

Surface Water and Foul Drainage Strategy

Proposed Development of Flight Training Centre & Associated Accommodation

Site Address:

Land West Of The Junction With
The Boulevard,
London Oxford Airport
Langford Lane
Kidlington
Oxford
OX5 1RA

Client:

Skyborne Flight Training School

Willcox Cooper Associates

Consulting Civil and Structural Engineers





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PROJECT: London Oxford Airport – Flight Training Centre		JOB No: 10772	
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LOA -Flight Training Centre

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Drainage Strategy Report – PRELIMINARY ISSUE

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1 INTRODUCTION

Willcox Cooper Associates were instructed by Mildren Construction Limited to undertake Civil Engineering design for a Flight Training Centre and associated accommodation on land to the north-west of the Landford Lane and The Boulevard Roundabout Junction, Oxford Spires Business Park, Oxford Airport, Kidlington OX5 1RA.

The site is currently a grassed area with several mature trees. A Ground Investigation Report was undertaken by Ground and Water Ltd on behalf of Mildren Construction Ltd; this was issued on the 1st October 2017.

The investigation on site consisted of Trial Pits, Window Samples and four percolation tests.

This is a preliminary version of the report stating the intended strategy. Detailed calculations and Construction Drawings will be issued in due course.

Refer also to Preliminary drawings – 10772-02, 03 Rev P2



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2 SURFACE WATER DRAINAGE STRATEGY

A series of percolation tests, in accordance with the principles of BRE365, were undertaken within four trial holes as part of the site investigation by Ground and Water Ltd. A summary of the results are shown in Figure 1 below.

BRE 365 Test Results					
Trial Pit and Depth (m bgl)	Test No.	Start Depth (m bgl)	Finished Depth (m bgl)	Time Taken (mins)	Infiltration Rate (m/s)
TP2/1.45m	1	0.26	1.16	76	3.04×10^{-5}
	2	0.31	Dry	139	3.03×10^{-5}
TP3/1.60m	1	0.28	1.39	39	1.58×10^{-4}
	2	0.36	Dry	55	1.02×10^{-4}
	3	0.51	Dry	72	6.52×10^{-5}
TP4/1.65m	1	0.40	1.37	66	5.99×10^{-5}
	2	0.50	1.40	94	3.96×10^{-5}
TP5/2.20m	1	0.84	Dry	107	3.97×10^{-5}

Figure 1: Summary of Percolation Tests by Ground and Water Ltd

These percolation tests show that the sub-strata is suitable for infiltration drainage. It is therefore proposed that all the surface water from the roof and the parking areas is conveyed into a series of soakaways. The surface water that falls onto this site will all be retained within the boundary of the site.

In accordance with the CIRIA Report C697 “The SUDS Manual” the following steps have been taken to ensure a sustainable drainage strategy:

1. Prevention: green areas on site have been maximised to reduce the impermeable area. A regular maintenance scheme for the car-park will be introduced to the site management plan to mitigate the risk of drainage blocking and causing localised flooding.
2. Source Control: Run-off from the car-parks and roofs will be collected and routed to nearby soakaways for infiltration into the sub-strata. All surface water will be retained on site.



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3 FOUL WATER DRAINAGE STRATEGY

There is currently an existing foul water running through the site which owned by Wessex Water Services Ltd, the regional Water Authority for the area.

Existing manholes for the existing system are located to the North-East and North-West; adjacent to the site.

The existing drainage to the North-West of the site needs to be diverted to enable the construction of the accommodation block. It is proposed that the accommodation block drainage will enter the foul system as part of this diversion.

The foul drainage for the training block will be directed into the foul sewer to the North-East of the site.