GeoEnginSeer

FREELANCE DILETTANTE GEOLOGIST

Oakroyd Hall,
Birkenshaw,
Bradford Road BD11 2DY

Verification Completion Report for Ground Gas Protection Systems

Date / Time:	02.04.24 9000hrs

Project Title	Oakroyd Hall Birkenshaw
GES Report Number	1513
Date	09.05.24
Client	GRK Civils / Willmott Dixon
Weather	9oC cloudy, light wind 3 kmph
Development Type	Commercial
Foundation Type	Sectional concrete slab floors
Area / section	Training area – Tunnels Visit 2 (second half of install)
GES Job Ref:	1427
Visit By	Paul Carter – Jones

Report By	**Checked/Approved By**
Signature	*Signature*
Name: Paul Carter – Jones	*Name: Ben Crowther*

Company Contact Details

Oakroyd Hall,
Birkenshaw,
Bradford Road BD11 2DY

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For and on behalf of geoenginseer.
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1. GAS MEMBRANE

1.1 Condition Of Subgrade 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.

The subgrade was Cast Monolithic reinforced slab which has been cleaned and scraped for a surface smooth enough for the install.

1.2 Gas Membrane Type

Manufacturer and product specification, gauge, colour, brand/name, material batch/roll numbers.

Juta GP Titan Bond, preformed corners and sheet material with tanking primer and double sided jointing tape for temporary fixing (also wired at top in excess sheet).

[redacted] [redacted]

1.3 Laps, Welds and Joint Seals

Joints lapped and sealed in accordance with manufacturers requirements/specification. Minimum overlap insured? Welds complete? Appropriate joining/double sided tape used?

The membrane had been heat welded together.

1.4 Service Entries Seals

How many pipe penetrations? Top hats seal arrangements fixed around service entries? Use of jubilee clips? Etc.

NA

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2. VENTILATION SYSTEMS

2.1 Subfloor Void

Is a check possible? Void former? Gravel (type/specification)? Height of void space? Is it clear?

N/A

2.2 External Wall Airbricks

How many? Size? Positioning? Spacing? Etc.

N/A

2.3 Active Venting

Type of air supply: mechanical, natural, combined? Location/condition/number of fans/vents? Location and size of inlets? Provision of air cleaning devices and air heaters? Supply and exhaust duct work? Alarm provision/installation? Gas monitoring system in under-floor void?

N/A

2.4 Testing Of Air Flow

Is the air flowing sufficiently through ventilation? Anemometer reading? Smoke test? Tracer gas?

N/A

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3. INSPECTION AND INTEGRITY DETAILS

On the 2nd of April 2024 the installation of the Proprietary Gas Resistant Membrane for the protection of properties from ground gas was inspected at Oakroyd Hall Birkenshaw, in the Tunnels training area. This was a follow up visit to see the completed installation.

The subgrade appeared to have been cleared and swept to a very good standard, there were no sharp or protruding objects.

Juta GP Titan Bond had been installed on the base, which then returned vertically up and around the perimeter. It had been held in place along the shuttering temporarily with wire ties, these were placed above the pour line in an extra area of membrane overlap, which can be repaired when joined to the rest of the gas membrane on the ground level or trimmed back. It was held to the wall with strips of double-sided tape that had been applied to sections of the wall that had been pre-treated with primer.

The membrane had been installed throughout the central area with a minimum of 100 – 150mm overlap. The seams of the membrane appeared to have been heat sealed together but I couldn't inspect the seams as they had also been covered with an overlaying tape on the upper side as a secondary seal, which was sound.

The corners had been detailed [redacted] e Titan Bond me[redacted] cut and shaped to fit that had been bonded with the same over laying tape.

I pick tested and visually inspected all laps and they were well sealed, and the upper tape applied and been installed with a very good bond.

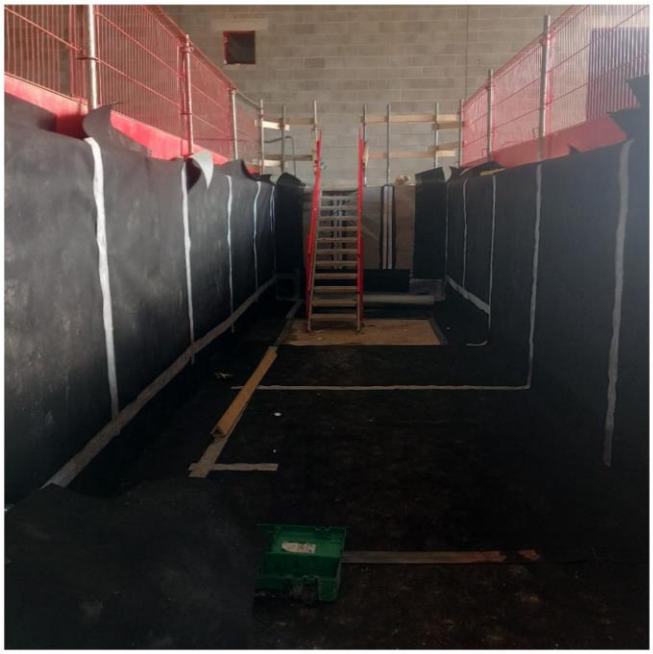
Overall the membrane had been installed to a very neat and good standard. An opening had been left around the temporary stair access, approximately a meter square, that is to be put in place once the stairs have been safely moved.

A Solco Bentobar Water Stop was currently being installed in between the rebar, the method of the installation of this water stop was under discussion with the site team during my visit. It was unclear if the water stop was to be installed with an adhesive or if fixings were to be used.

Please see photographs.

4. PHOTOGRAPHIC RECORDS

Training Tunnels:

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Training Tunnels:

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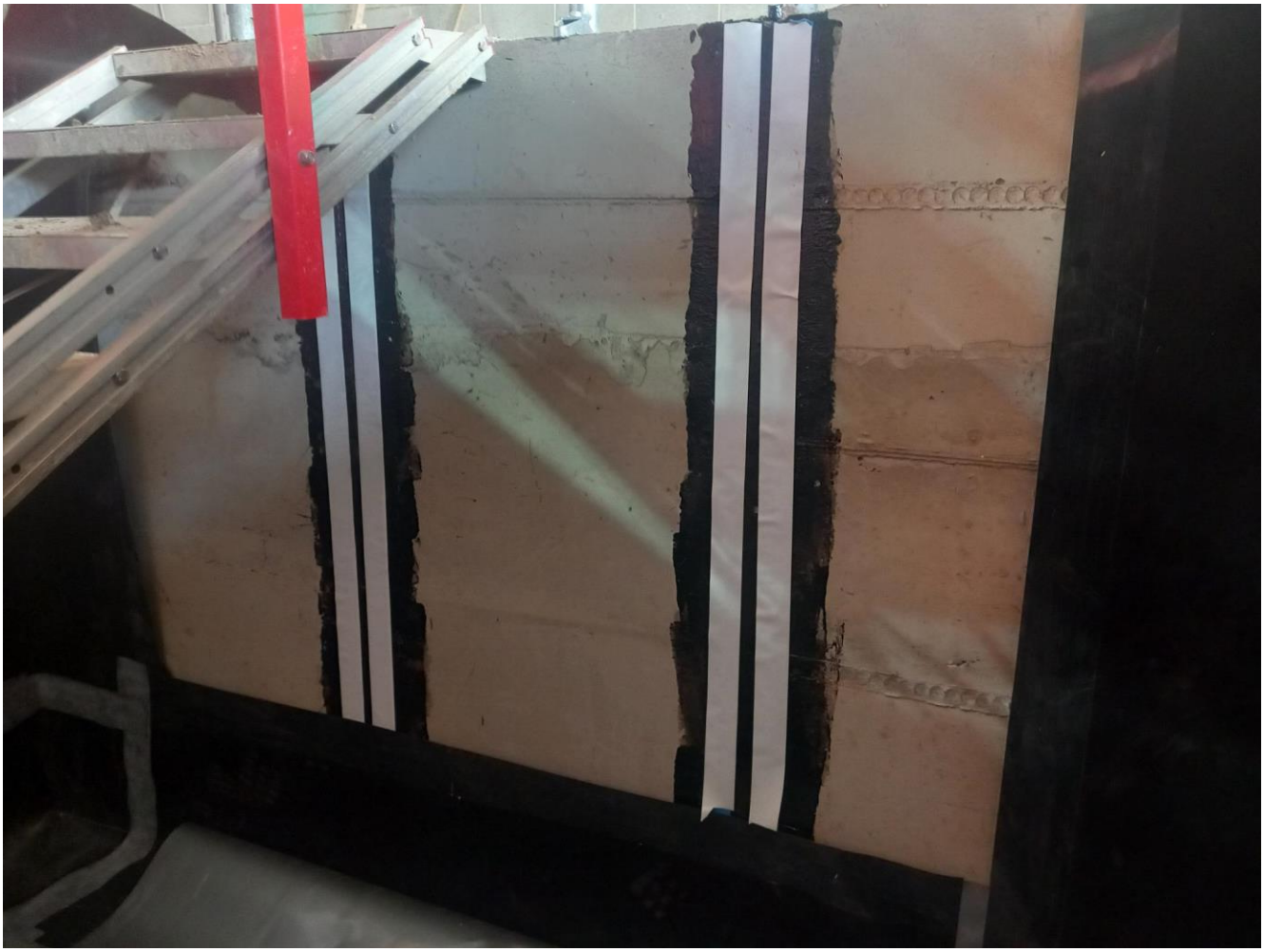
Detail tape on back of stair well:



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Bentobar Water Stop:

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Area to be completed:

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Site plan:

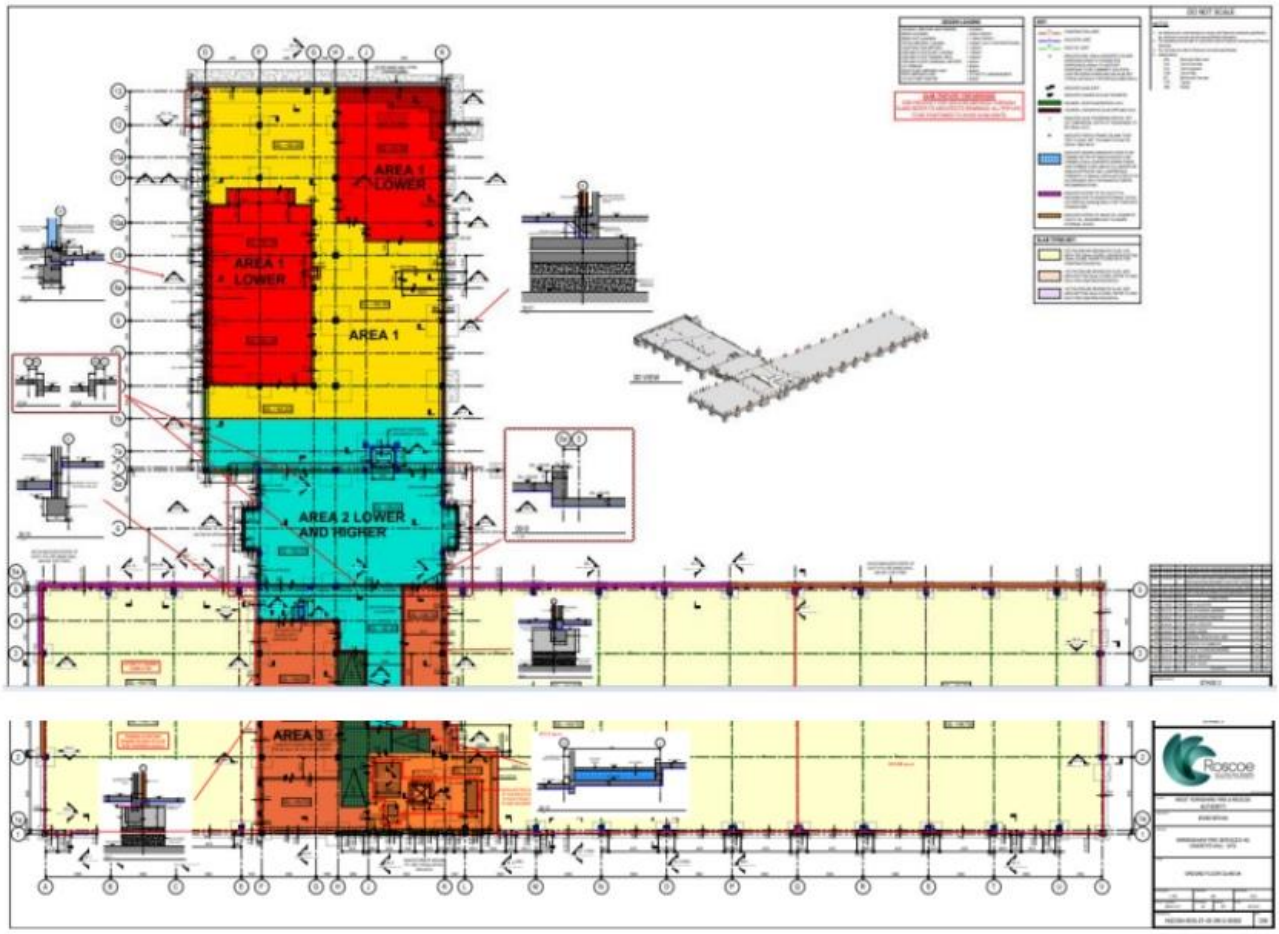

Image split due to size and capacity to fit legibly on on sheet. Please refer to originals.

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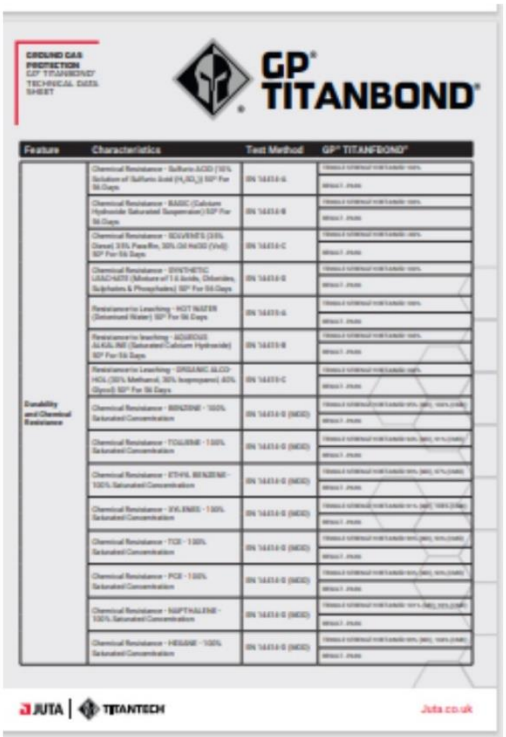
Product data sheets:



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5. CONCLUSION OF SITE VISIT

5.1 Details Of Installers

Are the installers suitably qualified / trained? Names of installers / company details?

GRK Civils Ltd

5.2 Pass / Fail?

Are the measures inspected acceptable / NOT acceptable? Do they comply with the specifications? Is attention required to specific issues?

PASS

5.3 Additional notes

Remedial actions to be taken? Re-visit to be arranged?

All Lines of evidence no received.

If you have any questions regarding the above, please do not hesitate to contact me.

Yours sincerely

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6.0 Limitations and Challenges of Verification Reporting

This report is based on the information that has been made available to us from the client, contractor and architect regarding the site. The conclusions drawn in the report are considered correct although any subsequent additional information or actions may allow refinement of the conclusions. It should be noted that: The report has been prepared under the express instructions and solely for the use of the Client.

The findings of this report represent the professional opinion of experienced Ground Gas System Surveyors. GeoEnginSeerLtd does not provide legal advice and the advice of lawyers may also be required.

All work carried out in preparing this report has utilised and is based upon understanding of current relevant UK standards and codes, technology, and legislation. (BS8485:2015+A1:2019 & CIRIA 735).

Changes in this legislation and guidance may occur at any time in the future and cause any conclusions to become inappropriate or incorrect.

The report is limited to the boundaries identified by the Client on this site and confirmed within this document.

Should additional services be introduced, or service conduits are not sealed or have services provided through them at a later date that are not sealed to the conduit and or gas protection system, a retrospective fit may be required. If a site is left open for prolonged periods following verification or works are conducted that may damage the integrity of the installation by follow on trades repairs may be needed, the standards observed in a positive verification report may be compromised. Intellectual rights to this document may be rescinded.

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