



# Remediation Verification Report

Starbucks Unit, Sandbrook Park,  
Rochdale

Presented to: AKN Build Ltd

Issued: December 2025

Lucion Contract Reference: 126205.655762

## Report Details

|                       |                                                |
|-----------------------|------------------------------------------------|
| <b>Client</b>         | AKN Build Ltd                                  |
| <b>Report Title</b>   | Remediation Verification Report                |
| <b>Site Address</b>   | Starbucks Unit, Sandbrook Park, Rochdale       |
| <b>Report No.</b>     | 126205.655762_REP_Starbucks Rochdale_RVR_Dec25 |
| <b>Lucion Contact</b> | Sarah McCourt (sarah.mccourt@luciongroup.com)  |

## Quality Assurance

| Issue No. | Status | Issue Date | Comments | Author                                                                             | Technical Review                    | Authorised                                                                          |
|-----------|--------|------------|----------|------------------------------------------------------------------------------------|-------------------------------------|-------------------------------------------------------------------------------------|
| 01        | Final  | 17/12/2025 |          |  | David Josling                       |  |
|           |        |            |          | Sarah McCourt<br>Associate                                                         | David Josling<br>Associate Director | Robin Slade<br>Unit Director                                                        |

## About Us

Lucion Delta-Simons is part of Lucion, a technology-led environmental services company dedicated to protecting people and the planet. With expert advice, guidance, and a comprehensive array of services, we support you at every stage of your asset lifecycle, helping you mitigate regulatory impact, improve business practices, and ensure safety and environmental protection.

As part of Lucion's group of companies, we can support you with a broader range of holistic services. Through our pool of multidisciplinary experts, we help you navigate complex regulatory frameworks, saving you time and money.

Being part of your sustainable supply chain is a key goal for our team. As a member of the UN Global Compact and a commitment to sustainability, we are the partner of choice for businesses looking to make informed decisions and mitigate risks across your portfolio.

Lucion is carbon neutral. We annually measure and report our Scope 1, Scope 2 and specified Scope 3 carbon emissions, and offset 100% of residual emissions through verified carbon credits, supporting carbon reduction and prevention projects overseas. We are taking steps to reduce our carbon emissions and have committed to setting and achieving near-term and Net Zero Science-Based carbon reduction targets in line with the goals of the Paris Agreement to limit global warming to 1.5°C above pre-industrial levels. Lucion is a signatory of Pledge to Net Zero and Members of the United Nations Global Compact.

If you would like support in understanding your carbon emissions, or those of your supply chain, please get in touch with your Lucion contact above who will be happy to help.

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## 1.0 Introduction

### 1.1 Appointment

Lucion Delta-Simons Limited ("Lucion") was instructed by AKN Build Ltd (the "Client") to provide a Remediation Verification Report for the Starbucks Unit, Sandbrook Park, Sandbrook Road, Rochdale, OL11 1RY (the "Site"). The Site is subject to outline Planning Permission, granted by Rochdale Borough Council reference 23/00119/FUL.

A Site Location Plan is included as Figure 1.

### 1.2 Context & Purpose

The purpose of this report is to document the remedial works undertaken at the Site during redevelopment as outlined in the Lucion Remediation and Verification Strategy for the Site (dated March 2025). This report also aims to support sign-off of relevant planning conditions as part of the redevelopment of the Site. This Remediation Verification Report should be read in conjunction with the previously produced Lucion reports for the Site, as follows:

- 'Remediation and Verification Strategy: Starbucks Unit, Sandbrook Park, Rochdale' by Lucion for AKN Build Ltd, on behalf of Design Engineering Workshop, reference 126205.655762, dated March 2025;
- 'Geo-Environmental Assessment: Proposed Starbucks Unit, Sandbrook Park, Rochdale' by Lucion for Molyneux Rose LLP on behalf of AIG Holdings Ltd, reference 94776.604690, dated February 2024; and
- 'Preliminary Geo-Environmental Risk Assessment for Proposed Starbucks Unit, Sandbrook Park, Rochdale' by Delta Simons for Molyneux Rose LLP on behalf of AIG Holdings Ltd, reference 94776.570467 dated April 2023.

### 1.3 Development

The Site has been redeveloped into a Starbucks "drive-thru". The new development comprises a single storey kiosk unit, with the balance of the Site remaining as hardstanding, either as the route around the building or as car parking. Existing soft landscaping is present along the periphery of the site, which will be supplemented with new planting and four new small areas of landscaping within the new car parking area.

### 1.4 Planning

Planning Permission was granted for the redevelopment of the Site for commercial use (Rochdale Borough Council Ref. 23/00119/FUL). The Planning Decision Notice issued by Rochdale Borough Council (Ref. 23/00119/FUL) in May 2023 imposed a number of conditions on the proposed development. Condition 3 of the Permission relates to contamination and remediation, and is outlined below:

Condition 3 – Contamination

*"Prior to commencement of the development an investigation and risk assessment, in addition to any assessment provided with the planning application, must be completed to assess the nature and extent of any contamination on the site, whether or not it originates on the site. The investigation and risk assessment must be undertaken by competent persons and a written report of the findings must be produced and shall have been first submitted to and approved in writing by the Local Planning Authority before development commences. The report of the findings must include:*

- i) a survey of the extent, scale and nature of contamination*
- ii) an assessment of the potential risks to: o human health, o property (existing or proposed) including buildings, crops, livestock, pets, woodland, and service lines and pipes, o adjoining land, o groundwaters and surface waters, o ecological systems, o archaeological sites and ancient monuments;*
- iii) where unacceptable risks are identified, an appraisal of remedial options and proposal of the preferred option(s) The development shall thereafter be completed in full accordance with the approved recommendations.*

*Reason: To ensure the safe development of the site in the interests of the amenity of future occupiers in accordance with Policy G9 of the adopted Rochdale Core Strategy and the National Planning Policy Framework.*

*Reason for pre-commencement condition: Further investigation will be necessary prior to commencement of any building or engineering works on site."*

It is noted that Condition 3 has been partially discharged on 6<sup>th</sup> March 2025 following the receipt of the Preliminary Risk Assessment and Remediation and Verification Strategy reports. The second part of Condition 3(iii) relates to the verification of required remediation measures. This report has been produced in support of full discharge of this condition i.e. Condition 3(iii).

## **1.5 Limitations**

The standard limitations associated with this assessment are presented in Appendix A.

## 2.0 Remediation Requirements

With reference to the Lucion Remediation and Verification Strategy for the Site (dated March 2025), the remediation and verification requirements for the redevelopment of the Site are summarised as follows:

### Enabling Phase Works

- Excavation, breaking out and processing of below ground structures and hard materials; and
- Addressing previously unidentified 'Hotspots' of contamination.

### Construction Phase Works

- Provision of ground gas protection measures in accordance with BS 8485:2015 Characteristic Situation (CS) 2 conditions with verification by a specialist contractor;
- Provision of a clean cover system in soft landscaped areas of the Site;
- Verification of the clean cover system by an environmental consultant to confirm depth and chemical / physical suitability of the clean cover system; and
- Installation of clean service corridors and upgraded water supply pipes.

## 3.0 Verification Evidence

### 3.1 Introduction

Lucion has been provided with third party verification evidence from AKN Build Ltd to support the Remediation Verification Report. Copies of this information are provided in Appendices B to F.

Verification of the remediation requirements has been undertaken solely by third parties. Lucion has reviewed and collated the verification evidence only and is not responsible for the content of the verification information provided by others.

### 3.2 Demolition and Site Clearance

The Client has provided a Waste Transfer Note (WTN) that indicates 7,000 tonnes of inert soil and stones was removed from the Site during redevelopment. The Client has confirmed that Site derived soils and materials originated from excavations relating to foundations, drainage and ducting trenches, and the attenuation tank. Asphalt from the original surfacing of the Site has also been included within the WTN, although the exact volumes for this material are not available.

Lucion notes that the volume of material removed from Site appears to contradict the final formation levels and importation volumes at the Site. Furthermore, whilst we have been provided a WTN for soils removed off site, this appears to comprise a mixture of material types and in the absence of a breakdown of material volumes, Lucion cannot be certain that materials removed from site were destined for appropriate receiving and handling facilities.

The soils were carried by Tyrone Stone Ltd (registered waste carrier licence no. CBDU325480) and received by Port Salford Aggregate Recycling Facility operated by NRE Aggregates (holder of Environmental Permit number LB3407UX).

A copy of the WTN is included in Appendix B.

### 3.3 Unidentified 'Hotspots'

The Client has confirmed that no previously unidentified 'hotspots' of contamination were encountered during redevelopment.

A copy of the correspondence is included in Appendix C.

### 3.4 Ground Gas Protection Measures

The Site was classified by Lucion as Characteristic Situation 2 (CS2) due to elevated concentrations of methane recorded during previous ground gas monitoring at the Site. In accordance with BS:8485, the Site was classified as a Type C (commercial) building. Table 4 of BS:8485 details the points required for the specific ground gas regime, which for CS2 is 2.5 points (Type C).

A ground gas protection membrane has been installed at the Site in accordance with the Remediation Strategy and has been independently verified by GeoShield Ltd.

The membrane installed comprised a 'Juta CP5 Gas Barrier' membrane which is designed for use on sites affected by methane. Joints were confirmed to comprise a minimum of 100mm overlap and the joints had been heat welded to provide a continuous gas resistant seal. Steel stanchions and service penetrations across the floor slab required sealing. This was achieved using a JUTA GP1 Self Adhesive Membrane (SAM). Heat and roller pressure were applied to allow full bonding between the two membranes.

It was noted by GeoShield that brickwork had been completed along 50% of the perimeter of the building prior to the installation of the ground gas membrane. In these areas, the JUTA GP1 SAM had been retrofitted to the brickwork to seal the membrane across the floor slab.

No faults or defects were observed during the independent verification inspection by GeoShield. A copy of the GeoShield Verification Report is included in Appendix D. The installation of the membrane affords a total of 2 points towards ground gas protection.

The membrane has been laid above a 300mm layer of 20-40mm stone with no fines and is passively vented to air by wall air bricks. Based on the evidence provided we consider that this item affords 0.5 points towards ground gas protection.

The floor slab construction for the new unit comprises a cast in-situ suspended slab with mesh reinforcement and minimal penetrations, and the slab is underlain by 100mm of insulation. The designer confirms that this item affords 1.5 points towards ground gas protection.

In light of the documentation provided by the Client, it is considered that a total of 4.0 points has been achieved across the three types of protection measures, which in accordance with BS8485 guidance, is sufficient for the CS2 classification given to the site.

### 3.5 Provision of Clean Cover System

As stated within the RVS, *'a clean cover system should be placed in areas of landscaping where Made Ground is present at surface... Where Made Ground has been removed, no remedial measures are deemed necessary aside from the provision of a minimum 150 mm thickness of topsoil'*. It is understood from the plans provided, that existing soft landscaping was present along the periphery of the Site, which was to be retained, and new trees/shrubs added where necessary. New areas of soft landscaping at the Site are noted to be limited to four small areas in the south east. A copy of the Landscaping Layout Plan is presented within Appendix E.

Each of the new areas of landscaping is noted to have been lined at the base with weak-mix concrete blinding due to the presence of services beneath the planters and due to the kerbstone edging. As the areas are lined with concrete and no Made Ground is present at the base, there is no requirement for a formal clean cover system and only a minimum of 150mm topsoil is required as a growth medium. The thickness of the topsoil placed in these areas is understood to be around 350mm, however confirmatory thicknesses of topsoil placed are not available.

Although the provision of a clean cover system is not necessary, to maintain the Client's duty of care, pre-import testing data was reviewed by Lucion for the topsoil growing medium. Topsoil was sourced from an unknown hub site of Freeland Horticulture and pre-import chemical results (from the Astley hub site) were compared against the soil criteria included within the remediation strategy. With the exception of total petroleum hydrocarbons, no exceedances of contaminants of concern were noted.

Total petroleum hydrocarbons are noted to have been recorded within the pre-import testing at 597mg/kg, which is elevated above the Lucion soil import criteria value of 500mg/kg. However, the speciated hydrocarbon values individually do not exceed the import criteria values nor UK Generic Assessment Criteria (GAC) values. Therefore, the soil was deemed chemically acceptable for import to site.

Due to the limited volume of material imported to site (approximately 27m<sup>3</sup>), in conjunction with the pre-import testing data and that the areas of soft landscaping will be covered with shrubs and mulch thereby preventing access by the public, no on-site testing of placed material was deemed necessary.

A copy of the Landscaping Layout Plan, the pre-import testing for the Topsoil, consignment notes for the import of the material, and photographs of the landscaping areas prior to topsoiling and post topsoiling are included within Appendix E.

### 3.6 Water Supply Pipes

The Client has confirmed that 32mm diameter MDPE Protecta-Line pipe has been utilised on Site for the water supply pipes as per discussions with United Utilities. A copy of the drainage plan has been provided to indicate the route of the pipework and the installation details.

The service trenches are understood to have been backfilled with sand and subsoil in areas of soft landscaping, and sand and MOT material in areas of hardstanding. Note that no additional information regarding the sources of the backfill material has been made available by the Client.

A copy of the pipe specification and the drainage plan are included in Appendix F.

## 4.0 Conclusion

Information provided by the Client and summarised above is considered to have demonstrated that the objectives of the Remediation Verification Strategy have broadly been achieved.

We note that based on the limited areas of landscaping provided within the development, and the presence of concrete blinding at the base of the landscaping areas, the requirement for a full clean cover system was not necessary and the landscaping is considered to comprise a growth medium only. Therefore, verification of the installed topsoil comprised the review of pre-import data and the inspection of photographs provided by the Client only.

This report should be submitted to Rochdale Borough Council for discharge of Condition 3(iii) of the development Planning Permission (ref. 23/00119/FUL).

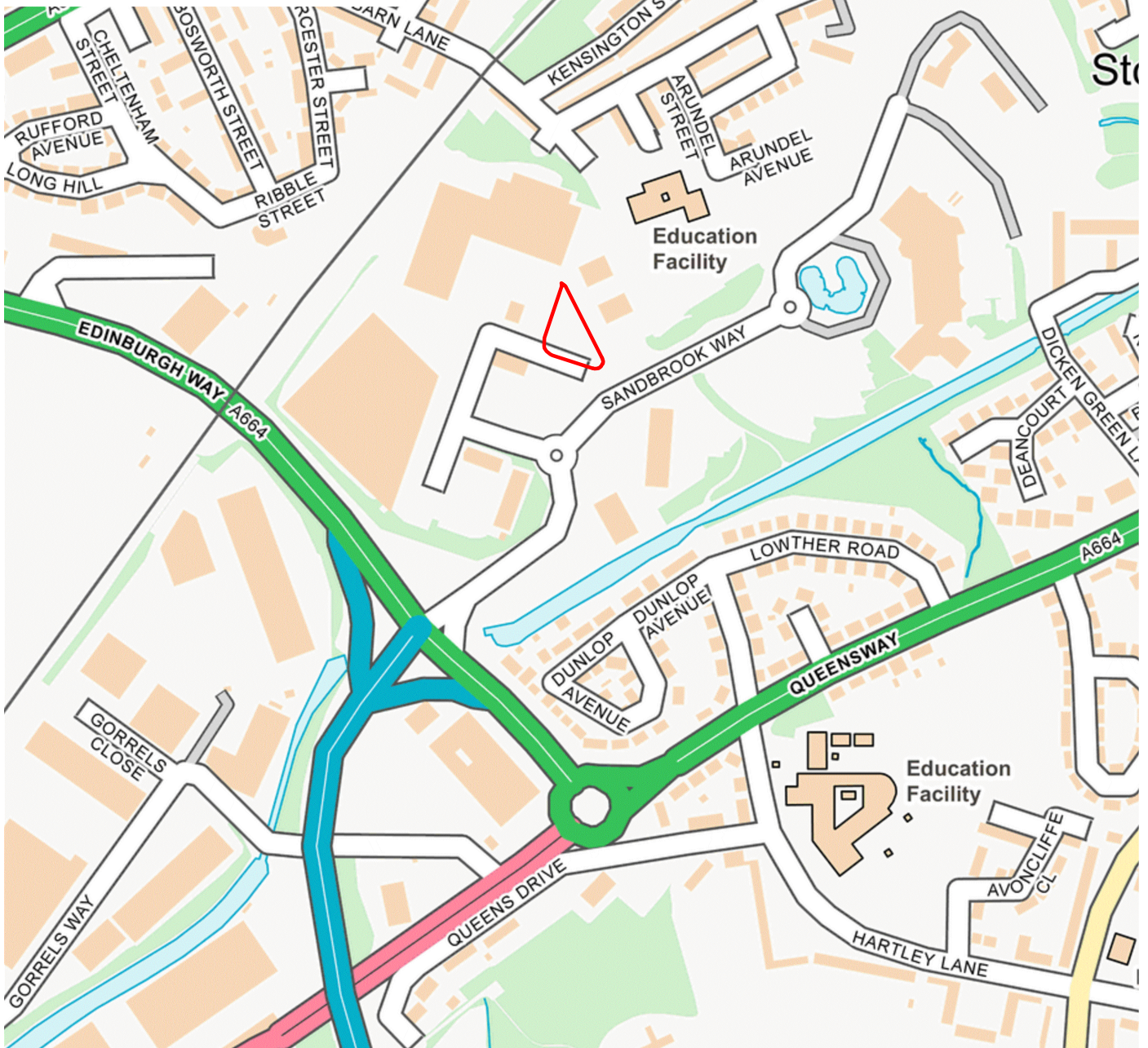
## Figures

## Figure 1 – Site Location Plan



# LEGEND

 Site Boundary



Scale: 1 / 10,000 @ A4

Contains OS data © , Crown Copyright and Database Right (2025)



TITLE:  
Site Location Map  
Sandbrook Park  
Rochdale

|                          |                       |                              |
|--------------------------|-----------------------|------------------------------|
| DRAWN BY:<br>JM          | SCALE:<br>To Scale@A4 | PROJECT NO:<br>126205.655762 |
| CHECKED BY:<br>NH        | REVISION:<br>1        | FIGURE NO:<br>1              |
| CLIENT:<br>AKN Build Ltd | DATE:<br>25/02/2025   |                              |

## Appendices

## Appendix A – Limitations

## Limitations

This Report was prepared by Lucion Delta-Simons Limited ("Lucion") for the sole and exclusive use of the Client and for the specific purpose for which Lucion was instructed. Nothing contained in this Report shall be construed to give any rights or benefits to anyone other than the Client and Lucion, and all duties and responsibilities undertaken are for the sole and exclusive benefit of the Client and not for the benefit of any other party. Lucion does not intend, without its written consent through a formal letter of reliance or warranty, for this Report to be disseminated to any party other than the named Client or to be used or relied upon by any party other than the named Client. Use of the Report by any other party is unauthorised and such use is at the sole risk of the user. Any party using or relying upon this Report, other than the Client, agrees by virtue of its use to indemnify and hold harmless Lucion from and against all claims, losses and damages (of whatsoever nature and howsoever or whensoever arising), arising out of or resulting from the performance of the work by Lucion. Unless explicitly agreed otherwise, in writing, this Report has been prepared under Lucions' Standard Terms and Conditions as included within our proposal to the Client.

The recommendations contained within this Report represent Lucion professional opinions, based upon the information detailed within the Report, exercising the reasonable skill and care to be expected of a professional consultant holding itself out as having the competence, experience and resources necessary for the purpose of carrying out similar work in scope and character to the services performed. The Report needs to be considered in the light of the proposal and associated limitations of scope. The Report needs to be read and considered in full and isolated sections cannot be used without full reference to other elements of the report and any previous works referenced within the Report.

Where Lucion has obtained, reviewed and evaluated information in preparing this Report from the Client and others and Lucion conclusions, opinions and recommendations has been reasonably determined using this information, Lucion does not warrant the accuracy of the third-party information provided to it and cannot be responsible for any opinions which Lucion has expressed, or conclusions which it has reached in reliance upon information which is subsequently proven to be inaccurate.

Site surveys document the conditions encountered at the time of survey only and conditions may change due to natural processes or human intervention. As such, surveys represent an assessment at a specific point in time and Lucion cannot be responsible for adverse conditions which arise or become apparent after the time of the survey or for conditions which sit outside the scope for which the survey or Report was commissioned.

Where intrusive investigations have been completed, information, comments and opinions given in this report are based on the ground conditions encountered during the site work period and on the results of laboratory and field tests performed during the investigation. Ground conditions are inherently variable such that no investigation can be exhaustive to the extent that all adverse conditions are revealed. Conditions may therefore be present beneath the site that were not apparent in the data reviewed or obtained as part of this assessment. It should be noted that groundwater levels vary due to seasonal and other effects and may at times differ to those measured during the investigation. Lucion does not warrant or guarantee that the Site is free of hazardous or potentially hazardous materials or conditions. Where risk assessment is undertaken, this is based upon the standards, guidance and common practice at the time of the assessment and Lucion cannot be responsible for conditions which become apparent following changes in guidance or practice or advancements in scientific knowledge which change the position in relation to assessment of risk.

No aspect of this Report constitutes a design. Where this information is used in design, the designer should verify the information has been used appropriately.

Where budgets are prepared and presented within the Report, these are for information only to indicate the likely magnitude of a cost and do not represent an invitation to treat for the works. All budgets and programmes presented should be reviewed and verified by appropriately qualified and experienced independent Project Managers and Cost Consultants.

## **Appendix B – Waste Transfer Note**

## DUTY OF CARE TRANSFER NOTE

\* SERIAL NO. ....

DW/ENQUIRY No. ....

DESCRIPTION  
OF WASTE

A

1. EWC Code 17.05.04
2. PLEASE DESCRIBE FULLY THE WASTE BEING TRANSFERRED, INCLUDE ITS PHYSICAL FORM:  
next soil & stone
3. How is the waste contained? Loose ☒ Sacks ☐ Skip ☐ Drum ☐ Other (Please describe):
4. What is the quantity of waste? For example, number of sacks, weight 4,000 Tonne For "multiple" consignments give estimated total quantity

CURRENT  
HOLDER  
-  
PRODUCER

B

1. Full Name (BLOCK CAPITALS) AKN Build LTD
2. Name & Address of Company Oldgate house, 34 Far Street  
Wymeswold, LE12 6TZ Postcode LE12 6TZ SIC (2007) .....
3. Address waste collected from (if different from above) Starbucks at, Sandbrook  
retail Park, Roendale, OL11 1RY
4. Which of the following are you? (Please ☒ one or more boxes)

Producer of waste ☒Collection Authority ☐Holder of an environment permit ☐ Permit number: .....

Exempt from requirement to

have an environment permit ☐Registered waste carrier ☐

Exempt from requirement

to register

Received By

3 MAR 2025

By signing below I confirm that I have fulfilled my duty to apply the waste hierarchy as required by Regulation 12 of the Waste (England and Wales) Regulations 2011

SIGNED ON BEHALF OF PRODUCER/HOLDER

DATE: 28/2/25PERSON  
COLLECTING  
-  
CARRYING  
THE WASTE

C

1. Full Name (BLOCK CAPITALS) TYRONE STONE LTD
2. Name & Address of Company 144, NANGREAVE ROAD, STOCKPORT, CHESHIRE,  
Postcode SK2 6DG SIC (2007) .....
3. REGISTERED WASTE CARRIER ☒ Registered No. CBN1325480 Vehicle Reg. No. VARIOUS
4. If exempt reasons why .....

By signing below I confirm that I have fulfilled my duty to apply the waste hierarchy as required by Regulation 12 of the Waste (England and Wales) Regulations 2011

SIGNED ON BEHALF OF CARRIER

Date: 28/2/25

MULTIPLE CONSIGNMENTS

START DATE: 28/2/25END DATE: 28/2/26NEXT  
HOLDER  
-  
DISPOSER  
OF WASTE

D

1. Name & Address of Company NRE Aggregates, 15 port Salford  
way, Eccles, Manchester M30 7SF
2. Address of Place of Transfer 15 port Salford way, Eccles, Manchester M30  
7SF
3. Name & Address of Broker who arranged this transfer (if applicable) Tyrone Stone LTD,  
144 Nangreave RD, Stockport, SK2 6DG
4. Which of the following are you? (Please ☒ one or more boxes)

Holder of an environment permit ☐Permit number: LB3407UX

Exempt from requirement to

have an environment permit ☐

Give reason: .....

SINGLE DEPOSIT, DATE OF TRANSFER

TIME OF TRANSFER

7.00 -> 5PM

MULTIPLE DEPOSIT

START DATE: 28/2/25END DATE: 28/2/26

SIGNED ON BEHALF OF NEXT HOLDER/DISPOSER

Full name (BLOCK CAPITALS)

ANTHONY DUNLEAVY

from waste to resource

FCC Environment Ltd (London)  
Incorporated in England, 100 Longwalk Road, Wokingham, RG40 3JH  
Registered in England and Wales No. 2994176. VAT Registration No. 2994176

Doc Ref: IMS-FRM-145

## **Appendix C – Client Correspondence**

AKNBuild Ltd  
34 Far St  
LE12 6TZ

**Re: Confirmation of Site Observations – Groundworks / Enabling Works**

This letter confirms that during the course of the groundworks and enabling works undertaken at [Starbucks Rochdale, OL11 1RY], no hotspots or unexpected contamination were identified or observed.

All works were carried out in accordance with the approved method statements, and sections 4.2 to 4.5 of the Remediation and Validation Strategy (RVS) were fully complied with. No evidence of contamination was encountered that would warrant further investigation or remediation.

Please do not hesitate to contact the undersigned should you require any further information or clarification.

Kind regards,

Carl Knights

## **Appendix D – GeoShield Verification Report**



# GeoShield Verification Report 1



PROJECT REFERENCE:

GEO105208

PROJECT ADDRESS:

Starbucks Drive Thru  
Sandbrook Park,  
Sandbrook Way,  
Rochdale,  
OL11 1RY

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 GP5 Gas Barrier  
JUTA GP SAM



# 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: | Kevan Shotter           |
| CONTACTS ROLE:  |                         |
| MOBILE PHONE:   | 07788239446             |
| EMAIL ADDRESS:  | kevan@ukmembranes.co.uk |



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



# GeoShield Verification Report



## APPLICATOR'S DETAILS

APPLICATOR NAME: Rhys Sales

COMPANY: UK Membranes

APPLICATOR TEL: 07889 775705

APPLICATOR EMAIL:

---

APPLICATOR NAME:

COMPANY: UK Membranes

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 deemed competent and skilled to complete the installation of gas membranes.



# GeoShield Verification Report



## INSPECTION AREA(S)

Proposed Starbuck Drive Thru - Full Line Out

## SITE CONDITIONS

WEATHER:

Sunny

TEMPERATURE:

12°C

TIME:

14:30 - 15:50

DATE:

07.04.2025

REPORT NUMBER:

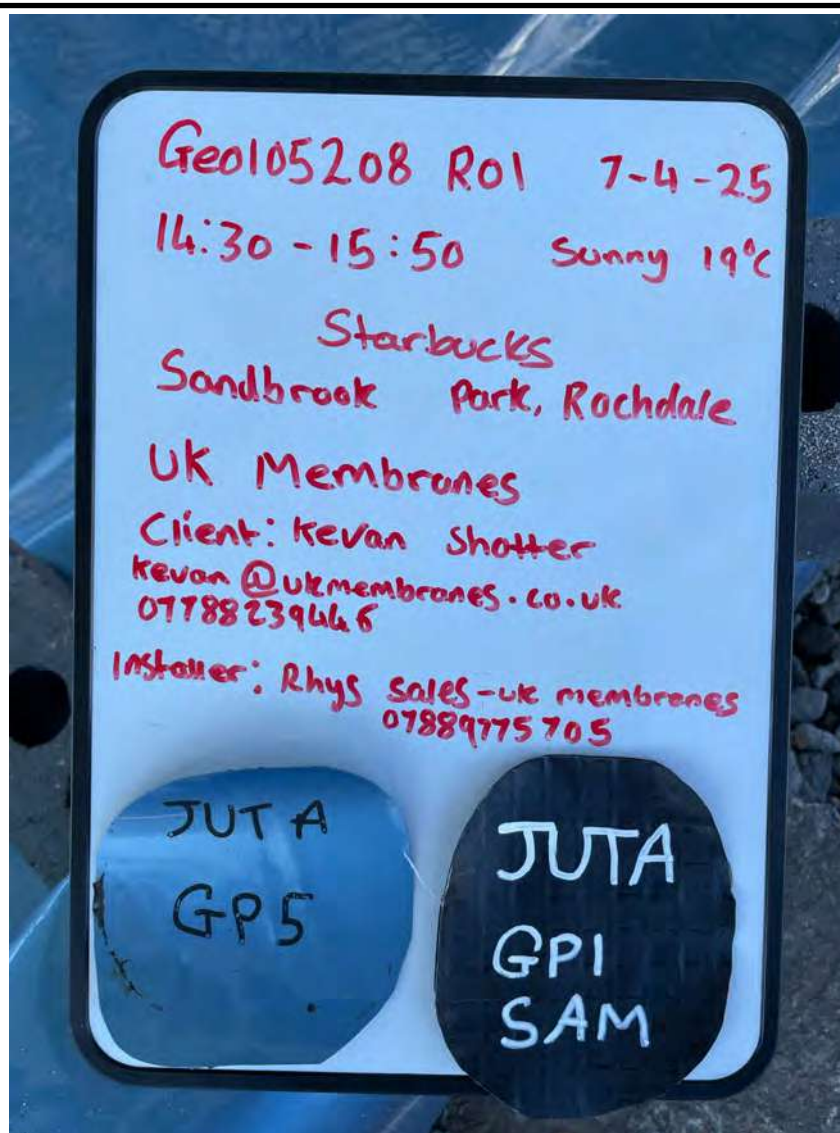
001

ACCOMPANIED BY:

UK Membranes

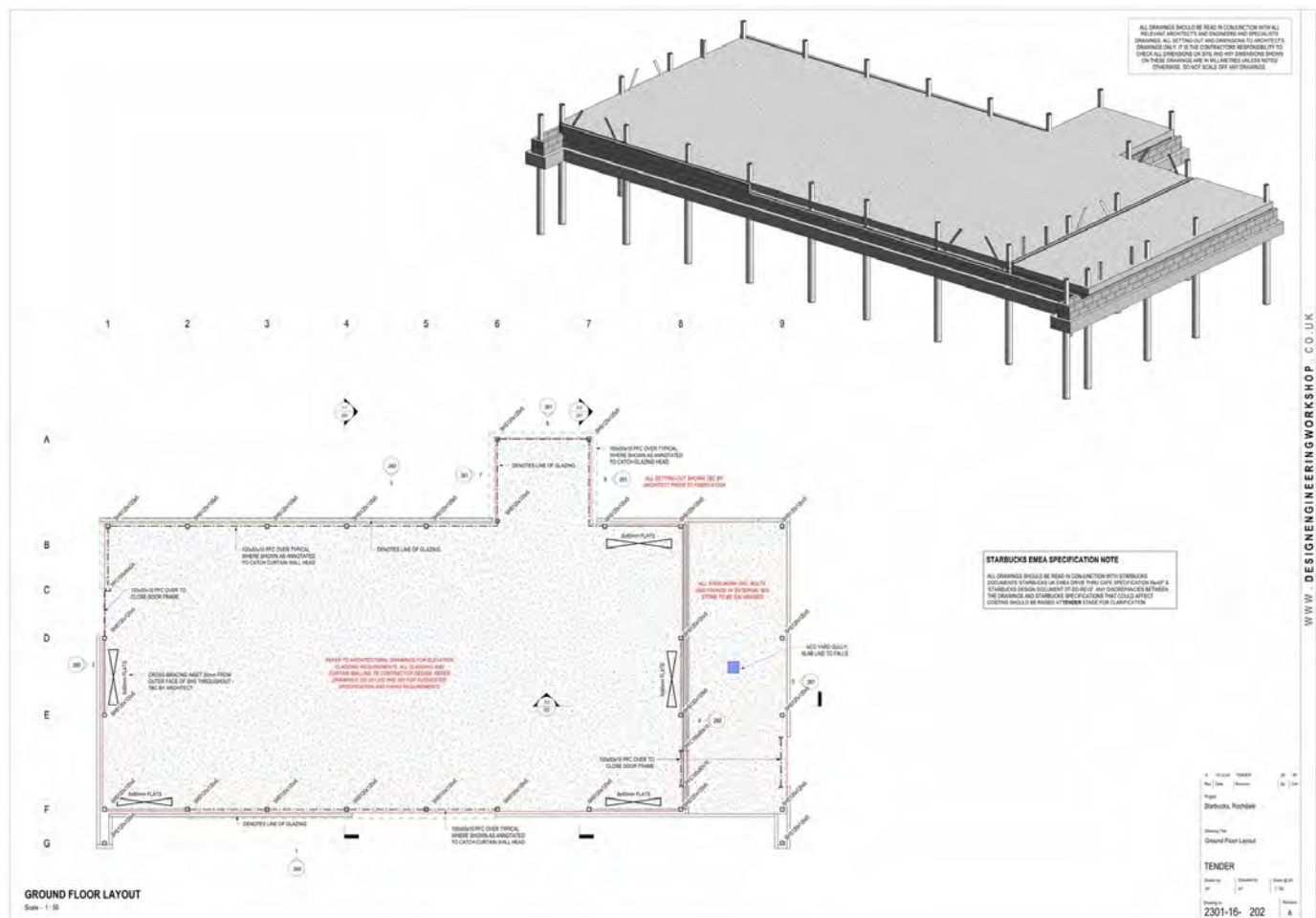
# GeoShield Verification Report

## VERIFICATION INSPECTION INFORMATION



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

## VERIFICATION LAYOUT



The photograph above shows a plan layout of the site for this project.

## VERIFICATION LAYOUT



The area highlighted in red shows the area where the complete line out of JUTA GP5 Gas Barrier took place and where the verification inspection was conducted today.

## OVERVIEW



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

## OVERVIEW



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

## OVERVIEW



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

## OVERVIEW



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



# GeoShield Verification Report



## LIMITATIONS / RESTRICTIONS

INSPECTED AREA: Proposed Starbuck Drive Thru



Air Lance testing could not be carried out due to restricted vehicle access to the area requiring verification today. There is also a 'live' road running around the site preventing being able to park next to the fence.

# GeoShield Verification Report



## VERIFICATION ITEM ONE

AREA INSPECTED: Proposed Starbuck Drive Thru - Full Line Out

INSPECTION DETAILS: Installation of JUTA GP5 Gas Barrier



### NOTES:

A complete line out of the JUTA GP5 Gas Barrier has been installed across the footprint of the proposed Starbucks Drive Thru. The JUTA GP5 Gas Barrier has been lined out across the entire area, lapping up and over the external wall of approximately 50% of the perimeter. A retrofit detailing has been implemented to the remaining



### NOTES:

50%. All lap joints between the adjacent sheets of JUTA GP5 Gas Barrier have been overlapped a minimum of 100mm, conforming to manufacturer's specifications. All lap joints have been heat welded using a twin welder and / or a hot air leister and silicone roller with adequate pressure applied to ensure a continuous,

# GeoShield Verification Report

## VERIFICATION ITEM ONE



gas resistant seal is achieved. Thorough visual inspections, supported by mechanical point stress testing conducted upon all sealed overlaps identified no faults or defects. A complete adhesion of the overlaps between the adjacent sheets of JUTA GP5 Gas Barrier has been achieved.

Tested and verified in accordance with CIRIA 735



# GeoShield Verification Report



## VERIFICATION ITEM TWO

LOCATION/GRID LINE: Proposed Starbuck Drive Thru - Full Line Out

### Steel Stanchions



#### NOTES:

A number of steel stanchions throughout the area also required sealing. The steel stanchions have been sealed using JUTA GP1 SAM, which is a gas resistant self adhesive membrane. The installers have first cut the JUTA GP5 Gas Barrier tight around the base of each steel stanchion to minimise voided areas. Next,

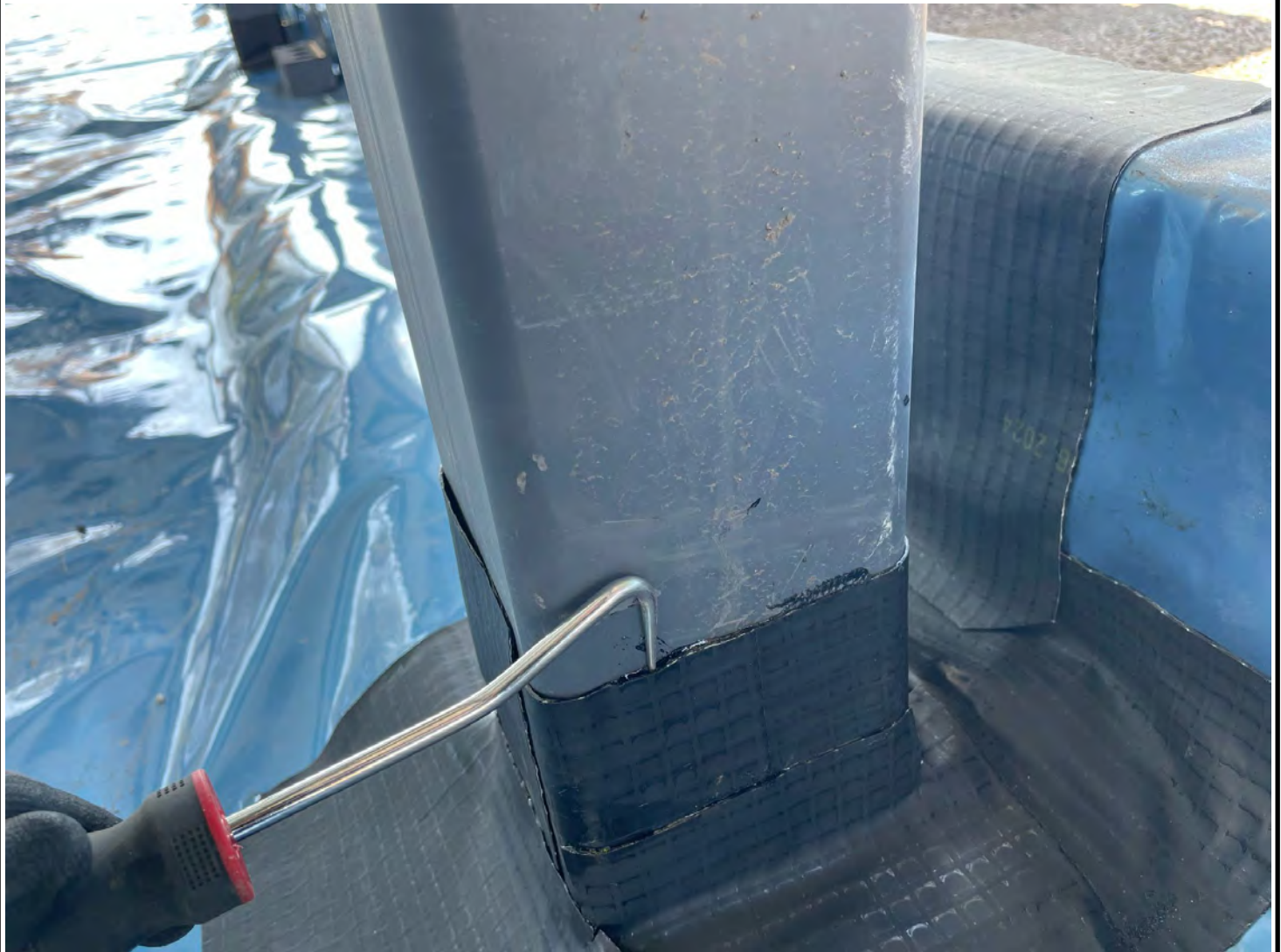


#### NOTES:

patches of JUTA GP1 SAM are placed intricately around the primed steel stanchion, onto the JUTA GP5 Gas Barrier. Sufficient heat and rolled pressure were applied to ensure the JUTA GP1 SAM had fully bonded.

# GeoShield Verification Report

## VERIFICATION ITEM TWO



As with all aspects of the installation, thorough visual inspections, supported by mechanical point stress testing conducted upon the steel stanchion detailing identified no faults or defects.

Tested and verified in accordance with CIRIA 735.

# GeoShield Verification Report



## VERIFICATION ITEM THREE

LOCATION/GRID LINE: Proposed Starbuck Drive Thru - Full Line Out

### Retrofit Detailing



#### NOTES:

Due to the finished brickwork having been built prior to the installation of the JUTA GP5 Gas Barrier, a retrofit detailing has been implemented around approximately 50% of the perimeter. This has been achieved using JUTA GP1 SAM. The JUTA GP1 SAM has been lapped 75mm down the brickwork and returned 75mm into



#### NOTES:

the building, upon the newly installed JUTA GP5 Gas Barrier. The installers have applied heat to the JUTA GP1 SAM to activate the bitumen backing and rolled it into position using a silicone roller with adequate pressure applied to ensure a continuous seal is achieved.

# GeoShield Verification Report

## VERIFICATION ITEM THREE



Thorough visual inspections, supported by mechanical point stress testing conducted upon the retrofit detailing identified no faults or defects.  
Tested and verified in accordance with CIRIA 735.



# GeoShield Verification Report



## VERIFICATION ITEM FOUR

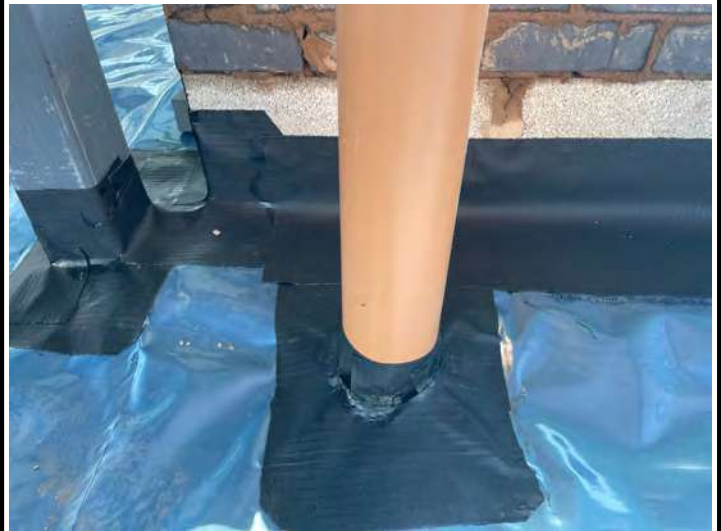
AREA INSPECTED: Proposed Starbuck Drive Thru - Full Line Out

INSPECTION DETAILS: Pipe Penetrations



### NOTES:

Throughout the complete line out installation of the JUTA GP5 Gas Barrier to the referenced area, there were a number of pipe penetrations that have been sealed in accordance with manufacturer's specifications and design guidelines. This has been achieved using JUTA GP1 SAM. The installers have first cut the JUTA GP5



### NOTES:

Gas Barrier tight around the base of each pipe penetration to minimise voided areas. Next, patches of JUTA GP1 SAM are placed intricately in a petal formation around the pipe penetration and onto the JUTA GP5 Gas Barrier, with a 300mm square of JUTA GP1 SAM placed over the top to form a top hat detail.

# GeoShield Verification Report

## VERIFICATION ITEM FOUR



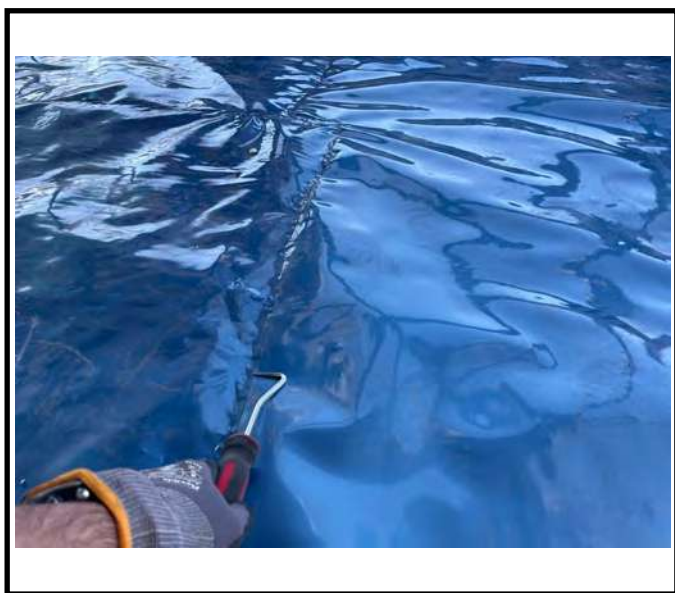
Heat and rolled pressure is applied to activate the bitumen backing, creating a secure bond between the pipe penetration and the JUTA GP5 Gas Barrier. All pipe penetrations were subjected to thorough visual inspections, supported by mechanical point stress testing where no faults or defects were identified. Tested and verified in accordance with CIRIA 735.



# GeoShield Verification Report



## ADDITIONAL PHOTOGRAPHS



A mechanical point stress test being conducted upon a welded overlap.



A mechanical point stress test being conducted upon the retrofit detailing around the perimeter.



A mechanical point stress test being conducted upon the JUTA GP1 SAM retrofit detailing.



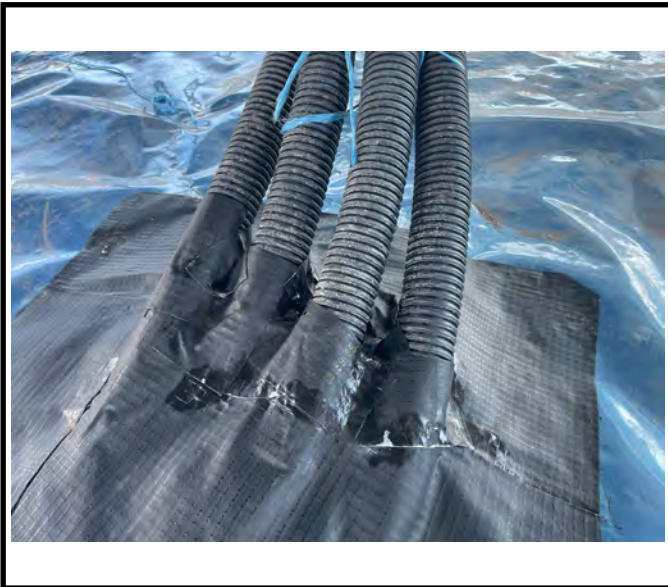
A mechanical point stress test being conducted upon a sealed steel stanchion.



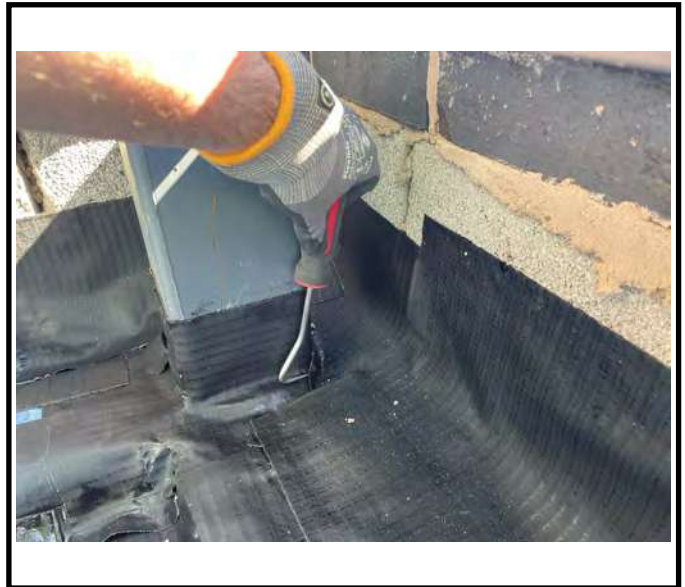
# GeoShield Verification Report



## ADDITIONAL PHOTOGRAPHS



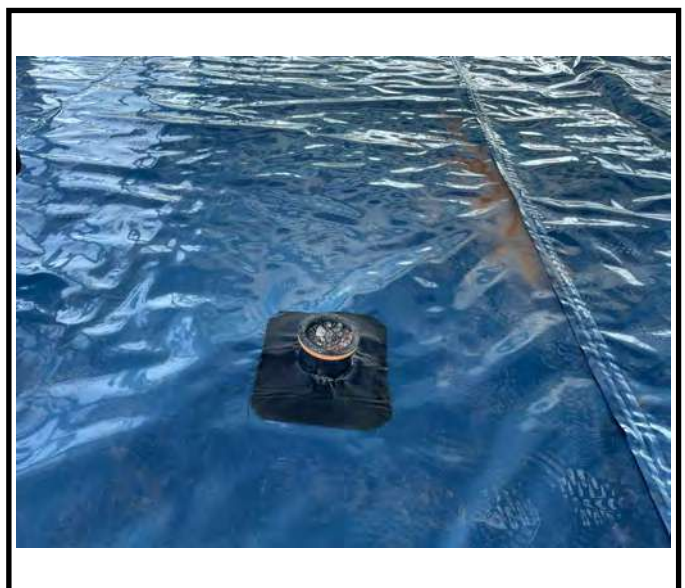
A cluster of pipe penetrations sealed with JUTA GP1 SAM



A mechanical point stress test being conducted upon a sealed steel stanchion.



GeoShield Verification Sticker confirming sign off of the area.



A pipe penetration sealed with JUTA GP1 SAM.



# GeoShield Verification Report



## GAS MEMBRANE TESTING



10

|  |
|--|
|  |
|--|

[illegible]



# GeoShield Verification Report



## REMEDIATION LOG

[illegible]



# GeoShield Verification Report



## VERIFICATION SUMMARY

This was the first visit to the site where verification was required for the complete line out installation of the JUTA GP5 Gas Barrier to the proposed Starbucks Drive Thru.

All overlaps between the adjacent sheets of JUTA GP5 Gas Barrier have been successfully welded using a twin welded and / or a hot air leister and silicone roller, creating continuous gas resistant seals throughout.

A retrofit detail has been implemented to approximately 50% of the perimeter due to the finished brickwork having been built prior to the installation of the JUTA GP5 Gas Barrier.

All steel stanchions and pipe penetrations have been successfully sealed using JUTA GP1 SAM, a self adhesive membrane which has been heated down to aid in the adherence.

Thorough visual inspections, supported by mechanical point stress testing were conducted across all aspects of the installation. No faults or defects were identified.

|                                    |     |
|------------------------------------|-----|
| Is the project ready for handover? | Yes |
|------------------------------------|-----|

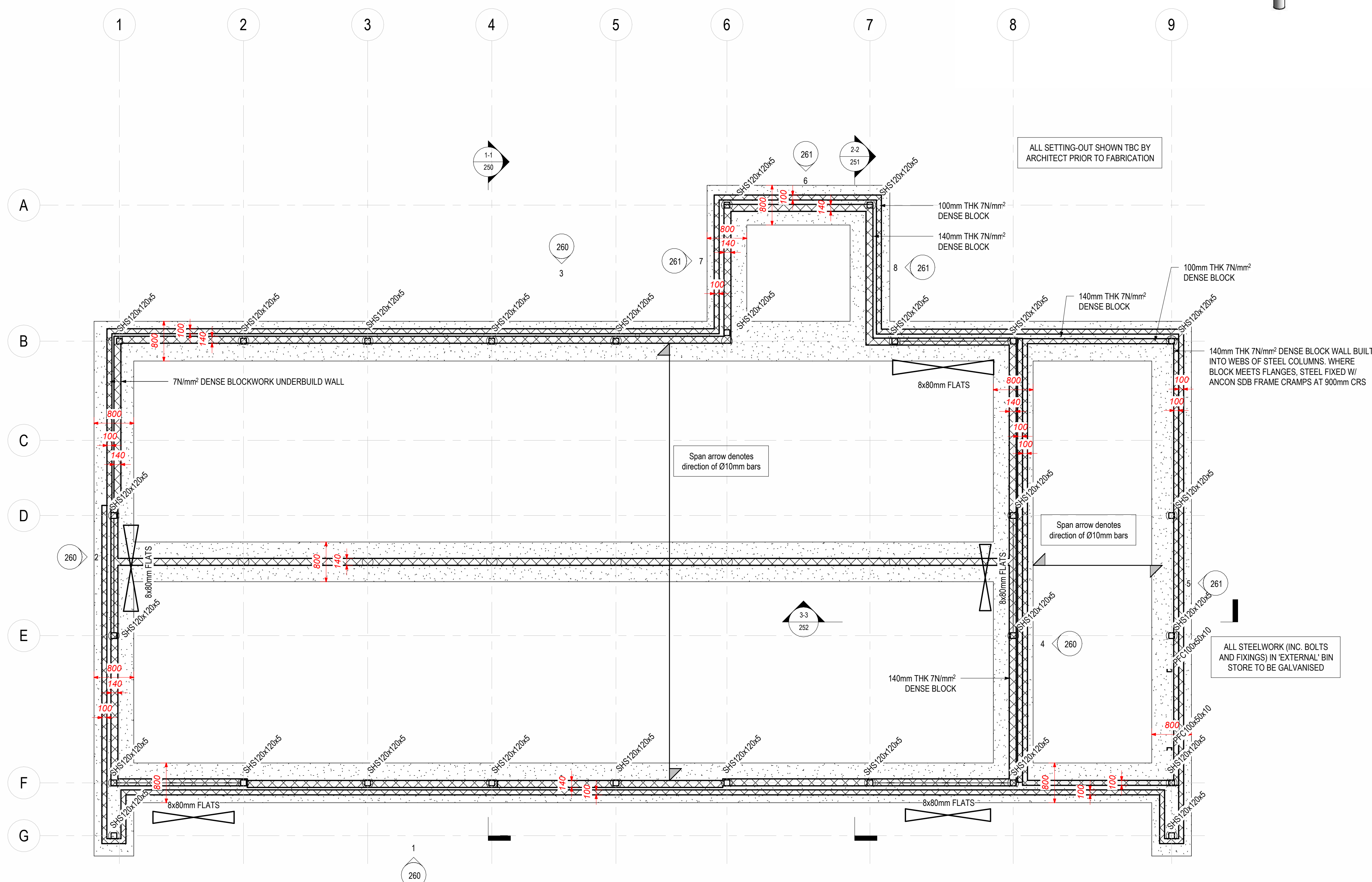
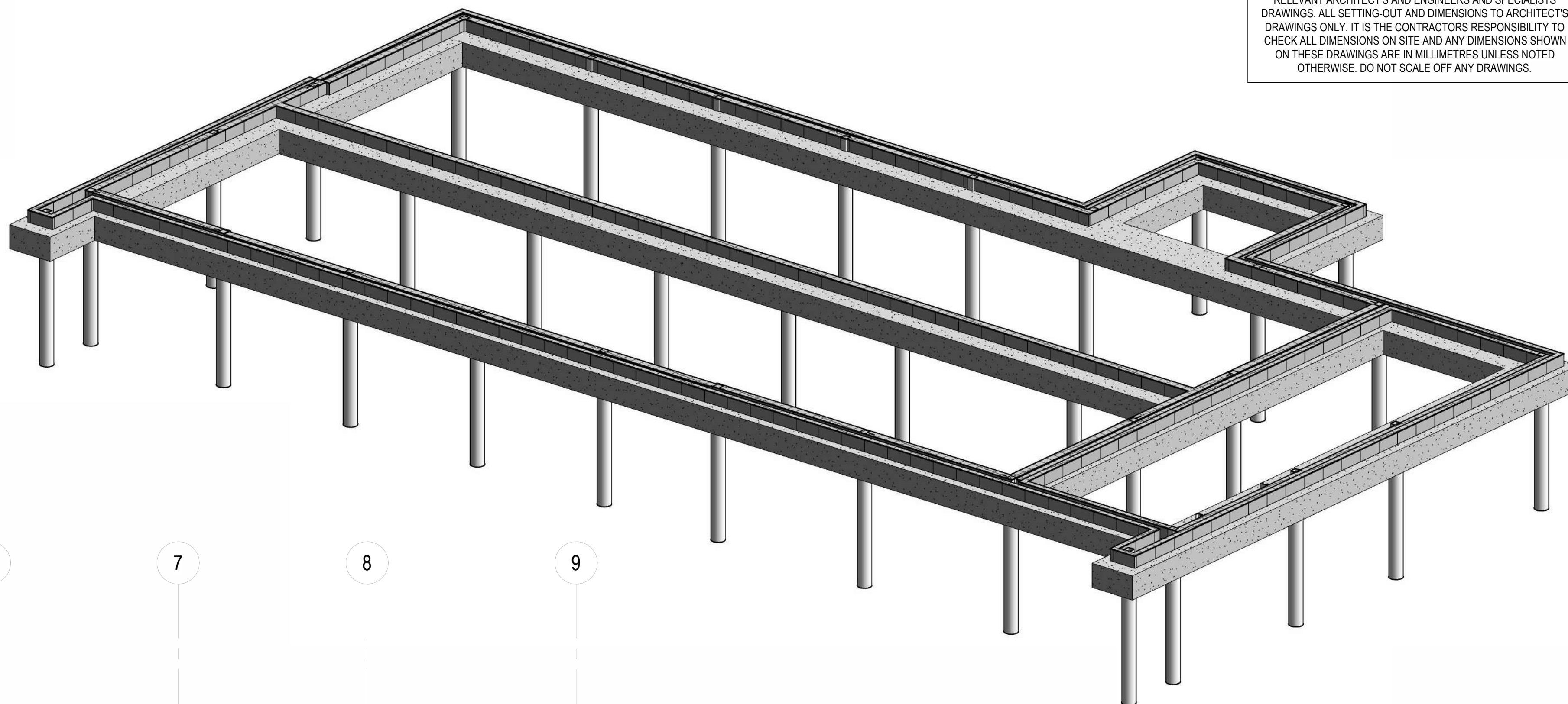
This was passed and verified in accordance with CIRIA 735 and installed to BS8485:2015+A1 2019.

GEOSHIELD SIGNATURE

DATE: 07-Apr-2025

*Pashwat*

WWW.DESIGNENGINEERINGWORKSHOP.CO.UK



Scale - 1 : 50

ALL DRAWINGS SHOULD BE READ IN CONJUNCTION WITH STARBUCKS DOCUMENTS 'STARBUCKS UK EMEA DRIVE THRU CAFE SPECIFICATION Rev07' & 'STARBUCKS DESIGN DOCUMENT DT-DD-REV2'. ANY DISCREPANCIES BETWEEN THE DRAWINGS AND STARBUCKS SPECIFICATIONS THAT COULD AFFECT COSTING SHOULD BE RAISED AT **TENDER** STAGE FOR CLARIFICATION


 Denotes 800x400mm RC Ground beam. Grade C28/35, 4No. H16 bars top & 4No. H16 bars bottom @ MAX. 225mm centres, 50mm cover, along full length of ground beams.


 Pile to contractor design. Ground beam assumes  $\phi 220$ mm steel driven piles @ MAX. centres of 3.0m. Contractor to allow for piles to be driven to refusal. Refer site investigation report for soil details & contractor to carry out any additional testing required for pile design by specialist. Piles to be centred on ground beams, refer to performance specification.


 Indicates 200mm Thick C28/35 Suspended concrete slab spanning between slab on ground beams. B785 mesh top and btm, 40mm cover. H8 U bars to perimeter of slab to suit mesh bar centres on btm. Ground insulation to architect's spec. (min. 100mm thick, compressive strength 300kPa) on gas membrane to specialist contractor & guarantee on 50mm sand bedding on min. 150mm type 1 hardcore.

The gas barrier membrane is to be installed in accordance with the manufacturer's recommendations & specification. The installation of the gas barrier membrane is to be inspected by a qualified verifier during construction. Sand blinding, directly over the blanket, to provide a flat, smooth surface to receive the gas resistant DPC.

Foil backed gas barrier to be installed at column level. Membrane to have a minimum 0.15m lap at all joints and be fully taped with Visqueen foil backed girth jointing tape. Gas barrier to be fully welded with gas resistant DPC and carried over the cavity to the outer leaf. Airtight seals to be formed around all service entry points. Pre formed top hat units are to be used and fixed to membrane with double sided jointing tape.

Smaller service pipes (less than  $\varnothing 50\text{mm}$ ) can be accommodated by taping a lapped membrane piece around the pipe, then taping and securing with Visqueen tape or equal approved, and stainless steel jubilee clip. The overlap to be a minimum of 150mm and filled with sealant. Pipe location to be a minimum of 50mm away from the face of the wall

This 'as built' drawing reflects the work as constructed by the main contractor to the best of our knowledge and as advised by the 'main contractor' representative on site.

|     |          |              |    |     |
|-----|----------|--------------|----|-----|
| B   | 29.01.25 | CONSTRUCTION | SF | AF  |
| A   | 18.12.24 | TENDER       | SF | AF  |
| Rev | Date     | Revision     | By | Chk |

Project  
Starbucks, Rochdale

Drawing Title  
Foundation Layout

|          |            |            |
|----------|------------|------------|
| Drawn by | Checked by | Scale @ A1 |
| SF       | AF         | 1 : 50     |

|              |          |
|--------------|----------|
| Drawing no.  | Revision |
| 2404-09- 201 | B        |

ALL DRAWINGS SHOULD BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECT'S AND ENGINEERS AND SPECIALISTS DRAWINGS. ALL SETTING-OUT AND DIMENSIONS TO ARCHITECT'S DRAWINGS ONLY. IT IS THE CONTRACTORS RESPONSIBILITY TO CHECK ALL DIMENSIONS ON SITE AND ANY DIMENSIONS SHOWN ON THESE DRAWINGS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE. DO NOT SCALE OFF ANY DRAWINGS.

7 8 9



ALL DRAWINGS SHOULD BE READ IN CONJUNCTION WITH STARBUCKS DOCUMENTS 'STARBUCKS UK EMEA DRIVE THRU CAFE SPECIFICATION Rev07' & 'STARBUCKS DESIGN DOCUMENT DT-DD-REV2'. ANY DISCREPANCIES BETWEEN THE DRAWINGS AND STARBUCKS SPECIFICATIONS THAT COULD AFFECT COSTING SHOULD BE RAISED AT **TENDER** STAGE FOR CLARIFICATION

This 'as built' drawing reflects the work as constructed by the main contractor to the best of our knowledge and as advised by the 'main contractor' representative on site.

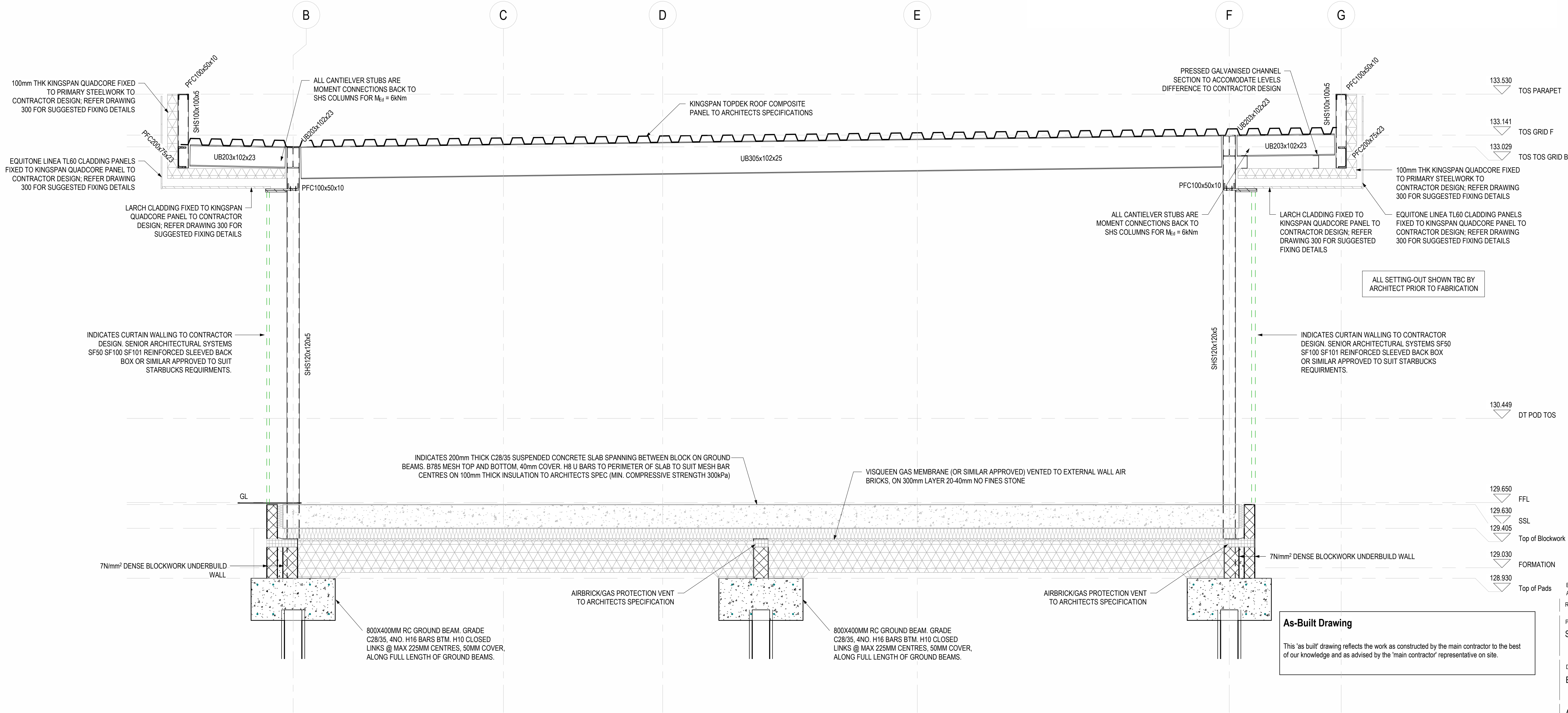
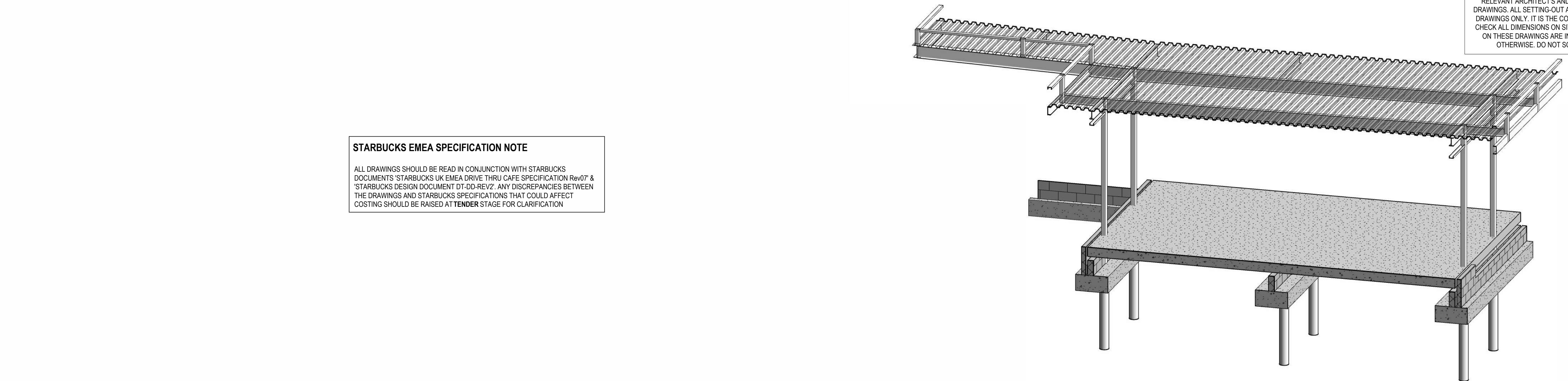
Scale - 1 : 50

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STARBUCKS EMEA SPECIFICATION NOTE

ALL DRAWINGS SHOULD BE READ IN CONJUNCTION WITH STARBUCKS DOCUMENTS 'STARBUCKS UK EMEA DRIVE THRU CAFE SPECIFICATION Rev07' & 'STARBUCKS DESIGN DOCUMENT DT-DD-REV2'. ANY DISCREPANCIES BETWEEN THE DRAWINGS AND STARBUCKS SPECIFICATIONS THAT COULD AFFECT COSTING SHOULD BE RAISED AT TENDER STAGE FOR CLARIFICATION



DETAIL SECTION A-A

Scale - 1 : 20

|     |          |              |    |     |
|-----|----------|--------------|----|-----|
| Rev | Date     | Revision     | By | Chk |
| B   | 29.01.25 | CONSTRUCTION | SF | AF  |
| A   | 18.12.24 | TENDER       | SF | AF  |

Project  
Starbucks, Rochdale

Drawing Title  
Building Section 1-1

AS-BUILT

|                |                  |                            |
|----------------|------------------|----------------------------|
| Drawn by<br>SF | Checked by<br>AF | Scale @ A1<br>As indicated |
|----------------|------------------|----------------------------|

|                         |     |               |
|-------------------------|-----|---------------|
| Drawing no.<br>2404-09- | 250 | Revision<br>B |
|-------------------------|-----|---------------|

## **Appendix E – Clean Cover System**

PLANTING NOTES:

1. Plant handling at the nursery, and during transit up to delivery, shall be in accordance with 'Plant Handling', the booklet published by the Committee for Plant Supply and Establishment (CPSE). The contractor shall comply with clauses 3 & 4 of the above booklet (obtained from the Horticulture Trades Association, 19 High Street, Theale, Reading, Berks RG7 5H) which refers to the receipt, unloading and temporary storage of plants.

2. Plants shall be first class examples of their species or variety, free from all pests and diseases, with good fibrous root systems and materially undamaged (refer to relevant sections of BS3936 Parts 1-4 'Specification of Nursery Stock').

3. All planting is to be in general compliance with BS4428: 1989 'Code of Practice for general landscape operations

4. Tree Planting:  
One number 80 litre bag of compost (non-peat based) should be roughly incorporated between two tree pits and a slow release tree fertiliser (in line with manufacturers recommendations) should also be incorporated into the mix. The compost and fertiliser must be thoroughly mixed with the excavated material prior to back filling the tree pit. Any large stones and rubble should be removed if excavated during these works and the base of the pit should be broken out to ensure that it is free draining. Trees should be secured with double timber stake, timber cross bar and rubber tree tie. As a guide, trees should be planted in tree pits of the following minimum sizes;

i) 10-12cm girth 750 x 750 x 600mm deep

5. All BR Whips and BR stock (proposed native understorey mix) to be protected with a spiral-bound tree/shrub guard and secured into place with a cane. Ensure that areas around the base of shrubs are maintained weed free during the establishment period using a glyphosate based herbicide. BR stock should be notch planted and heeled in securely to firm into position.

6. Shrub Beds and Planting General:

i) All beds should be free draining and free from builders rubble and large stones. There should be min 450mm of good quality top soil to all the shrub beds.

ii) Areas to be treated with a non-residual glyphosate based herbicide prior to planting and cultivated to a depth of 150mm.

iii) A slow release fertiliser mixed with a peat free compost should be incorporate into the back fill material when planting the shrubs to give them the best possible chance of establishment.

7. When storing the topsoil, compaction and contamination should be prevented by covering and not allowing construction plants to pass over it. It should also be handled in the driest conditions possible and not after a heavy rainfall. When spreading the topsoil do not firm, consolidate or compact it.

8. Finishing Beds:

i) The finished surface of the bed should be free from weeds, stones or rubble and the surface of the soil cultivated to level out any clumps, mounds or depressions.

ii) When planted all shrub beds are to be mulched with 50mm depth of small grade bark mulch.

iii) The beds should be maintained weed free and the beds topped up annually with bark mulch as required.

9. Grass:

i) Beds should be free draining and free from builders rubble and large stones. There should be min 150mm of good quality top soil to all the areas to be seeded.

ii) Areas to be cultivated to a depth of 150mm and finished to a fine tilth with smooth even contours and gradients.

iii) Prior to seeding the areas should be sprayed with a non-residual glyphosate based herbicide.

iv) Ensure that the grass is maintained to 25-50mm and once established mown min 12 times a year in the growing season.

10. Germinal 'WFG20 Eco Species Rich Lawn' mix:

i) To be mowed whilst still allowing lower growing species to establish.

11. Watering:

i) All Trees and Shrub beds to be watered in the first year of establishment regularly during periods of drought until established.

ii) For the trees in the first year of establishment and in subsequent years if there is a drought. Water with the following volumes once every 2-4 weeks regardless of rainfall:

10-12cm girth trees - 150 litres minimum per month

12. Weeding:

All shrub beds to be maintained weed free by regularly hand weeding the beds and spot treating any prolific weeds with a glyphosate based weed killer. Maintaining the bark mulch will also help to reduce weed growth.

13. The contractor must ascertain himself/herself of the exact location of underground services prior to carrying out any digging on site.

WFG20 Eco Species Rich Lawn (10g/m2)

Mixture Breakdown

- 2.0% Wild Carrot (Daucus carota)
- 0.5% Common Knapweed (Centaurea nigra)
- 0.4% Self Heal (Prunella vulgaris)
- 2.0% Red Clover (Trifolium pratense)
- 2.0% White Clover (Trifolium repens)
- 1.0% Ribwort Plantain (Plantago lanceolata)
- 2.0% Dandelion (Taraxacum officinale)
- 1.0% Birdsfoot Trefoil (Lotus corniculatus)
- 1.0% Black Medick (Medicago lupulina)
- 1.8% Flax (Linum usitatissimum)
- 0.1% Common Mouse-Ear (Cerastium fontanum)
- 0.1% Cowslip (Primula veris)
- 0.2% Burnett Saxifrage (Pimpinella saxifrage)
- 1.0% Lady's Bedstraw (Galium verum)
- 1.0% Yellow Rattle (Rhinanthus minor)
- 1.8% Yarrow (Achillea millefolium)
- 0.1% Wild Pansy(Viola tricolor)
- 2.0% Common Sorrel (Rumex acetosa)
- 20.0%Sheeps Fescue (Festuca Ovina)
- 15.0%Strong Creeping Red Fescue (Festuca rubra rubra)
- 12.5%Slender Creeping Red Fescue (Festuca rubra litoralis)
- 12.5%Chewings Fescue (Festuca rubra commutata)
- 10.0%Smooth Stalked Meadow Grass (Poa pratensis)
- 5.0% Browntop Bent (Agrostis capillaris)
- 2.5% Creeping Bent (Agrostis stolonifera)
- 2.5% Lolium perenne (Lolium perenne)

PLANT SCHEDULE

NATIVE SHRUB MIX - Planted at 1 per sq.m and to be protected with spiral bound shrub guards

| Abb | Species            | Size | Height (cm) | % in Mix | Number |
|-----|--------------------|------|-------------|----------|--------|
| Ca  | Corylus avellana   | BR   | 60-80       | 20%      | 4      |
| Cs  | Cornus sanguinea   | BR   | 60-80       | 10%      | 2      |
| Cmo | Crataegus monogyna | BR   | 60-80       | 30%      | 7      |
| Ia  | Ilex aquifolium    | 2L C | 40-60       | 5%       | 1      |
| Msy | Malus sylvestris   | BR   | 60-80       | 5%       | 1      |
| Rc  | Rosa canina        | BR   | 60-80       | 10%      | 2      |
| Sn  | Sambucus nigra     | BR   | 60-80       | 10%      | 2      |
| Vo  | Viburnum opulus    | BR   | 60-80       | 10%      | 2      |

ORNAMENTAL SHRUB PLANTING

| Abb | Species                        | Size | Height (cm) | Density | Number |
|-----|--------------------------------|------|-------------|---------|--------|
| BcP | Bergenia cordifolia 'Purpurea' | 3L   | 20-30       | 5 sq.m  | 4      |
| CoE | Carex oshimensis 'Evergold'    | 3L   | 20-30       | 4 sq.m  | 17     |
| EFH | Euonymus fortunei 'Harlequin'  | 3L   | 20-30       | 5 sq.m  | 9      |
| HC  | Heuchera 'Caramel'             | 3L   | 20-30       | 5 sq.m  | 11     |
| HGG | Hebe 'Green Globe'             | 3L   | 20-30       | 3 sq.m  | 6      |
| HMB | Helenium 'Moerheim Beauty'     | 3L   | 20-30       | 7 sq.m  | 13     |
| LaV | Lavandula angustifolia 'Vera'  | 3L   | 20-30       | 5 sq.m  | 9      |
| RFG | Rudbeckia fulgida 'Goldsturm'  | 3L   | 20-30       | 7 sq.m  | 12     |
| SMM | Skimmia 'Magic Marlot'         | 3L   | 30-40       | 3 sq.m  | 7      |

NATIVE TREE PLANTING

| Abb | Species        | Size   | Height (cm) | Root | Type     | Number |
|-----|----------------|--------|-------------|------|----------|--------|
| Bp  | Betula pendula | 10- 12 | 300-350     | RB   | Standard | 5      |
| Pa  | Prunus avium   | 10- 12 | 300-350     | RB   | Standard | 3      |
| Tc  | Tilia cordata  | 10- 12 | 300-350     | RB   | Standard | 2      |

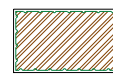
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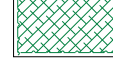
SOFT LANDSCAPE

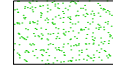
 Existing Trees and vegetation to be removed

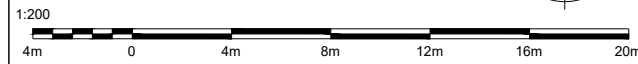
 Existing Trees and Vegetation to be retained

 Proposed Feature Trees planted as Standards with 10 - 12cm girth

 Proposed Native Shrub Mix - Planted at 1 per sq.m and to be protected with spiral bound shrub guards

 Proposed Ornamental Raised Beds

 Proposed grass areas seeded with a species rich grass mix



DEP LANDSCAPE ARCHITECTURE LTD

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W: www.dep.co.uk

Client

AIG Holdings Ltd

Project

Starbucks, Sandbrook Park, Rochdale

Description

Softworks Plan

Status

For Comments

Scale

1:200@A2

Drawn

CC (TR)

Job number

5597

Drawing number

01

Date

Dec 24

Revision

-

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All levels and dimensions to be checked on site by contractor prior to commencement; Any variations to be reported to the client. This drawing is to be read in conjunction with all others relating to the project and all information derived accordingly; any anomalies to be reported to the client. Do not scale from this drawing. Use figured dimensions only. Work shown on this drawings to be carried out in accordance with current British Standards and Codes of Practice.

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Freeland Horticulture Ltd  
Rosedale Nursery  
College Road  
Hextable  
Kent BR8 7LT

Attention: Philippa Lambourne

Our Ref: SLC-1390-SA

23 June 2025

Dear Philippa

***Topsoil Analysis Report: Astley, Greater Manchester Topsoil May 2025***

We have completed the analysis of the topsoil sample recently taken from the above site and it has been forwarded to an approved laboratory for analysis and have the pleasure of reporting our findings. The purpose of the analysis was to determine the suitability of the topsoil for general landscaping purposes and its compliance with the current British Standard for topsoil (BS3882).

**SOIL SAMPLING & EXAMINATION**

At the time of our sampling visit the topsoil was stored in a stockpile. A series of 10 hand augered trial holes were constructed across the stockpile for the purpose of soil examination and sample collection. As the soil examination confirmed a consistent topsoil composition, the ten samples were combined together to form one composite sample for analysis purposes. The soil was described as dark brown, slightly moist and friable with a well-developed, fine to medium granular structure. The soil contained a low fraction of small stones and no deleterious materials (eg. building waste materials, glass, roots or rhizomes of pernicious weeds) or unusual odours (eg. hydrocarbons) were recorded.

**LABORATORY ANALYSIS**

The topsoil sample was submitted to a UKAS and MCERTS accredited laboratory for routine physical and chemical parameters to confirm the composition and fertility of the soil. The following parameters were determined:

- ⊕ pH & electrical conductivity values;
- ⊕ major plant nutrients (N, P, K, Mg) & organic matter content;
- ⊕ particle size distribution and stone content;
- ⊕ heavy metals & potentially toxic elements (As, Cd, Cr, Cu, Pb, Hg, Ni, Se, Zn, B);
- ⊕ sulphate, sulphur, sulphide;
- ⊕ total cyanide and total (mono) phenols;
- ⊕ speciated PAHs (US EPA16)
- ⊕ banded aromatic and aliphatic petroleum hydrocarbons (C<sub>5</sub>-C<sub>35</sub>).
- ⊕ Asbestos

The results are presented on the attached Certificate of Analysis and an interpretation of the results is given below.

---

Phone: 01322 619161;

*Freeland horticulture Ltd, Registered in England: Rosedale Nursery, College Road, Hextable, Kent BR8 7LT  
Company Registration No: 04015968*

**COMMENTS*****pH & Electrical Conductivity (salinity) Values***

The sample was alkaline in nature (pH 8.4) with a pH value that would be considered suitable for general landscaping purposes.

The electrical conductivity (salinity) value using the soil:water extract was (1135 $\mu$ S/cm) indicating that soluble salts are not present at levels that would be harmful to plants.

The electrical conductivity values by CaSO<sub>4</sub> extract (BS3882 requirement) fell below the maximum specified value (3300 $\mu$ S/cm) given in BS3882:2015.

***Organic Matter & Nutrient Status***

The sample was rich in organic matter and all major plant nutrients. No further additions of compost or fertiliser are required, or indeed recommended, for at least the first growing season.

The C:N ratio of the sample was acceptable for general landscape purposes.

***Particle Size Distribution & Stone Content***

The sample contained 73% sand and fell into the sandy loam texture class. This particle size distribution is considered suitable for a broad range of landscape applications, including tree and shrub planting, turfing and seeding.

The sample was Virtually free from stones of 50 mm and upwards in diameter and only contained a slight fraction of smaller stones (12.3%). As such, stones will not restrict the use of the soil for landscaping purposes.

***Potential Contaminants***

We are not aware of any specified contaminant levels set for the proposed end-use of this topsoil. This includes human health, environmental protection and metals considered toxic to plants. In the absence of any site-specific assessment criteria, the concentrations that affect human health have been compared with the 'residential with homegrown produce' land use in the Suitable For Use Levels presented in 'The LQM/CIEH S4UIs' for Human Health Risk Assessment (2015) and DEFRA SP1010: 'Development of Category 4 Screening Levels' for Assessment of Land Affected by Contamination – Policy Companion Document (2014).

Of the potential contaminants determined, none was found at levels that would exceed their respective guideline values.

**CONCLUSION**

The purpose of the analysis was to determine the suitability of the topsoil for general landscaping purposes. From the soil examination and laboratory analysis, the soil is described as an alkaline, non-saline, sandy loam. The organic matter and nutrient levels are acceptable, and no significant contamination was found with respect to the parameters determined. This soil would adhere to the current BS3882 specification for 'multipurpose grade'.

To conclude, based on our findings, the topsoil would be considered well-suited to general landscaping purposes provided the physical condition of the soil is maintained.

---

We hope this report meets with your approval and provides the necessary information. Please do not hesitate to contact the undersigned if you have any queries or comments.

George Longmuir MSc Soil Sci. M.I Soil Sci.

---

|            |                            |
|------------|----------------------------|
| Client     | Freeland Horticulture Ltd  |
| Job Name   | Topsoil Analysis           |
| Site       | Astley, Greater Manchester |
| Month/Year | May 25                     |
| Our Ref    | 1390-SA                    |
| Date       | 23 June 2025               |

#### pH Value & Salinity

|                                                |       |
|------------------------------------------------|-------|
| pH value (1:2.5 soil/water ext)                | units |
| Electrical Conductivity (1:2.5 soil/water ext) | µS/cm |
| Electrical Conductivity (1:2.5 soil/CaSO4 ext) | µS/cm |

#### Composite sample

|      |
|------|
| 8.4  |
| 1135 |
| 2983 |

#### Organic Matter & Nutrient Status

|                          |      |
|--------------------------|------|
| Organic Matter (LOI)     | %    |
| Organic Carbon (Derived) | %    |
| Total Nitrogen           | %    |
| Carbon:Nitrogen Ratio    | :1   |
| Available Phosphorus     | mg/l |
| Available Potassium      | mg/l |
| Available Magnesium      | mg/l |

|       |
|-------|
| 5.6   |
| 3.3   |
| 0.277 |
| 0.6   |
| 40.6  |
| 820   |
| 166   |

#### Particle Size Analysis & Stones

|                      |          |
|----------------------|----------|
| Clay (<0.002mm)      | %        |
| Silt (0.063-0.002mm) | %        |
| Sand (2.0-0.063mm)   | %        |
| Texture Class        | UK Class |

|           |
|-----------|
| 12        |
| 15        |
| 73        |
| SandyLoam |

|                |         |
|----------------|---------|
| Stones 2-20mm  | % by DW |
| Stones 20-50mm | % by DW |
| Stones >50mm   | % by DW |

|      |
|------|
| 11.3 |
| 1.8  |
| 0.9  |

#### Potential Contaminants

|                                              |       |
|----------------------------------------------|-------|
| Total Arsenic (As)                           | mg/kg |
| Total Cadmium (Cd)                           | mg/kg |
| Total Chromium (Cr)                          | mg/kg |
| Hexavalent Chromium (CR <sup>VI</sup> )      | mg/kg |
| Total Copper (Cu)                            | mg/kg |
| Total Lead (Pb)                              | mg/kg |
| Total Mercury (Hg)                           | mg/kg |
| Total Nickel (Ni)                            | mg/kg |
| Total Selenium (Se)                          | mg/kg |
| Total Zinc (Zn)                              | mg/kg |
| Total Beryllium (Be)                         | mg/kg |
| Total Barium (Ba)                            | mg/kg |
| Total Vanadium (V)                           | mg/kg |
| Hot Water Soluble Boron (B)                  | mg/kg |
| Total Cyanide (CN)                           | mg/kg |
| Elemental Sulphur (S)                        | mg/kg |
| Easily Liberated Sulphide (S <sup>-2</sup> ) | mg/kg |
| Water Soluble Sulphate (SO <sup>2-</sup> )   | mg/l  |
| Total Phenols Index                          | mg/kg |
| Asbestos Screen                              | -     |

|      |
|------|
| 6.3  |
| 0.27 |
| 15.6 |
| <0.2 |
| 25.0 |
| 66.1 |
| <0.2 |
| 16.7 |
| 0.16 |
| 68.7 |
| <1   |
| 93.2 |
| 13.0 |
| 1.2  |
| <1   |
| <5   |
| <1   |
| 318  |
| <1   |
| N.D. |

#### Polycyclic Aromatic Hydrocarbons

|                |       |
|----------------|-------|
| Naphthalene    | mg/kg |
| Acenaphthylene | mg/kg |
| Acenaphthene   | mg/kg |
| Fluorene       | mg/kg |
| Phenanthrene   | mg/kg |

|       |
|-------|
| 0.1   |
| <0.05 |
| 0.2   |
| 0.2   |
| 1.1   |

|                          |                            |      |
|--------------------------|----------------------------|------|
| Client                   | Freeland Horticulture Ltd  |      |
| Job Name                 | Topsoil Analysis           |      |
| Site                     | Astley, Greater Manchester |      |
| Month/Year               | May 25                     |      |
| Our Ref                  | 1390-SA                    |      |
| Date                     | 23 June 2025               |      |
| Anthracene               | mg/kg                      | 0.2  |
| Fluoranthene             | mg/kg                      | 1.3  |
| Pyrene                   | mg/kg                      | 1.1  |
| Benzo[a]anthracene       | mg/kg                      | 0.6  |
| Chrysene                 | mg/kg                      | 0.6  |
| Benzo[b]fluoranthene     | mg/kg                      | 0.7  |
| Benzo[k]fluoranthene     | mg/kg                      | 0.3  |
| Benzo[a]pyrene           | mg/kg                      | 0.6  |
| Indeno[1,2,3-cd]pyrene   | mg/kg                      | 0.4  |
| Dibenzo[a,h]anthracene   | mg/kg                      | 0.1  |
| Benzo[g,h,i]perylene     | mg/kg                      | <0.1 |
| Total PAHs sum US EPA 16 | mg/kg                      | 8.0  |

#### Banded Petroleum Hydrocarbons

|                                                 |       |       |
|-------------------------------------------------|-------|-------|
| Aliphatic TPH >C <sub>5</sub> -C <sub>6</sub>   | mg/kg | <0.05 |
| Aliphatic TPH >C <sub>6</sub> -C <sub>8</sub>   | mg/kg | <0.05 |
| Aliphatic TPH >C <sub>8</sub> -C <sub>10</sub>  | mg/kg | <0.05 |
| Aliphatic TPH >C <sub>10</sub> -C <sub>12</sub> | mg/kg | <10   |
| Aliphatic TPH >C <sub>12</sub> -C <sub>16</sub> | mg/kg | <10   |
| Aliphatic TPH >C <sub>16</sub> -C <sub>21</sub> | mg/kg | 21.0  |
| Aliphatic TPH >C <sub>21</sub> -C <sub>35</sub> | mg/kg | 170   |
| Aliphatic TPH >C <sub>35</sub> -C <sub>44</sub> | mg/kg | 20.0  |

|                                                |       |       |
|------------------------------------------------|-------|-------|
| Aromatic TPH >C <sub>5</sub> -C <sub>7</sub>   | mg/kg | <0.05 |
| Aromatic TPH >C <sub>7</sub> -C <sub>8</sub>   | mg/kg | <0.05 |
| Aromatic TPH >C <sub>8</sub> -C <sub>10</sub>  | mg/kg | <0.05 |
| Aromatic TPH >C <sub>10</sub> -C <sub>12</sub> | mg/kg | <10   |
| Aromatic TPH >C <sub>12</sub> -C <sub>16</sub> | mg/kg | <10   |
| Aromatic TPH >C <sub>16</sub> -C <sub>21</sub> | mg/kg | 98.0  |
| Aromatic TPH >C <sub>21</sub> -C <sub>35</sub> | mg/kg | 240   |
| Aromatic TPH >C <sub>35</sub> -C <sub>44</sub> | mg/kg | 35.0  |

|                                                                 |       |     |
|-----------------------------------------------------------------|-------|-----|
| Total Petroleum Hydrocarbons (C <sub>5</sub> -C <sub>44</sub> ) | mg/kg | 597 |
|-----------------------------------------------------------------|-------|-----|

#### BTEX

|                |       |       |
|----------------|-------|-------|
| Benzene        | mg/kg | <0.02 |
| Toluene        | mg/kg | <0.2  |
| Ethyl Benzene  | mg/kg | <0.04 |
| m- & p- Xylene | mg/kg | <0.2  |
| o-Xylene       | mg/kg | <0.1  |

Chain of Custody requires a Freeland Ticket - 01322 619161



# TYRONE STONE LTD

SPECIALIST BUILDING MATERIALS  
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TEL: 0161 483 8700 (ORDERS/SALES) FAX: 0161 483 6400  
E-MAIL: enquiries@tyronestone.co.uk WEBSITE: www.tyronestone.co.uk

TICKET NO. TSL 49284

## CONVEYANCE NOTE

FORM B (WEIGHT)

PRESCRIBED BY THE BOARD OF  
TRADE UNDER SECTION 4 OF THE  
WEIGHTS AND MEASURES ACT 1936

ALL IN BLOCK LETTERS

CONSIGNEE

ADDRESS OF PLACE  
OF DELIVERY

LOADED AT FREELAND

SITUATION OF NEAREST AVAILABLE  
WEIGHING INSTRUMENT TO PLACE  
WHERE VEHICLE WAS LOADED.

|                                            | QUARRY TICKET No. | DATE                     |
|--------------------------------------------|-------------------|--------------------------|
|                                            | 28193             | 13/5/25                  |
| GROSS WEIGHT<br>OF VEHICLE AT WEIGH BRIDGE | 32000             | TIME OF<br>LOADING AM PM |
| TARE WEIGHT<br>OF VEHICLE                  | 12300             | TIME ON SITE             |
| NETT                                       | 19700             | TIME OFF SITE            |

DESCRIPTION

DESCRIPTION OF MATERIALS BEING CARRIED EG. LIMESTONE, SAND ETC.

REGD. NO

DRIVER/HAULIER

CERTIFIED THAT THE ABOVE PARTICULARS ARE TRUE AND RELATE TO THE SAND OR BALLAST BEING CONVEYED IN THE VEHICLE DESCRIBED, WHICH SAND OR BALLAST IS BEING SO CONVEYED IN PURSUANCE OF: (a) A SALE AGREEMENT FOR THE SALE THEREOF MADE BY WEIGHT (b) AN AGREEMENT FOR THE CARRIAGE THEREOF MADE BY WEIGHT. (a) OR (b) DELETE WORDS INAPPLICABLE.

SIGNED FOR ON BEHALF OF TYRONE STONE LTD

RECEIVED DATE

BLOCK CAPITALS

CUSTOMER ORDERING VEHICLES OFF THE PUBLIC ROAD DO SO ENTIRELY ON THEIR OWN RESPONSIBILITY



# TYRONE STONE LTD

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E-MAIL: enquiries@tyronestone.co.uk WEBSITE: www.tyronestone.co.uk

TICKET NO. TSL 49037

## CONVEYANCE NOTE

FORM B (WEIGHT)

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TRADE UNDER SECTION 4 OF THE  
WEIGHTS AND MEASURES ACT 1936

ALL IN BLOCK LETTERS

CONSIGNEE

ADDRESS OF PLACE  
OF DELIVERY

LOADED AT FREELAND

SITUATION OF NEAREST AVAILABLE  
WEIGHING INSTRUMENT TO PLACE  
WHERE VEHICLE WAS LOADED.

|                                            | QUARRY TICKET No. | DATE                     |
|--------------------------------------------|-------------------|--------------------------|
|                                            |                   | 16.5.25                  |
| GROSS WEIGHT<br>OF VEHICLE AT WEIGH BRIDGE | 3220              | TIME OF<br>LOADING AM PM |
| TARE WEIGHT<br>OF VEHICLE                  | 1220              | TIME ON SITE             |
| NETT                                       | 2000              | TIME OFF SITE            |

DESCRIPTION

DESCRIPTION OF MATERIALS BEING CARRIED EG. LIMESTONE, SAND ETC.

REGD. NO

DRIVER/HAULIER

CERTIFIED THAT THE ABOVE PARTICULARS ARE TRUE AND RELATE TO THE SAND OR BALLAST BEING CONVEYED IN THE VEHICLE DESCRIBED, WHICH SAND OR BALLAST IS BEING SO CONVEYED IN PURSUANCE OF: (a) A SALE AGREEMENT FOR THE SALE THEREOF MADE BY WEIGHT (b) AN AGREEMENT FOR THE CARRIAGE THEREOF MADE BY WEIGHT. (a) OR (b) DELETE WORDS INAPPLICABLE.

SIGNED FOR ON BEHALF OF TYRONE STONE LTD

RECEIVED DATE

BLOCK CAPITALS

## Site Photographs



Photo provided by the Client of one of the landscaping planters pre-placement of topsoil



Photo provided by the Client of one of the landscaping planters with placed imported topsoil



Photo provided by the Client of one of the landscaping planters showing it completed

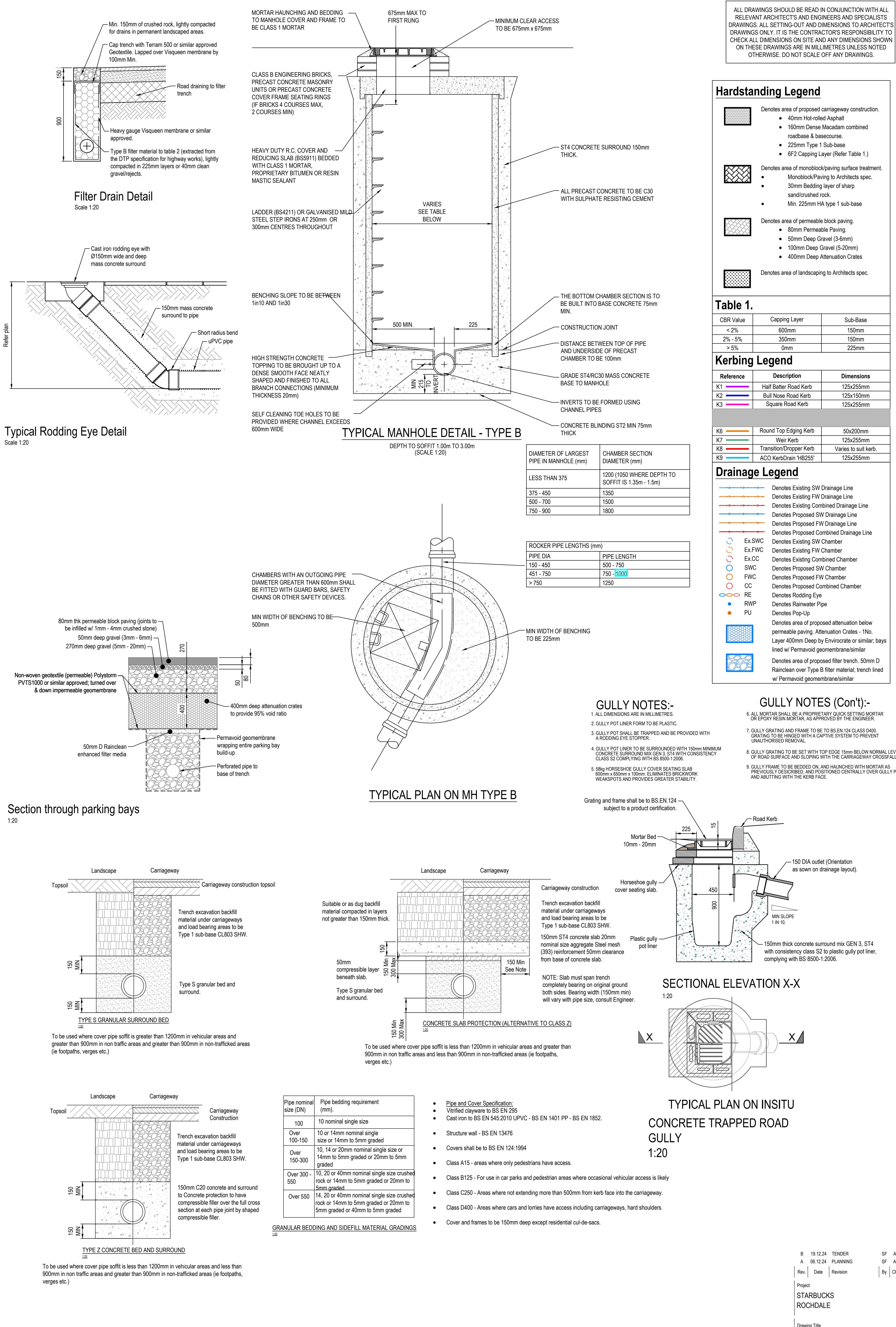


Photo provided by the Client of one of the landscaping planters showing it completed



Photo provided by the Client of one of the landscaping planters showing it completed

## **Appendix F – Water Supply Pipes**



## Useful Information



## Technical Specification

- **Pipe Type:** Multi-layer barrier pipe
- **Material:** Polyethylene (inner and outer), aluminium (barrier layer)
- **Application:** Potable water supply through contaminated or brownfield sites
- **Features:** Lightweight, flexible, quick to install

## Description

Protecta-Line barrier pipe coils offer a high-performance solution for safely conveying potable water through contaminated land and brownfield sites. Featuring a multi-layer construction with a polyethylene inner and outer core and an aluminium barrier layer, these award-winning pipes prevent the ingress of contaminants, ensuring long-term water quality protection. Lightweight and highly flexible, Protecta-Line is quick and easy to install, making it ideal for use in both new developments and utility upgrades.

## Key Features & Benefits

- **Multi-Layer Barrier Technology:** Aluminium inner barrier prevents contaminants entering the water supply.
- **Polyethylene Core:** Durable inner and outer layers offer excellent corrosion and impact resistance.
- **Safe for Contaminated Sites:** Approved for use in brownfield and contaminated ground applications.
- **Lightweight & Flexible:** Easy to handle, transport, and install on-site.
- **Award-Winning Design:** Industry-recognised for performance and reliability.
- **Quick Installation:** Reduces labour time and minimises disruption during pipe laying.

| Pipe dimensions Metric BS EN 15494:2003 |                                    |                              |                                    |
|-----------------------------------------|------------------------------------|------------------------------|------------------------------------|
| Pipe Size mm                            | Average Bore Inside Diameter in mm | Average Wall Thickness in mm | Approximate Weight Per Metre in KG |
| 25                                      | 17.6                               | 3.7                          | 0.30                               |
| 32                                      | 23.2                               | 4.4                          | 0.40                               |
| 63                                      | 47.8                               | 7.6                          | 1.30                               |
| 90                                      | 68.6                               | 10.7                         | 2.60                               |
| 110                                     | 84.6                               | 12.7                         | 3.70                               |
| 125                                     | 105.4                              | 9.8                          | 3.40                               |
| 160                                     | 135.2                              | 12.4                         | 5.40                               |
| 180                                     | 152.6                              | 13.7                         | 6.80                               |

**IMPORTANT:** The technical data given on this website is for preliminary information purposes only and is published without guarantee. All line drawings are for illustrative purposes only and should not be regarded as wholly accurate in every detail. We reserve the right to withdraw or to alter the specification of any product without notice. For more information, please consult our [Terms of Business](#).