



Gas Membrane Installation
Validation Report
Triton Construction
Trade City
Elizabeth Street
Cheetham Hill
Manchester
M8 8JJ



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1. INTRODUCTION

1.1 Purpose

UK Membranes are installing a gas protection membrane to the aforementioned site. MEC Environmental Ltd (MEC) has been appointed by UK Membranes to carry out independent validation of the installation of the membrane on the site as per our terms of engagement. The frequency of independent inspections has been determined by the client, comprehensive CQA should be forwarded by the installer to cover any data gaps for areas that have not been subjected to independent inspections.

The **SOLE** purpose of the works undertaken by MEC Environmental is to provide independent inspections and a factual report as and when requested to assist the client in gaining regulatory approval with regards to the gas membrane installation. This is as per the scope of work section within our term's engagement.

1.2 Limitations

This report is limited to providing lines of evidence to the regulatory authority for the areas components inspected by MEC only in support of the discharging of the relevant planning conditions only and cannot be used or relied upon for any other purpose. No professional liability shall be extended to any other parties by MEC, the report should explicitly not be relied on by any future vendor or tenant as proof that the gas protection measures are sufficient for the site and functioning at the time of purchase or start of any tenancy. Gas protection systems are not solely reliant on the gas membrane as points are scored under BS8485 for the floor slab, membrane and venting, these components work collaboratively to provide a gas protection system. This is as per the conditions within our term's engagement.

The report has been provided on the assumption that no damage or works that may have compromised the components and integrity of the gas membrane have been made after our inspections, failure to report any such occurrences will invalidate any liability and render the report and contents invalid. This is as per the conditions within our term's engagement.

This report has been prepared in accordance with the best available practice and the relevant guidance documents listed below of which the author of the report was a contributor and member of the steering committees:

Mallett H, Wilson S, Corban M (2014) "Good practice on the testing and verification of protection systems for buildings against hazardous ground gases". CIRIA Report C735

1.3 Compliance with Regulation 7 of Building Regulations

Regulation 7 of the building regulations requires that building work shall be carried out in a workmanlike manner. Approved document 7 suggests installation can comply with the regulation if workmanship is such that, where relevant, materials are adequately mixed or prepared and applied, used or fixed so as to perform adequately the functions for which they are intended.

A reasonable standard may be demonstrated by:

Compliance with a standard and independent certification - The relevant standard for gas protection measures is BS8485:2015 +A1:2019, Table 7 of the standard requires that gas membranes are verified as per CIRIA C735.

Past experience – The installers qualifications are checked by MEC Environmental to ensure that the installation supervisor holds the NVQ Level 2 in gas membrane installations.

Integrity Testing methods. – are carried out as prescribed in CIRIA C735, unless stated elsewhere
Frequency of Visits – MEC have not been employed to prepare a validation plan for this project, the frequency of visits is as per the instructions of the client, in essence MEC inspected the available membrane that could be inspected each time an inspection visit was requested. The area inspected on each visit is noted on the survey sheets in appendix 1. This report should be read in conjunction with the installers CQA report.

1.4 Method of Inspection (Per Visit)

All seams and non-seam areas of the available gas membrane were inspected/tested by the Validation Surveyor for identification of defects, protruding and penetrating objects, lack of subgrade support, overheating, holes, blisters, undispersed raw materials, scratches and gouges, and any sign of contamination by foreign matter.

Any portion of the gas membrane exhibiting a flaw or failing a visual inspection/testing was repaired. Several procedures exist for the repair of these areas. The final decision as to the appropriate repair procedure was agreed upon between the Validation Consultant and the Installer at the time of the repair and is noted in the survey sheets.

Major repairs are visually inspected/tested, repairs passing the inspection/testing were considered acceptable. In some cases minor repairs may be carried out under contractor CQA and photographic evidence supplied to the verifier for inclusion in the report.

1.5 MEC Staff Competency

All site inspections have been carried out by suitably qualified staff as defined in CIRIA C735, the qualification held by all MEC inspection surveyors is either the NVQ Level 4 in gas protection verification or the NVQ Level 2 in gas membrane installation

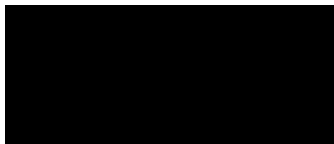
The author of this report is also a CL:AIRE accredited Specialist in Gas Protection Verification (SGPV) and holds both the NVQ Level 2 in gas membrane installation and the NVQ Level 4 in gas protection verification.

1.6 Conclusion

During our inspections to the areas denoted in Appendix 1 (Site Surveys Sheets) we witnessed the installer carrying out the installation in a workmanlike manner, the materials were adequately prepared and applied, used and fixed so as to perform adequately the functions for which they are intended as per Regulation 7 of the building regulations. In instances where 100% of the installation has not been independently inspected/tested then this report should be read in conjunction with the gas membrane installers CQA records.

The installers all hold the NVQ Level 2 "Gas membrane Installations" qualification and as such are classed as a qualified and experienced installer. MEC Environmental have checked the CSCS Trade Cards of the installers, which confirms the holder has attained the qualification.

Signed



Date: 30/01/2024

Michael Corban S.G.P.V.
Director
MEC Environmental Ltd

Appendix 1 – Site Survey Sheets

Site name: Triton Construction - Trade City. Elizabeth Street, Cheetham Hill, Manchester		Units/ plots checked: : Unit 2 & 3 core area line outs	
Postcode: M8 8JJ			
Installers Name: UK Membranes			
Date: 07/11/2023			
Inspection by: Dan Squire		Weather: 10°C Wet	
	Item	Comments	
	Sub-floor void	N/A	
	Ventilation Inlets and Outlets	N/A	
	Number Of Vents	N/A	
	Materials used:	Membrane – Juta GP5 gas barrier membrane Self-Adhesive Membrane ☒ Yes Preformed Top hats ☐ Yes Double Sided Butyl Tape ☐ Yes Preformed Corners ☐ Yes Others Please List: N/A	
	Installation Notes	<p><u>(brief description of area/plots and list of defects/repairs identified to the main membrane sheet, excluding detailing and joints)</u></p> <p>MEC Environmental carried out a thorough visual inspection of the membrane, the membrane had been installed to a good standard. The membrane is lined across the full core area base and extends out under the temporary shuttering. All joints are hand welded. All pipes, stanchion and perimeter retro fit detailing sealed using SAGM and heat applied.</p> <p>In unit 3 the wet weather restricted UKM to apply the perimeter retro fit detail so they lined the membrane up and over the perimeter steel frame.</p>	
	Type of Joint	Tape Joint ☐	Auto Weld ☐
		Hand Weld ☒	Extrusion Weld ☐
	Jointing/Detailing Testing	☐ Air Lance (ASTM D4437) ☒ Probe Test (ASTM D4437)	
	Laps, welds and detailing	Have all joints passed testing prior to surveyor leaving site?	☒ Yes ☐ No ☐ N/A
		Have all pipes passed testing prior to surveyor leaving site?	☒ Yes ☐ No ☐ N/A
	Ventilation Inlets & Outlets	Have all stanchions/wind braces/columns passed testing prior to surveyor leaving site?	☒ Yes ☐ No ☐ N/A

Have all piles and pile caps passed testing prior to surveyor leaving site?	☐ Yes	☐ No	☒ N/A
Has all other detailing work passed inspection	☐ Yes	☐ No	☒ N/A
<p><u>(List any defects to detailing work and joints):</u></p> <p>During our inspection the following defects and repairs were carried out: No recorded defects</p> <p>Have any defects identified above been satisfactorily rectified ☐ Yes ☐ No ☒ N/A</p> <p>The Area has passed inspection ☒</p> <p>The Area has failed inspection and a corrective action sheet has been left with the contractor ☐</p> <p>The Area is incomplete as detailed above ☐</p> <p>Signed: Dan Squire Date: 07/11/2023</p>			

Area Inspected

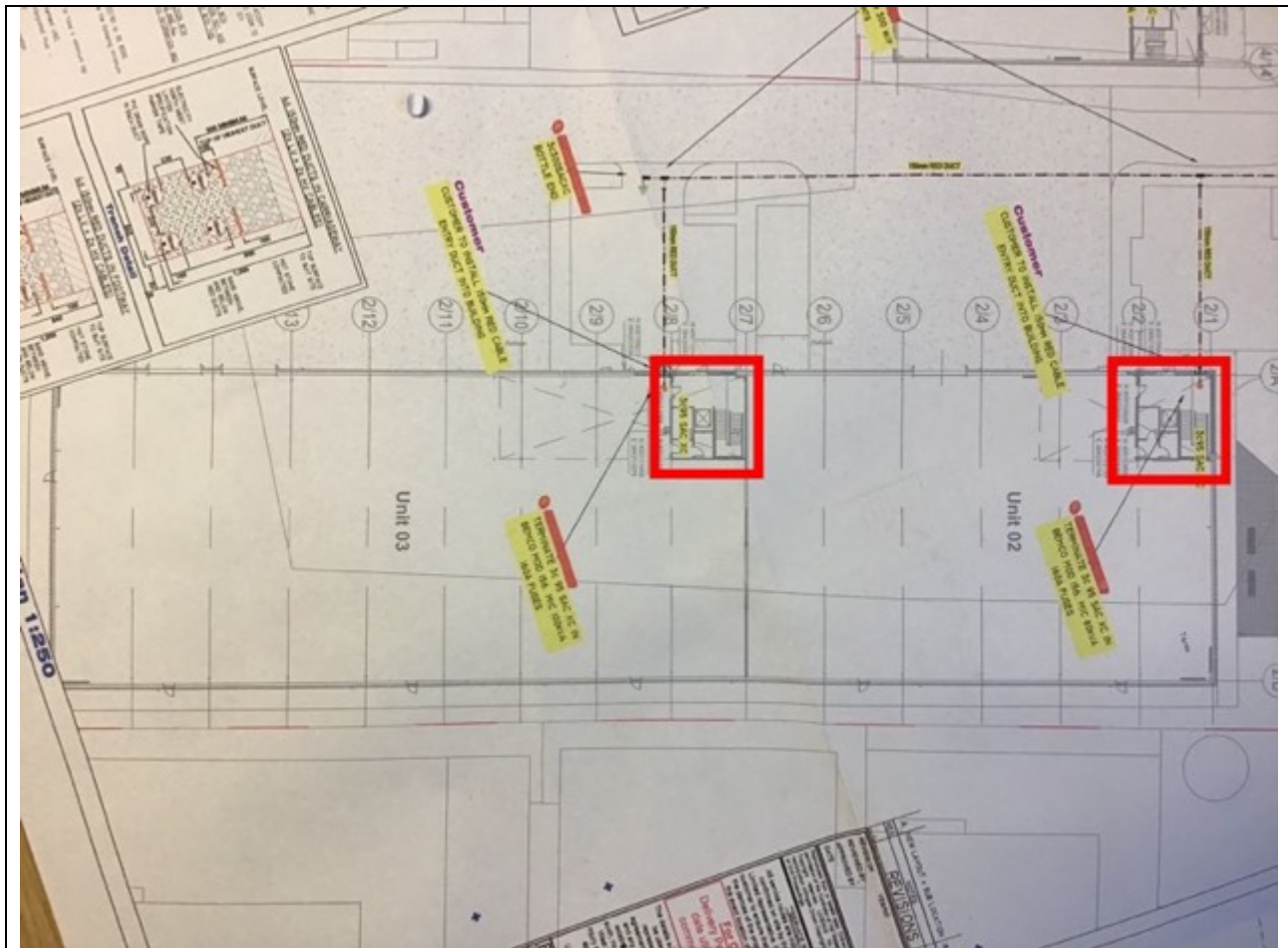


Photo 07/11/2023



Unit 2 core area line out installation



Unit 2 sealed retro fit detailing



Unit 2 sealed pipe penetration



Unit 2 sealed stanchion detailing



Unit 3 core area line out installation



Unit 3 membrane extended over the perimeter edge



Unit 3 sealed pipe penetrations



Unit 3 sealed stanchion detailing

Site name: Triton Construction - Trade City. Elizabeth Street, Cheetham Hill, Manchester		Units/ plots checked: : Unit 9 core area	
Postcode: M8 8JJ			
Installers Name: UK Membranes			
Date: 07/11/2023			
Inspection by: Dan Squire		Weather: 10°C Wet	
	Item	Comments	
	Sub-floor void	N/A	
	Ventilation Inlets and Outlets	N/A	
	Number Of Vents	N/A	
	Materials used:	Membrane – Juta GP5 gas barrier membrane Self-Adhesive Membrane ☒ Yes Preformed Top hats ☐ Yes Double Sided Butyl Tape ☐ Yes Preformed Corners ☐ Yes Others Please List: N/A	
	Installation Notes	<u>(brief description of area/plots and list of defects/repairs identified to the main membrane sheet, excluding detailing and joints)</u> MEC Environmental carried out a thorough visual inspection of the membrane, the membrane had been installed to a good standard. The membrane is lined across the full core area base and extends out under the temporary shuttering. All joints are hand welded. All pipes, stanchion and perimeter retro fit detailing sealed using SAGM and heat applied.	
	Type of Joint	Tape Joint ☐ Auto Weld ☐ Hand Weld ☒ Extrusion Weld ☐	
	Jointing/Detailing Testing	☐ Air Lance (ASTM D4437) ☒ Probe Test (ASTM D4437)	
	Laps, welds and detailing	Have all joints passed testing prior to surveyor leaving site?	☒ Yes ☐ No ☐ N/A
	Ventilation Inlets & Outlets	Have all pipes passed testing prior to surveyor leaving site?	☒ Yes ☐ No ☐ N/A
		Have all stanchions/wind braces/columns passed testing prior to surveyor leaving site?	☒ Yes ☐ No ☐ N/A
		Have all piles and pile caps passed testing prior to surveyor leaving site?	☐ Yes ☐ No ☒ N/A
		Has all other detailing work passed inspection	☐ Yes ☐ No ☒ N/A

	<p><u>(List any defects to detailing work and joints):</u></p> <p>During our inspection the following defects and repairs were carried out: No recorded defects</p> <p>Have any defects identified above been satisfactorily rectified ☐ Yes ☐ No ☒ N/A</p> <p>The Area has passed inspection ☒</p> <p>The Area has failed inspection and a corrective action sheet has been left with the contractor ☐</p> <p>The Area is incomplete as detailed above ☐</p> <p>Signed: Dan Squire Date: 07/11/2023</p>
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Area Inspected

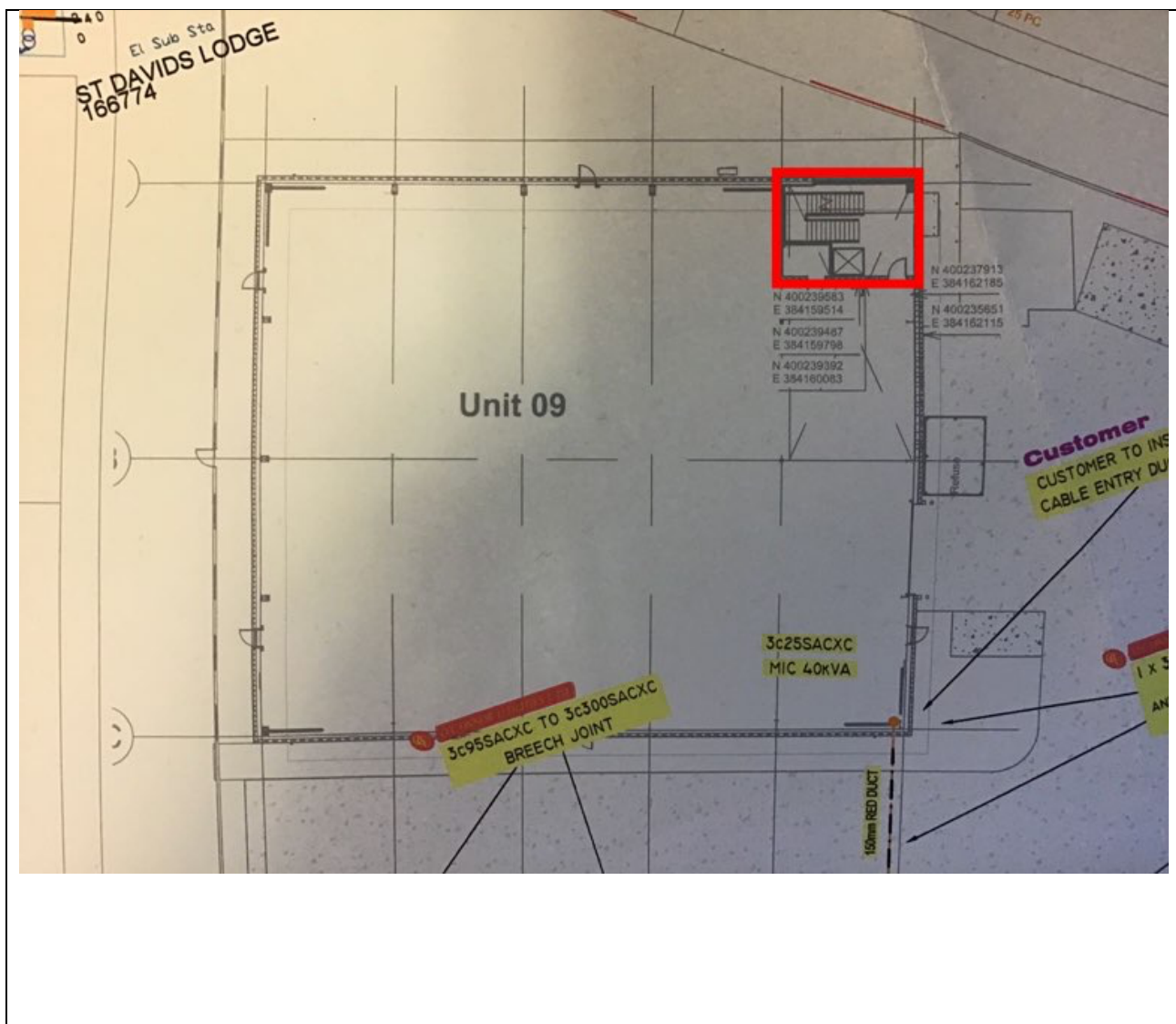


Photo 07/11/2023



Unit 9 core area line out installation



Probe test to sealed hand weld membrane joint



Sealed retro fit detailing to stairs



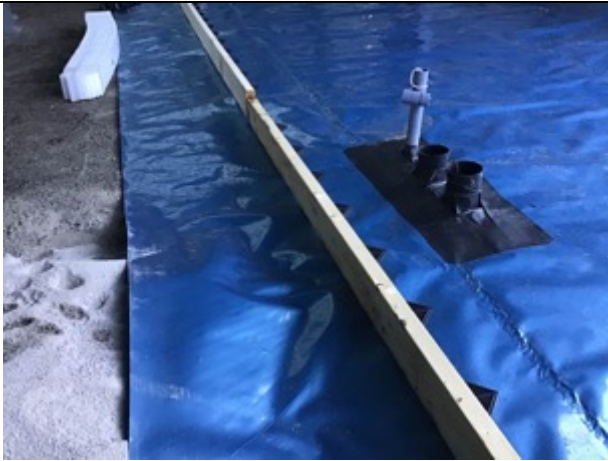
Sealed pipe penetrations



Sealed perimeter retro fit detailing



Sealed stanchion detailing



Membrane extending under temporary shuttering

Site name: Triton Construction - Trade City. Elizabeth Street, Cheetham Hill, Manchester		Units/ plots checked: : Unit 4 to 8 core areas full line out installation	
Postcode: M8 8JJ			
Installers Name: UK Membranes			
Date: 21/11/2023			
Inspection by: Dan Squire		Weather: 11°C Dry	
	Item	Comments	
	Sub-floor void	N/A	
	Ventilation Inlets and Outlets	N/A	
	Number Of Vents	N/A	
	Materials used:	Membrane – Juta GP5 gas barrier membrane Self-Adhesive Membrane ☒ Yes Preformed Top hats ☐ Yes Double Sided Butyl Tape ☐ Yes Preformed Corners ☐ Yes Others Please List: N/A	
	Installation Notes	<u>(brief description of area/plots and list of defects/repairs identified to the main membrane sheet, excluding detailing and joints)</u> MEC Environmental carried out a thorough visual inspection of the membrane, the membrane had been installed to a good standard. The membrane is lined across the full core area base upon a blinded substrate and extends out under where the temporary shuttering will sit. All joints are hand welded. All pipes, stanchion and perimeter retro fit detailing sealed using SAGM and heat applied.	
	Type of Joint	Tape Joint ☐ Auto Weld ☐ Hand Weld ☒ Extrusion Weld ☐	
	Jointing/Detailing Testing	☐ Air Lance (ASTM D4437) ☒ Probe Test (ASTM D4437)	
	Laps, welds and detailing	Have all joints passed testing prior to surveyor leaving site?	☒ Yes ☐ No ☐ N/A
	Ventilation Inlets & Outlets	Have all pipes passed testing prior to surveyor leaving site?	☒ Yes ☐ No ☐ N/A
		Have all stanchions/wind braces/columns passed testing prior to surveyor leaving site?	☒ Yes ☐ No ☐ N/A
		Have all piles and pile caps passed testing prior to surveyor leaving site?	☐ Yes ☐ No ☒ N/A
		Has all other detailing work passed inspection	☐ Yes ☐ No ☒ N/A

(List any defects to detailing work and joints):

During our inspection the following defects and repairs were carried out: 4no patch repairs made by the installers in core area 8 using SAGM and heat applied.

Have any defects identified above been satisfactorily rectified ☐ Yes ☐ No ☒ N/A

The Area has passed inspection ☒

The Area has failed inspection and a corrective action sheet has been left with the contractor ☐

The Area is incomplete as detailed above ☐

Signed: **Dan Squire**

Date: **21/11/2023**

Area Inspected

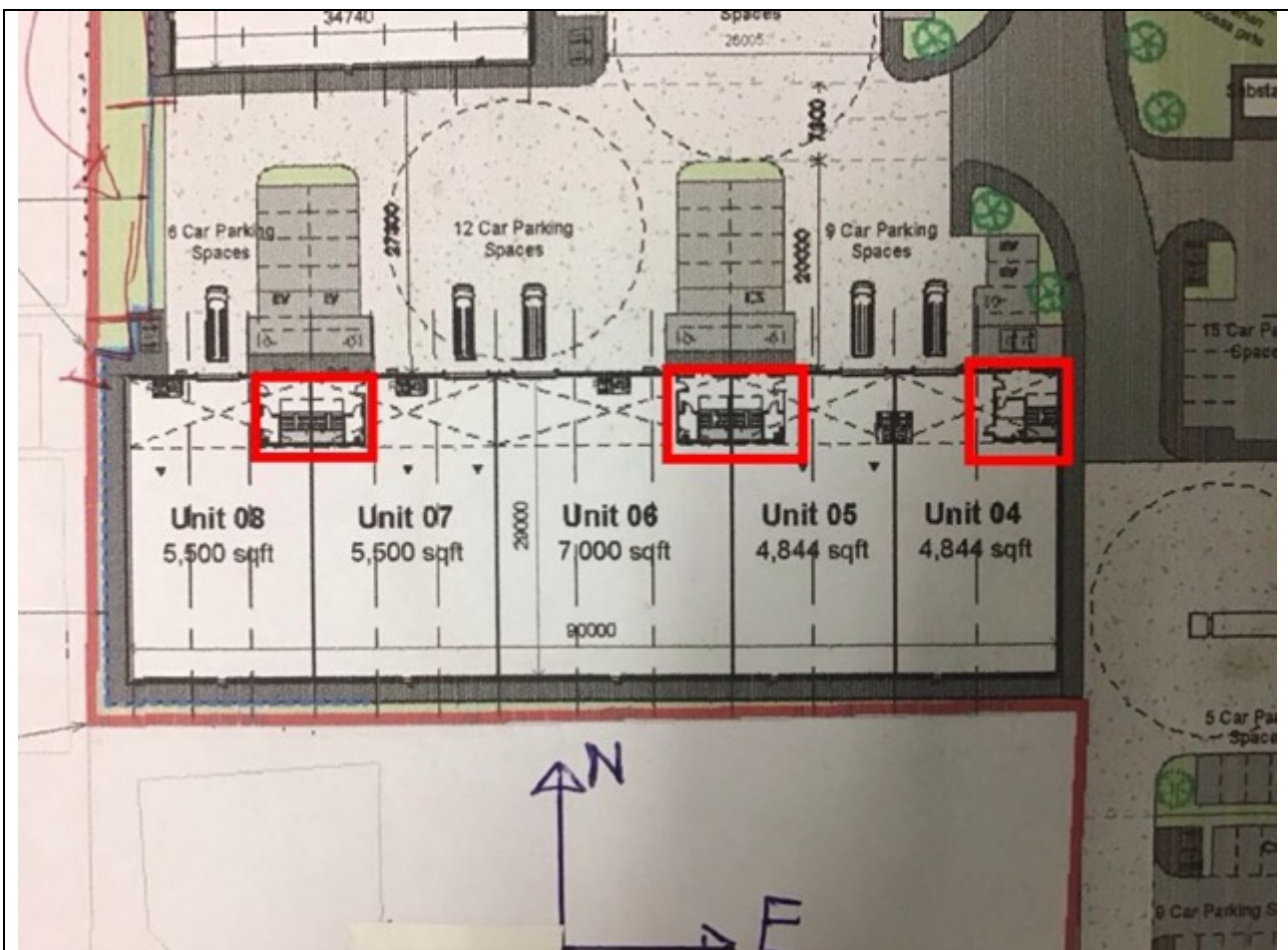


Photo 21/11/2023



Probe test to sealed hand weld membrane joint



Core area 4 overview



Core 4 sealed pipe penetration and stanchion detailing



Core 4 sealed perimeter retro fit detailing



Core area 5 & 6 overview



Core 5 sealed pipe penetrations



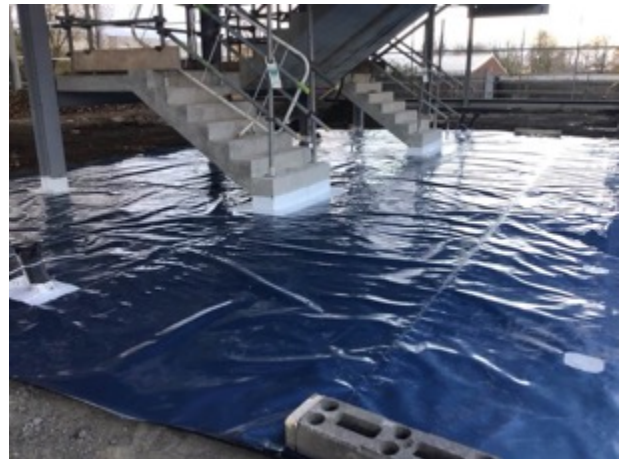
Core 5 sealed stair detailing



Core 6 sealed pipe penetrations



Core 6 sealed stanchion detailing



Core area 7 & 8 overview



Core 7 sealed pipe penetration



Core 7 sealed stanchion detailing



Core 8 sealed perimeter retro fit detailing



Core 8 sealed stanchion detailing, pipe penetration and patch repair

Site name: Trade City Manchester, Triton, Elizabeth Street, Cheetham Hill, Manchester		Units/ plots checked: : Unit 1	
Postcode: M8 8JJ			
Installers Name: UK Membranes			
Date: 04/01/2024			
Inspection by: Ross Edwards		Weather: 8°C Dry	
	Item	Comments	
	Sub-floor void		
	Ventilation Inlets and Outlets	N/A	
	Number Of Vents		
	Materials used:	Membrane – JUTA GP5 Gas Membrane Self-Adhesive Membrane ☒ Yes Preformed Top hats ☐ Yes Double Sided Butyl Tape ☐ Yes Preformed Corners ☐ Yes Others Please List: N/A	
	Installation Notes	<u>(brief description of area/plots and list of defects/repairs identified to the main membrane sheet, excluding detailing and joints)</u> MEC Environmental carried out a thorough visual inspection of the membrane, the membrane had been installed to a good standard, the membrane has been installed across the full footprint to Unit 1 with the membrane terminated to the perimeter steel using SAGM as a retro fit detail. All other detailing has been completed and sealed also using SAGM.	
	Type of Joint	Tape Joint ☐	Auto Weld ☐ Hand Weld ☒ Extrusion Weld ☐
	Jointing/Detailing Testing	☐ Air Lance (ASTM D4437) ☒ Probe Test (ASTM D4437)	
	Laps, welds and detailing	Have all joints passed testing prior to surveyor leaving site? ☒ Yes ☐ No ☐ N/A	
	Ventilation Inlets & Outlets	Have all pipes passed testing prior to surveyor leaving site? ☒ Yes ☐ No ☐ N/A	
		Have all stanchions/wind braces/columns passed testing prior to surveyor leaving site? ☒ Yes ☐ No ☐ N/A	
		Have all piles and pile caps passed testing prior to surveyor leaving site? ☐ Yes ☐ No ☒ N/A	
		Has all other detailing work passed inspection ☐ Yes ☐ No ☒ N/A	

	<p><u>(List any defects to detailing work and joints):</u></p> <p>During our inspection the following defects and repairs were carried out: no defects located</p> <p>Have any defects identified above been satisfactorily rectified ☐ Yes ☐ No ☒ N/A</p> <p>The Area has passed inspection ☒</p> <p>The Area has failed inspection and a corrective action sheet has been left with the contractor ☐</p> <p>The Area is incomplete as detailed above ☐</p> <p>Signed: Ross Edwards Date: 04/01/2024</p>
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Area Inspected

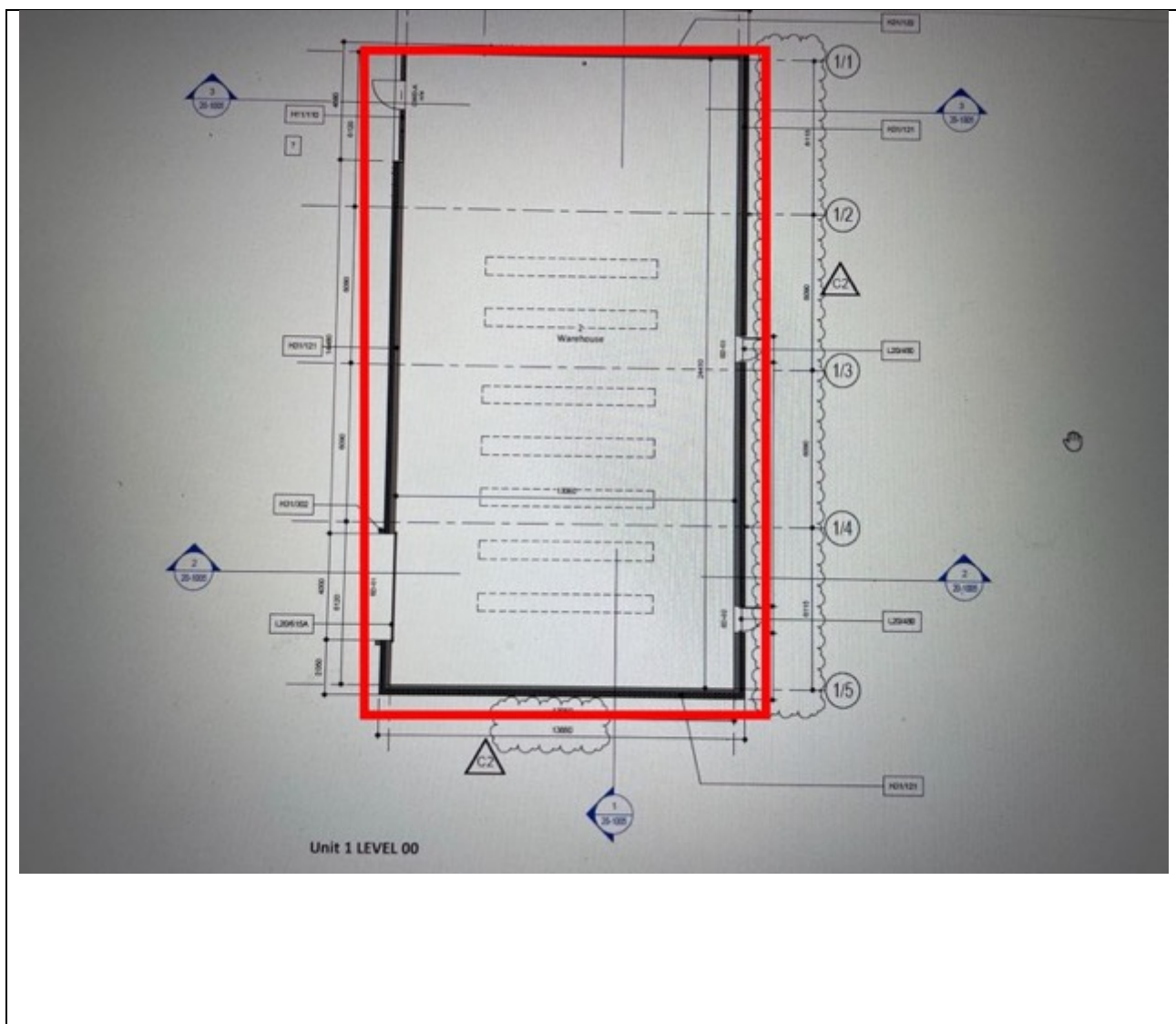


Photo 04/01/2024



Overview to the membrane line out to unit 1.



Sand blinding across the footprint within unit 1.



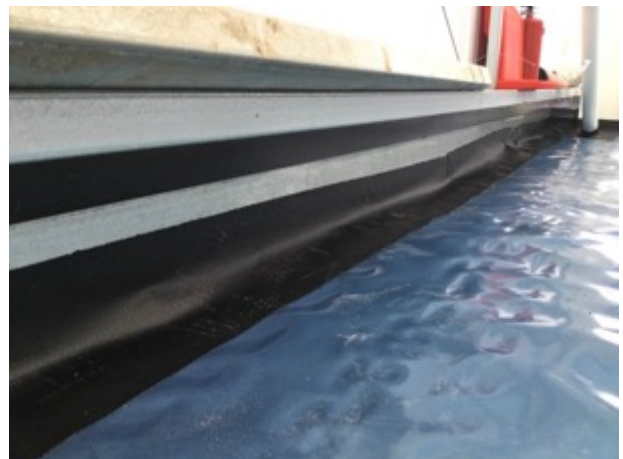
Pick testing along the hand welded lap joint.



Pipe penetration details sealed using SAGM.



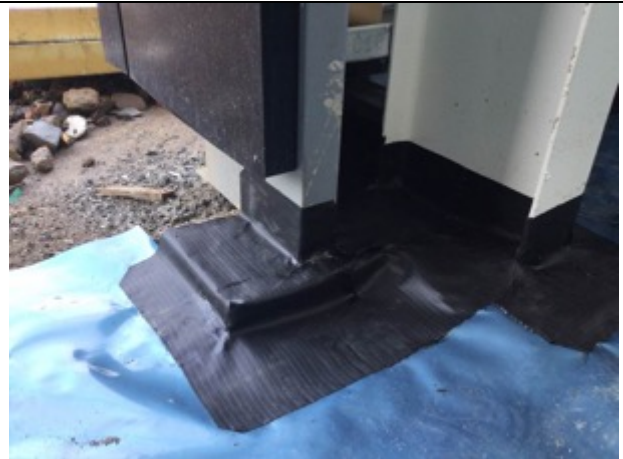
Steel stanchion and column details.



Retro detailing to the perimeter steel using SAGM.



Pick testing to the SAGM detail.



Door way detailing sealed with SAGM.



Membrane line out to unit 1

Site name: Triton Construction - Trade City. Elizabeth Street, Cheetham Hill, Manchester		Units/ plots checked: : Unit 2 & 3 undercroft areas full line out installation	
Postcode: M8 8JJ			
Installers Name: UK Membranes			
Date: 11/01/2024			
Inspection by: Dan Squire		Weather: 6°C Dry	
	Item	Comments	
	Sub-floor void	N/A	
	Ventilation Inlets and Outlets	N/A	
	Number Of Vents	N/A	
	Materials used:	Membrane – Juta GP5 gas barrier membrane Self-Adhesive Membrane ☒ Yes Preformed Top hats ☐ Yes Double Sided Butyl Tape ☐ Yes Preformed Corners ☐ Yes Others Please List: N/A	
	Installation Notes	<u>(brief description of area/plots and list of defects/repairs identified to the main membrane sheet, excluding detailing and joints)</u> MEC Environmental carried out a thorough visual inspection of the membrane, the membrane had been installed to a good standard. In each area the membrane is lined across the full marked up area upon a blinded substrate and extends out under where the armoured joint is installed. All joints are hand welded. All pipe penetrations & stanchion detailing and perimeter retro fit detailing is sealed using SAGM and heat applied. The membrane is hand welded to the membrane previously installed to the core areas and double sided butyl tape is used to seal the armoured joint pins. Each undercroft area has a small boxed out area where the membrane is lapped up the temporary shuttering to allow the area to be sealed at a later date after the pour.	
	Type of Joint	Tape Joint ☐ Auto Weld ☐ Hand Weld ☒ Extrusion Weld ☐	
	Jointing/Detailing Testing	☐ Air Lance (ASTM D4437)	☒ Probe Test (ASTM D4437)
	Laps, welds and detailing	Have all joints passed testing prior to surveyor leaving site?	☒ Yes ☐ No ☐ N/A
	Ventilation Inlets & Outlets	Have all pipes passed testing prior to surveyor leaving site?	☒ Yes ☐ No ☐ N/A
		Have all stanchions/wind braces/columns passed testing prior to surveyor leaving site?	☒ Yes ☐ No ☐ N/A
		Have all piles and pile caps passed testing prior to surveyor leaving site?	☐ Yes ☐ No ☒ N/A

Has all other detailing work passed inspection	☒ Yes	☐ No	☐ N/A
<p><u>(List any defects to detailing work and joints):</u></p> <p>During our inspection the following defects and repairs were carried out: all damages to the existing core area membrane have been sealed using SAGM patches and heat applied. No recorded defects to the undercroft area membrane.</p> <p>Have any defects identified above been satisfactorily rectified ☒ Yes ☐ No ☐ N/A</p> <p>The Area has passed inspection ☒</p> <p>The Area has failed inspection and a corrective action sheet has been left with the contractor ☐</p> <p>The Area is incomplete as detailed above ☐</p> <p>Signed: Dan Squire Date: 11/01/2024</p>			

Area Inspected

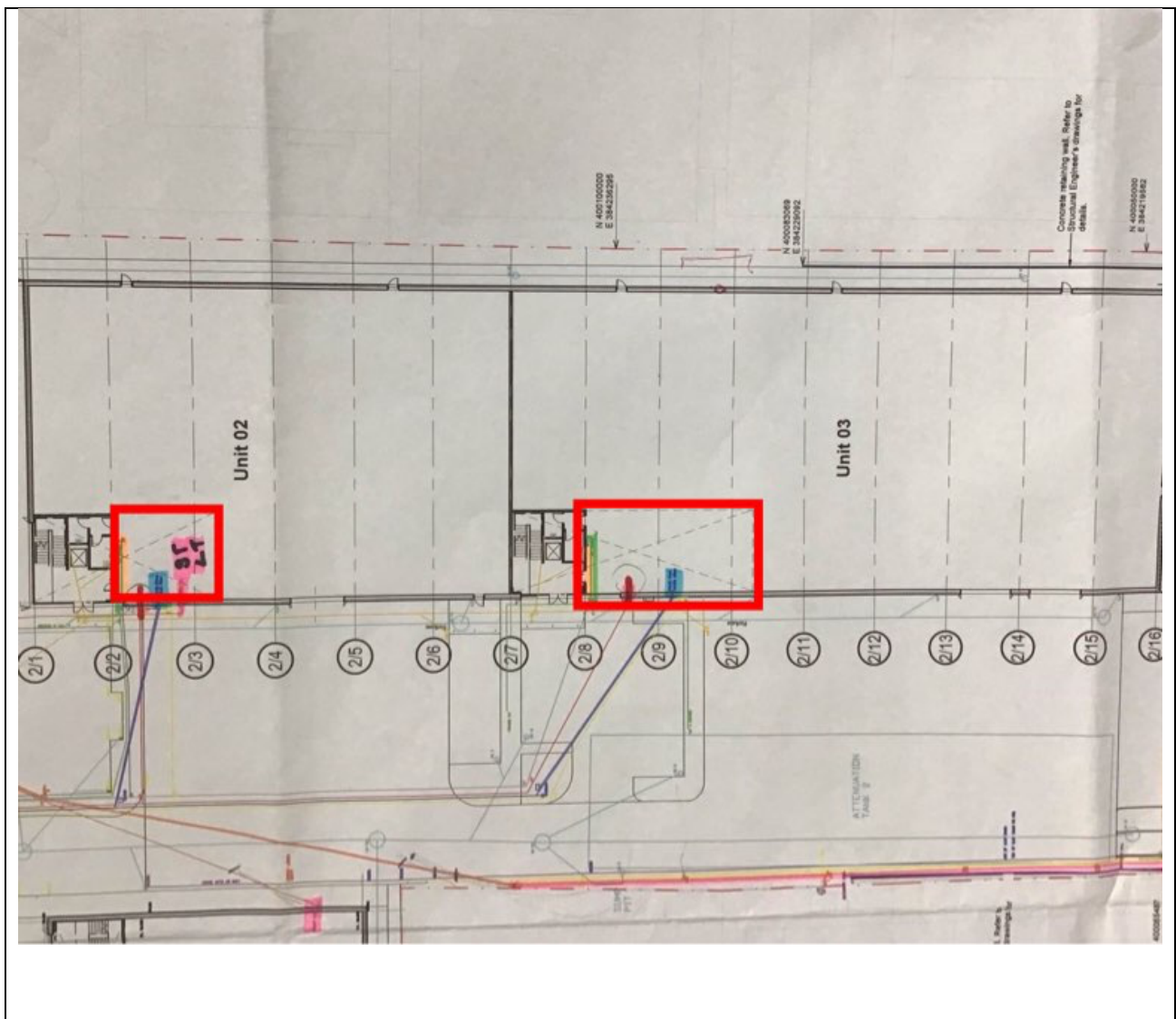


Photo 11/01/2024



Unit 2 undercroft overview



Unit 2 retro fit detailing and sealed pipe penetration



Unit 2 stanchion detailing



Unit 2 pin seals



Unit 2 membrane sealed to core area existing membrane



Unit 2 boxed out area



Unit 2 patch repairs



Rolled sub grade



Unit 3 undercroft overview



Unit 3 patch repairs



Unit 3 membrane sealed to core area existing membrane



Unit 3 boxed out area



Unit 3 retro fit detailing



Unit 3 pin seals



Unit 3 sealed pipe penetrations



Unit 3 stanchion detailing

Site name: Triton Construction - Trade City. Elizabeth Street, Cheetham Hill, Manchester		Units/ plots checked: : Unit 4 to 8. undercroft area full line out installation	
Postcode: M8 8JJ			
Installers Name: UK Membranes			
Date: 16/01/2024			
Inspection by: Dan Squire		Weather: 1°C Dry	
	Item	Comments	
	Sub-floor void	N/A	
	Ventilation Inlets and Outlets	N/A	
	Number Of Vents	N/A	
	Materials used:	Membrane – Juta GP5 gas barrier membrane Self-Adhesive Membrane ☒ Yes Preformed Top hats ☐ Yes Double Sided Butyl Tape ☐ Yes Preformed Corners ☐ Yes Others Please List: N/A	
	Installation Notes	<p><u>(brief description of area/plots and list of defects/repairs identified to the main membrane sheet, excluding detailing and joints)</u></p> <p>MEC Environmental carried out a thorough visual inspection of the membrane, the membrane had been installed to a good standard. The membrane is lined across the full marked up area upon a blinded substrate and extends out under where the armoured joint is installed. All joints are hand welded. All pipe penetrations & stanchion detailing and perimeter retro fit detailing is sealed using SAGM and heat applied. The membrane is hand welded to the membrane previously installed to the core areas and double sided butyl tape is used to seal the armoured joint pins.</p> <p>A single layer of mesh was installed over 50% of the membrane which was to be inspected. This did not restrict the inspection.</p>	
	Type of Joint	Tape Joint ☐ Auto Weld ☐ Hand Weld ☒ Extrusion Weld ☐	
	Jointing/Detailing Testing	☐ Air Lance (ASTM D4437) ☒ Probe Test (ASTM D4437)	
	Laps, welds and detailing	Have all joints passed testing prior to surveyor leaving site?	☒ Yes ☐ No ☐ N/A
	Ventilation Inlets & Outlets	Have all pipes passed testing prior to surveyor leaving site?	☒ Yes ☐ No ☐ N/A
		Have all stanchions/wind braces/columns passed testing prior to surveyor leaving site?	☒ Yes ☐ No ☐ N/A
		Have all piles and pile caps passed testing prior to surveyor leaving site?	☐ Yes ☐ No ☒ N/A

Has all other detailing work passed inspection	☒ Yes	☐ No	☐ N/A
<p><u>(List any defects to detailing work and joints):</u></p> <p>During our inspection the following defects and repairs were carried out: all damages to the existing core area membrane have been sealed using SAGM patches and heat applied. 5no patch repairs made to the membrane installed on this visit using SAGM.</p> <p>Have any defects identified above been satisfactorily rectified ☒ Yes ☐ No ☐ N/A</p> <p>The Area has passed inspection ☒</p> <p>The Area has failed inspection and a corrective action sheet has been left with the contractor ☐</p> <p>The Area is incomplete as detailed above ☐</p> <p>Signed: Dan Squire Date: 16/01/2024</p>			

Area Inspected

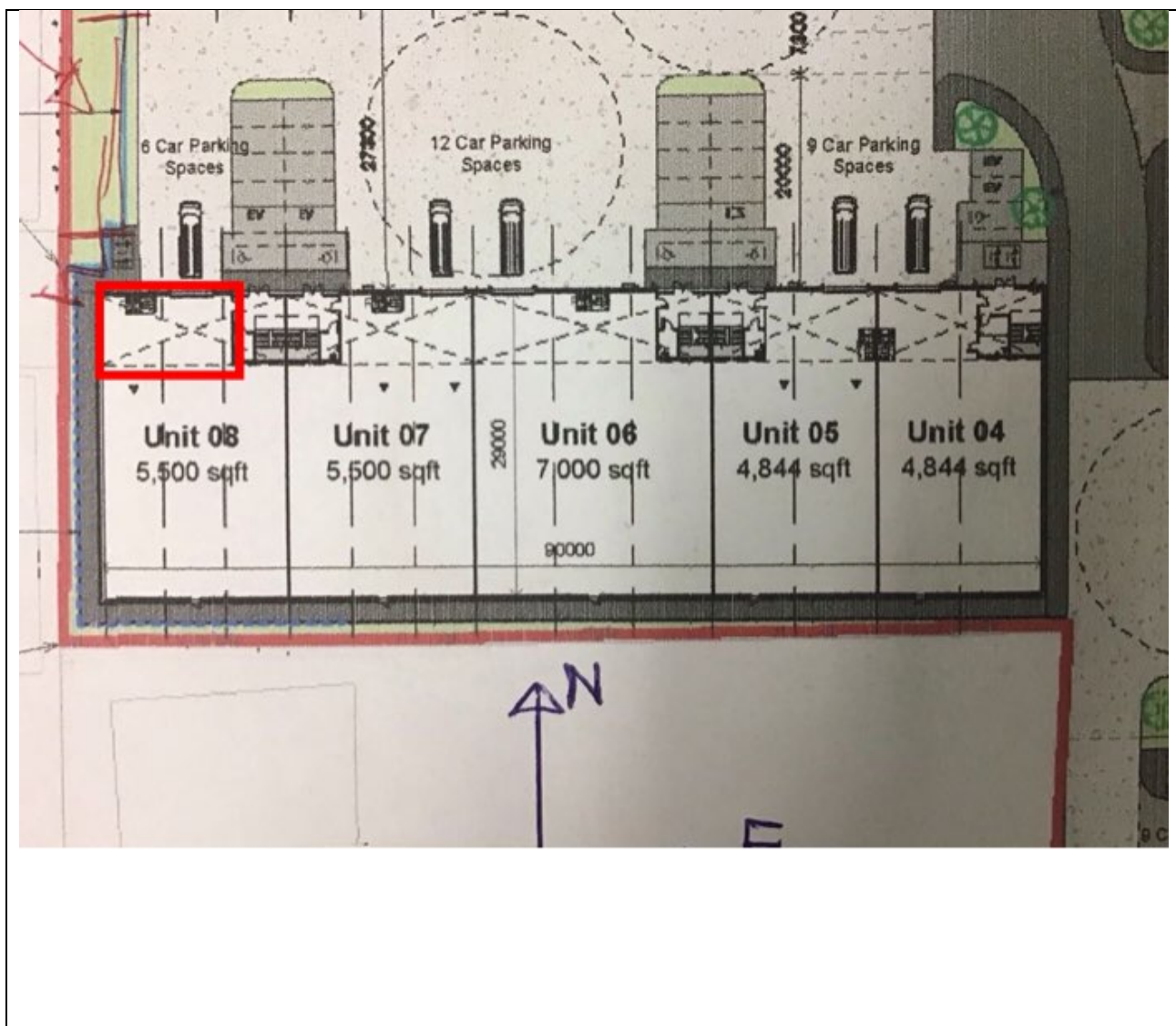
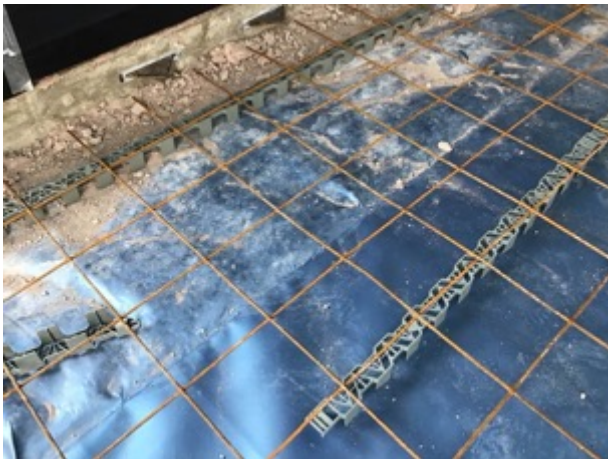


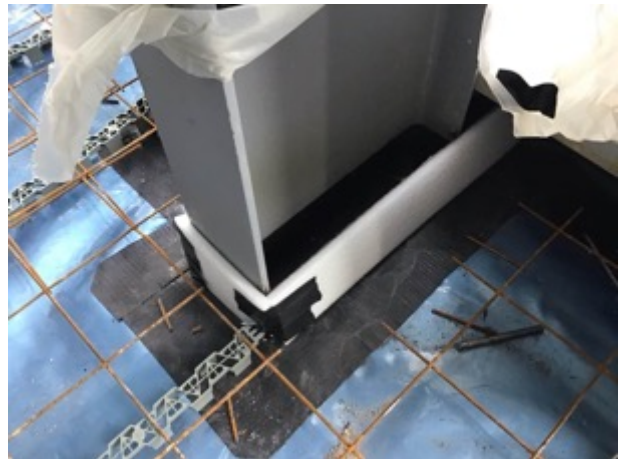
Photo 16/01/2024



Under Croft area overview



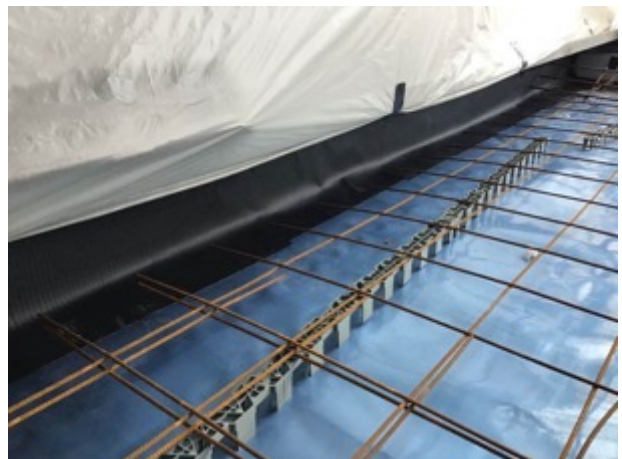
Membrane sealed to existing core area membrane



Sealed stanchion detailing



Sealed pipe penetrations



Sealed perimeter retro fit detailing



Armoured joint pins sealed using butyl tape



Sealed SAGM patch repairs

Site name: Triton Construction - Trade City. Elizabeth Street, Cheetham Hill, Manchester		Units/ plots checked: : Unit 2 & 3 laser pour. See marked up plan		
Postcode: M8 8JJ				
Installers Name: UK Membranes				
Date: 22/01/2024				
Inspection by: Dan Squire		Weather: 9°C Dry		
	Item	Comments		
	Sub-floor void	N/A		
	Ventilation Inlets and Outlets	N/A		
	Number Of Vents	N/A		
	Materials used:	Membrane – Juta GP5 gas barrier membrane Self-Adhesive Membrane ☒ Yes Preformed Top hats ☐ Yes Double Sided Butyl Tape ☐ Yes Preformed Corners ☐ Yes Others Please List: Double sided butyl tape		
	Installation Notes	<p><u>(brief description of area/plots and list of defects/repairs identified to the main membrane sheet, excluding detailing and joints)</u></p> <p>MEC Environmental carried out a thorough visual inspection of the membrane that was laid on a just in time basis in front of a laser pour, during our inspection we witnessed the installer carrying out their own CQA repairs as the pour progressed. The membrane is lined across the full footprint of the building upon a sand blinded and rolled substrate. The membrane is auto welded into panels and hand welded into position as the pour progresses. The membrane is sealed to the perimeter edge using SAGM as a retro fit detail. All stanchions are sealed using SAGM. Butyl tape is used to seal armoured joint pins.</p>		
	Type of Joint	Tape Joint ☐	Auto Weld ☒	Hand Weld ☒ Extrusion Weld ☐
	Jointing/Detailing Testing	☐ Air Lance (ASTM D4437)		☒ Probe Test (ASTM D4437)
	Laps, welds and detailing	Have all joints passed testing prior to surveyor leaving site?	☒ Yes	☐ No ☐ N/A
		Have all pipes passed testing prior to surveyor leaving site?	☐ Yes	☐ No ☒ N/A
	Ventilation Inlets & Outlets	Have all stanchions/wind braces/columns passed testing prior to surveyor leaving site?	☒ Yes	☐ No ☐ N/A
		Have all piles and pile caps passed testing prior to surveyor leaving site?	☐ Yes	☐ No ☒ N/A
		Has all other detailing work passed inspection	☒ Yes	☐ No ☐ N/A

	<p><u>(List any defects to detailing work and joints):</u></p> <p>During our inspection the following defects and repairs were carried out: 3no patch repairs using SAGM and heat applied.</p> <p>Have any defects identified above been satisfactorily rectified ☒ Yes ☐ No ☐ N/A</p> <p>The Area has passed inspection ☒</p> <p>The Area has failed inspection and a corrective action sheet has been left with the contractor ☐</p> <p>The Area is incomplete as detailed above ☐</p> <p>Signed: Dan Squire Date: 22/01/2024</p>
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Area Inspected



Photo 22/01/2024



Sealed patch repairs



Sub grade prep ahead of the membrane installation



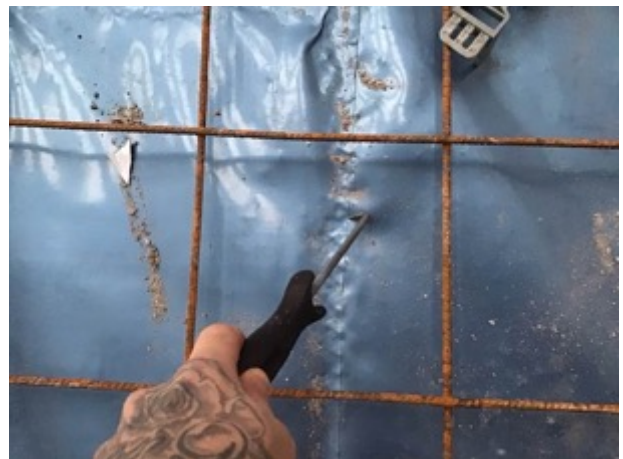
Sealed auto weld



Butyl tape on armoured joint pin



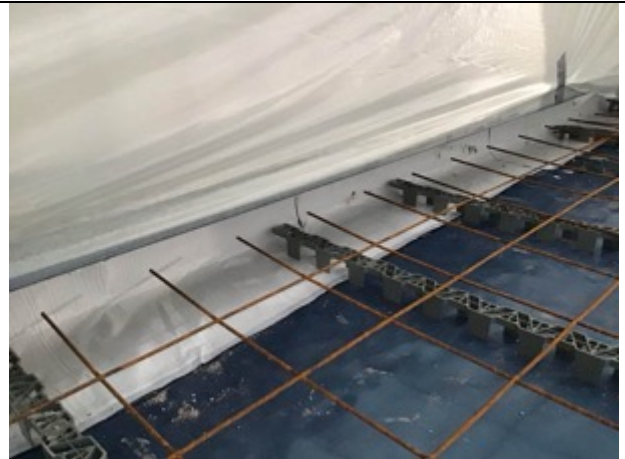
Sealed stanchion detailing



Probe test to hand weld



Pour area overview



Perimeter retro fit detailing



Concrete pour

Site name: Triton Construction - Trade City. Elizabeth Street, Cheetham Hill, Manchester		Units/ plots checked: : Unit 2 & 3 laser pour. See marked up plan	
Postcode: M8 8JJ			
Installers Name: UK Membranes			
Date: 23/01/2024			
Inspection by: Dan Squire		Weather: 6°C Dry	
	Item	Comments	
	Sub-floor void	N/A	
	Ventilation Inlets and Outlets	N/A	
	Number Of Vents	N/A	
	Materials used:	Membrane – Juta GP5 gas barrier membrane Self-Adhesive Membrane ☒ Yes Preformed Top hats ☐ Yes Double Sided Butyl Tape ☐ Yes Preformed Corners ☐ Yes Others Please List: Double sided butyl tape	
	Installation Notes	<u>(brief description of area/plots and list of defects/repairs identified to the main membrane sheet, excluding detailing and joints)</u> MEC Environmental carried out a thorough visual inspection of the membrane that was laid on a just in time basis in front of a laser pour, during our inspection we witnessed the installer carrying out their own CQA repairs as the pour progressed. The membrane is lined across the full footprint of the building upon a sand blinded and rolled substrate. The membrane is auto welded into panels and hand welded into position as the pour progresses. The membrane is sealed to the perimeter edge using SAGM as a retro fit detail and hand welded to the membrane from the previous pour areas. All stanchions are sealed using SAGM. Butyl tape is used to seal armoured joint pins.	
	Type of Joint	Tape Joint ☐ Auto Weld ☒ Hand Weld ☒ Extrusion Weld ☐	
	Jointing/Detailing Testing	☐ Air Lance (ASTM D4437)	☒ Probe Test (ASTM D4437)
	Laps, welds and detailing	Have all joints passed testing prior to surveyor leaving site?	☒ Yes ☐ No ☐ N/A
	Ventilation Inlets & Outlets	Have all pipes passed testing prior to surveyor leaving site?	☐ Yes ☐ No ☒ N/A
		Have all stanchions/wind braces/columns passed testing prior to surveyor leaving site?	☒ Yes ☐ No ☐ N/A
		Have all piles and pile caps passed testing prior to surveyor leaving site?	☐ Yes ☐ No ☒ N/A

Has all other detailing work passed inspection	☒ Yes	☐ No	☐ N/A
<p><u>(List any defects to detailing work and joints):</u></p> <p>During our inspection the following defects and repairs were carried out: All shuttering pin holes and 2no patch repairs made by the installers using SAGM and heat applied.</p> <p>Have any defects identified above been satisfactorily rectified ☒ Yes ☐ No ☐ N/A</p> <p>The Area has passed inspection ☒</p> <p>The Area has failed inspection and a corrective action sheet has been left with the contractor ☐</p> <p>The Area is incomplete as detailed above ☐</p> <p>Signed: Dan Squire Date: 23/01/2024</p>			

Area Inspected

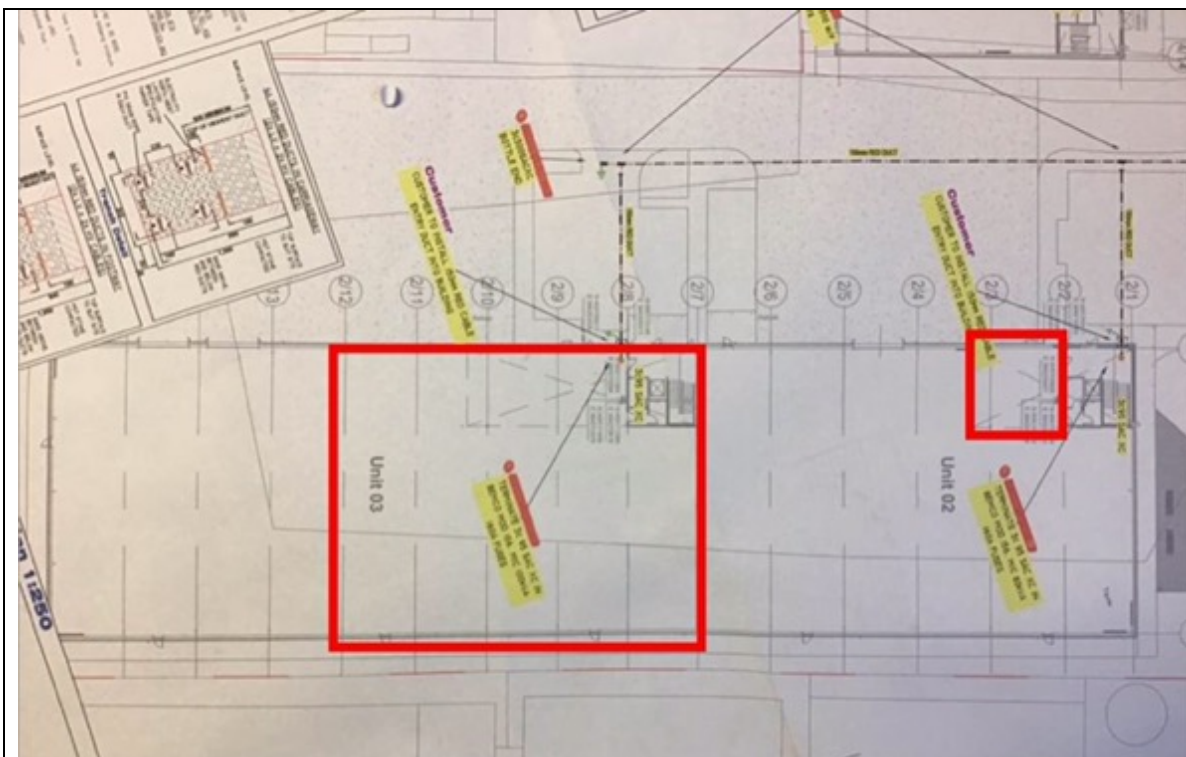


Photo 23/01/2024



Poured undercroft area



Laser screed pour



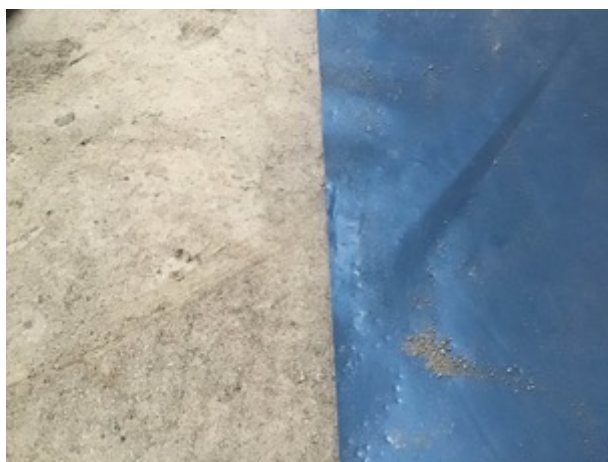
Sealed auto weld membrane joint



Perimeter retro fit detailing



Sealed stanchion detailing



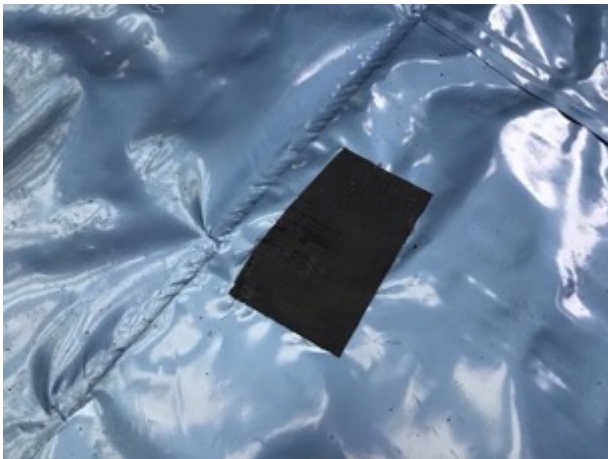
Membrane lined over rolled substrate



Pick test to hand weld



Armoured pin sealed with butyl tape



Sealed patch repair



Plant keeping off the mesh over the membrane

Site name: Triton Construction - Trade City. Elizabeth Street, Cheetham Hill, Manchester		Units/ plots checked: : Unit 2 & 3 laser pour. See marked up plan	
Postcode: M8 8JJ			
Installers Name: UK Membranes			
Date: 24/01/2024			
Inspection by: Dan Squire		Weather: 9°C Dry	
	Item	Comments	
	Sub-floor void	N/A	
	Ventilation Inlets and Outlets	N/A	
	Number Of Vents	N/A	
	Materials used:	Membrane – Juta GP5 gas barrier membrane Self-Adhesive Membrane ☒ Yes Preformed Top hats ☐ Yes Double Sided Butyl Tape ☐ Yes Preformed Corners ☐ Yes Others Please List: Double sided butyl tape	
	Installation Notes	<p><u>(brief description of area/plots and list of defects/repairs identified to the main membrane sheet, excluding detailing and joints)</u></p> <p>MEC Environmental carried out a thorough visual inspection of the membrane that was laid on a just in time basis in front of a laser pour, during our inspection we witnessed the installer carrying out their own CQA repairs as the pour progressed. The membrane is lined across the full footprint of the building upon a sand blinded and rolled substrate. The membrane is auto welded into panels and hand welded into position as the pour progresses. The membrane is sealed to the perimeter edge using SAGM as a retro fit detail and hand welded to the membrane from the previous pour areas. All stanchions are sealed using SAGM. Butyl tape is used to seal armoured joint pins.</p>	
	Type of Joint	Tape Joint ☐	Auto Weld ☒
		Hand Weld ☒	Extrusion Weld ☐
	Jointing/Detailing Testing	☐ Air Lance (ASTM D4437) ☒ Probe Test (ASTM D4437)	
	Laps, welds and detailing	Have all joints passed testing prior to surveyor leaving site?	☒ Yes ☐ No ☐ N/A
	Ventilation Inlets & Outlets	Have all pipes passed testing prior to surveyor leaving site?	☐ Yes ☐ No ☒ N/A
		Have all stanchions/wind braces/columns passed testing prior to surveyor leaving site?	☒ Yes ☐ No ☐ N/A
		Have all piles and pile caps passed testing prior to surveyor leaving site?	☐ Yes ☐ No ☒ N/A

Has all other detailing work passed inspection	☒ Yes	☐ No	☐ N/A
<p><u>(List any defects to detailing work and joints):</u></p> <p>During our inspection the following defects and repairs were carried out: 4no patch repairs made by the installers using SAGM and heat applied.</p> <p>Have any defects identified above been satisfactorily rectified ☒ Yes ☐ No ☐ N/A</p> <p>The Area has passed inspection ☒</p> <p>The Area has failed inspection and a corrective action sheet has been left with the contractor ☐</p> <p>The Area is incomplete as detailed above ☐</p> <p>Signed: Dan Squire Date: 24/01/2024</p>			

Area Inspected



Photo 24/01/2024



Under Croft area pump pour



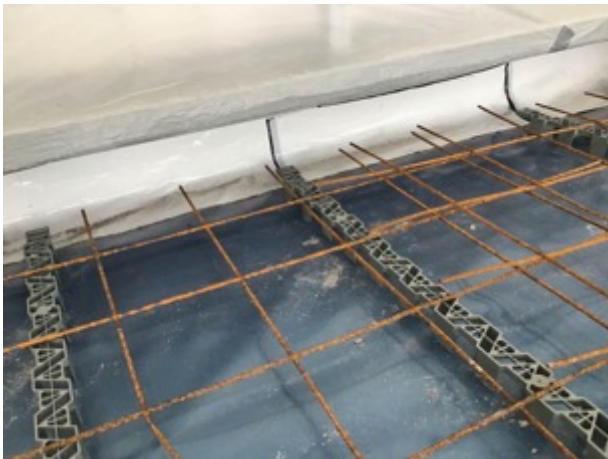
Membrane install prior to laser screed



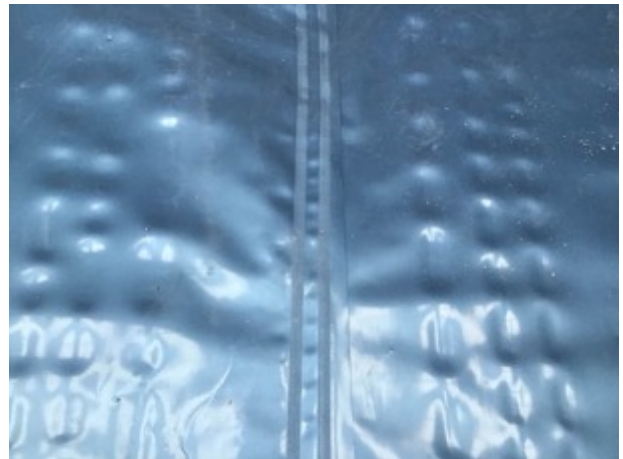
Sealed stanchion detailing



Probe test to hand welds



Perimeter retro fit detailing



Auto weld membrane joint



Butyl tape on armoured joint pin



Plant keeping off the mesh over the membrane



Sealed patch repair



Laser screed pour



Sub grade prep

Site name: Triton Construction - Trade City. Elizabeth Street, Cheetham Hill, Manchester		Units/ plots checked: : Unit 4 to 8 laser pour. See marked up plan		
Postcode: M8 8JJ				
Installers Name: UK Membranes				
Date: 25/01/2024				
Inspection by: Dan Squire		Weather: 8°C Dry		
	Item	Comments		
	Sub-floor void	N/A		
	Ventilation Inlets and Outlets	N/A		
	Number Of Vents	N/A		
	Materials used:	Membrane – Juta GP5 gas barrier membrane Self-Adhesive Membrane ☒ Yes Preformed Top hats ☐ Yes Double Sided Butyl Tape ☐ Yes Preformed Corners ☐ Yes Others Please List: N/A		
	Installation Notes	<u>(brief description of area/plots and list of defects/repairs identified to the main membrane sheet, excluding detailing and joints)</u> MEC Environmental carried out a thorough visual inspection of the membrane that was laid on a just in time basis in front of a laser pour, during our inspection we witnessed the installer carrying out their own CQA repairs as the pour progressed. The membrane is lined across the full footprint of the building upon a sand blinded and rolled substrate. The membrane is auto welded into panels and hand welded into position as the pour progresses. The membrane is sealed to the perimeter edge using SAGM as a retro fit detail and hand welded to the membrane from the previous pour areas. All stanchions and pipe penetrations are sealed using SAGM.		
	Type of Joint	Tape Joint ☐	Auto Weld ☒	Hand Weld ☒ Extrusion Weld ☐
	Jointing/Detailing Testing	☐ Air Lance (ASTM D4437)		☒ Probe Test (ASTM D4437)
Laps, welds and detailing Ventilation Inlets & Outlets	Have all joints passed testing prior to surveyor leaving site?	☒ Yes	☐ No	☐ N/A
	Have all pipes passed testing prior to surveyor leaving site?	☒ Yes	☐ No	☐ N/A
	Have all stanchions/wind braces/columns passed testing prior to surveyor leaving site?	☒ Yes	☐ No	☐ N/A
	Have all piles and pile caps passed testing prior to surveyor leaving site?	☐ Yes	☐ No	☒ N/A
	Has all other detailing work passed inspection	☒ Yes	☐ No	☐ N/A

	<p><u>(List any defects to detailing work and joints):</u></p> <p>During our inspection the following defects and repairs were carried out: 11no patch repairs made by the installers using SAGM and heat applied.</p> <p>Have any defects identified above been satisfactorily rectified ☒ Yes ☐ No ☐ N/A</p> <p>The Area has passed inspection ☒</p> <p>The Area has failed inspection and a corrective action sheet has been left with the contractor ☐</p> <p>The Area is incomplete as detailed above ☐</p> <p>Signed: Dan Squire Date: 25/01/2024</p>
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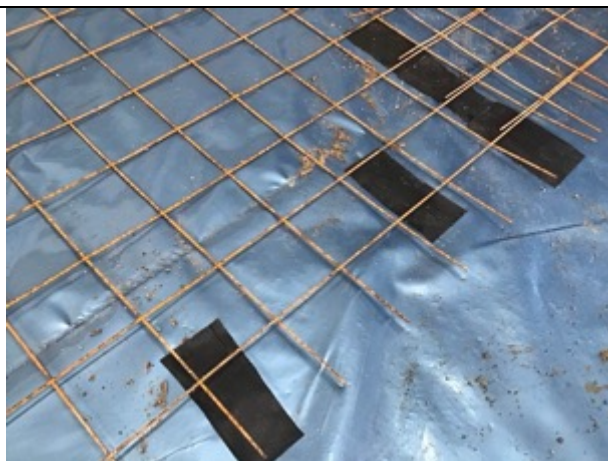
Area Inspected



Photo 25/01/2024



Hand weld probe testing



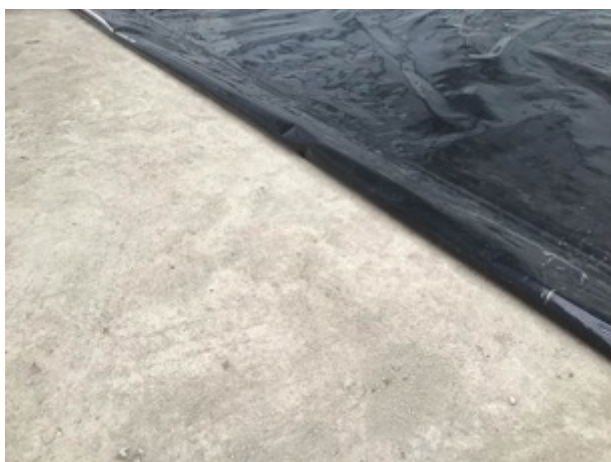
Sealed patch repairs



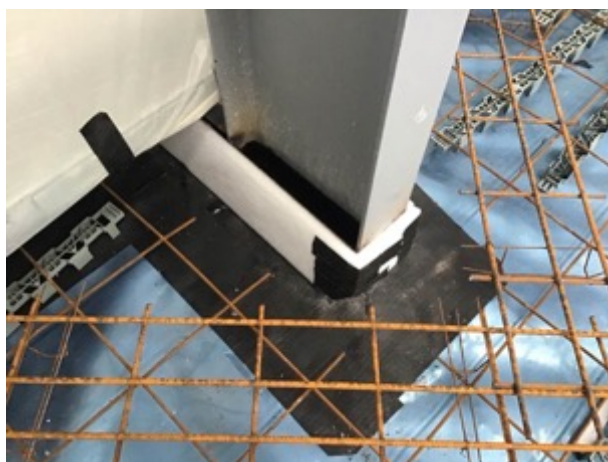
Laser screed pour



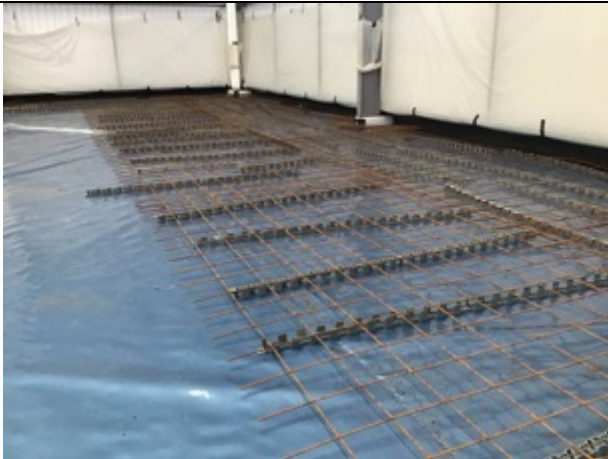
Sealed auto weld membrane joint



Rolled substrate ahead of the membrane installation



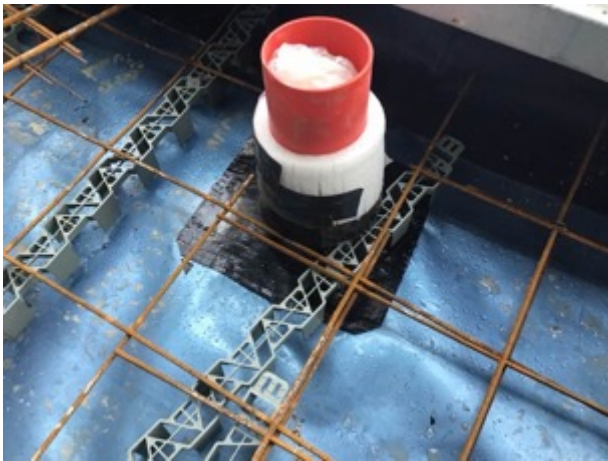
Sealed stanchion detailing



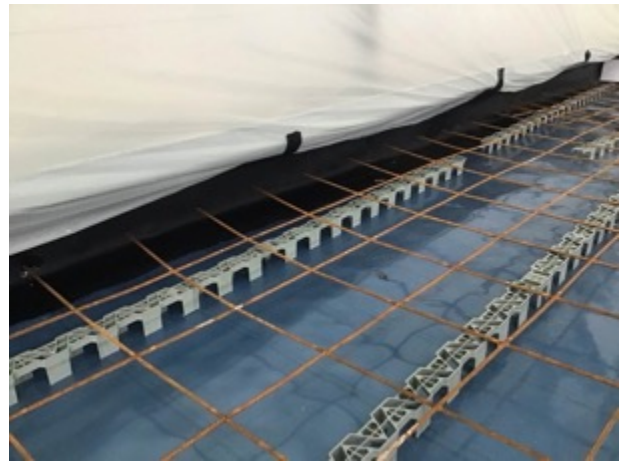
Membrane lined ahead of the pour



Laser screed pour



Sealed pipe penetration



Perimeter retro fit detailing

Site name: Triton Construction - Trade City. Elizabeth Street, Cheetham Hill, Manchester		Units/ plots checked: : Unit 4 to 8 laser pour. See marked up plan	
Postcode: M8 8JJ			
Installers Name: UK Membranes			
Date: 26/01/2024			
Inspection by: Dan Squire		Weather: 7°C Dry	
	Item	Comments	
	Sub-floor void	N/A	
	Ventilation Inlets and Outlets	N/A	
	Number Of Vents	N/A	
	Materials used:	Membrane – Juta GP5 gas barrier membrane Self-Adhesive Membrane ☒ Yes Preformed Top hats ☐ Yes Double Sided Butyl Tape ☒ Yes Preformed Corners ☐ Yes Others Please List: N/A	
	Installation Notes	<u>(brief description of area/plots and list of defects/repairs identified to the main membrane sheet, excluding detailing and joints)</u> MEC Environmental carried out a thorough visual inspection of the membrane that was laid on a just in time basis in front of a laser pour, during our inspection we witnessed the installer carrying out their own CQA repairs as the pour progressed. The membrane is lined across the full footprint of the building upon a sand blinded and rolled substrate. The membrane is auto welded into panels and hand welded into position as the pour progresses. The membrane is sealed to the perimeter edge using SAGM as a retro fit detail and hand welded to the membrane from the previous pour areas. All stanchions are sealed using SAGM. Double sided Butyl tape is used to seal armoured joint pins	
	Type of Joint	Tape Joint ☐	Auto Weld ☒ Hand Weld ☒ Extrusion Weld ☐
	Jointing/Detailing Testing	☐ Air Lance (ASTM D4437) ☒ Probe Test (ASTM D4437)	
	Laps, welds and detailing	Have all joints passed testing prior to surveyor leaving site?	☒ Yes ☐ No ☐ N/A
	Ventilation Inlets & Outlets	Have all pipes passed testing prior to surveyor leaving site?	☒ Yes ☐ No ☐ N/A
		Have all stanchions/wind braces/columns passed testing prior to surveyor leaving site?	☒ Yes ☐ No ☐ N/A
		Have all piles and pile caps passed testing prior to surveyor leaving site?	☐ Yes ☐ No ☒ N/A

Has all other detailing work passed inspection	☒ Yes	☐ No	☐ N/A
<p><u>(List any defects to detailing work and joints):</u></p> <p>During our inspection the following defects and repairs were carried out: 7no patch repairs made by the installers using SAGM and heat applied.</p> <p>Have any defects identified above been satisfactorily rectified ☒ Yes ☐ No ☐ N/A</p> <p>The Area has passed inspection ☒</p> <p>The Area has failed inspection and a corrective action sheet has been left with the contractor ☐</p> <p>The Area is incomplete as detailed above ☐</p> <p>Signed: Dan Squire Date: 26/01/2024</p>			

Area Inspected

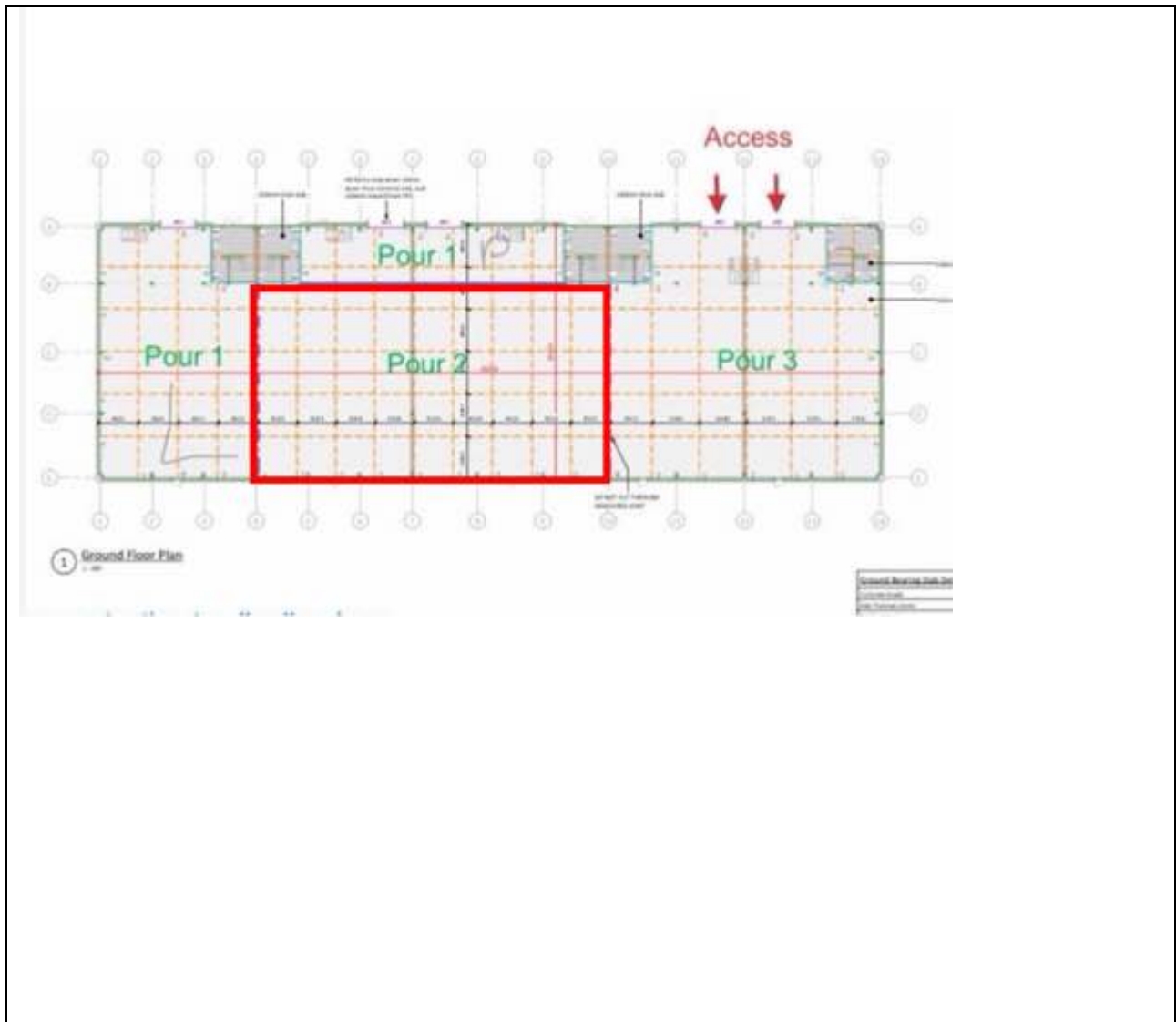
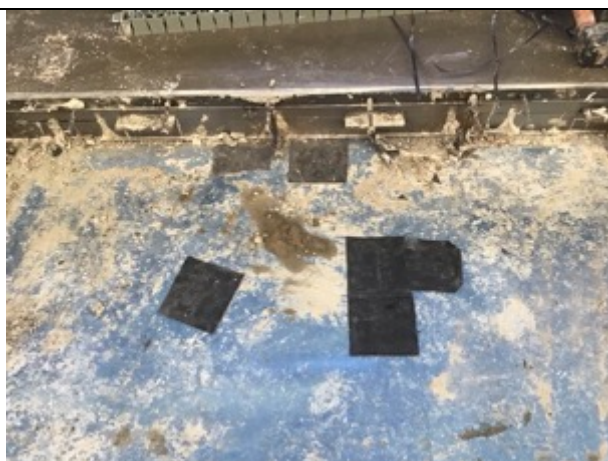


Photo 26/01/2024



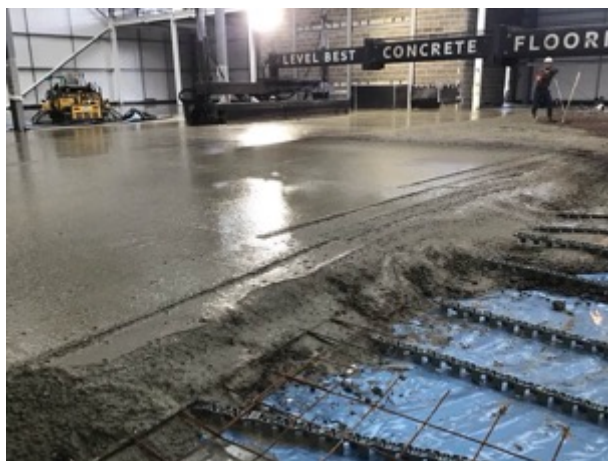
Sub grade prep ahead of the membrane installation



Sealed patch repairs



Sealed patch repair



Laser screed pour



Plant keeping off the mesh over the membrane



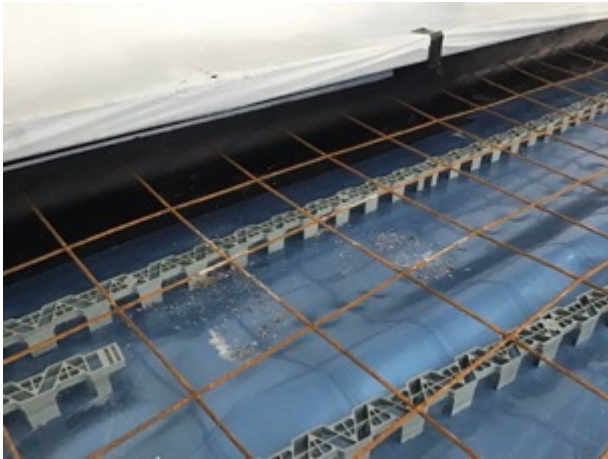
Auto weld membrane joint



Hand weld probe testing



Butyl tape around armoured joint pin



Perimeter retro fit detailing



Sealed stanchion detailing



Pour area overview

Site name: Triton Construction - Trade City. Elizabeth Street, Cheetham Hill, Manchester		Units/ plots checked: : Unit 4 to 8 laser pour. See marked up plan			
Postcode: M8 8JJ					
Installers Name: UK Membranes					
Date: 29/01/2024					
Inspection by: Dan Squire		Weather: 9°C Dry			
	Item	Comments			
	Sub-floor void	N/A			
	Ventilation Inlets and Outlets	N/A			
	Number Of Vents	N/A			
	Materials used:	Membrane – Juta GP5 gas barrier membrane Self-Adhesive Membrane ☒ Yes Preformed Top hats ☐ Yes Double Sided Butyl Tape ☒ Yes Preformed Corners ☐ Yes Others Please List: N/A			
	Installation Notes	<u>(brief description of area/plots and list of defects/repairs identified to the main membrane sheet, excluding detailing and joints)</u> MEC Environmental carried out a thorough visual inspection of the membrane that was laid on a just in time basis in front of a laser pour, during our inspection we witnessed the installer carrying out their own CQA repairs as the pour progressed. The membrane is lined across the full footprint of the building upon a sand blinded and rolled substrate. The membrane is auto welded into panels and hand welded into position as the pour progresses. The membrane is sealed to the perimeter edge using SAGM as a retro fit detail and hand welded to the membrane from the previous pour areas. All stanchions and pipe penetrations are sealed using SAGM. Double sided Butyl tape is used to seal armoured joint pins			
	Type of Joint	Tape Joint ☐	Auto Weld ☒	Hand Weld ☒	Extrusion Weld ☐
	Jointing/Detailing Testing	☐ Air Lance (ASTM D4437)		☒ Probe Test (ASTM D4437)	
	Laps, welds and detailing	Have all joints passed testing prior to surveyor leaving site?		☒ Yes	☐ No ☐ N/A
	Ventilation Inlets & Outlets	Have all pipes passed testing prior to surveyor leaving site?		☒ Yes	☐ No ☐ N/A
		Have all stanchions/wind braces/columns passed testing prior to surveyor leaving site?		☒ Yes	☐ No ☐ N/A
		Have all piles and pile caps passed testing prior to surveyor leaving site?		☐ Yes	☐ No ☒ N/A

Has all other detailing work passed inspection	☒ Yes	☐ No	☐ N/A
<p><u>(List any defects to detailing work and joints):</u></p> <p>During our inspection the following defects and repairs were carried out: 6no patch repairs made by the installers using SAGM and heat applied.</p> <p>Have any defects identified above been satisfactorily rectified ☒ Yes ☐ No ☐ N/A</p> <p>The Area has passed inspection ☒</p> <p>The Area has failed inspection and a corrective action sheet has been left with the contractor ☐</p> <p>The Area is incomplete as detailed above ☐</p> <p>Signed: Dan Squire Date: 29/01/2024</p>			

Area Inspected



Photo 29/01/2024



Patch repair



Patch repair



Laser screed pour



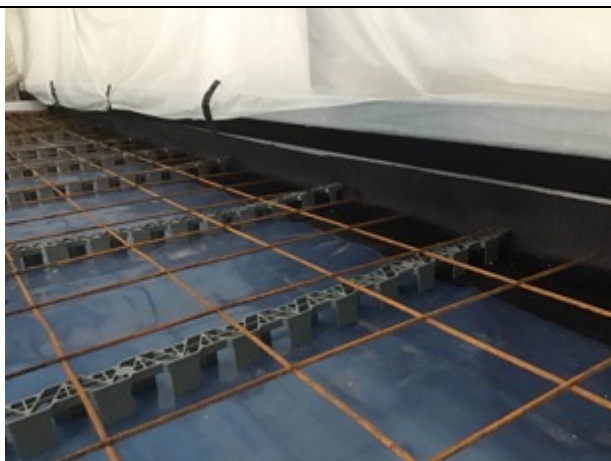
Sub grade prep



Pins sealed with butyl tape



Sealed stanchion detailing



Sealed perimeter retro fit detailing



Sealed pipe penetration



Probe test on hand weld



Sealed auto weld membrane joint

Site name: Triton Construction - Trade City. Elizabeth Street, Cheetham Hill, Manchester		Units/ plots checked: : Unit 9 laser pour. See marked up plan		
Postcode: M8 8JJ				
Installers Name: UK Membranes				
Date: 30/01/2024				
Inspection by: Dan Squire		Weather: 8°C Dry		
	Item	Comments		
	Sub-floor void	N/A		
	Ventilation Inlets and Outlets	N/A		
	Number Of Vents	N/A		
	Materials used:	Membrane – Juta GP5 gas barrier membrane Self-Adhesive Membrane ☒ Yes Preformed Top hats ☐ Yes Double Sided Butyl Tape ☐ Yes Preformed Corners ☐ Yes Others Please List: N/A		
	Installation Notes	<p><u>(brief description of area/plots and list of defects/repairs identified to the main membrane sheet, excluding detailing and joints)</u></p> <p>MEC Environmental carried out a thorough visual inspection of the membrane that was laid on a just in time basis in front of a laser pour, during our inspection we witnessed the installer carrying out their own CQA repairs as the pour progressed. The membrane is lined across the full footprint of the building upon a sand blinded and rolled substrate. The membrane is auto welded into panels and hand welded into position as the pour progresses. The membrane is sealed to the perimeter edge using SAGM as a retro fit detail. All stanchions and pipe penetrations are sealed using SAGM. There is 1no boxed out section from the pour where the membrane has been taken up and over the temporary shuttering to allow it to be joined and sealed at a later date when the shuttering is removed. The approximate location of this is marked in green on the marked up plan.</p>		
	Type of Joint	Tape Joint ☐	Auto Weld ☒	Hand Weld ☒ Extrusion Weld ☐
	Jointing/Detailing Testing	☐ Air Lance (ASTM D4437)		☒ Probe Test (ASTM D4437)
	Laps, welds and detailing	Have all joints passed testing prior to surveyor leaving site?	☒ Yes	☐ No ☐ N/A
		Have all pipes passed testing prior to surveyor leaving site?	☒ Yes	☐ No ☐ N/A
	Ventilation Inlets & Outlets	Have all stanchions/wind braces/columns passed testing prior to surveyor leaving site?	☒ Yes	☐ No ☐ N/A

	Have all piles and pile caps passed testing prior to surveyor leaving site?	☐ Yes	☐ No	☒ N/A
	Has all other detailing work passed inspection	☒ Yes	☐ No	☐ N/A
	<p><u>(List any defects to detailing work and joints):</u></p> <p>During our inspection the following defects and repairs were carried out: 5no patch repairs made by the installers using SAGM and heat applied.</p> <p>Have any defects identified above been satisfactorily rectified ☒ Yes ☐ No ☐ N/A</p> <p>The Area has passed inspection ☒</p> <p>The Area has failed inspection and a corrective action sheet has been left with the contractor ☐</p> <p>The Area is incomplete as detailed above ☐</p> <p>Signed: Dan Squire Date: 30/01/2024</p>			

Area Inspected



Photo 30/01/2024



Laser screed pour



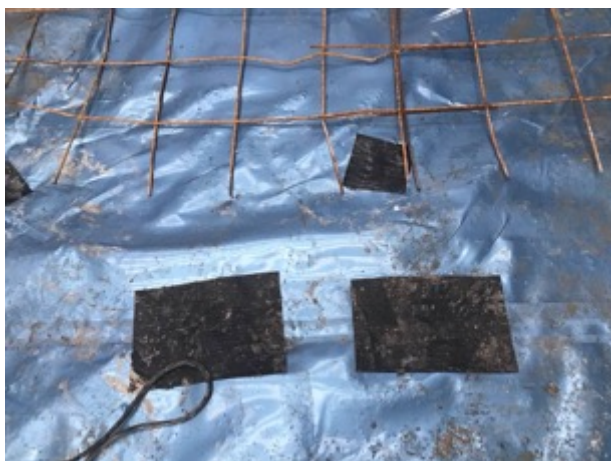
Sub grade prep



Sealed pipe penetrations



Boxed out area



SAGM patch repairs



Sealed stanchion detailing



Probe test to hand weld



Auto weld membrane joint



Perimeter retro fit detailing