



Windmill Views, Yapton SuDS Installation Report

Prepared for Redrow Homes Southern Counties
By Technical & Development Services
(Southern) Ltd

Project Information

Title	SuDS Installation Report
Site Location	Windmill Views, Yapton
Client	Prepared for Redrow Homes Southern Counties
TDS Project Number	RHSC.EW.02
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Issue History

Issue	Date	Author	Author signature	Approver	Approved signature
01	08/09/2021	S. Smith		R. Bishop	

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1. The Site

Proposed residential development by Windmill Views, Yapton which includes a range of SuDS features to facilitate the storage and removal of the S278 Highway Surface Water.

2. Principal Activity

To provide a detailed Report to the Client (with supporting information), verifying that the construction of the SuDS System has been completed in accordance with the technically approved design and specifications.

Due to the system being kept within the control of the Management Company, this process will also be undertaken in conjunction with the requirements of both the ILFA and NHBC, for the purposes of their sign off.

3. Scope of Works

- Review the relevant drawings and the scheme as a whole, to ensure the Technically Approved status of the design is appropriate for the conditions for which we are reporting against.
- Arrange a prestart meeting to go through the initial comments on how the role will work, including agreeing the requirements of the inspection process, which will include the method for organizing the call off timings required (i.e. minimum 24 hours call out period for any site visits).
- To act as the Client's SuDS installation supervising Engineer/Authority, for the construction of the Attenuation Tank and Pond.
- To monitor and ensure that the installation works are completed in accordance with the approved designs and specifications provided by the client, including the monitoring of both materials and workmanship on site.
- To provide a regular update to the client, including photographic evidence, indicating the progress and status of each of the elements being installed, until such time as the installation is complete.
- To provide a report (see below), once installation has been completed, covering the build out process, including evidence of the initial excavations, the preparation of the Sub-Base, the installation of any reinforcing membrane, the installation of the filtering media itself (Crates), the wrapping and securing of the system with a geomembrane, the appropriate connection of all necessary pipework and fittings, the Testing and Commissioning sign off for each of the systems and finally the backfilling and grading of the specified capping layer (Top Soil etc), where applicable.

4. Report

The pond and attenuation tank construction drawings can be found in Appendix 1.

Construction of the pond commenced mid April 2021 but was delayed due to the availability of a suitable clay liner.

Appendix 2 Photos 1 (inspection 22nd April) & 2 (inspection 10th May) show the excavation of the pond box, note Photo 2 the southern bank profile is too steep, this was later regraded with the clay liner.

The construction of the pond through to its completion recommenced during WC 23rd August to the 7th September. Regular inspections were made during the construction of the pond and attenuation tank specifically on 27, 31st August and 2,3,6. & 7th Sept as shown by the sequence of the photos. It should be noted that Blaze worked through both weekends in this period including the Bank Holiday.

The following photos show the construction of the pond and associated attenuation tank:

Photo 3-6 Installation of bentonite liner and placing of suitable clay liner

Photo 7-8 Placing of top soil trimmed and compacted

Photo 9-10 Installation of bio-degradable erosion mat, completed 6th September

Photos 11-12 Excavation for attenuation tank and fines free gravel base

Photos 13-14 Installation of drainage crates sealed in a geo-membrane with a porous pipe running through the middle wrapped in a geotextile and backfilled with a fines free gravel

Photos 15 -16 Show welded geo-membrane wrapped in geo textile

Photos 17-18 Shows the backfilling of the finished attenuation tank

5. Summary

The pond and attenuation tank described in the report and shown in the photographs in Appendix 2 have been constructed in accordance with the construction drawings and specification shown in Appendix 1.

It should be noted that this report has not verified the connections from the weired manhole to the west or the outfall to the existing ditch to the south west of the ditch

APPENDIX 1

Site Plan

Pond Construction Details

Attenuation Tank Construction Details

SPECIFICATION NOTES

1. ALL DRAINAGE SHALL BE CONSTRUCTED AND COMMISSIONED IN ACCORDANCE WITH BS 809 & BS EN757, BUILDING REGULATIONS OCC. H AND ANY PARTICULAR REQUIREMENTS OF THE BUILDING CONTROL OFFICER.
2. DRAIN BENCHING IS TO BE PROVIDED AS D200, D300, AND D400 AS SHOWN ON THE DRAWING DETAILS SHEETS.
3. EFFECTIVE COVER IS THE MINIMUM DEPTH OF COVER OVER THE PIPE DOWN AT ANY DURING THE CONSTRUCTION PROCESS.
4. ALL CONCRETE PIPWORK, MANHOLES AND FITTINGS SHALL BE TO BS 931 (ALL RELEVANT PARTS). ALL CONCRETE PIPWORK TO BE TO HIGHEST STRENGTH
5. WHERE CONNECTIONS ARE TO BE MADE TO EXISTING MANHOLES, INVERT LEVELS, PIPE SIZES & ORIENTATION SHALL BE CHECKED PRIOR TO THE COMMENCEMENT OF THE WORK AND ANY VARIANCE REPORTED TO THE ENGINEER IMMEDIATELY.
6. WHERE PIPELINES CROSS, EACH IS TO BE SURROUNDED WITH GRADE 5/1 MASS CONCRETE FOR A DEPTH NOT LESS THAN 1m CENTED ON THE CROSSING POINT. LENGTH OF SURROUND TO BE EXTENDED AS NECESSARY WITH LENGTH OF THE MOST HEAVY RADIUS CIRCLES.
7. THE CONNECTIONS ARE TO BE PROTECTED MEASURES ARE TAKEN TO ENSURE THAT DRAINAGE PIPWORKS AND FITTINGS ARE NOT DAMAGED BY SITE TRAFFIC PRIOR TO OVERSITE FILLING OPERATIONS BEING COMPLETED ABOVE BUILDINGS.
8. ALL PRIVATE DRAINAGE PIPWORK SHALL BE PVC-U, ALL ADAPTED DRAINAGE TO BE VC-U. ALL UNDERGROUNDING DRAINAGE TO BE LAID AT A GRADIENT OF 1:40
9. WHERE DRAINS PASS THROUGH FOUNDATIONS OR CONNECT TO MANHOLES, FLEXIBLE PIPE JOINTS ARE TO PROVIDED WITHIN 150mm OF THE FACE OF THE STRUCTURE AND WITHIN A FURTHER 600mm TO FORM A FOOTING PIPE.
10. WHERE PIPES PASS THROUGH SCREEN WALLS, FOOTINGS OR RETAINING WALLS, LINTELS ARE TO BE PROVIDED.
11. WHERE PIPELINES PASS WITHIN 1m OF BUILDINGS OR WALLS THE FOUNDATIONS ARE TO BE TAKEN DOWN BELOW THE BOTTOM OF THE TRENCH
12. 450mm DIA. INSPECTION CHAMBERS (F75/25) MAY BE USED:
- WITH 300mm REDUCED OPENING WHERE THE DEPTH FROM COVER TO INVERT EXCEEDS 1000mm.
13. 300mm DIA. POLYPROPYLENE ACCESS CHAMBERS (F45/25) MAY BE USED
- WHERE THE DEPTH FROM COVER TO INVERT DOES NOT EXCEED 1000mm AND WHERE THE PIPE SIZE DOES NOT EXCEED 100mm DIA.
14. STEEL COVERS OUTSIDE PIPWORK BOUNDARIES SHALL BE:
(UNLESS NOTED ON DRAWING OR MANHOLE SCHEDULES)
- ON PRIVATE SHOWWAYS: F45/25 OR F45 (BS EN 1241: 1999)
- ON PRIVATE PATHWAYS, VERGES OR ON GRASSES: FACTA GRADE A (BS EN ISO 1461: 1999)
15. DUCTILE IRON COVERS OUTSIDE PIPWORK BOUNDARIES SHALL BE:
(UNLESS NOTED ON DRAWING OR MANHOLE SCHEDULES)
- ON ACCESS ROADS AND CAR PARKS: GRADE D (BS EN 1241: 1999)
- ON SHARED PATHWAYS, VERGES OR ALTS (BS EN 1241: 1999)
16. COVER LEVELS SHOWN 'CL' AND INVERT LEVELS SHOWN 'IL' ARE METRES ABOVE ORALINE DATUM.
17. ALL DRAINS TO BE 100mm DIAMETER UNLESS NOTED OTHERWISE
18. ALL DRAINS MADE "HWS" OR "TWS" ARE PORCEPO ADAPTED SEWERS AND ARE TO BE CONSTRUCTED IN ACCORDANCE WITH SEWERS FOR ADOPTION, 7TH EDITION
19. DRAINAGE CONNECTIONS NOT DIRECT TO A CHAMBER TO BE VIA AN OBlique 45° JUNCTION
20. ALL CONNECTIONS INTO MANHOLES TO BE MADE SUFFIT TO SUFFIT UNLESS STATED OTHERWISE.

KEY

- [illegible]

ABBREVIATIONS

- [illegible]

GENERAL NOTES:

1. All dimensions to be checked on site. All details and dimensions relating to sub-contractors or suppliers work must be checked and agreed before the sub-contractor or supplier and the main contractor.
2. This drawing is to be read in conjunction with all relevant architect's services and engineers drawings and specifications.
3. The location, size, depth and identification of existing services that may be shown or referred to on this drawing have been assessed from non intrusive observations, record drawings from the files. The contractor shall be responsible for investigations, utility holes or soundings prior to commencing work to assure himself that it is safe to proceed and that the assessments are accurate. Any discrepancies shall be notified to go prior work items commencing.
4. Trench or bailing drawings shall not be used for foundations or the ordering of materials.
5. Do not scale. All dimensions and levels to be site confirmed.
6. Copyright: This drawing must not be copied, amended nor reproduced without the prior written agreement of gpp.

DESIGN NOTES

1. STORAGE DESIGN BASED ON 1 IN 100 YR STORM + 40%.
2. DRAIN POINTS AND LOCATIONS TO BE CONFIRMED BY ARCHITECT.
3. CONTRACTOR TO ESTABLISH LOCATIONS OF ALL EXISTING SERVICES PRIOR TO COMMENCING.
4. EXISTING TREES TO BE PROTECTED WHERE EXCAVATIONS RU CLOSE.
5. DESIGN SUBJECT TO APPROVAL FROM SOUTHERN WATER FOR CONNECTIONS TO SEWERS AND ADOPTION OF SEWERS.
6. DESIGN SUBJECT TO APPROVAL FROM WSCC FOR ADOPTEABLE ROADS AND DRAINAGE.
7. DESIGN SUBJECT TO APPROVAL FROM WSCC.
8. DISCHARGE TO EXISTING WATER COURSE SUBJECT TO ORDINARY WATERCOURSE CONSENT FROM WSCC.

NOTE

All ditches on the site for which Redrow has riparian responsibility to be cleared/desilted to the satisfaction of the ADC drainage engineer

C7	16.11.20	reference numbers added	SQL	MR
C8	15.10.20	Revised to Southern Water comments	SQL	MR
C9	08.10.20	foul sewer loadings invert levels amended. Surface water connections into S32 revised.	SQL	MR
C4	24.09.20	Revised to WSCG comments	SQL	MR
C3	17.09.20	Revised to WSCG comments	SQL	MR
C2	28.08.20	Revised to surface water revisions	SQL	MR
C1	25.08.20	CONSTRUCTION ISSUES	SQL	MR
T3	23.08.20	Task and catchup revised. Foul sewer level revised	SQL	MR
T2	30.07.20	Revised to latest layout	SQL	MR
T1	10.07.20	TENDER ISSUE	SQL	MR
P5	18.06.20	Updated to latest layout	SQL	MR
P4	21.02.20	Updated to Client comments	CS	SQL
P3	31.01.20	Updated to client comments	CM	MR
P2	23.12.19	Updated to latest scheme	MR	MR
P1	06.11.19	INITIAL ISSUE	SL	MR
REV	DATE	DESCRIPTION	BY	CHKD

Gyoury Self
CONSULTING ENGINEERS

16/17 BOUNDARY ROAD, HOVE,
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Also at Farnham and St Albans



REDROW
HOMES

RHP

ANGEL & HYDE NURSERIES
MARTON ROAD

BARNHAM

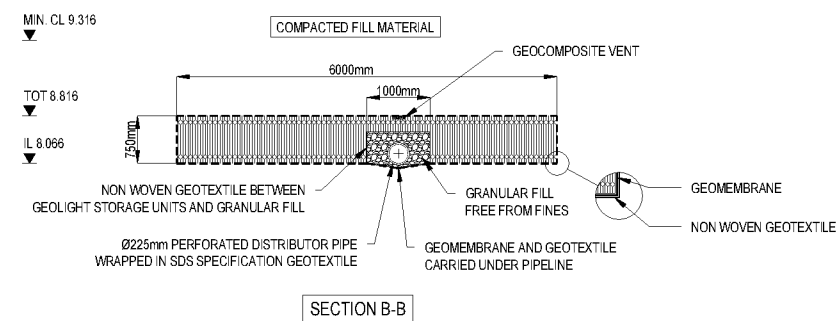
SITE DRAINAGE
SHEET 1 OF 2

312	SCALE 8 AS 1/200	DATE NOVEMBER 2019
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R	GTA		
DRIVING SUITABILITY SUITABLE FOR CONSTRUCTION			

STAGE 5 – CONSTRUCTION

12-GS-Z1-XX-DR-C-2060



APPENDIX 2 - AS-BUILT CONSTRUCTION PHOTOGRAPHS



Photo 1 - Excavation of pond looking from east to west



Photo 2 - Excavation of pond looking from west to east, note slope of southern bank too steep, corrected later with clay liner



Photo 3 - Installation of bentonite liner and placement of blue clay pond liner



Photo 4 - Shaping southern bank to achieve 1 in 3 slope



Photo 5 - Compaction of blue clay liner



Photo 6 - Blue clay liner looking west towards inlet pipe



Photo 7 - Placing 150mm topsoil layer over clay



Photo 8 - Top soil layer looking east, trimmed and compacted

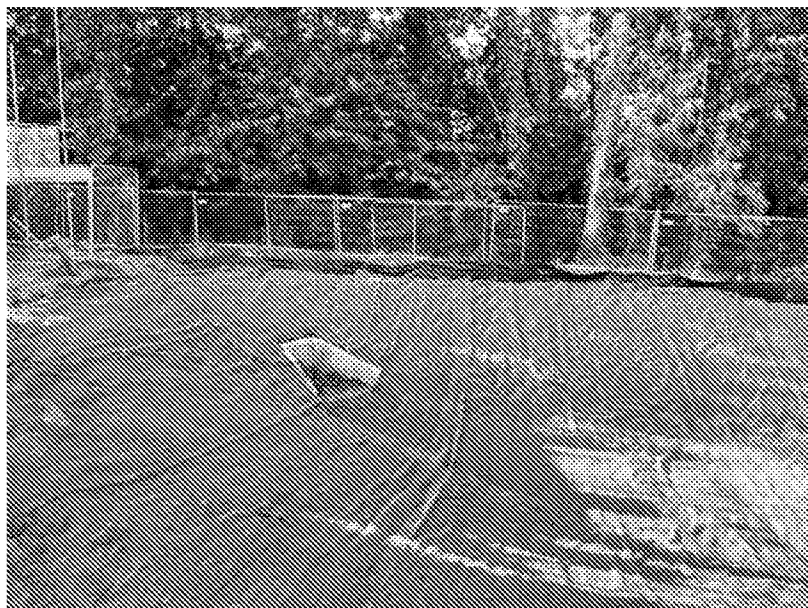


Photo 9 - Installation of bio-degradable erosion mat, east end looking at outfall



Photo 10 - Finished bio-degradable erosion mat looking west



Photo 11 - Excavation for attenuation tank, note level control, and fines free shingle backfill

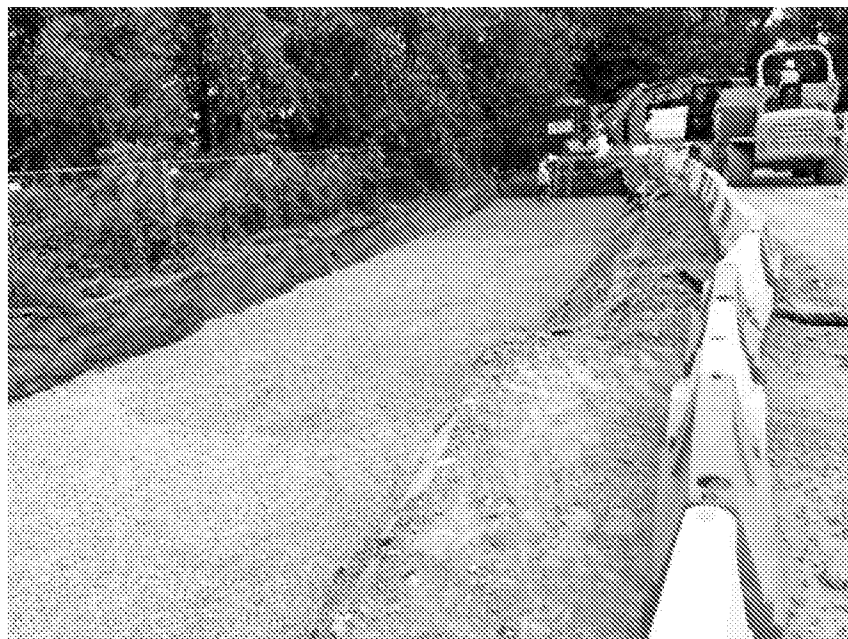
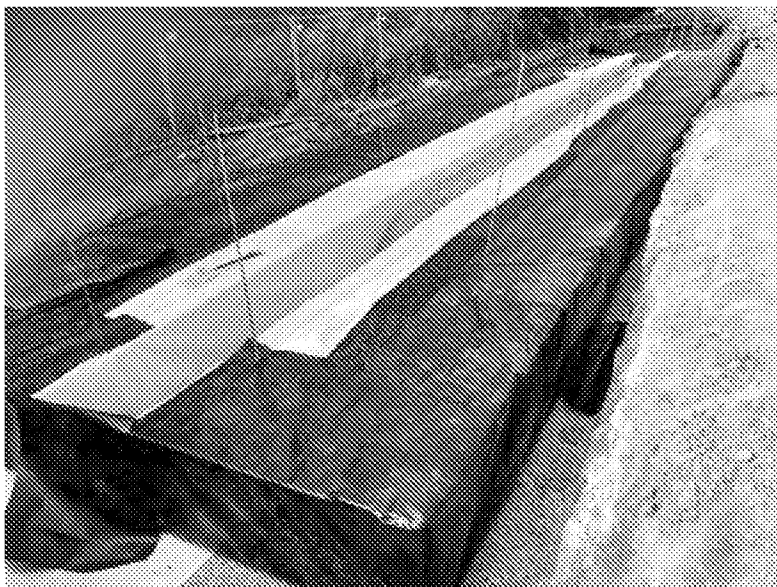


Photo 12 - Shingle base complete



Box 13 - Shows central perforated pipe wrapped in geotextile back filled with fines free shingle crates both sides looking east



Box 14 - Shows central perforated pipe wrapped in geotextile back filled with fines free shingle crates both sides looking west



Photo 15 - Drainage crates wrapped in geo-membrane (seen here black), welded joints and wrapped in a geotextile (seen here white)



Photo 16 - Shows welded geo-membrane around air vent



Photo 17 - Backfill of attenuation tank looking east



Photo 18- Backfill of attenuation tank looking west

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