GeoShield Verification Report 1

PROJECT REFERENCE:	GEO105611
PROJECT ADDRESS:	The Grange Expansion, Grange School, Matthews Lane, Levenshulme, M12 4GR
SPECIFICATION:	Verified in accordance with CIRIA 735. Design in accordance with BS8485 2015 + 2019 for Methane and Carbon Dioxide. Substrate prepared in accordance with manufacturer's instructions.
MATERIAL SPECIFICATION:	JUTA GP1 Gas Barrier JUTA GP1 SAM JUTA GP Primer JUTA PU SEALANT

GeoShield Verification Report

NAME OF SURVEYOR:	Liam England
VERIFICATION COMPANY:	GeoShield Limited
COMPANY ADDRESS:	Icon Business Centre
	4100 Park Approach, Thorpe Park
	Leeds
	LS15 8GB
CONTACT NUMBER:	07551 259023
EMAIL ADDRESS:	lengland@geoshield.co.uk

GeoShield Verification Report

CLIENT DETAILS

CLIENT CONTACT:	Steven Chantler
CONTACTS ROLE:	Arch and Wood Construction
MOBILE PHONE:	0161 3273907
EMAIL ADDRESS:	

CLIENT CONTACT:	
CONTACTS ROLE:	
MOBILE PHONE:	
EMAIL ADDRESS:	
NOTES:	

GeoShield Verification Report

APPLICATOR'S DETAILS

APPLICATOR NAME:	Alex Rodger's
COMPANY:	Arch and Wood Contrusction
APPLICATOR TEL:	07888 263143
APPLICATOR EMAIL:	

APPLICATOR NAME:	
COMPANY:	
APPLICATOR TEL:	
APPLICATOR EMAIL:	

NOTES:

At least one member of each team group will have a NVQ Level 2 qualification in gas membrane installation.

All installers are competent and skilled to complete gas membrane installation.

GeoShield Verification Report

INSPECTION AREA(S)

Sports Hall Underslab - Main Channels

SITE CONDITIONS

WEATHER:	Sunny
TEMPERATURE:	12ºC
TIME:	10:30 - 13:50
DATE:	22.09.2025
REPORT NUMBER:	001
ACCOMPANIED BY:	Alex Rodgers - Arch and Wood

GeoShield Verification Report

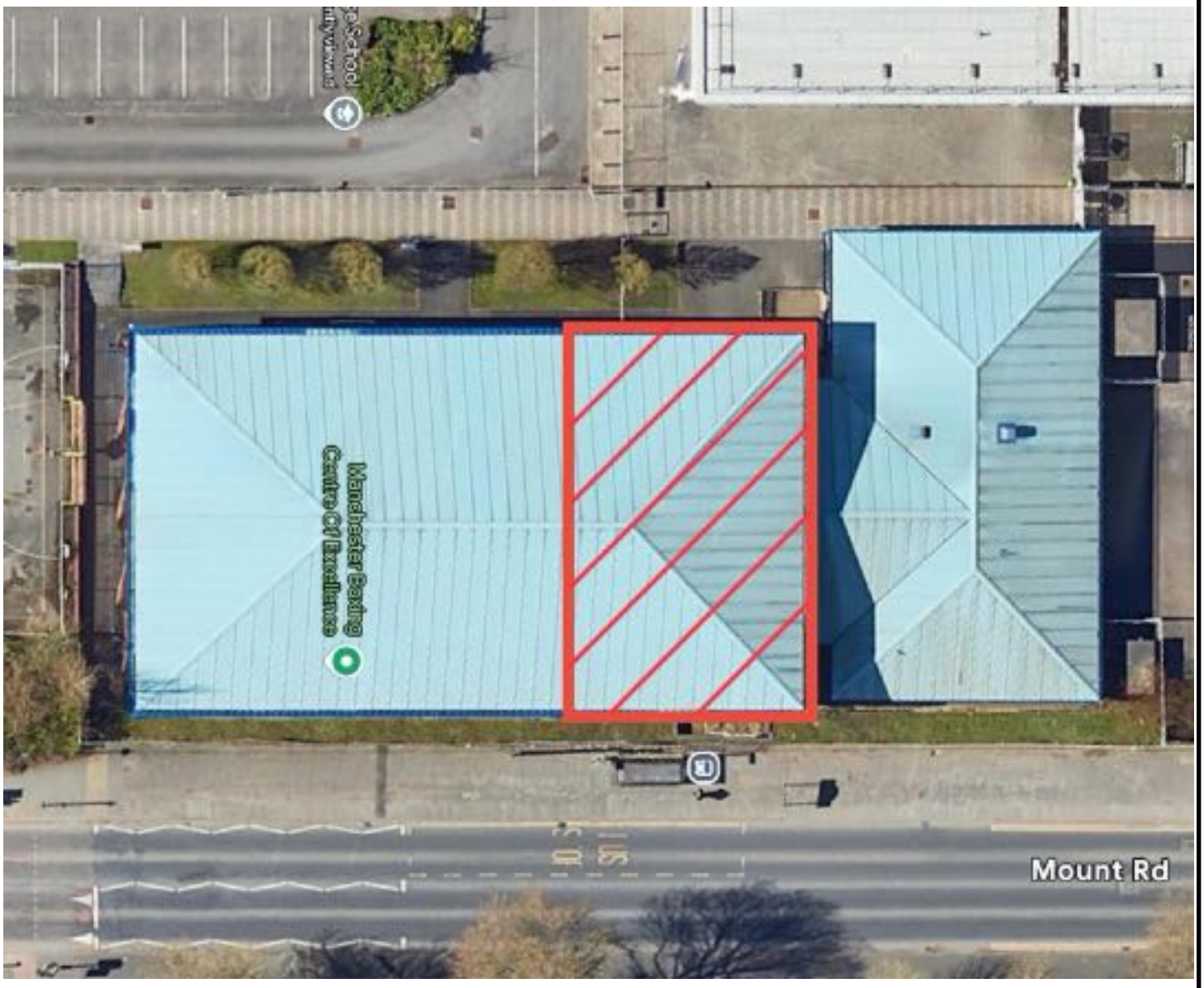
VERIFICATION LAYOUT



The photograph above shows the layout of the site.

GeoShield Verification Report

VERIFICATION LAYOUT



The photograph above shows the layout of the site, the area highlighted in red is where today's verification took place.

GeoShield Verification Report

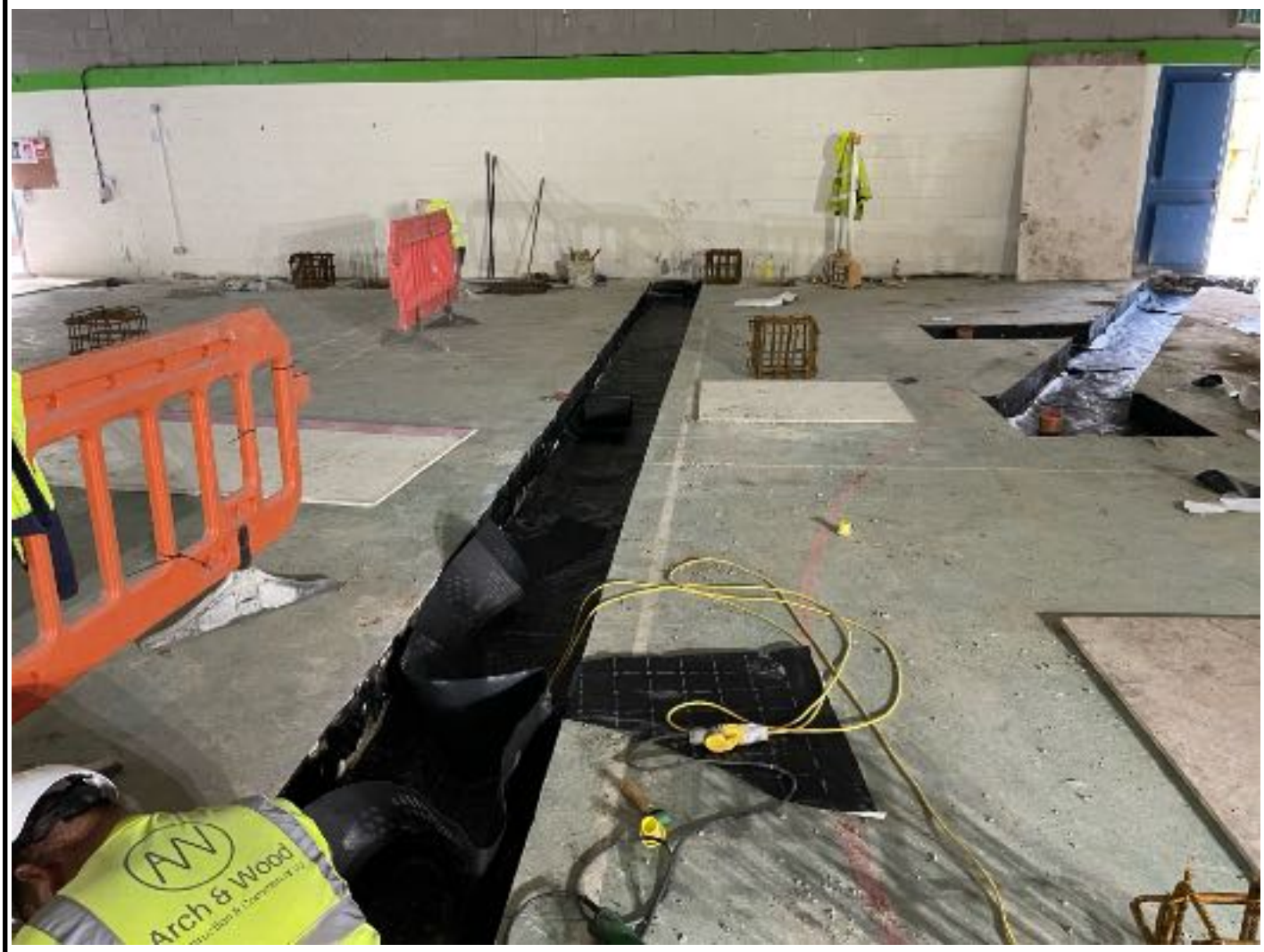
OVERVIEW



The photograph above displays an overview of the area where today's verification inspection took place on site.

GeoShield Verification Report

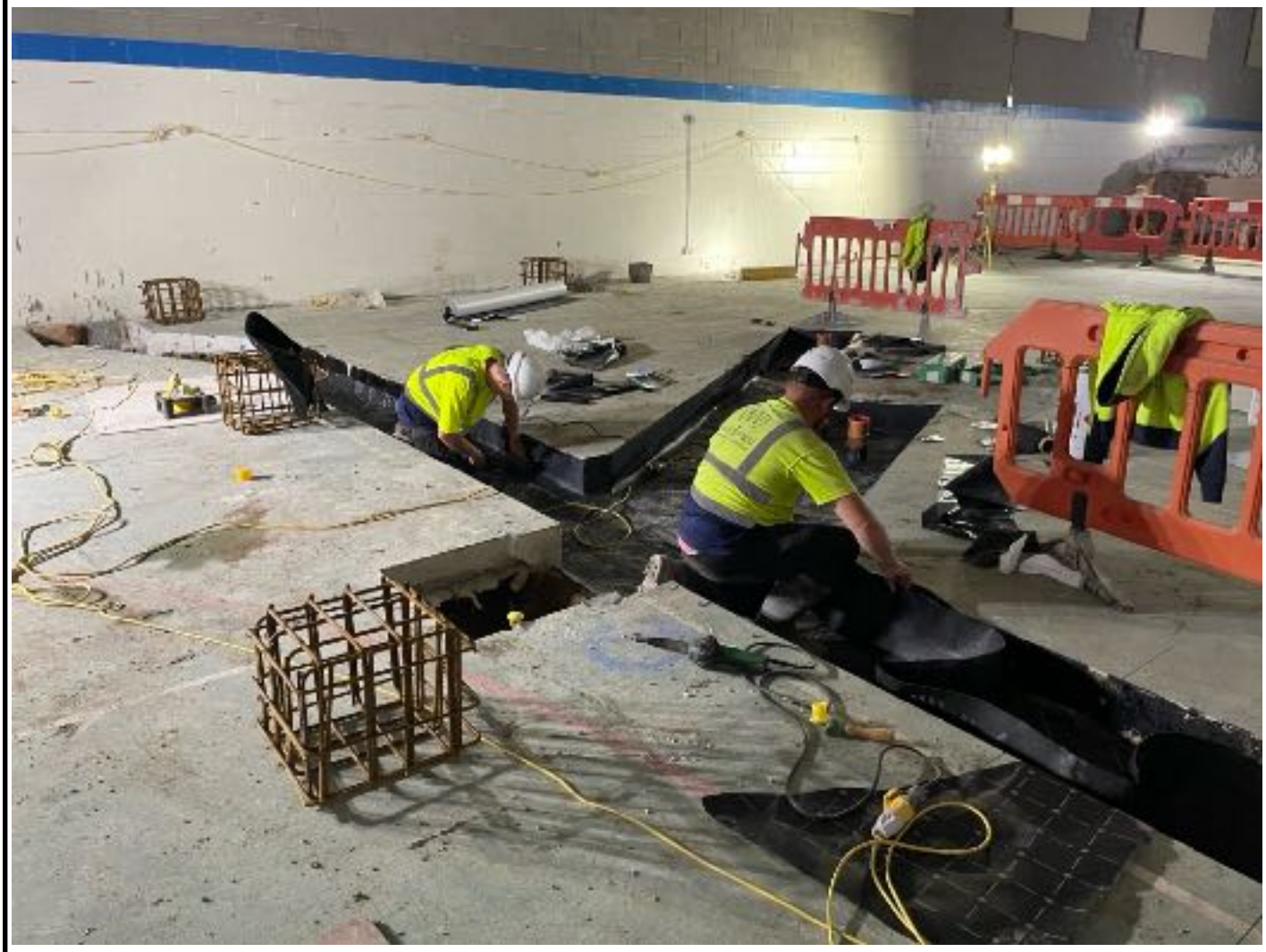
OVERVIEW



The photograph above displays an overview of the area where today's verification inspection took place on site.

GeoShield Verification Report

OVERVIEW



The photograph above displays an overview of the area where today's verification inspection took place on site.

GeoShield Verification Report

OVERVIEW



The photograph above displays an overview of the area where today's verification inspection took place on site.

GeoShield Verification Report

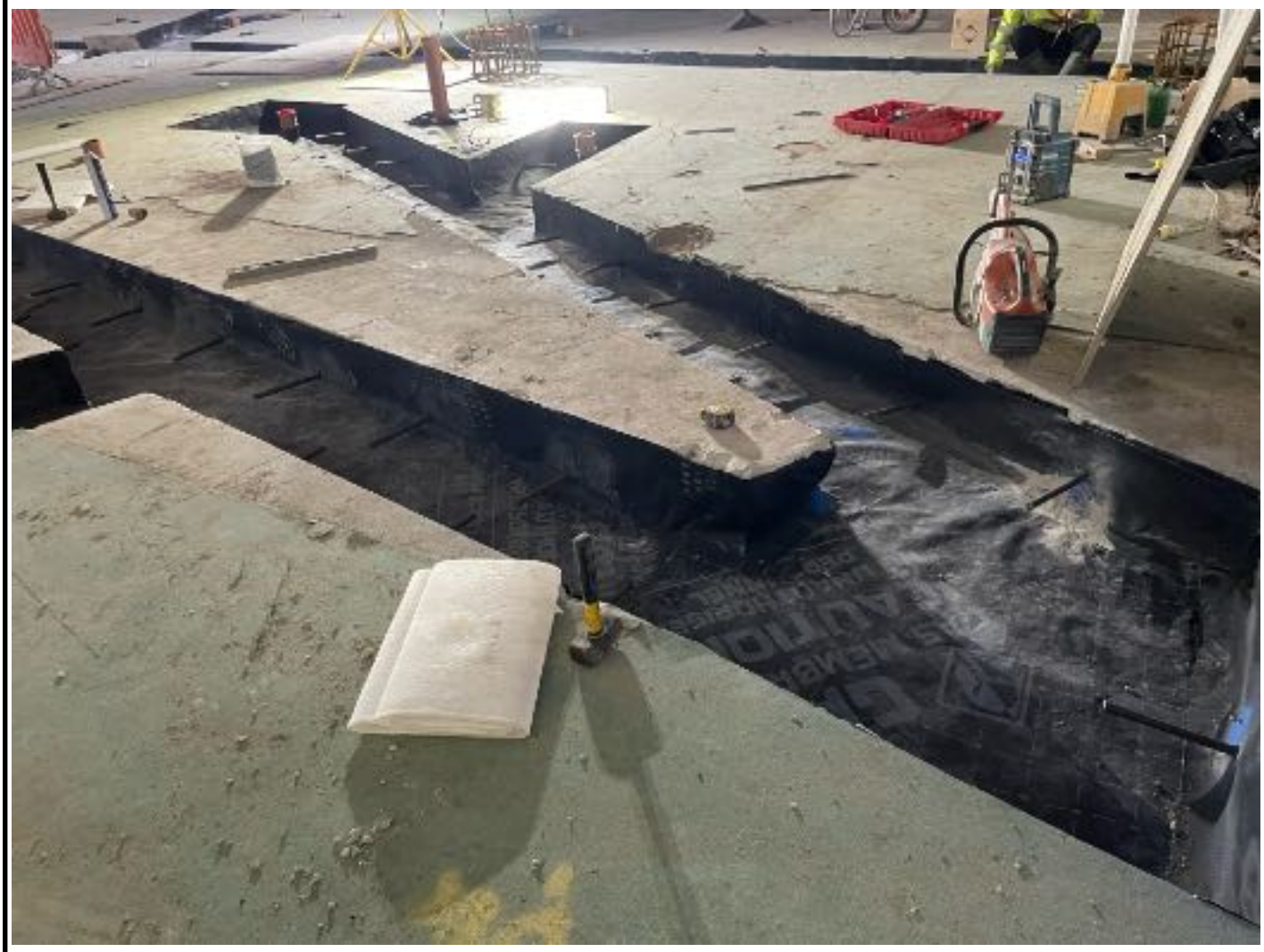
OVERVIEW



The photograph above displays an overview of the area where today's verification inspection took place on site.

GeoShield Verification Report

OVERVIEW



The photograph above displays an overview of the area where today's verification inspection took place on site.

GeoShield Verification Report

VERIFICATION ITEM ONE

AREA INSPECTED: Sports Hall Underslab - Main Channels

INSPECTION DETAILS: Installation of JUTA GP1 Gas Barrier





NOTES:

JUTA GP1 Gas Barrier has been installed to the Underslab area of the sports hall. The installers have ensured the membrane has covered the entirety of the Underslab channels ensuring continuity throughout. All laps of the adjacent sheets of JUTA GP1 Gas Barrier have been overlapped a minimum of 100mm

NOTES:

and sealed using a hot air tool and silicone roller ensuring all laps were sealed in accordance with manufacturer's specifications and design guidelines. All edges of the Underslab areas were primed using JUTA GP PRIMER, once the primer had cured the JUTA GP1 Gas Barrier was sealed to the edges of the Underslab edge

GeoShield Verification Report

VERIFICATION ITEM ONE



using JUTA GP1 SAM. All JUTA GP1 SAM was subjected to sufficient heat and pressuring using a hot air tool and silicone roller creating a strong seal throughout. All lap joints were subjected to thorough visual inspections, supported by mechanical point stress testing (also known as pick and probe testing) throughout the installation. No faults or defects were identified during these testing procedures.
Tested and verified in accordance with CIRIA 735.

GeoShield Verification Report

VERIFICATION ITEM TWO

AREA INSPECTED: Sports Hall Underslab - Main Channels

INSPECTION DETAILS: Sealing of Pipe Penetrations





NOTES:

Throughout the complete line out installation of the Juta GP1 Gas Barrier to the referenced area, there were a number of pipe penetrations that have been sealed in accordance with manufacturer's specifications. This had been achieved by cutting Juta GP1 Gas Barrier tightly around the pipe penetrations, four small squares

NOTES:

of Juta GP1 SAM were then cut and wrapped around the pipe to create a tight seal and then finally a 300mm square of Juta GP1 SAM was placed over the top of the pipe penetration in a top hat formation. A hot air tool and silicone roller were used to activate the bitumen backing on the Juta GP1 SAM to ensure the correct bond was

GeoShield Verification Report

VERIFICATION ITEM TWO



achieved between the Juta GP1 Gas Barrier and Juta GP1 SAM. All pipe penetrations were subjected to visual between the inspection as well as a mechanical point stress test where a probe is run along all edges of Juta GP1 SAM to ensure the correct bond was achieved during the installation. No faults were identified during this procedure. Tested and verified in accordance with CIRIA 735.

GeoShield Verification Report

VERIFICATION ITEM TWO

AREA INSPECTED: Sports Hall Underslab - Main Channels

INSPECTION DETAILS: Sealing of Steel Dowels





NOTES:

Throughout the installation of the Juta GP1 Gas Barrier to the referenced area, there were a number of steel dowels that have been sealed in accordance with manufacturer's specifications. Once the JUTA GP1 Gas Barrier had been installed and sealed to the Underslab edge a number of holes were drilled within the

NOTES:

area, a quick dry resin was then applied into the holes with the steel dowels being installed. Once cured the steel dowels were successfully sealed using JUTA PU Sealant. All steel dowels were subject to thorough visual inspections supported by mechanical point stress testing where no faults were identified.

GeoShield Verification Report

GAS MEMBRANE TESTING

VISUAL /PICK & PROBE:	✔	DIELECTRIC:	
AIR LANCING:		OTHER (PLEASE SPECIFY):	
DESTRUCTIVE:			
INERT GAS TEST:			
SMOKE TEST:			

Report No.	AREA INSPECTED	Y/N
001	Sports Hall Underslab - Main Channels	✔

GeoShield Verification Report

REMEDIATION LOG

Date	No.	Remediation Description	Y/N
22/09/2025	001	No faults or defects identified during today’s visit.	✔

GeoShield Verification Report

VERIFICATION SUMMARY

This was the first visit to site where the verification was required for the installation of Juta GP1 Gas Barrier to the channels within the sports hall expansion at The Grange school, which was carried out by Arch&Wood Construction.

All of the channel areas have successfully been lined out using Juta GP1 Gas Barrier, all overlapping joints between the adjacent sheets of Juta GP1 Gas Barrier have been singled welded together using a hot air Leister heat heat gun with adequate pressure having been applied using a silicone roller ensuring continuous seals were achieved throughout the install.

All Juta GP1 Gas Barrier has been successfully terminated at the slab edge using JUTA GP1 SAM.

All pipe penetrations throughout the install have successfully been sealed using Juta GP1 SAM.

All steel dowels that have pierced through the Juta GP1 SAM have been successfully sealed using JUTA PU Sealant.

Thorough visual inspections supported by mechanical point stress testing was conducted throughout where no faults or defects were identified at the time of the verification.

Is the project ready for handover?	No

This was passed and verified in accordance with CIRIA 735 and installed to BS8485:2015+A1 2019.

GEOSHIELD SIGNATURE



DATE: 22-Sep-2025

GeoShield Verification Report 2

PROJECT REFERENCE:	GEO105611
PROJECT ADDRESS:	The Grange Expansion, Grange School, Matthews Lane, Levenshulme, M12 4GR
SPECIFICATION:	Verified in accordance with CIRIA 735. Design in accordance with BS8485 2015 + 2019 for Methane and Carbon Dioxide. Substrate prepared in accordance with manufacturer's instructions.
MATERIAL SPECIFICATION:	JUTA GP1 Gas Barrier JUTA GP1 SAM JUTA GP Primer JUTA PU SEALANT

GeoShield Verification Report

NAME OF SURVEYOR:	Liam England
VERIFICATION COMPANY:	GeoShield Limited
COMPANY ADDRESS:	Icon Business Centre
	4100 Park Approach, Thorpe Park
	Leeds
	LS15 8GB
CONTACT NUMBER:	07551 259023
EMAIL ADDRESS:	lengland@geoshield.co.uk

GeoShield Verification Report

CLIENT DETAILS

CLIENT CONTACT:	Steven Chantler
CONTACTS ROLE:	Arch and Wood Construction
MOBILE PHONE:	0161 3273907
EMAIL ADDRESS:	

CLIENT CONTACT:	
CONTACTS ROLE:	
MOBILE PHONE:	
EMAIL ADDRESS:	
NOTES:	

GeoShield Verification Report

APPLICATOR'S DETAILS

APPLICATOR NAME:	Alex Rodgers
COMPANY:	Arch and Wood Contrusction
APPLICATOR TEL:	07888 263143
APPLICATOR EMAIL:	

APPLICATOR NAME:	
COMPANY:	
APPLICATOR TEL:	
APPLICATOR EMAIL:	

NOTES:

At least one member of each team group will have a NVQ Level 2 qualification in gas membrane installation.

All installers are competent and skilled to complete gas membrane installation.

GeoShield Verification Report

INSPECTION AREA(S)

Steel Column Encasements - Sports Hall Expansion

SITE CONDITIONS

WEATHER:	Overcast
TEMPERATURE:	11ºC
TIME:	14:05 - 15:50
DATE:	10.11.2025
REPORT NUMBER:	002
ACCOMPANIED BY:	Alex Rodgers - Arch and Wood

GeoShield Verification Report

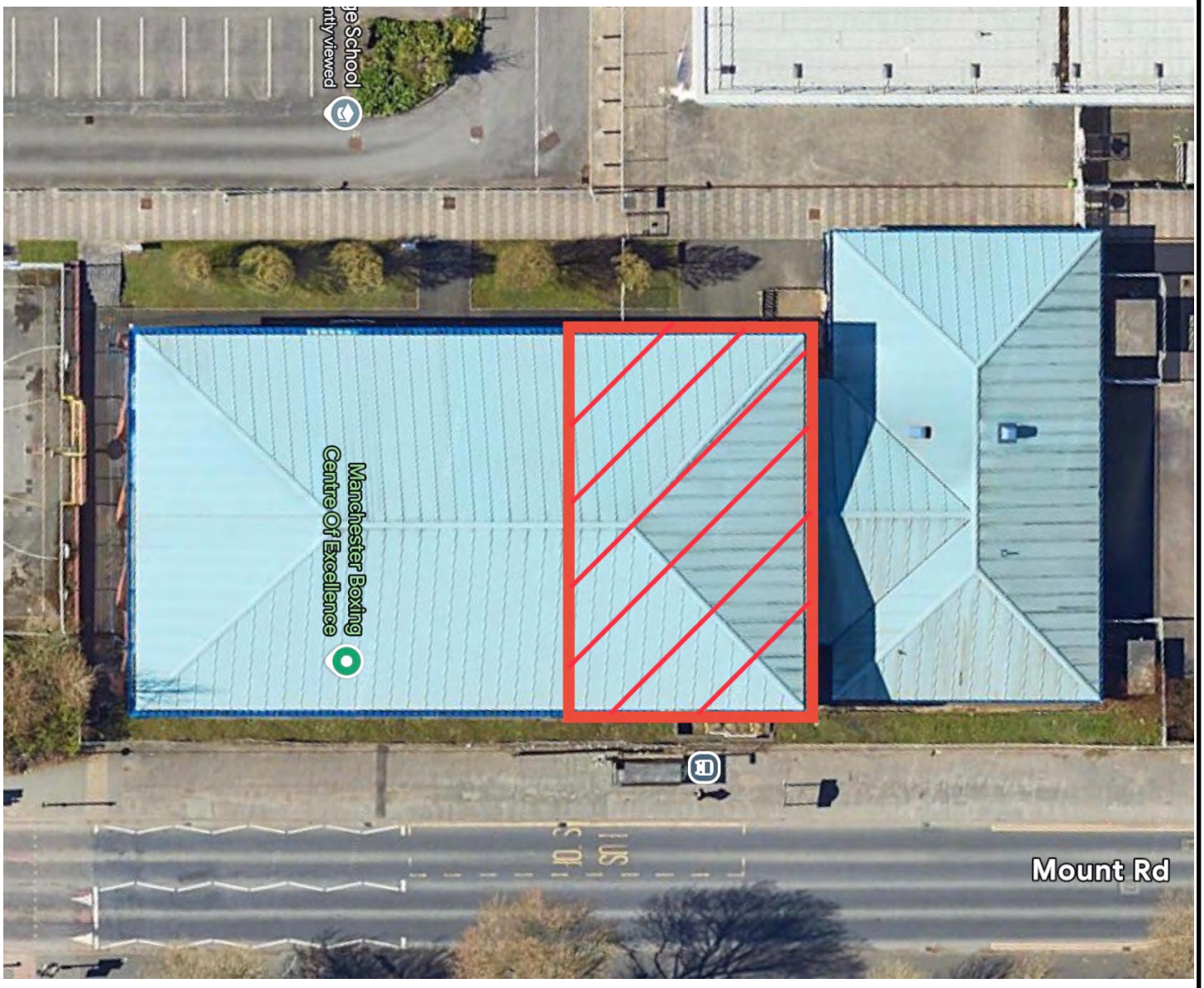
VERIFICATION LAYOUT



The photograph above shows the layout of the site.

GeoShield Verification Report

VERIFICATION LAYOUT



The photograph above shows the layout of the site, the area highlighted in red is where today's verification took place.

GeoShield Verification Report

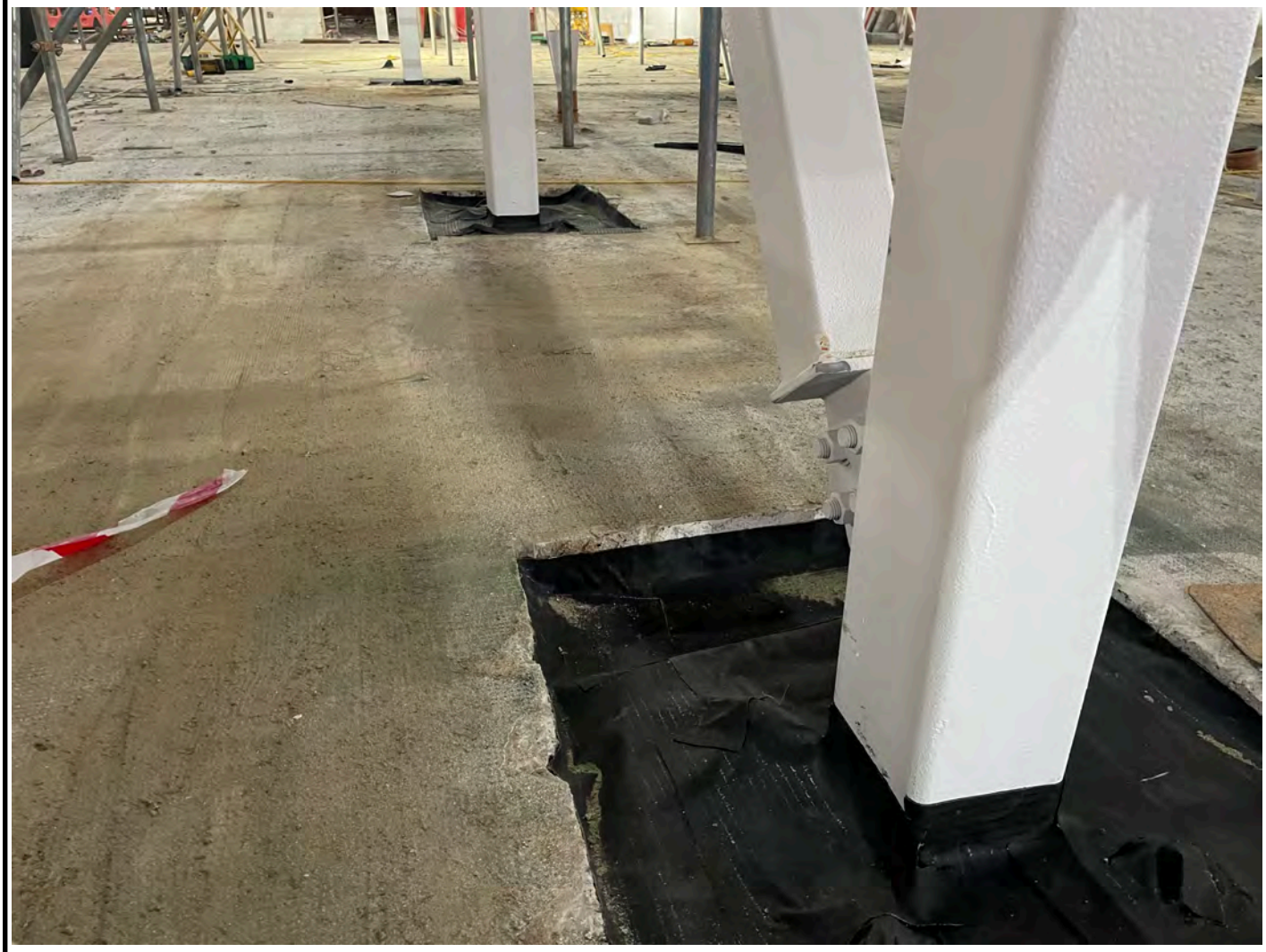
OVERVIEW



The photograph above displays an overview of the area where today's verification inspection took place on site.

GeoShield Verification Report

OVERVIEW



The photograph above displays an overview of the area where today's verification inspection took place on site.

GeoShield Verification Report

VERIFICATION ITEM ONE

AREA INSPECTED: Steel Column Encasements - Sports Hall Expansion

INSPECTION DETAILS: Installation of JUTA GP1 Gas Barrier





NOTES:

JUTA GP1 Gas Barrier has been installed within the steel column encasements of the sports hall expansion. The installers have ensured the membrane has covered all areas of the steel column encasements ensuring continuity throughout. All laps of the adjacent sheets of JUTA GP1 Gas Barrier have been sealed using a number

NOTES:

of strips of JUTA GP1 SAM, all areas of the JUTA GP1 SAM have been sealed to the column encasement slab edge and steel column. All areas of the JUTA GP1 SAM have been heated down using a hot air top with silicone roller ensuring adequate pressure was applied throughout creating strong adhesion throughout.

GeoShield Verification Report

VERIFICATION ITEM ONE



All steel column encasements were subjected to thorough visual inspections, supported by mechanical point stress testing (also known as pick and probe testing) throughout the installation. No faults or defects were identified during these testing procedures.

Tested and verified in accordance with CIRIA 735.

GeoShield Verification Report

ADDITIONAL PHOTOGRAPHS



Overview of one of the sealed steel column encasements.



Overview of one of the sealed steel column encasements.



Overview of one of the sealed steel column encasements.



Overview of one of the sealed steel column encasements.

GeoShield Verification Report

ADDITIONAL PHOTOGRAPHS



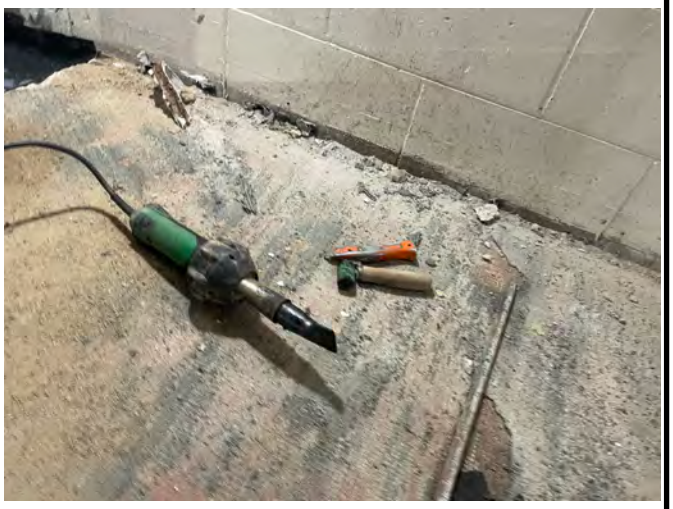
Photo showing 190mm strips of JUTA GP1 SAM sealing the column encasement slab edge.



Pick and probe test being carried out on a sealed steel column encasement.



Pick and probe test being carried out on a sealed steel column encasement.



Hot air tool and silicone roller used during the install to heat all JUTA GP1 SAM.

GeoShield Verification Report

GAS MEMBRANE TESTING

VISUAL /PICK & PROBE:	✔	DIELECTRIC:	
AIR LANCING:		OTHER (PLEASE SPECIFY):	
DESTRUCTIVE:			
INERT GAS TEST:			
SMOKE TEST:			

Report No.	AREA INSPECTED	Y/N
001	Sports Hall Underslab - Main Channels	✔
002	Steel Column Encasements - Sports Hall Expansion	✔

GeoShield Verification Report

REMEDIATION LOG

Date	No.	Remediation Description	Y/N
22/09/2025	001	No faults or defects identified during today’s visit.	✔
10/11/2025	002	No faults or defects identified during today’s visit.	✔

GeoShield Verification Report

VERIFICATION SUMMARY

This was the second visit to site where the verification was required for the installation of JUTA GP1 Gas Barrier to the steel column encasements within the sports hall expansion at The Grange school, which was carried out by Arch&Wood Construction.

All of the steel column encasements have successfully been lined out using JUTA GP1 Gas Barrier, any overlapping joints between the adjacent sheets of JUTA GP1 Gas Barrier have been singled welded together using a hot air Leister heat heat gun with adequate pressure having been applied using a silicone roller ensuring continuous seals were achieved throughout the install.

All JUTA GP1 Gas Barrier has been successfully terminated at the slab edge of the steel column encasements using JUTA GP1 SAM, all JUTA GP1 SAM has been heated down with adequate pressure being applied ensuring continuous seals were achieved throughout.

Thorough visual inspections supported by mechanical point stress testing was conducted throughout where no faults or defects were identified at the time of the verification.

Is the project ready for handover?	No

This was passed and verified in accordance with CIRIA 735 and installed to BS8485:2015+A1 2019.

GEOSHIELD SIGNATURE



DATE: 10-Nov-2025

GeoShield Verification Report 3

PROJECT REFERENCE:	GEO105611
PROJECT ADDRESS:	The Grange Expansion, Grange School, Matthews Lane, Levenshulme, M12 4GR
SPECIFICATION:	Verified in accordance with CIRIA 735. Design in accordance with BS8485 2015 + 2019 for Methane and Carbon Dioxide. Substrate prepared in accordance with manufacturer's instructions.
MATERIAL SPECIFICATION:	JUTA GP1 Gas Barrier JUTA GP1 SAM JUTA GP Primer JUTA PU SEALANT JUTA GP4 Gas Barrier

GeoShield Verification Report

NAME OF SURVEYOR:	Liam England
VERIFICATION COMPANY:	GeoShield Limited
COMPANY ADDRESS:	Icon Business Centre
	4100 Park Approach, Thorpe Park
	Leeds
	LS15 8GB
CONTACT NUMBER:	07551 259023
EMAIL ADDRESS:	lengland@geoshield.co.uk

GeoShield Verification Report

CLIENT DETAILS

CLIENT CONTACT:	Steven Chantler
CONTACTS ROLE:	Arch & Wood Construction
MOBILE PHONE:	0161 3273907
EMAIL ADDRESS:	

CLIENT CONTACT:	
CONTACTS ROLE:	
MOBILE PHONE:	
EMAIL ADDRESS:	
NOTES:	

GeoShield Verification Report

APPLICATOR'S DETAILS

APPLICATOR NAME:	Patrick
COMPANY:	Arch & Wood Construction
APPLICATOR TEL:	
APPLICATOR EMAIL:	

APPLICATOR NAME:	
COMPANY:	
APPLICATOR TEL:	
APPLICATOR EMAIL:	

NOTES:

At least one member of each team group will have a NVQ Level 2 qualification in gas membrane installation.

All installers are competent and skilled to complete gas membrane installation.

GeoShield Verification Report

INSPECTION AREA(S)

Sports Hall, Extension - Full Line Out

SITE CONDITIONS

WEATHER:	Overcast
TEMPERATURE:	12°c
TIME:	09:30 - 10:45
DATE:	31.03.2026
REPORT NUMBER:	003
ACCOMPANIED BY:	

GeoShield Verification Report

VERIFICATION INSPECTION INFORMATION



The images above provide details of today's verification inspection visit to site, including the gas membrane(s) used for the installation.

GeoShield Verification Report

VERIFICATION LAYOUT



The photograph above shows the site layout. The area highlighted in red shows the extension to the Sports Hall where the verification inspection of the JUTA GP4 Gas Barrier installation took place on site today.

GeoShield Verification Report

OVERVIEW



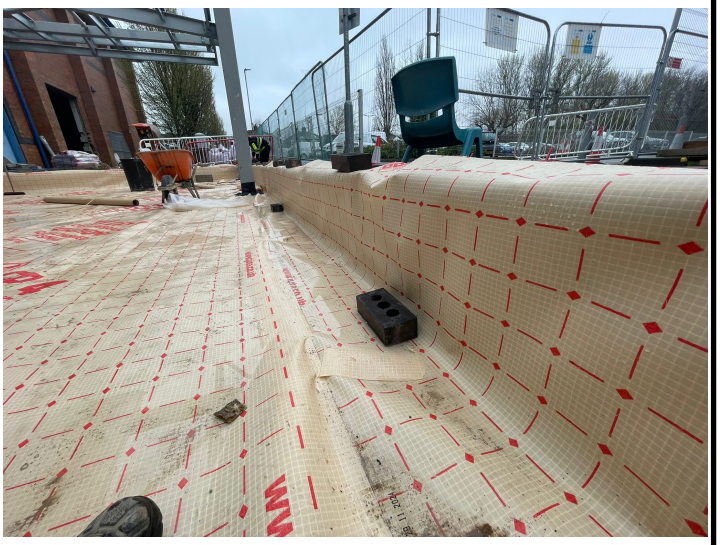
The photograph above displays an overview of the Sports Hall Extension area where today's verification inspection of the JUTA GP4 Gas Barrier installation took place on site.

GeoShield Verification Report

VERIFICATION ITEM ONE

LOCATION/GRID LINE: Sports Hall, Extension - Full Line Out

Installation of JUTA GP4 Gas Barrier - Lap Joints



NOTES:

A complete line out of the JUTA GP4 Gas Barrier has been installed across the footprint of the extension to the Sports Hall, upon a compacted sand substrate. The JUTA GP4 Gas Barrier has been lined out up all external shuttering and terminated to the existing building using a retrofit detail.

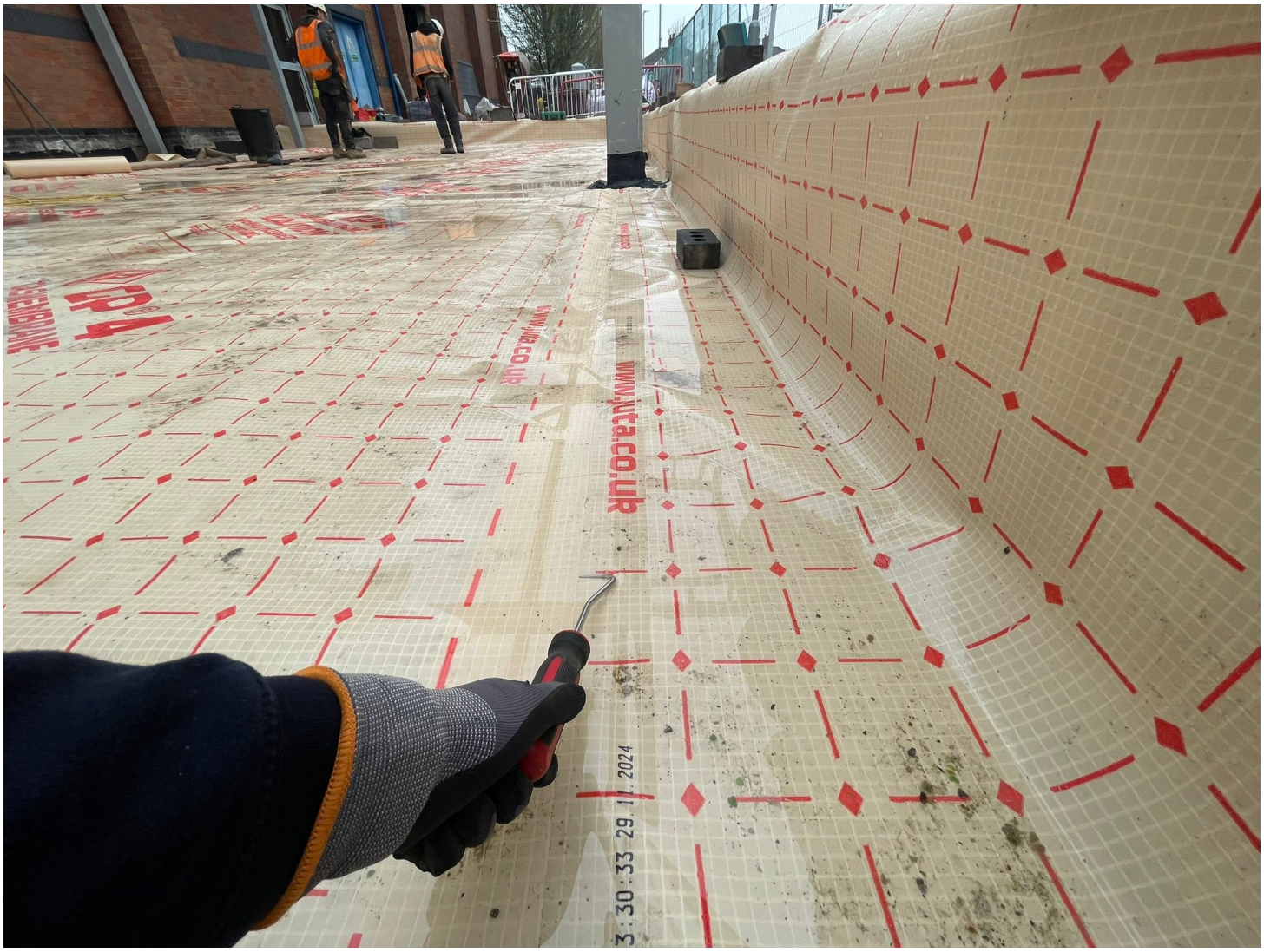


NOTES:

All lap joints between the adjacent sheets of JUTA GP4 Gas Barrier have been overlapped a minimum of 100mm, conforming to manufacturer's specifications. All overlaps have been welded using a hot air leister and a silicone roller with adequate pressure applied to ensure a continuous gas resistant seal is

GeoShield Verification Report

VERIFICATION ITEM ONE



achieved. Thorough visual inspections, supported by mechanical point stress testing were conducted upon all lap joints of the JUTA GP4 Gas Barrier. One fault was identified, which was remediated in the presence of GeoShield.
Tested and verified in accordance with CIRIA 735.

GeoShield Verification Report

REMEDIATIONS

Fault Identified & Remediated



As mentioned, one fault was identified during the testing procedures conducted upon all aspects of the installation.
The fault was brought to the attention of the installers and remediated during the visit, in the presence of GeoShield.



The fault was remediated by applying a 300mm square patch of JUTA WP SAM over the affected area, with heat and rolled pressure applied to activate the bitumen backing.
No further faults or defects were identified during the testing of the remedial work.

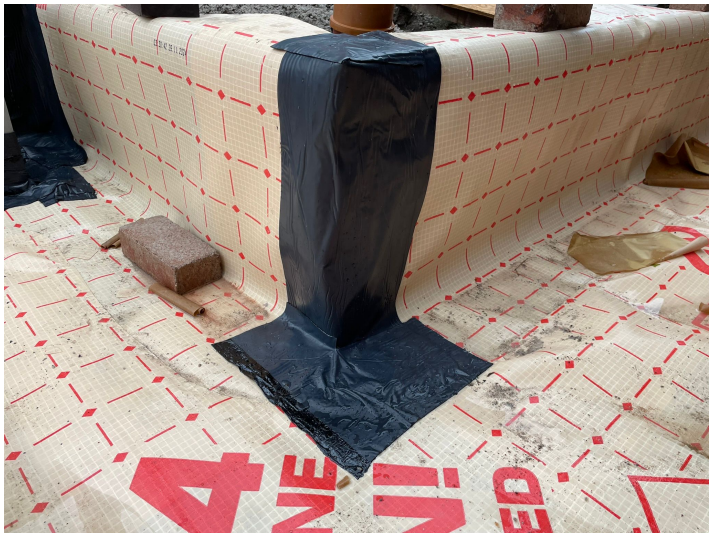
GeoShield Verification Report

VERIFICATION ITEM TWO

LOCATION/GRID LINE: Sports Hall, Extension - Full Line Out

Corner Detailing





NOTES:

A number of corners throughout the referenced extension have also been sealed. This has been achieved using JUTA WP SAM. Where the JUTA GP4 Gas Barrier has been cut to minimise voided areas and gaps across the footprint of the extension, each corner junction has been reinforced by heating strips of JUTA WP

NOTES:

SAM and placing into position around each corner, onto the JUTA GP4 Gas Barrier. Firm rolled pressure is applied with a silicone roller to aid in the adhesion, ensuring the JUTA WP SAM has fully bonded.

GeoShield Verification Report

VERIFICATION ITEM TWO



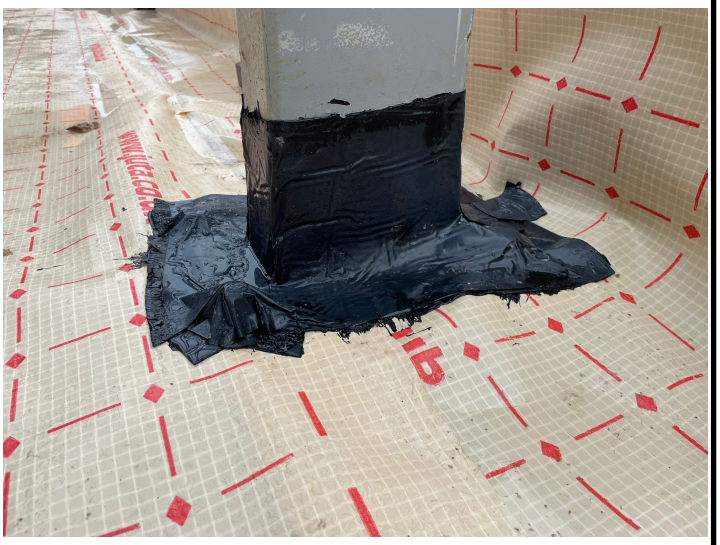
As with the columns, a probe was run along all edges of the JUTA WP SAM corner detailing to validate that a continuous gas resistant seal had been achieved throughout.
No faults or defects were identified.
Tested and verified in accordance with CIRIA 735.

GeoShield Verification Report

VERIFICATION ITEM THREE

LOCATION/GRID LINE: Sports Hall, Extension - Full Line Out

Column Detaililng





NOTES:

A number of columns throughout the referenced area have also been sealed as per manufacturer's specifications and design guidelines. This has been achieved using JUTA WP SAM. Where the JUTA GP4 Gas Barrier has been cut around the base of the columns to minimise voided areas, each column has been reinforced

NOTES:

by heating strips of JUTA WP SAM and placing into position around each column base, onto the JUTA GP4 Gas Barrier. Firm rolled pressure is applied to aid in the adhesion, ensuring the JUTA WP SAM has fully bonded. Prior to the application of the JUTA WP SAM, the column bases have been primed and left to cure.

GeoShield Verification Report

VERIFICATION ITEM THREE



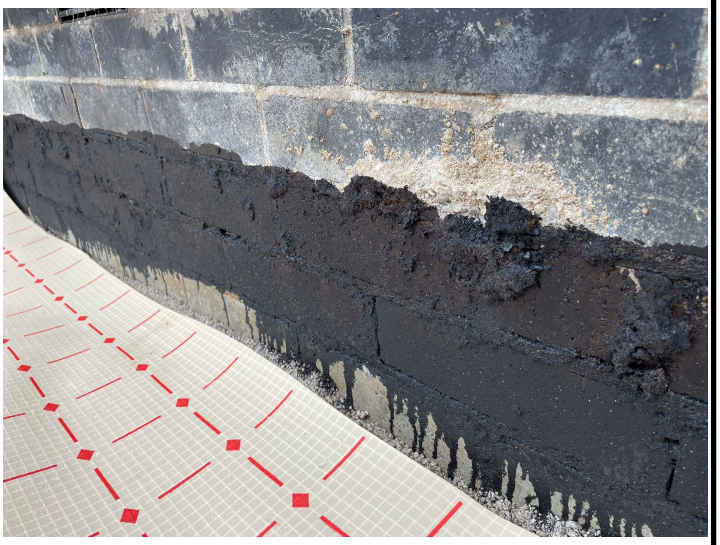
A probe was run along all edges of the JUTA WP SAM column detailing to validate that a continuous gas resistant seal had been achieved throughout.
No faults or defects were identified at the time of the inspection.
Tested and verified in accordance with CIRIA 735.

GeoShield Verification Report

VERIFICATION ITEM FOUR

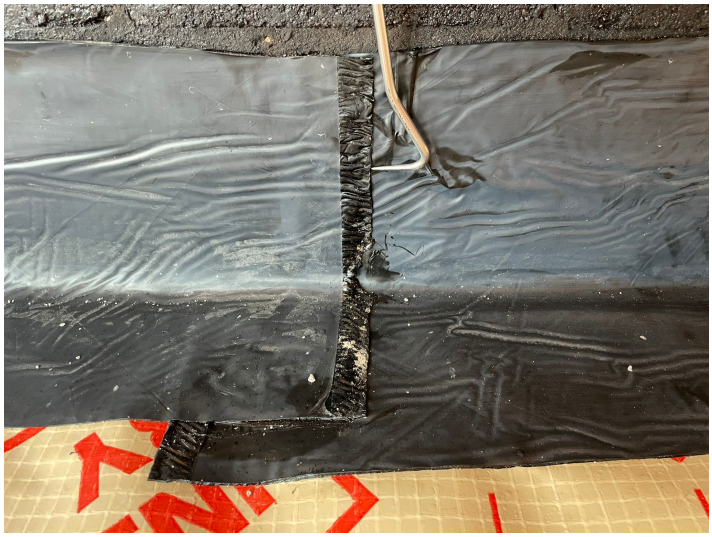
AREA INSPECTED: Extension - Full Line Out

INSPECTION DETAILS: Termination



NOTES:

The newly installed JUTA GP4 Gas Barrier has been terminated to the perimeter of the existing building using 300mm strips of JUTA WP SAM, implemented in a retrofit design. Prior to application of the JUTA WP SAM the blockwork has been painted with a coat of JUTA GP Primer and left a sufficient amount of time to cure. Once



NOTES:

cured, JUTA WP SAM has been lapped up the blockwork (onto the primed surface) and returned into the extension, upon the newly installed JUTA GP4 Gas Barrier. All lap joints between the adjacent sheets of JUTA WP SAM have been heat welded using a hot air leister and a silicone roller to ensure a continuous gas resistant seal

GeoShield Verification Report

VERIFICATION ITEM FOUR



has been achieved. Thorough visual inspections, supported by mechanical point stress testing were conducted upon the termination of the JUTA GP4 Gas Barrier to the existing building. No faults or defects were identified at the time of the inspection. Tested and verified in accordance with CIRIA 735.

GeoShield Verification Report

ADDITIONAL PHOTOGRAPHS



The JUTA GP4 Gas Barrier terminated to the existing building using JUTA WP SAM.



Corner reinforced with JUTA WP SAM.



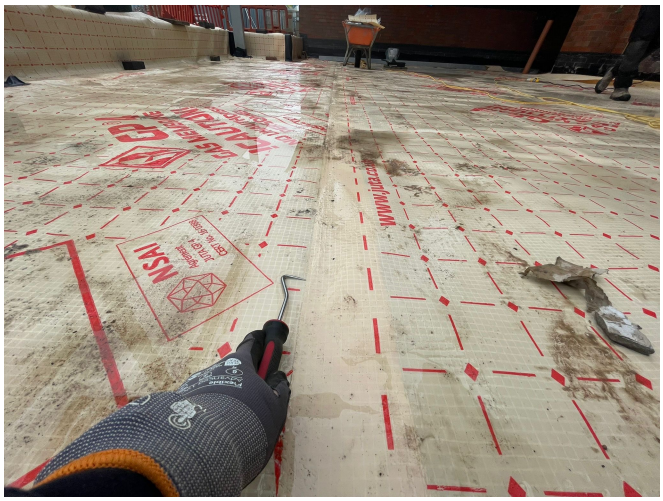
A mechanical point stress test being conducted upon a sealed corner.



A mechanical point stress test being conducted upon a lap joint of the JUTA GP4 Gas Barrier.

GeoShield Verification Report

ADDITIONAL PHOTOGRAPHS



A mechanical point stress test being conducted upon a welded lap joint.



The installer heat welding a lap joint of the JUTA GP4 Gas Barrier.



The installer heating the patch of JUTA WP SAM to remediate the one fault identified.



The installer sealing one of the column bases using JUTA WP SAM.

GeoShield Verification Report

GAS MEMBRANE TESTING

VISUAL /PICK & PROBE:	✔	DIELECTRIC:	
AIR LANCING:		OTHER (PLEASE SPECIFY):	
DESTRUCTIVE:			
INERT GAS TEST:			
SMOKE TEST:			

Report No.	AREA INSPECTED	Y/N
001	Sports Hall Underslab - Main Channels	✔
002	Steel Column Encasements - Sports Hall Expansion	✔
003	Sports Hall, Extension - Full Line Out	✔

GeoShield Verification Report

REMEDIATION LOG

Date	No.	Remediation Description	Y/N
22/09/2025	001	No faults or defects identified during today's visit.	✔
10/11/2025	002	No faults or defects identified during today's visit.	✔
31/03/2026	003	One fault was identified and remediated during the visit.	✔

GeoShield Verification Report

VERIFICATION SUMMARY

This was the third and final visit to the site where verification was required for the complete line out installation of the JUTA GP4 Gas Barrier to the Sports Hall Extension.

All lap joints between the adjacent sheets of JUTA GP4 Gas Barrier have been overlapped a sufficient amount and heat welded using a hot air leister and silicone roller, creating continuous welded joints throughout.

All details throughout the installation, such as columns and corners have been sealed using JUTA WP SAM.
The termination of the JUTA GP4 Gas Barrier onto the existing building has been carried out using JUTA WP SAM.
Prior to application of the JUTA WP SAM to terminate the membrane onto the column bases and the existing building, all areas were primed to aid in the adhesion.

Thorough visual inspections, supported by mechanical point stress testing were conducted throughout the inspection today.
One fault was identified and remediated during the visit in the presence of GeoShield.

Is the project ready for handover?	Yes

This was passed and verified in accordance with CIRIA 735 and installed to BS8485:2015+A1 2019.

GEOSHIELD SIGNATURE



DATE: 31-Mar-2026

GROUND GAS PROTECTION
GP®1 TECHNICAL DATA SHEET

JUTA | TITANTECH®



GP®1

GP®1 proprietary gas resistant damp proof membrane (DPM) is a multi-layer, low density polyethylene membrane, reinforced with a polypropylene reinforcing grid with an integral aluminium foil. GP®1 is specifically designed and manufactured to perform as a methane, carbon dioxide, radon, ground gas, air & moisture protection system.

Thickness	0.6 mm
Width	Various m
Length	Various m
Weight	370 g/m²

TITANTECH®
For developers of brownfield and contaminated sites the TITANTECH® family of products represent a major step forward in safeguarding projects against gaseous and chemical contamination.

Handling
Roll weights can be in excess of 20 kg and hence appropriate care and equipment is required for unloading and handling.

Storage
Rolls of GP®1 should be stored on stable/level ground and stacked not more than five rolls high, with no other material stacked on top. The rolls can be stored outdoors when packaged, but should be protected from exposure to UV.

Installation
GP®1 should be installed in accordance with the product installation guidelines, and in accordance with BS 8485:2015.

Certifications

BBA APPROVAL INSPECTION TESTING CERTIFICATION CERTIFICATE 20/5705

Please Scan

CE UK CA UK NI

Rev 2024

GROUND GAS PROTECTION
GP®1 TECHNICAL DATA SHEET

GP®1

Feature	Characteristics	Test Method	GP®1
Physical Properties	Thickness	EN 1849-2	0.6 mm
	Thickness - between Scrim	BS EN ISO 9863-1:2016	0.4 mm
	Width	EN 1849-2	Various m
	Length	EN 1849-2	Various m
	Weight	EN 1849-2	370 g/m^2
Hydraulic Press	Water Column	EN 20811	> 300
	Resistance to Water Penetration	EN 13967, EN 1928	Pass
	Water Tightness	EN 11296, EN 1367, EN 1928	Pass
Mechanical Properties	Resistance to Static Load	EN 12730-B	20 kg
	Tensile Strength (MD)	EN 12311-1	600 N/50mm
	Tensile Strength (CMD)	EN 12311-1	480 N/50mm
	Tensile Elongation (MD)	EN 12310-1	20%
	Tensile Elongation (CMD)	EN 12310-1	20%
	Puncture Resistance	EN 12236	1.25 kN
	Resistance to Tearing (Nail Shank) MD	EN 12310-1	330 N
	Resistance to Tearing (Nail Shank) CMD	EN 12310-1	400 N
Durability and Chemical Resistance	Transmission Rate of Volatile Liquids - Diesel	ISO 6179:2010 (B)	0.246 g/m^2/h
	Transmission Rate of Volatile Liquids - Xylene	ISO 6179:2010 (B)	0.571 g/m^2/h
	Transmission Rate of Volatile Liquids - Toluene	ISO 6179:2010 (B)	0.583 g/m^2/h
	Transmission Rate of Volatile Liquids - Petrol	ISO 6179:2010 (B)	0.135 g/m^2/h
Gas Permeability	Methane Permeability	BS EN ISO 15105-1	< 0.09 ml/m^2/day/atm
	Carbon Dioxide Permeability	BS EN ISO 15105-1	< 0.09 ml/m^2/day/atm
	Radon Permeability	K124/02/95	8.0 x 10^{-15} m^2/s
	Hydrogen Sulphide Permeability	BS EN ISO 15105-1	< 0.1 ml/m^2/day/atm
Compliance and Certification	CE Mark - EN13967:2012 (A1 2017)		
	NHBC Standards Compliant		
	Conforms to BS 8485:2015 + A1 2019		
	BBA Certified - Certificate No. 20/5728		

JUTA UK

Please contact JUTA UK Directly for more information on GP®1

Jointing and Sealing

It is recommended GP®1 be heat welded where possible, with welding carried out by competent personnel with suitable qualifications in accordance with best practice, and guidance contained within BS 8485:2015.

Accessory Products

- GP®1 Starter Band
- GP® Tape
- GP® Self Adhesive Membrane
- GP® Primer
- GP® Top Hats and Preformed Corners
- GP® Protection Fleece
- GP® Void Vent (24/40mm)

GROUND GAS PROTECTION
GP®4 TECHNICAL DATA SHEET

JUTA | TITANTECH®



GP®4

GP®4 gas barrier is a multi-layer, low density polyethylene membrane, reinforced with a polypropylene reinforcing grid. GP®4 is specifically designed and manufactured to perform as a radon, air & moisture protection system, as well as low level protection to carbon dioxide and methane.

Thickness	0.6 mm
Width	Various m
Length	Various m
Weight	400 g/m²

TITANTECH®

For developers of brownfield and contaminated sites the TITANTECH® family of products represent a major step forward in safeguarding projects against gaseous and chemical contamination.

Handling

Roll weights can be in excess of 20kg and hence appropriate care and equipment is required for unloading and handling.

Storage

Rolls of GP®4 should be stored on stable/level ground and stacked not more than five rolls high, with no other material stacked on top. The rolls can be stored outdoors when packaged, but should be protected from exposure to UV.

Installation

GP®4 should be installed in accordance with the product installation guidelines, and in accordance with best practice.

Certifications

BBA Certificate 20/5709

Please Scan

CE UKCA UKNI

Rev 2024

GROUND GAS PROTECTION
GP®4 TECHNICAL DATA SHEET

GP®4

Feature	Characteristics	Test Method	GP®4
Physical Properties	Thickness	EN 1849-2	0.6 mm
	Width	EN 1849-2	Various m
	Length	EN 1849-2	Various m
	Weight	EN 1849-2	400 g/m^2
Hydraulic Press	Water Column	EN 20811	Pass
	Water Vapour Transmission - Moisture Resistance Factor	EN 1931	130 m
	Water Tightness	EN 1928 (A)	Pass
Mechanical Properties	Resistance to Static Load	EN 12730-B	20 kg
	Tensile Strength (MD)	EN 12311-1	600 N/50mm
	Tensile Strength (CMD)	EN 12311-1	570 N/50mm
	Tensile Elongation (MD)	EN 12310-1	15%
	Tensile Elongation (CMD)	EN 12310-1	15%
	Puncture Resistance	EN 12236	1.25 kN
	Resistance to Tearing (Nail Shank) MD	EN 12310-1	500 N
	Resistance to Tearing (Nail Shank) CMD	EN 12310-1	500 N
Gas Permeability	Radon diffusion co-efficient (D)	ISO/TS 11665-13	8.0 x 10^{-12} m^2/s
	Radon diffusion co-efficient (D) Joint	ISO/TS 11665-13	7.4 x 10^{-12} m^2/s
Compliance and Certification	CE Mark - EN13967:2012		
	NHBC Standards Compliant		
	BBA Certified - Certificate No. 20/5728		

JUTA UK

Please contact JUTA UK Directly for more information on GP®4

Jointing and Sealing

GP®4 can be heat welded or taped, with jointing carried out by competent personnel with suitable qualifications in accordance with best practice. GP®4 should be overlapped by at least 100mm. If taping joints, only suitable tape must be used, ensuring application with a silicone roller to remove trapped air. JUTA pre-formed details, or self adhesive gas membrane are available for sealing around protuberances.

Accessory Products

- GP® DPC
- GP® Tape
- GP® Self Adhesive Membrane (SAM)
- GP® Primer
- GP® Top Hats and Preformed Corners
- GP® Protection Fleece
- GP® Void Vent (24/40mm)

GEOSHIELD

Verification Certificate

Date: 08 April 2026

Arch & Wood Construction

Sports Hall Extension
The Grange Expansion
Grange School
Matthews Lane
Levenshulme
M12 4GR

The documentation in this handover package shows that the installation of the Gas Membrane and ancillaries was installed to specification.

Verified in accordance with BS 8485:2015+A1:2019 and CIRIA 735.

All areas were verified, and remediation issues corrected.

Paul Colbeck
Director of Site Services