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## GAS MEMBRANE VALIDATION

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|
| <b>Site Name:</b> Belle Vue                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <b>Project Number:</b> 12-123                                                  |
| <b>Company Name:</b> Countryside Properties                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <b>Date:</b> 05-10-2022                                                        |
| <b>Project Manager:</b> S. Ellis                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <b>E3P Engineer:</b> T. Preston                                                |
| <b>PM Qualifications:</b> BSc (Hons), FGS, Cenv                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | <b>Engineer Qualifications:</b> Verification of Gas Protection Systems July 18 |
| 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. All the overlaps were then additionally taped using foil backed girth 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 170 &amp; Block 1</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)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                |

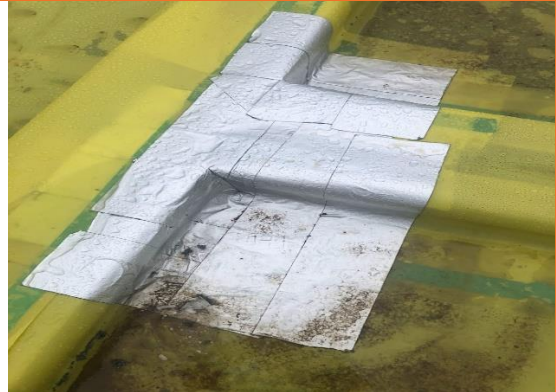


**Plot – Block 1**

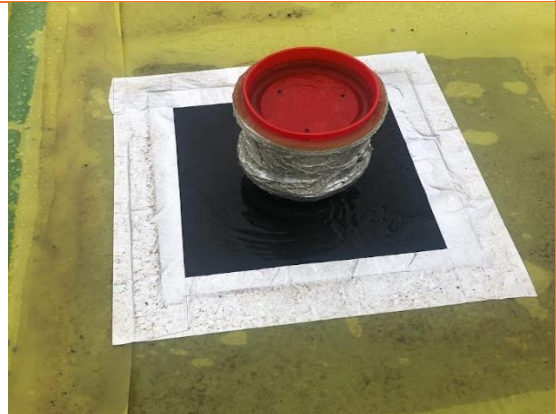
**General Condition of Membrane-Good Condition**



**Verification of Joints and Seals-Good Condition**



**Verification of Service Penetrations-Good Condition**

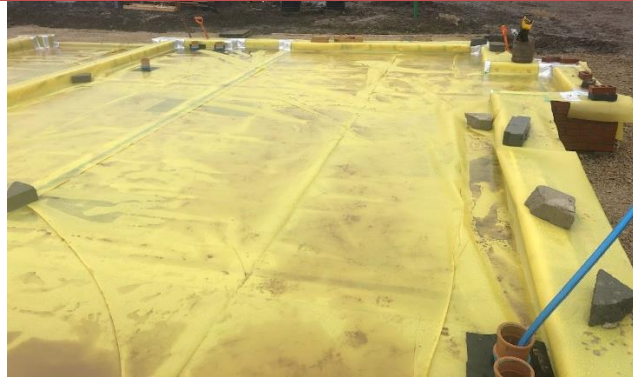


**Verification of Ventilation-Good Condition**



**Plot - 170**

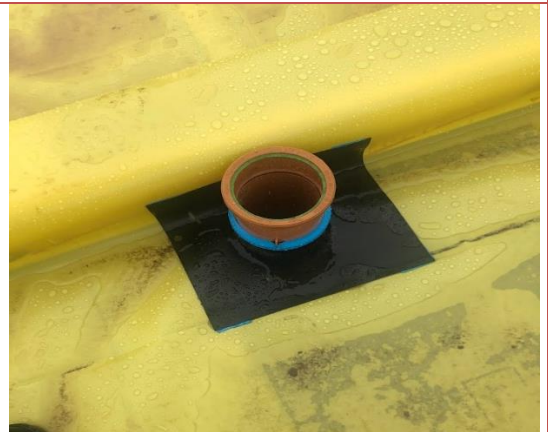
**General Condition of Membrane-Good Condition**



**Verification of Joints and Seals-Good Condition**

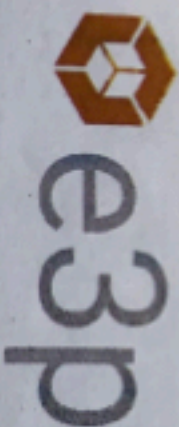


**Verification of Service Penetrations-Good Condition**



**Verification of Ventilation-Good Condition**





# Gas Protection Validation Site Record

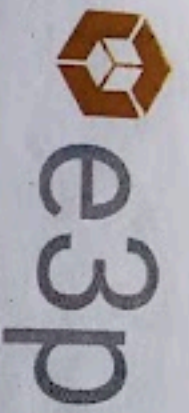
|                       |             |               |             |               |       |
|-----------------------|-------------|---------------|-------------|---------------|-------|
| Inspection date/time: | 5/10/22     | Inspected by: | Tom Preston | Photographed: | ✓/x ✓ |
| Type of development:  | Residential | Plot number:  | Black 1     | Developer:    |       |

| Notes/recommendations                                                 | Comments                                                                                                                           |
|-----------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|
| Membrane Type                                                         | Yellow Visqueen                                                                                                                    |
| Extent of Coverage                                                    | Full Plot ✓                                                                                                                        |
| Underside of Membrane                                                 | ✓                                                                                                                                  |
| Slab / membrane condition (is membrane clear of debris or insulation) | ✓                                                                                                                                  |
| 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         | ✓                                                                                                                                  |
| 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 re-inspection required for NOT required for inspection by: [redacted])

Signed: [redacted]

column on this form). An additional inspection visit is [redacted]



## Gas Protection Validation Site Record

|                       |             |               |             |               |       |
|-----------------------|-------------|---------------|-------------|---------------|-------|
| Inspection date/time: | 5/10/22     | Inspected by: | Tom Preston | Photographed: | ✓/x ✓ |
| Type of development:  | Residential | Plot number:  | 1170        | Developer:    |       |

Notes/recommendations

Comments

|                                                                       |                                                                                                                                    |
|-----------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|
| Membrane Type                                                         |                                                                                                                                    |
| Extent of Coverage                                                    | Yellow Visqueen Full Plot ✓                                                                                                        |
| Underside of Membrane                                                 | ✓                                                                                                                                  |
| Slab / membrane condition (is membrane clear of debris or insulation) | ✓                                                                                                                                  |
| 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         | ✓                                                                                                                                  |
| 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 NOT required for this plot) Inspection by: [Redacted] Signed: [Redacted]

\* column on this form). An additional inspection visit (S)