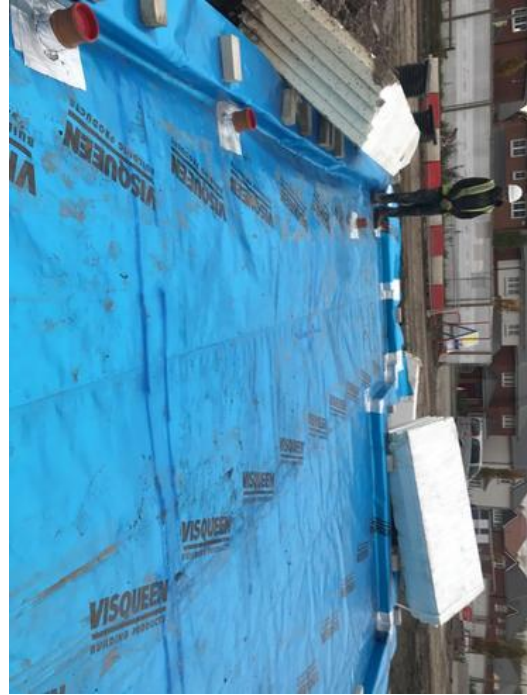


Photo 22



Photo 23



Photo 24





Photo 25



Photo 26



GAS MEMBRANE VALIDATION

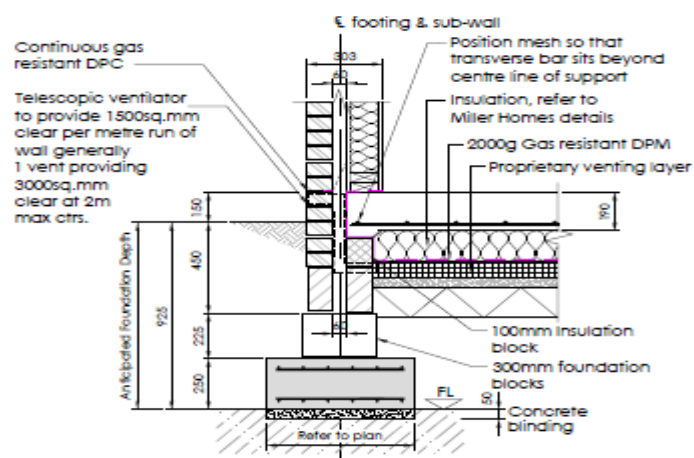
Site Name: Parcel C, Prescott	Project Number: 15-292
Company: Miller Homes	Date: 22-11-2022
Project Manager: R. Walker	E3P Engineer: R. Webster
PM Qualifications: BSc (Hons), FGS, AIEMA, AMICE, MIEEnvSc, CEnv	Engineer Qualifications: Ground Gas Training Dec 2018

Overview:

The membrane comprised a visqueen gas protection membrane (Blue) resistant to radon, carbon dioxide and low levels of methane. E3P can confirm there were no holes or rips at the time of inspection. Upon being laid the membrane is to be covered with a Celotex (closed Cell) floor insulation material which is considered to provide a high degree of protection.

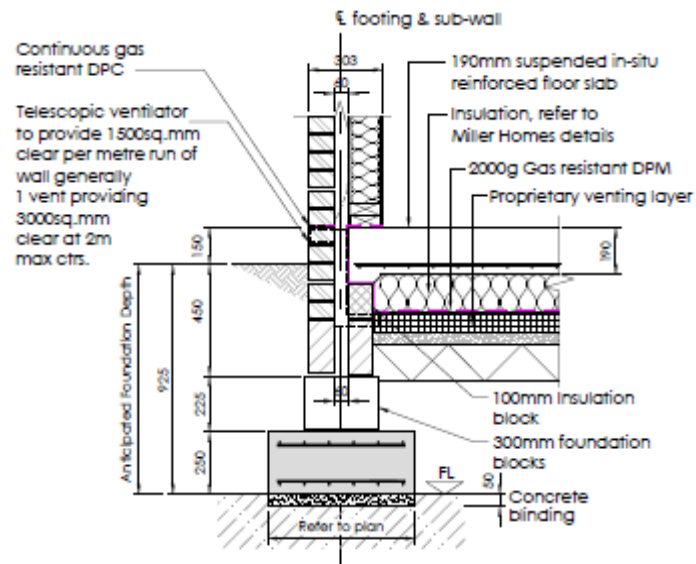
Each unit has a service duct located to the front and outer edge of the property. E3P inspected each one and can confirm that the top-hats have been adequately sealed against the membrane.

Based on the information provided within this report, the site inspections and validation checklists, E3P can confirm that **Plots 55-59** have been installed with gas protection measures in accordance with Characteristic Situation 2 to an acceptable level of workmanship.

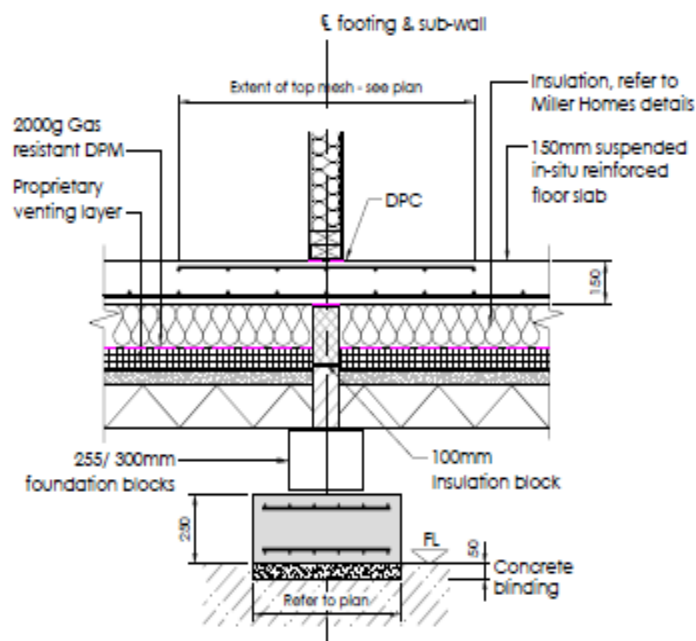


Section 1-1
Scale 1-25





Section 2-2
Scale 1:25



Section 3-3
Scale 1:25



GAS MEMBRANE VALIDATION

Complete

Score	100%
Site Name	Sonnet gate
Location	1 Tenlands Dr Prescot England L34 1BA United Kingdom (53.42224274641872, - 2.808890558527897)
Project Manager	R. Walker
Project number	15292
Developer	Miller
Site representative Signature	Gary Kenyon 22 Nov 2022 2:44 PM GMT
Conducted on	22 Nov 2022 2:28 PM GMT
Prepared by	Richard Webster



Inspection Gas Membrane - 100%

100%

Plot Inspection - 100%

100%

Plot Inspection 1 - 100%

100%

Plot Number

55

Type of Development: Other add note

House

Gas Characteristic Situation

CS2

Foundation Type: Other add note

Other

Block and beam

Gas Membrane Type: Manufacturer, gauge, and colour.

Visqueen blue

Gas Membrane Condition: Open punctures, tears, rips, stretching, Presence of debris, Repairs, Signs of weakness such as raised or sunken indentations, Protection plan in place to restrict access to lain gas membrane? IF FAIL DESCRIPTION IN ACTIONS AND PHOTOS REQUIRED

Pass

Laps, welds, and joints seals: Joints lapped and sealed in accordance with manufacturer's requirements/ specification? Minimum overlap insured? Sections taped twice? Are welds complete? Appropriate joining/double-sided tape used, Folds running in line with joints? (no joints cutting across folds)

Pass

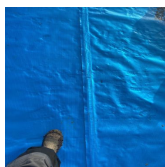


Photo 1

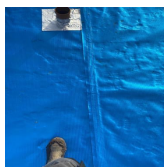


Photo 2

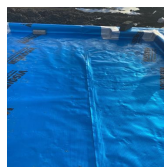


Photo 3



Photo 4



Photo 5

Service entries seals: Top hats seal arrangements fixed around service entries? Use of Jubilee clips?

Yes



Photo 6



Photo 7



Photo 8



Photo 9

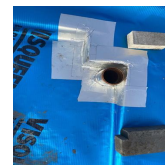


Photo 10

Type of joints/ Lapping

Welded



Corners / Internal joints: Check all corners are correctly formed or contractor has used performed corners.

Pass



Photo 11



Photo 12



Photo 13



Photo 14



Photo 15



Photo 16



Photo 17

Extent of Coverage: Is the membrane covering the entire plot? Does membrane span over outside walls?

Yes



Photo 18

Photo 19

Condition of sub-grade and underside of gas membrane: Check that the subgrade does not contain rough/uneven surfaces, is appropriately clean and that there are no hard/sharp objects. That protective sand blinding or geotextile (if specified) is present and meets the design criteria.

Pass

Slab / membrane condition (is membrane clear of debris or insulation): Can membrane be fully seen and photographed – ask contractor to remove an debris so membrane can be fully seen an inspected – this is a requirement of NHBC and local authorities.

Pass

External Wall Air bricks: Numbers, size. positions as design drawing? (Minimum of 3 walls)

Pass



Photo 20

Photo 21

Photo 22



Plot Inspection 2 - 100%

100%

Plot Number

56

Type of Development: Other add note

House

Gas Characteristic Situation

CS2

Foundation Type: Other add note

Other

Beam and block

Gas Membrane Type: Manufacturer, gauge, and colour.

Visqueen blue

Gas Membrane Condition: Open punctures, tears, rips, stretching, Presence of debris, Repairs, Signs of weakness such as raised or sunken indentations, Protection plan in place to restrict access to lain gas membrane? IF FAIL DESCRIPTION IN ACTIONS AND PHOTOS REQUIRED

Pass

Laps, welds, and joints seals: Joints lapped and sealed in accordance with manufacturer's requirements/ specification? Minimum overlap insured? Sections taped twice? Are welds complete? Appropriate joining/double-sided tape used, Folds running in line with joints? (no joints cutting across folds)

Pass

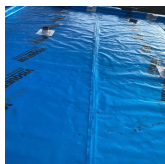


Photo 23

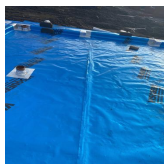


Photo 24



Photo 25



Photo 26



Photo 27

Service entries seals: Top hats seal arrangements fixed around service entries? Use of Jubilee clips?

Yes



Photo 28



Photo 29



Photo 30

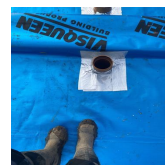


Photo 31

Type of joints/ Lapping

Welded

Corners / Internal joints: Check all corners are correctly formed or contractor has used performed corners.

Pass





Photo 32



Photo 33



Photo 34



Photo 35



Photo 36



Photo 37

Extent of Coverage: Is the membrane covering the entire plot? Does membrane span over outside walls?

Yes

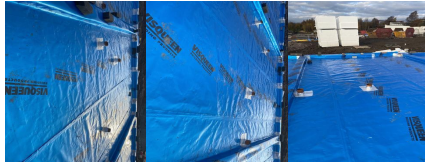


Photo 38

Photo 39

Photo 40

Condition of sub-grade and underside of gas membrane: Check that the subgrade does not contain rough/uneven surfaces, is appropriately clean and that there are no hard/sharp objects. That protective sand blinding or geotextile (if specified) is present and meets the design criteria.

Pass

Slab / membrane condition (is membrane clear of debris or insulation): Can membrane be fully seen and photographed – ask contractor to remove an debris so membrane can be fully seen an inspected – this is a requirement of NHBC and local authorities.

Pass

External Wall Air bricks: Numbers, size. positions as design drawing? (Minimum of 3 walls)

Pass

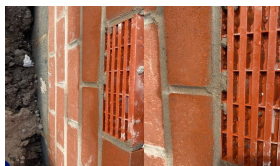


Photo 41

Photo 42



Plot Inspection 3 - 100%

100%

Plot Number

57

Type of Development: Other add note

House

Gas Characteristic Situation

CS2

Foundation Type: Other add note

Other

Beam and block

Gas Membrane Type: Manufacturer, gauge, and colour.

Visqueen blue

Gas Membrane Condition: Open punctures, tears, rips, stretching, Presence of debris, Repairs, Signs of weakness such as raised or sunken indentations, Protection plan in place to restrict access to lain gas membrane? IF FAIL DESCRIPTION IN ACTIONS AND PHOTOS REQUIRED

Pass

Laps, welds, and joints seals: Joints lapped and sealed in accordance with manufacturer's requirements/ specification? Minimum overlap insured? Sections taped twice? Are welds complete? Appropriate joining/double-sided tape used, Folds running in line with joints? (no joints cutting across folds)

Pass

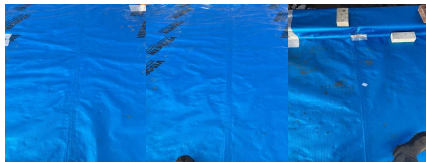


Photo 43

Photo 44

Photo 45

Service entries seals: Top hats seal arrangements fixed around service entries? Use of Jubilee clips?

Yes



Photo 46



Photo 47

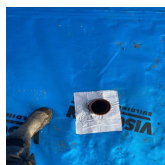


Photo 48



Photo 49

Type of joints/ Lapping

Welded

Corners / Internal joints: Check all corners are correctly formed or contractor has used performed corners.

Pass





Photo 50



Photo 51



Photo 52



Photo 53



Photo 54



Photo 55

Extent of Coverage: Is the membrane covering the entire plot? Does membrane span over outside walls?

Yes



Photo 56

Photo 57

Condition of sub-grade and underside of gas membrane: Check that the subgrade does not contain rough/uneven surfaces, is appropriately clean and that there are no hard/sharp objects. That protective sand blinding or geotextile (if specified) is present and meets the design criteria.

Pass

Slab / membrane condition (is membrane clear of debris or insulation): Can membrane be fully seen and photographed – ask contractor to remove an debris so membrane can be fully seen an inspected – this is a requirement of NHBC and local authorities.

Pass

External Wall Air bricks: Numbers, size. positions as design drawing? (Minimum of 3 walls)

Pass

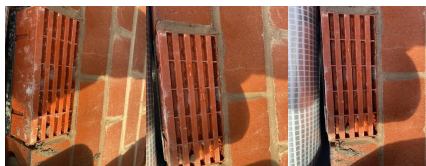


Photo 58

Photo 59

Photo 60



Plot Inspection 4 - 100%

100%

Plot Number

58

Type of Development: Other add note

House

Gas Characteristic Situation

CS2

Foundation Type: Other add note

Other

Beam and block

Gas Membrane Type: Manufacturer, gauge, and colour.

Visqueen blue

Gas Membrane Condition: Open punctures, tears, rips, stretching, Presence of debris, Repairs, Signs of weakness such as raised or sunken indentations, Protection plan in place to restrict access to lain gas membrane? IF FAIL DESCRIPTION IN ACTIONS AND PHOTOS REQUIRED

Pass

Laps, welds, and joints seals: Joints lapped and sealed in accordance with manufacturer's requirements/ specification? Minimum overlap insured? Sections taped twice? Are welds complete? Appropriate joining/double-sided tape used, Folds running in line with joints? (no joints cutting across folds)

Pass

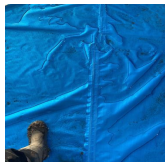


Photo 61



Photo 62

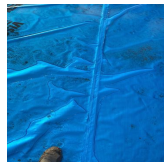


Photo 63

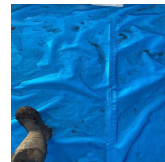


Photo 64

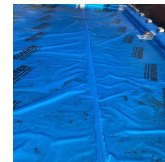


Photo 65

Service entries seals: Top hats seal arrangements fixed around service entries? Use of Jubilee clips?

Yes



Photo 66



Photo 67



Photo 68



Photo 69

Type of joints/ Lapping

Welded

Corners / Internal joints: Check all corners are correctly formed or contractor has used performed corners.

Pass





Photo 70



Photo 71



Photo 72



Photo 73



Photo 74



Photo 75

Extent of Coverage: Is the membrane covering the entire plot? Does membrane span over outside walls?

Yes



Photo 76

Photo 77

Condition of sub-grade and underside of gas membrane: Check that the subgrade does not contain rough/uneven surfaces, is appropriately clean and that there are no hard/sharp objects. That protective sand blinding or geotextile (if specified) is present and meets the design criteria.

Pass

Slab / membrane condition (is membrane clear of debris or insulation): Can membrane be fully seen and photographed – ask contractor to remove an debris so membrane can be fully seen an inspected – this is a requirement of NHBC and local authorities.

Pass

External Wall Air bricks: Numbers, size. positions as design drawing? (Minimum of 3 walls)

Pass



Photo 78

Photo 79



Plot Inspection 5 - 100%

100%

Plot Number

59

Type of Development: Other add note

House

Gas Characteristic Situation

CS2

Foundation Type: Other add note

Other

Beam and block

Gas Membrane Type: Manufacturer, gauge, and colour.

Visqueen blue

Gas Membrane Condition: Open punctures, tears, rips, stretching, Presence of debris, Repairs, Signs of weakness such as raised or sunken indentations, Protection plan in place to restrict access to lain gas membrane? IF FAIL DESCRIPTION IN ACTIONS AND PHOTOS REQUIRED

Pass

Laps, welds, and joints seals: Joints lapped and sealed in accordance with manufacturer's requirements/ specification? Minimum overlap insured? Sections taped twice? Are welds complete? Appropriate joining/double-sided tape used, Folds running in line with joints? (no joints cutting across folds)

Pass

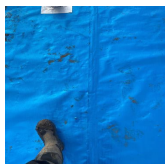


Photo 80



Photo 81



Photo 82



Photo 83

Service entries seals: Top hats seal arrangements fixed around service entries? Use of Jubilee clips?

Yes



Photo 84



Photo 85

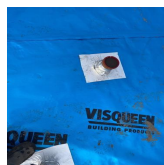


Photo 86



Photo 87

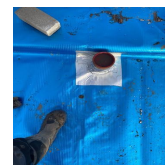


Photo 88



Photo 89

Type of joints/ Lapping

Welded

Corners / Internal joints: Check all corners are correctly formed or contractor has used performed corners.

Pass





Photo 90

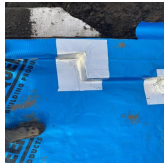


Photo 91



Photo 92



Photo 93



Photo 94



Photo 95



Photo 96



Photo 97



Photo 98



Photo 99

Extent of Coverage: Is the membrane covering the entire plot? Does membrane span over outside walls?

Yes

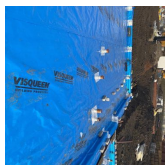


Photo 100



Photo 101



Photo 102

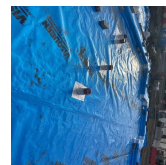


Photo 103



Photo 104

Condition of sub-grade and underside of gas membrane: Check that the subgrade does not contain rough/uneven surfaces, is appropriately clean and that there are no hard/sharp objects. That protective sand blinding or geotextile (if specified) is present and meets the design criteria.

Pass

Slab / membrane condition (is membrane clear of debris or insulation): Can membrane be fully seen and photographed – ask contractor to remove an debris so membrane can be fully seen an inspected – this is a requirement of NHBC and local authorities.

Pass

External Wall Air bricks: Numbers, size. positions as design drawing? (Minimum of 3 walls)

Pass

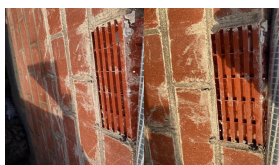


Photo 105

Photo 106

Passive Venting

Sub-floor Void: Is a check possible on future plots (insert Plot number or NO in text box)

No



Appendix



Photo 1



Photo 2



Photo 3



Photo 4





Photo 5



Photo 6



Photo 7



Photo 8





Photo 9



Photo 10



Photo 11



Photo 12





Photo 13



Photo 14



Photo 15



Photo 16





Photo 17



Photo 18



Photo 19



Photo 20





Photo 21



Photo 22



Photo 23



Photo 24





Photo 25



Photo 26



Photo 27



Photo 28





Photo 29



Photo 30



Photo 31



Photo 32





Photo 33



Photo 34



Photo 35



Photo 36





Photo 37

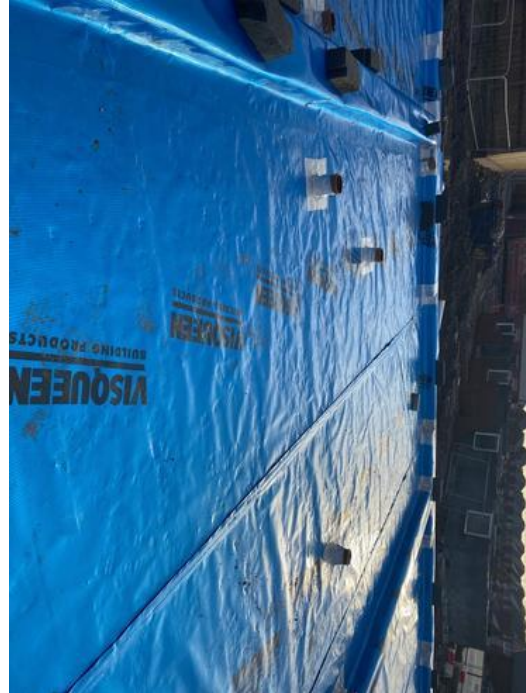


Photo 38



Photo 39



Photo 40





Photo 41



Photo 42



Photo 43

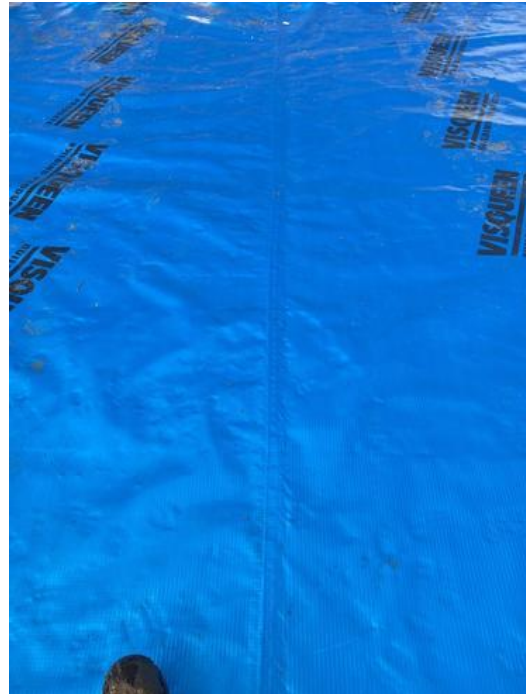


Photo 44





Photo 45

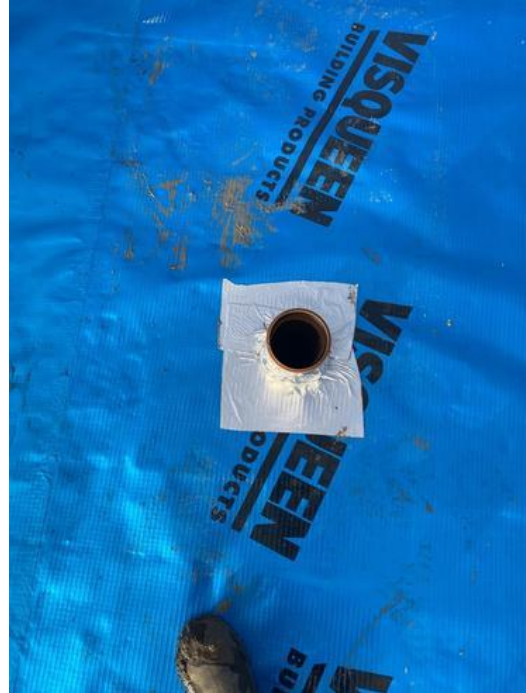


Photo 46



Photo 47



Photo 48





Photo 49



Photo 50



Photo 51



Photo 52





Photo 53



Photo 54



Photo 55



Photo 56





Photo 57



Photo 58



Photo 59



Photo 60





Photo 61



Photo 62



Photo 63



Photo 64





Photo 65

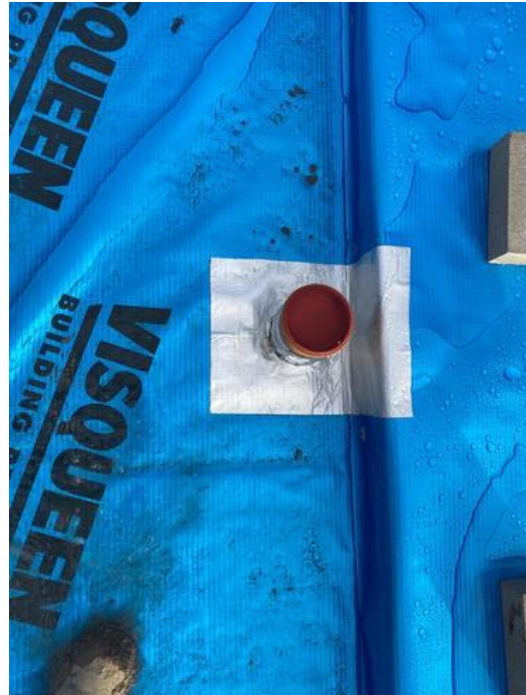


Photo 66



Photo 67



Photo 68





Photo 69



Photo 70



Photo 71



Photo 72





Photo 73



Photo 74



Photo 75



Photo 76





Photo 77



Photo 78



Photo 79



Photo 80





Photo 81



Photo 82



Photo 83



Photo 84





Photo 85



Photo 86



Photo 87



Photo 88





Photo 89



Photo 90



Photo 91



Photo 92





Photo 93



Photo 94



Photo 95



Photo 96





Photo 97



Photo 98



Photo 99



Photo 100





Photo 101



Photo 102



Photo 103



Photo 104





Photo 105



Photo 106



GAS MEMBRANE VALIDATION

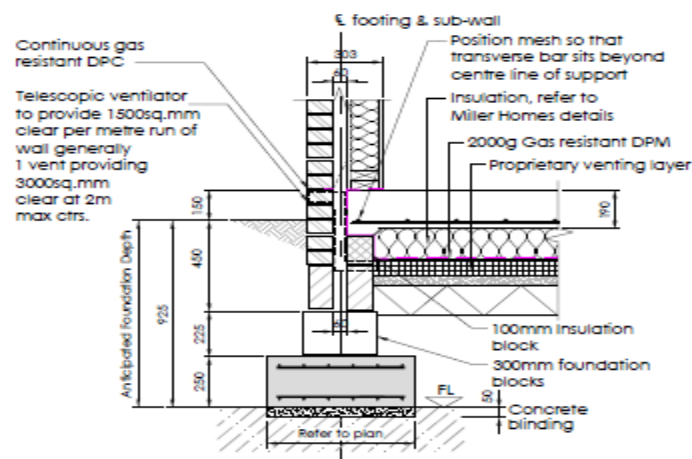
Site Name: Parcel C, Prescott	Project Number: 15-292
Company: Miller Homes	Date: 10-02-2023
Project Manager: R. Walker	E3P Engineer: P. Lavelle
PM Qualifications: BSc (Hons), FGS, AIEMA, AMICE, MEnvSc, CEnv	Engineer Qualifications: Ground Gas Training Feb 2022

Overview:

The membrane comprised a visqueen gas protection membrane (Blue) resistant to radon, carbon dioxide and low levels of methane. E3P can confirm there were no holes or rips at the time of inspection. Upon being laid the membrane is to be covered with a Celotex (closed Cell) floor insulation material which is considered to provide a high degree of protection.

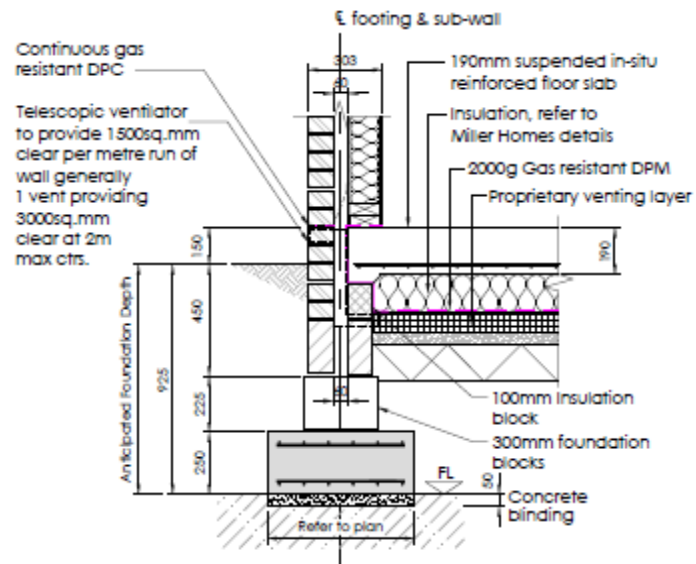
Each unit has a service duct located to the front and outer edge of the property. E3P inspected each one and can confirm that the top-hats have been adequately sealed against the membrane.

Based on the information provided within this report, the site inspections and validation checklists, E3P can confirm that **Plots 60-62** have been installed with gas protection measures in accordance with Characteristic Situation 2 to an acceptable level of workmanship.

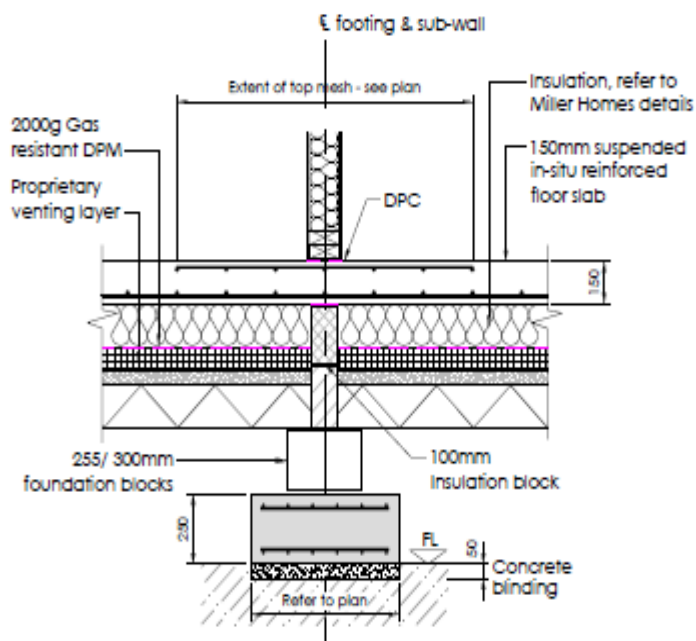


Section 1-1
Scale 1:25





Section 2-2
Scale 1:25



Section 3-3
Scale 1:25



GAS MEMBRANE VALIDATION

Complete

Site Name	Sonnet gate
Location	1 Tenlands Dr Prescot England L34 1BA United Kingdom (53.42233757846121, - 2.8083179385635018)
Project Manager	Roy Walker
Project number	15292
Developer	Miller homes
Site representative Signature	G Kenyon 10 Feb 2023 12:35 PM GMT
Conducted on	10 Feb 2023 12:18 PM GMT
Prepared by	Patrick Lavelle



Inspection Gas Membrane

Plot Inspection

Plot Inspection 1

Plot Number

60



Photo 1

Type of Development: Other add note

House

Foundation Type: Other add note

Suspended Floor

Gas Membrane Type: Manufacturer, gauge, and colour.

Blue visqueen building products



Photo 2

Photo 3

Gas Membrane Condition: Open punctures, tears, rips, stretching, Presence of debris, Repairs, Signs of weakness such as raised or sunken indentations, Protection plan in place to restrict access to lain gas membrane? IF FAIL DESCRIPTION IN ACTIONS AND PHOTOS REQUIRED

Pass



Photo 4



Photo 5



Photo 6



Photo 7

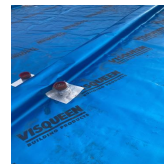


Photo 8



Photo 9



Photo 10



Photo 11



Laps, welds, and joints seals: Joints lapped and sealed in accordance with manufacturer's requirements/ specification? Minimum overlap insured? Sections taped twice? Are welds complete? Appropriate joining/double-sided tape used, Folds running in line with joints? (no joints cutting across folds)

Pass

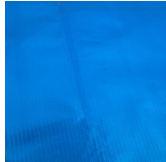


Photo 12

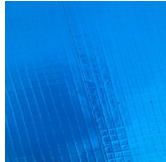


Photo 13



Photo 14



Photo 15

Service entries seals: Top hats seal arrangements fixed around service entries? Use of Jubilee clips?

Yes

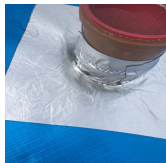


Photo 16



Photo 17

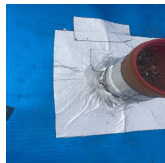


Photo 18

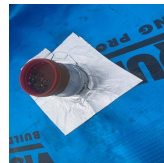


Photo 19



Photo 20



Photo 21



Photo 22

Type of joints/ Lapping

Welded

Corners / Internal joints: Check all corners are correctly formed or contractor has used performed corners.

Pass



Photo 23



Photo 24



Photo 25



Photo 26



Photo 27



Photo 28



Photo 29



Photo 30

Extent of Coverage: Is the membrane covering the entire plot? Does membrane span over outside walls?

Yes





Photo 31

Photo 32

Photo 33

Condition of sub-grade and underside of gas membrane: Check that the subgrade does not contain rough/uneven surfaces, is appropriately clean and that there are no hard/sharp objects. That protective sand blinding or geotextile (if specified) is present and meets the design criteria.

Pass



Photo 34

Slab / membrane condition (is membrane clear of debris or insulation): Can membrane be fully seen and photographed – ask contractor to remove an debris so membrane can be fully seen an inspected – this is a requirement of NHBC and local authorities.

Pass

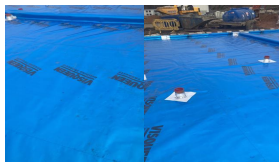


Photo 35

Photo 36

External Wall Air bricks: Numbers, size. positions as design drawing? (Minimum of 3 walls)

Pass



Photo 37

Photo 38

Photo 39



Plot Inspection 2

Plot Number

61



Photo 40

Type of Development: Other add note

House

Foundation Type: Other add note

Suspended Floor

Gas Membrane Type: Manufacturer, gauge, and colour.

Blue visqueen building products

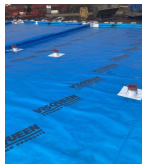


Photo 41

Gas Membrane Condition: Open punctures, tears, rips, stretching, Presence of debris, Repairs, Signs of weakness such as raised or sunken indentations, Protection plan in place to restrict access to lain gas membrane? IF FAIL DESCRIPTION IN ACTIONS AND PHOTOS REQUIRED

Pass



Photo 42



Photo 43



Photo 44



Photo 45



Photo 46



Photo 47

Laps, welds, and joints seals: Joints lapped and sealed in accordance with manufacturer's requirements/ specification? Minimum overlap insured? Sections taped twice? Are welds complete? Appropriate joining/double-sided tape used, Folds running in line with joints? (no joints cutting across folds)

Pass

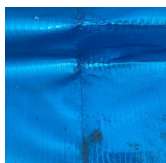


Photo 48



Photo 49



Photo 50

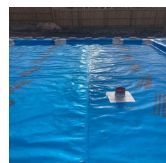


Photo 51



Service entries seals: Top hats seal arrangements fixed around service entries? Use of Jubilee clips?

Yes



Photo 52

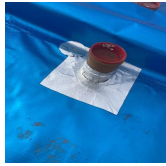


Photo 53

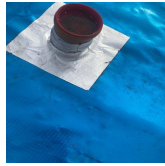


Photo 54



Photo 55

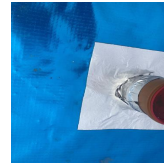


Photo 56



Photo 57

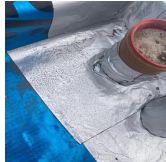


Photo 58

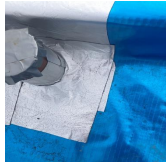


Photo 59

Type of joints/ Lapping

Welded

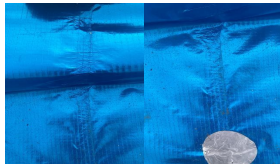


Photo 60

Photo 61

Corners / Internal joints: Check all corners are correctly formed or contractor has used performed corners.

Pass



Photo 62



Photo 63



Photo 64



Photo 65



Photo 66



Photo 67



Photo 68

Extent of Coverage: Is the membrane covering the entire plot? Does membrane span over outside walls?

Yes



Photo 69

Photo 70



Condition of sub-grade and underside of gas membrane: Check that the subgrade does not contain rough/uneven surfaces, is appropriately clean and that there are no hard/sharp objects. That protective sand blinding or geotextile (if specified) is present and meets the design criteria.



Photo 71

Pass

Slab / membrane condition (is membrane clear of debris or insulation): Can membrane be fully seen and photographed – ask contractor to remove an debris so membrane can be fully seen an inspected – this is a requirement of NHBC and local authorities.

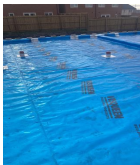


Photo 72

Pass

External Wall Air bricks: Numbers, size. positions as design drawing? (Minimum of 3 walls)



Photo 73

Photo 74

Photo 75

Pass



Plot Inspection 3

Plot Number

62



Photo 76

Type of Development: Other add note

House

Foundation Type: Other add note

Suspended Floor

Gas Membrane Type: Manufacturer, gauge, and colour.

Blue visqueen building products



Photo 77

Photo 78

Gas Membrane Condition: Open punctures, tears, rips, stretching, Presence of debris, Repairs, Signs of weakness such as raised or sunken indentations, Protection plan in place to restrict access to lain gas membrane? IF FAIL DESCRIPTION IN ACTIONS AND PHOTOS REQUIRED

Pass



Photo 79



Photo 80



Photo 81



Photo 82

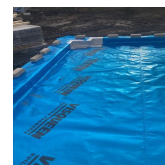


Photo 83



Photo 84



Photo 85

Laps, welds, and joints seals: Joints lapped and sealed in accordance with manufacturer's requirements/ specification? Minimum overlap insured? Sections taped twice? Are welds complete? Appropriate joining/double-sided tape used, Folds running in line with joints? (no joints cutting across folds)

Pass



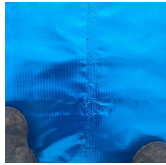


Photo 86



Photo 87



Photo 88

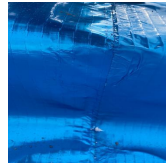


Photo 89

Service entries seals: Top hats seal arrangements fixed around service entries? Use of Jubilee clips?

Yes

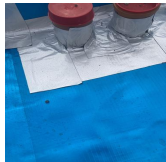


Photo 90

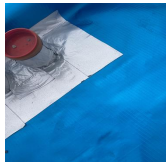


Photo 91



Photo 92



Photo 93



Photo 94



Photo 95



Photo 96

Type of joints/ Lapping

Welded

Corners / Internal joints: Check all corners are correctly formed or contractor has used performed corners.

Pass



Photo 97



Photo 98



Photo 99



Photo 100



Photo 101



Photo 102



Photo 103



Photo 104



Photo 105



Photo 106



Photo 107

Extent of Coverage: Is the membrane covering the entire plot? Does membrane span over outside walls?

Yes



Photo 108



Photo 109



Condition of sub-grade and underside of gas membrane: Check that the subgrade does not contain rough/uneven surfaces, is appropriately clean and that there are no hard/sharp objects. That protective sand blinding or geotextile (if specified) is present and meets the design criteria.



Photo 110

Pass

Slab / membrane condition (is membrane clear of debris or insulation): Can membrane be fully seen and photographed – ask contractor to remove an debris so membrane can be fully seen an inspected – this is a requirement of NHBC and local authorities.



Photo 111

Photo 112

Photo 113

Pass

External Wall Air bricks: Numbers, size. positions as design drawing? (Minimum of 3 walls)



Photo 114

Photo 115

Photo 116

Pass

Passive Venting

Sub-floor Void: Is a check possible on future plots (insert Plot number or NO in text box)

No



Appendix



Photo 1



Photo 2



Photo 3



Photo 4





Photo 5



Photo 6



Photo 7



Photo 8





Photo 9



Photo 10



Photo 11



Photo 12



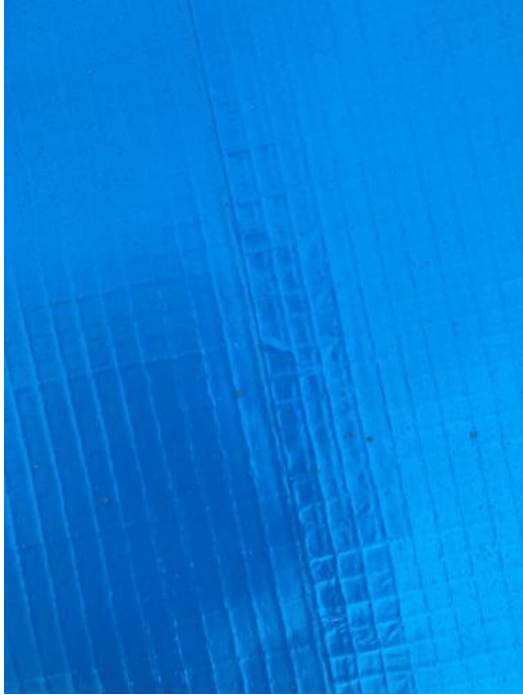


Photo 13



Photo 14

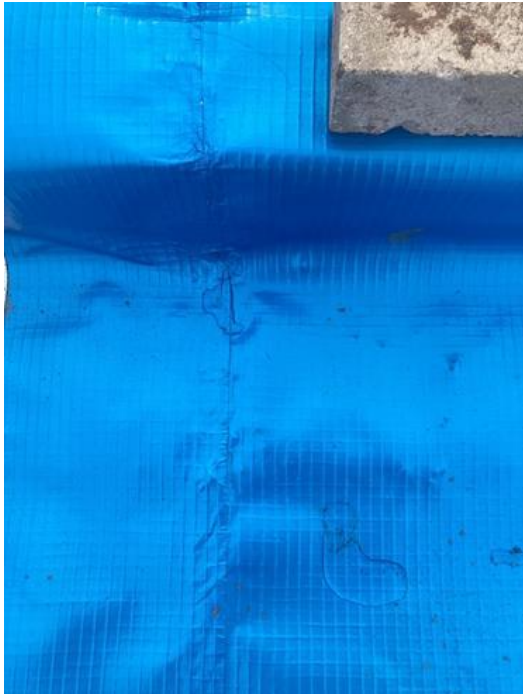


Photo 15



Photo 16





Photo 17



Photo 18



Photo 19



Photo 20





Photo 21



Photo 22



Photo 23



Photo 24





Photo 25



Photo 26



Photo 27



Photo 28





Photo 29



Photo 30



Photo 31



Photo 32





Photo 33



Photo 34



Photo 35



Photo 36





Photo 37



Photo 38



Photo 39



Photo 40





Photo 41



Photo 42



Photo 43



Photo 44





Photo 45



Photo 46

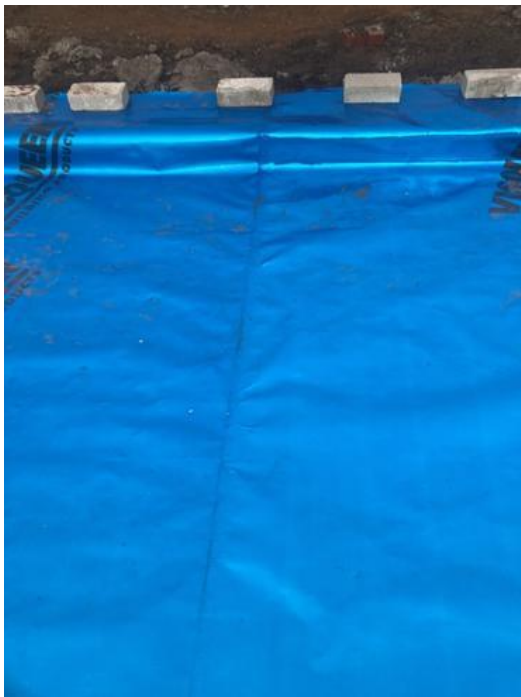


Photo 47

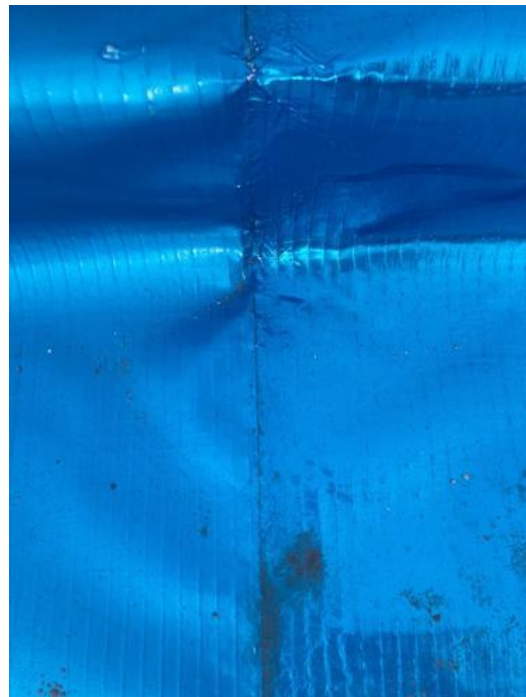


Photo 48





Photo 49



Photo 50

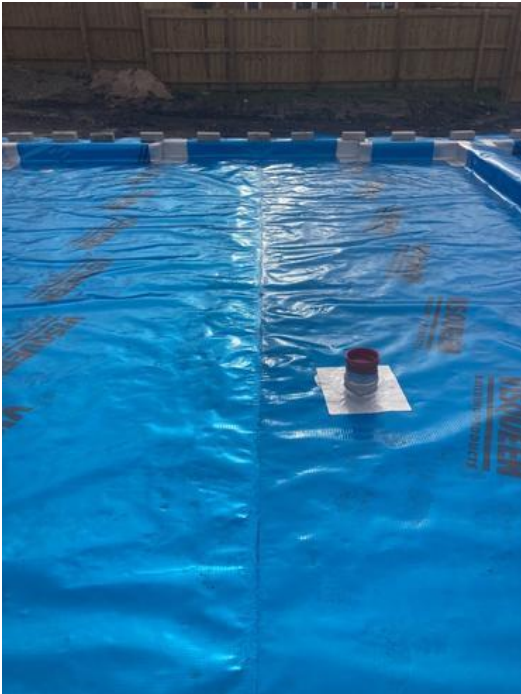


Photo 51



Photo 52





Photo 53



Photo 54



Photo 55

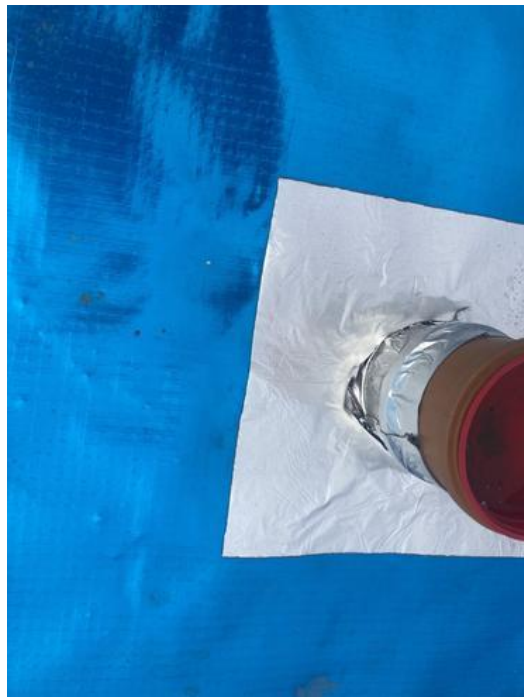


Photo 56





Photo 57



Photo 58



Photo 59

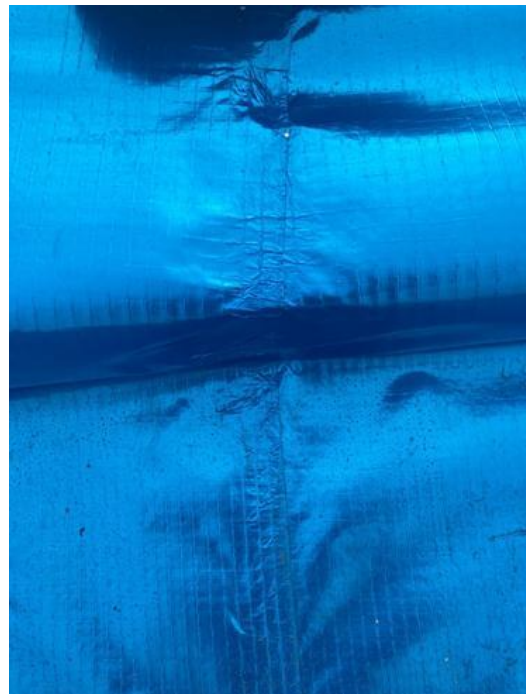


Photo 60





Photo 61



Photo 62



Photo 63



Photo 64





Photo 65



Photo 66



Photo 67



Photo 68





Photo 69



Photo 70



Photo 71



Photo 72





Photo 73



Photo 74



Photo 75



Photo 76





Photo 77



Photo 78

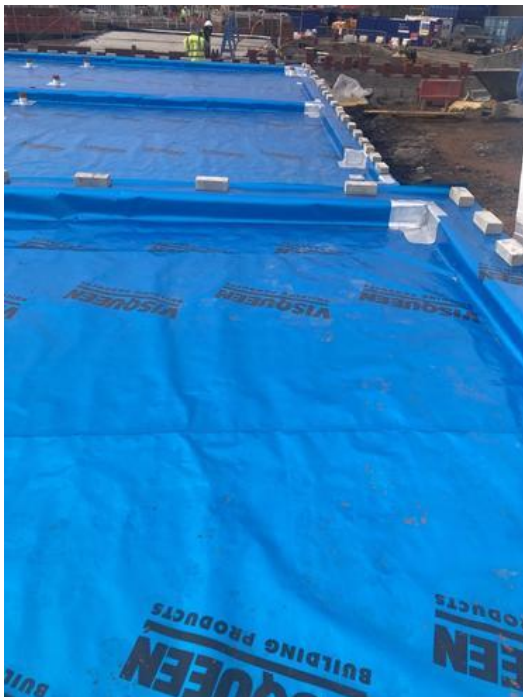


Photo 79

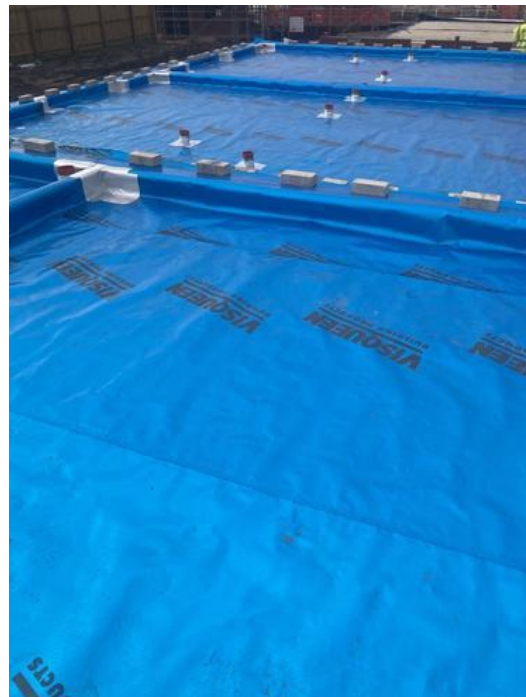


Photo 80





Photo 81



Photo 82



Photo 83



Photo 84





Photo 85



Photo 86



Photo 87



Photo 88



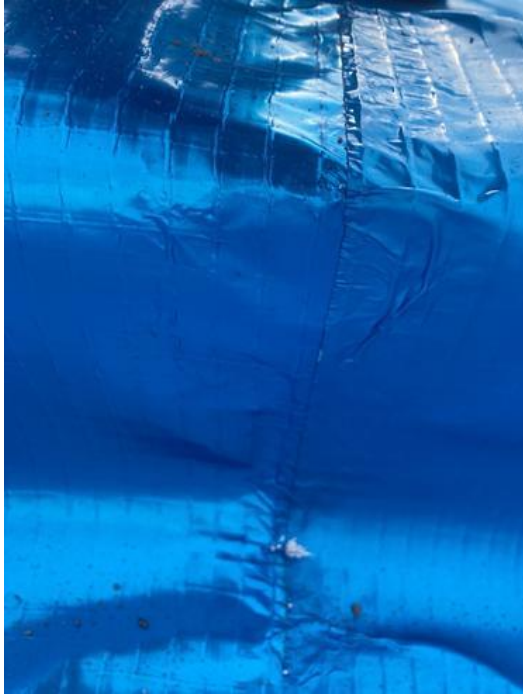


Photo 89



Photo 90

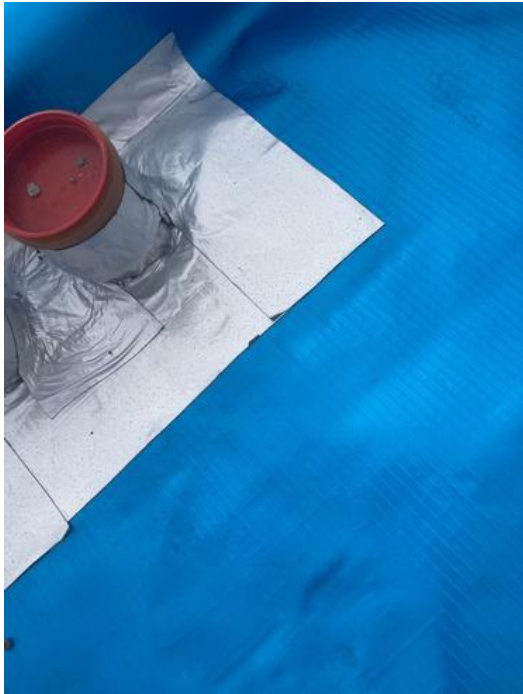


Photo 91



Photo 92





Photo 93



Photo 94



Photo 95



Photo 96





Photo 97



Photo 98



Photo 99



Photo 100





Photo 101



Photo 102



Photo 103



Photo 104





Photo 105



Photo 106



Photo 107



Photo 108





Photo 109



Photo 110



Photo 111



Photo 112





Photo 113



Photo 114



Photo 115



Photo 116



GAS MEMBRANE VALIDATION

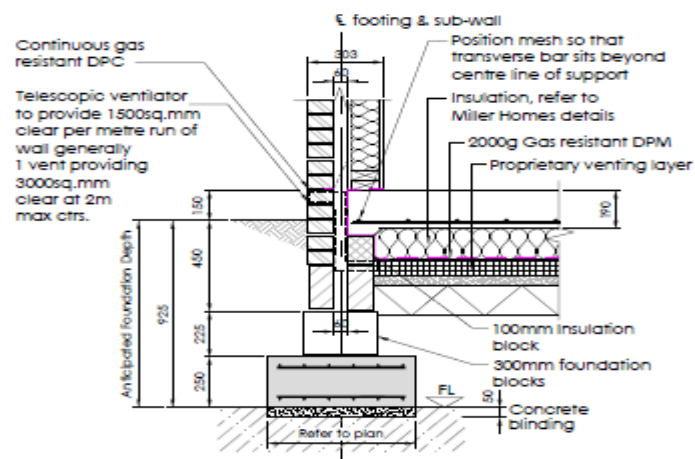
Site Name: Parcel C, Prescott	Project Number: 15-292
Company: Miller Homes	Date: 23-02-2023
Project Manager: R. Walker	E3P Engineer: T. Newall
PM Qualifications: BSc (Hons), FGS, AIEMA, AMICE, MEnvSc, CEnv	Engineer Qualifications: Ground Gas Training Feb 2022

Overview:

The membrane comprised a visqueen gas protection membrane (Blue) resistant to radon, carbon dioxide and low levels of methane. E3P can confirm there were no holes or rips at the time of inspection. Upon being laid the membrane is to be covered with a Celotex (closed Cell) floor insulation material which is considered to provide a high degree of protection.

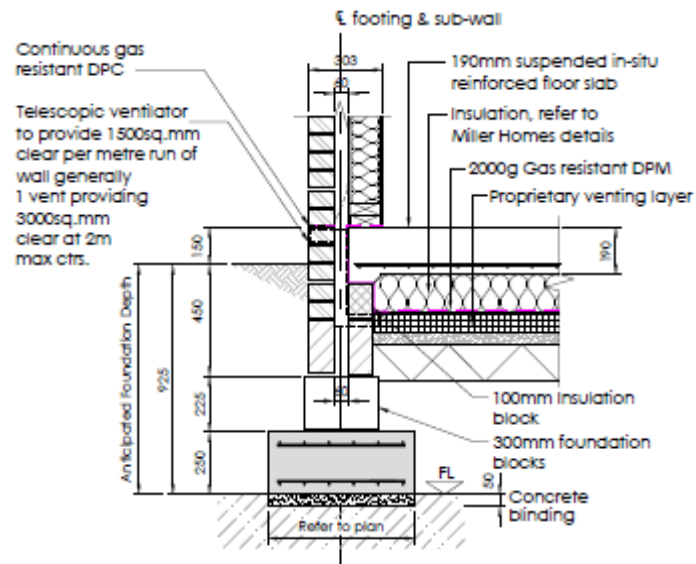
Each unit has a service duct located to the front and outer edge of the property. E3P inspected each one and can confirm that the top-hats have been adequately sealed against the membrane.

Based on the information provided within this report, the site inspections and validation checklists, E3P can confirm that **Plots 65-67** have been installed with gas protection measures in accordance with Characteristic Situation 2 to an acceptable level of workmanship.

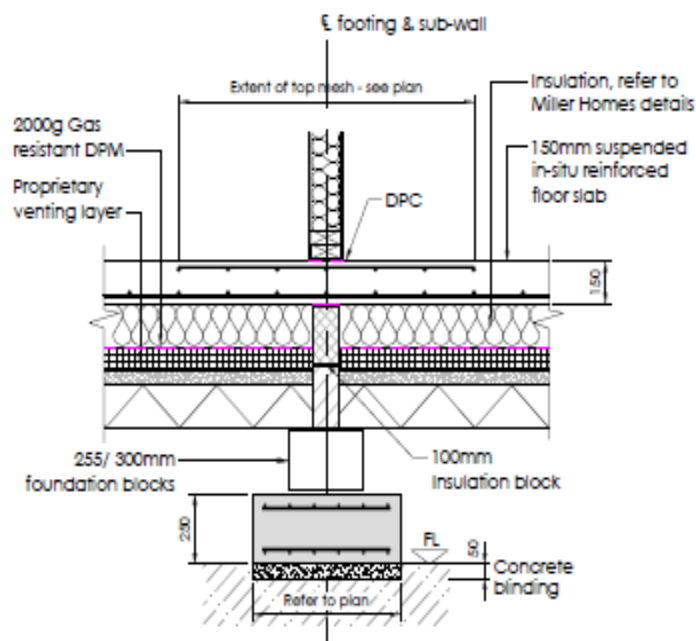


Section 1-1
Scale 1:25





Section 2-2
Scale 1:25



Section 3-3
Scale 1:25



GAS MEMBRANE VALIDATION

Complete

Site Name	Sonnet gate
Location	1 Tenlands Dr Prescot England L34 1BA United Kingdom (53.42240944824424, - 2.808244850789456)
Project Manager	Roy Walker
Project number	15292
Developer	Miller homes
Site representative Signature	23 Feb 2023 9:21 AM GMT
Conducted on	23 Feb 2023 9:04 AM GMT
Prepared by	Tobey Newall



Inspection Gas Membrane

Plot Inspection

Plot Inspection 1

Plot Number 65

Type of Development: Other add note

House

Foundation Type: Other add note

Suspended Floor

Gas Membrane Type: Manufacturer, gauge, and colour.

Blue visqueen

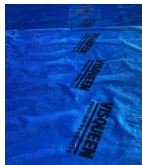


Photo 1

Gas Membrane Condition: Open punctures, tears, rips, stretching, Presence of debris, Repairs, Signs of weakness such as raised or sunken indentations, Protection plan in place to restrict access to lain gas membrane? IF FAIL DESCRIPTION IN ACTIONS AND PHOTOS REQUIRED

Pass



Photo 2

Laps, welds, and joints seals: Joints lapped and sealed in accordance with manufacturer's requirements/ specification? Minimum overlap insured? Sections taped twice? Are welds complete? Appropriate joining/double-sided tape used, Folds running in line with joints? (no joints cutting across folds)

Pass



Photo 3

Photo 4

Service entries seals: Top hats seal arrangements fixed around service entries? Use of Jubilee clips?

Yes



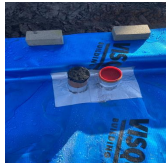


Photo 5



Photo 6

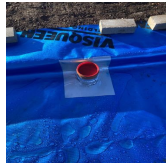


Photo 7

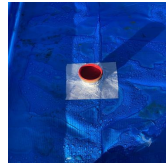


Photo 8

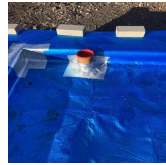


Photo 9

Type of joints/ Lapping

Welded

Corners / Internal joints: Check all corners are correctly formed or contractor has used performed corners.

Pass

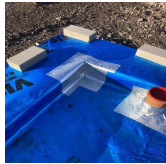


Photo 10



Photo 11



Photo 12

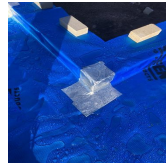


Photo 13

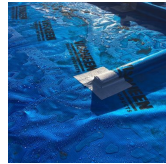


Photo 14



Photo 15

**Extent of Coverage: Is the membrane covering the entire plot?
Does membrane span over outside walls?**

Yes



Photo 16

Condition of sub-grade and underside of gas membrane: Check that the subgrade does not contain rough/uneven surfaces, is appropriately clean and that there are no hard/sharp objects. That protective sand blinding or geotextile (if specified) is present and meets the design criteria.

Pass

Slab / membrane condition (is membrane clear of debris or insulation): Can membrane be fully seen and photographed – ask contractor to remove an debris so membrane can be fully seen an inspected – this is a requirement of NHBC and local authorities.

Pass



Photo 17

External Wall Air bricks: Numbers, size. positions as design drawing? (Minimum of 3 walls)

Pass





Photo 18 Photo 19



Plot Inspection 2

Plot Number 66

Type of Development: Other add note

House

Foundation Type: Other add note

Suspended Floor

Gas Membrane Type: Manufacturer, gauge, and colour.

Blue visqueen



Photo 20

Gas Membrane Condition: Open punctures, tears, rips, stretching, Presence of debris, Repairs, Signs of weakness such as raised or sunken indentations, Protection plan in place to restrict access to lain gas membrane? IF FAIL DESCRIPTION IN ACTIONS AND PHOTOS REQUIRED

Pass



Photo 21 Photo 22

Laps, welds, and joints seals: Joints lapped and sealed in accordance with manufacturer's requirements/ specification? Minimum overlap insured? Sections taped twice? Are welds complete? Appropriate joining/double-sided tape used, Folds running in line with joints? (no joints cutting across folds)

Pass



Photo 23

Service entries seals: Top hats seal arrangements fixed around service entries? Use of Jubilee clips?

Yes

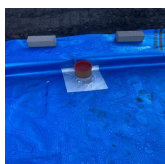


Photo 24



Photo 25



Photo 26



Photo 27



Type of joints/ Lapping

Welded



Photo 28 Photo 29

Corners / Internal joints: Check all corners are correctly formed or contractor has used performed corners.

Pass

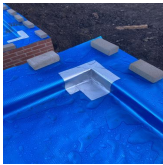


Photo 30



Photo 31

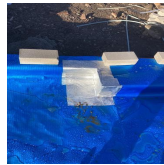


Photo 32



Photo 33



Photo 34

**Extent of Coverage: Is the membrane covering the entire plot?
Does membrane span over outside walls?**

Yes



Photo 35

Condition of sub-grade and underside of gas membrane: Check that the subgrade does not contain rough/uneven surfaces, is appropriately clean and that there are no hard/sharp objects. That protective sand blinding or geotextile (if specified) is present and meets the design criteria.

Pass

Slab / membrane condition (is membrane clear of debris or insulation): Can membrane be fully seen and photographed – ask contractor to remove an debris so membrane can be fully seen an inspected – this is a requirement of NHBC and local authorities.

Pass



Photo 36

External Wall Air bricks: Numbers, size. positions as design drawing? (Minimum of 3 walls)

Pass





Photo 37 Photo 38



Plot Inspection 3

Plot Number 67

Type of Development: Other add note House

Foundation Type: Other add note Suspended Floor

Gas Membrane Type: Manufacturer, gauge, and colour. Blue visqueen



Photo 39

Gas Membrane Condition: Open punctures, tears, rips, stretching, Presence of debris, Repairs, Signs of weakness such as raised or sunken indentations, Protection plan in place to restrict access to lain gas membrane? IF FAIL DESCRIPTION IN ACTIONS AND PHOTOS REQUIRED

Pass

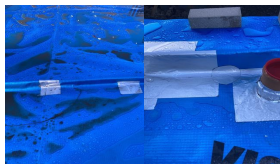


Photo 40 Photo 41

Laps, welds, and joints seals: Joints lapped and sealed in accordance with manufacturer's requirements/ specification? Minimum overlap insured? Sections taped twice? Are welds complete? Appropriate joining/double-sided tape used, Folds running in line with joints? (no joints cutting across folds)

Pass

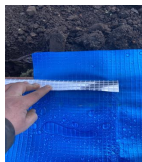


Photo 42

Service entries seals: Top hats seal arrangements fixed around service entries? Use of Jubilee clips?

Yes

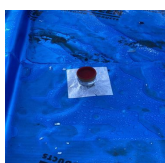


Photo 43



Photo 44



Photo 45



Photo 46



Type of joints/ Lapping

Welded



Photo 47 Photo 48

Corners / Internal joints: Check all corners are correctly formed or contractor has used performed corners.

Pass

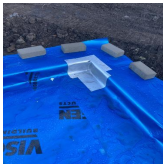


Photo 49

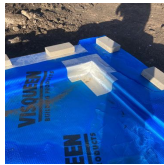


Photo 50

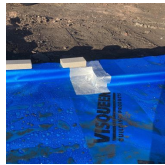


Photo 51



Photo 52



Photo 53



Photo 54



Photo 55

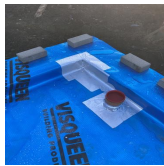


Photo 56

**Extent of Coverage: Is the membrane covering the entire plot?
Does membrane span over outside walls?**

Yes



Photo 57

Condition of sub-grade and underside of gas membrane: Check that the subgrade does not contain rough/uneven surfaces, is appropriately clean and that there are no hard/sharp objects. That protective sand blinding or geotextile (if specified) is present and meets the design criteria.

Pass

Slab / membrane condition (is membrane clear of debris or insulation): Can membrane be fully seen and photographed – ask contractor to remove an debris so membrane can be fully seen an inspected – this is a requirement of NHBC and local authorities.

Pass



Photo 58



External Wall Air bricks: Numbers, size. positions as design drawing? (Minimum of 3 walls)

Pass



Photo 59 Photo 60

Passive Venting

Sub-floor Void: Is a check possible on future plots (insert Plot number or NO in text box)

NO



Appendix



Photo 1



Photo 2



Photo 3



Photo 4



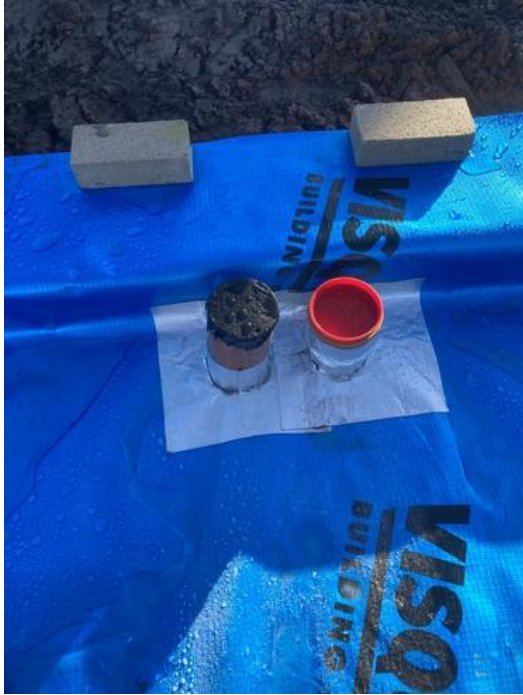


Photo 5



Photo 6



Photo 7



Photo 8





Photo 9



Photo 10



Photo 11



Photo 12



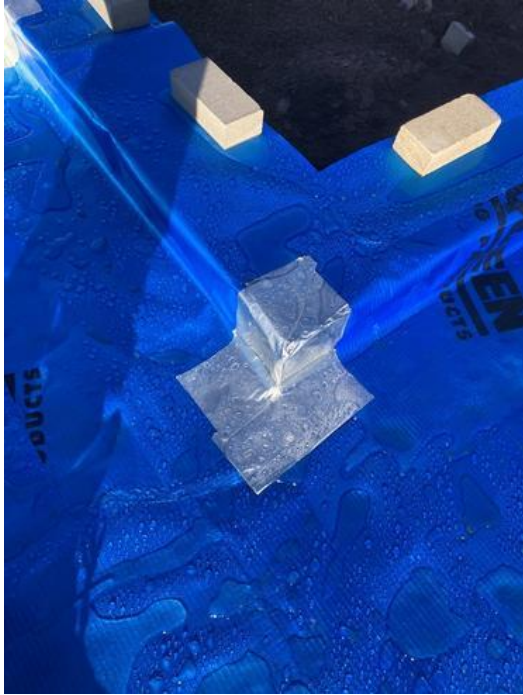


Photo 13

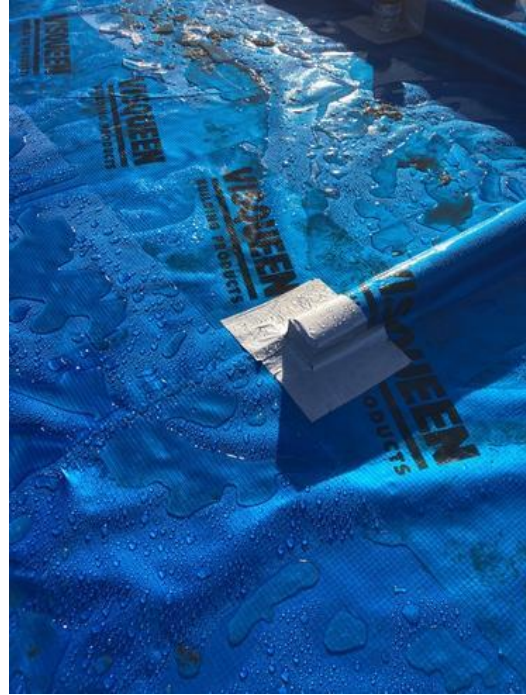


Photo 14



Photo 15



Photo 16





Photo 17



Photo 18



Photo 19



Photo 20





Photo 21



Photo 22



Photo 23



Photo 24





Photo 25



Photo 26



Photo 27



Photo 28





Photo 29



Photo 30



Photo 31

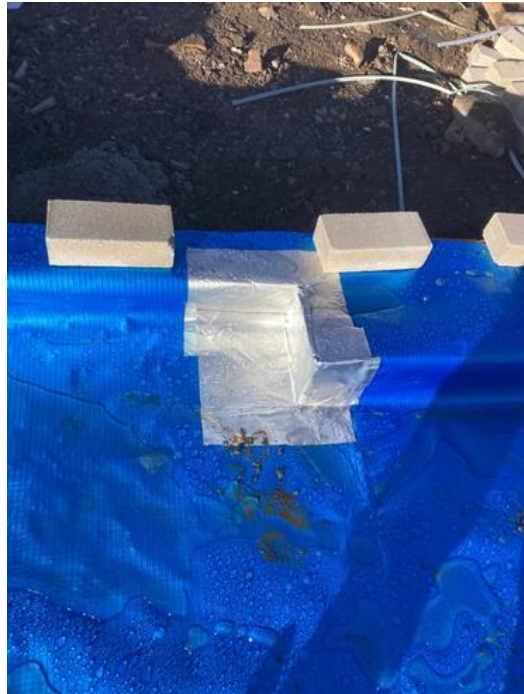


Photo 32





Photo 33



Photo 34



Photo 35



Photo 36





Photo 37



Photo 38



Photo 39



Photo 40





Photo 41

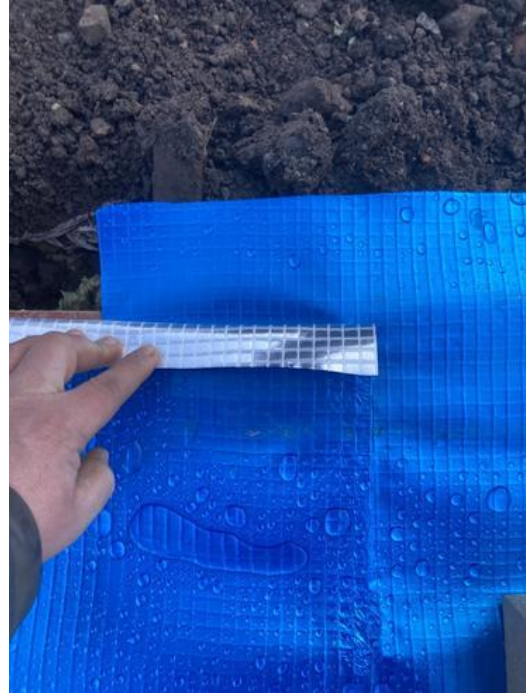


Photo 42



Photo 43



Photo 44





Photo 45



Photo 46



Photo 47



Photo 48





Photo 49



Photo 50



Photo 51



Photo 52





Photo 53



Photo 54



Photo 55

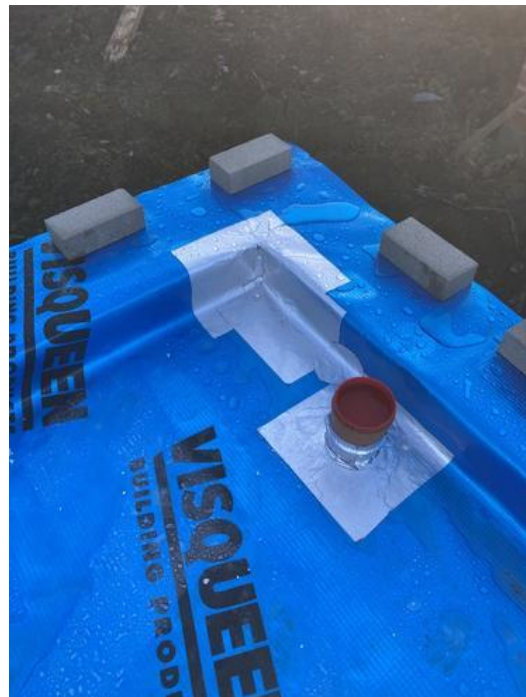


Photo 56





Photo 57



Photo 58



Photo 59



Photo 60



GAS MEMBRANE VALIDATION

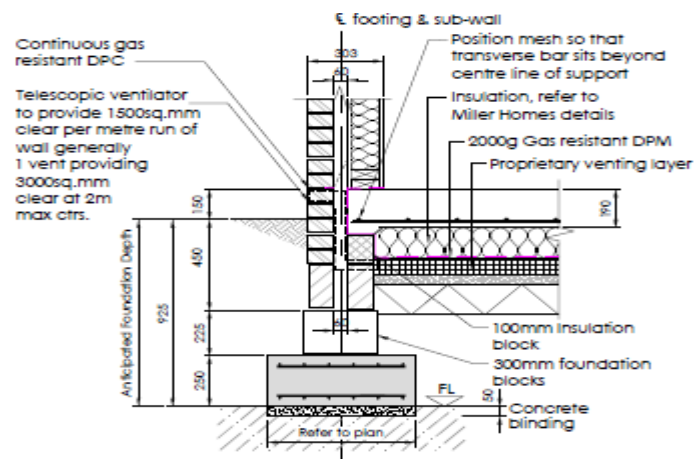
Site Name: Parcel C, Prescott	Project Number: 15-292
Company: Miller Homes	Date: 27-03-2023
Project Manager: R. Walker	E3P Engineer: P.Lavelle
PM Qualifications: BSc (Hons), FGS, AIEMA, AMICE, MIEEnvSc, CEnv	Engineer Qualifications: Ground Gas Training Feb 2022

Overview:

The membrane comprised a visqueen gas protection membrane (Blue) resistant to radon, carbon dioxide and low levels of methane. E3P can confirm there were no holes or rips at the time of inspection. Upon being laid the membrane is to be covered with a Celotex (closed Cell) floor insulation material which is considered to provide a high degree of protection.

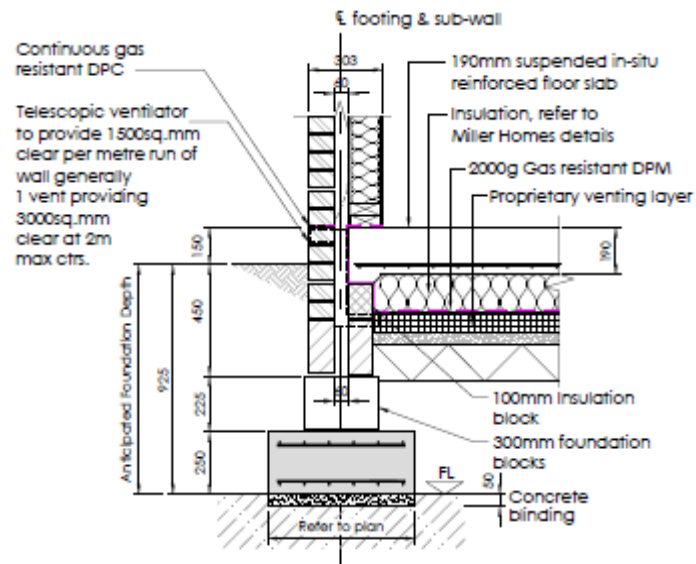
Each unit has a service duct located to the front and outer edge of the property. E3P inspected each one and can confirm that the top-hats have been adequately sealed against the membrane.

Based on the information provided within this report, the site inspections and validation checklists, E3P can confirm that **Plots 63-64** have been installed with gas protection measures in accordance with Characteristic Situation 2 to an acceptable level of workmanship.

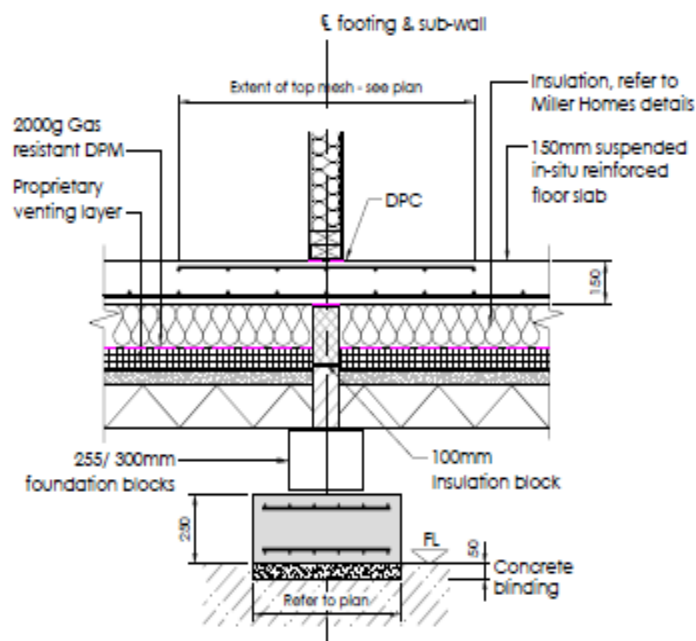


Section 1-1
Scale 1:25





Section 2-2
Scale 1:25



Section 3-3
Scale 1:25



GAS MEMBRANE VALIDATION

Complete

Site Name	Sonnet gate
Location	14 Tenlands Dr Prescot England L34 1BA United Kingdom (53.421927061430985, - 2.808021315556545)
Project Manager	Roy Walker
Project number	15292
Developer	Miller's homes
Site representative Signature	 G kenyon 27 Mar 2023 11:31 AM BST
Conducted on	27 Mar 2023 11:17 AM BST
Prepared by	Patrick Lavelle



Inspection Gas Membrane

Plot Inspection

Plot Inspection 1

Plot Number

63

Type of Development: Other add note

House



Photo 1

Foundation Type: Other add note

Suspended Floor

Gas Membrane Type: Manufacturer, gauge, and colour.

Blue visqueen building products

Gas Membrane Condition: Open punctures, tears, rips, stretching, Presence of debris, Repairs, Signs of weakness such as raised or sunken indentations, Protection plan in place to restrict access to lain gas membrane? IF FAIL DESCRIPTION IN ACTIONS AND PHOTOS REQUIRED

Pass

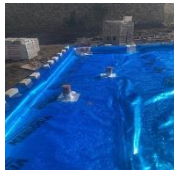


Photo 2



Photo 3



Photo 4



Photo 5



Photo 6



Photo 7

Laps, welds, and joints seals: Joints lapped and sealed in accordance with manufacturer's requirements/ specification? Minimum overlap insured? Sections taped twice? Are welds complete? Appropriate joining/double-sided tape used, Folds running in line with joints? (no joints cutting across folds)

Pass



Photo 8



Photo 9



Photo 10



Photo 11

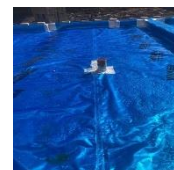


Photo 12



Service entries seals: Top hats seal arrangements fixed around service entries? Use of Jubilee clips?

Yes



Photo 13



Photo 14



Photo 15



Photo 16



Photo 17



Photo 18



Photo 19



Photo 20



Photo 21

Type of joints/ Lapping

Welded



Photo 22



Photo 23



Photo 24



Photo 25

Corners / Internal joints: Check all corners are correctly formed or contractor has used preformed corners.

Pass



Photo 26



Photo 27



Photo 28



Photo 29

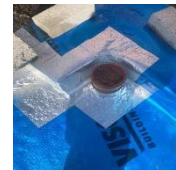


Photo 30



Photo 31



Photo 32



Photo 33

Extent of Coverage: Is the membrane covering the entire plot? Does membrane span over outside walls?

Yes





Photo 34

Photo 35

Photo 36

Condition of sub-grade and underside of gas membrane: Check that the subgrade does not contain rough/uneven surfaces, is appropriately clean and that there are no hard/sharp objects. That protective sand blinding or geotextile (if specified) is present and meets the design criteria.



Photo 37

Pass

Slab / membrane condition (is membrane clear of debris or insulation): Can membrane be fully seen and photographed – ask contractor to remove an debris so membrane can be fully seen an inspected – this is a requirement of NHBC and local authorities.



Photo 38



Photo 39



Photo 40



Photo 41

Pass

External Wall Air bricks: Numbers, size. positions as design drawing? (Minimum of 3 walls)

Didn't have any air bricks. Holes left ready for install

Pass



Plot Number

64

Type of Development: Other add note

House



Photo 42

Foundation Type: Other add note

Suspended Floor

Gas Membrane Type: Manufacturer, gauge, and colour.

Blue visqueen building products



Photo 43

Gas Membrane Condition: Open punctures, tears, rips, stretching, Presence of debris, Repairs, Signs of weakness such as raised or sunken indentations, Protection plan in place to restrict access to lain gas membrane? IF FAIL DESCRIPTION IN ACTIONS AND PHOTOS REQUIRED

Pass



Photo 44

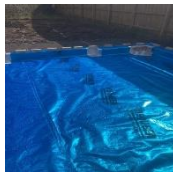


Photo 45



Photo 46



Photo 47



Photo 48



Photo 49

Laps, welds, and joints seals: Joints lapped and sealed in accordance with manufacturer's requirements/ specification? Minimum overlap insured? Sections taped twice? Are welds complete? Appropriate joining/double-sided tape used, Folds running in line with joints? (no joints cutting across folds)

Pass

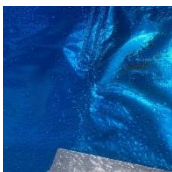


Photo 50



Photo 51



Photo 52



Photo 53



Photo 54



Service entries seals: Top hats seal arrangements fixed around service entries? Use of Jubilee clips?

Yes



Photo 55



Photo 56



Photo 57



Photo 58



Photo 59



Photo 60



Photo 61

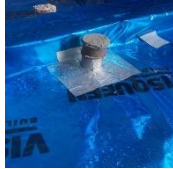


Photo 62

Type of joints/ Lapping

Welded



Photo 63

Photo 64

Photo 65

Corners / Internal joints: Check all corners are correctly formed or contractor has used preformed corners.

Pass

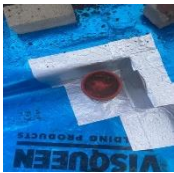


Photo 66

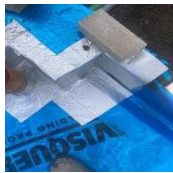


Photo 67



Photo 68

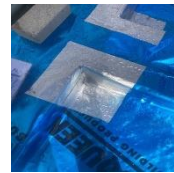


Photo 69



Photo 70



Photo 71



Photo 72



Photo 73

Extent of Coverage: Is the membrane covering the entire plot? Does membrane span over outside walls?

Yes





Photo 74

Photo 75

Condition of sub-grade and underside of gas membrane: Check that the subgrade does not contain rough/uneven surfaces, is appropriately clean and that there are no hard/sharp objects. That protective sand blinding or geotextile (if specified) is present and meets the design criteria.

Pass



Photo 76

Slab / membrane condition (is membrane clear of debris or insulation): Can membrane be fully seen and photographed – ask contractor to remove an debris so membrane can be fully seen an inspected – this is a requirement of NHBC and local authorities.

Pass



Photo 77

External Wall Air bricks: Numbers, size. positions as design drawing? (Minimum of 3 walls)

Pass

Didn't have any air bricks, holes left ready for install



Photo 78

Photo 79

Photo 80

Passive Venting

Sub-floor Void: Is a check possible on future plots (insert Plot number or NO in text box)

No



Media summary



Photo 1



Photo 2



Photo 3



Photo 4





Photo 5



Photo 6



Photo 7



Photo 8





Photo 9



Photo 10



Photo 11



Photo 12





Photo 13



Photo 14



Photo 15



Photo 16



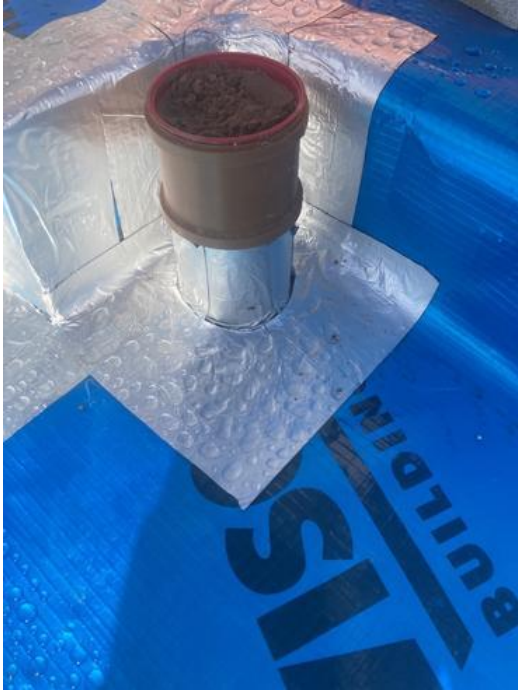


Photo 17



Photo 18



Photo 19



Photo 20





Photo 21



Photo 22



Photo 23



Photo 24





Photo 25



Photo 26



Photo 27



Photo 28





Photo 29



Photo 30



Photo 31



Photo 32





Photo 33



Photo 34



Photo 35



Photo 36





Photo 37



Photo 38



Photo 39



Photo 40





Photo 41



Photo 42



Photo 43



Photo 44





Photo 45



Photo 46

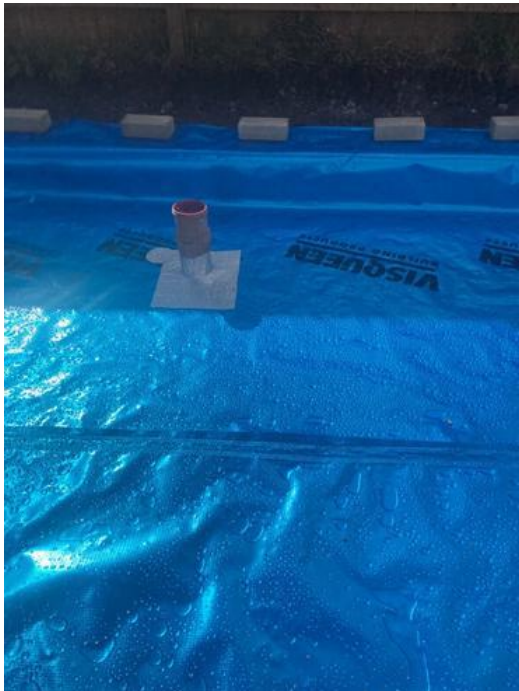


Photo 47



Photo 48





Photo 49



Photo 50



Photo 51



Photo 52





Photo 53



Photo 54



Photo 55



Photo 56





Photo 57

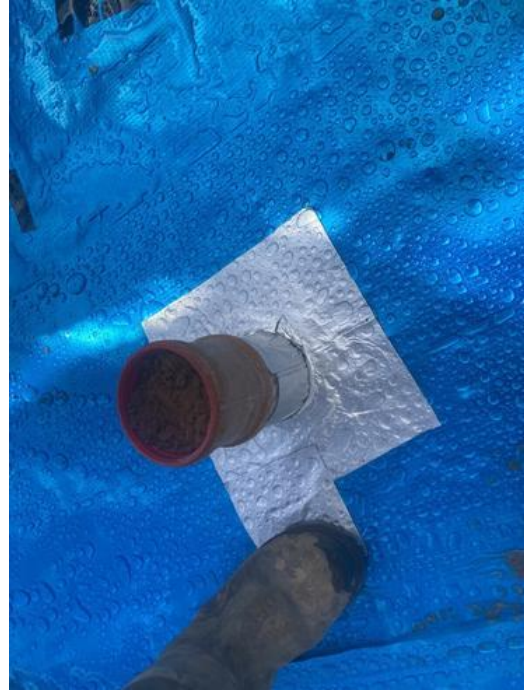


Photo 58



Photo 59



Photo 60





Photo 61

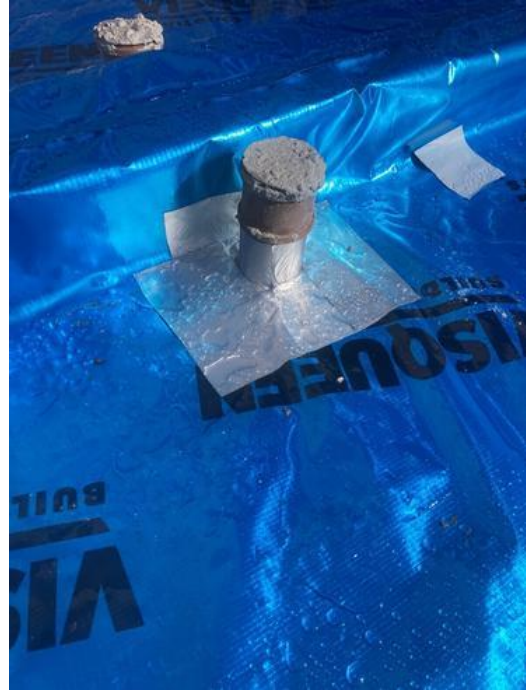


Photo 62



Photo 63



Photo 64





Photo 65



Photo 66



Photo 67



Photo 68





Photo 69



Photo 70



Photo 71



Photo 72





Photo 73



Photo 74



Photo 75



Photo 76





Photo 77



Photo 78



Photo 79



Photo 80



GAS MEMBRANE VALIDATION

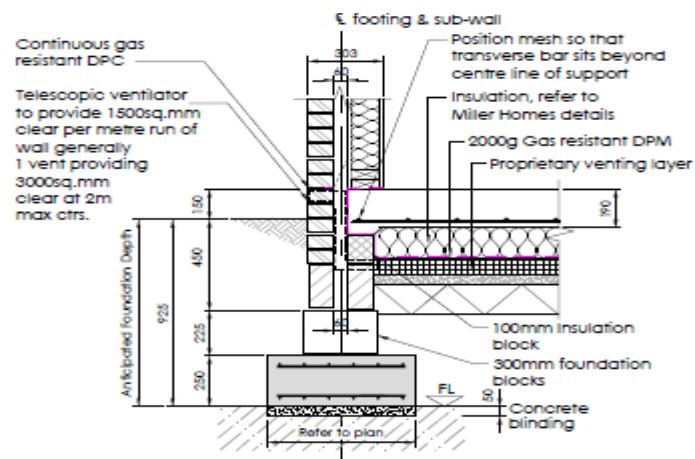
Site Name: Parcel C, Prescott	Project Number: 15-292
Company: Miller Homes	Date: 19-05-2023
Project Manager: R. Walker	E3P Engineer: P. Lavelle
PM Qualifications: BSc (Hons), FGS, AIEMA, AMICE, MIEEnvSc, CEnv	Engineer Qualifications: Ground Gas Training Feb 2022

Overview:

The membrane comprised a visqueen gas protection membrane (Blue) resistant to radon, carbon dioxide and low levels of methane. E3P can confirm there were no holes or rips at the time of inspection. Upon being laid the membrane is to be covered with a Celotex (closed Cell) floor insulation material which is considered to provide a high degree of protection.

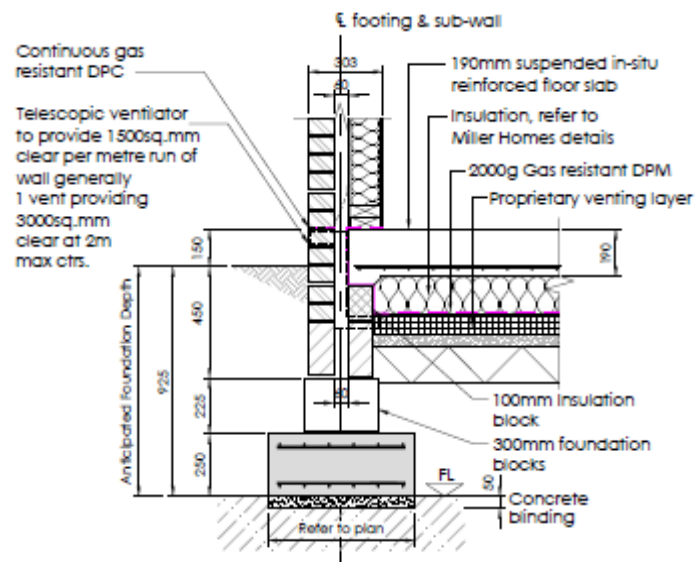
Each unit has a service duct located to the front and outer edge of the property. E3P inspected each one and can confirm that the top-hats have been adequately sealed against the membrane.

Based on the information provided within this report, the site inspections and validation checklists, E3P can confirm that **Plots 70-71** have been installed with gas protection measures in accordance with Characteristic Situation 2 to an acceptable level of workmanship.

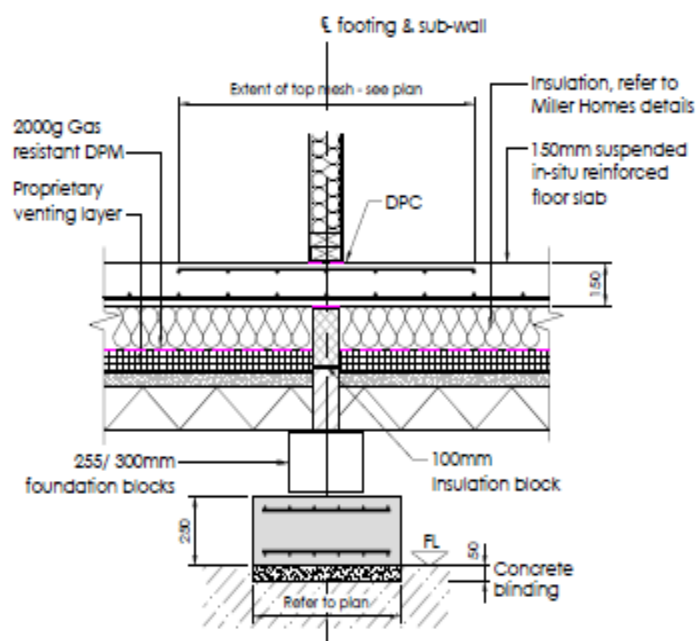


Section 1-1
Scale 1:25





Section 2-2
Scale 1:25



Section 3-3
Scale 1:25



GAS MEMBRANE VALIDATION

Complete

Site Name	Sonnet gate
Location	1 Tenlands Dr Prescot England L34 1BA United Kingdom (53.42218675917964, - 2.8082374266291197)
Project Manager	Roy walker
Project number	13127
Developer	Miller homes
Site representative Signature	Shaun Hewitt 19 May 2023 11:53 AM BST
Conducted on	19 May 2023 11:42 AM BST
Prepared by	Patrick Lavelle



Inspection Gas Membrane

Plot Inspection

Plot Number

70

Type of Development: Other add note

House



Photo 1

Foundation Type: Other add note

Suspended Floor

Gas Membrane Type: Manufacturer, gauge, and colour.

Blue visqueen

Gas Membrane Condition: Open punctures, tears, rips, stretching, Presence of debris, Repairs, Signs of weakness such as raised or sunken indentations, Protection plan in place to restrict access to lain gas membrane? IF FAIL DESCRIPTION IN ACTIONS AND PHOTOS REQUIRED

Pass

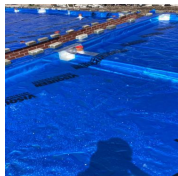


Photo 2



Photo 3



Photo 4



Photo 5

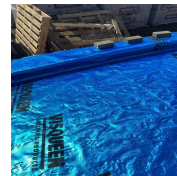


Photo 6



Photo 7



Photo 8

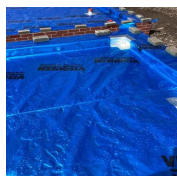


Photo 9

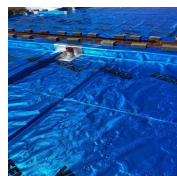


Photo 10



Photo 11

Laps, welds, and joints seals: Joints lapped and sealed in accordance with manufacturer's requirements/ specification? Minimum overlap insured? Sections taped twice? Are welds complete? Appropriate joining/double-sided tape used, Folds running in line with joints? (no joints cutting across folds)

Pass



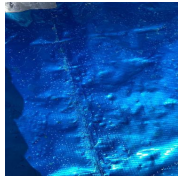


Photo 12

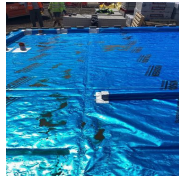


Photo 13

Service entries seals: Top hats seal arrangements fixed around service entries? Use of Jubilee clips?

Yes



Photo 14

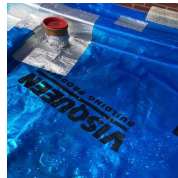


Photo 15

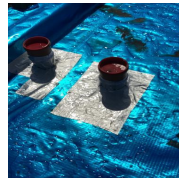


Photo 16

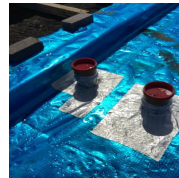


Photo 17

Type of joints/ Lapping

Welded

Corners / Internal joints: Check all corners are correctly formed or contractor has used preformed corners.

Pass



Photo 18



Photo 19



Photo 20



Photo 21



Photo 22

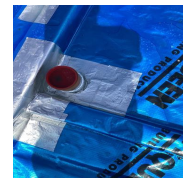


Photo 23

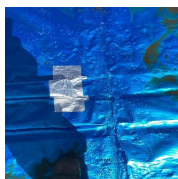


Photo 24



Photo 25



Photo 26



Photo 27

Extent of Coverage: Is the membrane covering the entire plot? Does membrane span over outside walls?

Yes



Photo 28



Photo 29



Photo 30



Condition of sub-grade and underside of gas membrane:
Check that the subgrade does not contain rough/uneven surfaces, is appropriately clean and that there are no hard/sharp objects. That protective sand blinding or geotextile (if specified) is present and meets the design criteria.



Photo 31

Pass

Slab / membrane condition (is membrane clear of debris or insulation): Can membrane be fully seen and photographed – ask contractor to remove an debris so membrane can be fully seen an inspected – this is a requirement of NHBC and local authorities.

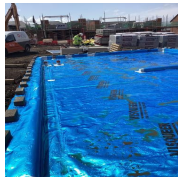


Photo 32

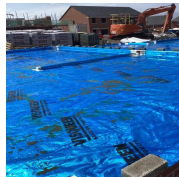


Photo 33

Pass

External Wall Air bricks: Numbers, size. positions as design drawing? (Minimum of 3 walls)

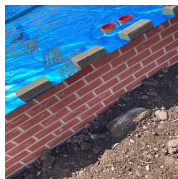


Photo 34



Photo 35

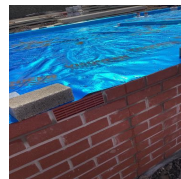


Photo 36

Pass



Plot Inspection

Plot Number

71

Type of Development: Other add note

House



Photo 37



Photo 38

Foundation Type: Other add note

Suspended Floor

Gas Membrane Type: Manufacturer, gauge, and colour.

Blue visqueen

Gas Membrane Condition: Open punctures, tears, rips, stretching, Presence of debris, Repairs, Signs of weakness such as raised or sunken indentations, Protection plan in place to restrict access to lain gas membrane? IF FAIL DESCRIPTION IN ACTIONS AND PHOTOS REQUIRED

Pass



Photo 39



Photo 40



Photo 41

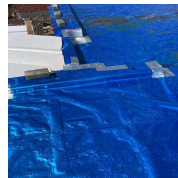


Photo 42

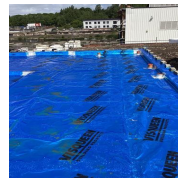


Photo 43

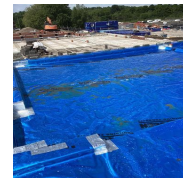


Photo 44



Photo 45

Laps, welds, and joints seals: Joints lapped and sealed in accordance with manufacturer's requirements/ specification? Minimum overlap insured? Sections taped twice? Are welds complete? Appropriate joining/double-sided tape used, Folds running in line with joints? (no joints cutting across folds)

Pass





Photo 46



Photo 47

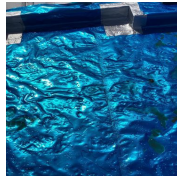


Photo 48



Photo 49

Service entries seals: Top hats seal arrangements fixed around service entries? Use of Jubilee clips?

Yes

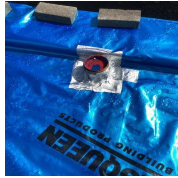


Photo 50

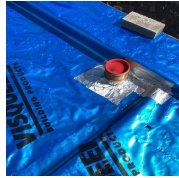


Photo 51

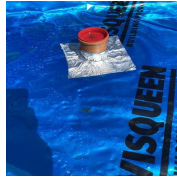


Photo 52

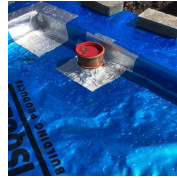


Photo 53



Photo 54

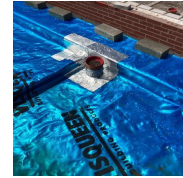


Photo 55

Type of joints/ Lapping

Welded

Corners / Internal joints: Check all corners are correctly formed or contractor has used preformed corners.

Pass

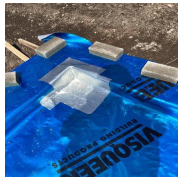


Photo 56

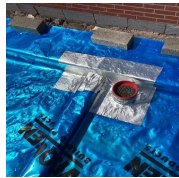


Photo 57



Photo 58



Photo 59

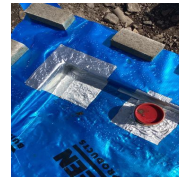


Photo 60



Photo 61



Photo 62

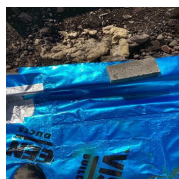


Photo 63



Photo 64



Photo 65

Extent of Coverage: Is the membrane covering the entire plot? Does membrane span over outside walls?

Yes



Photo 66



Photo 67

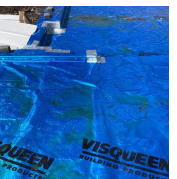


Photo 68



Condition of sub-grade and underside of gas membrane:
Check that the subgrade does not contain rough/uneven surfaces, is appropriately clean and that there are no hard/sharp objects. That protective sand blinding or geotextile (if specified) is present and meets the design criteria.



Photo 69

Pass

Slab / membrane condition (is membrane clear of debris or insulation): Can membrane be fully seen and photographed – ask contractor to remove an debris so membrane can be fully seen an inspected – this is a requirement of NHBC and local authorities.

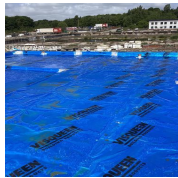


Photo 70

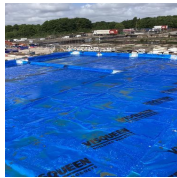


Photo 71

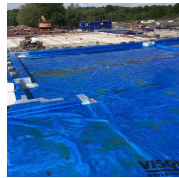


Photo 72

Pass

External Wall Air bricks: Numbers, size. positions as design drawing? (Minimum of 3 walls)



Photo 73

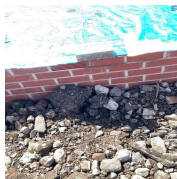


Photo 74



Photo 75

Pass

Passive Venting

Sub-floor Void: Is a check possible on future plots (insert Plot number or NO in text box)

No



Media summary



Photo 1

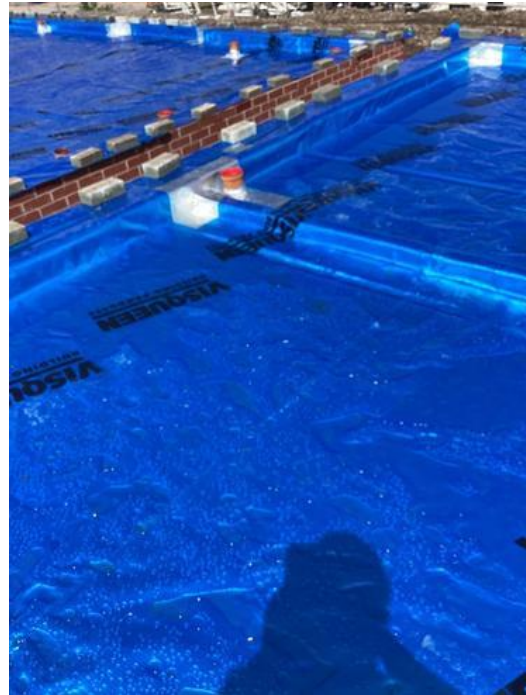


Photo 2



Photo 3



Photo 4





Photo 5



Photo 6



Photo 7



Photo 8





Photo 9



Photo 10



Photo 11



Photo 12





Photo 13



Photo 14

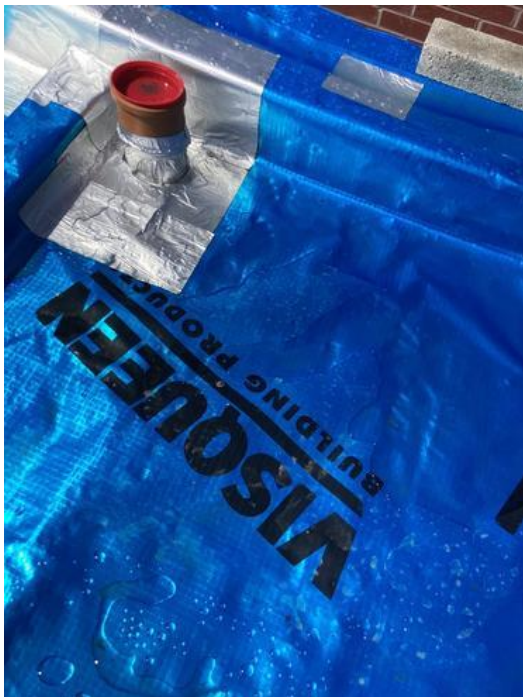


Photo 15



Photo 16





Photo 17



Photo 18



Photo 19



Photo 20





Photo 21



Photo 22



Photo 23



Photo 24





Photo 25

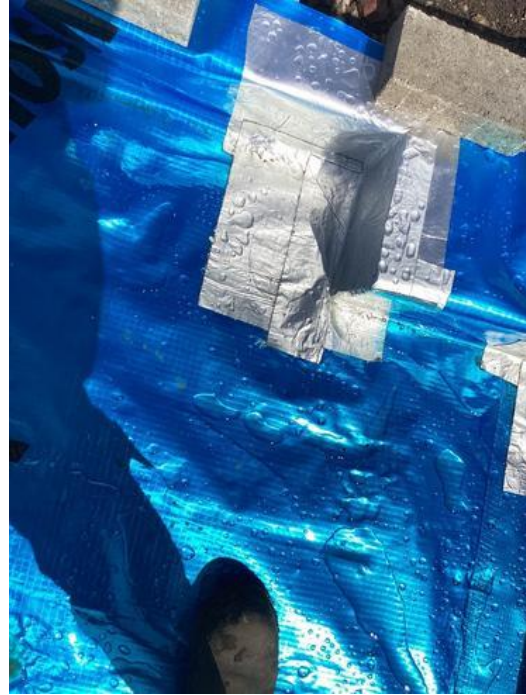


Photo 26



Photo 27



Photo 28





Photo 29



Photo 30



Photo 31



Photo 32





Photo 33



Photo 34



Photo 35



Photo 36





Photo 37



Photo 38



Photo 39



Photo 40





Photo 41



Photo 42



Photo 43



Photo 44





Photo 45



Photo 46



Photo 47



Photo 48





Photo 49



Photo 50

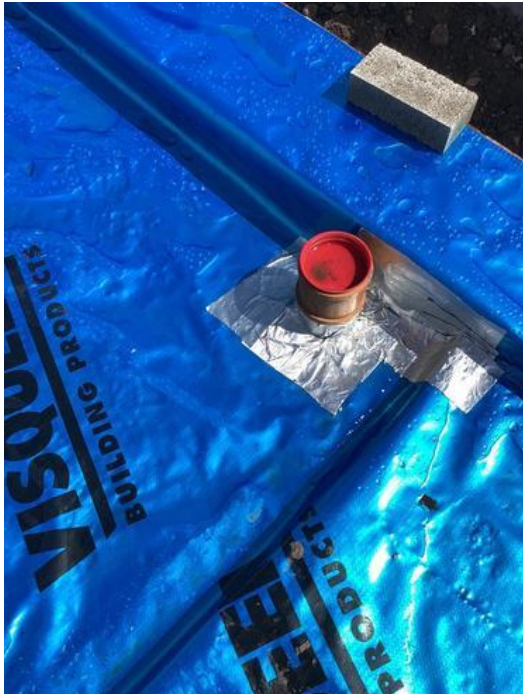


Photo 51

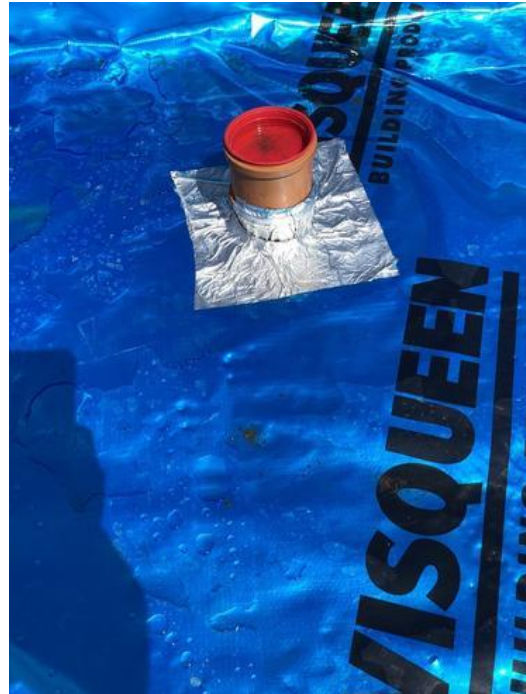


Photo 52



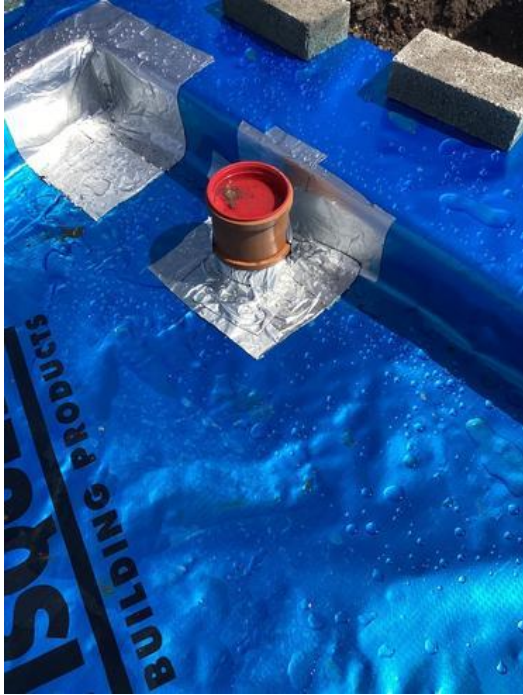


Photo 53

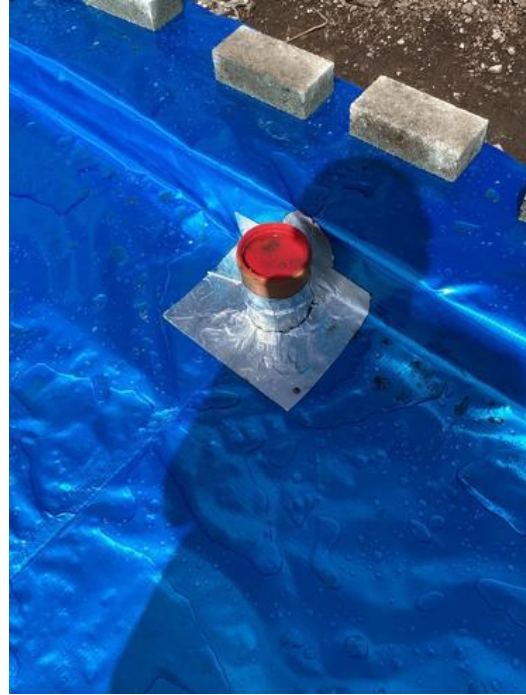


Photo 54



Photo 55



Photo 56





Photo 57



Photo 58



Photo 59



Photo 60





Photo 61



Photo 62



Photo 63



Photo 64





Photo 65



Photo 66



Photo 67



Photo 68





Photo 69



Photo 70

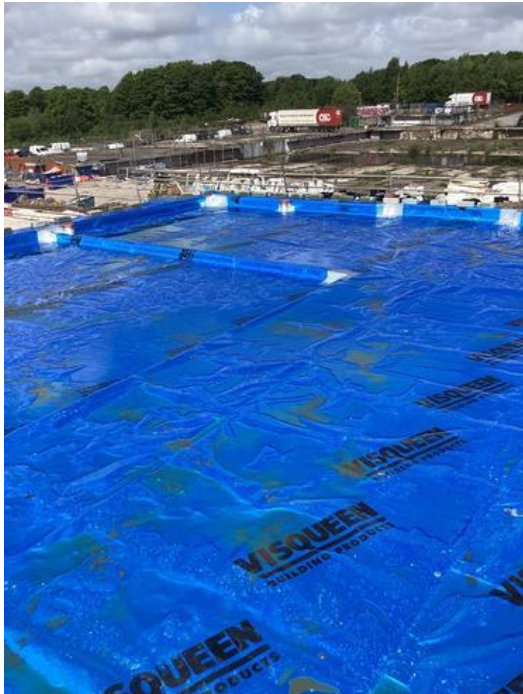


Photo 71

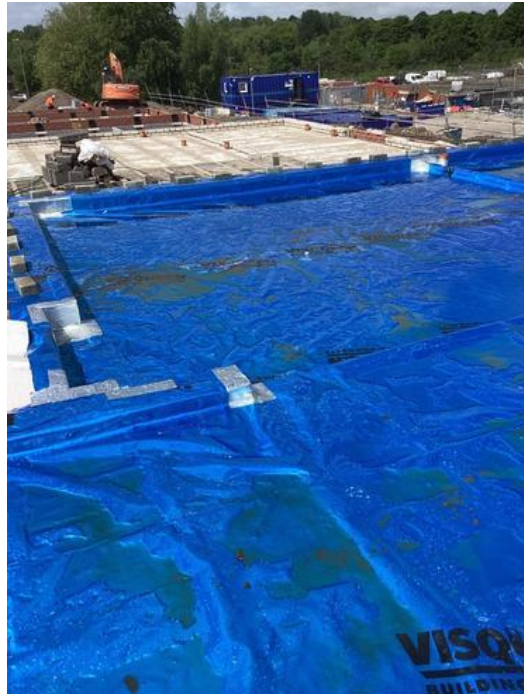


Photo 72





Photo 73



Photo 74



Photo 75



GAS MEMBRANE VALIDATION

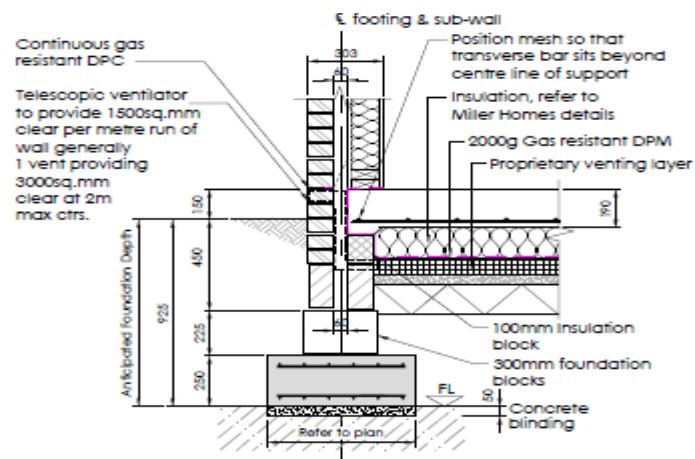
Site Name: Parcel C, Prescott	Project Number: 15-292
Company: Miller Homes	Date: 23-05-2023
Project Manager: R. Walker	E3P Engineer: R. Webster
PM Qualifications: BSc (Hons), FGS, AIEMA, AMICE, MIEEnvSc, CEnv	Engineer Qualifications: Ground Gas Training Feb 2022

Overview:

The membrane comprised a visqueen gas protection membrane (Blue) resistant to radon, carbon dioxide and low levels of methane. E3P can confirm there were no holes or rips at the time of inspection. Upon being laid the membrane is to be covered with a Celotex (closed Cell) floor insulation material which is considered to provide a high degree of protection.

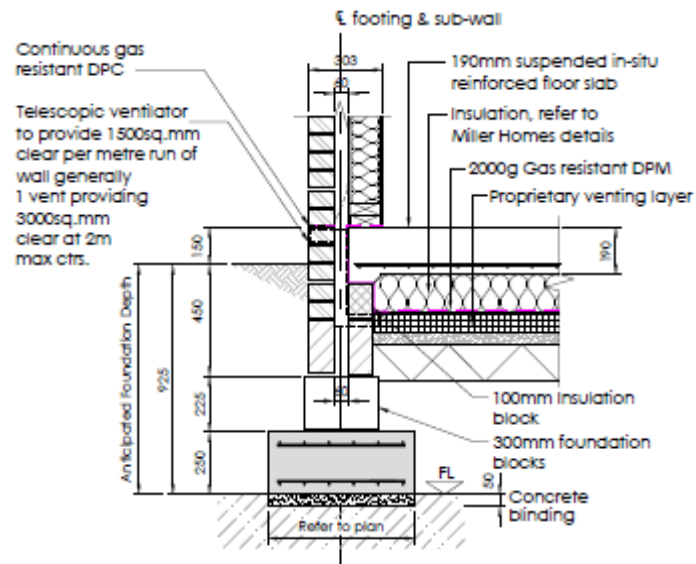
Each unit has a service duct located to the front and outer edge of the property. E3P inspected each one and can confirm that the top-hats have been adequately sealed against the membrane.

Based on the information provided within this report, the site inspections and validation checklists, E3P can confirm that **Plots 72, 80-81** have been installed with gas protection measures in accordance with Characteristic Situation 2 to an acceptable level of workmanship.

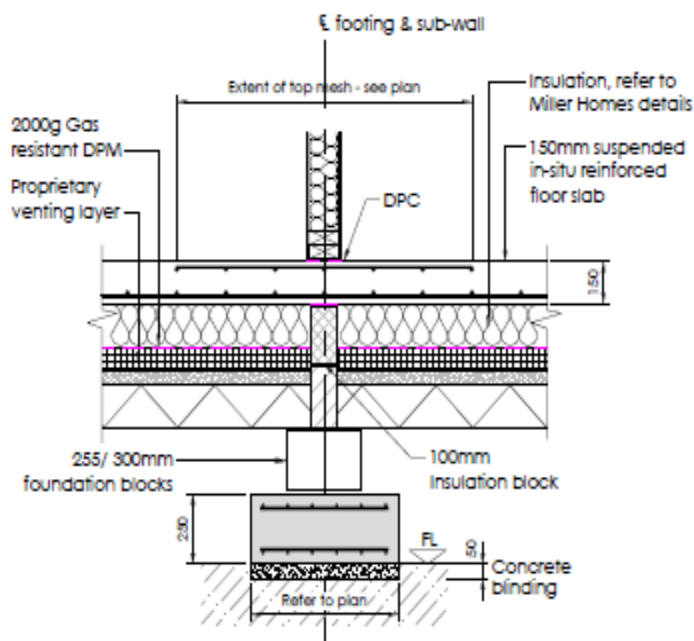


Section 1-1
Scale 1:25





Section 2-2
Scale 1:25



Section 3-3
Scale 1:25



GAS MEMBRANE VALIDATION

Complete

Site Name	Sonnet gate
Location	Prescot Park Way Knowsley England L34 United Kingdom (53.42237031654531, - 2.8099527013121652)
Project Manager	R. Walker
Project number	15292
Developer	Miller
Site representative Signature	Shaun Hewitt 23 May 2023 9:29 AM BST
Conducted on	23 May 2023 9:14 AM BST
Prepared by	Richard Webster



Inspection Gas Membrane

Plot Inspection 1

Plot Number 80

Type of Development: Other add note

House

Foundation Type: Other add note

Suspended Floor

Gas Membrane Type: Manufacturer, gauge, and colour.

Visqueen blue

Gas Membrane Condition: Open punctures, tears, rips, stretching, Presence of debris, Repairs, Signs of weakness such as raised or sunken indentations, Protection plan in place to restrict access to lain gas membrane? IF FAIL DESCRIPTION IN ACTIONS AND PHOTOS REQUIRED

Pass

Laps, welds, and joints seals: Joints lapped and sealed in accordance with manufacturer's requirements/ specification? Minimum overlap insured? Sections taped twice? Are welds complete? Appropriate joining/double-sided tape used, Folds running in line with joints? (no joints cutting across folds)

Pass



Photo 1

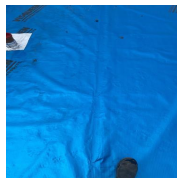


Photo 2

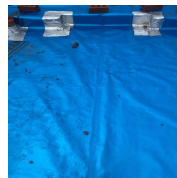


Photo 3



Photo 4



Photo 5

Service entries seals: Top hats seal arrangements fixed around service entries? Use of Jubilee clips?

Yes



Photo 6



Photo 7



Photo 8



Photo 9

Type of joints/ Lapping

Welded

Corners / Internal joints: Check all corners are correctly formed or contractor has used preformed corners.

Pass



Photo 10



Photo 11



Photo 12



Photo 13



Photo 14



Photo 15



**Extent of Coverage: Is the membrane covering the entire plot?
Does membrane span over outside walls?**

Yes



Photo 16



Photo 17

Condition of sub-grade and underside of gas membrane: Check that the subgrade does not contain rough/uneven surfaces, is appropriately clean and that there are no hard/sharp objects. That protective sand blinding or geotextile (if specified) is present and meets the design criteria.

Pass

Slab / membrane condition (is membrane clear of debris or insulation): Can membrane be fully seen and photographed – ask contractor to remove an debris so membrane can be fully seen an inspected – this is a requirement of NHBC and local authorities.

Pass

External Wall Air bricks: Numbers, size. positions as design drawing? (Minimum of 3 walls)

Pass



Photo 18



Photo 19



Plot Inspection

Plot Number 81

Type of Development: Other add note House

Foundation Type: Other add note Suspended Floor

Gas Membrane Type: Manufacturer, gauge, and colour. Visqueen blue

Gas Membrane Condition: Open punctures, tears, rips, stretching, Presence of debris, Repairs, Signs of weakness such as raised or sunken indentations, Protection plan in place to restrict access to lain gas membrane? IF FAIL DESCRIPTION IN ACTIONS AND PHOTOS REQUIRED

Pass

Laps, welds, and joints seals: Joints lapped and sealed in accordance with manufacturer's requirements/ specification? Minimum overlap insured? Sections taped twice? Are welds complete? Appropriate joining/double-sided tape used, Folds running in line with joints? (no joints cutting across folds)

Pass

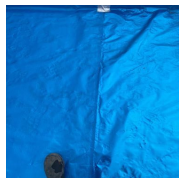


Photo 20



Photo 21

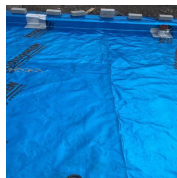


Photo 22



Photo 23



Photo 24

Service entries seals: Top hats seal arrangements fixed around service entries? Use of Jubilee clips?

Yes



Photo 25



Photo 26



Photo 27



Photo 28

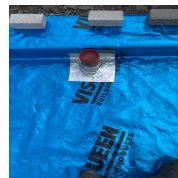


Photo 29



Photo 30

Type of joints/ Lapping Welded

Corners / Internal joints: Check all corners are correctly formed or contractor has used preformed corners.

Pass



Photo 31



Photo 32



Photo 33



Photo 34



Photo 35



Photo 36





Photo 37

**Extent of Coverage: Is the membrane covering the entire plot?
Does membrane span over outside walls?**

Yes



Photo 38



Photo 39

Condition of sub-grade and underside of gas membrane: Check that the subgrade does not contain rough/uneven surfaces, is appropriately clean and that there are no hard/sharp objects. That protective sand blinding or geotextile (if specified) is present and meets the design criteria.

Pass

Slab / membrane condition (is membrane clear of debris or insulation): Can membrane be fully seen and photographed – ask contractor to remove an debris so membrane can be fully seen an inspected – this is a requirement of NHBC and local authorities.

Pass

External Wall Air bricks: Numbers, size. positions as design drawing? (Minimum of 3 walls)

Pass



Photo 40



Photo 41



Plot Inspection

Plot Number 72

Type of Development: Other add note House

Foundation Type: Other add note Suspended Floor

Gas Membrane Type: Manufacturer, gauge, and colour. Visqueen blue

Gas Membrane Condition: Open punctures, tears, rips, stretching, Presence of debris, Repairs, Signs of weakness such as raised or sunken indentations, Protection plan in place to restrict access to lain gas membrane? IF FAIL DESCRIPTION IN ACTIONS AND PHOTOS REQUIRED Pass

Laps, welds, and joints seals: Joints lapped and sealed in accordance with manufacturer's requirements/ specification? Minimum overlap insured? Sections taped twice? Are welds complete? Appropriate joining/double-sided tape used, Folds running in line with joints? (no joints cutting across folds) Pass



Photo 42

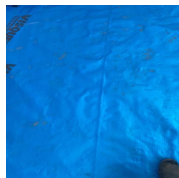


Photo 43



Photo 44



Photo 45



Photo 46

Service entries seals: Top hats seal arrangements fixed around service entries? Use of Jubilee clips? Yes



Photo 47



Photo 48



Photo 49



Photo 50



Photo 51



Photo 52

Type of joints/ Lapping Welded

Corners / Internal joints: Check all corners are correctly formed or contractor has used preformed corners. Pass



Photo 53



Photo 54



Photo 55



Photo 56



Photo 57



Photo 58





Photo 59



Photo 60



Photo 61

**Extent of Coverage: Is the membrane covering the entire plot?
Does membrane span over outside walls?**

Yes

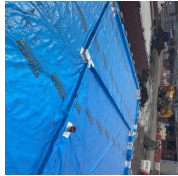


Photo 62



Photo 63



Photo 64



Photo 65

Condition of sub-grade and underside of gas membrane: Check that the subgrade does not contain rough/uneven surfaces, is appropriately clean and that there are no hard/sharp objects. That protective sand blinding or geotextile (if specified) is present and meets the design criteria.

Pass

Slab / membrane condition (is membrane clear of debris or insulation): Can membrane be fully seen and photographed – ask contractor to remove an debris so membrane can be fully seen an inspected – this is a requirement of NHBC and local authorities.

Pass

External Wall Air bricks: Numbers, size. positions as design drawing? (Minimum of 3 walls)

Pass

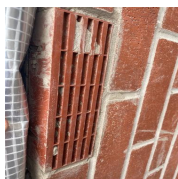


Photo 66



Photo 67

Passive Venting

Sub-floor Void: Is a check possible on future plots (insert Plot number or NO in text box)

No



Media summary



Photo 1



Photo 2

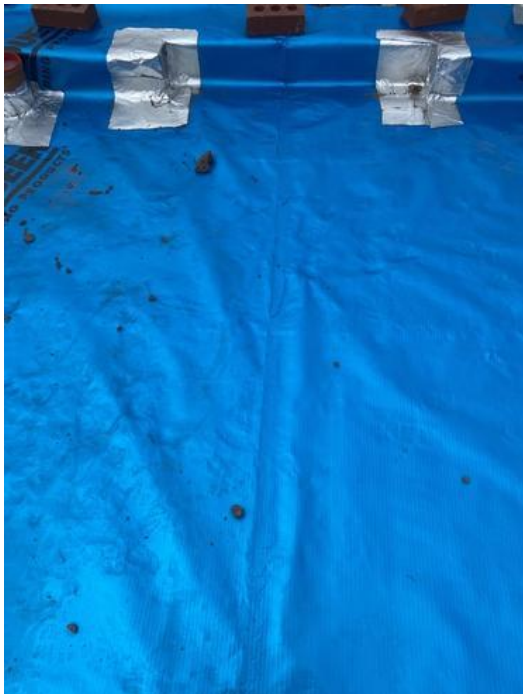


Photo 3



Photo 4





Photo 5



Photo 6



Photo 7



Photo 8





Photo 9



Photo 10



Photo 11



Photo 12





Photo 13



Photo 14



Photo 15



Photo 16





Photo 17



Photo 18



Photo 19



Photo 20





Photo 21



Photo 22



Photo 23



Photo 24





Photo 25



Photo 26



Photo 27



Photo 28



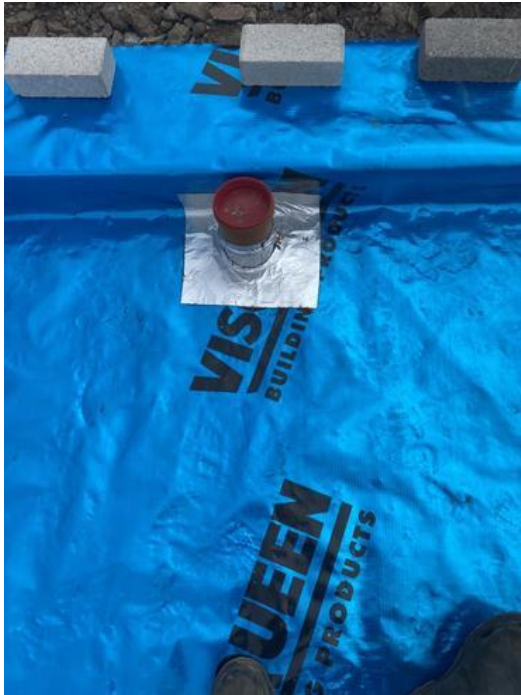


Photo 29



Photo 30



Photo 31



Photo 32





Photo 33



Photo 34



Photo 35



Photo 36





Photo 37



Photo 38



Photo 39



Photo 40





Photo 41



Photo 42



Photo 43



Photo 44





Photo 45



Photo 46



Photo 47



Photo 48





Photo 49



Photo 50



Photo 51



Photo 52





Photo 53



Photo 54



Photo 55



Photo 56





Photo 57



Photo 58



Photo 59



Photo 60





Photo 61

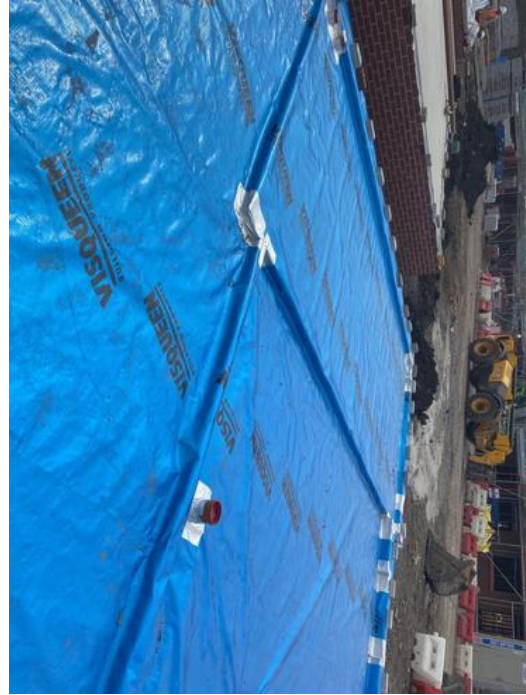


Photo 62



Photo 63



Photo 64





Photo 65



Photo 66



Photo 67



GAS MEMBRANE VALIDATION

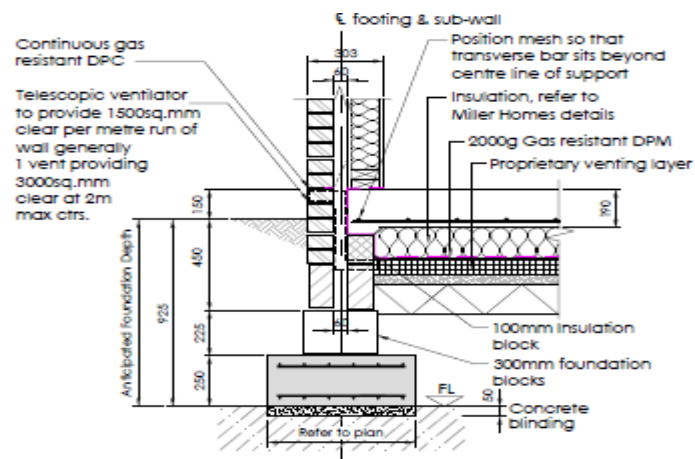
Site Name: Parcel C, Prescott	Project Number: 15-292
Company: Miller Homes	Date: 30-05-2023
Project Manager: R. Walker	E3P Engineer: J. James
PM Qualifications: BSc (Hons), FGS, AIEMA, AMICE, MIEEnvSc, CEnv	Engineer Qualifications: Ground Gas Training Feb 2022

Overview:

The membrane comprised a visqueen gas protection membrane (Blue) resistant to radon, carbon dioxide and low levels of methane. E3P can confirm there were no holes or rips at the time of inspection. Upon being laid the membrane is to be covered with a Celotex (closed Cell) floor insulation material which is considered to provide a high degree of protection.

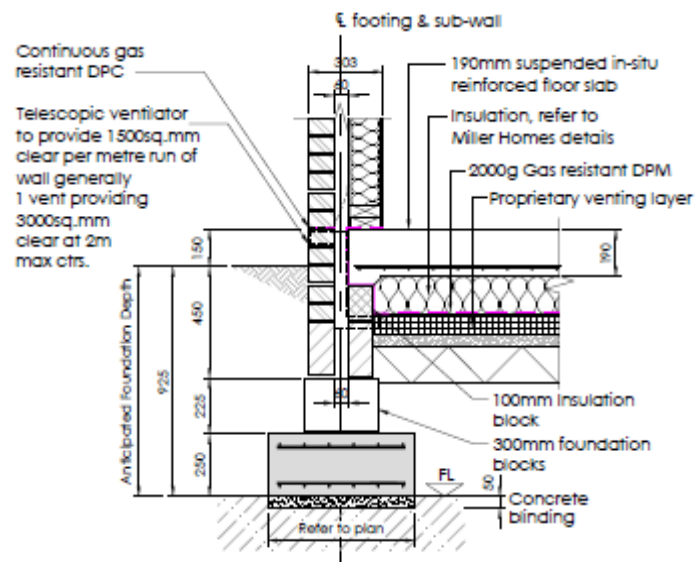
Each unit has a service duct located to the front and outer edge of the property. E3P inspected each one and can confirm that the top-hats have been adequately sealed against the membrane.

Based on the information provided within this report, the site inspections and validation checklists, E3P can confirm that **Plots 73-74** have been installed with gas protection measures in accordance with Characteristic Situation 2 to an acceptable level of workmanship.

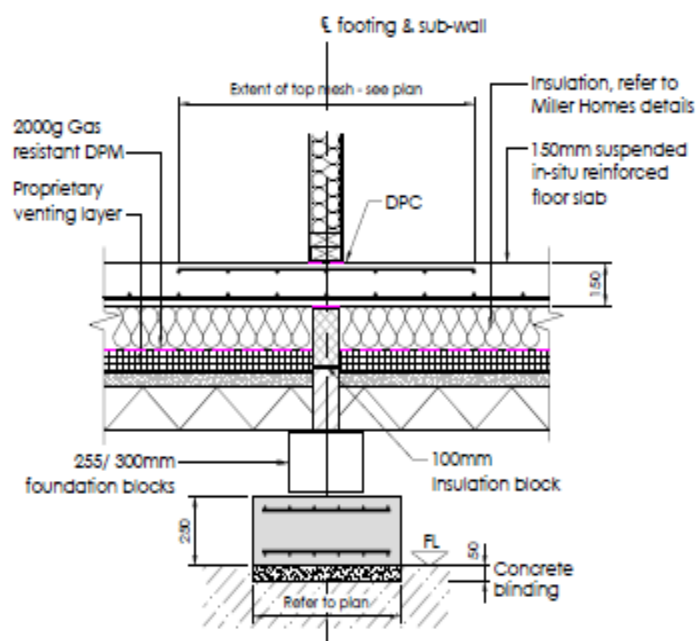


Section 1-1
Scale 1:25





Section 2-2
Scale 1:25



Section 3-3
Scale 1:25



GAS MEMBRANE VALIDATION

Complete

Site Name	Prescot Parcel 4
Location	Prescot Park Way Knowsley England L34 United Kingdom (53.422393622622906, - 2.8095852410439304)
Project Manager	Andrew Garrity
Project number	15292
Developer	Miller Homes
Site representative Signature	Shaun 30 May 2023 11:28 AM BST
Conducted on	26 May 2023 1:27 PM BST
Prepared by	Jordan James



Inspection Gas Membrane

Plot Inspection

Plot Inspection 1

Plot Number 74

Type of Development: Other add note House

Foundation Type: Other add note Suspended Floor

Gas Membrane Type: Manufacturer, gauge, and colour. Blue Visqueen

Gas Membrane Condition: Open punctures, tears, rips, stretching, Presence of debris, Repairs, Signs of weakness such as raised or sunken indentations, Protection plan in place to restrict access to lain gas membrane? IF FAIL DESCRIPTION IN ACTIONS AND PHOTOS REQUIRED

Pass

Laps, welds, and joints seals: Joints lapped and sealed in accordance with manufacturer's requirements/ specification? Minimum overlap insured? Sections taped twice? Are welds complete? Appropriate joining/double-sided tape used, Folds running in line with joints? (no joints cutting across folds)

Pass

Service entries seals: Top hats seal arrangements fixed around service entries? Use of Jubilee clips?

Yes



Photo 1



Photo 2



Photo 3



Photo 4



Photo 5

Type of joints/ Lapping Welded

Corners / Internal joints: Check all corners are correctly formed or contractor has used preformed corners.

Pass

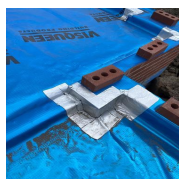


Photo 6



Photo 7



Photo 8



Photo 9



Photo 10



Photo 11





Photo 12

Extent of Coverage: Is the membrane covering the entire plot? Does membrane span over outside walls?

Yes



Photo 13



Photo 14

Condition of sub-grade and underside of gas membrane: Check that the subgrade does not contain rough/uneven surfaces, is appropriately clean and that there are no hard/sharp objects. That protective sand blinding or geotextile (if specified) is present and meets the design criteria.

Pass

Slab / membrane condition (is membrane clear of debris or insulation): Can membrane be fully seen and photographed – ask contractor to remove an debris so membrane can be fully seen an inspected – this is a requirement of NHBC and local authorities.

Pass

External Wall Air bricks: Numbers, size. positions as design drawing? (Minimum of 3 walls)

Pass



Photo 15



Photo 16



Plot Inspection 2

Plot Number 73

Type of Development: Other add note House

Foundation Type: Other add note Suspended Floor

Gas Membrane Type: Manufacturer, gauge, and colour. Blue Visqueen

Gas Membrane Condition: Open punctures, tears, rips, stretching, Presence of debris, Repairs, Signs of weakness such as raised or sunken indentations, Protection plan in place to restrict access to lain gas membrane? IF FAIL DESCRIPTION IN ACTIONS AND PHOTOS REQUIRED

Pass

Laps, welds, and joints seals: Joints lapped and sealed in accordance with manufacturer's requirements/ specification? Minimum overlap insured? Sections taped twice? Are welds complete? Appropriate joining/double-sided tape used, Folds running in line with joints? (no joints cutting across folds)

Pass

Service entries seals: Top hats seal arrangements fixed around service entries? Use of Jubilee clips?

Yes



Photo 17



Photo 18



Photo 19



Photo 20



Photo 21



Photo 22

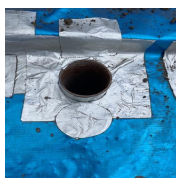


Photo 23



Photo 24

Type of joints/ Lapping Welded

Corners / Internal joints: Check all corners are correctly formed or contractor has used preformed corners.

Pass



Photo 25



Photo 26



Photo 27



Photo 28



Photo 29



Photo 30





Photo 31

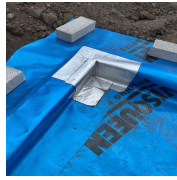


Photo 32



Photo 33



Photo 34



Photo 35

Extent of Coverage: Is the membrane covering the entire plot? Does membrane span over outside walls?

Yes



Photo 36



Photo 37



Photo 38

Condition of sub-grade and underside of gas membrane: Check that the subgrade does not contain rough/uneven surfaces, is appropriately clean and that there are no hard/sharp objects. That protective sand blinding or geotextile (if specified) is present and meets the design criteria.

Pass

Slab / membrane condition (is membrane clear of debris or insulation): Can membrane be fully seen and photographed – ask contractor to remove an debris so membrane can be fully seen an inspected – this is a requirement of NHBC and local authorities.

Pass

External Wall Air bricks: Numbers, size. positions as design drawing? (Minimum of 3 walls)

Pass



Photo 39



Photo 40

Passive Venting

Sub-floor Void: Is a check possible on future plots (insert Plot number or NO in text box)

NO



Media summary



Photo 1



Photo 2



Photo 3



Photo 4





Photo 5



Photo 6



Photo 7



Photo 8





Photo 9



Photo 10



Photo 11



Photo 12





Photo 13



Photo 14



Photo 15



Photo 16



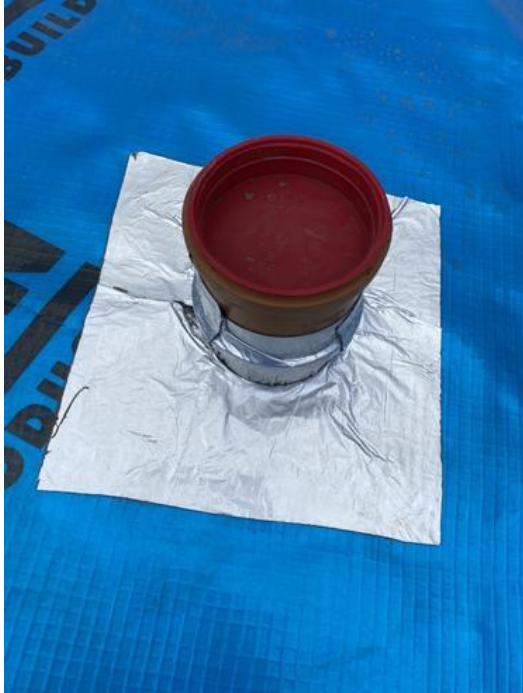


Photo 17



Photo 18

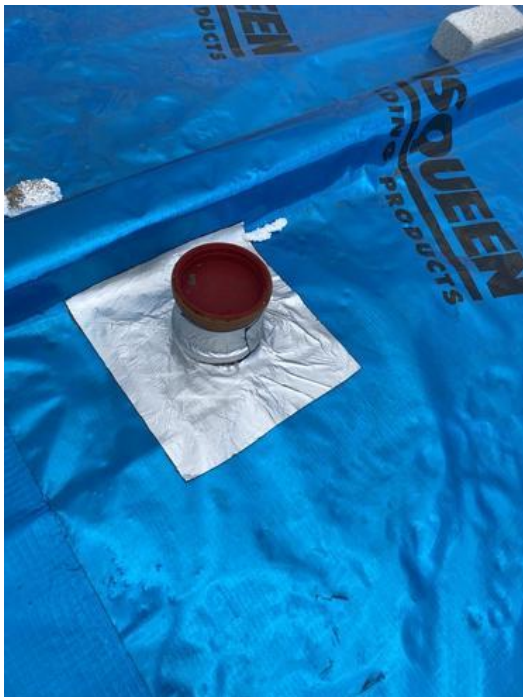


Photo 19



Photo 20





Photo 21



Photo 22

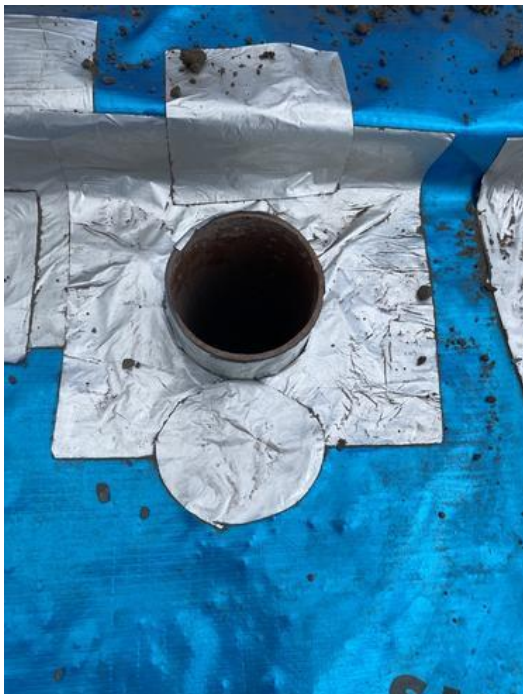


Photo 23

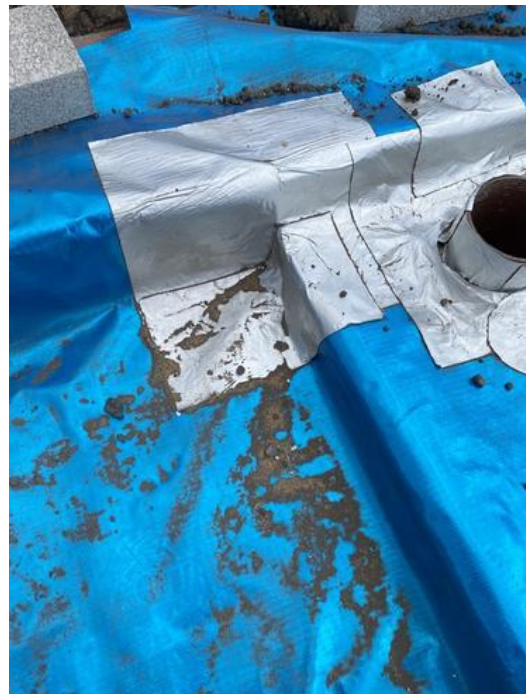


Photo 24





Photo 25



Photo 26



Photo 27



Photo 28





Photo 29



Photo 30



Photo 31



Photo 32





Photo 33



Photo 34



Photo 35



Photo 36





Photo 37



Photo 38



Photo 39



Photo 40



GAS MEMBRANE VALIDATION

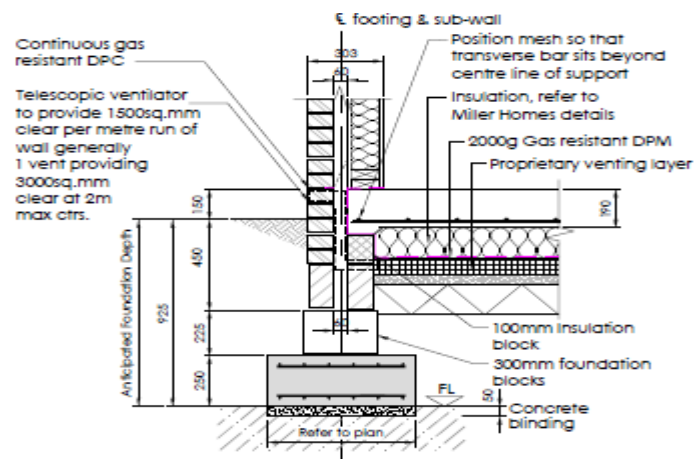
Site Name: Parcel C, Prescott	Project Number: 15-292
Company: Miller Homes	Date: 05-06-2023
Project Manager: R. Walker	E3P Engineer: R. Webster
PM Qualifications: BSc (Hons), FGS, AIEMA, AMICE, MIEEnvSc, CEnv	Engineer Qualifications: Ground Gas Training Feb 2022

Overview:

The membrane comprised a visqueen gas protection membrane (Blue) resistant to radon, carbon dioxide and low levels of methane. E3P can confirm there were no holes or rips at the time of inspection. Upon being laid the membrane is to be covered with a Celotex (closed Cell) floor insulation material which is considered to provide a high degree of protection.

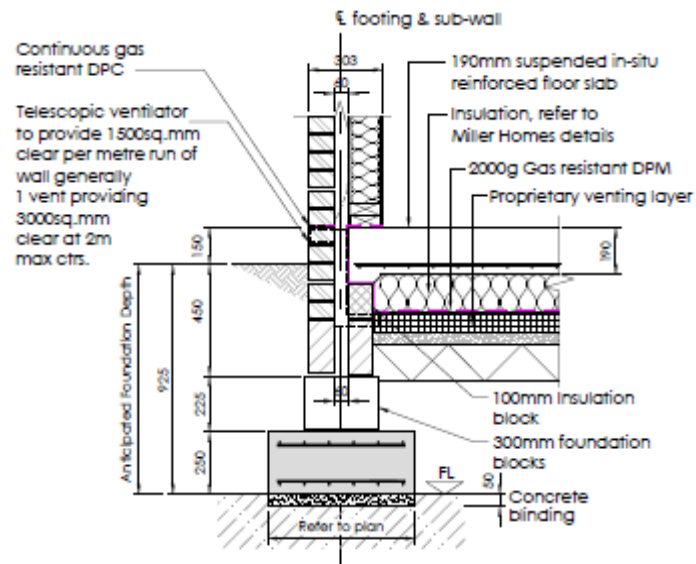
Each unit has a service duct located to the front and outer edge of the property. E3P inspected each one and can confirm that the top-hats have been adequately sealed against the membrane.

Based on the information provided within this report, the site inspections and validation checklists, E3P can confirm that **Plots 77-79** have been installed with gas protection measures in accordance with Characteristic Situation 2 to an acceptable level of workmanship.

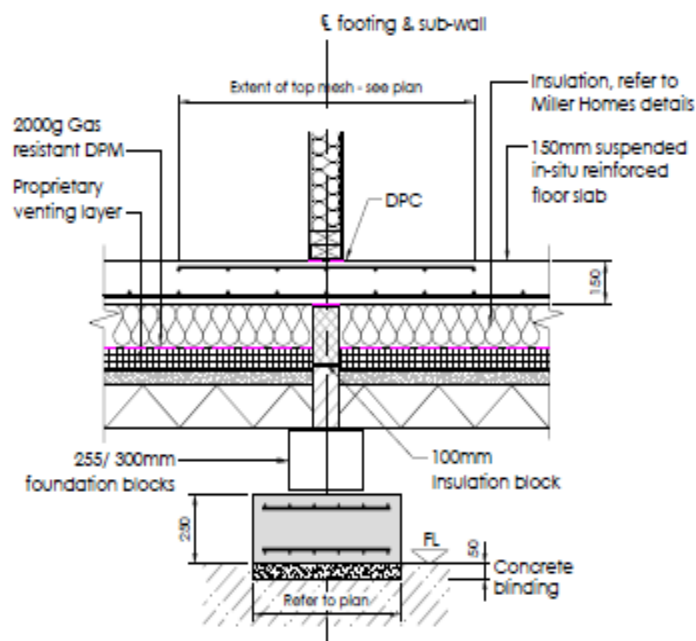


Section 1-1
Scale 1:25





Section 2-2
Scale 1:25



Section 3-3
Scale 1:25



GAS MEMBRANE VALIDATION

Complete

Site Name	Sonnet gate
Location	32 Emelia Dr Prescot England L34 1AX United Kingdom (53.42205697404573, - 2.809799890342916)
Project Manager	R. Walker
Project number	15292
Developer	Miller
Site representative Signature	Shaun 5 Jun 2023 11:33 AM BST
Conducted on	5 Jun 2023 11:20 AM BST
Prepared by	Richard Webster



Inspection Gas Membrane

Plot Inspection

Plot Inspection 1

Plot Number

77

Type of Development: Other add note

House

Foundation Type: Other add note

Suspended Floor

Gas Membrane Type: Manufacturer, gauge, and colour.

Visqueen blue

Gas Membrane Condition: Open punctures, tears, rips, stretching, Presence of debris, Repairs, Signs of weakness such as raised or sunken indentations, Protection plan in place to restrict access to lain gas membrane? IF FAIL DESCRIPTION IN ACTIONS AND PHOTOS REQUIRED

Pass

Laps, welds, and joints seals: Joints lapped and sealed in accordance with manufacturer's requirements/ specification? Minimum overlap insured? Sections taped twice? Are welds complete? Appropriate joining/double-sided tape used, Folds running in line with joints? (no joints cutting across folds)

Pass



Photo 1



Photo 2

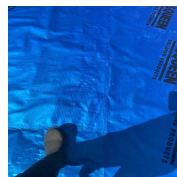


Photo 3

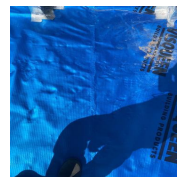


Photo 4



Photo 5



Photo 6

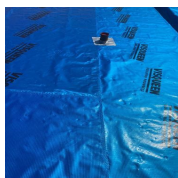


Photo 7

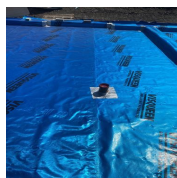


Photo 8

Service entries seals: Top hats seal arrangements fixed around service entries? Use of Jubilee clips?

Yes



Photo 9

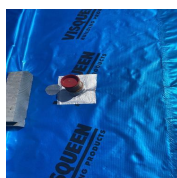


Photo 10

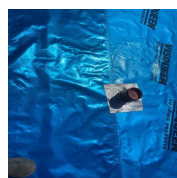


Photo 11

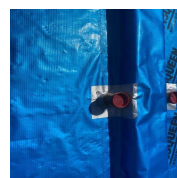


Photo 12



Photo 13



Photo 14



Type of joints/ Lapping

Welded

Corners / Internal joints: Check all corners are correctly formed or contractor has used preformed corners.

Pass



Photo 15



Photo 16

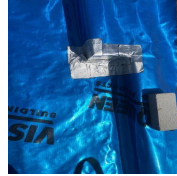


Photo 17



Photo 18



Photo 19

Extent of Coverage: Is the membrane covering the entire plot? Does membrane span over outside walls?

Yes

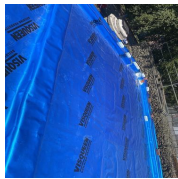


Photo 20

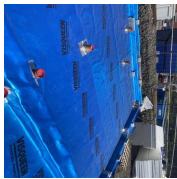


Photo 21

Condition of sub-grade and underside of gas membrane: Check that the subgrade does not contain rough/uneven surfaces, is appropriately clean and that there are no hard/sharp objects. That protective sand blinding or geotextile (if specified) is present and meets the design criteria.

Pass

Slab / membrane condition (is membrane clear of debris or insulation): Can membrane be fully seen and photographed – ask contractor to remove an debris so membrane can be fully seen an inspected – this is a requirement of NHBC and local authorities.

Pass

External Wall Air bricks: Numbers, size. positions as design drawing? (Minimum of 3 walls)

Pass

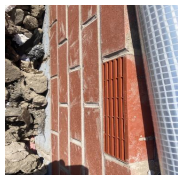


Photo 22

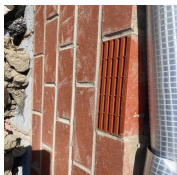


Photo 23



Plot Inspection 2

Plot Number 78

Type of Development: Other add note

House

Foundation Type: Other add note

Suspended Floor

Gas Membrane Type: Manufacturer, gauge, and colour.

Visqueen blue

Gas Membrane Condition: Open punctures, tears, rips, stretching, Presence of debris, Repairs, Signs of weakness such as raised or sunken indentations, Protection plan in place to restrict access to lain gas membrane? IF FAIL DESCRIPTION IN ACTIONS AND PHOTOS REQUIRED

Pass

Laps, welds, and joints seals: Joints lapped and sealed in accordance with manufacturer's requirements/ specification? Minimum overlap insured? Sections taped twice? Are welds complete? Appropriate joining/double-sided tape used, Folds running in line with joints? (no joints cutting across folds)

Pass



Photo 24



Photo 25

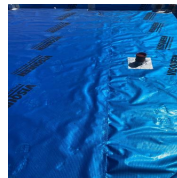


Photo 26

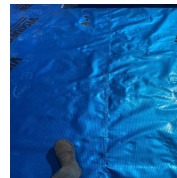


Photo 27



Photo 28

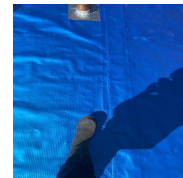


Photo 29

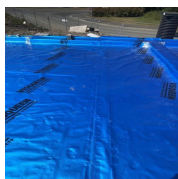


Photo 30

Service entries seals: Top hats seal arrangements fixed around service entries? Use of Jubilee clips?

Yes



Photo 31



Photo 32

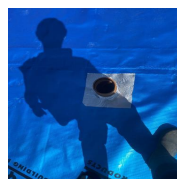


Photo 33

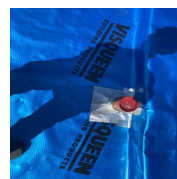


Photo 34

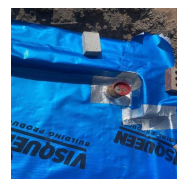


Photo 35

Type of joints/ Lapping

Welded

Corners / Internal joints: Check all corners are correctly formed or contractor has used preformed corners.

Pass





Photo 36



Photo 37



Photo 38



Photo 39



Photo 40



Photo 41



Photo 42

Extent of Coverage: Is the membrane covering the entire plot? Does membrane span over outside walls?

Yes



Photo 43

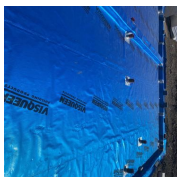


Photo 44

Condition of sub-grade and underside of gas membrane: Check that the subgrade does not contain rough/uneven surfaces, is appropriately clean and that there are no hard/sharp objects. That protective sand blinding or geotextile (if specified) is present and meets the design criteria.

Pass

Slab / membrane condition (is membrane clear of debris or insulation): Can membrane be fully seen and photographed – ask contractor to remove an debris so membrane can be fully seen an inspected – this is a requirement of NHBC and local authorities.

Pass

External Wall Air bricks: Numbers, size. positions as design drawing? (Minimum of 3 walls)

Pass

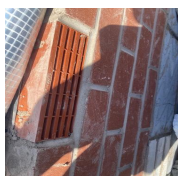


Photo 45

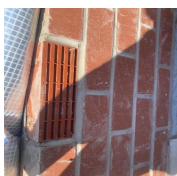


Photo 46



Plot Inspection 3

Plot Number 79

Type of Development: Other add note

House

Foundation Type: Other add note

Suspended Floor

Gas Membrane Type: Manufacturer, gauge, and colour.

Visqueen blue

Gas Membrane Condition: Open punctures, tears, rips, stretching, Presence of debris, Repairs, Signs of weakness such as raised or sunken indentations, Protection plan in place to restrict access to lain gas membrane? IF FAIL DESCRIPTION IN ACTIONS AND PHOTOS REQUIRED

Pass

Laps, welds, and joints seals: Joints lapped and sealed in accordance with manufacturer's requirements/ specification? Minimum overlap insured? Sections taped twice? Are welds complete? Appropriate joining/double-sided tape used, Folds running in line with joints? (no joints cutting across folds)

Pass

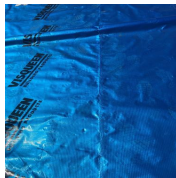


Photo 47

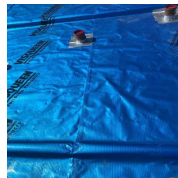


Photo 48



Photo 49

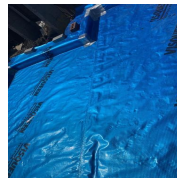


Photo 50



Photo 51



Photo 52

Service entries seals: Top hats seal arrangements fixed around service entries? Use of Jubilee clips?

Yes



Photo 53

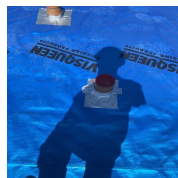


Photo 54



Photo 55

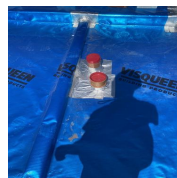


Photo 56



Photo 57

Type of joints/ Lapping

Welded

Corners / Internal joints: Check all corners are correctly formed or contractor has used preformed corners.

Pass



Photo 58



Photo 59

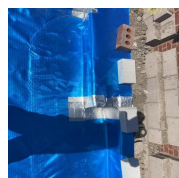


Photo 60



Photo 61



Photo 62



Photo 63





Photo 64



Photo 65



Photo 66

Extent of Coverage: Is the membrane covering the entire plot? Does membrane span over outside walls?

Yes

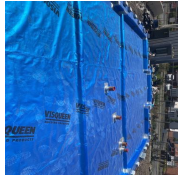


Photo 67

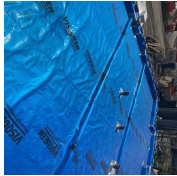


Photo 68

Condition of sub-grade and underside of gas membrane: Check that the subgrade does not contain rough/uneven surfaces, is appropriately clean and that there are no hard/sharp objects. That protective sand blinding or geotextile (if specified) is present and meets the design criteria.

Pass

Slab / membrane condition (is membrane clear of debris or insulation): Can membrane be fully seen and photographed – ask contractor to remove an debris so membrane can be fully seen an inspected – this is a requirement of NHBC and local authorities.

Pass

External Wall Air bricks: Numbers, size. positions as design drawing? (Minimum of 3 walls)

Pass

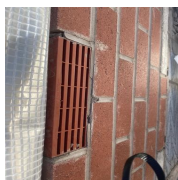


Photo 69



Photo 70

Passive Venting

Sub-floor Void: Is a check possible on future plots (insert Plot number or NO in text box)

No



Media summary



Photo 1



Photo 2



Photo 3



Photo 4





Photo 5



Photo 6



Photo 7

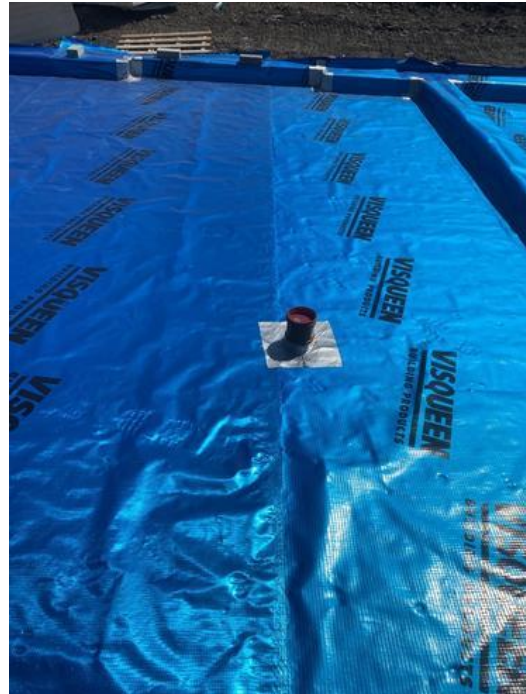


Photo 8





Photo 9



Photo 10



Photo 11



Photo 12





Photo 13



Photo 14



Photo 15



Photo 16





Photo 17



Photo 18



Photo 19



Photo 20





Photo 21



Photo 22



Photo 23



Photo 24





Photo 25



Photo 26



Photo 27



Photo 28





Photo 29



Photo 30



Photo 31



Photo 32





Photo 33



Photo 34



Photo 35



Photo 36





Photo 37



Photo 38



Photo 39



Photo 40





Photo 41



Photo 42



Photo 43



Photo 44





Photo 45



Photo 46



Photo 47



Photo 48





Photo 49



Photo 50



Photo 51



Photo 52





Photo 53



Photo 54



Photo 55



Photo 56





Photo 57



Photo 58



Photo 59



Photo 60





Photo 61



Photo 62



Photo 63



Photo 64





Photo 65



Photo 66



Photo 67



Photo 68





Photo 69



Photo 70



GAS MEMBRANE VALIDATION

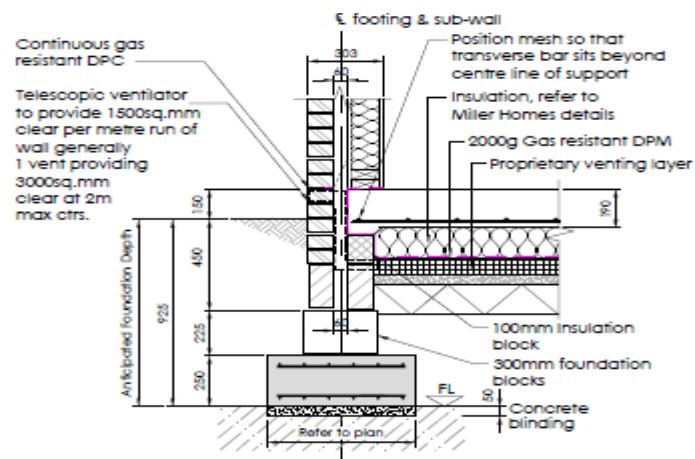
Site Name: Parcel C, Prescott	Project Number: 15-292
Company: Miller Homes	Date: 03-07-2023
Project Manager: R. Walker	E3P Engineer: J. Newall
PM Qualifications: BSc (Hons), FGS, AIEMA, AMICE, MIEEnvSc, CEnv	Engineer Qualifications: Verification of Gas Protection Systems Dec 17

Overview:

The membrane comprised a visqueen gas protection membrane (Blue) resistant to radon, carbon dioxide and low levels of methane. E3P can confirm there were no holes or rips at the time of inspection. Upon being laid the membrane is to be covered with a Celotex (closed Cell) floor insulation material which is considered to provide a high degree of protection.

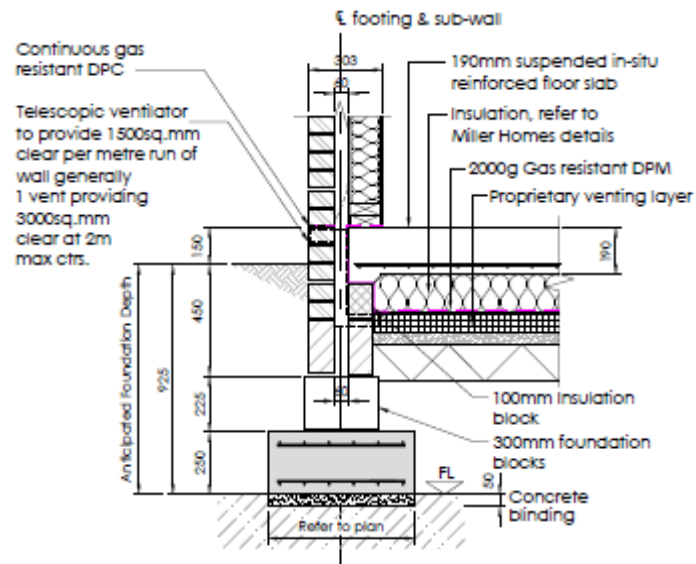
Each unit has a service duct located to the front and outer edge of the property. E3P inspected each one and can confirm that the top-hats have been adequately sealed against the membrane.

Based on the information provided within this report, the site inspections and validation checklists, E3P can confirm that **Plots 68-69** have been installed with gas protection measures in accordance with Characteristic Situation 2 to an acceptable level of workmanship.

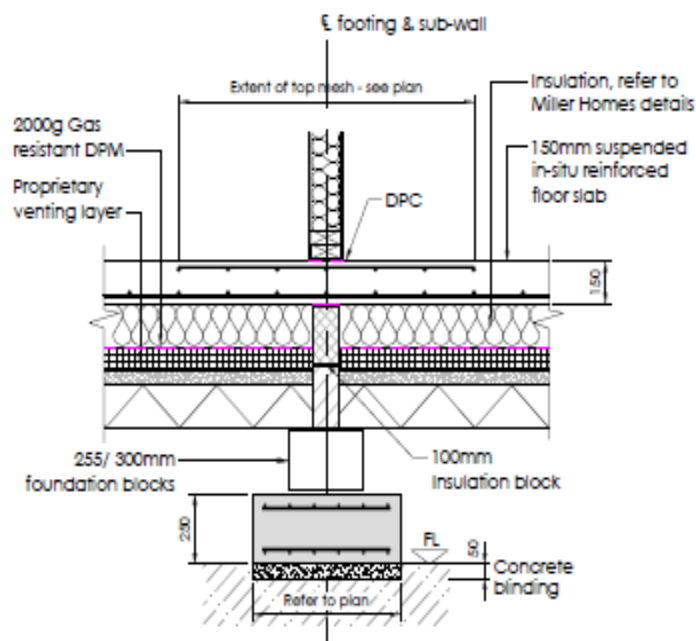


Section 1-1
Scale 1:25





Section 2-2
Scale 1:25



Section 3-3
Scale 1:25



GAS MEMBRANE VALIDATION

Complete

Site Name	Sonnet gate
Location	1 Tenlands Dr Prescot England L34 1BA United Kingdom (53.42253251937569, - 2.808250291275613)
Project Manager	R.Walker
Project number	15-292
Developer	Miller homes
Site representative Signature	4 Jul 2023 10:15 AM BST
Conducted on	4 Jul 2023 10:10 AM BST
Prepared by	Joe Newall



Inspection Gas Membrane

Plot Inspection

Plot Inspection 1

Plot Number 68

Type of Development: Other add note

House

Foundation Type: Other add note

Suspended Floor

Gas Membrane Type: Manufacturer, gauge, and colour.

Blue visqueen building products

Gas Membrane Condition: Open punctures, tears, rips, stretching, Presence of debris, Repairs, Signs of weakness such as raised or sunken indentations, Protection plan in place to restrict access to lain gas membrane? IF FAIL DESCRIPTION IN ACTIONS AND PHOTOS REQUIRED

Pass



Photo 1



Photo 2

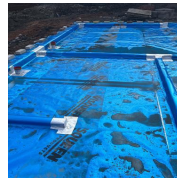


Photo 3



Photo 4



Photo 5

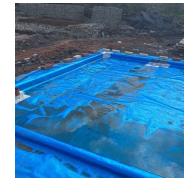


Photo 6

Laps, welds, and joints seals: Joints lapped and sealed in accordance with manufacturer's requirements/ specification? Minimum overlap insured? Sections taped twice? Are welds complete? Appropriate joining/double-sided tape used, Folds running in line with joints? (no joints cutting across folds)

Pass



Photo 7



Photo 8

Service entries seals: Top hats seal arrangements fixed around service entries? Use of Jubilee clips?

Yes





Photo 9



Photo 10



Photo 11



Photo 12

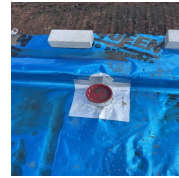


Photo 13



Photo 14

Type of joints/ Lapping

Welded

Corners / Internal joints: Check all corners are correctly formed or contractor has used preformed corners.

Pass



Photo 15



Photo 16



Photo 17



Photo 18



Photo 19



Photo 20

Extent of Coverage: Is the membrane covering the entire plot? Does membrane span over outside walls?

Yes



Photo 21



Photo 22

Condition of sub-grade and underside of gas membrane: Check that the subgrade does not contain rough/uneven surfaces, is appropriately clean and that there are no hard/sharp objects. That protective sand blinding or geotextile (if specified) is present and meets the design criteria.

Pass

Slab / membrane condition (is membrane clear of debris or insulation): Can membrane be fully seen and photographed – ask contractor to remove an debris so membrane can be fully seen an inspected – this is a requirement of NHBC and local authorities.

Pass

External Wall Air bricks: Numbers, size. positions as design drawing? (Minimum of 3 walls)

Pass



Photo 23



Photo 24



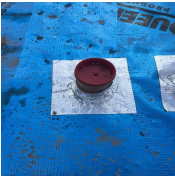
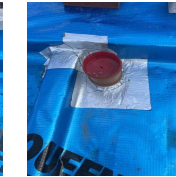
Photo 25



Photo 26



Plot Inspection 2

Plot Number	69
Type of Development: Other add note	House
Foundation Type: Other add note	Suspended Floor
Gas Membrane Type: Manufacturer, gauge, and colour.	Blue visqueen building products
Gas Membrane Condition: Open punctures, tears, rips, stretching, Presence of debris, Repairs, Signs of weakness such as raised or sunken indentations, Protection plan in place to restrict access to lain gas membrane? IF FAIL DESCRIPTION IN ACTIONS AND PHOTOS REQUIRED	Pass
   Photo 27 Photo 28 Photo 29	
Laps, welds, and joints seals: Joints lapped and sealed in accordance with manufacturer's requirements/ specification? Minimum overlap insured? Sections taped twice? Are welds complete? Appropriate joining/double-sided tape used, Folds running in line with joints? (no joints cutting across folds)	Pass
   Photo 30 Photo 31 Photo 32	
Service entries seals: Top hats seal arrangements fixed around service entries? Use of Jubilee clips?	Yes
     Photo 33 Photo 34 Photo 35 Photo 36 Photo 37	
Type of joints/ Lapping	Welded



Corners / Internal joints: Check all corners are correctly formed or contractor has used preformed corners.

Pass



Photo 38



Photo 39



Photo 40



Photo 41



Photo 42

Extent of Coverage: Is the membrane covering the entire plot? Does membrane span over outside walls?

Yes



Photo 43



Photo 44

Condition of sub-grade and underside of gas membrane: Check that the subgrade does not contain rough/uneven surfaces, is appropriately clean and that there are no hard/sharp objects. That protective sand blinding or geotextile (if specified) is present and meets the design criteria.

Pass

Slab / membrane condition (is membrane clear of debris or insulation): Can membrane be fully seen and photographed – ask contractor to remove an debris so membrane can be fully seen an inspected – this is a requirement of NHBC and local authorities.

Pass

External Wall Air bricks: Numbers, size. positions as design drawing? (Minimum of 3 walls)

Pass



Photo 45



Photo 46



Photo 47



Photo 48

Passive Venting

Sub-floor Void: Is a check possible on future plots (insert Plot number or NO in text box)

NO



Media summary



Photo 1



Photo 2



Photo 3



Photo 4





Photo 5



Photo 6



Photo 7



Photo 8





Photo 9



Photo 10



Photo 11



Photo 12





Photo 13



Photo 14



Photo 15



Photo 16





Photo 17



Photo 18



Photo 19



Photo 20





Photo 21



Photo 22



Photo 23



Photo 24





Photo 25



Photo 26



Photo 27



Photo 28





Photo 29



Photo 30



Photo 31



Photo 32





Photo 33



Photo 34



Photo 35



Photo 36





Photo 37



Photo 38



Photo 39



Photo 40





Photo 41



Photo 42



Photo 43



Photo 44





Photo 45



Photo 46



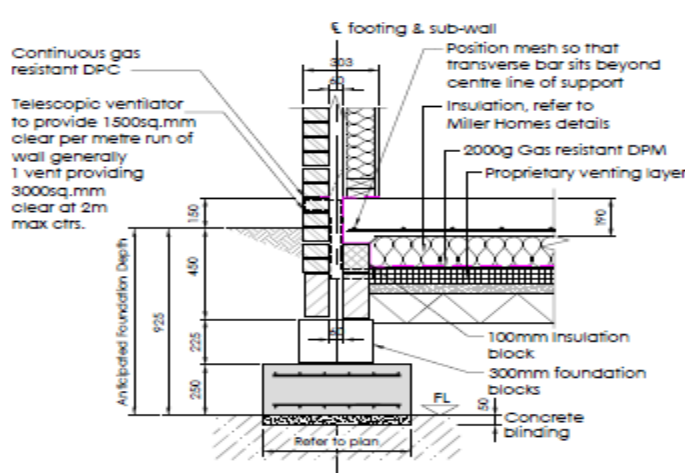
Photo 47



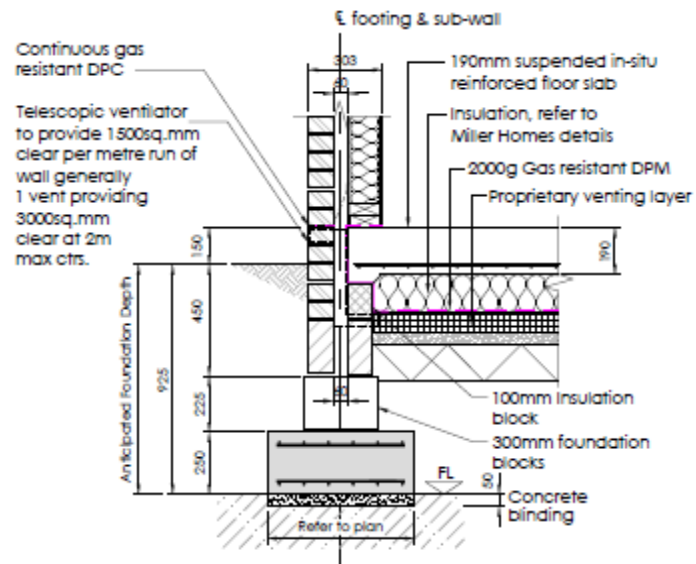
Photo 48



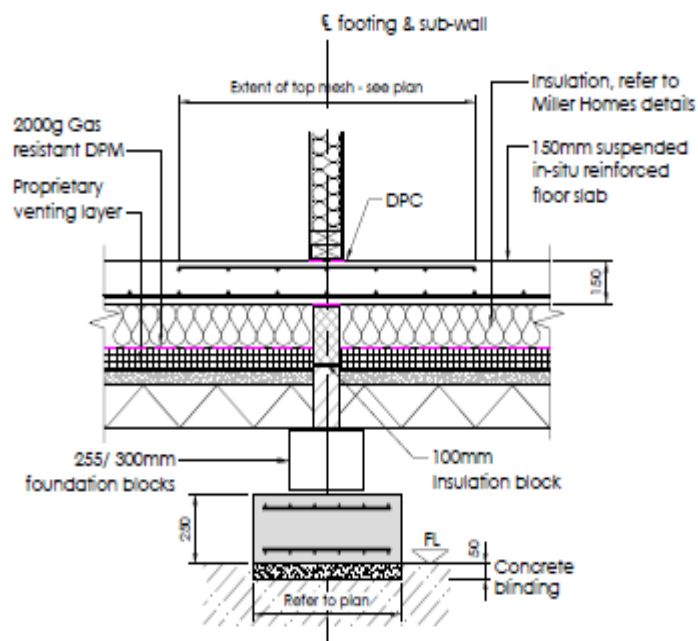
GAS MEMBRANE VALIDATION

Site Name: Parcel C, Prescott	Project Number: 15-292
Project Manager: R. Walker	Date: 15-06-2022
PM Qualifications: BSc (Hons) FGS, AIEMA, ICE, MEnvSc, CEnv	E3P Engineer: J. James
Ground Gas Risk Assessment: Characteristic Situation 2	
Overview: The membrane comprised a JUTA GP1 (Black) and visqueen membrane (Blue) resistant to radon, carbon dioxide and low levels of methane. E3P can confirm there were no holes or rips at the time of inspection. Upon being laid the membrane is to be covered with a Celotex (closed Cell) floor insulation material which is considered to provide a high degree of protection. Each unit has a service duct located to the front and outer edge of the property. E3P inspected each one and can confirm that the top-hats have been adequately sealed against the membrane. Based on the information provided within this report, the site inspections and validation checklists, E3P can confirm that Plots 38-43 have been installed with gas protection measures in accordance with Characteristic Situation 2 to an acceptable level of workmanship.	
 Section 1-1 Scale 1:25	





Section 2-2
Scale 1:25



Section 3-3
Scale 1:25



Plot - 38

General Condition of Membrane-Good Condition



Verification of Joints and Seals-Good Condition



Verification of Service Penetrations-Good Condition



Verification of Service Penetrations-Good Condition



Plot – 39

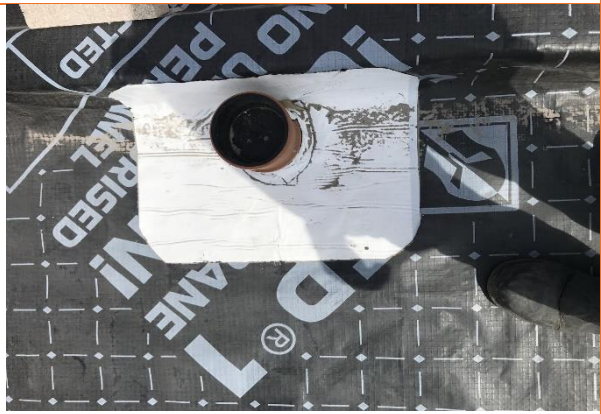
General Condition of Membrane-Good Condition



Verification of Joints and Seals-Good Condition



Verification of Service Penetrations-Good Condition



Verification of Service Penetrations-Good Condition



Plot - 40

General Condition of Membrane-Good Condition



Verification of Joints and Seals-Good Condition



Verification of Service Penetrations-Good Condition



Verification of Service Penetrations-Good Condition



Plot - 41

General Condition of Membrane-Good Condition



Verification of Joints and Seals-Good Condition



Verification of Service Penetrations-Good Condition



Verification of Service Penetrations-Good Condition



Plot - 42

General Condition of Membrane-Good Condition



Verification of Joints and Seals-Good Condition



Verification of Service Penetrations-Good Condition



Verification of Service Penetrations-Good Condition



Plot - 43

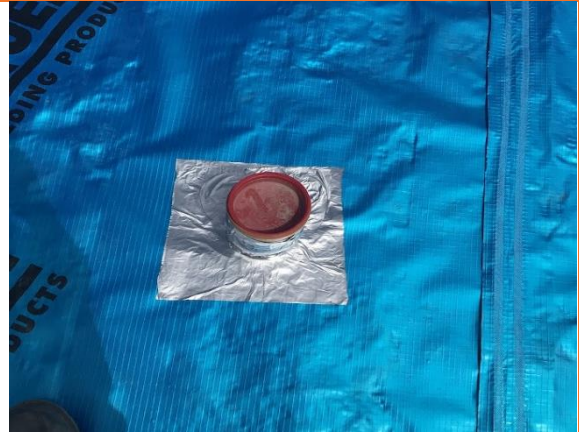
General Condition of Membrane-Good Condition



Verification of Joints and Seals-Good Condition



Verification of Service Penetrations-Good Condition



Verification of Service Penetrations-Good Condition

