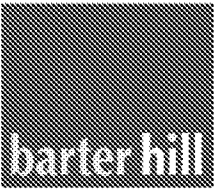




Surface Water and SuDS Verification Report

Vistry Homes South East Ltd
Avisford Grange, Walberton, West Sussex

March 2023



Quality Assurance

Site name: Avisford Grange, Walberton, West Sussex

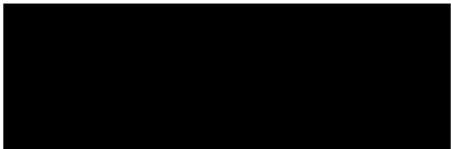
Client name: Vistry Homes South East Ltd

Type of report: Surface Water and SuDS Verification Report

Job Reference: 8804

Prepared by: John Russell

Signed

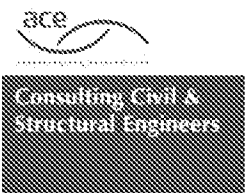


Date March 2023

Checked by: Rob Brusselen

Signed

Date March 2023



Rev	November 2022	Details	Prepared by	Checked by
V.01	March 2023	Draft issue for external review	JR	RB
V.02	July 2024	Phase 1 completion	JR	AB
V.03	November 2024	As Constructed Survey completion	JR	AB
V.04	November 2024	Updated for consultation comments	JR	AB
V.05	March 2025	Updated for consultation comments	JR	AB

Vistry South East Ltd

Avisford Grange, Walberton, West Sussex

March 2023

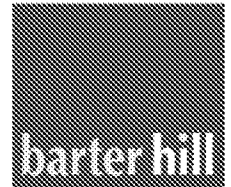


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1 Introduction

- 1.1 Barter Hill Consulting Engineers have been commissioned by Vistry Homes Limited to prepare a Surface Water and Sustainable Urban Drainage Systems (SuDS) Verification Report. The aim of this report is to detail all the surface water drainage and surface water SuDS elements have been constructed in line with Ardent Consulting Engineers designs and specifications and the guidance set out within the CIRIA SuDS Manual 2015 and will inform those bodies responsible on how to manage and maintain these systems effectively in the future. This report will be submitted to Arun District Council's Planning Officer to enable discharge of condition 23b which states:

Immediately following implementation of the approved SuDS scheme for each design catchment agreed under (a) and prior to occupation of any part of the development which that catchment serves, the developer/applicant shall provide the Local Planning Authority with as-built drawings of the fully implemented scheme, together with a completion report prepared by an independent engineer that confirms that the scheme was built in accordance with the approved drawing/s and is fit for purpose.

- 1.2 This report will be a live document and as the works progress, the report will be updated in line with construction progress until such time as the development is complete and the finished submitted report agreed and accepted with the Local Authority. The Report is prepared in accordance with the Drainage Phasing Plan attached and seeks to address both Phases 1 and 2
- 1.3 The Author of the report, John Russell, has worked in the construction industry since 1979 for both Housing Developers and Consulting Engineers as a Civil Engineer and Company Director.

2 Site Location

- 2.1 The development is approximately 11.3 ha (28 acres) and was 100% Greenfield. It is located in Walberton, West Sussex (NGR 497286 106211) 500 m south from A27 (Arundel Road). The development site is currently bordered by the Avisford Park Golf course to the north, Tye Lane to the west and school and residential dwellings to the south and east.
- 2.2 The proposed development comprises the erection of 175 dwellings with access from B2132 Yapton Lane. Refer to Appendix A for a plan of the proposed development site consisting of residential dwellings and associated car parking, soft landscaping, private gardens and access roads.

3 Description of Works

- 3.1 The works comprise of a residential development consisting of 175 homes with associated infrastructure in the form of estate roads, traditional piped foul and surface water drainage, culverts and SuDS features out-falling to the proposed infiltration basins within the development boundaries. These basins which form the primary attenuation and water quality features for the overall development prior to final discharge at the prescribed greenfield run-off rate.
- 3.2 This report will focus on the construction and implementation of the on-site surface water drainage and SuDS features.

4 SuDS Features

- 4.1 Within the development SuDS features consist of a series of swales, under-drained swales and permeable paving all of which have been designed to convey and treat surface water run off together with providing some element of upstream attenuation and to eliminate the risk of flood to the development and the surrounding area. These features discharge surface water via infiltration both locally and to 2 larger basins. These are located as follows and highlighted as constructed at time of latest inspection visit.

i	Soakaway Tank	ii	Swale C
iii	Swale D	iv	Headwall 1A
v	Headwall 1B	vi	Swale E
vii	Swale F	viii	Headwall 1C
ix	Headwall 1D	x	Headwall 1E
xi	Permeable Paving 1A	xii	Permeable paving 1B
xiii	Permeable Paving 1C	xiv	Swale G
xv	Swale H	xvi	Headwall 1F
xvii	Headwall 1G	xviii	Headwall 1H
xix	Headwall 1I	xx	Eastern Basin
xxi	Swale I	xxii	Swale J-M
xxiii	Swale N	xxiv	Swale O
xxv	Swales P-R	xxvi	Headwalls 2C-2G
xxvii	Western Basin	xxviii	



4.2 The above SuDS features are identified on the following drawings:

LHS240-1235 SuDS Key Plan
LHS240-1201_C7 Main Drainage Sheet 1
LHS240-1202_C6 Main Drainage Sheet 2
LHS240-1221_C1 Drainage Construction Details Sheet 1
LHS240-1222_C1 Drainage Construction Details Sheet 2
LHS240-1223_C1 Drainage Construction Details Sheet 3

These drawings are located in Appendix A and B of this report.

5 Construction Quality and Assurance

- 5.1 Barter Hill were instructed to carry out periodic site inspections which would consist of visually inspecting, monitoring and recording via photographic evidence the construction of drainage throughout the various stages of the construction process.
- 5.2 The author of this report John Russell is a director of Barter Hill Partnership Limited and as a Civil Engineer has over 40 years of experience in the construction industry
- 5.3 An initial site meeting was held between Vistry Homes, Barter Hill and the Groundworks Contractor (BARAM) to ensure the strategy and construction details were fully understood and to establish the requirement for accurate records to be taken during the construction process to allow this document to be populated accordingly and to inform a final set of As-Constructed details.
- 5.4 As instructed Barter Hill will undertake periodic site inspections and record keeping at each key stage of the drainage construction. Following this we conclude that the construction of the drainage has been built in line with the Ardent approved design and specification and in line with the Water Authorities Association Sewer Sector Guidance

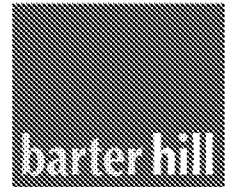
Evidence of the above inspections can be seen from the photos that were taken, and which can be located in Appendix C of this report.

- 5.5 As noted previously this report will be updated with the remainder of the drainage elements as and when they are constructed until such time as the development is complete. Once complete this report will be re-submitted to Arun District Council to allow full discharge of condition 23.
- 5.6 Following the most recent visit on 9 July 2024 it can be confirmed that phase 1 of the scheme has been constructed in accordance with the approved drawing/s and is fit for purpose.

Vistry South East Ltd

Avisford Grange, Walberton, West Sussex

March 2023

**5.7 Site Inspection Information**

Site Inspections	Date	Barter Hill Employee Attended
Meeting with Contractor and review on design details	17 January 2022	John Russell
Eastern pond under construction, phase 1 eastern features complete and functioning	21 March 2022	John Russell
Site Inspection Eastern Pond complete, phase 1 features partially complete and functioning.	1 February 2023	John Russell
Phase 1 completion all features constructed and functioning.	9 July 2024	John Russell

5.8 Finished Levels and supplier product information supplied by groundworks contractor provided in Appendix F.

Vistry South East Ltd

Avisford Grange, Walberton, West Sussex

March 2023



Appendices



Appendix A

Infrastructure Drainage Layouts with Asset Locations

- LHS240-1235 SuDS Key Plan
- LHS240-1201_C7 Main Drainage Sheet 1
- LHS240-1202_C6 Main Drainage Sheet 1

Vistry South East Ltd

Avisford Grange, Walberton, West Sussex

March 2023



Appendix B

Infrastructure Construction Details

- LHS240-1221_C1 Drainage Construction Details Sheet 1
- LHS240-1222_C1 Drainage Construction Details Sheet 2
- LHS240-1223_C1 Drainage Construction Details Sheet 3

Vistry South East Ltd

Avisford Grange, Walberton, West Sussex

March 2023



Appendix C

QA Images

Vistry South East Ltd

Avisford Grange, Walberton, West Sussex

March 2023

barter hill



Swale E - 17 January 2022 - complete and functioning

Vistry South East Ltd

Avisford Grange, Walberton, West Sussex

March 2023



Eastern Pond - 17 March 2022 – under construction, liner being installed.

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Avisford Grange, Walberton, West Sussex

March 2023

barter hill



Swale I - 01 February 2023 – complete and functioning

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March 2023

barter hill



Eastern Pond / Head Wall 1J - 01 February 2023 – stilling area complete an functioning.

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Avisford Grange, Walberton, West Sussex

March 2023

barter hill



Swale K / L - 01 February 2023 Partially complete and functioning - 9 July 2024.

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March 2023

barter hill



Swale M - - 01 February 2023 - complete and functioning

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March 2023

barter hill



Swale H - 01 February 2023 - complete and functioning

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Avisford Grange, Walberton, West Sussex

March 2023

barter hill



Head Wall 1G - 01 February 2023 - complete and functioning

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Avisford Grange, Walberton, West Sussex

March 2023

barter hill



Head Wall 1F - 01 February 2023 – Partially complete

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Avisford Grange, Walberton, West Sussex

March 2023



Swale 1H - 01 February 2023 - complete and functioning

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March 2023

barter hill



Permeable Paving -1B - 01 February 2023 - complete and functioning

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Avisford Grange, Walberton, West Sussex

March 2023

barter hill



Permeable Paving 1C - 01 February 2023 - complete and functioning

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Avisford Grange, Walberton, West Sussex

March 2023

barter hill



Eastern Pond - 01 February 2023

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Avisford Grange, Walberton, West Sussex

March 2023



Eastern Pond A - 01 February 2023

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Avisford Grange, Walberton, West Sussex

March 2023

barter hill



Swale C - 01 February 2023 - complete and functioning

Vistry South East Ltd

Avisford Grange, Walberton, West Sussex

March 2023

barter hill



Swale D - 01 February 2023 - complete and functioning

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Avisford Grange, Walberton, West Sussex

March 2023



Swale C and Head Wall 1A - 01 February 2023 - complete and functioning

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Avisford Grange, Walberton, West Sussex

March 2023



Swale G and Head Wall 11 - 01 February 2023 - complete and functioning

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Avisford Grange, Walberton, West Sussex

March 2023

barter hill



Swale G and Head Wall 11 - 01 February 2023 - complete and functioning

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barter hill



Head Wall 1B - 01 February 2023 - complete and functioning

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barter hill



Permeable Pavement 2A - 9 July 2024 - complete and functioning

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Avisford Grange, Walberton, West Sussex

March 2023

barter hill



Swale B-HW2A - 9 July 2024 - complete and functioning

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Avisford Grange, Walberton, West Sussex

March 2023

barter hill



Swale O-N - 9 July 2024 - complete and functioning

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Avisford Grange, Walberton, West Sussex

March 2023



Swale P-Q-HW2C-G - 9 July 2024 - complete and functioning

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Avisford Grange, Walberton, West Sussex

March 2023

barter hill



Swale R-HW2G - 9 July 2024 - complete and functioning

Vistry South East Ltd

Avisford Grange, Walberton, West Sussex

March 2023

barter hill



Swale S – 09 July 2024 - complete and functioning

Vistry South East Ltd

Avisford Grange, Walberton, West Sussex

March 2023



Swale H-HW1F - 9 July 2024 - complete and functioning



Swale S-HW2F - 9 July 2024 - complete and functioning

Vistry South East Ltd

Avisford Grange, Walberton, West Sussex

March 2023



Appendix D

As Constructed Survey

Vistry South East Ltd

Avisford Grange, Walberton, West Sussex

March 2023



Appendix E

Professional Indemnity Insurance

Vistry South East Ltd

Avisford Grange, Walberton, West Sussex

March 2023



Appendix F

FFL Survey & Supplier Material Details