



DRAINAGE STRATEGY SUMMARY:

Sonning Golf Club Phase 2
– Housing Development

ADDRESS:

Sonning Golf Club, Duffield Road,
Sonning. RG4 6GJ

R02 – Second Issue – Layout updated

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APPENDICES

- A. SITE SURVEY DRAWING H1620/400-1 & 400-2**
- B. EXISTING RUN-OFF CALCULATIONS**
- C. EA FLOOD ZONE MAP**
- D. EA SOURCE PROTECTION ZONES**
- E. DRAINAGE DESIGN DRAWINGS H1620/451 > H1620/473**
- F. CAUSEWAY "FLOW" CALCULATIONS**
- G. DESIGN EXCEEDANCE DRAWING H1620/453**
- H. SURFACE WATER MANAGEMENT PLAN**
- I. SITE INVESTIGATION REPORT INCLUDING INFILTRATION TEST RESULTS**

Document Control Sheet

Date of first Issue 31/07/26 – Report Version R01

Rev.	Date	Description	By	Checked
R01	31/07/26	First Issue	SU	PP
R02	10/08/26	Layout updated to suit Architects layout dated 10/08/26.	SU	NT

1 Introduction

This report outlines the surface and foul water Drainage Strategy for the proposed development, Sonning Golf Club, Duffield Road, Sonning. RG4 6GJ. The development proposals included the construction of 50 dwellings with access roads and parking.

2 Planning Application proposals

Outline planning permission Ref:- 223458 for the proposed erection of up to 50 no. dwellings with public open space and revised access off Duffield Road.

3 Technical Summary

Detailed drawings to be submitted to the planning authority which include the following engineering drawings.

- H1620-451 - Schematic Drainage Layout 1 of 2
- H1620-452 - Schematic Drainage Layout 2 of 2
- H1620-453 - Schematic Layout & Levels 1 of 2
- H1620-454 - Schematic Layout & Levels 2 of 2
- H1620-455 - Drainage Areas 1:500
- H1620-456 - Design Exceedance
- H1620-460 - Long Sections 1 of 4
- H1620-461 - Long Sections 2 of 4
- H1620-462 - Long Sections 3 of 4
- H1620-463 - Long Sections 4 of 4
- H1620-465 - Highway Construction Details
- H1620-470 - Drainage Details 1 of 3
- H1620-471 - Drainage Details 2 of 3
- H1620-472 - Drainage Details 3 of 3

4 Background

4.1 *The existing site*

The existing site is currently part of the golf course and measures approximately 370m at its longest by approximately 85m wide. The site area equals 3.2hec excluding the access road / existing carpark. The Topographical survey drawing has not identified any drainage features within the development site, and it is therefore assumed that the soft landscaping is currently self-draining.

The site is sloping from the northwest boundary to the southeast. The level difference is about 1m from 54.30 down to approximately 53.30m. Mature trees

are present along the northwest and southeast boundaries. Refer to Appendix A - Drawings H1620-400-1 & H1620-400-2 - Site Survey Sheets 1 & 2.

4.2 Existing Site run-off

Existing run-off from the site has been determined using the ICP Mean Annual Flood Method which has provided the following flow rates. Refer to Appendix B – Greenfield Run-off Rates.

Results	l/s
Qbar Rural	5.8
Qbar Urban	5.8
Q1 years	5.0
Q30 years	13.2
Q100 years	18.6

4.3 Flooding Issues

The site is located in EA- Flood Zone 1 which comprises of land assessed as having a less than 1 in 1000 annual probability of river or sea flooding (<0.1%) in any year. The Environment Agency has not provided any history of flooding at the site. Refer to Appendix C – EA Flood Zone Map.

4.4 Ground Conditions

The presence of River Terrace Deposits was confirmed by the investigation, with a covering of made ground and reworked natural material associated with the landscaping. The Lambeth Group and undifferentiated chalk formations were not encountered within the depth of investigation. Refer to Appendix I – Site Investigation Report

4.5 Groundwater

Groundwater was not encountered during the site investigation works.

4.6 Water Resources

The site is located on the edge of Source Protection Zone 3 – Total Catchment. This is the area around a supply source within which all the groundwater ends up at the abstraction point. Refer to Appendix D – EA Source Protection Zones.

5 Infiltration Test Results

Infiltration testing was carried out by Soil Consultants as part of their detailed Site Investigation Ref: 11043a/CA dated 01/09/25. Refer to Appendix I – Site Investigation Report which includes Infiltration Test Results.

Trial pit soakage testing indicated infiltration rates of between $1.75 \times 10^{-4} \text{m/s}$ (good) and $2.65 \times 10^{-6} \text{m/s}$ (very poor). The majority of the testing returned figures ranging between 2.48×10^{-5} to $8.88 \times 10^{-6} \text{m/s}$. For the purposes of the design the lowest of the median test results is used $8.88 \times 10^{-6} \text{m/s} = 0.032 \text{m/h}$.

Infiltration coefficients

m/s	m/h	Test 1	Test 2	Test 3	Comments
0.0005	5.00E-04	1.80			Good
0.0004	4.00E-04	1.44			Good
0.0003	3.00E-04	1.08			Good
0.0002	1.75E-04	0.63	SA3-2		Good
0.0001	1.250E-04	0.45	SA4-1		Good
0.00009	9.00E-05	0.324			Average
0.00008	8.00E-05	0.288			Average
0.00007	7.00E-05	0.252			Average
0.00006	6.00E-05	0.216			Average
0.00005	5.00E-05	0.180			Average
0.00004	4.00E-05	0.144			Average
0.00003	3.00E-05	0.108			Average
0.00002	2.48E-05	0.089	SA3-1		Average
0.00001	1.29E-05	0.046	SA2-1		Poor
0.000009	9.03E-06	0.0325	SA1-1		Poor
0.000009	8.88E-06	0.0320	SA6-1		Poor
0.000007	7.00E-06	0.0252			Poor
0.000006	6.00E-06	0.0216			Poor
0.000005	5.00E-06	0.0180			Poor
0.000004	4.00E-06	0.0144			Poor
0.000003	2.65E-06	0.0095	SA5-1		Very Poor
0.000002	2.00E-06	0.0072			Very Poor
0.000001	1.00E-06	0.0036			Very Poor
0.0000009	9.00E-07	0.0032			Very Poor
0.0000008	8.00E-07	0.0029			Very Poor
0.0000007	7.00E-07	0.0025			Very Poor
0.0000006	6.00E-07	0.0022			Very Poor

6 Detailed Drainage Layout & Details

A detailed drainage layout has been prepared to show the new roof areas discharging to soakaways, driveways draining to permeable pavements and the road areas draining to large cellular soakaways where possible and part of the road is designed to drain to an infiltration basin. The drainage has been designed using “Flow”. And modelled for the 1:100year storm plus 40% for climate change.

Foul water drainage is designed to drain by gravity to a pump station located along the southeastern boundary. The pump station will discharge to the adoptable drainage network in the access road near Duffield Road.

Refer to Appendix E – Drainage Layout Drawings H1620/451 > H1620/473.

Refer to Appendix F – Causeway “Flow” Calculations.

7 Design Exceedance

Refer to Appendix G – Design Exceedance H1620/456.

8 Surface Water Management Plan

Refer to Appendix H – Surface Water Management Plan