Reference: **120-24-1130.3134**

Date: **24th January 2025**

MAP Developments (NW) Limited
21 Box Lane
Wrexham
LL12 8BY

For the Attention of: Mr Michael Pearson

INSTALLATION AND VALIDATION OF GAS PROTECTION MEASURES
GWERSYLLT CRICKET GROUND, WREXHAM

Dear Michael,

Further to your instructions we present the gas protection validation report for the installation of gas protection measures at the above named site.

1.0 INTRODUCTION

The site is located to the north of Park Wall Road approximately 3.8km to the north of Wrexham town centre. The development comprises the construction of a new cricket pavilion building.

The building is constructed on conventional foundations with a suspended beam and block floor slab with associated ventilated sub floor void. The construction includes the installation of a gas resistant membrane installed above the suspended floor slab and a screed layer below finished flooring.

Due to an error in the construction process, a radon barrier membrane has been installed above the suspended beam and block floor slab and below the screed layer. This membrane was not validated and has been covered with the screed layer. It is also considered that the radon barrier membrane does not provide appropriate gas protection for methane and carbon dioxide.

As a result, a gas barrier membrane has been installed above the screed layer and below the finished flooring. The gas membrane installation comprises a perimeter gas resistant membrane and a self-adhesive gas resistant membrane (SAGRM) which has been installed across the internal footprint of the development. This approach this has been agreed with the Local Authority.

ASL were requested to undertake independent validation of these gas protection measures and have previously completed a Gas Protection Verification Plan (report reference 120-24-1130.3128, dated 20th December 2024). This validation report should be read in conjunction with the ASL Verification Plan for the site.

The following measures have been incorporated into the construction scheme:

- Visqueen Gas Barrier Membrane installed beneath perimeter and interior walls;
- VisqueenPro Detailing Strip SAGRM installed across the internal footprint;
- VisqueenPro Double Sided Jointing Tape;
- Visqueen Gas Resistant Lap Tape;
- Passive ventilation of the subfloor void beneath the suspended ground floor slab.

2.0 VALIDATION WORKS

The site was visited on three occasions between the 20th May 2024 and the 13th January 2025. A summary of the inspections is detailed below:

- 20th May 2024 – Inspection of membrane installed beneath perimeter and interior walls;
- 6th December 2024 – Inspection of membrane across internal areas of the majority of development;
- 13th January 2025 – Inspection of membrane across internal area of the storage room area.

The validation included a visual inspection of the placement of the gas resistant membrane, the sealing of joints and penetrations through the membrane and the general standard of the installation works completed. An inspection of the passive ventilation was also carried out. Air lance integrity testing was completed across the development as required by the Verification Plan.

3.0 INSPECTION FINDINGS

The findings of the inspections are as follows:

The gas resistant membrane was installed by MAP Developments Limited. The membranes installed were a Visqueen Gas Barrier Membrane installed beneath interior and exterior walls and VisqueenPro Detailing Strip SAGRM installed across interior areas together with VisqueenPro Double Sided Jointing Tape and Visqueen Gas Resistant Lap Tape used at joints, corner details, repairs and penetrations in general accordance with the Verification Plan. The data sheets for these products are included in the Verification Plan. Photographs showing the general membrane installation are included in Appendix I and records of the site inspections are included in Appendix II.

The membranes have been installed to an appropriate standard with all joints and penetrations sealed. The defects identified during the inspections were repaired by MAP Developments Limited operatives to the satisfaction of the ASL validator during the relevant inspections.

The general standard of the installation works was good and care was being taken to protect the membrane during the installation works. The subfloor void has been installed across the development with periscopic vents installed to connect the subfloor void with vent bricks around the perimeter of the building.

Further to these inspections and the requirements of the Verification Plan we can confirm that the gas protection measures installed at the development meet the requirements of the Verification Plan and have been installed to an appropriate standard.

We trust this meets with your requirements and please contact us with any queries.

Yours sincerely
for **ASL**



ASHLEY MEHAFFY
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Certified holder of ABBE Level 4 NVQ Diploma in Verification of Ground Gas Protection Systems (143617)

Encl.
Appendix I: Photographs
Appendix II: Validation Inspection Reports

APPENDIX I

PHOTOGRAPHS

Plate 1 **Visit 1 - Perimeter Detailing and Passive Vents (20/05/2024)**



Plate 2 **Visit 1 - Corner Detailing (20/05/2024)**



Plate 3 Visit 1 - Perimeter Detailing at Interior Walls (20/05/2024)



Plate 4 Visit 1 – Perimeter at Interior Walls (20/05/2024)



Plate 5 **Visit 1 - Perimeter Detailing and Passive Vent (20/05/2024)**



Plate 6 **Visit 1 - Perimeter Detailing and Passive Vents (20/05/2024)**



Plate 7 **Visit 1 - Perimeter Detailing at Exterior Walls (20/05/2024)**



Plate 8 **Visit 1 - Perimeter Detailing at Interior Walls (20/05/2024)**



Plate 9 **Visit 2 - Membrane (06/12/2024)**



Plate 10 **Visit 2 - Membrane (06/12/2024)**



Plate 11 Visit 2 – Membrane and Sealed Penetration (06/12/2024)



Plate 12 Visit 2 - Sealed Penetration (06/12/2024)

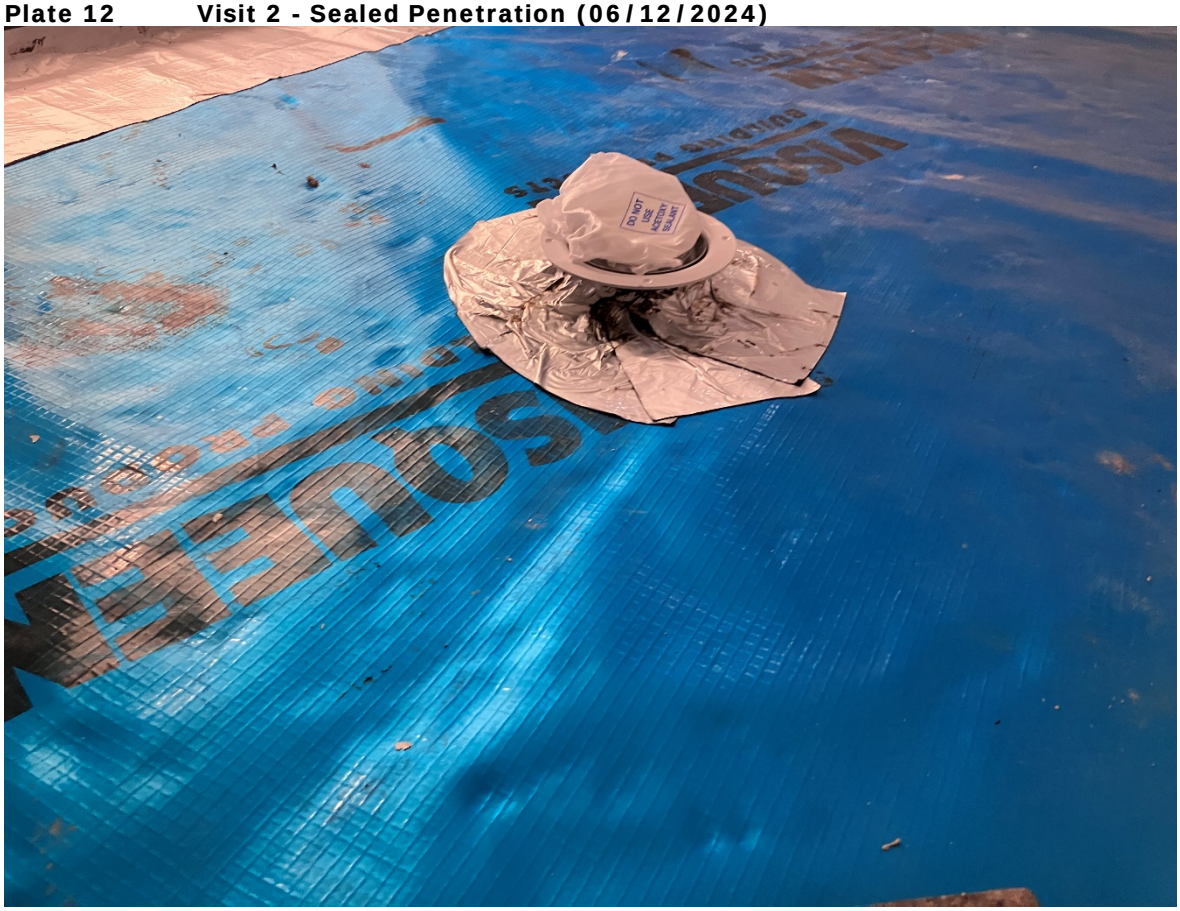


Plate 13 Visit 2 – Edge Detailing (06/12/2024)



Plate 14 Visit 2 – Membrane (06/12/2024)



Plate 15 Visit 2 – Edge Detailing (06/12/2024)



Plate 16 Visit 2 – Sealed Penetration (06/12/2024)



Plate 17 Visit 3 - Storage Area Edge Detailing (13/01/2025)



Plate 18 Visit 3 - Storage Area Membrane (13/01/2025)



Plate 19 **Visit 3 - Storage Area Membrane (13/01/2025)**



Plate 20 **Visit 3 - Storage Area - Passive Vents (13/01/2025)**



APPENDIX II

VALIDATION INSPECTION REPORTS

GAS PROTECTION MEASURES VALIDATION INSPECTION REPORT

Project Name: Gwersyllt Cricket Ground	**Inspection Carried Out by:** AJM
Project No. 120-24-1130	**Date:** 20/05/24

Plot Type: Detached / Semi-Detached / Apartments / (Commercial)	**Plot Number (s):** Whole building perimeter	**Gas Membrane Installer:** MAP Developments

Gas Risk Rating (CS)	~CS2	**VOC**	Yes	No	(N/A)	**Radon**	Yes	No	(N/A)

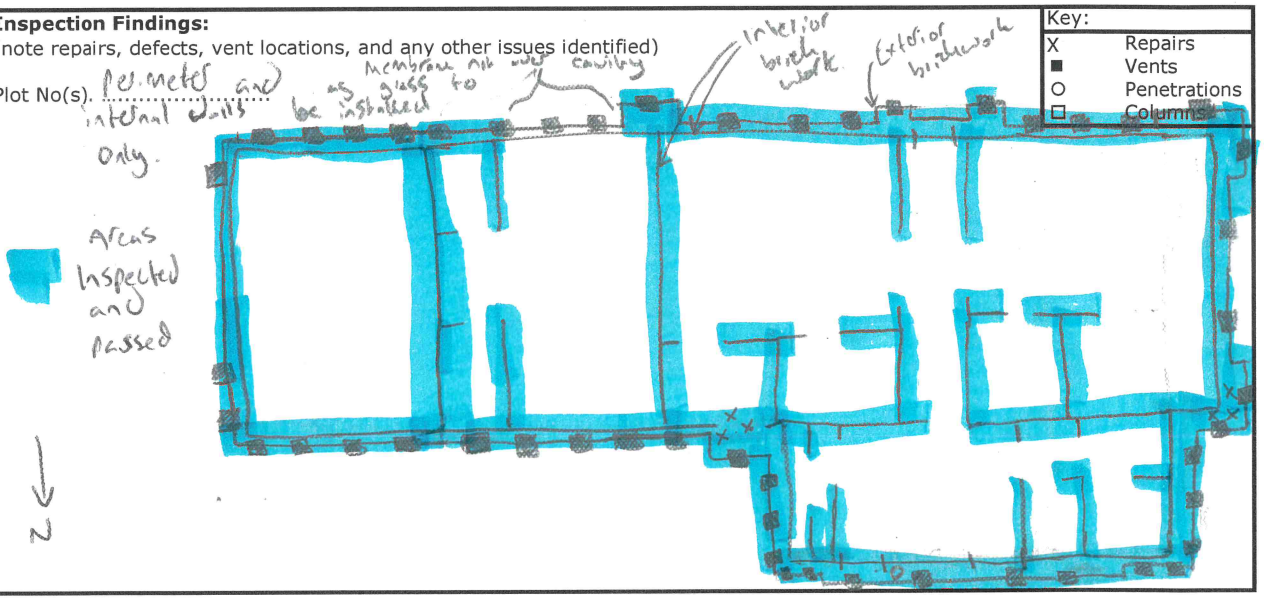
Verificatation Plan Completed:	Yes	(No)	In Production

Gas Protection Provided by:			**Other Details (Membrane Products, Ventilation Type etc):**
1. Gas Resistant Membrane	(Yes)	No	Visqueen Gas barrier + jointing and lap tape
2. Ventilation	(Yes)	No	subfloor void + periscopics
3. Structural Barrier	Yes	(No)	N/A

Gas Membrane Installation:	Welded	(Taped)	

Inspection Findings:
(note repairs, defects, vent locations, and any other issues identified)

Plot No(s). Perimeter and internal walls only.



Number of Defects/Repairs Identified: 6 No	**All Defects/Repairs Completed:** (Note locations above)	(Yes) No
Number of Vents/Vent Spacing: (Note vent locations above)	50 Vents @ 1-2m centers	
Integrity Testing required? Yes (No)	**Details:** Perimeter only	
General Comments/Further Action Required: membrane over cavity in SE not complete as infill visit. glass to be installed. To be inspected during 6 repairs carried out by MAP Developments	**Photos Taken (✓)** ✓	

Verifier Signature .....

Installer Representative Name..... Signed..... Company.....

Site Representative Name Mike Pearson Signed ..... Company MAP Developments

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GAS PROTECTION MEASURES VALIDATION INSPECTION REPORT

Project Name: Gwersyllt Cricket Ground, Wrexham	**Inspection Carried Out by:** AJM
Project No. 120-24-1130	**Date:** 06/12/24

Plot Type: Detached / Semi-Detached / Apartments / (Commercial)	**Plot Number (s):** Internals (except single room left)	**Gas Membrane Installer:** MAP Developments

Gas Risk Rating (CS)	CS2	**VOC**	Yes	(No)	**Radon**	(Yes)	No

Verificatation Plan Completed:	Yes	No	(In Production)

Gas Protection Provided by:			**Other Details (Membrane Products, Ventilation Type etc):**
1. Gas Resistant Membrane	(Yes)	No	Visqueen GRSMM + Gas barrier
2. Ventilation	(Yes)	No	Subfloor void + periscopics (see previous visit)
3. Structural Barrier	Yes	(No)	N/A

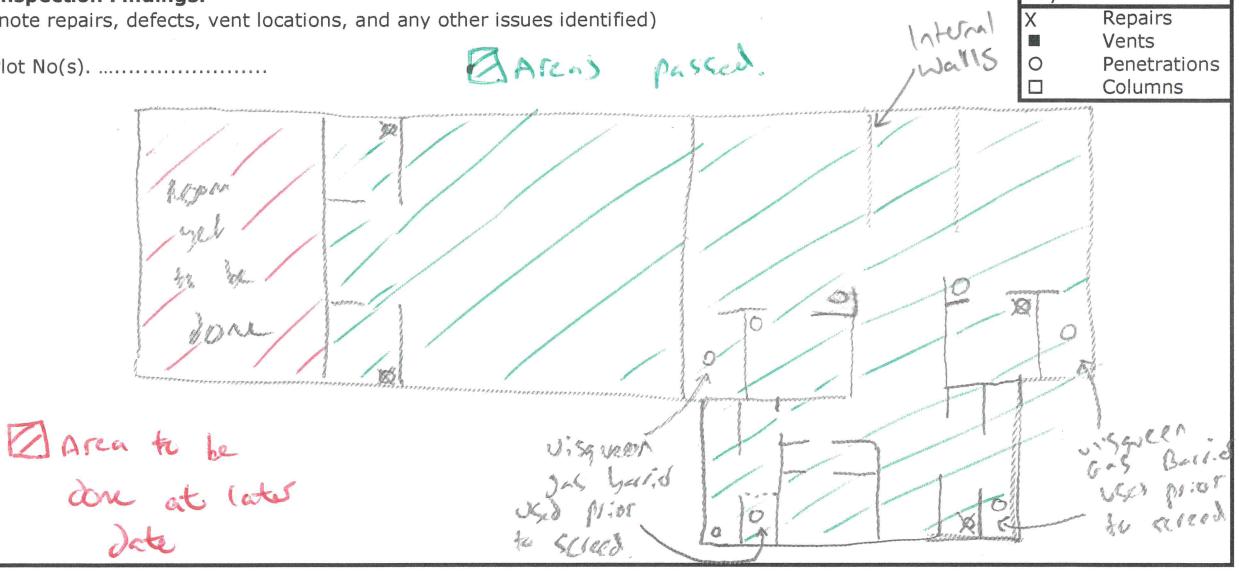
Gas Membrane Installation:	Welded	(Taped)	

Inspection Findings:
(note repairs, defects, vent locations, and any other issues identified)

Plot No(s). .....

☒ Areas passed.

Key:
X Repairs
■ Vents
○ Penetrations
□ Columns



Number of Defects/Repairs Identified: 4 NO	**All Defects/Repairs Completed:** (Note locations above) (Yes) No
Number of Vents/Vent Spacing: (Note vent locations above)	50 @ 1-2m centres (see previous visit for locations)
Integrity Testing required? (Yes) No	**Details:** Air lance testing

General Comments/Further Action Required:
Membrane installed to a good condition, minor repairs to pipework at later date carried out by MAP developments, room to be finished out by Membrane air lances and passed

Photos Taken (✓) ✓

Verifier Signature .....

Installer Representative Name..... Signed..... Company.....

Site Representative Name Mike Pearson Signed ..... Company M.A.P.

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The Geo-Environmental Service Provider

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GAS PROTECTION MEASURES VALIDATION INSPECTION REPORT

Project Name:	GWERSYLLT CRICKET GROUND, WREXHAM	**Inspection Carried Out by:**	AJM
Project No.	120-24-1130	**Date:**	13/01/25

Plot Type: Detached / Semi-Detached / Apartments / (Commercial)	**Plot Number (s):** Storage Area	**Gas Membrane Installer:** NAP Developments

Gas Risk Rating (CS)	CS2	**VOC**	Yes	No	(N/A)	**Radon**	Yes	No	(N/A)

Verificatation Plan Completed:	(Yes)	No	In Production

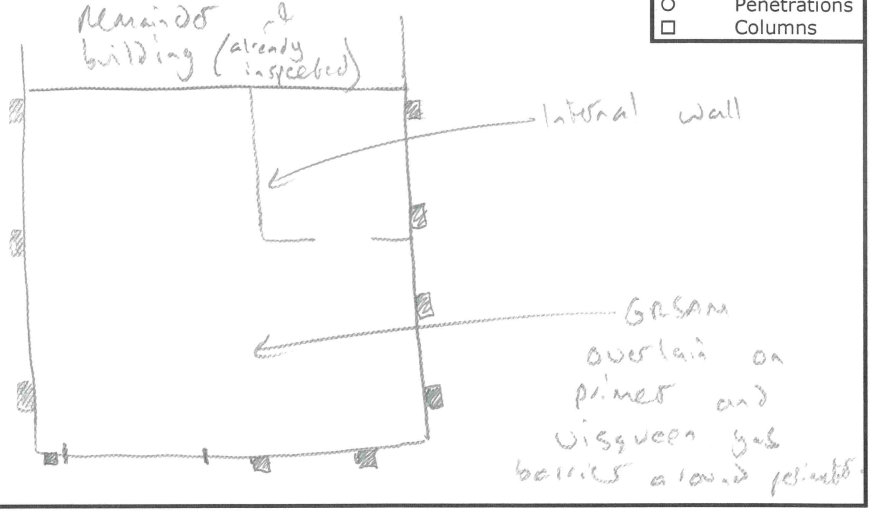
Gas Protection Provided by:			**Other Details (Membrane Products, Ventilation Type etc):**
1. Gas Resistant Membrane	(Yes)	No	Visqueen GREAM + Gas barrier
2. Ventilation	(Yes)	No	Subfloor void + periscopics
3. Structural Barrier	Yes	(No)	N/A

Gas Membrane Installation:	Welded	Taped	

Inspection Findings:
(note repairs, defects, vent locations, and any other issues identified)

Plot No(s). Storage Area

Key:	
X	Repairs
■	Vents
○	Penetrations
□	Columns



Number of Defects/Repairs Identified: None	**All Defects/Repairs Completed:** (Note locations above) N/A ~~Yes~~ ~~No~~
Number of Vents/Vent Spacing: (Note vent locations above)	See previous visit (50 @ 1-2m centres)
Integrity Testing required? (Yes) No	**Details:** Air lance integrity testing 100%.

General Comments/Further Action Required:
Membrane in excellent condition, no repairs required, membrane air lanced and passed.

Photos Taken (✓) ✓

Verifier Signature .....

Installer Representative Name AS below ..... Signed AS below ..... Company as below

Site Representative Name Mike Pearson ..... Signed ..... Company MAP

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