



GeoShield Verification Report 22



PROJECT REFERENCE: GEO103260 R22

PROJECT: Riverside Academy

PROJECT ADDRESS: Riverside Academy

Reading

RG1 8EQ

SPECIFICATION: Verified in accordance with CIRIA 735.

Design in accordance with BS8485 2015 + 2019 for Methane and Carbon Dioxide.

Substrate prepared in accordance with manufacturers instructions

Juta GP1 Gas Barrier

Juta GP SAM

Juta Titan Flex (Basal layer membrane)

Juta Titan Tank (Basal layer membrane)



GeoShield Verification Report



INFORMATION INCLUDED

GG52686 River Academy, Reading GGVRA Final

FS0949-ASO-XX-XX-RP-Y-0005 Remediation Strategy S3 P02

FS0949-HEX-01-FN-DR-S-1601-FOUNDATION LAYOUT_P07

SWC_RVS-Det_Version A (6 pages)

JUTA Material Specification Technical Data Sheets

Radon Maps UK - (Map 1) Site Location & (Map 2) Nearby Location

Information presented to at the pre-verification stage assumed correct

Any change client will let GeoShield know or this Pre-verification Plan will be void.



GEOSHIELD Verification Report



VERIFICATION OFFICER: Kavanagh Palmer-Fletcher

VERIFICATION COMPANY: GeoShield Limited

Icon Business Park, 4100 Park Approach

Thorpe Park, LEEDS

West Yorkshire

LS15 8GB

CONTACT NUMBER: 07470012812

EMAIL ADDRESS: Kpalmer-fletcher@geoshield.co.uk

ORDER NUMBER:

PER VISIT: YES:

☐

NO:



PROJECT: YES:



NO:

☐



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CLIENT DETAILS

CLIENT CONTACT:	James Hay
CONTACTS ROLE:	Commercial Director
MOBILE PHONE:	07507 560 728
EMAIL ADDRESS:	jameshay@swcontracts.co.uk

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



GEOSHIELD Verification Report



APPLICATION TEAM LEADERS

APPLICATOR NAME: Baz

COMPANY: SWC

APPLICATOR TEL:

APPLICATOR EMAIL:

APPLICATOR NAME:

COMPANY: SWC

APPLICATOR TEL:

APPLICATOR EMAIL:

NOTES: The installers from SWC are specialists in the installation of ground gas

NOTES: and waterproofing systems. They hold NVQ level 2 qualifications in the

NOTES: installation of gas membranes and weld all lap joints, which is required

NOTES: for this project.



GeoShield Verification Report



AREA SURVEYED:

East Block Infill, West Block Infill,
Various Rooms (as per the site layout plan) Infills

SITE CONDITIONS:

WEATHER:

Overcast

TEMPERATURE:

17c

RELATIVE HUMIDITY:

N/A

MEMBRANE TEMPERATURE:

N/A

TIME:

08:00 - 11:00

DATE:

26.09.2023

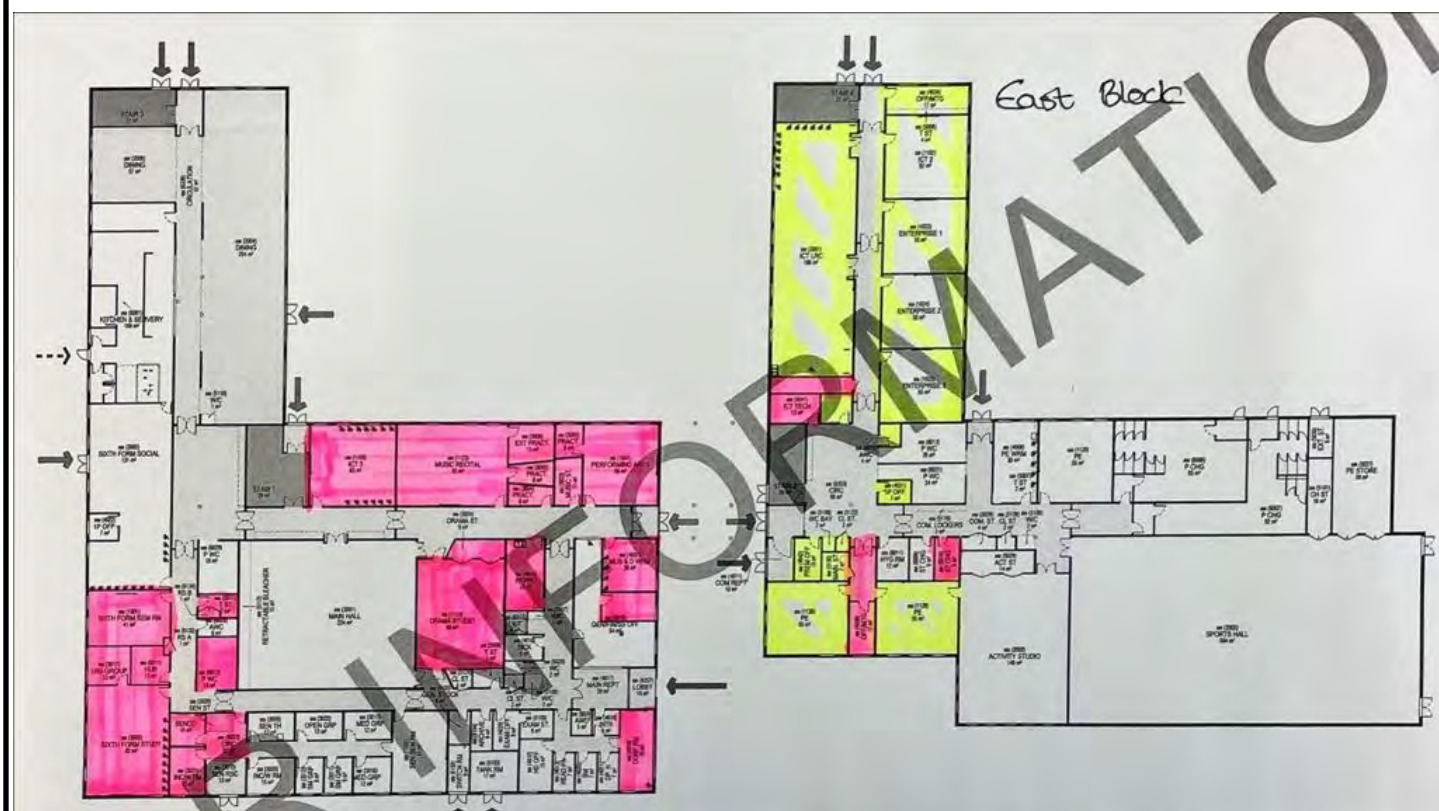
REPORT NUMBER:

022

ACCOMPANIED BY:

SWC

Verification Layout



The photograph above shows a plan layout of the site. The area highlighted in pink shows where the verification inspection took place on site today.

OVERVIEW



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

OVERVIEW



An alternate overview photograph of where the verification inspection took place on site today.

OVERVIEW



An alternate overview photograph of where the verification inspection took place on site today.



GeoShield Verification Report



LIMITATIONS

SURVEYED AREA: Various Rooms

RESTRICTIONS AND LIMITATIONS:

Air Lance testing could not be carried out due to insufficient access to the area requiring verification during this site visit. To mitigate this issue, thorough pick and probe and visual testing was carried out.





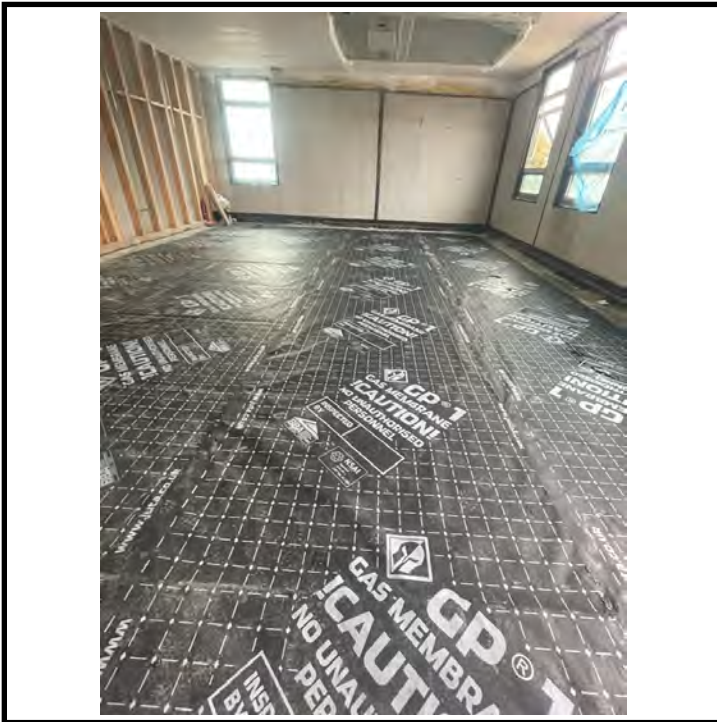
GeoShield Verification Report



VERIFICATION ITEM ONE

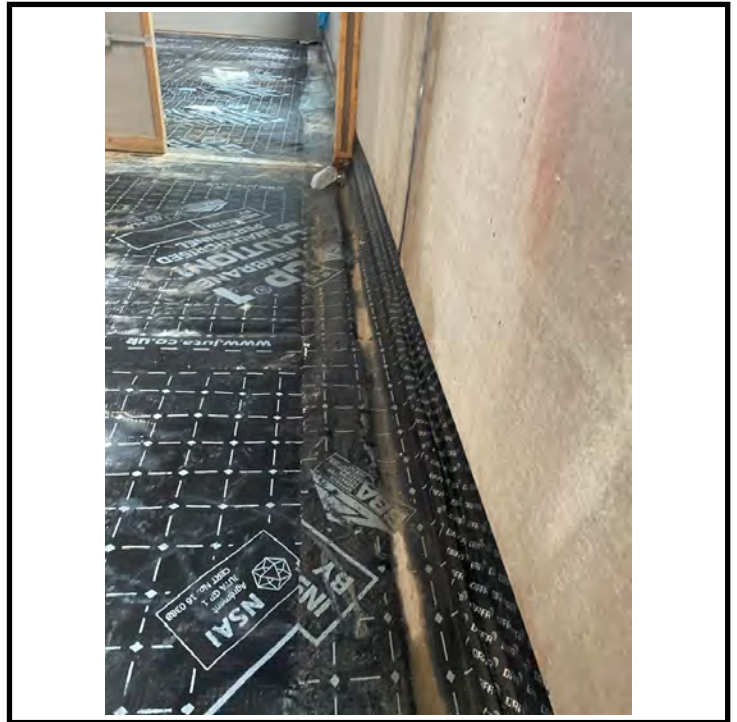
LOCATION/GRID LINE: Various Room Infills

Installation of Juta GP1 Gas Barrier



NOTES:

Juta GP1 Gas Barrier has been installed to the infills of various rooms within the east and west block. The Juta GP1 Gas Barrier has been lined underneath the existing perimeter and internal wall installation. All overlaps between the adjacent sheets of Juta GP1 Gas Barrier have been lapped a minimum of 100mm and heat welded



NOTES:

using a hot air leister and silicone roller with adequate pressure applied to ensure continuous welds are achieved throughout the installation. The first photograph above shows a successfully welded lap joint. The second photograph shows an overview of welded lap joints achieved.

VERIFICATION ITEM ONE



The above photograph displays a mechanical point stress test, also known as a pick and probe test, being conducted upon a welded lap joint of the Juta GP1 Gas Barrier. All lap joints throughout the installation were subjected to thorough pick and probe testing. Several miswelds were identified, all of which were remediated on site in the presence of GeoShield.



GeoShield Verification Report



VERIFICATION ITEM TWO

LOCATION/GRID LINE: Various Rooms - Infills

Sealed Details



NOTES:

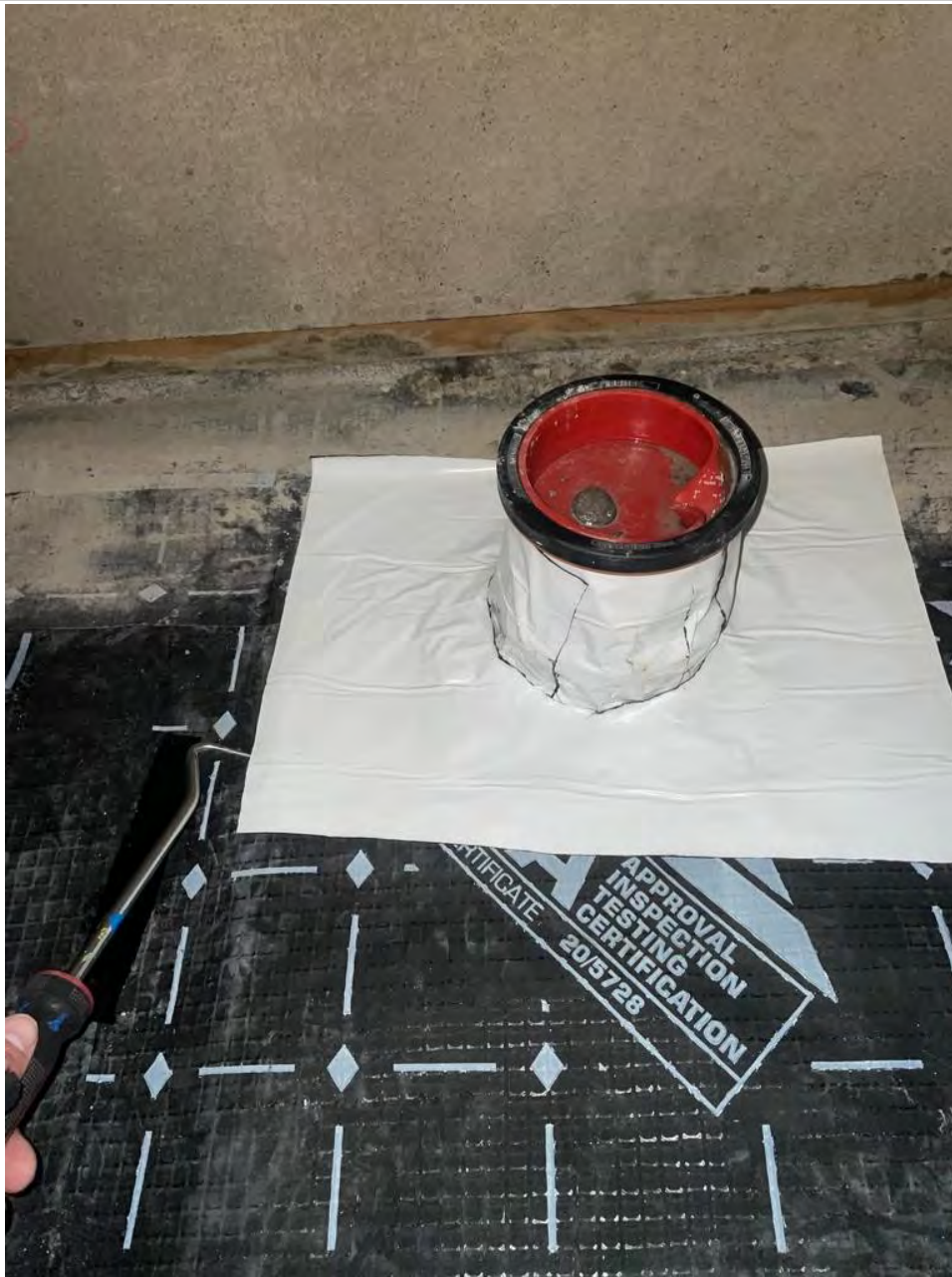
Throughout the infill installation of the Juta GP1 Gas Barrier to the referenced areas, there were several details that required sealing, these were outstanding from the initial previous perimeter and internal wall installation. These details were primarily pipe penetrations and steel stanchions fixed within the Juta GP1 Gas Barrier. All



NOTES:

details have been sealed using patches of Juta GP SAM, a gas resistant self adhesive membrane. The installers have applied adequate heat and rolled pressure to the Juta GP SAM to ensure the bituminous backing is activated to achieve complete adherence between the details and the Juta GP1 Gas Barrier.

VERIFICATION ITEM TWO



All sealed details throughout the installation were subjected to thorough mechanical point stress testing. No faults or defects were identified with the sealed details during the testing procedures.

Tested and verified in accordance with CIRIA 735.



GeoShield Verification Report



VERIFICATION ITEM THREE

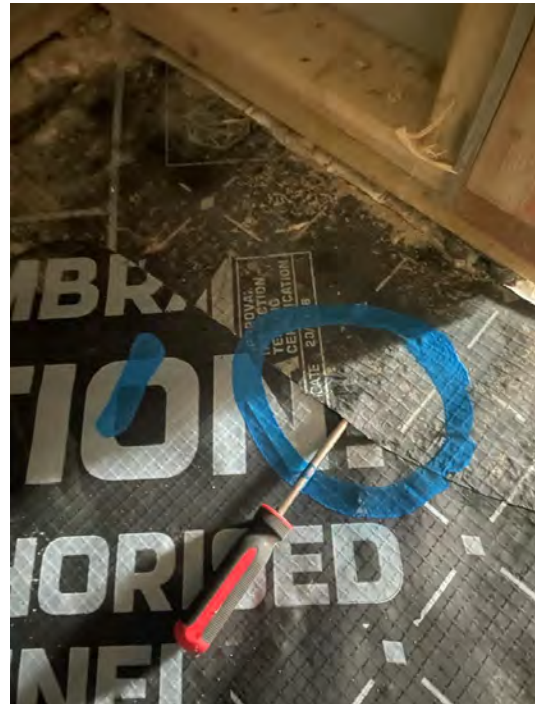
LOCATION/GRID LINE: Various Rooms - Infills

Faults Identified and Remediated



NOTES:

As mentioned in this report, the thorough mechanical point stress testing which supported the initial visual inspections conducted across the Juta GP1 infill installations identified several faults. These were primarily small holes or miswelded lap joints around the perimeters of the rooms. All faults were highlighted for ease



NOTES:

of identification and remediated on site in the presence of GeoShield. The specialist installers from SWC opted to apply 150mm patches of Juta GP SAM upon the affected areas, as shown in the photographs above. This has reinstated the continuous seal across the affected rooms.

VERIFICATION ITEM THREE



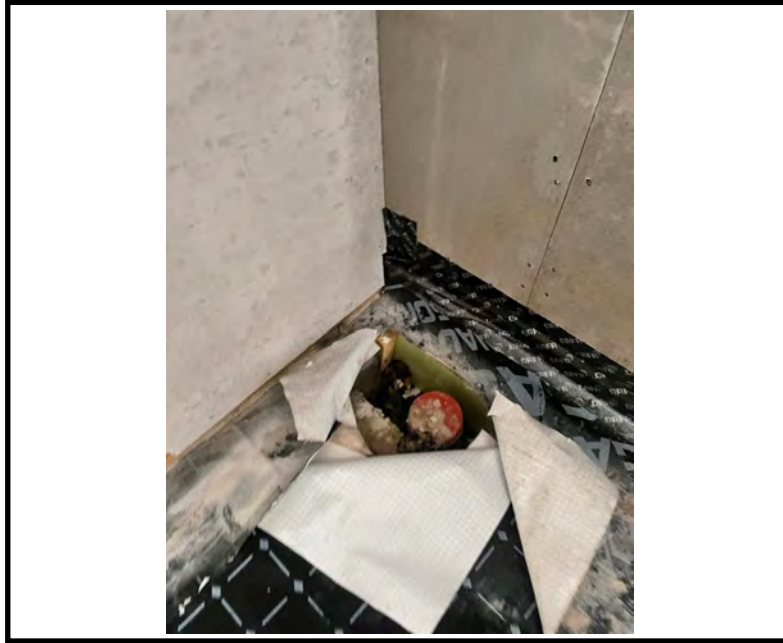
All patch repairs were subjected to thorough mechanical point stress testing. No further faults or defects were identified with the remediations during these testing procedures. Tested and verified in accordance with CIRIA 735.



VERIFICATION ITEM THREE

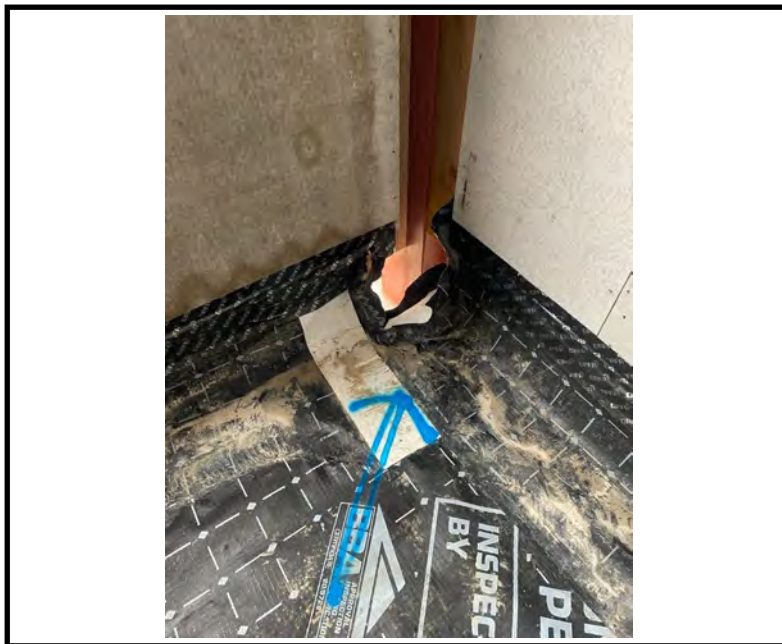
REMEDIATIONS:

West Wing - External Perimeters



NOTES:

There is two steel stanchions within the west block that required sealing on the external side of the perimeters. These were in the corners of the blocks. These areas will be boxed out prior to being screeded and sealed additionally and verified on the next visit.



NOTES:

There is also a pipe service penetration which requires extending, as shown in the photograph above. Again, this will be verified and passed off at the next visit but in the meantime this will be boxed out prior to screeding commencing.



A hot air leister and silicone roller used on site.



An alternate overview photograph.



A sealed pipe penetration.



An alternate overview photograph.



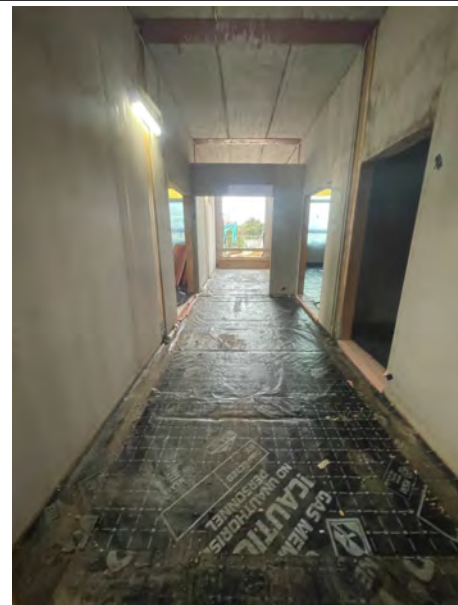
An alternate overview photograph.



A pick and probe testing being carried out.



A sealed steel stanchion



An alternate overview photograph.



An alternate overview photograph.



A sealed corner detail.



An alternate overview photograph.



An alternate overview photograph.



GEOSHIELD Verification Report



REMEDIATION LOG

Date	Nr	Remediation Description	Y/N
27/01/2023	001	Probe 1 6.5 metres from centre & probe 2 5.8 metres from centre.	✓
		- The above has been confirmed it doesn't affect the ground gas	✓
		monitoring. However, centres are now to be followed as per design.	✓
06/02/2023	002	Six miswelded lap joints identified. Remediated on-site.	✓
15/02/2023	003	Six miswelded lap joints identified. Remediated on-site.	✓
17/02/2023	004	Membrane to be repaired and verified where basal layer probe 3	✓
		has been installed.	✓
22/02/2023	005	Zone B & C Above Basal Layer 3	✓
		Below Basal probe 4 needs membrane re installed.	✓
28/02/2023	006	No faults identified	✓
01/03/2023	007	Probes 4,8 & 9 ABL / Probes 5 & 6 BBL	✓
03/03/2023	008	Block B, D & E and Extension to Probe 5 BBL.	✓
08/03/2023	009	Block B, D & E.	✓
10/03/2023	010	No faults or defects were identified.	✓
23/03/2023	011	Inconsistent seal around retrofit detailing see locations above.	✓



GEOSHIELD Verification Report



REMEDIATION LOG

Date	Nr	Remediation Description	Y/N
28/03/2023	012	No faults or defects were identified.	✓
04/04/2023	013	Several miswelds identified and remediated on-site.	✓
06/04/2023	014	Several miswelds identified and remediated on-site.	✓
12/04/2023	015	X12 mis-welds identified and remediated on-site.	✓
14/04/2023	016	X6 faults identified and remediated on-site.	✓
17/04/2023	017	No faults or defects were identified.	✓
24/05/2023	018	X5 inadequately or (un)sealed overlaps.	✓
		Pipes within internal or perimeter walls to be sealed.	✓
		External thresholds to be sealed.	
		Bolt pins around sports hall to be sealed.	✓
25/05/2023	019	Further unsealed overlaps identified.	✓
31/05/2023	020	X1 unsealed overlap. Remediated on-site.	✓
		Internal steel stanchions (east&west) to be sealed.	✓
18/09/2023	021	19 miswelds identified. Remediated on-site.	✓
26/09/2023	022	1. Several faults identified, all remediated on site.	✓



GEOSHIELD Verification Report



GAS MEMBRANE TESTING

VISUAL: YES ☒ NO ☐ SMOKE TEST: YES ☐ NO ☒

COMPRESSED AIR: YES ☒ NO ☐ DILECTIC YES ☐ NO ☒

DESTRUCTIVE: YES ☐ NO ☒ OTHER: YES ☐ NO ☒

Testing checklist attached: YES ☐ NO ☐

Gridline/Plot Sign off

Gridline/Plot Sign off	Zone A - Below Basal Layer - Probes 1 and 2.	☒
Gridline/Plot Sign off	Membrane Basal Layer. GL's; C-D/1-10, A-B/1-2 & B-C/1-6.	☒
Gridline/Plot Sign off	Membrane Basal Layer. GL's; C-D/10-11, C-D 12-14, A-B/5-13	☒
Gridline/Plot Sign off	B-C/6-13 & C-H/12-12.5	☒
Gridline/Plot Sign off	Below Basal Layer - Probe 3	☒
Gridline/Plot Sign off	Above Basal Layer - Probes 1 & 2.	☒
Gridline/Plot Sign off	Zone B & C / Below Basel 4 and Above Basel 3.	☒
Gridline/Plot Sign off	Zone C & D	☒
Gridline/Plot Sign off	Probes 4,8 & 9 ABL / Probes 5 & 6 BBL	☒
Gridline/Plot Sign off	Block B, D & E and Extension to Probe 5 BBL.	☒
Gridline/Plot Sign off	Block B, D & E.	☒
Gridline/Plot Sign off	Membrane Basal Layer membrane - Gridlines; L-N/13-14	☒



GEOSHIELD Verification Report



GAS MEMBRANE TESTING

VISUAL:	☐ YES	☒	☐ NO	☐	SMOKE TEST:	☐ YES	☐	☐ NO	☒
COMPRESSED AIR:	☐ YES	☐	☐ NO	☒	DILECTIC	☐ YES	☐	☐ NO	☒
DESTRUCTIVE:	☐ YES	☐	☐ NO	☒	OTHER:	☐ YES	☒	☐ NO	☐
Testing checklist attached:	☐ YES	☐	☐ NO	☐					

Gridline/Plot Sign off

Gridline/Plot Sign off	Below Basal Layer Probe - 7.	☒
Gridline/Plot Sign off	East Block Basal Layer- GLs Q-Q.5/10-12 & Q-R/12-13	☒
Gridline/Plot Sign off	East Block Below Basal Layer Probe 3&4	☒
Gridline/Plot Sign off	East Block Basal Layer Membrane - GLs A-T/10-11	☒
Gridline/Plot Sign off	East Block Basal Layer Membrane - GLs Q-T/1-13	☒
Gridline/Plot Sign off	East Block Basal Layer Membrane - GLs S-T/12-13	☒
Gridline/Plot Sign off	East Block Below Basal Layer Probes 5,6 and 7	☒
Gridline/Plot Sign off	East Block Basal Layer Membrane -GLs T-W/12-13	☒
Gridline/Plot Sign off	East Block Basal Layer Membrane - GLs S-AA/11-12	☒
Gridline/Plot Sign off	East Block Above Basal Layer Probes 1,2 and 3.	☒
Gridline/Plot Sign off	East Block Basal Layer -GLs: 10-12/BB-EE	☒
Gridline/Plot Sign off	East Block Basal Layer Membrane -GLs: 12/Z-EE	☒



GEOSHIELD Verification Report



GAS MEMBRANE TESTING

VISUAL:	☐ YES	☒	☐ NO	☐	SMOKE TEST:	☐ YES	☐	☐ NO	☒
COMPRESSED AIR:	☐ YES	☒	☐ NO	☐	DILECTIC	☐ YES	☐	☐ NO	☒
DESTRUCTIVE:	☐ YES	☐	☐ NO	☒	OTHER:	☐ YES	☒	☐ NO	☐
Testing checklist attached:	☐ YES	☐	☐ NO	☐					

Gridline/Plot Sign off

Gridline/Plot Sign off	East Block Basal Layer Membrane -GLs: 12-13/W-FF	☒
Gridline/Plot Sign off	East Block Above Basal Layer Probes 9,10,11	☒
Gridline/Plot Sign off	East Block Above Basal Layer Probes 6,7 and 8.	☒
Gridline/Plot Sign off	West Block perimeter and internal walls.	☐
Gridline/Plot Sign off	East Block perimeter and internal walls.	☒
Gridline/Plot Sign off	Infill installation- East Block; Enterprise rooms 1,2&3, ICT LRC	☒
Gridline/Plot Sign off	Infill Installation- East Block; ICT2 and PE Rooms.	☒
Gridline/Plot Sign off	Infill Installation - East Block	☒
Gridline/Plot Sign off	Infill Installation - West Block	☐
Gridline/Plot Sign off		☐
Gridline/Plot Sign off		☐
Gridline/Plot Sign off		☐



GeoShield Verification Report



VERIFICATION SUMMARY

This was the 22nd visit to the site where verification was required for the infill installation of the Juta GP1 Gas Barrier to various rooms within the east and west block.

All overlaps between the adjacent sheets of Juta GP1 Gas Barrier have been successfully welded using a hot air leister and silicone roller creating continuous welded joints throughout.

All details such as pipe penetrations and steel stanchions have been successfully sealed using Juta GP SAM, heated down with a hot air tool to aid in the adherence.

Thorough visual inspections were supported by mechanical point stress testing throughout the verification today. Several small holes and miswelded lap joints were identified, all of which were successfully remediated using 150mm patches of Juta GP SAM. Further pick and probe testing upon all remediated faults validated that a gas tight seal had been achieved.

Outstanding Remediations - There are two steel stanchions and a pipe service penetration within the west block that require sealing on the external side of the perimeters. These were in the corners of the blocks and will be boxed out prior to being screeded.

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

GEOSHIELD SIGNATURE:

DATE:

26-Sep-2023