



Land at Oldlands Farm,
Shripney Road,
Bognor Regis,
West Sussex

**Flood Risk Assessment
and Drainage Strategy :
Summary Document**

for

**Rolls-Royce Motor Cars
Limited**

July 2014

Hydrock Ref: R/14443/007



DOCUMENT CONTROL SHEET

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Client: Rolls-Royce Motor Cars Limited

Project: Oldlands Farm, Bognor Regis, West Sussex

Title: Flood Risk Assessment and Drainage Strategy Summary

Status: Final

Date: 22nd July 2014

Document Production Record

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Document Revision Record

Issue number	Date	Revision Details	Issued to
1	22/07/14	Final	Rolls-Royce Motor Cars Limited

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Executive Summary

This report comprises a summary of the Hydrock Report (ref R/14443/001) – Flood Risk Assessment and Drainage Strategy Report.

It should be highlighted from the outset that the site already benefits from planning permission for a mixed-use development of up to 33,116 square metres (Arun District Council ref. BE/61/13). That application, which was approved on 19 March 2013, included a Flood Compensation Area and on-site attenuation ponds. The FRA which supported that scheme was found to be acceptable by the Environment Agency and Arun District Council, and sets clear precedent for the full planning permission now sought by Rolls-Royce Motor Cars Limited. Moreover, whilst the application now being pursued is essentially an alternative development to the consented scheme in terms of the B1(c), B2 and B8 uses, the enabling development, envisaged in Phase 1a of BE/61/13, can be implemented alongside Rolls-Royce Motor Cars Limited's proposals.

Flood Risk

The proposal is for the construction of an industrial/warehouse development on land at Oldlands Farm, Bognor Regis, West Sussex. The scheme will consist of two buildings, service yards, car parks, landscaping, and an associated Flood Compensation Area (FCA) the need for which is outlined within the Hydrock detailed FRA.

The Hydrock FRA considered the flood risk posed to the site from a variety of flood risk sources, as defined by the National Planning Policy Framework (NPPF) and the West Sussex Local Flood Risk Management Strategy (LFRMS). The report identified that the proposed development is currently located within Flood Zones 1, 2, and 3 and the Environment Agency's predicted 100 year fluvial flood level is 1.82m AOD. However, this has been increased to a level of 2.0m AOD to include climate change and this is the level the EA stipulate as the minimum required floor level for the development. In the more severe 1:1000 year storm event the EA flood mapping indicates a flood level on the site of 2.38m AOD. The designed finished floor level of the buildings will be +3.0m AOD to allow for a balanced earthworks design between the proposed development and the flood compensation area, on land adjacent to the Bognor Northern Relief Road, and to achieve an enhanced level of flood protection for the end user. The proposed site levels drawing (no. C14443/200) is included in Appendix A.

The FRA report also found the site to be at low risk from tidal, surface water, sewer, groundwater flooding and artificial sources.

There is no residual flood risk from the development site to the surrounding district, due to the restriction imposed on allowable storm water peak flow rates, from the development to Oldlands Farm drainage ditch. Therefore the development does not increase the risk of surface water flooding to other adjacent neighbourhoods.



Drainage Strategy

The outline surface water drainage strategy is to control the surface water discharge from the new development and restrict peak flows to a maximum rate of greenfield runoff, to be agreed with the Environment Agency. The surface water drainage network has been designed to mimic the existing catchment division, with the majority of run-off being taken east towards the watercourse, adjacent to the Bognor to Chichester railway line. This then connects to an open ditch drain that runs east along the northern boundary of the site. The drainage ditch is then culverted under the railway line, it ultimately discharges to the Lidsey Rife approximately 300m to the east of the development. The catchment boundary line is shown on the drainage strategy drawing (no C14443-210) contained within Appendix A.

The highway drainage for the proposed carriageway access will connect into the open drainage ditch to the north of the development and attenuated in oversized pipes.

Sustainable Drainage Systems (SuDS) in the form of Prevention, Source Control and Site Control methods will be considered and where appropriate incorporated. A drainage strategy assessment and outline strategy plan which corresponds with a full surface water hydraulic model accompanies the Hydrock FRA report.

Foul water generated by the development will be discharged by gravity to a pumping station located within the site. The station will then pump via a rising main to a point into the foul public sewer located in Shirpley Road, as indicated by Southern Water Sewer records.

The proposed pumping station and rising main to serve the development is being secured under a Section 98 off site sewer requisition with Southern Water. The design process for this is currently with Southern Water's consultants.

Summary

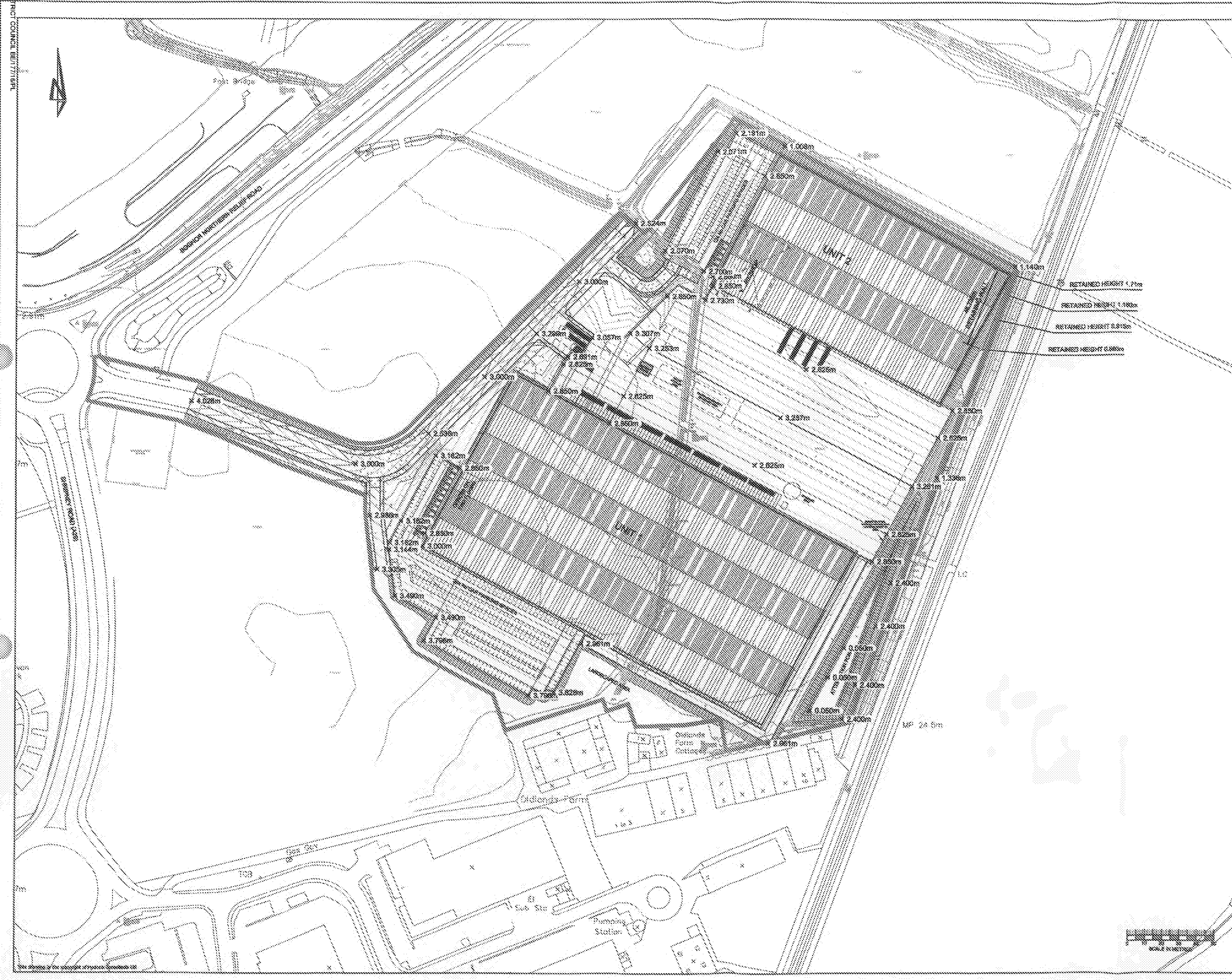
The detailed Hydrock FRA report demonstrates that the proposed scheme:

- Is at low risk from fluvial flooding but is partly in Flood Zone 2 and 3.
- Is not at risk from all other flood sources.
- Would be safe and flood resilient.
- Would not adversely increase flood risk elsewhere, as a result of the proposed development, through increase in surface water run-off.
- Incorporates a comprehensive and flood resilient drainage and SuDS strategy.
- Has an agreed foul discharge location.



1.0 APPENDIX A – HYDROCK DRAWINGS

CONTENTS	
Identifier	Name
Hydrock	Drg No. C14443/200
Hydrock	Drg No. C14443/210



NOTES:

1. All dimensions are to be checked on site before commencement of work. Any discrepancies are to be reported to the Architect & Engineer for verification. Figure dimensions only exist on the drawing.
2. This drawing is to be read in conjunction with all relevant Engineering and Service Engineers' drawings and specifications.

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

IN ACCORDANCE WITH THE HAZARDOUS SUBSTANCES REGULATIONS 2002 (HSR) THE TYPES OF HAZARDOUS MATERIALS ON THIS DRAWING ARE:

CONSTRUCTION

MAINTENANCE / CLEANING

DECOMMISSIONING / DEMOLITION

IT IS ASSUMED THAT ALL WORKS WILL BE CARRIED OUT BY A COMPETENT CONTRACTOR USING APPROPRIATE TOOLS AND APPROVED METHODS.

NOTES:

1. SURVEY INFORMATION BASED ON MALCOLM HUGHES LAND SURVEYORS DRAWINGS (18473-1).
2. PLOT LAYOUT BASED ON MSA ARCHITECTS DRAWING 80889-PL-191A.
3. FFL ASSUMED TO BE 3.00m.
4. CONTOURS SHOWN AT 100MM AND 200MM.
5. FOR DETAILS OF CULVERT ANALYSIS REFER TO DRAWING C14443/02.
6. NUMERICAL VALUES SHOWN ARE PROPOSED LEVELS AOD.

Rev	Date	Description	By	Rev
1	15.06.2014	PROPOSED WALL SIGNAL PROPERTIES	AM	1
2	15.06.2014	PROPOSED WALL SIGNAL PROPERTIES	AM	2
3	15.06.2014	PROPOSED WALL SIGNAL PROPERTIES	AM	3

Hydrock

ROLLS ROYCE MOTOR CARS LIMITED

OLDLANDS FARM
BOGNER REES

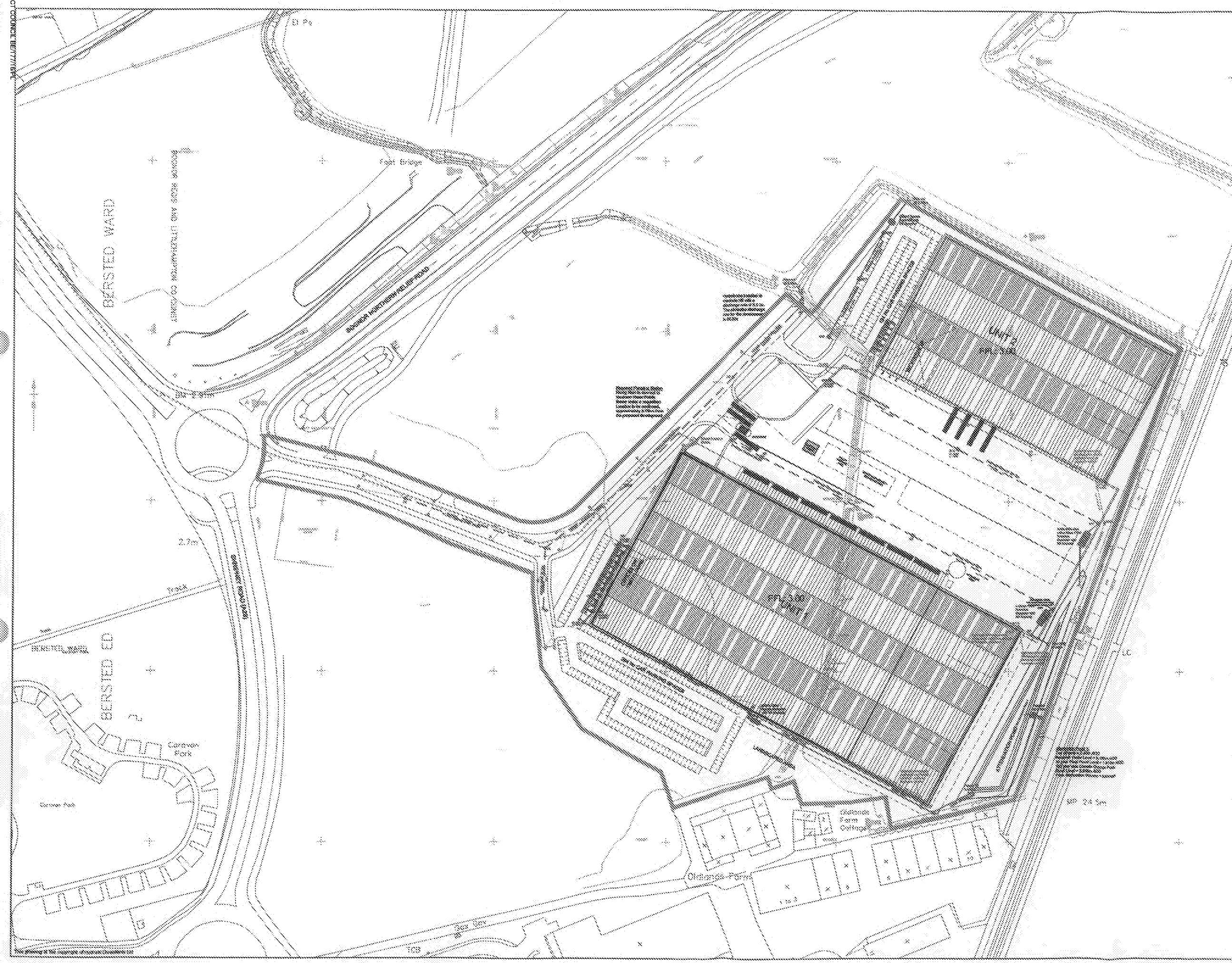
PROPOSED FINISHED FLOOR LEVEL AND CONTOURS (FFL 3.00m)

PRELIMINARY

C14443

Rev	Rev	Rev	Date	Rev
1	1	1	12.05.2014	1

200



- Notes:**
1. All dimensions are to be checked on site before commencement of works. Any discrepancies are to be reported to the Architect & Engineer for verification. All dimensions are to be taken from the site plan.
 2. This drawing is to be used in conjunction with all relevant Highway and Service Engineers' drawings and specifications.

Key:

100mm dia. stormwater pipe	Proposed Road Drainage
150mm dia. stormwater pipe	Proposed SW Drainage
150mm dia. foul water pipe	Proposed Foul Drainage
Site Boundary	Site Boundary

PS	20.06.14	Not too boundary presented	PS	20
PS	20.06.14	Not too boundary presented	PS	20
PS	20.06.14	Not too boundary presented	PS	20

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ROLLS ROYCE MOTOR CARS LIMITED

ORLANDS FARM
SCENIC RESERVE

PROPOSED DRAINAGE
STRATEGY

PRELIMINARY				
C14443				
Project	Client	Scale	Date	Author
20	MR	1:500	20.06.2014	PS
Drawing Number				210