

Foul Water Drainage Strategy Report

Rossett, Wrexham

CGH-R2-0017-FW-01

17.03.2023







1. Site Description

The proposed development consists of 2No parcels – one north, one south of Rossett Road, the B5012 to the east of Rossett village. Total area 15.34 acres (6.21 hectares). Both parcels consist of undeveloped agricultural land. Both parcels have perimeter post and wire fences complimented with perimeter hedgerows.

There are several semi-mature trees to the north parcel boundaries. Both parcels have existing housing developments along the west boundary. Castle Green Homes propose to construct 132No. residential properties, 61No in the north, 71No in the south. An area of public open space is located to the south of the southern parcel.

2. Proposed Foul Water Drainage Strategy

The foul water strategy for the new development is to discharge by gravity, commencing from the south area of the south parcel, running north through the south parcel, underneath the B5012, continuing north through the north parcel to a pumping station. From the pumping station located in the north area of the north parcel the foul drainage is to be pumped to an agreed Welsh Water Foul Sewer connection located in Trevalyn Hall View, Rossett. The drainage system is to be adopted and maintained by Welsh Water. The foul water would then be treated at the local wastewater treatment works by Welsh Water.

A drainage design was developed to adoptable standards. Refer to Betts Associates Proposed Section 104 Agreement Main Drainage Layout [North Drg CAS02-301 & South Drg CAS02-302], located in the Appendix.

3. Phosphate Update

In February 2023 Welsh Water and NRW published a raft of evidence and research that emerged from its source apportionment exercise. Whilst the permit review process is ongoing, the published evidence provides some key initial findings. The outcome of this was discussed in detail at the SAC Rivers and TAG meetings, and in the meeting with Council Officers on 9th March. This latter meeting was arranged to focus on, and seek to clarify, the outcomes of the TAG meeting in Planning terms and how this relates to sites currently in the planning process (either consented or undetermined) or allocated in the emerging LDP. At the TAG meeting it



emerged that DCWW and NRW had made a significant shift in its position in relation when the current effective moratorium on new housing development in Wrexham and Flintshire can be lifted.

The site is within the catchment of the Welsh Water treatment plant, Lavister. It is expected that the data to be released by NRW will show that capacity for foul treatment and phosphate stripping will accommodate the development of 134 homes, without exceeding the new permit level.

NOTES

1. DRAINAGE DESIGN AND CONSTRUCTION IS IN ACCORDANCE WITH SEWERS FOR ADOPTION 7TH EDITION, WELSH MINISTERS STANDARDS AND THE REQUIREMENTS OF THE STATUTORY UNDERTAKER.
2. ALL ADOPTABLE MATERIALS AND WORKMANSHIP TO CONFORM TO PART E OF SEWERS FOR ADOPTION 7TH EDITION.
3. ALL SVP, RWP AND BIG CONNECTIONS ARE INDICATIVE AND MUST BE CONFIRMED BY ARCHITECT.
4. PIPE GRADIENTS OUT OF BUILDING TO CONNECTING MANHOLE TO BE LAID AN 1:40 IN ACCORDANCE WITH PART H OF THE 2002 BUILDING REGULATIONS, TABLE 6. ALL INVERTS TO SVP WITHIN 3 STOREY BUILDINGS MUST BE 750mm IN ACCORDANCE WITH BUILDING REGULATIONS.
5. TOLERANCES IN PIPE LAYING TO BE IN ACCORDANCE WITH SEWERS FOR ADOPTION 7TH EDITION CLAUSE 4.5.9.
6. FOR PIPES 150-450mm DIA. ALL ROCKER PIPES TO BE IN ACCORDANCE WITH "SEWERS FOR ADOPTION" 7TH EDITION.
7. ENGINEERING BRICKS SHALL NOT CONTAIN FROGS OR HOLES.
8. BRICKWORK TO MANHOLES TO BE ENGLISH BOND.
9. WHERE PIPES SURROUNDED IN CONCRETE, FLEXIBILITY TO BE MAINTAINED AT PIPE JOINTS BY THE USE OF SUITABLE COMPRESSIBLE MATERIAL eg. "FLEXCELL" OR "FIBREBOARD".
10. ALL MANHOLE COVERS AND FRAMES MUST COMPLY WITH BS EN124. COVERS IN ROADS TO BE GRADE D400 AND BE 150mm DEEP. MANHOLE COVERS IN CAR PARKING AREAS AND DRIVES TO BE GRADE B125. WHILST LANDSCAPED AREAS MAY BE GRADE A15. ALL TO BE SIZED IN ACCORDANCE WITH PART H OF BUILDING REGULATIONS 2002, TABLES 11 & 12.
11. PIPEWORK MATERIALS AS SPECIFIED WITHIN SEWERS FOR ADOPTION 7TH.
10a. CLAY PIPES SEE E2 18 SFA 7TH.
10b. PLASTIC PIPES SEE E2 21 SFA 7TH.
10c. CONCRETE PIPES SEE E2 16 SFA 7TH.
12. GRANULITIC BENCHING TO MANHOLES TO BE 40mm THICKNESS MINIMUM.
13. PRECAST CONCRETE CHAMBER RINGS TO BE REINFORCED.
14. THE SLOPE OF BENCHING IN ALL CASES SHOULD BE 1 IN 30.
15. MANHOLES SHALL NOT INCORPORATE DOUBLE SQUARE OR DOUBLE OBLIQUE CHANNEL JUNCTIONS IN THEIR INVERTS.
16. ALL INCOMING PIPES SHALL BE SURROUNDED WITH 150mm OF CONCRETE TO THE FACE OF THE COLLAR OF THE FIRST FLEXIBLE JOINT AND THE OUTGOING PIPE SHALL ALSO BE SURROUNDED TO WITHIN 50mm OF THE FIRST FLEXIBLE JOINT AND A COMPRESSIBLE FILLER USED AS A FORMER BETWEEN THE CONCRETE SURROUND AND DOWNSTREAM PIPE COLLAR.

The developer must self-verify and certify that the design criteria, material standards and workmanship specifications for the proposed adoptable sewers are in accordance with those set out in "Sewers for Adoption" 7th Edition (SFA 7th), The Welsh Ministers Standards and the requirement of DCWW as the Statutory Sewerage Undertaker.

The Landscaping arrangements & Drainage design conforms to the requirements set out in B3.1.13 of SFA 7th.

Subject to a Section 104 Adoption Agreement being complete, a Section 106 application to connect must be made to DCWW the developer shall give 21 days' notice prior to connection. The works may only be undertaken by an SSIP Health & Safety approved contractor.

LEGEND

- | | | | | | |
|--|--|--|---|--|--|
| | SURFACE WATER SEWER (PRIVATE) | | FOUL WATER SEWER (ADOPTABLE) | | SITE BOUNDARY |
| | SURFACE WATER CONNECTION TO SUDS (PRIVATE) | | FOUL WATER RISING MAIN (ADOPTABLE) | | PROPOSED FINISHED FLOOR LEVEL |
| | SURFACE WATER DRAIN (PRIVATE) | | FOUL WATER LATERAL DRAIN (ADOPTABLE) | | UNDERBUILD - MEASURED FROM FFL TO PGL |
| | PERFORATED UNDER DRAIN (PRIVATE) | | FOUL WATER DRAIN (PRIVATE) | | GRAVEL BOARDS (UP TO 400mm) |
| | SURFACE WATER MANHOLE (PRIVATE) | | FOUL WATER MANHOLE (ADOPTABLE) | | MASONRY RETAINING WALL (OVER 450mm) |
| | SURFACE WATER SILT TRAP CHAMBER (PRIVATE) | | TYPE 3 FOUL WATER INSPECTION CHAMBER (ADOPTABLE) | | PROPOSED ADOPTABLE FOUL WATER PUMP STATION |
| | TYPE 4 SURFACE WATER INSPECTION CHAMBERS - NOT GREATER THAN 1 PROPERTY (PRIVATE) | | TYPE 4 FOUL WATER INSPECTION CHAMBERS - NOT GREATER THAN 3 PROPERTIES (ADOPTABLE) | | |
| | SURFACE WATER RODDING EYE (PRIVATE) | | TYPE 4 FOUL WATER INSPECTION CHAMBERS - NOT GREATER THAN 1 PROPERTY (PRIVATE) | | |
| | RAIN WATER PIPE (RWP) CONNECTION (PRIVATE) | | SOILVENT PIPE (SVP) DIRECT DRAIN CONNECTION (PRIVATE) | | |
| | YARD GULLY (PRIVATE) | | BACK INLET GULLY (BIG) (PRIVATE) | | |
| | PERMEABLE ROAD CONSTRUCTION (PRIVATE) | | PROPOSED DRAINAGE EASEMENT (UNDER 450mm) | | |
| | IMPERMEABLE/STANDARD ROAD CONSTRUCTION (DCWW SERVICE CORRIDORS) | | THIRD PARTY LAND | | |
| | IMPERMEABLE/STANDARD ROAD CONSTRUCTION | | | | |

All private drives to be impermeable, standard road construction

DCWW service corridors
(standard road construction -
Impermeable)

Turning Head to be Impermeable
(standard road construction)

Sheared Drive/Access to be
Impermeable
(standard road construction)

Turning Head to be Impermeable
(standard road construction)

non-degradable
marker tape to be
used with the
rising main.

Sheared Drive/Access to be
Impermeable
(standard road construction)

DCWW service corridors
(standard road construction -
Impermeable)

Turning Head to be Impermeable
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Sheared Drive/Access
Impermeable
(standard road construction)

RISEING MAIN TERMINATION LOCATION
Scale: 1:250

H	02.09.22	GPR colours amended at rising main termination point	GW
S	26.08.22	Rising Main amended draw order	CP
F	11.08.22	Rising Main Route amended	CP
E	12.07.22	Updated following DCWW comments	CP
D	10.03.22	Updated following review (F1 16/F1 32)	CP
C	09.02.22	Drawing reviewed following S104 Comments	NR
B	22.11.21	Foul Water drainage amended	CP
A	26.07.21	Preliminary issue for Section 104 submission	NR

Scale: 1:250

Revision history

Drawing originator:

BETTS HYDRO BETTS ASSOCIATES BETTS GEO

Client:

Castle Green

Project title:

Rossett Road, Rossett

Proposed Section 104 Agreement

Drainage Layout

Northern Land Parcel

Scale: 1:250 for the original size of A0

Drawn by: CP Checked by: RA Project by: RA Date: July 2021

Drawing status:

For Information

Job No: CAS02

Project: Design

Volume: Level

Type: Date: Number

Revision: H

Do not scale this drawing

4-7 Old Marsh Farm Barn, Main Road, Rossett, Flintshire, CH5 2JY

www.bettsgeo.co.uk

Checker: 01244 288118

Author: 01244 288118

Drawn: 01244 288118

Checked: 01244 288118

Project: Design

Volume: Level

Type: Date: Number

Revision: H



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