

**GAS MEMBRANE VALIDATION**

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                 |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|
| <b>Site Name: Belle Vue Stadium</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <b>Project Number: 12-123</b>                                                   |
| <b>Company Name: Countryside</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <b>Date: 03-03-2022</b>                                                         |
| <b>Project Manager: O. Jackson</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | <b>E3P Engineer: J. Newall</b>                                                  |
| <b>PM Qualifications : BSc FGS AMIEnvSc</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | <b>Engineer Qualifications: Verification of Gas Protection Systems Dec 2017</b> |
| Ground Gas Risk Assessment: <b>Amber 1</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                 |
| <p><b>Overview:</b></p> <p>The membrane comprised a Visqueen low permeability gas membrane (Yellow) 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.</p> <p>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.</p> <p>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.</p> <p>Based on the information provided within this report, the site inspections and validation checklists, E3P can confirm that <b>Plots 1-3</b> have been installed with gas protection measures in accordance with Amber 1 to an acceptable level of workmanship.</p> |                                                                                 |
| Membrane Specification: Visqueen Gas Membrane (Yellow)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                 |



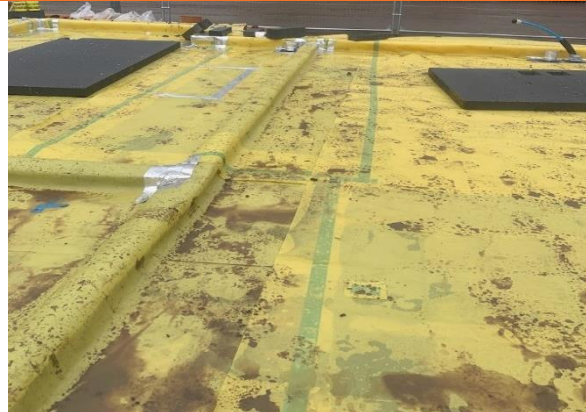


**Plot - 1**

**General Condition of Membrane-Good Condition**



**Verification of Joints and Seals-Overlapped and sealed correctly**



**Verification of Service Penetrations-Good Condition**



**Verification of Ventilation-Good Condition**



**Plot - 2**

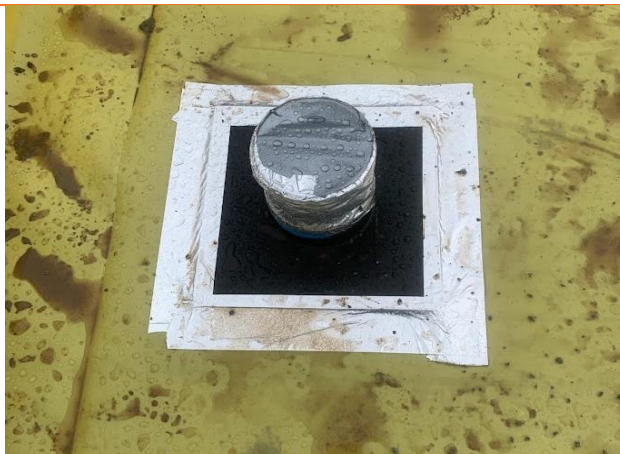
**General Condition of Membrane-Good Condition**



**Verification of Joints and Seals-Overlapped and sealed correctly**



**Verification of Service Penetrations-Good Condition**



**Verification of Ventilation-Good Condition**



**Plot - 3**

**General Condition of Membrane-Good Condition**



**Verification of Joints and Seals-Overlapped and sealed correctly**



**Verification of Service Penetrations-Good Condition**



**Verification of Ventilation-Good Condition**





# Gas Protection Validation Site Record

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|                       |          |               |          |               |     |
|-----------------------|----------|---------------|----------|---------------|-----|
| Inspection date/time: | 03/03/22 | Inspected by: | J Mcwill | Photographed: | Chx |
| Type of development:  |          | Plot number:  | 1        | Developer:    |     |

| Notes/recommendations                                                 | Comments                                                                                                                           |
|-----------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|
| Membrane Type                                                         | yellow u.s. green                                                                                                                  |
| Extent of Coverage                                                    | full coverage                                                                                                                      |
| Underside of Membrane                                                 | clear                                                                                                                              |
| Slab / membrane condition (is membrane clear of debris or insulation) | clear                                                                                                                              |
| Type of joints                                                        | <input checked="" type="checkbox"/> Tape Joint <input type="checkbox"/> Welded Joint <input type="checkbox"/> 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 / 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 Mcwill Signed: [Redacted]



## Gas Protection Validation Site Record

|                       |          |               |           |               |     |
|-----------------------|----------|---------------|-----------|---------------|-----|
| Inspection date/time: | 03/03/22 | Inspected by: | J McNeill | Photographed: | 19x |
| Type of development:  |          | Plot number:  | 2         | Developer:    |     |

| Notes/recommendations                                                 | Comments                                                                                                                           |
|-----------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|
| Membrane Type                                                         | yellow VLSAreen                                                                                                                    |
| Extent of Coverage                                                    | Full coverage                                                                                                                      |
| Underside of Membrane                                                 | clear                                                                                                                              |
| Slab / membrane condition (is membrane clear of debris or insulation) | clear                                                                                                                              |
| Type of joints                                                        | <input checked="" type="checkbox"/> Tape Joint <input type="checkbox"/> Welded Joint <input type="checkbox"/> 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/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 McNeill Signed: [Redacted]



## Gas Protection Validation Site Record

|                       |          |               |           |               |     |
|-----------------------|----------|---------------|-----------|---------------|-----|
| Inspection date/time: | 03/03/22 | Inspected by: | J McNeill | Photographed: | 17x |
| Type of development:  |          | Plot number:  | 3         | Developer:    |     |

| Notes/recommendations                                                 | Comments                                                                                                                           |
|-----------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|
| Membrane Type                                                         | yellow vis signs                                                                                                                   |
| Extent of Coverage                                                    | Full coverage                                                                                                                      |
| Underside of Membrane                                                 | clear                                                                                                                              |
| Slab / membrane condition (is membrane clear of debris or insulation) | clear                                                                                                                              |
| Type of joints                                                        | <input checked="" type="checkbox"/> Tape Joint <input type="checkbox"/> Welded Joint <input type="checkbox"/> 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/FAILED\* inspection. (Any proposed re-inspection must be requested in the "Remarks" column on this form). An additional inspection visit IS/IS NOT required for this Plot.

Inspection by: J McNeill Signed: [Redacted]