

DRAINAGE STRATEGY REPORT

PROPOSED COMMERCIAL DEVELOPMENT

**Rochdale Sports Club
Redbrook
Bridgefold Road
Rochdale
OL11 5BX**

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Client: Rochdale Padel Club
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Revision	Date	Reason
0	Jun 2025	Original to address planning condition.

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1 Introduction.

1.1 Purpose of Assessment.

The primary purpose of this report is to identify drainage strategy from the proposed development. The proposal is for a padel club within the curtilage of the existing Rochdale Sports Club grounds. The area where the proposal is to be situated is adjacent the main cricket pitch & car park.

A planning application is to be submitted in due course, presently there are no planning conditions to discharge.

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.

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.

1.2 LLFA Consultation.

No consultations at the time of writing.

1.3 LPA Planning.

No planning comments at the time of writing.

2 Site Proposals.

2.1 Location Plan.

See Location Plan in Appendix showing the area features.

Rochdale Sports Club is situated to the south of Bridgefold Road, in the Red Brook valley area between Spotland, Bamford & Oakenrod.

The Application Site is located to the east side of the cricket pitch on landscaped sports fields.

Red Brook was culverted c1970s, and is approximately 25m south of the Application Site boundary.

2.2 Site Plan.

Refer to Existing & Proposed Plans in the appendix.

The Application Site comprises a grass landscaped area bound by a wooded area to the east, and the existing cricket pitch to the west.

Existing Site areas are as follows:

Ex hardstandings	0 sqm.
Soft landscaping	2400 sqm.
Total area	2400 sqm.

The padel club will comprise a nominally rectangular piece of land, accessed directly from the car park. It is proposed to have an entrance building with office, bar/seating area and changing facilities, leading through to 4 padel courts (court Nos.1-4). The proposal includes for 2 extra courts (court Nos. 5-6) to be added at a later date.

Court Nos 3-4 will have a canopy overhead.

The general site can be made permeable apart from the roof area to the entrance building & canopy area.

Proposed Site areas are as follows:

Building roof/canopy area (impermeable)	850 sqm.
Proposed courts & pathways (permeable)	1550 sqm.
Total area	2400 sqm.

2.3 Derivation of Data, Surveys and Models.

2.3.1 Existing and proposed topography.

A topographic survey has been undertaken which gives the approximate following levels in maOD:

Northwest corner: 128.39

Northeast corner: 129.12

Southwest corner: 127.90

Southeast corner: 128.00

There is no proposed site level indicated as yet.

2.3.2 Geology.

BGS Maps record the superficial cover to be glaciofluvial sand & gravels.

2.3.3 Drainage Surveys.

N/A – not yet undertaken.

2.3.4 Sewer Undertaker Records.

Not obtained.

2.3.5 BGS Borehole Records.

No relevant boreholes in close proximity to the Site.

2.3.6 Site Investigations.

No site investigation information has been obtained to date.

3 Drainage Strategy.

3.1 Existing Site rainfall & drainage systems.

There is no known Site drainage apart from the United Utilities services.

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	Other
Storm duration	D = 30 min
Return period	Period = 1 yr
Ratio 60 min to 2 day rainfall of 5 yr return period	r = 0.300
5-year return period rainfall of 60 minutes duration	M5_60min = 20.0 mm
Increase of rainfall intensity due to global warming	p _{climate} = 0 %
Factor Z1 (Wallingford procedure)	Z1 = 0.77
Rainfall for 30min storm with 5 year return period	M5_30min _i = Z1 ' M5_60min = 15.4 mm
Factor Z2 (Wallingford procedure)	Z2 = 0.62
Rainfall for 30min storm with 1 year return period	M1_30min = Z2 ' M5_30min _i = 9.6 mm
Design rainfall intensity	I _{max} = M1_30min / D = 19.1 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	Other
Storm duration	D = 30 min
Return period	Period = 30 yr
Ratio 60 min to 2 day rainfall of 5 yr return period	r = 0.300
5-year return period rainfall of 60 minutes duration	M5_60min = 20.0 mm
Increase of rainfall intensity due to global warming	p _{climate} = 0 %
Factor Z1 (Wallingford procedure)	Z1 = 0.77
Rainfall for 30min storm with 5 year return period	M5_30min _i = Z1 ' M5_60min = 15.4 mm
Factor Z2 (Wallingford procedure)	Z2 = 1.53
Rainfall for 30min storm with 30 year return period	M30_30min = Z2 ' M5_30min _i = 23.5 mm
Design rainfall intensity	I _{max} = M30_30min / D = 47.1 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	Other
Storm duration	D = 30 min
Return period	Period = 100 yr
Ratio 60 min to 2 day rainfall of 5 yr return period	r = 0.300
5-year return period rainfall of 60 minutes duration	M5_60min = 20.0 mm
Increase of rainfall intensity due to global warming	p _{climate} = 0 %
Factor Z1 (Wallingford procedure)	Z1 = 0.77
Rainfall for 30min storm with 5 year return period	M5_30min _i = Z1 ' M5_60min = 15.4 mm
Factor Z2 (Wallingford procedure)	Z2 = 1.99
Rainfall for 30min storm with 100 year return period	M100_30min = Z2 ' M5_30min _i = 30.7 mm
Design rainfall intensity	I _{max} = M100_30min / D = 61.4 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 2050s epoch is considered suitable for climate change estimation cross referenced with the central allowance potential; which suggests the following allowance to be used:

30yr rainfalls +25% climate change allowance.

100yr rainfalls +25% climate change allowance.

3.3 Proposed Surface Water Drainage.

3.3.1 Infiltration.

BGS maps suggest the majority of the Application Site is underlain by glaciofluvial sand & gravels which includes all the land under the proposed building and courts 1-4.

The very south part of the site where the potential for two future courts (courts 5 & 6), are potentially partly underlain by some made ground attributed to the former Red Brook landfill area, which may have varying properties.

Site investigation & infiltration testing should be undertaken in due course.

It is anticipated that all external areas such as the open air courts and general pathways, will be suitable for permeable paving. The proposed roof and canopy areas should be suitable for connection to soakaway, subject to satisfactory infiltration testing.

3.3.2 Watercourse.

Red Brook is located nominally 25m south of the site and will only be used if site investigations indicate poor infiltration results.

3.3.3 SW Sewer.

Not required.

3.3.4 Combined Sewer.

Foul water connections only.

3.4 Proposed Foul Water Drainage.

There are existing sewers in the vicinity of the proposed building, and adjacent the existing clubhouse. It is proposed to connect any foul drainage to this network subject to satisfactory drainage surveys.

3.5 Adoption.

The drainage systems drainage will remain private.

3.6 Maintenance.

Maintenance of suds will be private.

4 Conclusion & Residual risks.

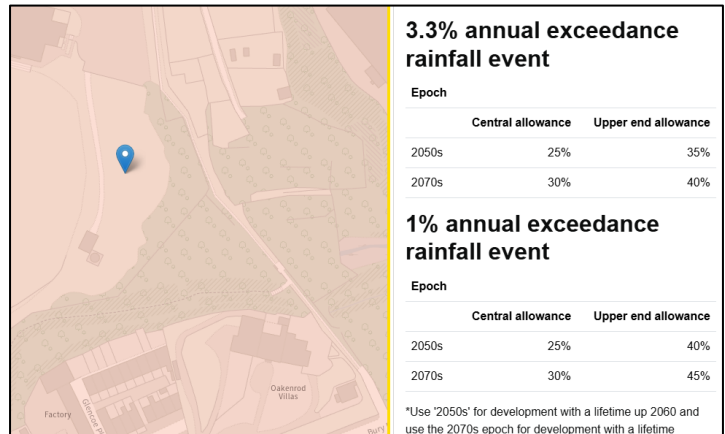
4.1 Drainage.

It is considered that the proposal will be suitable for infiltration SUDS and techniques such as permeable paving/surfaces and soakaway design.

This report should be suitable for initial planning validation, and detailed design be subject to planning condition.

Prior to detailed design, the following will be required:

- Site investigation & infiltration testing.
- Drainage surveys of the existing site drainage systems.





Signed.....



D.S. Slattery BSc (Hons).

T J Booth Associates.

Authorised...

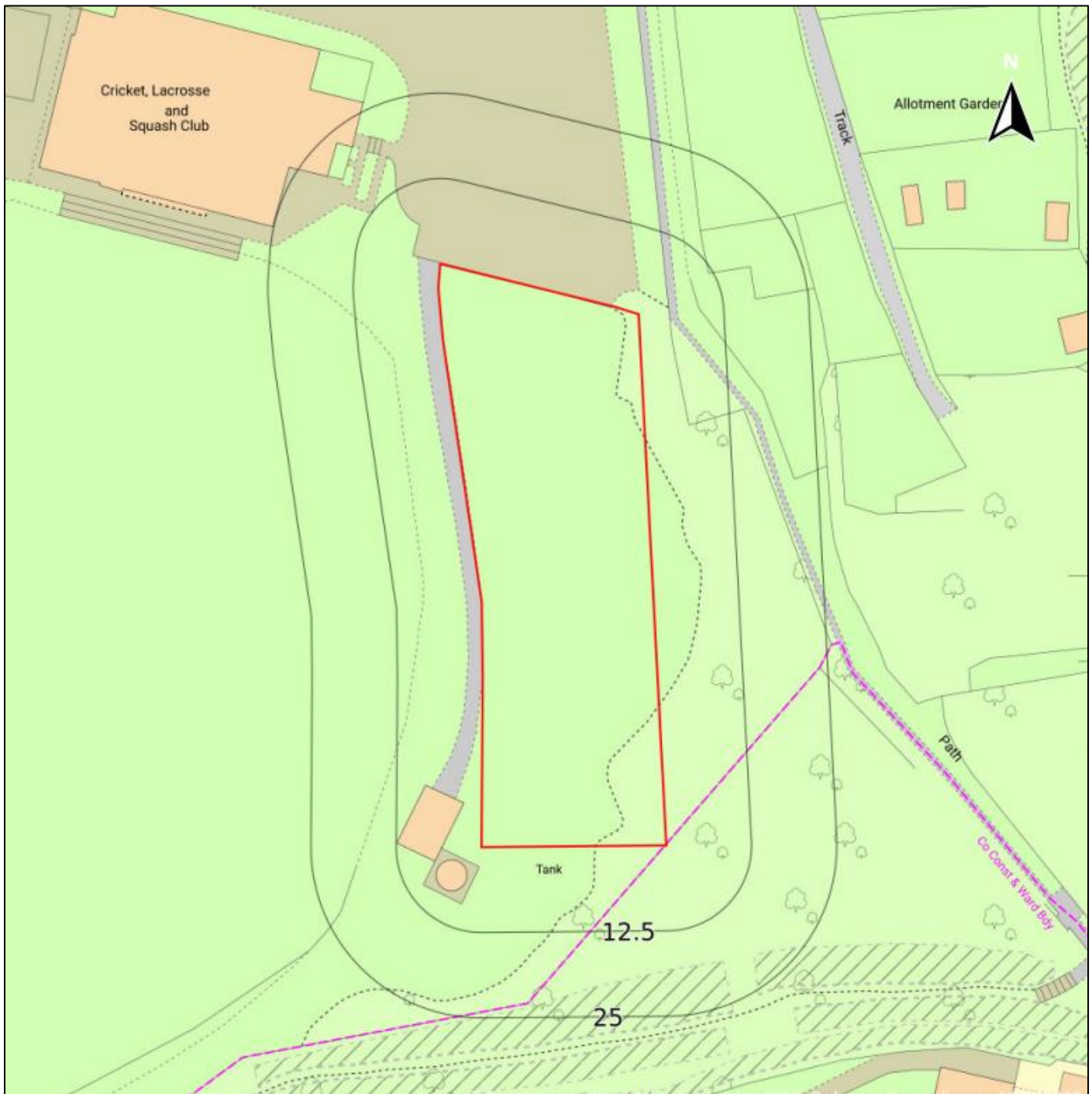


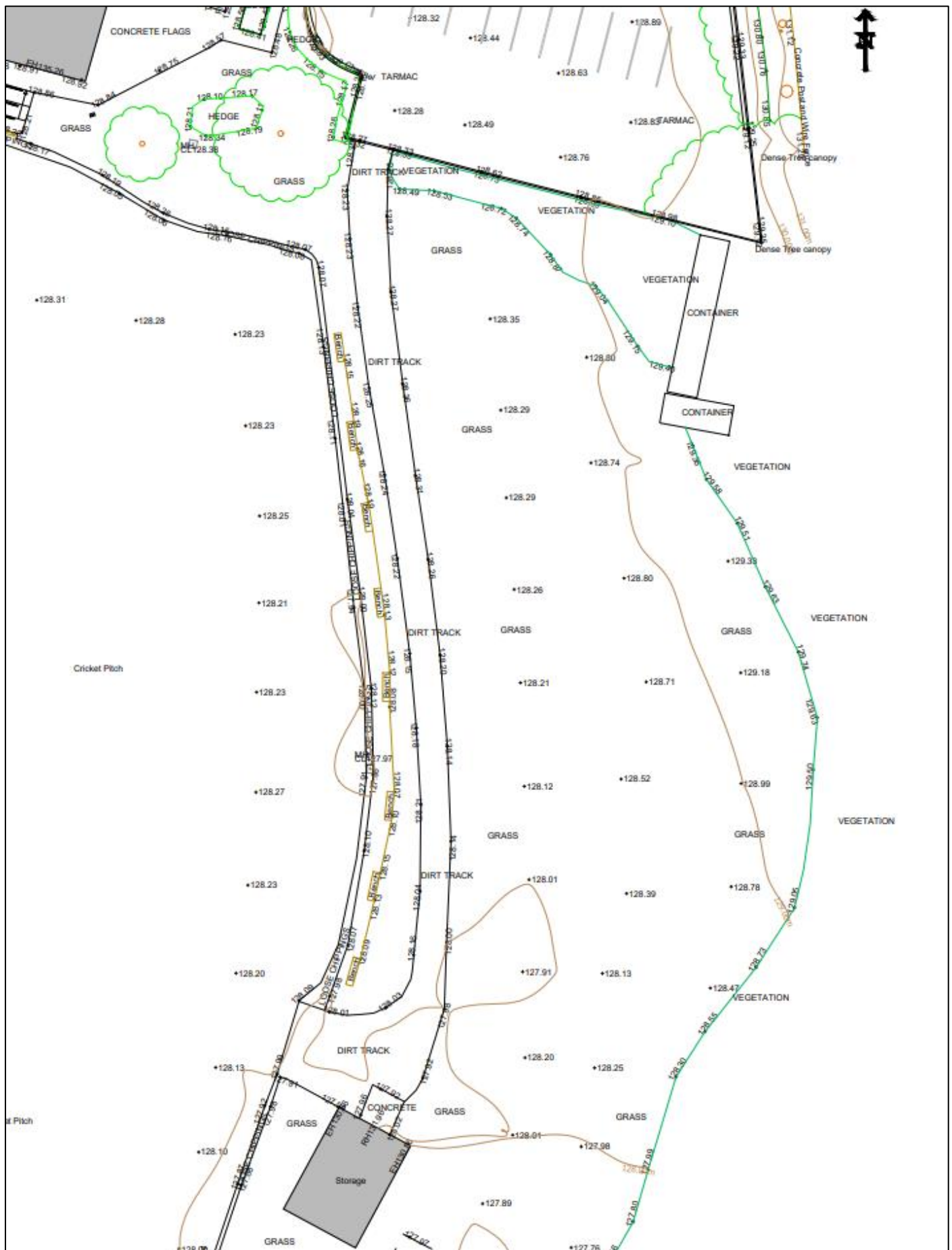
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5 Appendix.

5.1 Location Plan.



5.2 Existing Plans/Topographic Survey.

5.3 Proposed Site Plan.

