



DRAINAGE DESIGN STATEMENT REPORT

FOTHERGILL COATED FABRICS LIMITED

FOTHERGILL EXTENSION

AT

FOTHERGILL COATED FABRICS

UNIT 12 RIVERSIDE DRIVE

ROCHDALE

OL16 2HS

HBL Ref: 11122-HBL-XX-XX-RP-C-5100

REV.P01



Document Control:

Document reference: 11122-HBL-XX-XX-RP-C-5100

HBL Associates Ltd

Craig House
33 Ballbrook Ave
Didsbury
Manchester
M20 3JG

Author:	JASON BALE BEng (Hons), EngTech, MICE
Signature:	<i>J L Bale</i>
Date:	30.04.2026
Approved:	MATT SHANLEY BSc (Hons)
Signature:	<i>M Shanley</i>
Date:	30.04.2026

Tel: +44 (0)161 432 9977

consultants@hbl.ltd

Rev	Date	Details	Prepared By	Reviewed By
P01	30.04.26	Preliminary	JLB	MS

Limitations

This document has been prepared in accordance with the scope of HBL Associates Ltd appointment with its client and is subject to the terms of that appointment. It is addressed to and for the sole and confidential use and reliance of HBL Associates' Ltd client. HBL Associates Ltd accepts no liability for any use of this document other than by its client and only for the purposes for which it was prepared and provided. No person other than the client may copy (in whole or in part) use or rely on the contents of this document, without the prior written permission of HBL Associates Ltd. Any advice, opinions, or recommendations within this document should be read and relied upon only in the context of the document. The contents of this document do not provide legal or tax advice or opinion.

All comments and proposals presented in this report, including any conclusions, are based on information available to HBL Associates Ltd at the time of the investigation.

The conclusions drawn by HBL Associates Ltd could therefore differ if the information available at that time is found to be inaccurate or misleading.

HBL Associates Ltd accepts no liability should this be the case, nor if additional information exists or becomes available with respect to this project.

Except as requested / instructed by Client, HBL Associates Ltd is not obliged to and disclaims any obligation to update the report for events taking place after the date on which this assessment was undertaken, and the date on which the report is delivered.

HBL Associates Ltd makes no representation concerning the legal significance of its findings or legal matters referred to in the following report.

The information presented in this document and all conclusions drawn are based on statistical data and are for guidance purposes only. The report does not guarantee against flooding of the study site or elsewhere, nor of the absolute accuracy of the water levels, flow rates and associated probabilities.

TABLE OF CONTENTS

1. INTRODUCTION	3
Scope of Appraisal	3
Source of information.....	4
2. EXISTING SITE CONTEXT	5
Site Location	5
3. EXISTING GROUND CONDITIONS.....	6
Geology.....	6
4. EXISTING DRAINAGE	7
Private sewers	7
5. PROPOSED DEVELOPMENT DETAILS	8
6. CONSULTATIONS	9
Lead Authority	9
Water Authority.....	9
7. PROPOSED RUNOFF RATE AND VOLUMES	10
Proposed Runoff Rate.....	10
Proposed Runoff Volume	10
8. SURFACE WATER DRAINAGE STRATEGY	11
9. DESIGN FOR EXCEEDANCE.....	12
10. SUMMARY AND CONCLUSIONS.....	13
APPENDIX A – EXISTING SITE PLANS	14
APPENDIX B – PROPOSED SITE PLANS.....	15
APPENDIX C – SITE INVESTIGATION DETAILS	16
APPENDIX D – CONSULTATIONS	17
APPENDIX E – PROPOSED DRAINAGE LAYOUT	18
APPENDIX F – HYDRAULIC CALCULATIONS	19

1. INTRODUCTION

Scope of Appraisal

- 1.1 HBL Associates Ltd has been instructed by Fothergill Coated Fabrics Ltd. to prepare a Drainage Design Statement Report to accompany a detailed drainage design to discharge planning conditions for an extension to their existing premises
- 1.2 The project is for Fothergill Coated Fabrics Ltd.

Table 1.1 Existing Site Details.

Project Name	Fothergill Extension
Project Description	Extension to an existing industrial unit with an extension to an existing service yard, plus a new retaining wall
Location	Fothergill Coated Fabrics, Unit 12 Riverside Drive, Rochdale, OL16 2SH
NGR (Approximate)	SD 91284 14885
Application Site Area (ha)	1.07Ha - total site area
Red Boundary Line	2000m ² - proposed extension works
Development Type	Industrial
Type of Planning Application	Discharge of Conditions
Local Planning Authority	Rochdale Borough Council
Lead Local Authority	Rochdale Borough Council
Sewerage Undertaker	United Utilities

- 1.3 The purpose of this report is to expand on a drainage strategy produced by P G Consulting report ref: PGC1146, submitted for planning and develop it into a working design to discharge planning conditions.
- 1.4 The report aims to ensure that the development will not increase flood risk elsewhere and that all surface water is managed in accordance with SuDS principles, in line with the National Planning Policy Framework (NPPF) and recognised best practice guidance
- 1.5 This report sets out the design criteria and assumptions used in the drainage assessment and presents the proposed strategy for the management of surface water runoff generated by the development.
- 1.6 The findings, recommendations, and conclusions presented in this report are based on information obtained during the course of the assessment. While HBL has made every effort to obtain and evaluate all relevant data, the report is based on third-party information and site-specific investigations, and as such, HBL cannot guarantee the completeness or accuracy of all information relied upon.
- 1.7 This report has been prepared in accordance with the guidance contained in the Department for Communities and Local Government's National Planning Policy Framework (NPPF) and accompanying Planning Practice Guidance (PPG), which provides a framework for managing development in relation to flood risk and drainage. It also aligns with guidance issued by the Environment Agency (EA) and other regulatory stakeholders.
- 1.8 This document is to be read in conjunction with all associated drawings, supported reports and documentation.

Source of information

1.9 This report is informed by the following data:

- Topographical survey information
 - Topographical Survey – Robertson Elliot - OVERVIEW
 - Existing site plan - Just H Architects – X141-EX-AS1.01
- Planning drawings:
 - Proposed Site Plan - Just H Architects – X141-PR-AK1.01
- Ground Investigation and infiltration testing
 - Report ref: L K Consult
- Flood Risk Assessment & Outline Drainage Strategy Report
 - Report ref: P G Consulting – PGC1146
- Drainage Maintenance Report
 - Report ref: 11122-HBL-XX-XX-RP-C-5102 Rev.P01

2. EXISTING SITE CONTEXT

Site Location

- 2.1 The application site is located at **Fothergill Coated Fabrics, Unit 12 Riverside Drive, Rochdale, OL16 2SH**



Figure 2.1 Site Location Plan – Google Earth

3. EXISTING GROUND CONDITIONS

Geology

- 3.1 The British Geological Survey (BGS) online mapping (1:50,000 scale) shows that the site is underlain by:
- Superficial Deposits – Till, Devensian (silt and clay)
 - Bedrock Deposits – Pennine Lower Coal Measures Formation
- 3.2 On site surveying found that the superficial clay deposits were between 3.7m and 4.3m below existing ground level, with a band of dense clayey gravel. Soakaway testing to BRE365 was undertaken within the superficial deposits' stratum, and they were found to be impermeable and unsuitable for infiltration. A copy of these results can be found in **Appendix C**.
- 3.3 No groundwater was encountered during any of the survey locations.

4. EXISTING DRAINAGE

Private sewers

- 4.1 The existing building is served by private surface water network, which discharges to a United Utilities surface water sewer located within the public highway, Riverside Drive, outside the site entrance.
- 4.2 The existing building is served by a private foul sewer network; however the drainage survey did not indicate where this foul connection discharged.
- 4.3 A copy of the existing drainage plans can be found in **Appendix A**.

5. PROPOSED DEVELOPMENT DETAILS

- 5.1 The proposed development layout is illustrated in proposed site plans in **Appendix B**, with an excerpt provided in Figure 5.1 below for reference.

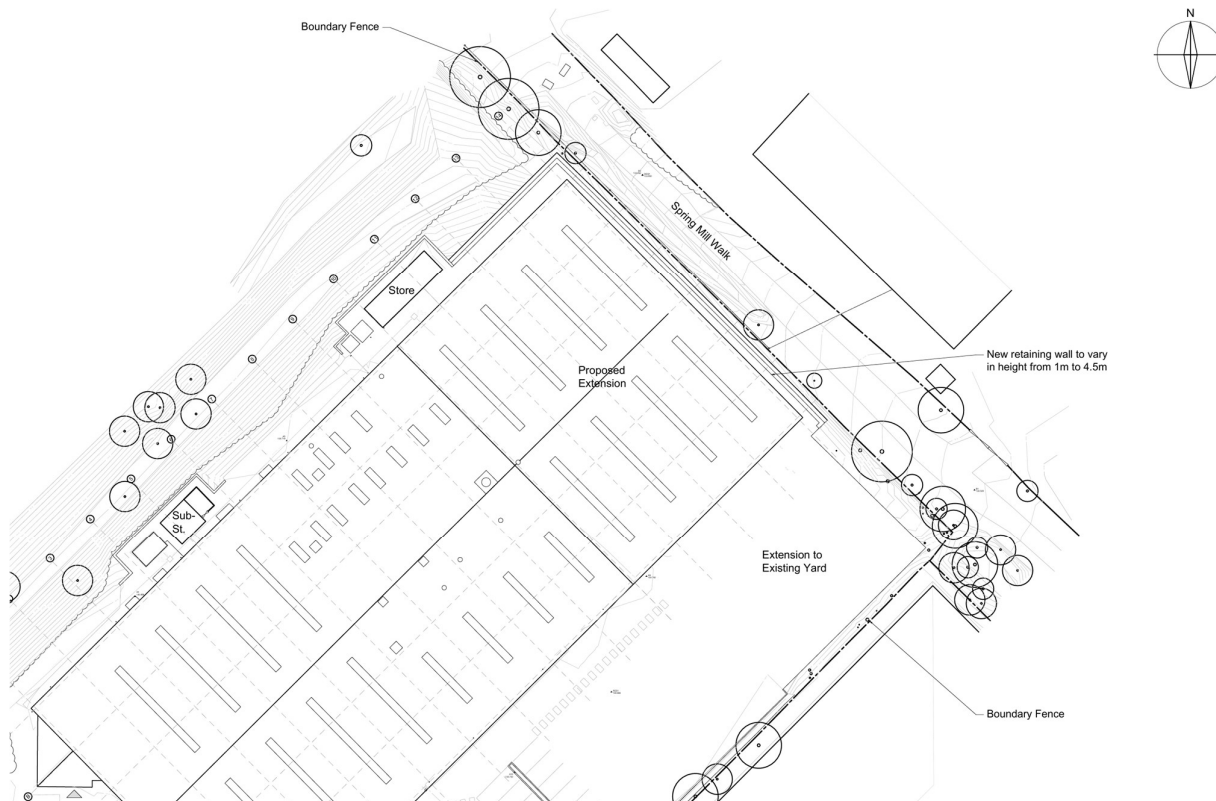


Figure 5.1 Proposed Site Plan NTS (Source: Just H Architecture Drawing X141-PR-AK1.01)

- 5.2 The proposed development will result in an increase in impermeable surface area compared to the current site condition, as shown in Table 5.1

Table 5.1 Comparison of existing and proposed site areas.

Area	m ²
Application Site Area Total	10,790
Total Existing impermeable areas	5527
Percentage of Impermeable (PIMP) within application site pre-development	51.2%
Total proposed additional impermeable areas.	2057
Percentage of Impermeable (PIMP) within application site post-development	70.3%
Increase in impermeable areas post development	19.1%

- 5.3 A layout showing drained areas can be found in **Appendix B**.

6. CONSULTATIONS

Lead Authority

- 6.1 The Lead Authority for the site is Rochdale Borough Council.
- 6.2 Rochdale Borough has granted planning permission, reference 25/00713/FUL, but has set the following conditions that are required to be discharged.
- 6.3 The conditions referring to drainage are quoted below:

Condition 11 - *Prior to occupation of the development a sustainable drainage management and maintenance plan for the lifetime of the development shall be submitted to the local planning authority and agreed in writing. The sustainable drainage management and maintenance plan shall include as a minimum:*

- (i) Arrangements for adoption by an appropriate public body or statutory undertaker, or management and maintenance by a resident's management company; and*
- (ii) Arrangements for inspection and ongoing maintenance of all elements of the sustainable drainage system to secure the operation of the surface water drainage scheme throughout its lifetime.*

The development shall subsequently be completed, maintained and managed in accordance with the approved plan.

Reason: To ensure that management arrangements are in place for the sustainable drainage system in order to manage the risk of flooding and pollution during the lifetime of the development in accordance with Policy G8 of the adopted Rochdale Core Strategy, saved Policy EM/7 of the adopted Rochdale Unitary Development Plan and the National Planning Policy Framework.

Reason for pre-commencement condition: Drainage infrastructure will need to be implemented prior to commencement of above ground works and a scheme therefore needs to be agreed in advance of the same.

Condition 12 – *No development shall take place until a detailed Drainage Strategy in accordance with the SuDs hierarchy including assessment / incorporation of sustainable SuDS source control components during subsequent design phases of the development shall be submitted to, and approved in writing by, the Local Planning Authority.*

Reason: To promote sustainable development, secure proper drainage and to manage the risk of flooding and pollution. To prevent an increased risk of flooding as a result of the development and to ensure satisfactory disposal of surface water from the site in accordance with Policy G8 of the adopted Rochdale Core Strategy, saved Policy EM/7 of the adopted Rochdale Unitary Development Plan and the National Planning Policy Framework.

Reason for pre-commencement condition: As further source control measures are required.

Water Authority

- 6.4 The Water Authority has not been consulted.

7. PROPOSED RUNOFF RATE AND VOLUMES

Proposed Runoff Rate

- 7.1 The drainage strategy submitted by P G Consulting report ref: PGC1146, and accepted for planning, proposed that flows from the proposed extension should be restricted to a maximum of 5.0L/s, while keeping the existing surface water network unchanged.
- 7.2 Discharge to the existing network was proposed due to the strategy report assuming ground conditions not being suitable for infiltration. These assumptions were confirmed by on site infiltration testing.
- 7.3 The proposal seeks to carry forward the approved by P G Consulting report ref: PGC1146, and to only restrict flows from the proposed extension. Connection to the existing private surface water network will be made at the final chamber before discharging from site, to avoid impacting on the existing network.

Proposed Runoff Volume

- 7.4 'Where reasonably practicable, for developments which have been previously developed, the runoff volume from the development to any highway drain, sewer or surface water body in the 1 in 100-year, 6-hour rainfall event must be constrained to a value as close as is reasonably practicable to the greenfield runoff volume for the same event but should never exceed the runoff volume from the development site prior to redevelopment for that event.' (S5 NSTSSD 2015)
- 7.5 The drainage strategy report produced by P G Consulting report ref: PGC1146, calculated the greenfield runoff rate for the 1 in 100 year rainfall event to be 6.1L/s
- 7.6 Where it is not reasonably practicable to limit the volume of runoff to match the predevelopment (brownfield) runoff volume, the Non-Statutory Technical Standards for Sustainable Drainage Systems (NSTSuDS,) states that the runoff must be discharged at a rate that does not increase flood risk.
- 7.7 The proposed discharge rate by P G Consulting report ref: PGC1146 of 5.0l/s for all rainfall events up to and including the critical 1 in 100-year event plus 45% climate change allowance is considered to be in accordance with this standard, as it will not adversely affect flood risk downstream.

8. SURFACE WATER DRAINAGE STRATEGY

- 8.1 The proposed drainage layout will accept all rainwater from the new extension, plus additional hard standing area via a new surface water network. This new network will connect with the existing network serving the site at a chamber near the site entrance.
- 8.2 Flows will be restricted by using a 'Hydrobrake' flow control system, with attenuated water being stored within oversized pipes plus an attenuation crate located within the new hard standing area.
- 8.3 Surface water flows from the new hard standing area will discharge to a rain garden area, and then pass through a full retention interceptor, which will provide treatment to outgoing flows.
- 8.4 The new extension will also incorporate a new toilet block, plus drainage channels serving new equipment within the extension. These foul water flows will be directed towards a pumping station, which will pump foul water to an existing chamber within the onsite foul network.
- 8.5 Proposed Drainage Layout Plan is included within the **Appendix E** with associated hydraulic calculation in **Appendix F**.

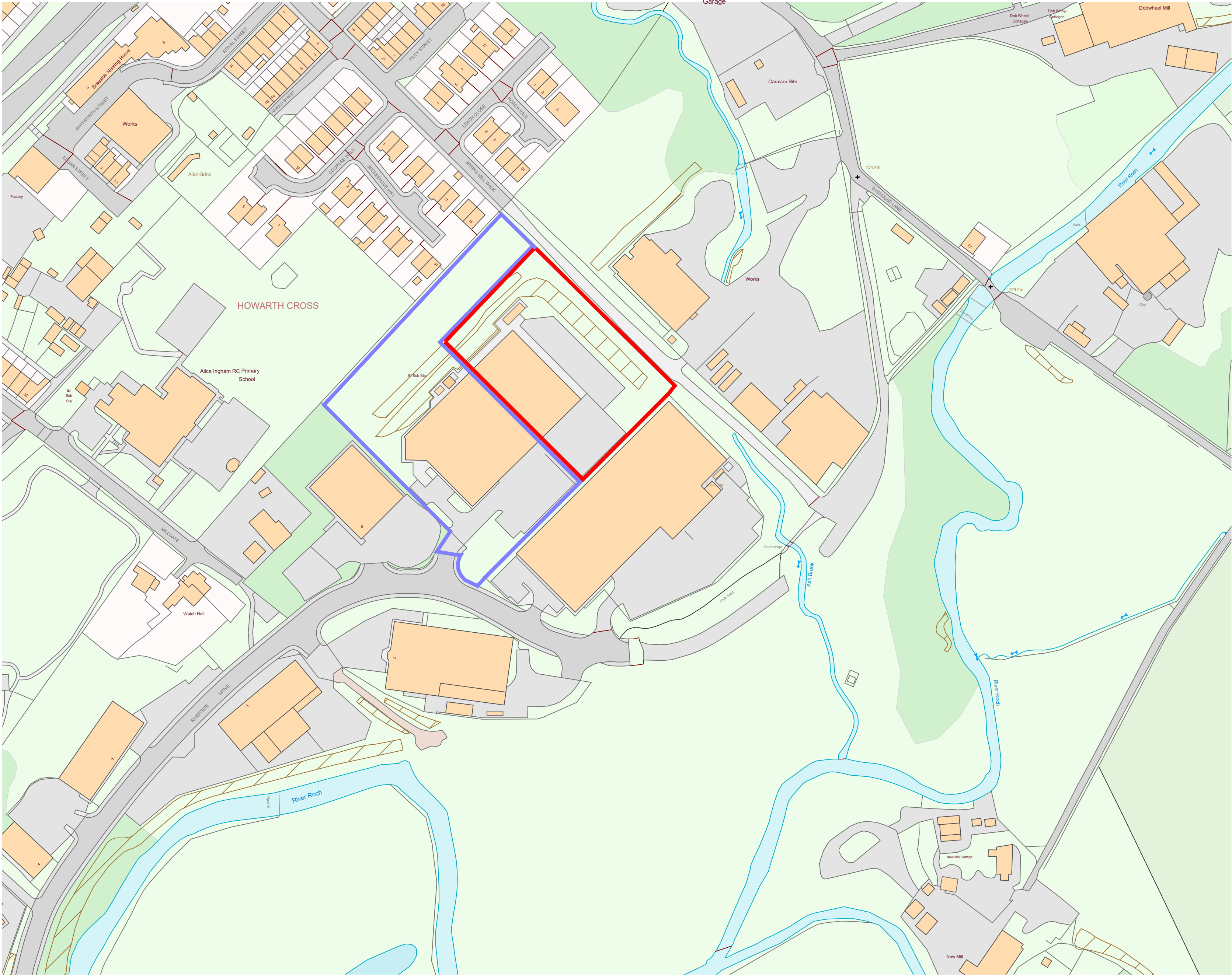
9. DESIGN FOR EXCEEDANCE

- 9.1 The drainage system will be designed so that, unless an area is designed to hold/or convey water as part of the design, flooding does not occur on any part of the site for 1:100-year +45 climate change uplift rainfall event, which is an improvement on the proposed in the initial drainage strategy by P G Consulting report ref: PGC1146.
- 9.2 A copy of the drainage design calculation can be found in **Appendix F**.
- 9.3 Events up to 1 in 100 years plus 45% climate change uplift will cause flooding within the proposed network at node PrSW03. This will follow the proposed topography of the new hard standing area and discharge onto the new hard standing area, and flow into a rain garden featured within the landscape boarder.
- 9.4 Exceedance from the existing surface water network will continue to occur unchanged from their existing volumes, with exceedance flows flowing to the southwest corner of the existing parking area and site entrance, or towards existing landscape boundary areas. These existing flows will not be impacted on by the proposed network.

10. SUMMARY AND CONCLUSIONS

- 10.1 All drainage infrastructure will be designed and constructed in accordance with Building Regulations, relevant British Standards, and industry best practices
- 10.2 The proposed drainage strategy is subject to statutory approvals and agreement with the relevant Regulatory Authorities and the Local Lead Flood Authority.
- 10.3 The drainage network, including all SuDS features, will be designed with consideration for long-term maintenance and operational performance.
- 10.4 Silt trap units or silt filters will be specified for surface water inspection chambers throughout the system to minimize silt accumulation in the proposed drainage network. Channel drains and road gullies will also be specified with silt sump units.
- 10.5 The use of a 'Hydrobrake' flow control system will ensure that discharge rates will be maintained at a maximum of 5.0L/s.
- 10.6 The surface water network serving the extension will be designed to accommodate surface water below ground for events up to 1 in 100 years +45% climate change uplift.
- 10.7 Exceedance events from the existing surface water network will remain unchanged.
- 10.8 The use of a full retention separator will provide treatment of surface water flows from the hard standing area
- 10.9 During construction and for an agreed period post-completion, the developer will be responsible for maintaining the drainage infrastructure. Ongoing maintenance responsibilities will then transfer to the site owner or operator, ensuring system performance over the development's lifetime.
- 10.10 The foul pumping station will be specified but designed and supplied by others.
- 10.11 The Maintenance Schedule, document ref: 11122-HBL-XX-XX-RP-C-5102 will be updated with as built drainage plans, post construction CCTV surveys, and supporting information from manufacturers of drainage components/proprietary systems and incorporated within the Operation and Maintenance (O&M) manual for the site.
- 10.12 Based on the assessment findings, HBL Associates Ltd recommends that the Local Planning Authority accept this Drainage Design Statement Report in support of the full planning application, ref: 25/00713/FUL, for the proposed development.

APPENDIX A – EXISTING SITE PLANS



NB	Do not scale off this drawing. All dimensions to be checked on site prior to manufacture and construction. This drawing is the property of JH. Architects and should not be reproduced without permission. All discrepancies to be brought to the attention of the architect immediately. This drawing to be read in conjunction with the specification / bill of quantities and related drawings.		
REVISION			
-	FIRST ISSUE	18.03.25	SZ
A	GENERAL UPDATES	27.03.25	DG

KEY:

- OWNERSHIP OUTSIDE OF APPLICATION BOUNDARY
- APPLICATION BOUNDARY

LOCATION PLAN
SCALE 1:1250

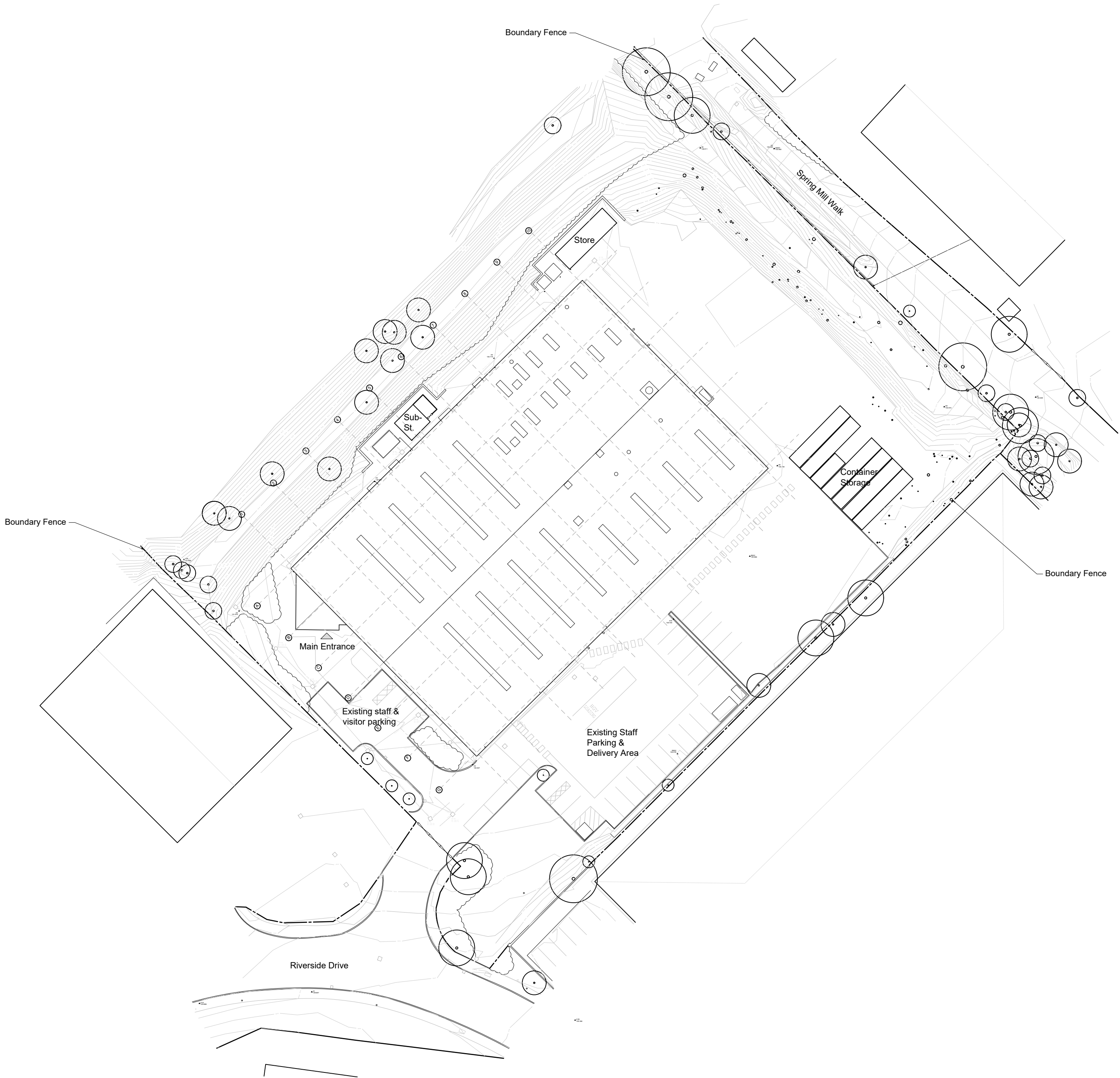
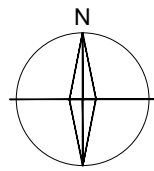


CLIENT	FOTHERGILL COATED FABRICS
PROJECT	SMALLBRIDGE BUSINESS PARK RIVERSIDE DRIVE, ROCHDALE OL16 2SH
TITLE	LOCATION PLAN
JOB NO.	X141
DWG NO.	X141-AP1.01 REV. A
SCALE	1:1250 @ A2
DRAWN	SZ

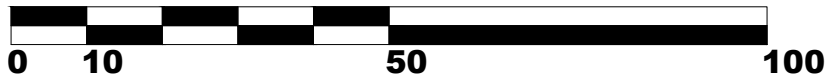
46 MANCHESTER ROAD
CHORLTON
MANCHESTER
M21 9PH
info@justharchitects.co.uk
T +44(0)161 237 5500



REVISION	NB	Do not scale off this drawing. All dimensions to be checked on site prior to manufacture and construction. This drawing is the property of JH. Architects and should not be reproduced without permission. All discrepancies to be brought to the attention of the architect immediately. This drawing to be read in conjunction with the specification / bill of quantities and related drawings.		
	-	FIRST ISSUE	18.03.25	SZ
	A	GENERAL UPDATE	27.03.25	DG
	B	GENERAL AMENDMENTS	07.04.25	DG



EXISTING SITE PLAN
SCALE 1:500



CLIENT	FOTHERGILL COATED FABRICS		
PROJECT	SMALLBRIDGE BUSINESS PARK RIVERSIDE DRIVE, ROCHDALE OL16 2SH		
TITLE	EXISTING SITE PLAN WITH ROOF PLAN		
JOB NO.	X141		
DWG NO.	X141-EX-AS1.01 - Rev.B		
SCALE	1:500 @ A2		
DRAWN	SZ		

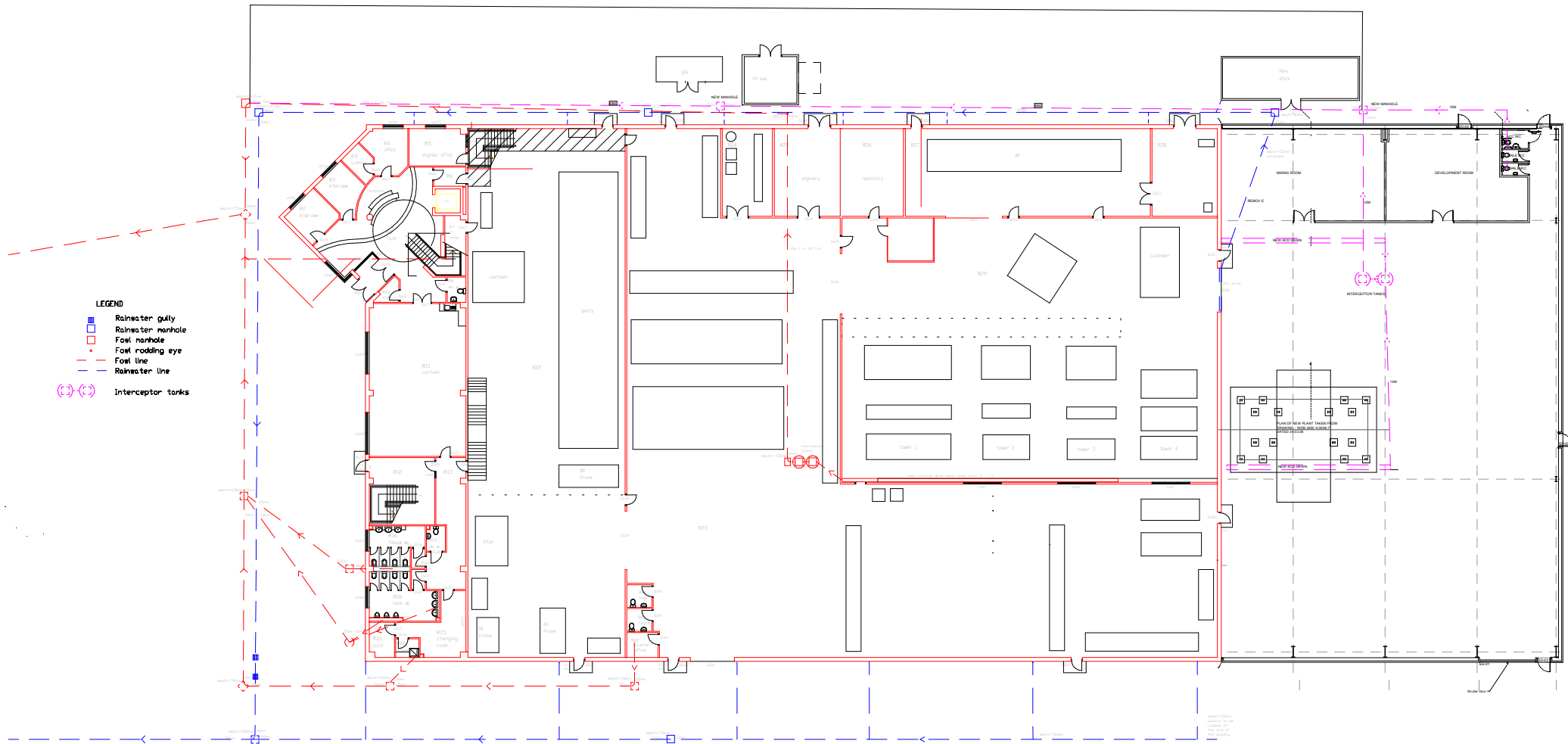
46 MANCHESTER ROAD
CHORLTON
MANCHESTER
M21 9PH

info@justharchitects.co.uk
T +44(0)161 237 5500

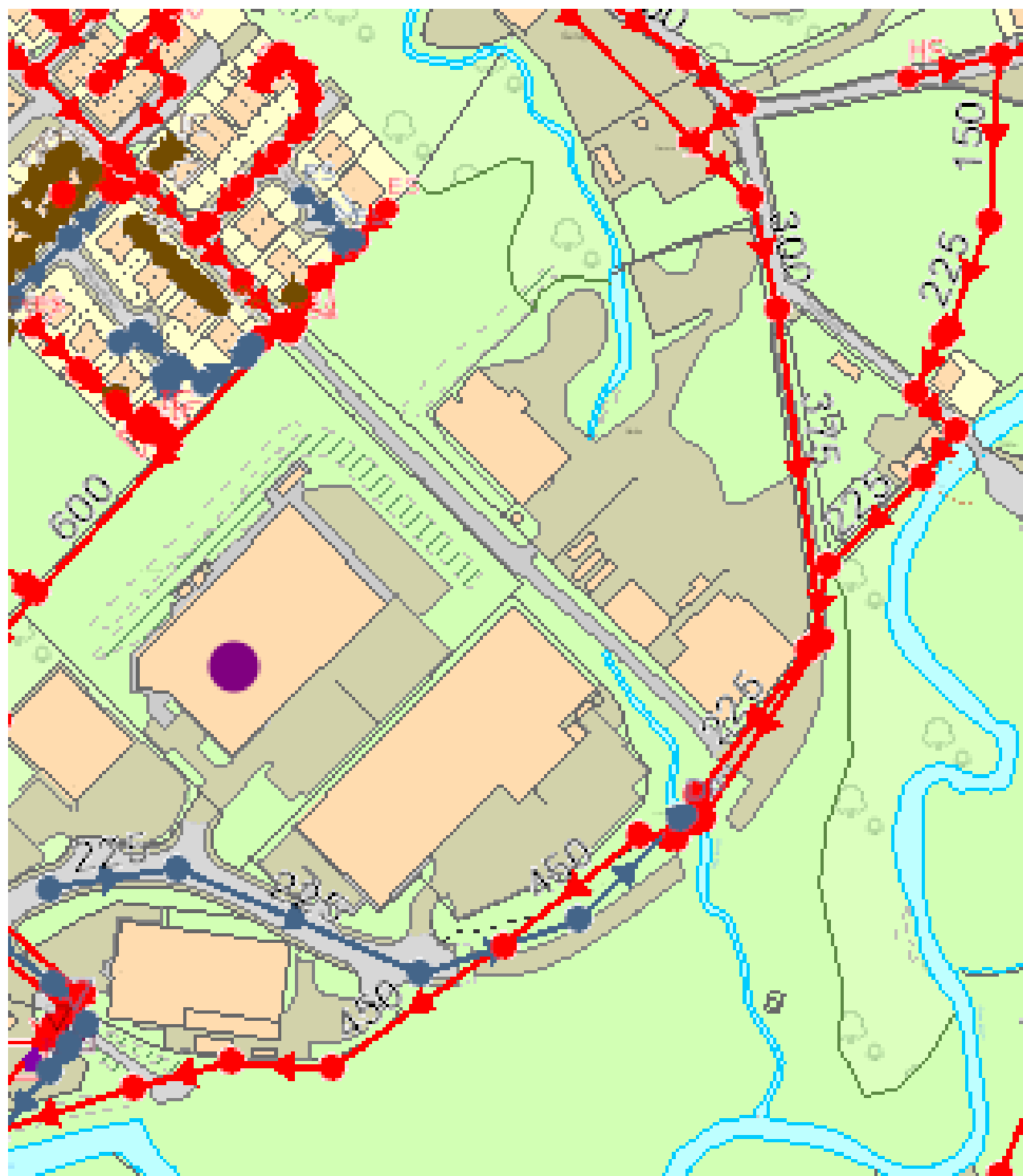
JH.A

RIBA
Chartered Practice

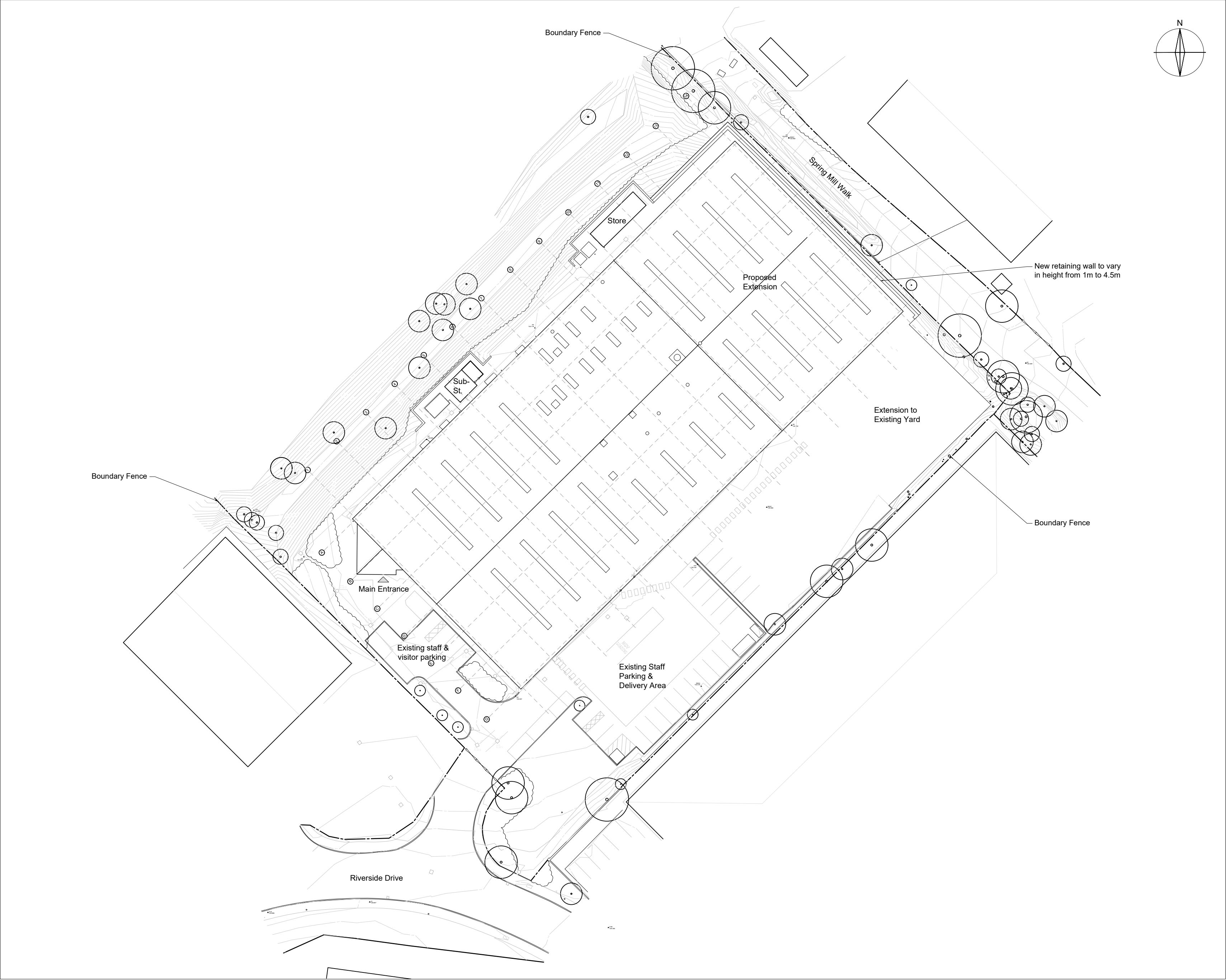
arb Architects
Registration
Board



	Name	Date	Fothergill Coated Fabrics LTD Unit 12 Riverside Drive Rochdale OL16 6SH
Drawn	GR	7/4/26	
Checked	GR	7/4/26	
Approved			
Scale	A0	FCF Drain Plan	REV 01



APPENDIX B – PROPOSED SITE PLANS



PROPOSED SITE PLAN
SCALE 1:500

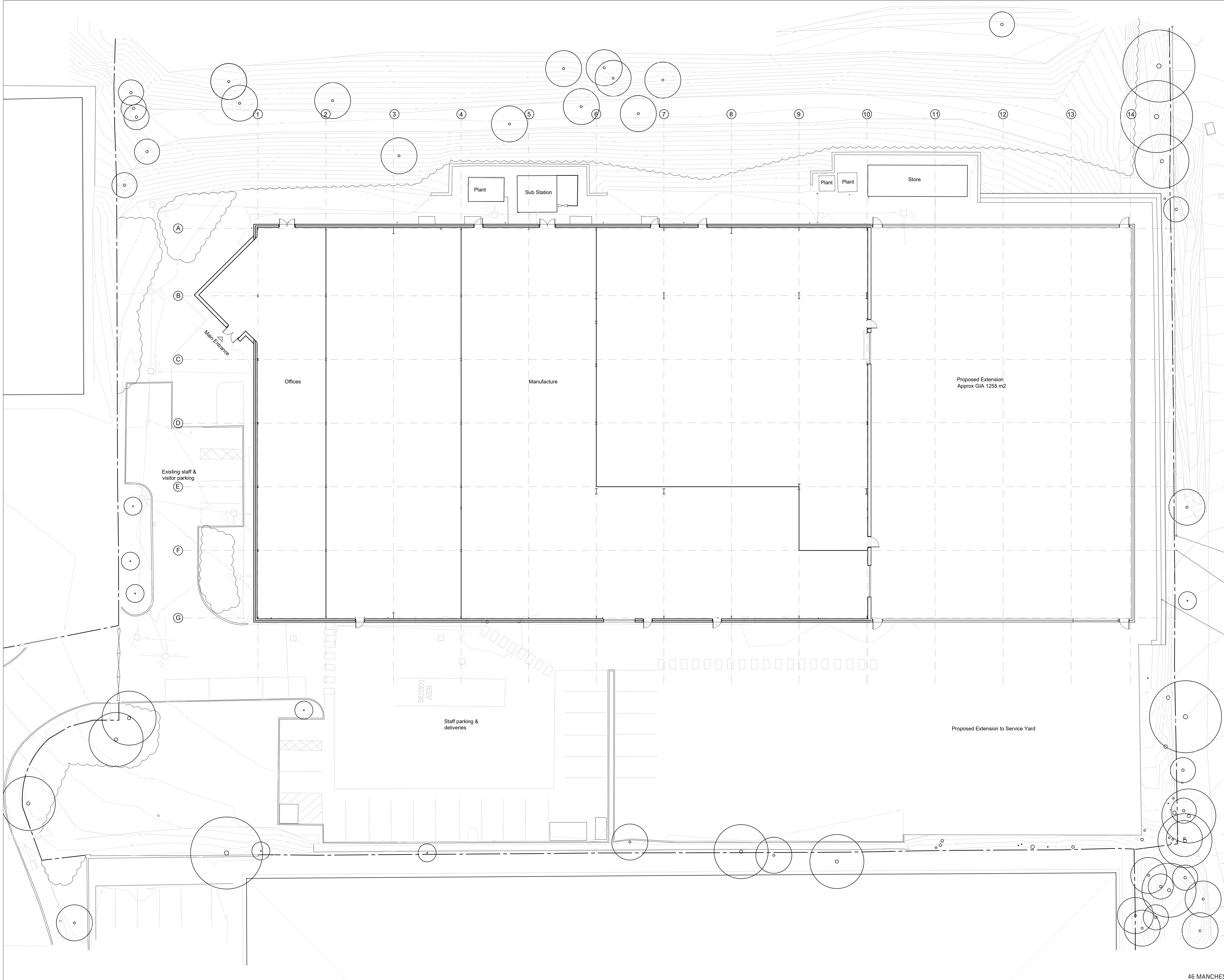
REVISION	Do not scale off this drawing. All dimensions to be checked on site prior to manufacture and construction. This drawing is the property of JH. Architects and should not be reproduced without permission. All discrepancies to be brought to the attention of the architect immediately. This drawing to be read in conjunction with the specification / bill of quantities and related drawings.		
-	FIRST ISSUE	18.03.25	SZ
A	GENERAL UPDATE	27.03.25	DG
B	GENERAL UPDATE	08.04.25	DG

CLIENT	FOTHERGILL COATED FABRICS		
PROJECT	SMALLBRIDGE BUSINESS PARK RIVERSIDE DRIVE, ROCHDALE OL16 2SH		
TITLE	PROPOSED SITE PLAN WITH ROOF PLAN		
JOB NO.	X141		
DWG NO.	X141-PR-AK1.01 Rev. B		
SCALE	1:500 @ A2		
DRAWN	SZ		

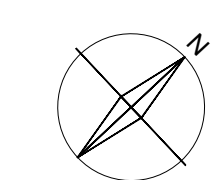
46 MANCHESTER ROAD
CHORLTON
MANCHESTER
M21 9PH

info@justharchitects.co.uk
T +44(0)161 237 5500

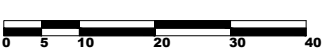




NB	Do not scale off this drawing. All dimensions to be checked on site prior to manufacture and construction. This drawing is the property of JH. Architects and should not be reproduced without permission. All discrepancies to be brought to the attention of the architect immediately. This drawing to be read in conjunction with the specification / bill of quantities and related drawings.			
REVISION	-	FIRST ISSUE	19.03.25	SZ
A		GENERAL UPDATES	08.04.25	DG



PROPOSED GROUND FLOOR PLAN
SCALE 1:200



46 MANCHESTER ROAD
CHORLTON
MANCHESTER
M21 9PH

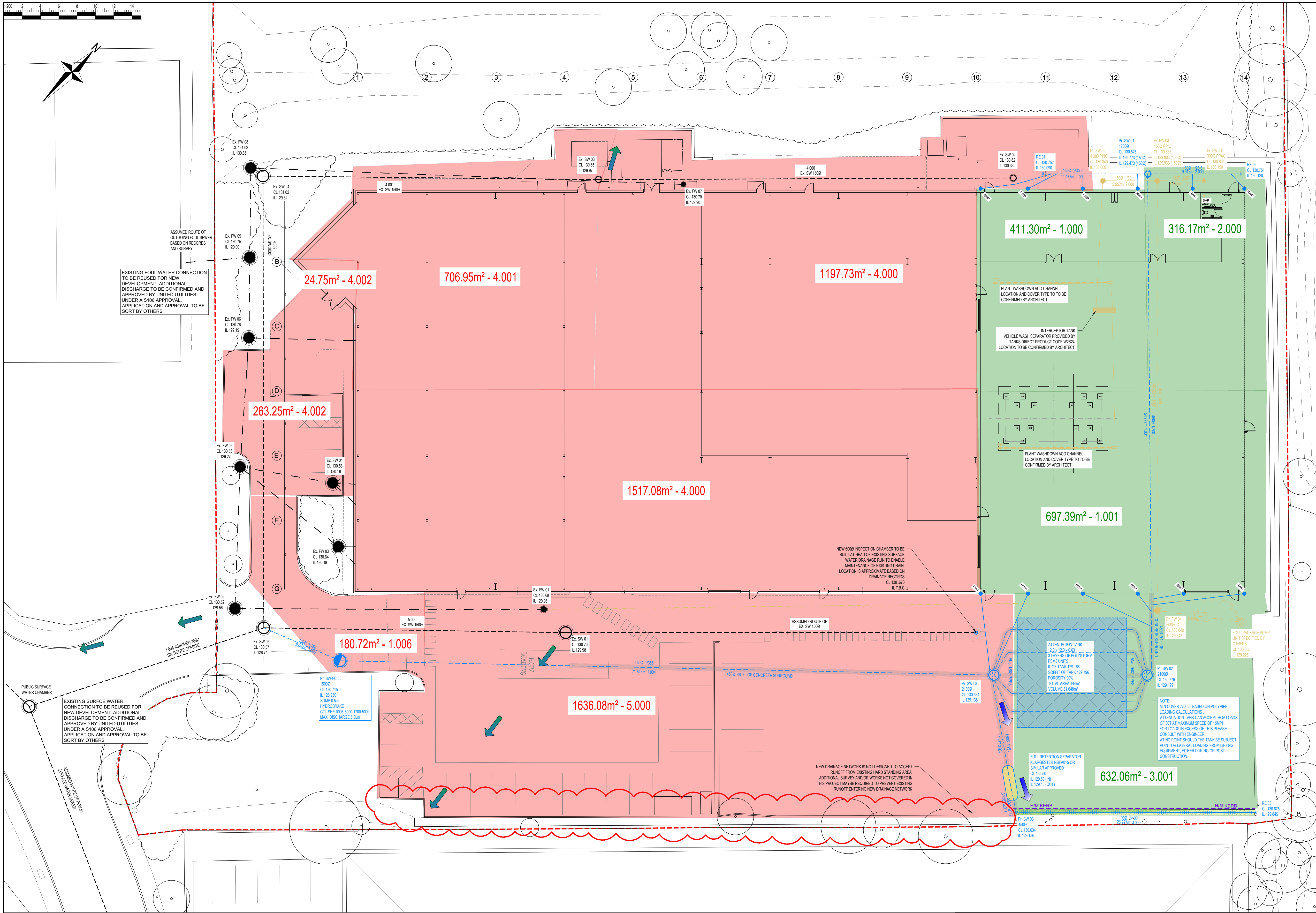
info@justharchitects.co.uk
T +44(0)161 237 5500

CLIENT	FOTHERGILL COATED FABRICS		
PROJECT	SMALLBRIDGE BUSINESS PARK RIVERSIDE DRIVE, ROCHDALE OL16 2SH		
TITLE	PROPOSED GROUND FLOOR PLAN		
JOB NO.	X141		
DWG NO.	X141-PR-AL1.01 - Rev.A		
SCALE	1:200 @ A1		
DRAWN	SZ		

JH.A

RIBA
Chartered Practice

arb
Architects
Registration
Board



THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER HBL DRAWINGS ISSUED FOR THIS PROJECT

PRIVATE DRAINAGE NOTES

- ALL DIMENSIONS ARE IN MILLIMETRES AND LEVELS IN METERS UNLESS OTHERWISE SPECIFIED
- THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER RELATED DRAWINGS AND SPECIFICATIONS
- THE DRAINAGE CONTRACTOR IS RESPONSIBLE TO MAKING AN APPLICATION TO ANY SEWERAGE UNDERTAKER PRIOR TO CONSTRUCTION OF ANY CONNECTION INTO A PUBLIC MAINLINE
- THE ENGINEER IS TO BE NOTIFIED OF ANY DISCREPANCIES TO THE DETAILS SHOWN ON THE DRAWING AND ANY UNRECORDED CONNECTIONS NOT SHOWN ON THE DRAWINGS
- THE CONTRACTOR IS RESPONSIBLE FOR CHECKING DIMENSIONS AND LEVELS AND FOR CONFIRMING THE GIVEN LEVEL OF OUTFALL INTO PUBLIC SEWER, WATERCOURSE OR OTHER OUTFALL PRIOR TO CONSTRUCTION WORKS COMMENCING
- UNTIL TECHNICAL APPROVAL HAS BEEN OBTAINED FROM THE RELEVANT AUTHORITIES ALL DRAWINGS ISSUED ARE AS PRELIMINARY AND NOT FOR CONSTRUCTION. SHOULD THE CONTRACTOR COMMENCE SITE WORK PRIOR TO APPROVAL BEING GIVEN, IT IS ENTIRELY AT THEIR OWN RISK
- TO PROTECT THE DRAINAGE SYSTEM FROM CONSTRUCTION SITE DEBRIS, THE CONTRACTOR SHALL ENSURE THAT STOPPERS ARE SECURELY PLACED IN ALL CONNECTIONS IMMEDIATELY UPSTREAM OF THE TANK. ONLY TO BE REMOVED ONCE THE FINAL CLEANING OF THE ROADS DRAINAGE HAS BEEN COMPLETED
- THE DESIGN IS BASED ON THE INFORMATION AVAILABLE ON THE DATE OF ISSUE FROM OTHER PARTIES (E.G. ARCHITECT AND M&E ENGINEER). IT IS SUBJECT TO CHANGE RESULTING FROM UPDATES TO THE AVAILABLE INFORMATION FROM OTHERS
- NEW DRAINS AND SEWERS TO BE AS FOLLOWS
- CONSTRUCTION AND MATERIALS OF PRIVATE SURFACE, FOUL & COMBINED WATER SEWERAGE SYSTEM TO BE IN ACCORDANCE WITH 'BUILDING REGULATIONS - APPROVED DOCUMENT H' & 'S' EN 752:2017 DRAIN AND SEWER SYSTEMS OUTSIDE BUILDINGS
- CONSTRUCTION AND MATERIALS OF PUBLIC SURFACE, FOUL & COMBINED WATER SEWERS TO BE IN ACCORDANCE WITH 'DESIGN & CONSTRUCTION GUIDANCE, SEWERAGE SECTOR GUIDANCE APPENDIX C' AND IN ACCORDANCE WITH LOCAL SEWERAGE UNDERTAKER
- MINIMUM PIPE SIZE FOR ADAPTABLE SURFACE WATER DRAINAGE IS 150mm DN
- 100mm DN AT MIN 1:100 FOR 10 DWELLINGS OR LESS
- 150mm DN AT MIN 1:100 FOR GREATER THAN 10 DWELLINGS
- MINIMUM PIPE SIZE FOR ADAPTABLE FOUL WATER DRAINAGE IS 100mm DN
- 100mm DN AT 40 WHERE 10 DWELLINGS OR LESS AND NO WC
- 100mm DN 1:80 WHERE GREATER THAN 10 DWELLINGS AND AT LEAST 1 WC
- ALL ROAD GULLY PREWORK SPURS TO BE 150mm DN UNLESS OTHERWISE SPECIFIED
- LOAD CLASS SELECTION TO COMPLY WITH BS EN 124
- LOAD CLASS A15 - AREAS INACCESSIBLE TO MOTOR VEHICLES
- LOAD CLASS B125 - FOOTWAYS, PEDESTRIAN AREAS ETC
- LOAD CLASS D240 - GULLY TOPS IN KERBSIDE CHANNELS OF ROADS
- LOAD CLASS D400 - CARRIAGEWAYS OF ROADS (HEAVY DUTY)
- LOAD CLASS E600 - AREAS IMPOSING HIGH WHEEL LOADS
- LOAD CLASS F900 - AREAS IMPOSING PARTICULARLY HIGH WHEEL LOADS
- ALL FOUL DRAINAGE BENEATH BUILDINGS AND FROM SOL VENT PIPES, GULLIES AND WC CONNECTIONS BE 100mm DN AT A GRADIENT NOT LESS THAN 1:40
- ALL FOUL CONNECTIONS TO BE FULLY TRAPPED AND EACH FOU CONNECTION TO A BRANCH DRAIN TO HAVE FULL ROODING ACCESS (E.G. LOW LEVEL ROODING ACCESS)
- RAINWATER DOWN PIPES ARE TO CONNECT TO A DRAIN VIA A REST BEND
- WHERE DRAINAGE IS COMBINED A P TRAP MUST BE PROVIDED ABOVE PROPOSED FLOOR FINISH LEVEL
- MINIMUM DEPTH OF COVER TO THE CROWN OF GRAVITY PIPES WITHOUT PROTECTION SHOULD BE AS FOLLOWS (IN ACCORDANCE WITH 'DESIGN & CONSTRUCTION GUIDANCE, SEWERAGE SECTOR GUIDANCE APPENDIX C')
- 35mm - DOMESTIC GARDENS AND PATHWAYS WITHOUT ANY POSSIBILITY OF VEHICULAR ACCESS
- 60mm - DOMESTIC DRIVEWAYS, PARKING AREAS AND YARDS WITH HEIGHT RESTRICTIONS TO PREVENT ENTRY BY VEHICLES WITH A GROSS WEIGHT IN EXCESS OF 7.5 TONNES
- 90mm - DOMESTIC DRIVEWAYS, PARKING AREAS AND NARROW STREETS WITH LIMITED ACCESS FOR VEHICLES WITH A GROSS WEIGHT IN EXCESS OF 7.5 TONNES
- 120mm - HIGHWAYS AND PARKING AREAS WITH UNRESTRICTED ACCESS TO VEHICLE WITH A GROSS WEIGHT IN EXCESS OF 7.5 TONNES
- BACKFILL TO DRAINAGE TRENCHES UNDER CARRIAGEWAYS TO BE TYPE 1 SUB-BASE MATERIAL ELSEWHERE BACKFILL TO BE FREE DRAINING READILY AVAILABLE COMPACTABLE MATERIAL FREE FROM RUBBISH, ORGANIC MATTER, FROZEN SOIL, CLAY LUMPS AND LARGE STONES TO BE COMPACTED IN LAYERS NOT EXCEEDING 250mm THICK
- A FLEXIBLE JOINT SHALL BE PROVIDED AS CLOSE AS IS FEASIBLE TO THE OUTSIDE FACE OF ANY STRUCTURE INTO WHICH A PIPE IS BUILT, COMPATIBLE WITH THE SATISFACTORY COMPLETION AND SUBSEQUENT MOVEMENTS OF THE JOINT. LENGTH OF THE NEXT PIPE (ROCKER PIPE) IS TO BE IN ACCORDANCE WITH THE TABLE BELOW
- 150-600mm DN - 600mm LONG ROCKER PIPE
- 601-750mm DN - 1000mm LONG ROCKER PIPE
- 751mm DN AND ABOVE - 125mm LONG ROCKER PIPE
- PIPE CROSSOVERS TO HAVE MINIMUM OF 300mm CLEARANCE BETWEEN OUTSIDE TOP OF THE LOWER PIPE AND OUTSIDE BOTTOM OF THE UPPER PIPE. WHERE THIS CANNOT BE ACHIEVED A SEPARATION CONCRETE SURROUND IS TO BE FORMED WHICH WILL EXTEND NOT LESS THE 1000mm EACH SIDE OF THE CROSSING POINT. THE EXTENT OF THE CONCRETE SHOULD BE WITHIN 150mm OF A FLEXIBLE PIPE JOINT. THE CONCRETE SPECIFICATION SHOULD BE IN ACCORDANCE WITH THE STANDARD DETAILS FOR PIPE BED AND SURROUND AS ISSUED BY THE ENGINEER
- CONCRETE MIXES INDICATED ON THIS DRAWING ARE DESIGNATED MIXES CONFORMING TO BS 8800:2008. ALL CONCRETE TO BE SULPHATE RESISTANT. CONTRACTOR SHOULD ALLOWANCE FOR CARRYING OUT TESTING ON SITE TO CONFIRM SULPHATE LEVEL CLASSIFICATION
- ALL PRIVATE MANHOLES AND INSPECTION CHAMBERS TO BE CONSTRUCTED IN ACCORDANCE WITH 'BUILDING REGULATIONS - APPROVED DOCUMENT H' & 'S' EN 752:2017 DRAIN AND SEWER SYSTEMS OUTSIDE BUILDINGS
- ALL MANHOLES AND INSPECTION CHAMBERS TO BE ADOPTED TO BE CONSTRUCTED IN ACCORDANCE WITH 'IN ACCORDANCE WITH 'DESIGN & CONSTRUCTION GUIDANCE, SEWERAGE SECTOR GUIDANCE APPENDIX C' AND IN ACCORDANCE WITH LOCAL SEWERAGE UNDERTAKER
- CCTV SURVEY ALL THE DRAINAGE SHOULD BE CARRIED OUT ON COMPLETION OF THE BUILDING WORKS AND PASSED ON TO THE CLIENT
- ANY EXISTING DRAINAGE INFRASTRUCTURE TO BE RETAINED TO HAVE NEW COVERS AND FRAMES TO SUIT NEW LEVELS AND SURFACING
- WHERE DRAINAGE RUNS PASS BELOW FOUNDATIONS, PIPES TO BE ENCASED IN MIN 100mm CONCRETE SURROUND AND SURROUND WRAPPED IN 50mm COMPRESSIBLE MATERIAL (TOP & SIDES) PIPE ELEVATED THROUGH FOUNDATIONS AND FITTED WITH ROCKER PIPE FOUNDATIONS ADJACENT TO DRAIN RUN TO BE DEEPEMED LOCALLY TO INVERT OF DRAINAGE PIPE TO AVOID SURCHARGE LOADING
- WHERE DRAINAGE RUNS PASS ABOVE FOUNDATIONS, PROVIDE 65mm DEEP PRE-STRESSED CONCRETE LINTELS E.G. 'NAYLOR Ref. P100

TENDER

FOR TENDER PURPOSES ONLY

REV.	DATE	DRAWN	DESCRIPTION	CHKD	APPRO	STATUS
P01	30.04.26	ALB	FIRST ISSUE - FOR INFORMATION	MS	MS	
STATUS DESCRIPTION						S2

FOR INFORMATION

HBL

Craig House,
33 Galloway Avenue,
Manchester M20 3JG
+44(0)161 432 9877 | www.hbl.co.uk
Consulting Civil & Structural Engineers

PROJECT

FOTHERGILL EXTENSION

DRAWING TITLE

DRAINAGE CATCHMENT AREAS

CLIENT

FOTHERGILL COATED FABRICS LIMITED

HBL REF. 11122 DATE 30.04.26 AT SCALE(S) 1:200

DRAWING No. 11122-HBL-XX-XX-DR-C-5210 REVISION P01

ANY WORKS UNDERTAKEN PRIOR TO RECEIPT OF TECHNICAL APPROVAL FOR THEIR RESPECTIVE PROPOSALS IS DONE AT THE CONTRACTOR'S OWN RISK.

PRELIMINARY SCHEME - FOR COMMENT AND REVIEW ONLY
DESIGN IS BASED UPON INITIAL P.G CONSULTING DRAINAGE STRATEGY AND OTHER INFORMATION AVAILABLE AT THE TIME. DESIGN IS SUBJECT TO FULL REVIEW AS ADDITIONAL INFORMATION BECOMES AVAILABLE.
DESIGN IS SUBJECT TO FULL REVIEW UPON RECEIPT OF COMMENTS FROM
• DEVELOPMENT CONTROL
• LA PLANNING AUTHORITY
• LLFA
• SEWERAGE UNDERTAKER

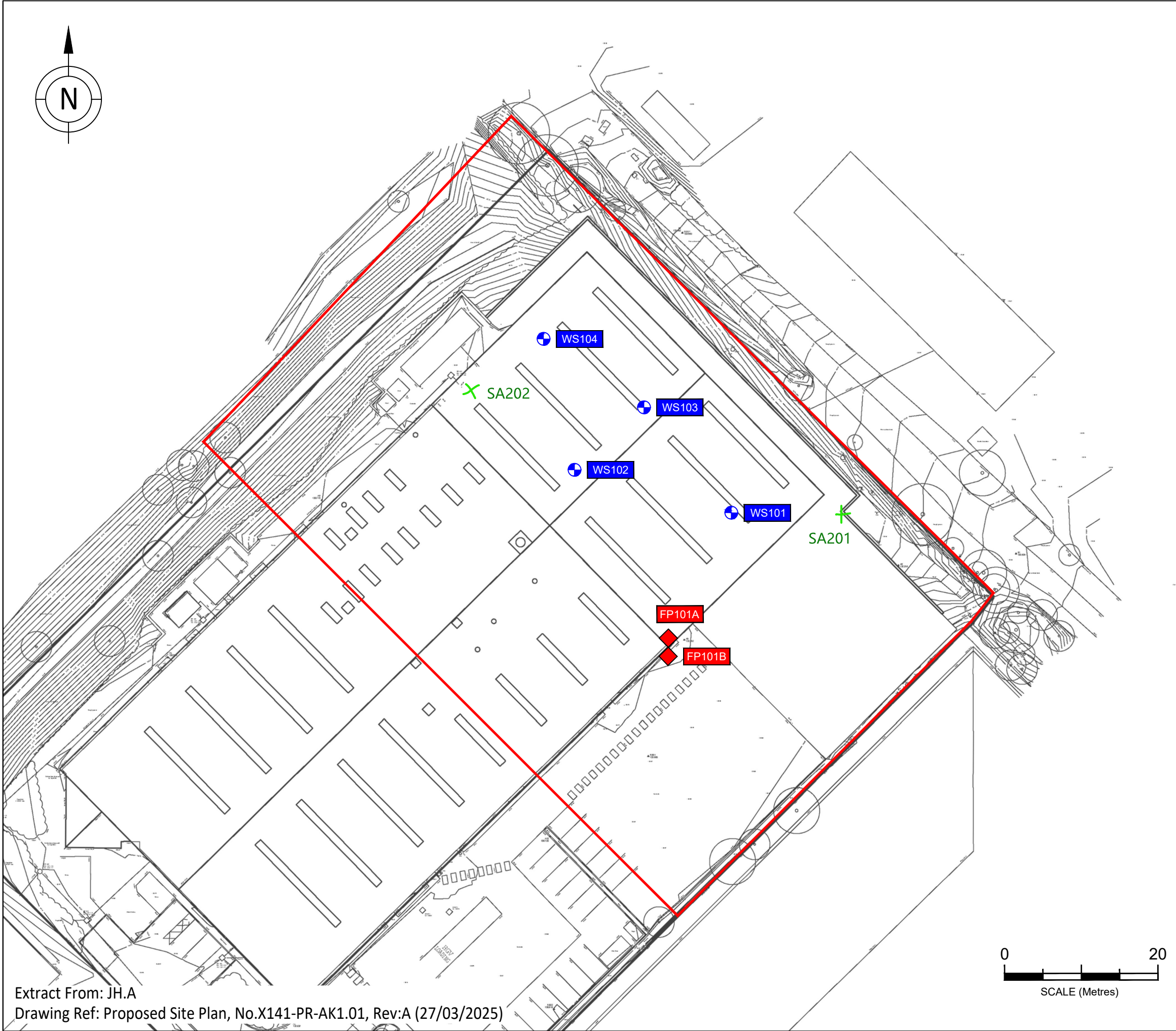
KEY:

- SITE BOUNDARY - 10,790m²
- EXISTING ROOF AREAS - 3447m²
- EXISTING HARD STANDING AREA - 2080m²
- TOTAL EXISTING AREA - 5527m²
- PROPOSED ROOF AREAS - 1425m²
- PROPOSED HARD STANDING AREA - 632m²
- TOTAL PROPOSED AREA - 2057m²

LEGEND:

- Ex FW - EXISTING FOUL WATER ACCESS CHAMBER
- Ex SW - EXISTING SURFACE WATER ACCESS CHAMBER
- Pr SW - PROPOSED SURFACE WATER
- Pr SW-FC - PROPOSED FLOW CONTROL CHAMBER
- Pr FW - PROPOSED FOUL WATER
- Pr FW-P - PROPOSED FOUL WATER PUMPING STATION
- Pr FW-RM - PROPOSED FOUL WATER RISING MAIN

APPENDIX C – SITE INVESTIGATION DETAILS



Extract From: JH.A
Drawing Ref: Proposed Site Plan, No.X141-PR-AK1.01, Rev:A (27/03/2025)

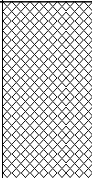
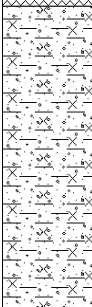
KEY

-  Site Boundary
-  Window Sample Borehole (WS)
-  Foundation Inspection Pit (FP)

Sampling Locations and features annotated by LK Consult Ltd are approximate and are based upon observed measurements unless otherwise stated. Do not scale from this drawing and work from marked dimensions only. All dimensions and features should be confirmed on site by the Contractor. Where this drawing includes information provided to LK Consult Ltd by others, LK Consult Ltd gives no warranty, representation or assurance as to the accuracy of such information.

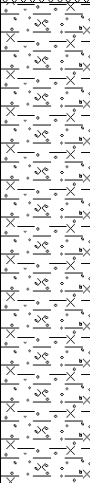


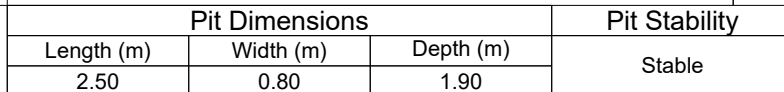
Client: Fothergill Coated Fabrics Ltd			
Site: Riverside Drive, Rochdale			
Title: Site Investigation Location Plan			
Job No.: LKC251054	Scale (See Scale Bar): 1:500 @ A3	Figure: 3	Revision:
Drawn By: AC	Checked By: AE	Drawn: Mar 2026	

Depth (m)	Samples / Tests	Depth (m)	Legend	Stratum Description	
0.60-1.60	D	0.60		MADE GROUND: Grey sandy silty GRAVEL with abundant quarried stone, occasional concrete fragments, rare brick fragments and rare fabric. Sand is fine to coarse. Gravel is fine to coarse, subangular to subrounded comprising anthropogenic material.	0.5
				Firm consistency brown slightly gravelly sandy silty CLAY. Sand is fine to coarse. Gravel is fine to coarse, subangular to subrounded comprising sandstone.	1.0 1.5
		1.60		End of Trial Pit at 1.60m	2.0 2.5 3.0 3.5 4.0 4.5

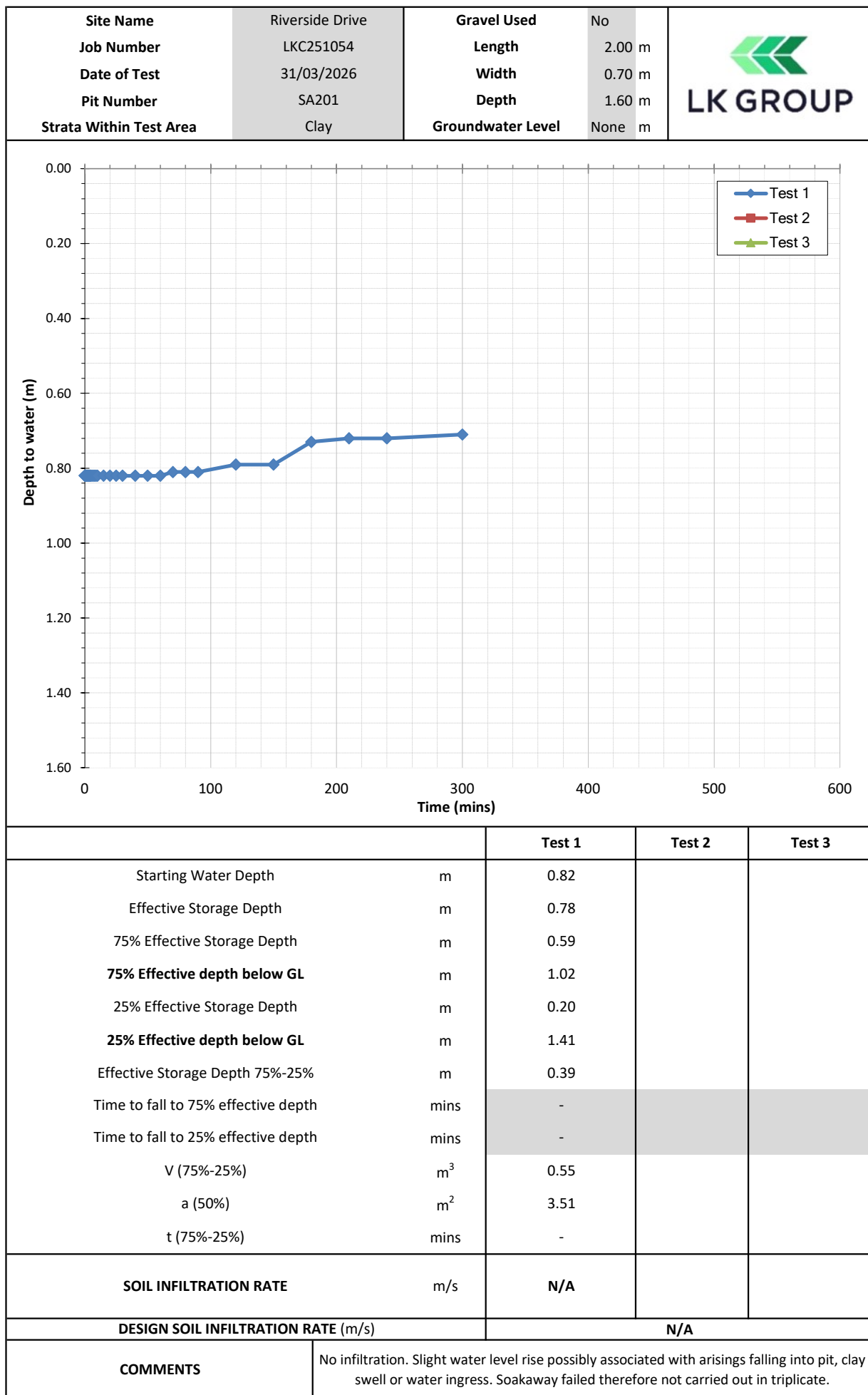


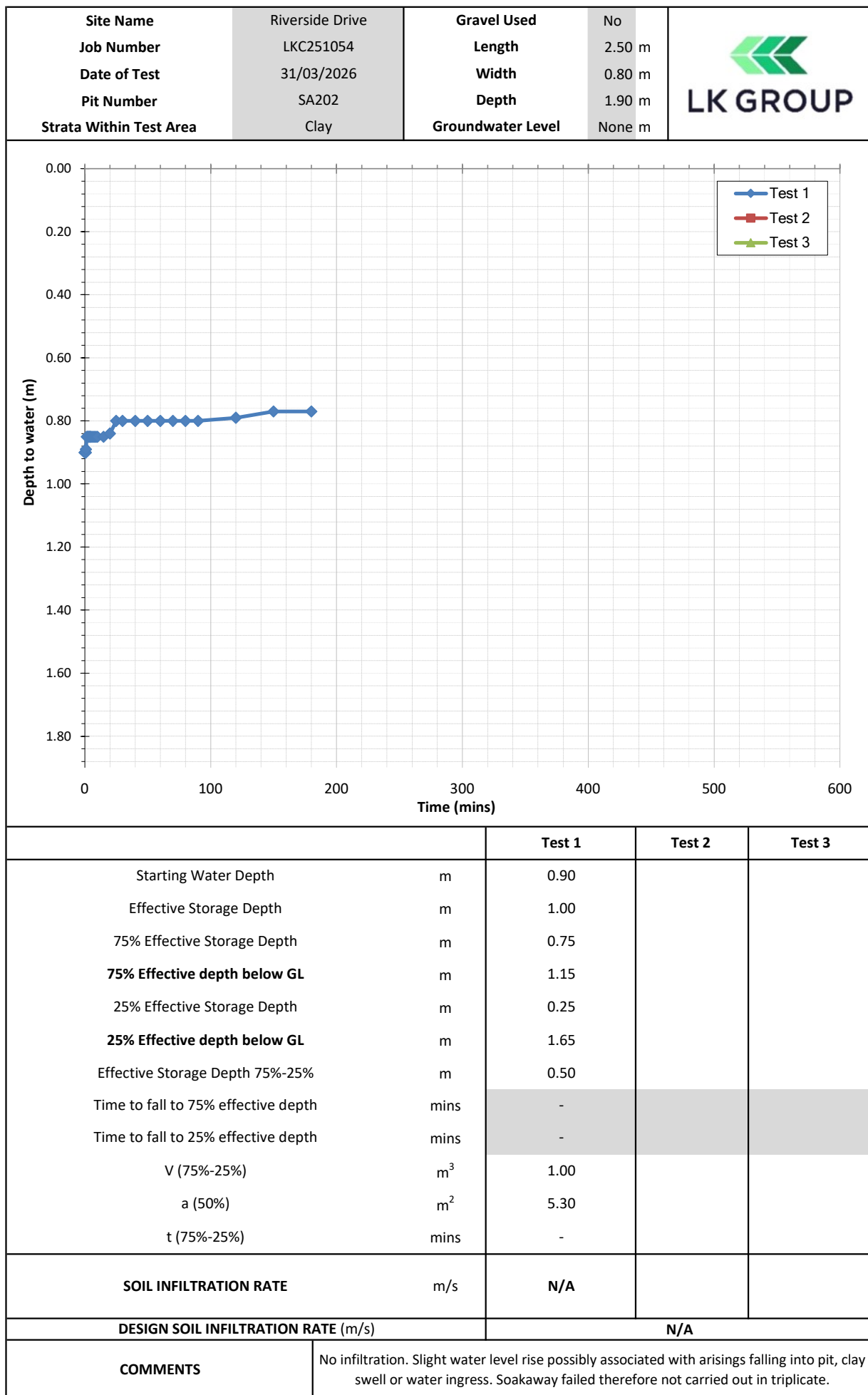
	Remarks: Soakaway undertaken between 0.80-1.60mbgl. Black membrane noted at 0.60mbgl.
--	---

Depth (m)	Samples / Tests	Depth (m)	Legend	Stratum Description	
1.00-1.90	D	0.30		MADE GROUND: Grey sandy silty GRAVEL with abundant quarried stone, occasional concrete fragments, rare brick fragments and rare fabric. Sand is fine to coarse. Gravel is fine to coarse, subangular to subrounded comprising anthropogenic material.	
				Firm consistency brown slightly gravelly silty CLAY. Gravel is fine to coarse, subangular to subrounded comprising sandstone.	0.5 1.0 1.5
		1.90		End of Trial Pit at 1.90m	2.0 2.5 3.0 3.5 4.0 4.5



Soakaway undertaken between 0.90-1.90mbgl.





APPENDIX D – CONSULTATIONS

TOWN AND COUNTRY PLANNING ACT 1990 (AS AMENDED)**Full Planning Application**

APPLICATION REFERENCE: 25/00713/FUL

Applicant Mr Andrew Ogden (Fothergill Coated Fabrics Ltd) 12 Riverside Drive Rochdale OL16 2SH	Agent Mr David George (JHA) 46 Manchester Road Chorlton Manchester M21 9PH
---	--

Part I - Particulars of Application

Proposal: Extension to existing factory and warehouse facility with associated extension to service yard

Location: Unit 12 Fothergill Coated Fabrics Ltd, Smallbridge Business Park, Riverside Drive, Rochdale, OL16 2SH

Valid On: 2 October 2025

DECISION: GRANT PLANNING PERMISSION SUBJECT TO THE FOLLOWING CONDITIONS:

Condition(s) (13)

- 1 The development must be begun not later than three years beginning with the date of this permission.

Reason: Required to be imposed by Section 91 of the Town and Country Planning Act 1990 (as amended).

- 2 This permission relates to the following plans:-

Drawing No: X141-PR-AK1.01 Rev B – Proposed Site Plan with Roof Plan

Drawing No: X141-PR-AV1.01 Rev A – Proposed Elevations Sheet 1

Drawing No: X141-PR-AV1.02 Rev A – Proposed Elevations Sheet 2

Drawing No: X141-PR-AL1.01 Rev A – Proposed Ground Floor Plan

Received 11th July 2025

Drawing No: X141-AP1.01 Rev B – Location Plan

Received 3rd September 2025

Drawing No: X141-PR-AV1.03 – Proposed Site Cross Section

Received 10th December 2025

and the development shall be carried out in complete accordance with these drawings hereby approved.

Reason: For the avoidance of doubt and to ensure a satisfactory standard of development in accordance with the policies contained within the adopted Rochdale Core Strategy, the saved Rochdale Unitary Development Plan and the National Planning Policy Framework.

- 3 Notwithstanding any description of materials in the application, no above ground works shall take place until samples or full details of all materials to be used on the external surfaces of the building have first been submitted to, and approved in writing by, the Local Planning Authority. The development shall be carried out and thereafter maintained in accordance with the approved details.

Reason: These details are required due to insufficient information being contained within this submission and in the interests of visual amenity and ensuring the new development responds positively to the local context and character, in accordance with policies P2, P3 and DM1 of the adopted Rochdale Core Strategy and the National Planning Policy Framework.

- 4 No development shall take place until details of the retaining wall, including elevations and materials, have been submitted to, and approved in writing by, the Local Planning Authority.

Reason: To ensure the new development responds positively to the local context and character, in accordance with policies P2, P3 and DM1 of the adopted Rochdale Core Strategy and the National Planning Policy Framework.

Reason for pre-commencement condition: No details of the retaining wall have been provided.

- 5 No development shall take place until an investigation and risk assessment (in addition to any assessment provided with the planning application) has been submitted to and approved in writing by the Local Planning Authority. The assessment shall investigate the nature and extent of any contamination on the site (whether or not it originates on the site). The

assessment shall be undertaken by competent persons and a written report of the findings submitted to and approved in writing by the Local Planning Authority before any development takes place.

The submitted report shall include:

i) a survey of the extent, scale and nature of contamination

ii) an assessment of the potential risks to:

- human health,
- property (existing or proposed) including buildings, crops, livestock, pets, woodland, and service lines and pipes,
- adjoining land,
- groundwaters and surface waters,
- ecological systems,
- 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 carried out in full accordance with the duly approved

remediation strategy and a verification report submitted to and approved in writing by the

Local Planning Authority before any of the buildings hereby approved are first occupied.

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.

- 6 No development shall commencement until an external lighting plan, if applicable, has been submitted to, and approved in writing by, the Local Planning Authority. The approved scheme shall thereafter be maintained and operated in accordance with the approved details.

Reason: To reduce the potential impacts of foraging and commuting bats to ensure that they are not adversely impacted upon as a result of the development in accordance with Policy G7 of the adopted Core Strategy and the NPPF.

Reason for pre-commencement condition: No details of any external lighting have been provided.

- 7 Prior to any vegetation clearance, earth works or machinery on the site, a precautionary working measures method statement for mammals and amphibians shall be submitted to and approved in writing by the Local Planning Authority. The development shall only be implemented in accordance with the agreed details.

Reason: In order to protect wildlife from works that may impact on their habitats, pursuant to Policy G7 of the Rochdale Core Strategy, JP-G8 of PfE and the National Planning Policy Framework.

- 8 No development shall take place (including demolition, ground works, vegetation clearance) until a construction environmental management plan (CEMP: Biodiversity) has been submitted to and approved in writing by the Local Planning Authority. The CEMP (Biodiversity) for each phase shall include the following:

1. Identification of "biodiversity protection zones".
2. Practical measures (both physical measures and sensitive working practices) to avoid or reduce impacts during construction (may be provided as a set of method statements).
3. The location and timing of sensitive works to avoid harm to biodiversity features.
4. The times during construction when specialist ecologists may need to be present on site to oversee works.
5. Responsible persons and lines of communication.
6. Use of protective fences, exclusion barriers and warning signs.

The approved CEMP shall be adhered to and implemented throughout the construction period strictly in accordance with the approved details, unless otherwise agreed in writing by the Local Planning Authority.

Reason: To minimise detrimental effects to the natural environment during the construction phase in accordance with Policies DM1, P2 and P3 of the

adopted Rochdale Core Strategy and the National Planning Policy Framework.

Reason for pre-commencement condition: As the development will include site clearance, demolition works, ground works and engineering works an understanding will therefore be necessary of what measures will be put in place to protect the amenity of the natural environment and the area in general, prior to commencement of any works taking place.

- 9 No works or vegetation clearance shall take place during the optimum period for bird nesting (1st March - 31st August inclusive) unless nesting birds have been shown to be absent or a method statement for the protection of any nesting birds is agreed in writing by the Local Planning Authority. Any method statement shall then be implemented for the duration of the works.

Reason: In order to protect wildlife from works that may impact on their habitats in accordance with Policy G7 of the Rochdale Core Strategy, JP-G8 of PfE and the National Planning Policy Framework.

- 10 Prior to first occupation of the proposed extension hereby approved, details of the installation of bat and bird boxes shall be submitted to, and approved in writing by, the Local Planning Authority. These details shall include the number and type of boxes and a plan showing the location of the boxes.

Reason: In the interests of securing adequate biodiversity and habitat enhancement within the site in accordance with Policy G7 of the Rochdale Core Strategy, JP-G8 of PfE and the NPPF.

- 11 Prior to occupation of the development a sustainable drainage management and maintenance plan for the lifetime of the development shall be submitted to the local planning authority and agreed in writing. The sustainable drainage management and maintenance plan shall include as a minimum:

(i) Arrangements for adoption by an appropriate public body or statutory undertaker, or management and maintenance by a resident's management company; and

(ii) Arrangements for inspection and ongoing maintenance of all elements of the sustainable drainage system to secure the operation of the surface water drainage scheme throughout its lifetime.

The development shall subsequently be completed, maintained and managed in accordance with the approved plan.

Reason: To ensure that management arrangements are in place for the sustainable drainage system in order to manage the risk of flooding and pollution during the lifetime of the development in accordance with Policy G8 of the adopted Rochdale Core Strategy, saved Policy EM/7 of the adopted Rochdale Unitary Development Plan and the National Planning Policy Framework.

Reason for pre-commencement condition: Drainage infrastructure will need to be implemented prior to commencement of above ground works and a scheme therefore needs to be agreed in advance of the same.

- 12 No development shall take place until a detailed Drainage Strategy in accordance with the SuDs hierarchy including assessment / incorporation of sustainable SuDS source control components during subsequent design phases of the development shall be submitted to, and approved in writing by, the Local Planning Authority.

Reason: To promote sustainable development, secure proper drainage and to manage the risk of flooding and pollution. To prevent an increased risk of flooding as a result of the development and to ensure satisfactory disposal of surface water from the site in accordance with Policy G8 of the adopted Rochdale Core Strategy, saved Policy EM/7 of the adopted Rochdale Unitary Development Plan and the National Planning Policy Framework.

Reason for pre-commencement condition: As further source control measures are required.

- 13 The erection of fencing for the protection of any retained tree or trees shall be undertaken in accordance with the Arboricultural Statement by Cheshire Woodlands, Ref: CW/11826-AS, Date: 22 August 2025, received by the Local Planning Authority on 3rd September 2025 before any equipment, machinery or materials are brought on to the site. Such protection as required in the Arboricultural Statement shall be retained throughout the entire period of construction and until all equipment, machinery and surplus materials have been removed from the site. No materials, soil, rubbish or vehicles shall be deposited or stored in any area fenced in accordance with this condition and no fires shall be lit, and no raising or lowering of ground levels shall take place within this area. No drains, pits, ditches or trenches shall be dug in or run across the area protected by the fencing, at any time before, during and after the development of the site, unless otherwise agreed in writing by the Local Planning Authority.

Reason: In order to ensure that retained trees are adequately protected, in the interests of the visual amenities of the locality in accordance with

Policies DM1, G6 and G7 of the Core Strategy, Policy JP-G7 of PfE and the NPPF.

Approval Reason(s) (1)

- 15 The Local Planning Authority worked proactively with the applicant to identify various solutions during the application process to ensure that the proposal comprised sustainable development and would improve the economic, social and environmental conditions of the area and would accord with the development plan. These were incorporated into the scheme and/or have been secured by planning condition.

Date of Decision: 11/02/2026

Melanie Hale
Head of Planning

IMPORTANT

PLEASE ENSURE THAT YOU HAVE READ AND FULLY UNDERSTOOD THE CONTENTS OF THIS DECISION NOTICE. YOUR ATTENTION IS DRAWN TO THE ATTACHED NOTES.

INFORMATIVE:

The Local Planning Authority's reasons for its decision are set out in the accompanying officer's report.

Your attention is drawn to the following (4)	
1	The effect of paragraph 13 of Schedule 7A to the Town and Country Planning Act 1990 is that planning permission granted for development of land in England is deemed to have been granted subject to the condition (biodiversity gain condition) that development may not begin unless: a) A Biodiversity Gain Plan has been submitted to the planning authority, and;

b) The planning authority has approved the plan.

The planning authority, for the purposes of determining whether to approve a Biodiversity Gain Plan, if one is required in respect of this permission would be Rochdale Borough Council.

Based on the information available this permission is considered to be one which will require the approval of a biodiversity gain plan before development is begun because none of the statutory exemptions or transitional arrangements are considered to apply.

For the purposes of paragraph 13 of Schedule 7A to the Town and Country Planning Act 1990, a biodiversity gain plan is a plan which:

(a) relates to development for which planning permission is granted, and;

(b) specifies the matters referred to below:

The matters are:

(a) information about the steps taken or to be taken to minimise the adverse effect of the development on the biodiversity of the onsite habitat and any other habitat;

(b) the pre-development biodiversity value of the onsite habitat;

(c) the post-development biodiversity value of the onsite habitat;

(d) any registered offsite biodiversity gain allocated to the development and the biodiversity and the biodiversity value of that gain in relation to the development;

	(e) any biodiversity credits purchased for the development; and (f) any such other matters as the Secretary of State may by regulations specify.
2	The applicant is reminded that protected species can turn up in unexpected places and the granting of planning permission does not negate the need to abide by the laws which are in place to safeguard biodiversity. The applicant must seek ecological advice should they find or suspect the proposal will impact on protected species.
3	The applicant is advised of United Utilities comments (which have been sent under separate cover) and should contact United Utilities prior to any development taking place.
4	The applicant is reminded of the recommendations made by Greater Manchester Police and should consider implementing the works in Section 3.3 of the Crime Impact Statement by Greater Manchester Police, Version A: 09/09/25, Reference: 2025/0304/CIS/01, received by the Local Planning Authority on 25th September 2025.

Notes

- 1 The decision is for planning purposes only and for no other. It does not grant approval under any other regulatory regime, including the building regulations. Separate approvals may be required.
- 2 This permission does not give any legal right to carry out the development on, over or under land owned by or contrary to the rights of another person. You are advised to seek independent legal advice Your attention is also drawn to the Party Wall Act.
- 3 If you are unhappy with the decision to grant permission subject to conditions you can appeal to the Secretary of State under section 78 of the Town and Country Planning Act 1990. Details of how to appeal can be obtained from the Planning Inspectorate, Customer Support Unit, Temple Quay House, 2 The Square, Temple Quay, Bristol BS1 6PN or via their website at <https://www.gov.uk/government/publications/planning-appeals-procedural-guide>.

- 4 If permission to develop land is granted subject to conditions, whether by the Council or by the Secretary of State and you, as owner of the land, claim that it has become incapable of reasonable beneficial use, you may serve a Purchase Notice on the Council requiring the Council to purchase your interest in accordance with the provision of Part IV of the Town and Country Planning Act 1990.
- 5 Some conditions attached to a grant of permission may require you to submit details and/or information before you start work. Please note that we aim to deal with these requests within 8 weeks. There is a fee for 'approval of details reserved by a condition'. These fees are set by Government and the current level can be found at:
<https://1app.planningportal.co.uk/FeeCalculator/Standalone?region=1>.



Highways and Engineering Service – Economy and Environment

DRAINAGE CONSULTATION ON APPLICATION – 25/00713/FUL – UNIT 12 FOTHERGILL FABRICS SMALLBRIDGE BUSINESS PARK, RIVERSIDE DRIVE, OL16 2SH

LLFA Consultation Response on behalf of Head of Highways and Engineering

Date of Response: 11th November 2025

LOCATION & PROPOSED DEVELOPMENT

Unit 12, Fothergill Fabrics, Smallbridge B Park, Riverside Drive, OL16 2SH

A 1255m² extension to the existing unit, with increased internal storage and accompanying service yard area, is proposed to follow the existing footprint. The unit is currently occupied by Fothergill Coated Fabrics Ltd.

DOCUMENTS REVIEWED

- Flood Risk Assessment & Outline Drainage Strategy
- Site Location Plan
- Existing Site Plan
- Proposed Site Plan
- Design & Access Statement
- Flood Map for Planning
- UU SafeDig Records

DRAINAGE & FLOOD OFFICER COMMENTS

1. The proposal is for a partial redevelopment of the existing unit to provide an extension. Most of the area appears to be existing hardstanding.
2. The FRA states the closest feature is River Roch. However, the extracts below indicate that Ash Brook is significantly closer. Whilst the site is shown to be outside Flood Zone 2 or 3 it is close to these zones. In addition, the extracts below indicate a potential culverting of Ash Brook which may result in the watercourse being even closer to the site boundary which should be reviewed. Furthermore, the surface water flood map indicates potential flooding along the northern boundary of the building.
3. The aim should be to discharge the surface run off as high up the following hierarchy of drainage options as reasonably practicable: The ordered drainage techniques to be assessed with the aim to reduce or omit lower techniques:
 - Control at Source (Infiltration / Recycling)
 - On Site Treatment (Basins, Swales, Rain gardens, Tree pits)
 - Local Treatment (Adoptable Ponds, Basins, Swales etc)
 - Regional Treatment (ditto usually to a larger scale)
 - Discharge to Watercourses / Bodies
 - Discharge to SW Sewers
 - Discharge to Combined Sewers

4. Infiltration solutions have been considered and discounted based on interpretation of online BGS data assumptions. This should be reviewed following the completion of onsite investigation.
5. It is proposed to discharge attenuated surface water into the existing site drainage system which in turn discharges to a water course. The proposed drainage design has been based on hydraulic calculations to a 1-in-100-year storm event with a 30% allowance for climate change. Typically, a 45% allowance for climate change is required in line with Rochdale LLFA standards.
6. The drainage strategy proposes a traditional buried storage solution. This is not considered to be the most sustainable option. The design should incorporate green surface-based SuDS source control. The FRA has discounted swales and basins due to spatial constraints which is not necessarily an acceptable reason. However, components such as tree pits and raingardens may offer a compromise.

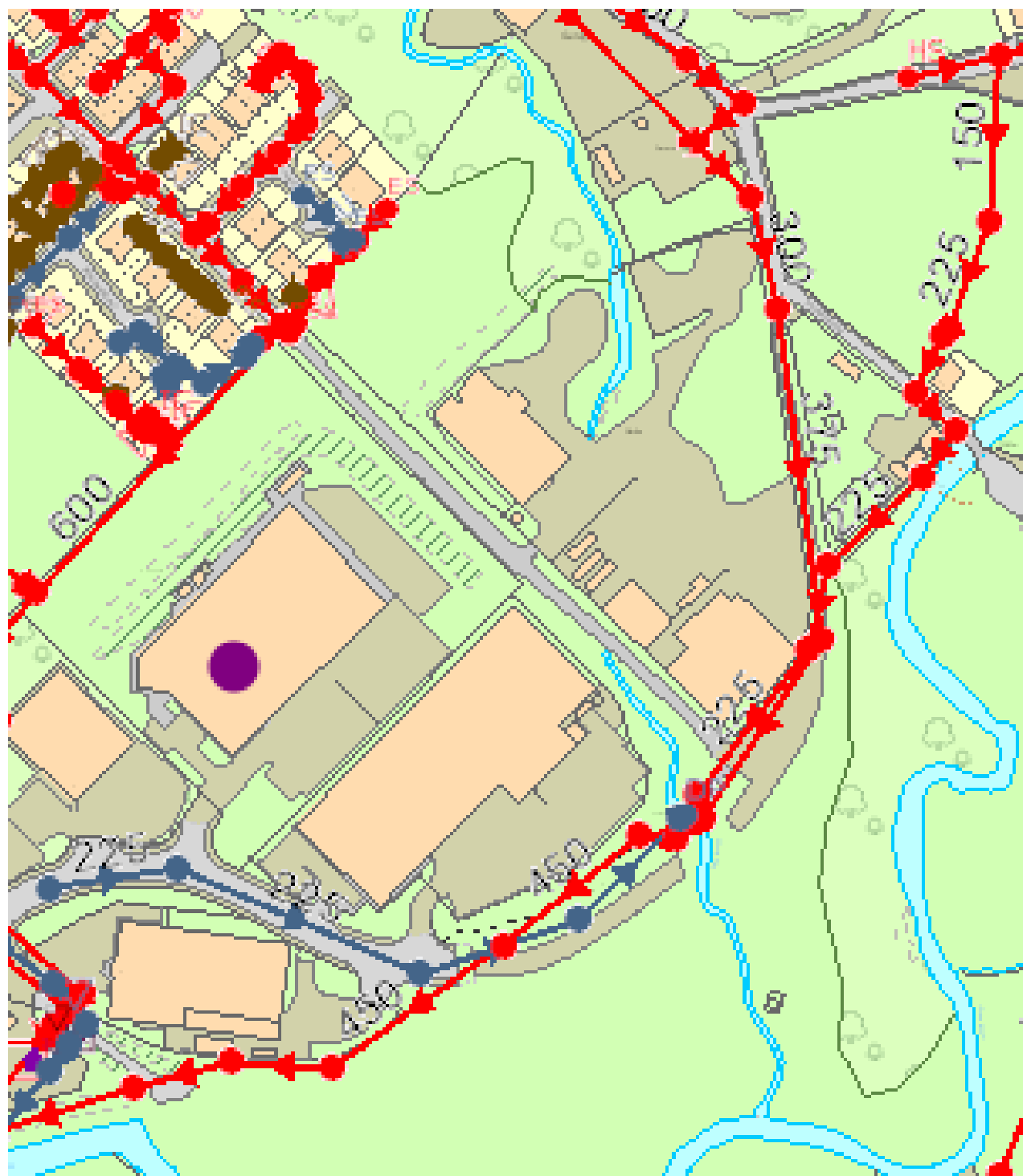
DRAINAGE & FLOOD OFFICER SUMMARY:

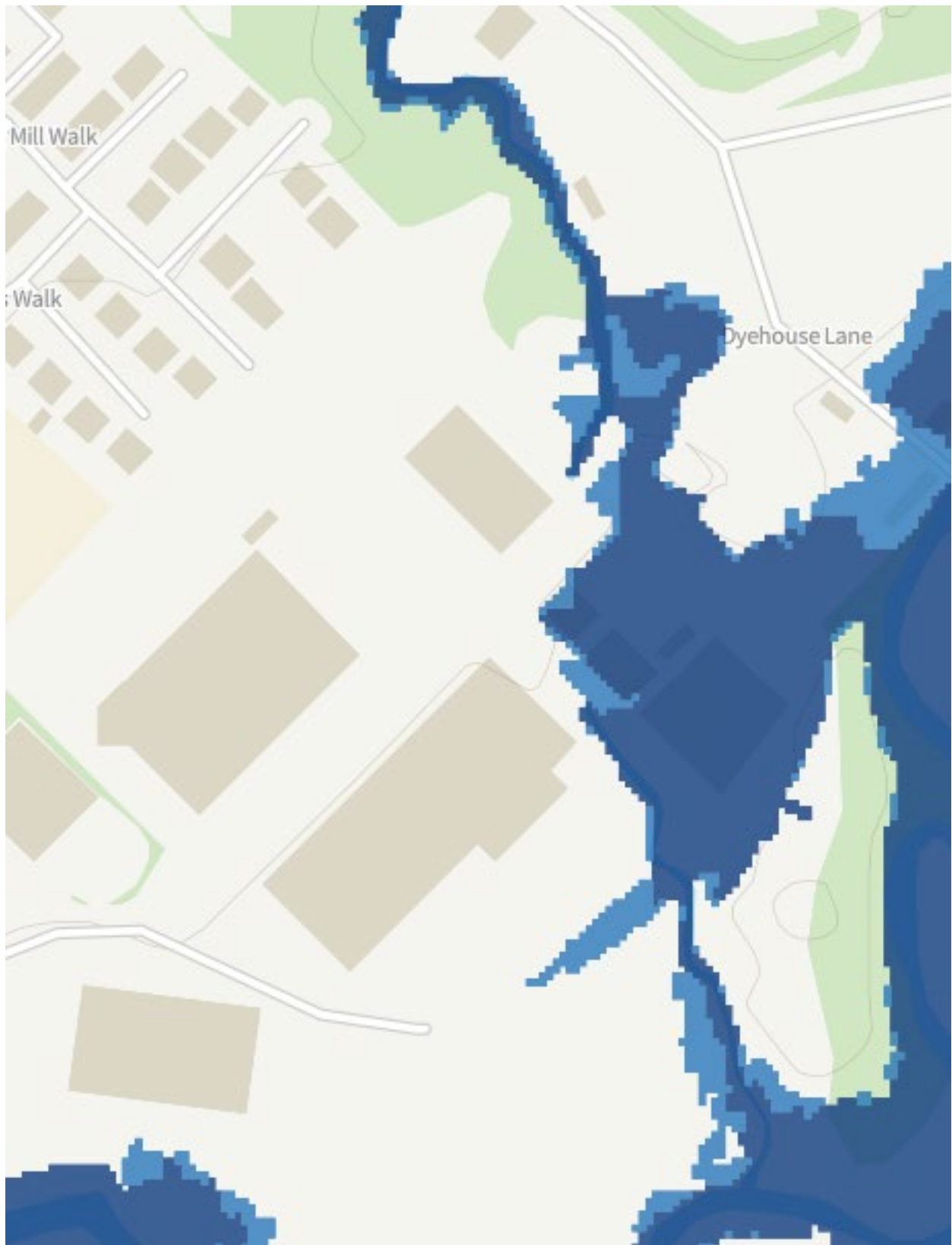
- I. Potential flood risks and main river (Ash Brook) alignments should be reviewed onsite.
- II. The design approach should incorporate a 45% climate change allowance.
- III. SuDS source control should be incorporated.
- IV. Site based infiltration investigation should be assessed.
- V. The above points should be addressed before the application is approved.

Consultation by Keith Mealey

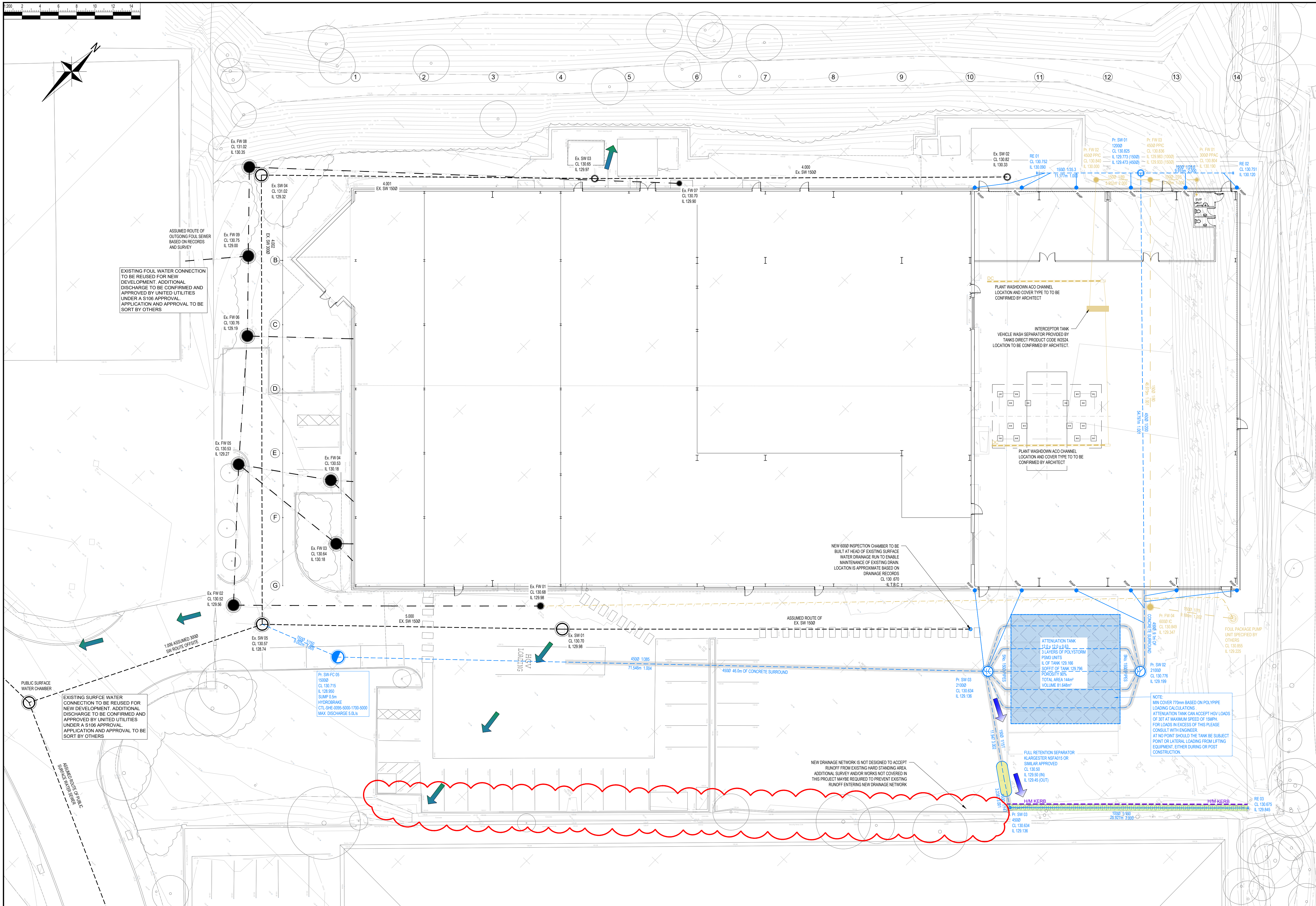
Drainage & Flooding Officer

 keith.mealey@rochdale.gov.uk





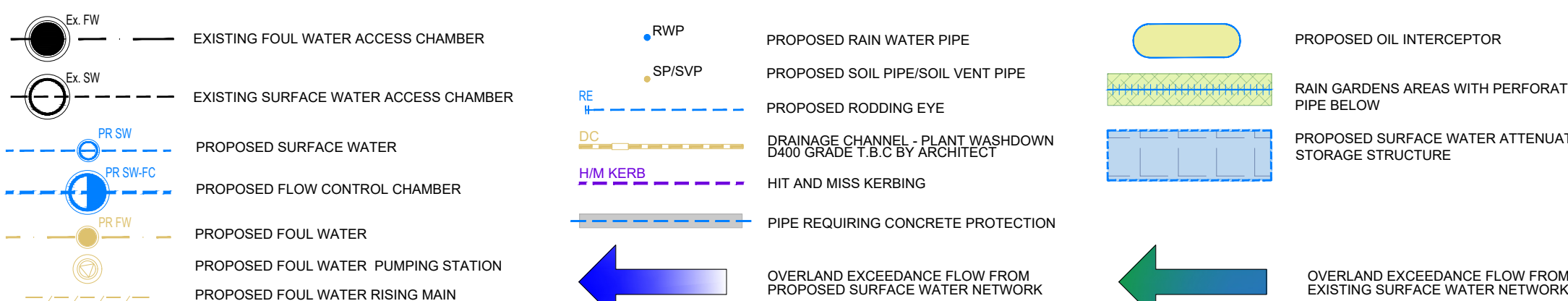
APPENDIX E – PROPOSED DRAINAGE LAYOUT



ANY WORKS UNDERTAKEN PRIOR TO RECEIPT OF TECHNICAL APPROVAL FOR THEIR RESPECTIVE PROPOSALS IS DONE AT THE CONTRACTORS OWN RISK.

PRELIMINARY SCHEME - FOR COMMENT AND REVIEW ONLY
DESIGN IS BASED UPON INITIAL P.G CONSULTING DRAINAGE STRATEGY AND OTHER INFORMATION AVAILABLE AT THE TIME. DESIGN IS SUBJECT TO FULL REVIEW AS ADDITIONAL INFORMATION BECOMES AVAILABLE.
DESIGN IS SUBJECT TO FULL REVIEW UPON RECEIPT OF COMMENTS FROM
• DEVELOPMENT CONTROL
• LA PLANNING AUTHORITY
• LLFA
• SEWERAGE UNDERTAKER

KEY:



THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER HBL DRAWINGS ISSUED FOR THIS PROJECT

- PRIVATE DRAINAGE NOTES
- ALL DIMENSIONS ARE IN MILLIMETRES AND LEVELS IN METERS UNLESS OTHERWISE SPECIFIED
 - THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER RELATED DRAWINGS AND SPECIFICATIONS
 - THE DRAINAGE CONTRACTOR IS RESPONSIBLE TO MAKING AN APPLICATION TO ANY SEWERAGE UNDERTAKER PRIOR TO CONSTRUCTION OF ANY CONNECTION INTO A PUBLIC MAINWIRE
 - THE ENGINEER IS TO BE NOTIFIED OF ANY DISCREPANCIES TO THE DETAILS SHOWN ON THE DRAWING AND ANY UNRECORDED CONNECTIONS NOT SHOWN ON THE DRAWINGS
 - THE CONTRACTOR IS RESPONSIBLE FOR CHECKING DIMENSIONS AND LEVELS AND FOR CONFIRMING THE GIVEN LEVEL OF OUTFALL INTO PUBLIC SEWER, WATERCOURSE OR OTHER OUTFALL PRIOR TO CONSTRUCTION WORKS COMMENCING
 - UNTIL TECHNICAL APPROVAL HAS BEEN OBTAINED FROM THE RELEVANT AUTHORITIES ALL DRAWINGS ISSUED ARE AS PRELIMINARY AND NOT FOR CONSTRUCTION. SHOULD THE CONTRACTOR COMMENCE SITE WORK PRIOR TO APPROVAL BEING GIVEN, IT IS ENTIRELY AT THEIR OWN RISK
 - TO PROTECT THE DRAINAGE SYSTEM FROM CONSTRUCTION SITE DERBIES, THE CONTRACTOR SHALL ENSURE THAT STOPPERS ARE SECURELY PLACED IN ALL CONNECTIONS IMMEDIATELY UPSTREAM OF THE TANK, ONLY TO BE REMOVED ONCE THE FINAL CLEANING OF THE ROADS DRAINAGE HAS BEEN COMPLETED
 - THE DESIGN IS BASED ON THE INFORMATION AVAILABLE ON THE DATE OF ISSUE FROM OTHER PARTIES (E.G. ARCHITECT AND M&E ENGINEER). IT IS SUBJECT TO CHANGE RESULTING FROM UPDATES TO THE AVAILABLE INFORMATION FROM OTHERS
 - NEW DRAINS AND SEWERS TO BE AS FOLLOWS
 - CONSTRUCTION AND MATERIALS OF PRIVATE SURFACE FOUL & COMBINED WATER SEWERAGE SYSTEM TO BE IN ACCORDANCE WITH 'BUILDING REGULATIONS - APPROVED DOCUMENT H' & 'S' EN 752:2017 DRAIN AND SEWER SYSTEMS OUTSIDE BUILDINGS
 - CONSTRUCTION AND MATERIALS OF PUBLIC SURFACE FOUL & COMBINED WATER SEWERS TO BE IN ACCORDANCE WITH 'DESIGN & CONSTRUCTION GUIDANCE, SEWERAGE SECTOR GUIDANCE APPENDIX C' AND IN ACCORDANCE WITH LOCAL SEWERAGE UNDERTAKER
 - MINIMUM PIPE SIZE FOR ADAPTABLE SURFACE WATER DRAINAGE IS 150mmDN
 - 100mmDN AT MIN 1:100 FOR 10 DWELLINGS OR LESS
 - 150mmDN AT MIN 1:150 FOR GREATER THAN 10 DWELLINGS
 - MINIMUM PIPE SIZE FOR ADAPTABLE FOUL WATER DRAINAGE IS 100mmDN
 - 100mmDN 1:40 WHERE 10 DWELLINGS OR LESS AND NO WC
 - 100mmDN 1:80 WHERE GREATER THAN 10 DWELLINGS AND AT LEAST 1 WC
 - ALL ROAD GULLY PREPWORK SPURS TO BE 150mmDN UNLESS OTHERWISE SPECIFIED
 - LOAD CLASS SELECTION TO COMPLY WITH BS EN 124
 - LOAD CLASS A15 - AREAS INACCESSIBLE TO MOTOR VEHICLES
 - LOAD CLASS B125 - FOOTWAYS, PEDESTRIAN AREAS ETC
 - LOAD CLASS D250 - GULLY TOPS IN KERBSIDE CHANNELS OF ROADS
 - LOAD CLASS D400 - CARRIAGEWAYS OF ROADS (HEAVY DUTY)
 - LOAD CLASS E800 - AREAS IMPOSING HIGH WHEEL LOADS
 - LOAD CLASS F900 - AREAS IMPOSING PARTICULARLY HIGH WHEEL LOADS
 - ALL FOUL DRAINING BENEATH BUILDINGS AND FROM SOLID FLOOR, GULLIES AND WC CONNECTIONS BE 100mmDN AT A GRADIENT NOT LESS THAN OF 1:40
 - ALL FOUL CONNECTIONS TO BE FULLY TRAPPED AND EACH FOUL CONNECTION TO A BRANCH DRAIN TO HAVE FULL ROODING ACCESS (E.G. LOW LEVEL ROODING ACCESS)
 - RAINWATER DOWN PIPES ARE TO CONNECT TO A DRAIN VIA A REST BEND
 - WHERE DRAINAGE IS COMBINED A P TRAP MUST BE PROVIDED ABOVE PROPOSED FLOOR FINISH LEVEL
 - MINIMUM DEPTH OF COVER TO THE CROWN OF GRAVITY PIPES WITHOUT PROTECTION SHOULD BE AS FOLLOWS IN ACCORDANCE WITH 'DESIGN & CONSTRUCTION GUIDANCE, SEWERAGE SECTOR GUIDANCE APPENDIX C'
 - 35mm - DOMESTIC GARDENS AND PATHWAYS WITHOUT ANY POSSIBILITY OF VEHICULAR ACCESS
 - 60mm - DOMESTIC DRIVEWAYS, PARKING AREAS AND YARDS WITH HEIGHT RESTRICTIONS TO PREVENT ENTRY BY VEHICLES WITH A GROSS WEIGHT IN EXCESS OF 7.5 TONNES
 - 90mm - DOMESTIC DRIVEWAYS, PARKING AREAS AND NARROW STREETS WITH LIMITED ACCESS FOR VEHICLES WITH A GROSS WEIGHT IN EXCESS OF 7.5 TONNES
 - 100mm - AGRICULTURAL LAND & PUBLIC OPEN SPACE
 - 120mm - HIGHWAYS AND PARKING AREAS WITH UNRESTRICTED ACCESS TO VEHICLE WITH A GROSS WEIGHT IN EXCESS OF 7.5 TONNES
 - BACKFILL TO DRAINAGE TRENCHES UNDER CARRIAGEWAYS TO BE TYPE 1 SUB-BASE MATERIAL ELSEWHERE BACKFILL TO BE FREE DRAINING READILY AVAILABLE COMPACTABLE MATERIAL FREE FROM RUBBISH, ORGANIC MATTER, FROZEN SOIL, CLAY LUMPS AND LARGE STONES TO BE COMPACTED IN LAYERS NOT EXCEEDING 200mm THICK
 - A FLEXIBLE JOINT SHALL BE PROVIDED AS CLOSE AS IS FEASIBLE TO THE OUTSIDE FACE OF ANY STRUCTURE INTO WHICH A PIPE IS BUILT, COMPATIBLE WITH THE SATISFACTORY COMPLETION AND SUBSEQUENT MOVEMENTS OF THE JOINT. LENGTH OF THE NEXT PIPE (ROCKER PIPE) IS TO BE IN ACCORDANCE WITH THE TABLE BELOW
 - 150-600mmDN - 600mm LONG ROCKER PIPE
 - 601-750mmDN - 1000mm LONG ROCKER PIPE
 - 751mmDN AND ABOVE - 125mm LONG ROCKER PIPE
 - PIPE CROSSOVERS TO HAVE MINIMUM OF 300mm CLEARANCE BETWEEN OUTSIDE TOP OF THE LOWER PIPE AND OUTSIDE BOTTOM OF THE UPPER PIPE. WHERE THIS CANNOT BE ACHIEVED A SEPARATION, CONCRETE SURROUND IS TO BE FORMED WHICH WILL EXTEND NOT LESS THE 1000mm EACH SIDE OF THE CROSSING POINT. THE EXTENT OF THE CONCRETE SHOULD BE WITHIN 150mm OF A FLEXIBLE PIPE JOINT. THE CONCRETE SPECIFICATION SHOULD BE IN ACCORDANCE WITH THE STANDARD DETAILS FOR PIPE BED AND SURROUND AS ISSUED BY THE ENGINEER
 - CONCRETE MIXES INDICATED ON THIS DRAWING ARE DESIGNATED MIXES CONFORMING TO BS 8001:2008. ALL CONCRETE TO BE SULPHATE RESISTANT. CONTRACTOR SHOULD ALLOWANCE FOR CARRYING OUT TESTING ON SITE TO CONFIRM SULPHATE LEVEL CLASSIFICATION
 - ALL PRIVATE MAINWIRLES AND INSPECTION CHAMBERS TO BE CONSTRUCTED IN ACCORDANCE WITH 'BUILDING REGULATIONS - APPROVED DOCUMENT H' & 'S' EN 752:2017 DRAIN AND SEWER SYSTEMS OUTSIDE BUILDINGS
 - ALL MAINWIRLES AND INSPECTION CHAMBERS TO BE CONSTRUCTED IN ACCORDANCE WITH 'IN ACCORDANCE WITH 'DESIGN & CONSTRUCTION GUIDANCE, SEWERAGE SECTOR GUIDANCE APPENDIX C' AND IN ACCORDANCE WITH LOCAL SEWERAGE UNDERTAKER
 - CCTV SURVEY OF ALL THE DRAINAGE SHOULD BE CARRIED OUT ON COMPLETION OF THE BUILDING WORKS AND PASSED ON TO THE CLIENT
 - ANY EXISTING DRAINAGE INFRASTRUCTURE TO BE RETAINED TO HAVE NEW COVERS AND FRAMES TO SUIT NEW LEVELS AND SURFACING
 - WHERE DRAINAGE RUNS PASS BELOW FOUNDATIONS, PIPES TO BE ENCASED IN MIN 100mm CONCRETE SURROUND AND SURROUND WRAPPED IN 50mm COMPRESSIBLE MATERIAL (TOP & SIDES). PIPE TO BE LINED THROUGH FOUNDATIONS AND FITTED WITH ROCKER PIPE. FOUNDATIONS ADJACENT TO DRAIN RUN TO BE DEEPEMED LOCALLY TO INVERT OF DRAINAGE PIPE TO AVOID SURCHARGE LOADING
 - WHERE DRAINAGE RUNS PASS ABOVE FOUNDATIONS, PROVIDE 65mm DEEP PRE-STRESSED CONCRETE LININGS e.g. 'NAYLOR Ref. P100

TENDER
FOR TENDER PURPOSES ONLY

REV.	DATE	DRAWN	DESCRIPTION	STATUS
P01	30.04.26	ALB	FIRST ISSUE - FOR INFORMATION	MS

HBL
Craig House,
33 Galloway Avenue,
Manchester M20 3JG
+44(0)161 432 9677 | www.hbl.co.uk
Consulting Civil & Structural Engineers

PROJECT	FOTHERGILL EXTENSION
DRAWING TITLE	PROPOSED DRAINAGE LAYOUT
CLIENT	FOTHERGILL COATED FABRICS LIMITED
HBL REF.	11122
DATE	30.04.26
AT SCALE(S)	1:200
DRAWING No.	11122-HBL-XX-XX-DR-C-5200
REVISION	P01

APPENDIX F – HYDRAULIC CALCULATIONS

Design Settings

Rainfall Methodology	FEH-22	Minimum Velocity (m/s)	1.00
Return Period (years)	1	Connection Type	Level Soffits
Additional Flow (%)	0	Minimum Backdrop Height (m)	1.000
CV	1.000	Preferred Cover Depth (m)	1.200
Time of Entry (mins)	5.00	Include Intermediate Ground	✓
Maximum Time of Concentration (mins)	5.00	Enforce best practice design rules	x
Maximum Rainfall (mm/hr)	50.0		

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)	Invert Level (m)
RE 01	0.041	5.00	130.742	150	391266.914	414893.410	0.652	130.090
RE 02	0.032	5.00	130.772	150	391281.915	414908.238	0.652	130.120
Pr. SW 01	0.070	5.00	130.825	1200	391274.863	414901.268	1.352	129.473
Pr. SW 02			130.800	2100	391313.341	414862.253	1.601	129.199
Pr. SW 03			130.650	2100	391301.427	414850.479	1.514	129.136
Pr. SW-FC 05			130.715	1500	391249.429	414801.336	2.265	128.450
Ex. SW 02	0.120	5.00	130.800	450	391264.733	414890.633	0.470	130.330
Ex. SW 03	0.071	5.00	130.660	450	391232.597	414858.623	0.690	129.970
Ex. SW 04	0.029	5.00	130.974	1350	391206.251	414833.131	1.654	129.320
Ex. SW 01	0.315	5.00	130.700	450	391264.877	414820.883	0.720	129.980
Ex. SW 05	0.018	5.00	130.589	1200	391241.043	414798.063	1.849	128.740
S6			129.660	1350	391228.845	414773.922	1.500	128.160
ATTENUATION TANK			130.700		391307.499	414856.480	1.534	129.166
Pr. SW 04	0.063	5.00	130.500	450	391313.694	414841.536	0.913	129.587
RE 03		5.00	130.765	150	391332.162	414859.733	0.920	129.845
NSFA015			130.500		391310.997	414843.327	0.985	129.515

Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
1.000	RE 01	Pr. SW 01	11.177	0.600	130.090	129.773	0.317	35.3	150	5.00	28.0
2.000	RE 02	Pr. SW 01	9.915	0.600	130.120	129.773	0.347	28.6	150	5.00	28.0
1.001	Pr. SW 01	Pr. SW 02	54.797	0.600	129.473	129.199	0.274	200.0	450	5.00	28.0
1.002	Pr. SW 02	ATTENUATION TANK	8.213	0.600	129.199	129.166	0.033	248.9	150	5.00	28.0
1.004	Pr. SW 03	Pr. SW-FC 05	71.546	0.600	129.136	128.950	0.186	384.7	450	5.00	28.0
1.005	Pr. SW-FC 05	Ex. SW 05	9.002	0.600	128.950	128.890	0.060	150.0	150	5.00	28.0
4.000	Ex. SW 02	Ex. SW 03	45.358	0.600	130.330	129.970	0.360	126.0	150	5.00	28.0
4.001	Ex. SW 03	Ex. SW 04	36.660	0.600	129.970	129.470	0.500	73.3	150	5.00	28.0

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)	Pro Depth (mm)	Pro Velocity (m/s)
1.000	1.700	30.0	4.2	0.502	0.902	0.041	0.0	38	1.202
2.000	1.890	33.4	3.2	0.502	0.902	0.032	0.0	31	1.199
1.001	1.434	228.0	14.4	0.902	1.151	0.142	0.0	76	0.815
1.002	0.632	55.9	14.4	1.451	1.384	0.142	0.0	52	0.530
1.004	1.030	163.9	20.9	1.064	1.315	0.206	0.0	108	0.715
1.005	0.818	14.5	20.9	1.615	1.549	0.206	0.0	150	0.833
4.000	0.894	15.8	12.1	0.320	0.540	0.120	0.0	99	0.984
4.001	1.175	20.8	19.3	0.540	1.354	0.190	0.0	115	1.331

Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
4.002	Ex. SW 04	Ex. SW 05	49.398	0.600	129.320	128.740	0.580	85.2	300	5.00	28.0
5.000	Ex. SW 01	Ex. SW 05	32.997	0.600	129.980	128.740	1.240	26.6	150	5.00	28.0
1.006	Ex. SW 05	S6	27.047	0.600	128.740	128.160	0.580	46.6	300	5.00	28.0
1.003	ATTENUATION TANK	Pr. SW 03	8.537	0.600	129.166	129.136	0.030	284.6	150	5.00	28.0
3.001	Pr. SW 04	NSFA015	3.238	0.600	129.587	129.565	0.022	147.2	150	5.00	28.0
3.000	RE 03	Pr. SW 04	25.927	0.600	129.845	129.587	0.258	100.5	100	5.00	28.0
3.002	NSFA015	Pr. SW 03	11.947	0.600	129.515	129.436	0.079	151.2	150	5.00	28.0

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)	Pro Depth (mm)	Pro Velocity (m/s)
4.002	1.704	120.5	22.2	1.354	1.549	0.219	0.0	87	1.312
5.000	1.959	34.6	32.0	0.570	1.699	0.315	0.0	114	2.217
1.006	2.308	163.1	76.9	1.549	1.200	0.758	0.0	145	2.276
1.003	0.591	52.2	14.4	1.384	1.364	0.142	0.0	54	0.507
3.001	0.826	14.6	6.4	0.763	0.785	0.063	0.0	69	0.799
3.000	0.767	6.0	0.0	0.820	0.813	0.000	0.0	0	0.000
3.002	0.815	14.4	6.4	0.835	1.064	0.063	0.0	70	0.791

Pipeline Schedule

Link	Length (m)	Slope (1:X)	Dia (mm)	Link Type	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
1.000	11.177	35.3	150	Circular	130.742	130.090	0.502	130.825	129.773	0.902
2.000	9.915	28.6	150	Circular	130.772	130.120	0.502	130.825	129.773	0.902
1.001	54.797	200.0	450	Circular	130.825	129.473	0.902	130.800	129.199	1.151
1.002	8.213	248.9	150	5No.	130.800	129.199	1.451	130.700	129.166	1.384
1.004	71.546	384.7	450	Circular	130.650	129.136	1.064	130.715	128.950	1.315
1.005	9.002	150.0	150	Circular	130.715	128.950	1.615	130.589	128.890	1.549
4.000	45.358	126.0	150	Circular	130.800	130.330	0.320	130.660	129.970	0.540
4.001	36.660	73.3	150	Circular	130.660	129.970	0.540	130.974	129.470	1.354
4.002	49.398	85.2	300	Circular	130.974	129.320	1.354	130.589	128.740	1.549
5.000	32.997	26.6	150	Circular	130.700	129.980	0.570	130.589	128.740	1.699
1.006	27.047	46.6	300	Circular	130.589	128.740	1.549	129.660	128.160	1.200
1.003	8.537	284.6	150	5No.	130.700	129.166	1.384	130.650	129.136	1.364
3.001	3.238	147.2	150	Circular	130.500	129.587	0.763	130.500	129.565	0.785

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
1.000	RE 01	150	Manhole	Adoptable	Pr. SW 01	1200	Manhole	Adoptable
2.000	RE 02	150	Manhole	Adoptable	Pr. SW 01	1200	Manhole	Adoptable
1.001	Pr. SW 01	1200	Manhole	Adoptable	Pr. SW 02	2100	Manhole	Adoptable
1.002	Pr. SW 02	2100	Manhole	Adoptable	ATTENUATION TANK		Junction	
1.004	Pr. SW 03	2100	Manhole	Adoptable	Pr. SW-FC 05	1500	Manhole	Adoptable
1.005	Pr. SW-FC 05	1500	Manhole	Adoptable	Ex. SW 05	1200	Manhole	Adoptable
4.000	Ex. SW 02	450	Manhole	Adoptable	Ex. SW 03	450	Manhole	Adoptable
4.001	Ex. SW 03	450	Manhole	Adoptable	Ex. SW 04	1350	Manhole	Adoptable
4.002	Ex. SW 04	1350	Manhole	Adoptable	Ex. SW 05	1200	Manhole	Adoptable
5.000	Ex. SW 01	450	Manhole	Adoptable	Ex. SW 05	1200	Manhole	Adoptable
1.006	Ex. SW 05	1200	Manhole	Adoptable	S6	1350	Manhole	Adoptable
1.003	ATTENUATION TANK		Junction		Pr. SW 03	2100	Manhole	Adoptable
3.001	Pr. SW 04	450	Manhole	Adoptable	NSFA015		Junction	

Pipeline Schedule

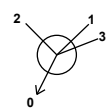
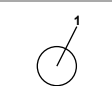
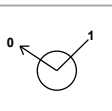
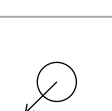
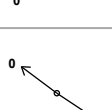
Link	Length (m)	Slope (1:X)	Dia (mm)	Link Type	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
3.000	25.927	100.5	100	Circular	130.765	129.845	0.820	130.500	129.587	0.813
3.002	11.947	151.2	150	Circular	130.500	129.515	0.835	130.650	129.436	1.064

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
3.000	RE 03	150	Manhole	Adoptable	Pr. SW 04	450	Manhole	Adoptable
3.002	NSFA015		Junction		Pr. SW 03	2100	Manhole	Adoptable

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
RE 01	391266.914	414893.410	130.742	0.652	150				
						0	1.000	130.090	150
RE 02	391281.915	414908.238	130.772	0.652	150				
						0	2.000	130.120	150
Pr. SW 01	391274.863	414901.268	130.825	1.352	1200		1 2	2.000 1.000	129.773 150
						0	1.001	129.473	450
Pr. SW 02	391313.341	414862.253	130.800	1.601	2100		1	1.001	129.199
						0	1.002	129.199	150
Pr. SW 03	391301.427	414850.479	130.650	1.514	2100		1 2	3.002 1.003	129.436 150
						0	1.004	129.136	450
Pr. SW-FC 05	391249.429	414801.336	130.715	2.265	1500		1	1.004	128.950
						0	1.005	128.950	150
Ex. SW 02	391264.733	414890.633	130.800	0.470	450				
						0	4.000	130.330	150
Ex. SW 03	391232.597	414858.623	130.660	0.690	450		1	4.000	129.970
						0	4.001	129.970	150
Ex. SW 04	391206.251	414833.131	130.974	1.654	1350		1	4.001	129.470
						0	4.002	129.320	300
Ex. SW 01	391264.877	414820.883	130.700	0.720	450				
						0	5.000	129.980	150

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)	
Ex. SW 05	391241.043	414798.063	130.589	1.849	1200		1	5.000	128.740	150
							2	4.002	128.740	300
							3	1.005	128.890	150
							0	1.006	128.740	300
S6	391228.845	414773.922	129.660	1.500	1350		1	1.006	128.160	300
ATTENUATION TANK	391307.499	414856.480	130.700	1.534			1	1.002	129.166	150
							0	1.003	129.166	150
Pr. SW 04	391313.694	414841.536	130.500	0.913	450		1	3.000	129.587	100
							0	3.001	129.587	150
RE 03	391332.162	414859.733	130.765	0.920	150					
							0	3.000	129.845	100
NSFA015	391310.997	414843.327	130.500	0.985			1	3.001	129.565	150
							0	3.002	129.515	150

Simulation Settings

Rainfall Methodology	FEH-22	Analysis Speed	Normal	Starting Level (m)
Rainfall Events	Singular	Skip Steady State	x	Check Discharge Rate(s) x
Summer CV	1.000	Drain Down Time (mins)	240	Check Discharge Volume x
Winter CV	1.000	Additional Storage (m³/ha)	0.0	

Storm Durations

15 | 30 | 60 | 120 | 180 | 240 | 360 | 480 | 600 | 720 | 960 | 1440

Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
2	0	0	0
30	0	0	0
100	45	0	0

Node Pr. SW-FC 05 Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	x	Sump Available	✓
Invert Level (m)	128.950	Product Number	CTL-SHE-0095-5000-1700-5000
Design Depth (m)	1.700	Min Outlet Diameter (m)	0.150
Design Flow (l/s)	5.0	Min Node Diameter (mm)	1200

Node ATTENUATION TANK Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	129.166
Side Inf Coefficient (m/hr)	0.00000	Porosity	0.95	Time to half empty (mins)	208

Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)
0.000	144.0	144.0	0.630	144.0	170.8	0.631	0.0	170.8

Node Pr. SW 04 Link Surround Storage Structure

Base Inf Coefficient (m/hr)	0.10000	Porosity	0.30	Link	3.000
Side Inf Coefficient (m/hr)	0.00000	Invert Level (m)	129.587	Surround Shape	(Trench)
Safety Factor	2.0	Time to half empty (mins)	6	Diameter (mm)	650

Results for 2 year Critical Storm Duration. Lowest mass balance: 99.93%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	RE 01	10	130.138	0.048	6.1	0.0009	0.0000	OK
15 minute summer	RE 02	10	130.160	0.039	4.7	0.0007	0.0000	OK
15 minute summer	Pr. SW 01	10	129.570	0.097	21.1	0.1096	0.0000	OK
15 minute summer	Pr. SW 02	11	129.259	0.060	20.8	0.2086	0.0000	OK
180 minute summer	Pr. SW 03	120	129.254	0.118	8.8	0.4075	0.0000	OK
180 minute summer	Pr. SW-FC 05	120	129.255	0.305	7.2	0.5395	0.0000	SURCHARGED
15 minute summer	Ex. SW 02	12	130.757	0.427	17.9	0.0679	0.0000	FLOOD RISK
15 minute summer	Ex. SW 03	12	130.370	0.400	26.1	0.0636	0.0000	FLOOD RISK
15 minute summer	Ex. SW 04	11	129.418	0.098	28.6	0.1404	0.0000	OK
15 minute summer	Ex. SW 01	10	130.700	0.720	47.0	0.1145	0.7612	FLOOD
15 minute summer	Ex. SW 05	12	128.888	0.148	71.8	0.1676	0.0000	OK
15 minute summer	S6	12	128.298	0.138	72.0	0.0000	0.0000	OK
180 minute summer	ATTENUATION TANK	120	129.254	0.087	9.6	11.9661	0.0000	OK
15 minute summer	Pr. SW 04	10	129.678	0.091	9.4	0.0857	0.0000	OK
15 minute summer	RE 03	1	129.845	0.000	0.0	0.0000	0.0000	OK
15 minute summer	NSFA015	10	129.604	0.089	9.2	0.0000	0.0000	OK
Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	RE 01	1.000	Pr. SW 01	6.1	1.297	0.202	0.0523	
15 minute summer	RE 02	2.000	Pr. SW 01	4.7	1.301	0.140	0.0356	
15 minute summer	Pr. SW 01	1.001	Pr. SW 02	20.8	1.132	0.091	1.0236	
15 minute summer	Pr. SW 02	1.002	ATTENUATION TANK	20.9	1.092	0.374	0.2091	
180 minute summer	Pr. SW 03	1.004	Pr. SW-FC 05	7.2	0.273	0.044	5.2738	
180 minute summer	Pr. SW-FC 05	1.005	Ex. SW 05	4.3	0.697	0.301	0.0561	
15 minute summer	Ex. SW 02	4.000	Ex. SW 03	16.0	0.957	1.016	0.7985	
15 minute summer	Ex. SW 03	4.001	Ex. SW 04	24.7	1.400	1.187	0.6344	
15 minute summer	Ex. SW 04	4.002	Ex. SW 05	28.3	1.103	0.235	1.3497	
15 minute summer	Ex. SW 01	5.000	Ex. SW 05	39.7	2.256	1.147	0.5803	
15 minute summer	Ex. SW 05	1.006	S6	72.0	2.171	0.441	0.8971	47.7
180 minute summer	ATTENUATION TANK	1.003	Pr. SW 03	4.6	0.173	0.088	0.5438	
15 minute summer	Pr. SW 04	3.001	NSFA015	9.2	0.848	0.627	0.0350	
15 minute summer	Pr. SW 04	Infiltration		0.1				
15 minute summer	RE 03	3.000	Pr. SW 04	0.0	0.000	0.000	0.0971	
15 minute summer	NSFA015	3.002	Pr. SW 03	9.1	0.855	0.634	0.1275	

Results for 30 year Critical Storm Duration. Lowest mass balance: 99.92%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	RE 01	10	130.174	0.084	16.0	0.0015	0.0000	OK
15 minute summer	RE 02	10	130.187	0.067	12.3	0.0012	0.0000	OK
15 minute summer	Pr. SW 01	10	129.630	0.157	55.2	0.1779	0.0000	OK
120 minute winter	Pr. SW 02	114	129.442	0.243	19.0	0.8411	0.0000	SURCHARGED
120 minute winter	Pr. SW 03	114	129.442	0.306	10.3	1.0589	0.0000	OK
120 minute winter	Pr. SW-FC 05	112	129.442	0.492	8.0	0.8695	0.0000	SURCHARGED
30 minute summer	Ex. SW 02	15	130.800	0.470	44.5	0.0747	11.5828	FLOOD
15 minute summer	Ex. SW 03	9	130.660	0.690	36.7	0.1097	1.3967	FLOOD
15 minute summer	Ex. SW 04	10	129.438	0.118	40.0	0.1683	0.0000	OK
30 minute summer	Ex. SW 01	14	130.700	0.720	117.1	0.1145	26.4506	FLOOD
30 minute summer	Ex. SW 05	18	128.910	0.170	89.0	0.1918	0.0000	OK
30 minute summer	S6	18	128.316	0.156	89.0	0.0000	0.0000	OK
120 minute winter	ATTENUATION TANK	114	129.442	0.276	18.0	37.7180	0.0000	SURCHARGED
15 minute summer	Pr. SW 04	11	129.838	0.251	24.5	0.6293	0.0000	SURCHARGED
15 minute summer	RE 03	1	129.845	0.000	0.0	0.0000	0.0000	OK
15 minute summer	NSFA015	11	129.766	0.251	21.9	0.0000	0.0000	SURCHARGED
Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	RE 01	1.000	Pr. SW 01	15.9	1.646	0.529	0.1080	
15 minute summer	RE 02	2.000	Pr. SW 01	12.2	1.669	0.366	0.0726	
15 minute summer	Pr. SW 01	1.001	Pr. SW 02	54.7	1.461	0.240	2.0972	
120 minute winter	Pr. SW 02	1.002	ATTENUATION TANK	17.2	0.657	0.308	0.7229	
120 minute winter	Pr. SW 03	1.004	Pr. SW-FC 05	8.0	0.342	0.049	9.7699	
120 minute winter	Pr. SW-FC 05	1.005	Ex. SW 05	4.6	0.705	0.315	0.0582	
30 minute summer	Ex. SW 02	4.000	Ex. SW 03	15.8	0.953	1.001	0.7985	
15 minute summer	Ex. SW 03	4.001	Ex. SW 04	28.8	1.637	1.387	0.6389	
15 minute summer	Ex. SW 04	4.002	Ex. SW 05	39.9	1.205	0.331	1.6404	
30 minute summer	Ex. SW 01	5.000	Ex. SW 05	39.5	2.244	1.141	0.5809	
30 minute summer	Ex. SW 05	1.006	S6	89.0	2.276	0.545	1.0572	137.5
120 minute winter	ATTENUATION TANK	1.003	Pr. SW 03	4.6	0.173	0.088	0.7515	
15 minute summer	Pr. SW 04	3.001	NSFA015	21.9	1.244	1.500	0.0570	
15 minute summer	Pr. SW 04	Infiltration		0.2				
15 minute summer	RE 03	3.000	Pr. SW 04	0.0	0.000	0.000	0.1014	
15 minute summer	NSFA015	3.002	Pr. SW 03	21.7	1.234	1.507	0.2039	

Results for 100 year +45% CC Critical Storm Duration. Lowest mass balance: 99.92%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	RE 01	11	130.266	0.176	29.0	0.0032	0.0000	SURCHARGED
15 minute summer	RE 02	10	130.220	0.100	22.4	0.0018	0.0000	OK
240 minute winter	Pr. SW 01	232	130.135	0.662	21.2	0.7485	0.0000	SURCHARGED
240 minute winter	Pr. SW 02	232	130.135	0.936	21.2	3.2418	0.0000	SURCHARGED
240 minute winter	Pr. SW 03	232	130.135	0.999	9.3	3.4599	0.0000	SURCHARGED
240 minute winter	Pr. SW-FC 05	232	130.135	1.185	6.1	2.0939	0.0000	SURCHARGED
60 minute summer	Ex. SW 02	24	130.800	0.470	66.4	0.0747	35.4680	FLOOD
30 minute summer	Ex. SW 03	14	130.660	0.690	57.8	0.1097	9.1306	FLOOD
15 minute summer	Ex. SW 04	10	129.452	0.132	49.2	0.1885	0.0000	OK
60 minute summer	Ex. SW 01	23	130.700	0.720	174.9	0.1145	81.6196	FLOOD
30 minute summer	Ex. SW 05	18	128.928	0.188	103.8	0.2130	0.0000	OK
15 minute summer	S6	11	128.332	0.172	103.8	0.0000	0.0000	OK
240 minute winter	ATTENUATION TANK	232	130.136	0.970	21.1	86.2524	0.0000	SURCHARGED
30 minute summer	Pr. SW 04	20	130.258	0.671	43.4	2.7834	0.0000	FLOOD RISK
30 minute summer	RE 03	20	130.269	0.424	2.2	0.0076	0.0000	SURCHARGED
240 minute winter	NSFA015	232	130.136	0.620	9.3	0.0000	0.0000	SURCHARGED
Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	RE 01	1.000	Pr. SW 01	28.6	1.788	0.953	0.1796	
15 minute summer	RE 02	2.000	Pr. SW 01	22.3	1.903	0.667	0.1160	
240 minute winter	Pr. SW 01	1.001	Pr. SW 02	21.2	0.876	0.093	8.6822	
240 minute winter	Pr. SW 02	1.002	ATTENUATION TANK	18.9	0.596	0.338	0.7229	
240 minute winter	Pr. SW 03	1.004	Pr. SW-FC 05	6.1	0.319	0.037	11.3360	
240 minute winter	Pr. SW-FC 05	1.005	Ex. SW 05	4.6	0.705	0.315	0.0581	
60 minute summer	Ex. SW 02	4.000	Ex. SW 03	15.8	0.921	0.998	0.7985	
30 minute summer	Ex. SW 03	4.001	Ex. SW 04	28.8	1.637	1.387	0.6389	
15 minute summer	Ex. SW 04	4.002	Ex. SW 05	49.0	1.282	0.407	1.8847	
60 minute summer	Ex. SW 01	5.000	Ex. SW 05	39.5	2.247	1.142	0.5809	
30 minute summer	Ex. SW 05	1.006	S6	103.8	2.351	0.636	1.1938	195.3
240 minute winter	ATTENUATION TANK	1.003	Pr. SW 03	4.3	0.187	0.083	0.7515	
30 minute summer	Pr. SW 04	3.001	NSFA015	34.3	1.949	2.350	0.0570	
30 minute summer	Pr. SW 04	Infiltration		0.2				
30 minute summer	RE 03	3.000	Pr. SW 04	-2.2	-0.328	-0.364	0.2029	
240 minute winter	NSFA015	3.002	Pr. SW 03	9.3	0.857	0.646	0.2103	