



DRAINAGE STRATEGY REPORT

PROPOSED COMMERCIAL DEVELOPMENT
1 TODD STREET
FERNHILL
BURY
BL9 5AA

Author: Daniel Slattery
Client: Bury Drains Ltd
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Revision	Date	Reason
0	June 2026	Original to address planning condition.

T J Booth Associates.
20A Eastgate St,
Rochdale,
Lancs,
OL16 1DH.
Tel: 01706 868288.
Email: office@tjba.co.uk



Contents.

1	Introduction.....	3
1.1	Purpose of Assessment.....	3
1.2	Regulatory Reference.....	3
1.3	LLFA Consultation.....	3
1.4	LPA Planning.....	3
2	Site Proposals.....	3
2.1	Site Plan.....	3
2.2	Derivation of Data, Surveys and Models.....	4
2.2.1	Existing and proposed topography.....	4
2.2.2	Geology.....	4
2.2.3	Drainage Surveys.....	4
2.2.4	Sewer Undertaker Records.....	5
2.2.5	Site Investigations.....	5
3	Drainage Strategy.....	5
3.1	Existing Site rainfall & drainage systems.....	5
	Design rainfall 1yr (The Wallingford Procedure).....	5
	Design rainfall 30yr (The Wallingford Procedure).....	6
	Design rainfall 100yr (The Wallingford Procedure).....	6
3.2	Rainfall Climate Change Impacts.....	6
3.3	Proposed Surface Water Drainage.....	7
3.3.1	Infiltration.....	7
3.3.2	Watercourse.....	7
3.3.3	SW Sewer.....	7
3.3.4	Combined Sewer.....	7
3.4	Proposed Foul Water Drainage.....	7
3.5	Adoption.....	7
3.6	Maintenance.....	8
4	Conclusion & Residual risks.....	8
5	Appendix.....	9
5.1	Location Plan.....	9
5.2	Existing & Proposed Plans.....	10
5.3	United Utilities Sewer Plans.....	11

1 Introduction.

1.1 Purpose of Assessment.

The primary purpose of this report is to identify drainage strategy for the proposed development.

The proposal is for a single commercial unit on an existing commercial/industrial estate.

1.2 Regulatory Reference.

The site will be assessed in accordance with the national drainage hierarchy for surface water disposal & exceedance characteristics, also considering the proposed end adopters and their requirements.

Regarding Site assessment, this report will appraise the existing and local drainage infrastructure, assess the suitability of the proposed development, giving recommendations for drainage design & management, specifically for approval of the LLFA/EA/sewerage undertakers, as applicable.

Drainage from new developments is to be designed to follow the national drainage hierarchy for surface water discharge to the following networks in order of preference:

- infiltration.
- Watercourse.
- surface water sewer.
- combined sewer.

Where possible, flow rates (existing & proposed) are to be estimated for approval using the following methodology:

- Development should aim to deliver greenfield runoff on greenfield sites up to a 100yr rainfall event, considering climate change.
- Development should aim for a minimum reduction in surface water runoff rates of 50% for Brownfield sites on a 1yr rainfall event.
- Development should be designed so that there is no flooding to the development in a 30yr event, and so that there is no property flooding in a 100yr event considering climate change.

1.3 LLFA Consultation.

No consultations at the time of writing.

1.4 LPA Planning.

The site is subject to a planning permission, ref: 70987, for the 'Erection of 1No. unit for storage of existing plant on site'. Condition 3 relates to drainage.

2 Site Proposals.

See Location Plan in Appendix showing the area features.

The site is within an industrial part of Bury, noted for commercial properties both large and small, such as former mills and site with smaller starter units.

The area is thus predominantly covered with permanent hardstandings, commercial yards & access roads comprising concrete/macadam finishes etc.

There are no natural drainage features or watercourses noted in the local area.

The closest is the River Irwell nominally 350m west.

2.1 Site Plan.

The Application Site is located on an existing commercial site, comprising commercial premises which are split into smaller units.

The proposal comprises a vacant plot on the end of an existing unit, currently part of the existing yard, and surfaced in concrete. It is currently used for storage.

It is proposed to erect a single commercial unit nominally 175sqm in area.

Refer to Proposed Plan in appendix.

2.2.1 Existing and proposed topography.

However, lidar data was obtained, and is illustrated on the plan below showing contours relating to the Lidar 1m DTM.



The site level and FFL of the proposed units are set at approximately 100.30m aOD.

2.2.2 Geology.

N/A – not yet undertaken.

2.2.4 Sewer Undertaker Records.

There is a former United Utilities sewer which is shown as abandoned, flowing through the site, which formerly connected into United Utilities MH 5502 at the site entrance. MH 5502 is still ad live sewer with a 225VC outlet flowing southwest.

It is assumed all the site drainage connects into this sewer.

There are no surface water sewers in the local area.

The UU map excerpt is below:



2.2.5 Site Investigations.

No site investigation undertaken to date.

3 Drainage Strategy.

3.1 Existing Site rainfall & drainage systems.

The site is considered brownfield for the purposes of the assessment.

Local rainfall characteristics are as follows:

M5-60 rainfall depth (mm) 	20 
'r' ratio M5-60 / M5-2day 	0.3 
FEH/FSR conversion factor 	1.12
Hydrological region 	10

DESIGN RAINFALL 1YR (THE WALLINGFORD PROCEDURE)

Design rainfall in accordance with the Wallingford Procedure

Tedds calculation version 2.0.02

Design rainfall intensity

Location of catchment area

Storm duration

Return period

Ratio 60 min to 2 day rainfall of 5 yr return period

5-year return period rainfall of 60 minutes duration

Other

D = **30** min

Period = **1** yr

 $r = 0.300$

M5 60min = **20.0** mm

Increase of rainfall intensity due to global warming
 Factor Z1 (Wallingford procedure)
 Rainfall for 30min storm with 5 year return period
 Factor Z2 (Wallingford procedure)
 Rainfall for 30min storm with 1 year return period
 Design rainfall intensity

$p_{climate} = 0\%$
 $Z1 = 0.77$
 $M5_{30min_i} = Z1 \cdot M5_{60min} = 15.4 \text{ mm}$
 $Z2 = 0.62$
 $M1_{30min} = Z2 \cdot M5_{30min_i} = 9.6 \text{ mm}$
 $I_{max} = M1_{30min} / D = 19.1 \text{ mm/hr}$

DESIGN RAINFALL 30YR (THE WALLINGFORD PROCEDURE)

Design rainfall in accordance with the Wallingford Procedure

Tedds calculation version 2.0.02

Design rainfall intensity

Location of catchment area
 Storm duration
 Return period
 Ratio 60 min to 2 day rainfall of 5 yr return period
 5-year return period rainfall of 60 minutes duration
 Increase of rainfall intensity due to global warming
 Factor Z1 (Wallingford procedure)
 Rainfall for 30min storm with 5 year return period
 Factor Z2 (Wallingford procedure)
 Rainfall for 30min storm with 30 year return period
 Design rainfall intensity

Other
 $D = 30 \text{ min}$
 Period = 30 yr
 $r = 0.300$
 $M5_{60min} = 20.0 \text{ mm}$
 $p_{climate} = 0\%$
 $Z1 = 0.77$
 $M5_{30min_i} = Z1 \cdot M5_{60min} = 15.4 \text{ mm}$
 $Z2 = 1.53$
 $M30_{30min} = Z2 \cdot M5_{30min_i} = 23.5 \text{ mm}$
 $I_{max} = M30_{30min} / D = 47.1 \text{ mm/hr}$

DESIGN RAINFALL 100YR (THE WALLINGFORD PROCEDURE)

Design rainfall in accordance with the Wallingford Procedure

Tedds calculation version 2.0.02

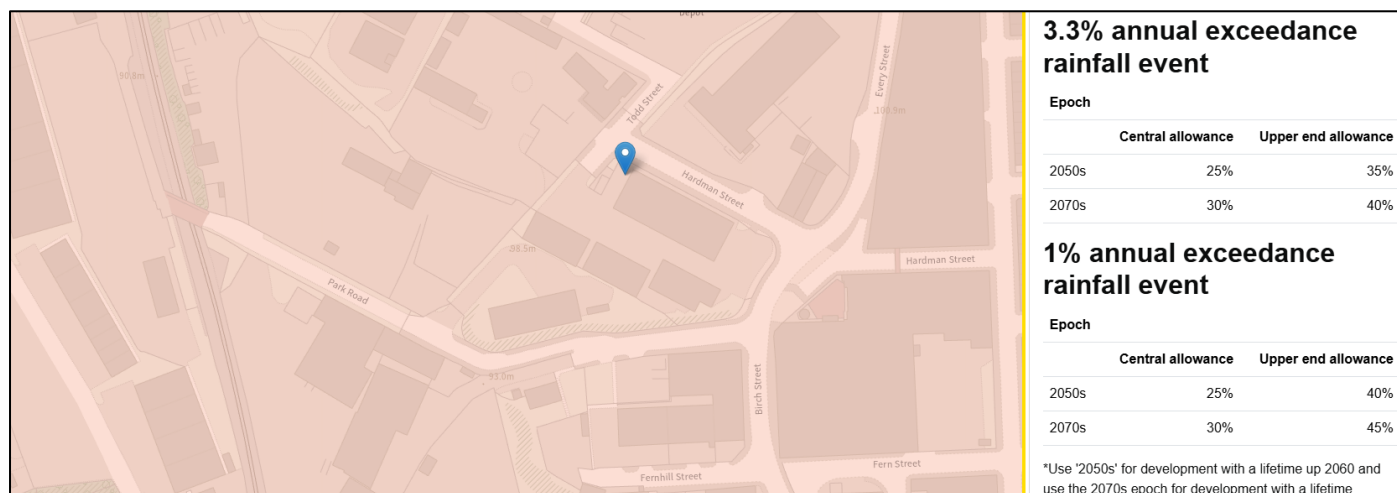
Design rainfall intensity

Location of catchment area
 Storm duration
 Return period
 Ratio 60 min to 2 day rainfall of 5 yr return period
 5-year return period rainfall of 60 minutes duration
 Increase of rainfall intensity due to global warming
 Factor Z1 (Wallingford procedure)
 Rainfall for 30min storm with 5 year return period
 Factor Z2 (Wallingford procedure)
 Rainfall for 30min storm with 100 year return period
 Design rainfall intensity

Other
 $D = 30 \text{ min}$
 Period = 100 yr
 $r = 0.300$
 $M5_{60min} = 20.0 \text{ mm}$
 $p_{climate} = 0\%$
 $Z1 = 0.77$
 $M5_{30min_i} = Z1 \cdot M5_{60min} = 15.4 \text{ mm}$
 $Z2 = 1.99$
 $M100_{30min} = Z2 \cdot M5_{30min_i} = 30.7 \text{ mm}$
 $I_{max} = M100_{30min} / D = 61.4 \text{ mm/hr}$

3.2 Rainfall Climate Change Impacts.

Climate change allowances to peak rainfall intensity are given nationally across the whole of England, based upon river management catchment areas. Refer to graphic inset:



Given the proposed commercial end use, the 2070s epoch is considered suitable for climate change estimation cross referenced with the central allowance potential; which suggests the following climate change estimations to be used:

30yr rainfalls +30% climate change allowance.

100yr rainfalls +30% climate change allowance.

3.3 Proposed Surface Water Drainage.

3.3.1 Infiltration.

As the site is existing, it is only the building footprint which will be erected. The existing entrance and yard serve the other site units and businesses, and will remain as existing.

BGS maps suggest the site is underlain by glacial till/boulder clay which isn't suitable for infiltration.

There is also no room within the ownership boundary & around the proposed building for soakaways, to ensure a 5m offset to foundations in accordance with the UK Building Regulations.

Infiltration is not considered a suitable method of discharging surface water.

3.3.2 Watercourse.

There are no watercourses in the local area.

3.3.3 SW Sewer.

There are no SW sewers in the local area.

3.3.4 Combined Sewer.

The proposed development will need to connect to the existing combined system.

Runoff rates were estimated using the Modified Rational Method, below:

MODIFIED RATIONAL METHOD					
Client:	Bury Drains Ltd.				
Site:	1 Todd Street, Fernhill, Bury.				
PEAK RUNOFF RATE ESTIMATION					
in accordance with CIRIA C753, pgs 519-520, EQ. 24.5					
modified rational method		$Q = 2.78 C i A$	return period (Tr)	rainfall intensity (mm/hr)	runoff rate (l/s)
site area:	175	sqm	1yr	19.10	0.93
	0.0175	Ha	30yr	47.10	2.29
volumetric runoff coefficient Cv:	1		100yr	61.40	2.99
dimensionless routing coefficient Cr:	1		30yr+30%	61.23	2.98
runoff coefficient C (Cv x Cr):	1		100yr+30%	79.82	3.88
rainfall intensity assumptions:					
1yr rainfall	19.1	mm/hr	synthetic 1yr TEDDS calculation		
30yr rainfall	47.1	mm/hr	constant lower intensity estimation, CIRIA C753		
100yr rainfall	61.4	mm/hr	constant upper intensity estimation, CIRIA C753		
development type	commercial/aggricultural	enter commercial/aggricultural or residential			
30yr rainfall climate change allowance	30	%	0.3	ratio	
100yr rainfall climate change allowance	30	%	0.3	ratio	

Due to the small footprint of the development, runoff & relative peak flow rates are low. Due to the low flow rates and volume, it will not be required to attenuate flows further.

For reference, the proposal will not create extra hardstanding, and therefore no additional runoff volume will be created by the development proposals.

3.4 Proposed Foul Water Drainage.

It is proposed to connect the proposed building to the overall site foul.

3.5 Adoption.

The drainage systems drainage will remain private.

3.6 Maintenance.

Maintenance will be private.

4 Conclusion & Residual risks.

This report should be issued to the LPA for planning condition discharge/comment.

Due to the simplicity of the proposal, detailed design is not envisaged.

The proposal may need a United Utilities Part 1 S106 connection application for Building Regulations approval.

Signed.....



D.S. Slattery BSc (Hons).

T J Booth Associates.

Authorised...

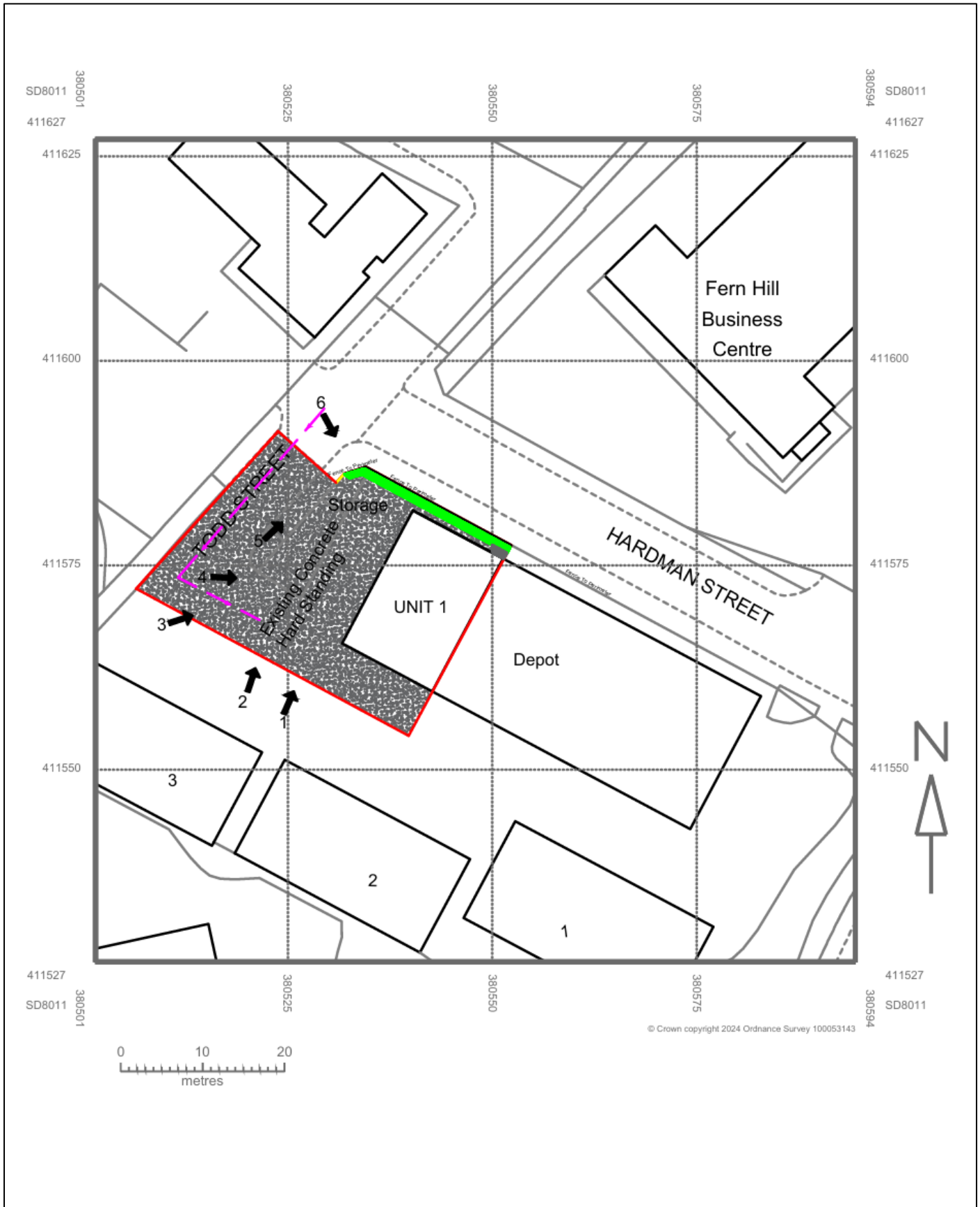


T J Booth BSc (Hons), C. Eng. C. Env. MICE.

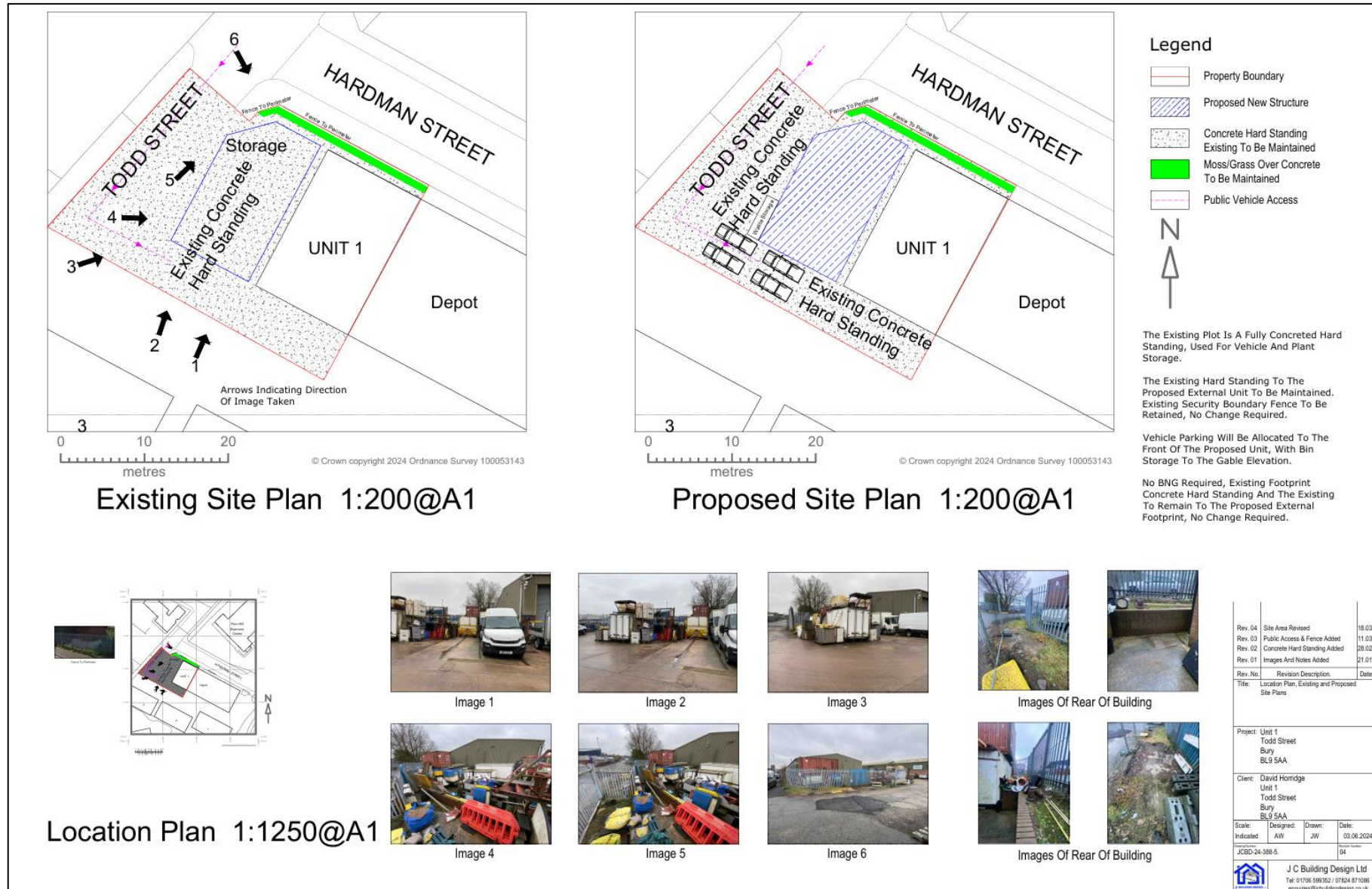
T J Booth Associates.

5 Appendix.

5.1 Location Plan.



5.2 Existing & Proposed Plans.



5.3 United Utilities Sewer Plans.

