

WAAFER HOMES LTD

WARNINGLID PRIMARY SCHOOL, SLAUGHAM LANE,
WARNINGLID, WEST SUSSEX RH17 5TJ



Drainage Design Strategy – Surface and Foul

December 2025
(Revised May 2026)



EAS ltd

Environmental Assessment Services Ltd

REPORT DATA SHEET

Requirement	Data
Report Reference	862/GB/WaaferHomes/WarninglidSchool/DDS
Date	December 2025
Client	Waafer Homes Ltd
Report type	Drainage Design Strategy – Surface and Foul
Purpose	Planning
Revisions	May 2026
Prepared by	Daniel Milford BSc (Hons)  Signed
Approved by	Eur Ing Malcolm McKemey BSc (Hons), CEng, CEnv, MICE, MCIWEM, MIEnvSc  Signed

WAAFER HOMES LTD

**WARNINGLID PRIMARY SCHOOL, SLAUGHAM LANE,
WARNINGLID, WEST SUSSEX RH17 5TJ**

Drainage Design Strategy – Surface and Foul

December 2025
(Revised May 2026)

CONTENTS

1. INTRODUCTION
2. EXISTING SITE AND PROPOSED DEVELOPMENT
3. FLOOD RISK ASSESSMENT
4. EXISTING DRAINAGE
5. PROPOSED DRAINAGE
6. SURFACE WATER DRAINAGE DESIGN
7. PROPOSED FOUL SEWERAGE
8. OPERATION AND MAINTENANCE
9. CONCLUSIONS
10. RECOMMENDATIONS

APPENDICES

APPENDIX A: FIGURES

- Figure 1: Site Location
- Figure 2: Site as Existing
- Figure 3: Proposed Development
- Figure 4: Suggested Drainage Design

APPENDIX B: SITE PHOTOGRAPHS

APPENDIX C: SOUTHERN WATER SEWER PLANS

APPENDIX D: UK SUSTAINABLE DRAINAGE CALCULATIONS (GREENFIELD RUNOFF RATE)

APPENDIX E: OUTPUT FROM DRAINAGE DESIGN SOFTWARE AND ATTENUATION STORAGE CALCULATIONS

WAAFER HOMES LTD

**WARNINGLID PRIMARY SCHOOL, SLAUGHAM LANE,
WARNINGLID, WEST SUSSEX RH17 5TJ**

Drainage Design Strategy – Surface and Foul

December 2025
(Revised May 2026)

1. INTRODUCTION

- 1.1 Environmental Assessment Services (EAS) Limited was instructed to prepare a Drainage Design Strategy – Surface and Foul for the proposed redevelopment of Warninglid Primary School into 2No. residential dwellings, as well as development of another 2No. residential dwellings on site.

2. EXISTING SITE & PROPOSED DEVELOPMENT

- 2.1 The site comprises of the existing school building (closed 2021), surrounding asphalt and synthetic playgrounds and grass field. The site area is approximately 0.55 ha. The Ordnance Survey (OS) map reference for the site is TQ 2526 0595. The site elevation is approximately +88 m OD. See Appendix A, Figure 1: Site Location Plan and Figure 2: Topographic Survey.
- 2.2 According to the British Geological Survey (available online), the site lies on a bedrock of Cretaceous Weald Clay – Mudstone. Online Environment Agency (EA) groundwater mapping identifies the site to lie on unproductive strata. The site does not lie within a groundwater source protection zone.
- 2.3 The proposed development comprises converting the existing school building into 2No. 4-bedroom residential dwellings and developing 2No. additional 2-storey, 4-bedroom residential dwellings on the grass field with associated 2No. car garages. This will also include driveway access tracks connecting to Slaugham Road. Permeable surfacing will be utilised including block paving for patio areas and gravel for driveways.
- 2.4 The northern half of the site consists of the existing school building and surrounding playgrounds; the northern and southern playground surfaced with asphalt and the eastern playground consisting of a synthetic surface. The southern half of the site comprises entirely of the grass playing field. An oak tree stands at the centre of the site with a few saplings growing around it. A bench surrounded by a ring of young thorn bushes lies close to the southeastern corner of the site. An earthen bund runs from the midpoint of the western border to the southwestern corner with fully developed trees planted along it and continuing along the southern border.

- 2.5 The site is in a rural location, approximately 900 m north of Warninglid, predominantly surrounded by fields with few residences north of site. The site lies on/is accessed from Slaugham Lane, which lies west of the site boundary.
- 2.6 There are no nearby drainage ditches or watercourses. The site has a slight camber with the highest point at the northeastern corner of the site and lowest point in the southeastern corner.

3. FLOOD RISK ASSESSMENT

- 3.1 According to the EA online Flood Map for Planning, the site lies within Flood Zone 1, at low risk of flooding from rivers and the sea. The nearest area within Flood Zones 2 and 3 are located some 400 m north of the site. The EA online Risk of Flooding from Surface Water map shows that the site is not at risk of surface water flooding.
- 3.2 As the site is less than 1 ha in area and lies within Flood Zone 1, there is no requirement for a flood risk assessment under the National Planning Policy Framework (NPPF) and associated guidance documents.

4. EXISTING DRAINAGE

- 4.1 The site was visited on 28 November 2025 in order to examine the existing drainage (and carry out percolation testing). See Appendix B: Site Photographs.
- 4.2 Formal surface water drainage on the site, as existing, comprises rainwater piping along the existing schoolhouse and two surface water gullies along the perimeter of the southern playground that drain into an existing surface water sewer. There is a private sewer that runs from the eastern side of the building and southwards off site into public foul sewer chamber 0801.
- 4.3 As a general rule, the flow permitted to leave the developed site should not exceed the QBar Greenfield flow rate. The Greenfield runoff rate for the site has therefore been estimated using the UK Sustainable Drainage (UKSUDS) Greenfield Runoff Estimation Tool. The runoff rates are given for scenarios up to (and including) the 1 in 200-year storm event, as summarised in Table 4.1 below and provided in Appendix D.

TABLE 4.1
GREENFIELD RUNOFF RATES

Return period	Runoff rates (l/s)
QBar	3.9
1 in 1 year	3.3
1 in 2 years	3.4
1 in 10 years	6.3
1 in 30 years	8.9
1 in 100 years	12.3
1 in 200 years	14.5

- 4.4 The maximum discharge permitted to leave the whole site post development should not exceed the 3.9 l/s.
- 4.5 The foul sewage should also be allowed for in the permitted discharge flow rate. The peak foul sewage design flow has been calculated for the proposed site as 0.2 l/s (see Section 7 below) therefore the surface water discharge should not exceed 3.7 l/s.

5. PROPOSED DRAINAGE

- 5.1 The proposed residential development may increase the impermeable area of the site compared to its former use, which could increase the peak flow following a rainfall event. It has been estimated that following development 0.09 ha of the site will comprise hardstanding, and the rest (0.46 ha) will comprise permeable surfacing and soft landscaping. The permeable surfacing and soft landscaping will still discharge informally as Greenfield (as existing) and only the controlled drainage from the impermeable areas will be subject to SuDS measures.

- 5.2 The drainage design of the developed site should retain onsite flows up to the 1 in 100 year return period event, including an allowance for climate change and an increase in impermeable area of 10% due to urban creep. The ways in which this can be achieved are discussed in 5.3 and 5.4 below.

5.3 Drainage to Soakaway

- 5.3.1 Drainage to soakaway (infiltration) is the preferred Sustainable Drainage System (SUDS) solution. The underlying Weald Clay is not considered a suitable medium for soakaway. Percolation testing was undertaken at the site on 28 November 2025, in order to investigate the practicality of soakaway as a method of disposal of surface water.
- 5.3.2 Percolation testing comprised the excavation of three trial pits to 1 m below ground level to examine the geology at different locations across the site. Trial pits were located near the eastern border of the site, one below the synthetic playground, one near the southeastern corner of the site and one in between. No groundwater was encountered during the excavation of the trial pits however there was a small level of water in the trial pits due to recent heavy rainfall. The geology appeared to comprise of a thin layer of topsoil over Weald Clay with a shallow layer of made ground present at the northernmost trial pit.
- 5.3.3 Percolation testing was undertaken in all the trial pits. The holes were filled with water, and the water level drop relative to the time was recorded. An infiltration rate could not be gained as no drop in water level was observed. Drainage to soakaway is therefore not considered to be a feasible option for the site.

5.4 Attenuation Storage

- 5.4.1 The alternative to soakaway drainage would be attenuation storage onsite, with discharge limited to the QBar Greenfield flow rate for the impermeable areas subtracting peak foul sewage design flow (in this case 3.7 l/s), as stated in the Mid Sussex District Council Level 1 Strategic Flood Risk Assessment (2024).
- 5.4.2 This would require a discharge point, which in this case the only possible option would be the existing surface water sewer. This connection exists and is in use presently for the existing school building. The owner of the surface water sewer is presently unknown. The invert levels for these chambers are unknown and have been estimated for drainage calculations. These levels will need to be determined at a later date.
- 5.4.3 The total storage volume required for the site, for the 1 in 100 year plus climate change scenario, with a volumetric runoff coefficient (cv) of 1.0, has been calculated as 42.5 m³ for the converted school and 28 m³ for the proposed residences. See Appendix E.
- 5.4.4 Attenuation storage could be provided in the form of ponds, swales, a detention basin or an underground geocellular/modular system wrapped in a geomembrane. Due to the layout and slope of the site two separate underground geocellular/modular systems are considered to be the most appropriate for the site.
- 5.4.5 Suitable locations for the geocellular/modular systems would be the southwestern corner of the school building and southwestern corner of the southernmost new build. This would allow for the outlet pipes for the storage system to discharge into the existing surface water sewer. Discharged surface water will be limited by two vortex valves to a peak flow rate of 2.0 l/s (lowest commercially available rate).
- 5.4.6 Due to the slope of the site, it is considered most practicable that the underground geocellular/modular system is no more than 0.8 m in depth, allowing for 0.6 m of topsoil to lay above in order to provide suitable planting depth. In order to provide the required storage volume for the site, and with a depth of 0.8 m, the dimensions of the geocellular/modular system would need to be 4 m x 13.2 m for the converted school and 3.2 m x 11.2 m for the proposed residences. See Appendix A, Figure 4: Proposed Drainage Design.

5.5 Other Sustainable Urban Drainage System (SUDS) Options

- 5.5.1 Permeable paving is to be utilised in the driveway and any patio areas. Permeable paving will permit surface water to infiltrate into the underlying structure, delay discharge and reduce peak flows following a rainfall event. It is recommended that the permeable paving be underlain by a shallow drainage blanket connected to the surface water drainage system.
- 5.5.2 Rainwater harvesting could also be practised. Rainwater could be used for irrigation purposes within the garden, via water butts connected to roof downpipes. Rain gardens could also be installed.

- 5.5.3 It may be possible to incorporate a green roof into the proposed design. Green roofs reduce the volume and rate of runoff and can be low maintenance, generally requiring bi-annual maintenance visits.

6. SURFACE WATER DRAINAGE DESIGN

6.1 Design Philosophy

- 6.1.1 The drainage strategy is for surface water to be drained into attenuation storage, comprising a geocellular/modular system, before being discharged into the public surface water sewer system, with discharge limited to the QBar flow rate for the site (in this case 3.7 l/s). The converted school residences and newly proposed dwellings will have separate storage units. See Figure 4 in Appendix A for the proposed drainage arrangement.

6.2 Design Storm

- 6.2.1 The surface water drainage system has been designed for the 30-year return period event with 10% urban creep, plus a 45% allowance for climate change and tested for surcharge for the 1 in 100-year return period event (1% Annual Exceedance Probability) plus a 45% allowance for climate change. See Appendix A, Figure 4 for the proposed drainage design and Appendix E for pipe and chamber layout and sizing of the attenuation storage from the MasterDrain model.

6.3 Drainage Design Model

- 6.3.1 The attenuation storage has been designed to accommodate the 1 in 100-year return period storm event plus a 45% allowance for climate change using the MasterDrain network model.
- 6.3.2 An appropriate attenuation storage size has been calculated as 13.2 m length, 4.0 m width and 0.8 m depth for the converted school residences and 11.2 m length, 3.2 m width and 0.8 m depth for the southernmost dwellings.

6.4 Hydrogeological Data

- 6.4.1 Hydrological data based on FEH22 rainfall data for the site and applied to the MasterDrain model is given in Appendix E. The chamber details, pipe sizes and levels are shown in Appendix E and summarised in Table 6.1 below:

TABLE 6.1
SURFACE WATER DRAINAGE

Ref.	Dia (mm)	Cover level (mAOD)	Invert level (mAOD)	Pipe dia in (mm)	Pipe dia out (mm)
SW1	450	89.80	89.30	-	100
SW2	900	89.00	88.50	100	225
SW3	1200	88.85	88.35	225	225
SW4	900	89.27	88.20	225	225
SW5	450	89.10	88.60	-	100
SW6	450	89.74	88.42	100	150
SW7	600	89.00	88.09	150	225
Storage	-	89.00	87.60	225 + 225	100
SW8	450	88.85	87.54	100	100
Sewer	-	88.50	87.50	100	-
SW9	450	88.50	88.00	-	100
SW10	900	88.15	87.65	100	100
SW11	900	87.84	87.34	100	150
SW12	1200	87.20	86.70	150	225
SW13	450	87.40	86.52	225	150
Storage	-	87.30	85.90	150	100
SW14	450	87.30	85.85	100	100
Sewer	-	86.00	85.50	100	-

6.5 Extreme event

- 6.5.1 If an extreme storm event overwhelmed the surface water drainage system at the site and/or if the drainage system were to fail, ground levels would indicate that surface water would discharge along the western site boundary as existing and into the south adjacent field as per the present situation.

7. PROPOSED FOUL SEWERAGE

- 7.1 There is existing foul sewerage at the site. A private sewer runs from the north adjacent Old School House dwelling, through the site (two chambers on site) and connects to an existing demarcation chamber at the southern boundary. This then discharges to the public foul sewer by chamber 0801 in the south adjacent field. The invert levels for the private sewer chambers and public foul sewer chambers are unknown and have been estimated for drainage calculations. These levels will need to be determined at a later date.

- 7.2 The preferred foul sewerage disposal option comprises adding two chambers to the existing sewer (one for each proposed residence in the converted school) and connecting a chamber for each of the proposed houses to the existing chambers. As the proposed development consists of fewer than 10No. properties and there is an existing connection, neither permission nor a capacity check should be required from the relevant authority. See Appendix C: Southern Water Sewer Plans.
- 7.3 The proposed development will comprise of four dwellings. According to the WRc publication "Sewers for Adoption" (8th Edition), the design (peak) flow from a proposed residential development should be based on water use of 4000 l/dwelling/day. This gives the overall (peak) foul sewage design flow for the site as 0.2 l/s.
- 7.4 The flow of sewage is calculated by the MasterDrain Foul model based on "drainage units"; the number of facilities (basins, baths, showers, WCs, washing machines, dishwashers, etc.).
- 7.5 The results of the sewerage design from the MasterDrain Foul analysis given in Appendix E and illustrated in Figure 4 are summarised in Table 7.1 below:

TABLE 7.1
FOUL SEWERAGE

Ref.	Dia (mm)	Cover level (mAOD)	Invert level (mAOD)	Pipe dia in (mm)	Pipe dia out (mm)
PC1	450	90.00	89.50	-	100
FW1	450	89.77	89.22	100	100
FW2	450	89.17	88.67	100	100
PC2	450	88.96	88.46	100	100
FW3	450	88.28	87.78	-	100
PC3	450	88.54	87.64	100 + 100	100
FW4	450	88.50	88.00	-	100
EDC	450	87.40	86.90	100 + 100	-

PC – Private Chamber EDC – Existing Demarcation Chamber

- 7.6 It is advised that the peak foul sewage design flow (0.2 l/s) should be deducted from the maximum permitted discharge from the surface water attenuation storage.

8. OPERATION AND MAINTENANCE

- 8.1 The drainage system will generally require minimal operational input once construction has been completed. However, it will require some regular maintenance. The maintenance of the drainage systems will be the responsibility of the owners of the residences, overseen by either a residents committee or single freeholder to manage and charge where appropriate.

- 8.2 The chambers, gullies, gutters and channels will require regular removal of any silt or other debris. Maintenance should be carried out at the time of year after most leaf fall has occurred.
- 8.3 Required maintenance in accordance with the CIRIA SuDS Manual (C753) for attenuation storage is summarised in Table 8.1:

TABLE 8.1
OPERATION AND MAINTENANCE REQUIREMENTS FOR
ATTENUATION STORAGE

Maintenance Schedule	Required Action	Typical Frequency
Regular maintenance	Inspect and identify any areas that are not operating correctly. If required, take remedial action	Monthly for 3 months, then annually
	Remove debris from the catchment surface (where it may cause risks to performance)	Monthly
	For systems where rainfall infiltrates into the tank from above, check surface of filter for blockage by sediment, algae or other matter- remove and replace surface infiltration medium as necessary.	Annually
	Remove sediment from pre-treatment structures and/or internal forebays	Annually, or as required
Remedial action	Repair/rehabilitate inlets, outlet, overflows and vents	Annually, or as required
Monitoring	Inspect/check all inlets, outlets, vents and overflows to ensure that they are in good condition and operating as designed	Annually
	Survey inside of tank for sediment build-up and remove if necessary	Every 5 years or as required

- 8.4 In accordance with the CIRIA SuDS Manual (C753) the pollution hazard level for the development is considered to be very low for the residential roofs and low for individual property driveways. For the roofs, it is advised to remove gross solids and sediments to satisfy requirements. For the driveways the simple index approach to determine pollution control measures should be applied. As such the proposed permeable pavement is considered an adequate control measure.

9. CONCLUSIONS

- 9.1 The site currently comprises of the existing school building (closed 2021), surrounding asphalt and synthetic playgrounds and grass field located to the west of Slaugham Lane, Warninglid. It is proposed to redevelop the existing school building into 2No. 4-bedroom residential dwellings with associated driveway as well as develop a further 2 No. 4-bedroom dwellings with garages and driveways where the existing grass field lies.
- 9.2 All runoff for the 1 in 100 year flood event, plus allowance for climate change, will be managed on site, and the discharge from the proposed development will be restricted to QBar greenfield run-off rate, including peak foul drainage (3.7 l/s).
- 9.3 The site lies within Flood Zone 1, at low risk of tidal and fluvial flooding, and is also shown to not be at risk of surface water flooding.
- 9.4 Formal surface water drainage on site comprises rainwater piping along the existing schoolhouse and two surface water gullies along the perimeter of the southern playground that drain into the surface water sewer.
- 9.5 The total storage volume required to retain the 1 in 100 year plus climate change flood event on site has been calculated as 42.5 m³ for the converted school and 28 m³ for the new builds, based on the HR Wallingford UK SUDS Model.
- 9.6 The underlying Weald Clay showed poor infiltration during percolation testing and as such drainage to soakaway would not be a practicable option for the site. The alternative SuDS preferred method of draining surface water is drainage to attenuation storage with outflow limited to QBar greenfield flow rate (3.7 l/s). This would require a discharge point, of which the only option would be the existing surface water sewer. The most feasible attenuation storage option for the proposed site layout would be a geocellular/modular system, wrapped in a geomembrane.
- 9.7 Due to the layout and slope of the site 2No. separate underground geocellular/modular systems are considered to be the most appropriate for the site. Suitable locations for the geocellular/modular systems would be the southwestern corner of the school and southwestern corner of the site. This would allow for the outlet pipes for the storage system to discharge into the existing surface water sewer. Suggested dimensions would be 13.2 m x 4.0 m x 0.8 m for the converted school and 11.2 m x 3.2 m x 0.8 m for the new builds. Maximum flow rate discharged from each of the storage crates should be limited to 2.0 l/s (lowest peak flow rate commercially available).
- 9.8 Permeable surfacing is to be utilised for the driveway and patio areas. Additional SUDS options which could be incorporated into the development include rainwater harvesting for garden irrigation purposes via the provision of water butts, and a green roof on the dwelling.

- 9.9 Existing foul sewerage on site consists of a private sewer that runs through the site, past the eastern side of the school and southwards off site into public foul sewer 0801. Proposed foul sewerage would comprise utilising the existing sewer.

10. RECOMMENDATIONS

- 10.1 The invert levels for the surface water sewer along Slaugham Lane, private sewer on site and public foul sewer south of site will need to be determined prior to further development.
- 10.2 The drainage system will generally require minimal operational input once construction has been completed. However, it will require some regular maintenance.
- 10.3 The geocellular/modular system and all chambers are to be kept clear of debris and build ups of silt to ensure working order and prevent loss of maximum capacity.



APPENDIX A

Figures

- | | |
|-----------|---------------------------|
| Figure 1: | Site Location |
| Figure 2: | Site as Existing |
| Figure 3: | Proposed Development |
| Figure 4: | Suggested Drainage Design |



WAAFER HOMES LTD

Scale as shown

WARNINGLID PRIMARY SCHOOL, SLAUGHAM LANE,
WARNINGLID, WEST SUSSEX RH17 5TJ

Figure 1: Site Location

May 2025



WAAFER HOMES LTD

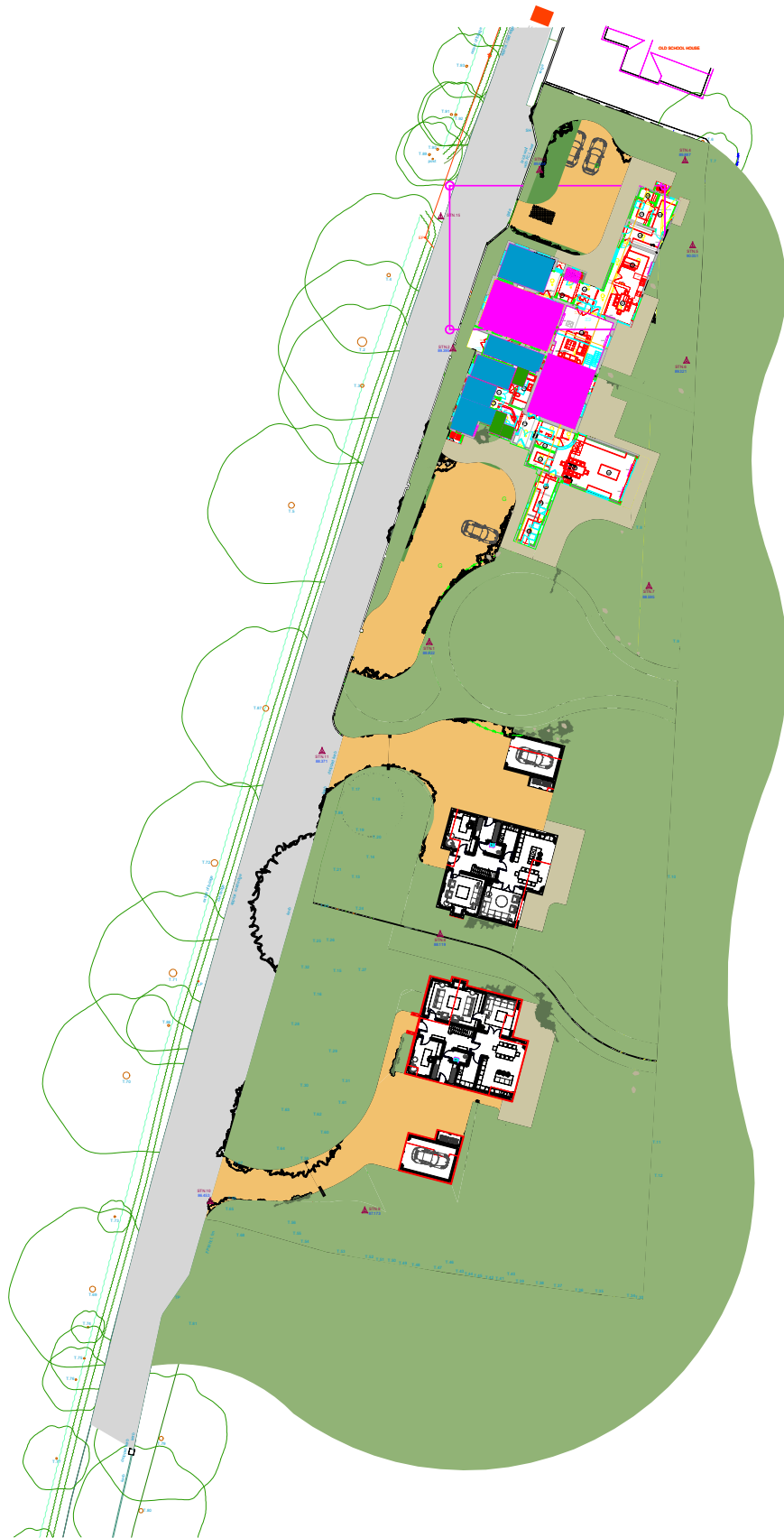
Scale as shown

**WARNINGLID PRIMARY SCHOOL, SLAUGHAM LANE,
WARNINGLID, WEST SUSSEX RH17 5TJ**

Figure 2: Site as Existing

May 2025





WAAFER HOMES LTD

Scale as shown

**WARNINGLID PRIMARY SCHOOL, SLAUGHAM LANE,
WARNINGLID, WEST SUSSEX RH17 5TJ**

Figure 3: Proposed Development

May 2025



APPENDIX B

Site Photographs

Percolation test pit 1



Percolation test pit 2



Percolation test pit 3



Eastern playground



Southwestern playground



Existing school



Grass field



Southern site boundary and adjacent field



Playground drains leading to road gully pots



Existing sewer gully pot



Side access manholes south of site



Existing drainpipes and downpipes

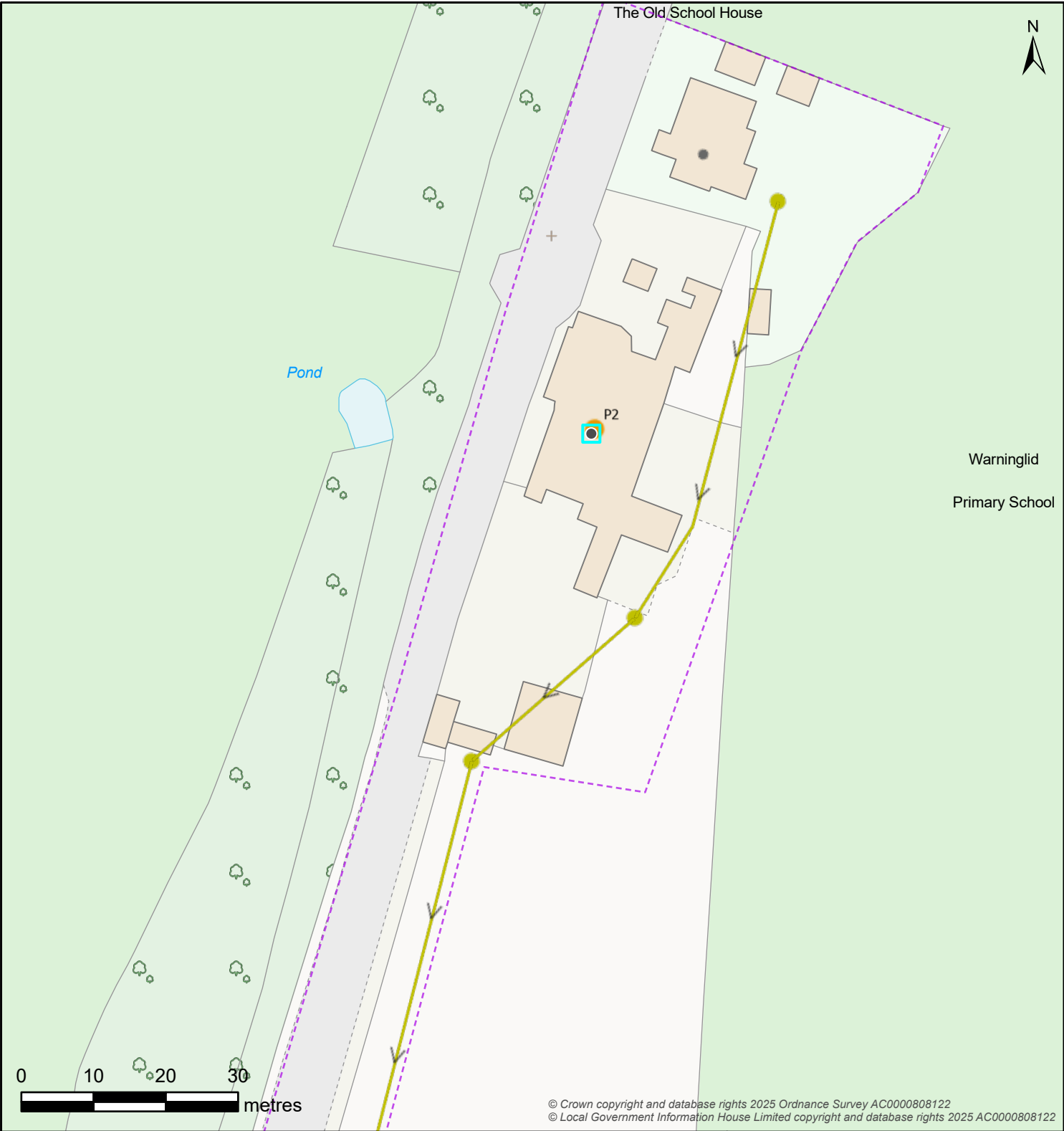


Private sewer manhole



APPENDIX C

Southern Water Sewer Plans



© Crown copyright and database rights 2025 Ordnance Survey AC0000808122
© Local Government Information House Limited copyright and database rights 2025 AC0000808122

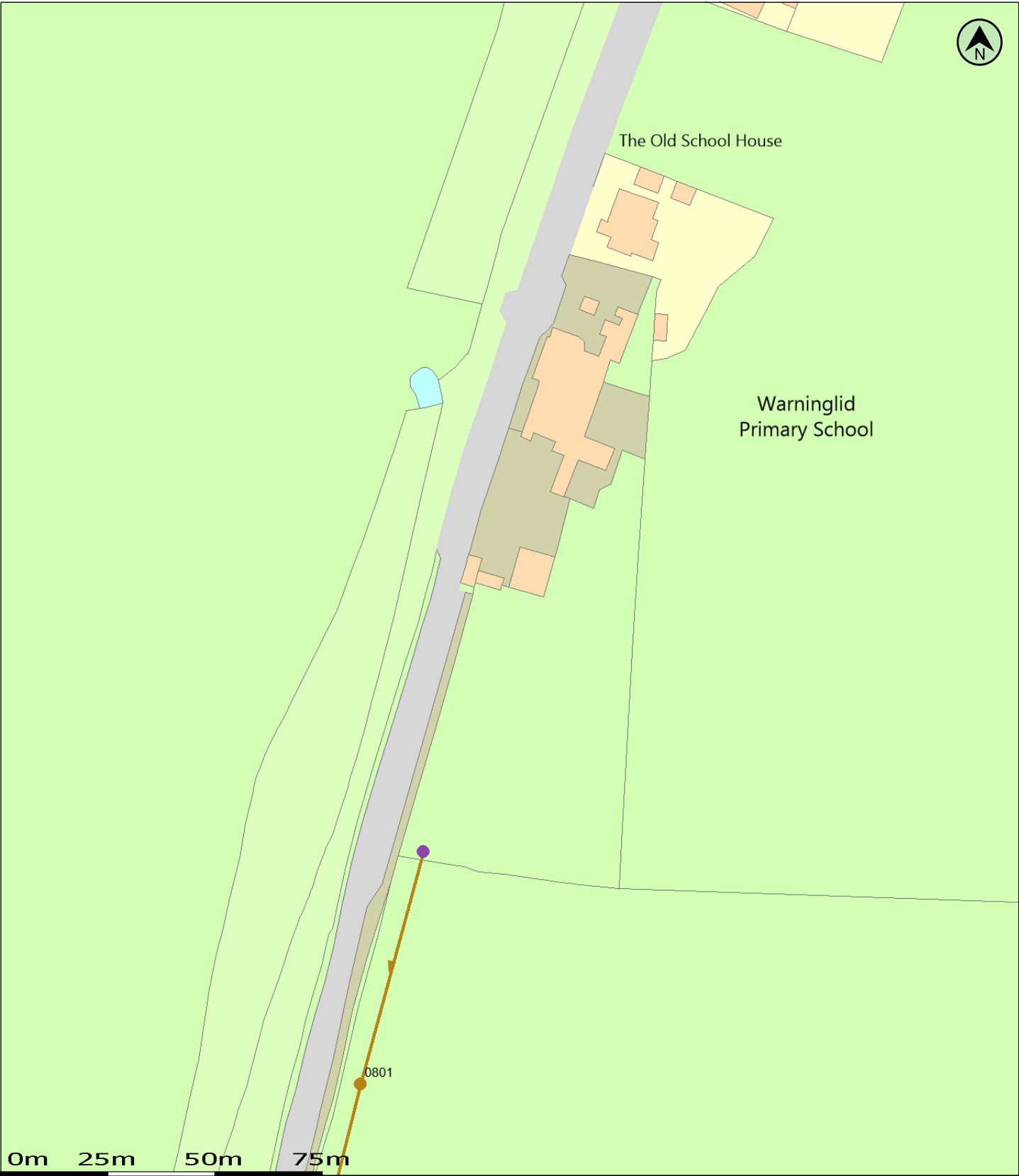
Map Title: SW Print

Printed By: Anne.McFarlane2
Date Printed: 28/10/2025
Map Scale: 750

The information provided is believed to be correct but is provided on an 'as is' basis and without any warranty or condition express or implied, statutory or otherwise as to its quality or fitness for purpose. Actual positions of assets should always be determined on site.



Controllable Valve			Flow Control			Inlet-Outfall	
Damboards	Penstock	Valve	Anti Flood Device	Pumped Anti Flood Device	Reflux Valve	Inlet	Outfall
Manhole							
BIF Bifurcation	Cascade	CP Catchpit	Head Of Public Sewer	IC Interceptor Chamber	Manhole	S Soakaway	WO Washout
Outfall Headworks		Overflow Chamber		Pipe Bridge		Pumping Station	
Outfall Headworks	CSO Combined Sewer Overflow	Emergency Overflow	EMO Emergency Overflow	Pipe Bridge	Micro Pumping Station	Pumping Station	
Sewer Level Monitor		Storage		Treatment Works		Weir	
Sewer Level Monitor	Storm Tank	Tidal Storage Tank		Treatment Works		Weir	Wastewater Site
Wastewater Pipe				Wastewater Use		Developer Services	
Culverted Water Course	Syphon	Tank Sewer	Trunk Sewer	Foul	Combined	Build Over Agreement	Section 104
Drain	Vacuum Main	Decommissioned Pipe		Sludge	Treated Effluent	Wastewater Area	
Outfall				Surface Water	Private	Catchment	Sub-Catchment
Overflow							
Rising Main							
Sewer							



(c) Crown copyright and database rights 2025 Ordnance Survey AC0000808122 Scale: 1:1250 Date: 10/12/25 Wastewater Plan A4
Data updated: 24/11/25 Map Centre: 525041,126952 Our Ref: 1966518 - 1 Powered by digdat

malcolm@easltd.co.uk
Warninglid Primary



The positions of pipes shown on this plan are believed to be correct, but Southern Water Services Ltd accept no responsibility in the event of inaccuracy. The actual positions should be determined on site. This plan is produced by Southern Water Services Ltd (c) Crown copyright and database rights 2025 Ordnance Survey AC0000808122. This map is to be used for the purposes of viewing the location of Southern Water plant only. Any other uses of the map data or further copies is not permitted.

WARNING: BAC pipes are constructed of Bonded Asbestos Cement.

WARNING: Unknown (UNK) materials may include Bonded Asbestos Cement.

APPENDIX D

UK Sustainable Drainage Calculations (Greenfield Runoff Rate)

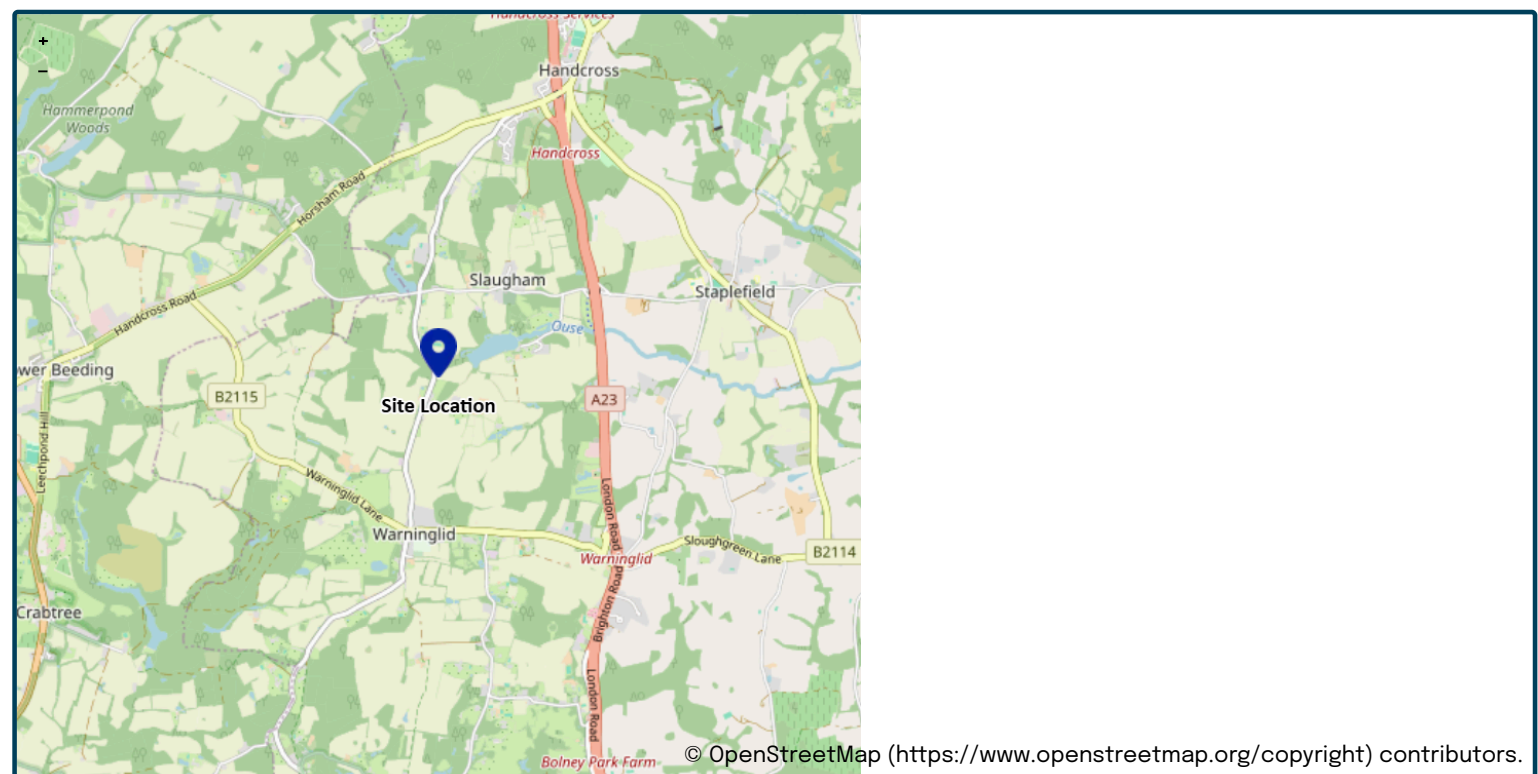
This is an estimation of the greenfield runoff rates that are used to meet normal best practice criteria in line with Environment Agency guidance “Rainfall runoff management for developments”, SC030219 (2013), the SuDS Manual C753 (CIRIA, 2015) and the non-statutory standards for SuDS (Defra, 2015). This information on greenfield runoff rates may be the basis for setting consents for the drainage of surface water runoff from sites.

Project details

Date	26/05/2026
Calculated by	EAS Ltd
Reference	862
Model version	2.2.3

Location

Site name	Warninglid School
Site location	Warninglid



Site easting (British National Grid)	525209
Site northing (British National Grid)	127192

Site details

Total site area (ha)	0.47	ha
----------------------	------	----

Method By clicking the Accept button, you agree to us doing so.

Method	FEH statistical (2025)		
FEH statistical (2025)			
	<u>My value</u>	<u>Map value</u>	
SAAR9120 (mm)	866		mm
BFIHOST19scaled	0.321		
QMed-QBar conversion	1.136	☐	1.136
QMed (l/s)	3.4		l/s
QBar (FEH statistical 2025) (l/s)	3.9		l/s

Growth curve factors

	<u>My value</u>	<u>Map value</u>	
Hydrological region	7	☐	7
1 year growth factor	0.85		
2 year growth factor	0.88		
10 year growth factor	1.62		
30 year growth factor	2.3		
100 year growth factor	3.19		
200 year growth factor	3.74		

Results

Method	FEH statistical (2025)	
Flow rate 1 year (l/s)	3.3	l/s
Flow rate 2 year (l/s)	3.4	l/s
Flow rate 10 years (l/s)	6.3	l/s
Flow rate 30 years (l/s)	8.9	l/s
Flow rate 100 years (l/s)	12.3	l/s
Flow rate 200 years (l/s)	14.5	l/s

Please note runoff estimation is subject to significant uncertainty. Results are therefore normally reported to only 1 decimal place. Where 2 decimal places are provided, this does not indicate accuracy to this level, it has been adopted to prevent ‘zero’ figures from being reported. Outputs less than 0.01 l/s are reported as 0.01 l/s.

Disclaimer

This report was produced using the Greenfield runoff rate estimation tool (2.2.3) developed by HR Wallingford and available at uksuds.com (<https://www.uksuds.com/>). The use of this tool is subject to the UK SuDS terms and conditions and licence agreement, which can both be found at uksuds.com/terms-conditions (<https://www.uksuds.com/terms-conditions>). The outputs from this tool have been used to estimate Greenfield runoff rates. The use of these results is the responsibility of the users of this tool. No liability will be accepted by HR Wallingford, the Environment Agency, Centre for Ecology and Hydrology, Wallingford Hydrosolutions or any other organisation for the use of these data in the design or operational characteristics of any drainage scheme.

APPENDIX E

Output From Drainage Design Software and Attenuation Storage Calculations



MasterDrain
HY 11.0

Environmental Assessment Services Ltd

<http://www.easltd.co.uk>

London Rd, Hickstead
Haywards Heath,
West Sussex, RH17 5LZ
Tel: 01444 882552
email: info@easltd.co.uk

Job No. 862		
Sheet no. 1		
Date 11/03/26		
By EAS	Checked	Reviewed

Project **Warninglid School**

Title **Hydrological data for WARNINGLID**

Data:-

FSR values

Location = WARNINGLID

Grid reference = TQ2526

M5-60 (mm) = 19.8

SAAR (mm/yr) = 825

r = 0.34

Soil = 0.45

Long reference = 525126

Area = England and Wales

Hydrological area = 7

Hydrological zone = 7

Soil classification for WRAP type 4

Clayey, or loamy over clayey soils with an impermeable layer at shallow depth.

FEH values

c = -0.027

d1 = 0.390

d2 = 0.306

d3 = 0.328

e = 0.319

f = 2.498



Environmental Assessment Services



MasterDrain
HY 11.0

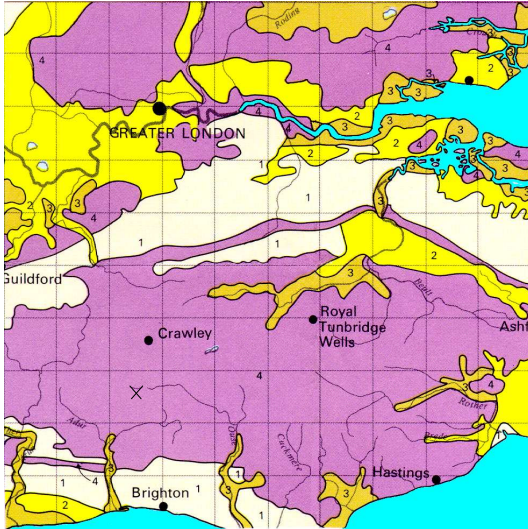
Environmental Assessment Services Ltd

<http://www.easitd.co.uk>

London Rd, Hickstead
Haywards Heath,
West Sussex, RH17 5LZ
Tel: 01444 882552
email: info@easitd.co.uk

Job No. 862		
Sheet no. 2		
Date 11/03/26		
By EAS	Checked	Reviewed

Project **Warninglid School**
Title **Hydrological data for WARNINGLID**



<- Soil

M5-60 ->



<- SAAR

r x 100 ->



Map extracts reproduced by permission of H R Wallingford.



Environmental Assessment Services



MasterDrain
SW

Environmental Assessment Services Ltd

<http://www.easitd.co.uk>

London Rd, Hickstead
Haywards Heath,
West Sussex, RH17 5LZ
Tel: 01444 882552
email: info@easitd.co.uk

Job No.	862		
Sheet no.	1		
Date	22/05/26		
By	EAS	Checked	Reviewed

Project	Warninglid School
Title	Hydrograph storage analysis (Winter profile) for WARNINGLID SCHOOL

Data:-

FEH Hydrology:-

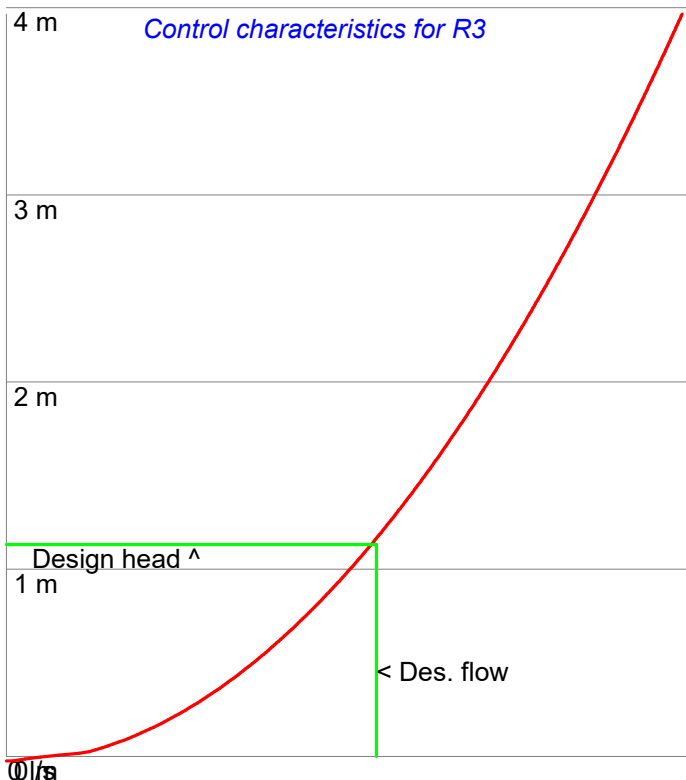
Location = WARNINGLID Grid reference = TQ2526
 c = -0.0270 d1 = 0.3904 d2 = 0.3064
 d3 = 0.3282 e = 0.3190 f = 2.4980
 Return period = 100 Climate change = 45%

Percentage runoff = 100.0% (manual setting)

Imperv. area = 514 m² Pervious area = 0 m²
 Total area = 514 m² Equiv area = 514 m² (Tot. area x % runoff).
 Total runoff = 60.3 m³ Discharge rate = 2.000 l/s

Design Head = 1.2m Peak flow = 1.99 l/s
 Control device = R3 Orifice diam = 37.8 mm
 Max. calc. depth = 1.2 m Available depth = 0.0 m³
 Mean discharge = 1.08 l/s

Available system storage = 0.00 m³ under a system plane at the design head level.
 Offline storage = 0.0 m³
 Total storage = 42.5 m³ Peak input flow = 8.38 l/s



Head (m)	Flow (l/s)	Head (m)	Flow (l/s)
0.01	0.04	2.01	2.59
0.05	0.39	2.05	2.61
0.10	0.58	2.10	2.65
0.15	0.71	2.15	2.68
0.20	0.82	2.20	2.71
0.25	0.91	2.25	2.74
0.30	1.00	2.30	2.77
0.35	1.08	2.35	2.80
0.40	1.15	2.40	2.83
0.45	1.22	2.45	2.86
0.50	1.29	2.50	2.89
0.55	1.35	2.55	2.92
0.60	1.41	2.60	2.94
0.65	1.47	2.65	2.97
0.70	1.53	2.70	3.00
0.75	1.58	2.75	3.03
0.80	1.63	2.80	3.06
0.85	1.68	2.85	3.08
0.90	1.73	2.90	3.11
0.95	1.78	2.95	3.14
1.00	1.83	3.00	3.16
1.05	1.87	3.05	3.19
1.10	1.91	3.10	3.21
1.15	1.96	3.15	3.24
1.20	2.00	3.20	3.27
1.25	2.04	3.25	3.29
1.30	2.08	3.30	3.32
1.35	2.12	3.35	3.34
1.40	2.16	3.40	3.37
1.45	2.20	3.45	3.39
1.50	2.24	3.50	3.42
1.55	2.27	3.55	3.44
1.60	2.31	3.60	3.46
1.65	2.35	3.65	3.49
1.70	2.38	3.70	3.51
1.75	2.42	3.75	3.54
1.80	2.45	3.80	3.56
1.85	2.48	3.85	3.58
1.90	2.52	3.90	3.61
1.95	2.55	3.95	3.63
2.00	2.58	4.00	3.65

Calculation data provided by Crown Water Ltd, SL5 7NT



MasterDrain
SW

Environmental Assessment Services Ltd

<http://www.easltd.co.uk>

London Rd, Hickstead
Haywards Heath,
West Sussex, RH17 5LZ
Tel: 01444 882552
email: info@easltd.co.uk

Job No.	862		
Sheet no.	2		
Date	22/05/26		
By	EAS	Checked	Reviewed

Project **Warninglid School**
Title **Hydrograph storage analysis (Winter profile) for WARNINGLID SCHOOL**

Storage curves for a 5 hours storm.

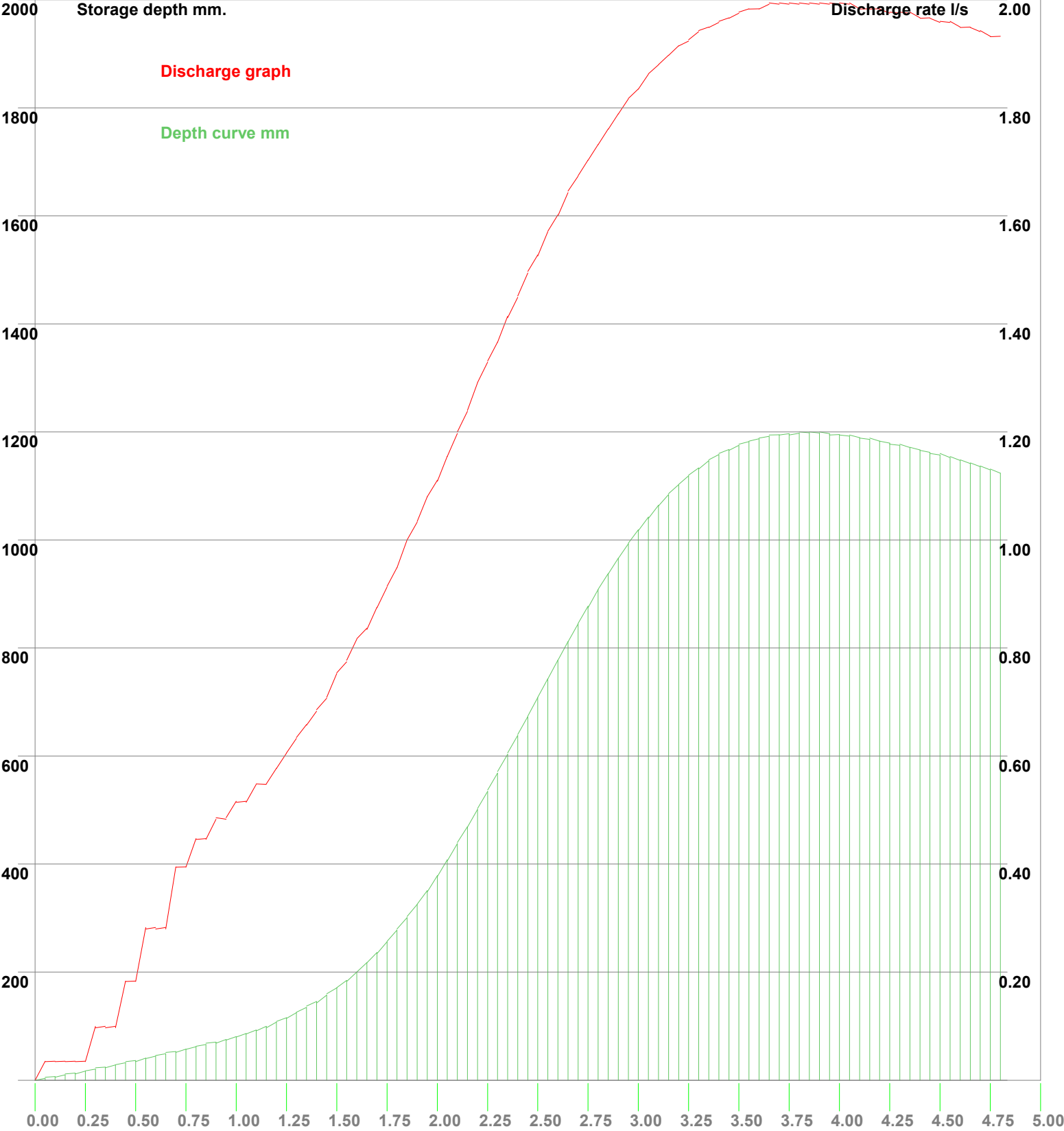
Storage depth mm.

Discharge rate l/s

2.00

Discharge graph

Depth curve mm





Environmental Assessment Services Ltd

http://www.easitd.co.uk

London Rd, Hickstead
Howards Heath,
West Sussex, RH17 5LZ
Tel: 01444 882552
email: info@easitd.co.uk

Job No.	862		
Sheet no.	3		
Date	22/05/26		
By	EAS	Checked	Reviewed
Title			

Project	Warninglid School
Title	Hydrograph storage analysis (Winter profile) for WARNINGLID SCHOOL

MasterDrain
SW

Incremental rainfall figures.

Storm Mins	Storage Depth mm	Control Flow l/s	Storm Mins	Storage Depth mm	Control Flow l/s
3.0	3.4	0.04	153.0	743.1	1.57
6.0	6.6	0.04	156.0	777.6	1.60
9.0	10.0	0.04	159.0	811.7	1.64
12.0	13.4	0.04	162.0	844.9	1.67
15.0	17.0	0.04	165.0	877.1	1.70
18.0	20.7	0.10	168.0	908.1	1.73
21.0	24.3	0.10	171.0	937.8	1.76
24.0	28.2	0.10	174.0	966.2	1.79
27.0	32.3	0.18	177.0	993.2	1.82
30.0	36.3	0.18	180.0	1018.7	1.83
33.0	40.7	0.28	183.0	1042.5	1.86
36.0	44.7	0.28	186.0	1064.2	1.88
39.0	48.9	0.28	189.0	1084.1	1.90
42.0	53.2	0.39	192.0	1102.4	1.91
45.0	57.4	0.39	195.0	1118.9	1.92
48.0	61.8	0.45	198.0	1133.5	1.94
51.0	66.2	0.45	201.0	1146.6	1.95
54.0	70.7	0.48	204.0	1158.0	1.96
57.0	75.4	0.48	207.0	1167.5	1.97
60.0	80.7	0.52	210.0	1175.4	1.97
63.0	86.4	0.52	213.0	1182.0	1.98
66.0	92.8	0.55	216.0	1187.4	1.98
69.0	99.7	0.55	219.0	1191.7	1.99
72.0	107.5	0.58	222.0	1194.7	1.99
75.0	115.8	0.61	225.0	1196.6	1.99
78.0	124.8	0.63	228.0	1197.8	1.99
81.0	134.7	0.66	231.0	1198.2	1.99
84.0	145.7	0.68	234.0	1197.8	1.99
87.0	157.7	0.71	237.0	1196.7	1.99
90.0	170.8	0.75	240.0	1194.9	1.99
93.0	184.9	0.77	243.0	1192.5	1.99
96.0	200.4	0.82	246.0	1189.5	1.98
99.0	217.5	0.84	249.0	1186.2	1.98
102.0	236.2	0.88	252.0	1182.8	1.98
105.0	256.1	0.91	255.0	1179.2	1.97
108.0	277.7	0.95	258.0	1175.3	1.97
111.0	300.9	1.00	261.0	1171.0	1.97
114.0	325.2	1.03	264.0	1166.6	1.97
117.0	351.2	1.08	267.0	1162.1	1.97
120.0	378.7	1.11	270.0	1157.4	1.96
123.0	407.8	1.15	273.0	1152.3	1.96
126.0	438.1	1.20	276.0	1147.0	1.95
129.0	469.3	1.24	279.0	1141.5	1.95
132.0	501.5	1.29	282.0	1135.7	1.94
135.0	534.6	1.33	285.0	1129.8	1.93
138.0	568.6	1.37	288.0	1123.7	1.93
141.0	603.2	1.41	291.0	1117.4	1.92
144.0	638.3	1.45	294.0	1111.2	1.92
147.0	673.3	1.49	297.0	1104.9	1.91
150.0	708.3	1.53	300.0	1098.5	1.91

Using the Get Max button causes the program to step through a series of storm durations until a maximum volume is obtained.

Each duration is sampled 600 times and the results recorded. The storm durations (hrs) are:-

0.25, 0.5, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 15, 18, 20, 24, 30, 36, 42, 48, 54, 60, 66, 72, 84, 96, 120, 150, 175, 200, 250, 300, 375, 500, 750, 1000, 1250, 1500, 1570, 2000, 2500, 3000, 3500, 4000

It should be noted that the six hour storm frequently requested rarely demonstrates the worst case for storage.



Environmental Assessment Services Ltd

<http://www.easltd.co.uk>

London Rd, Hickstead
Newmans Heath,
West Sussex, RH17 5LZ
Tel: 01444 882552
email: info@easltd.co.uk

Job No.
862

Sheet no.

4

Date

22/05/26

By

EAS

Checked

Reviewed

Project

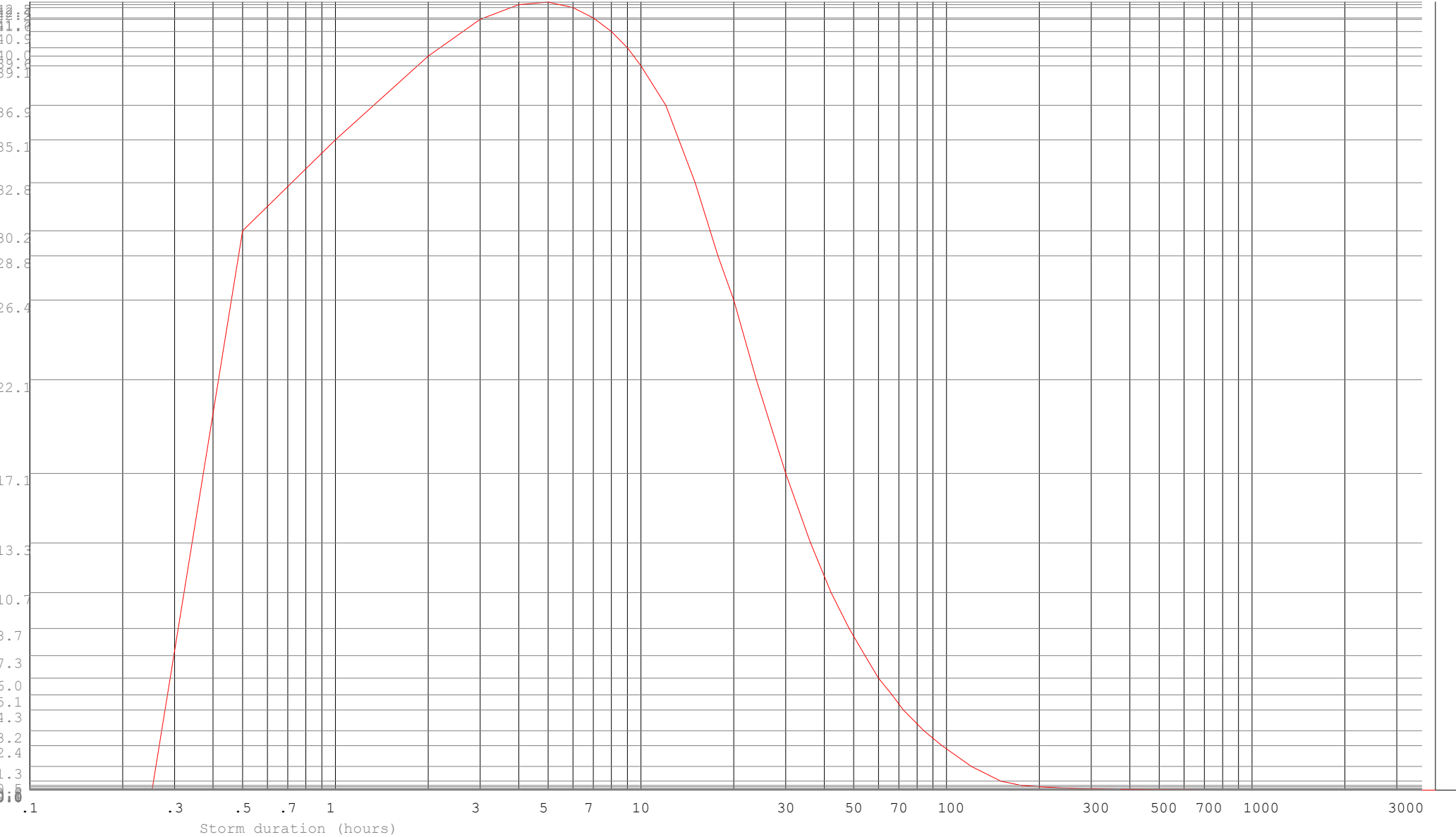
Warninglid School

Title

Hydrograph storage analysis (Winter profile) for WARNINGLID SCHOOL

Sequential storage volume at specific storm durations.

m³





MasterDrain
SW

Environmental Assessment Services Ltd

<http://www.easitd.co.uk>

London Rd, Hickstead
Haywards Heath,
West Sussex, RH17 5LZ
Tel: 01444 882552
email: info@easitd.co.uk

Job No. 862			
Sheet no. 1			
Date 22/05/26			
By EAS	Checked	Reviewed	

Project Warninglid New Builds	Title Hydrograph storage analysis (Winter profile) for WARNINGLID BUILDS

Data:-

FEH Hydrology:-

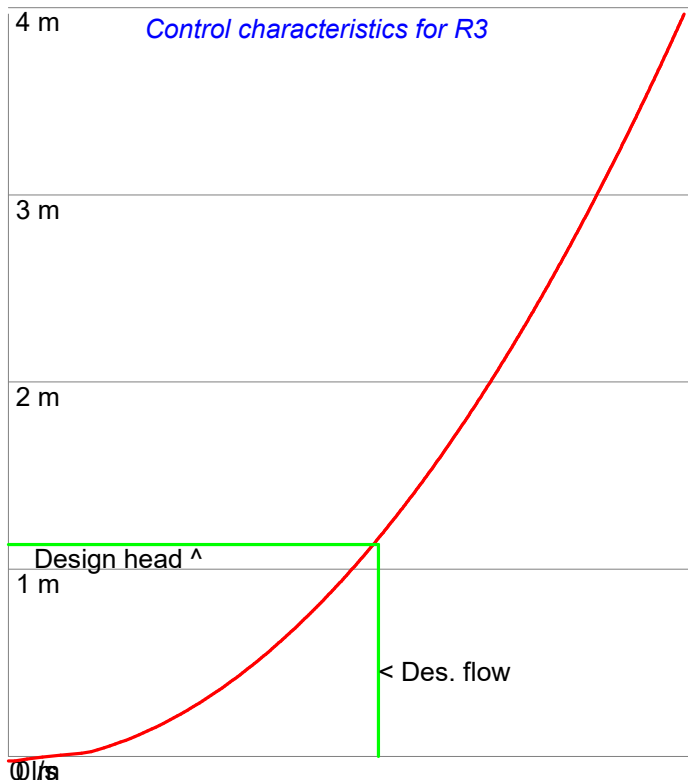
Location = WARNINGLID Grid reference = TQ2526
 c = -0.0270 d1 = 0.3904 d2 = 0.3064
 d3 = 0.3282 e = 0.3190 f = 2.4980
 Return period = 100 Climate change = 45%

Percentage runoff = 100.0% (manual setting)

Imperv. area = 377 m² Pervious area = 0 m²
 Total area = 377 m² Equiv area = 377 m² (Tot. area x % runoff).
 Total runoff = 38.6 m³ Discharge rate = 2.000 l/s

Design Head = 1.2m Peak flow = 1.99 l/s
 Control device = R3 Orifice diam = 37.8 mm
 Max. calc. depth = 1.19 m Available depth = 0.0 m³
 Mean discharge = 1.12 l/s

Available system storage = 0.00 m³ under a system plane at the design head level.
 Offline storage = 0.0 m³
 Total storage = 28.0 m³ Peak input flow = 8.94 l/s



Head (m)	Flow (l/s)	Head (m)	Flow (l/s)
0.01	0.04	2.01	2.59
0.05	0.39	2.05	2.61
0.10	0.58	2.10	2.65
0.15	0.71	2.15	2.68
0.20	0.82	2.20	2.71
0.25	0.91	2.25	2.74
0.30	1.00	2.30	2.77
0.35	1.08	2.35	2.80
0.40	1.15	2.40	2.83
0.45	1.22	2.45	2.86
0.50	1.29	2.50	2.89
0.55	1.35	2.55	2.92
0.60	1.41	2.60	2.94
0.65	1.47	2.65	2.97
0.70	1.53	2.70	3.00
0.75	1.58	2.75	3.03
0.80	1.63	2.80	3.06
0.85	1.68	2.85	3.08
0.90	1.73	2.90	3.11
0.95	1.78	2.95	3.14
1.00	1.83	3.00	3.16
1.05	1.87	3.05	3.19
1.10	1.91	3.10	3.21
1.15	1.96	3.15	3.24
1.20	2.00	3.20	3.27
1.25	2.04	3.25	3.29
1.30	2.08	3.30	3.32
1.35	2.12	3.35	3.34
1.40	2.16	3.40	3.37
1.45	2.20	3.45	3.39
1.50	2.24	3.50	3.42
1.55	2.27	3.55	3.44
1.60	2.31	3.60	3.46
1.65	2.35	3.65	3.49
1.70	2.38	3.70	3.51
1.75	2.42	3.75	3.54
1.80	2.45	3.80	3.56
1.85	2.48	3.85	3.58
1.90	2.52	3.90	3.61
1.95	2.55	3.95	3.63
2.00	2.58	4.00	3.65

Calculation data provided by Crown Water Ltd, SL5 7NT



MasterDrain
SW

Environmental Assessment Services Ltd

<http://www.easltd.co.uk>

London Rd, Hickstead
Haywards Heath,
West Sussex, RH17 5LZ
Tel: 01444 882552
email: info@easltd.co.uk

Job No.	862		
Sheet no.	2		
Date	22/05/26		
By	EAS	Checked	Reviewed

Project **Warninglid New Builds**

Title **Hydrograph storage analysis (Winter profile) for WARNINGLID BUILDS**

Storage curves for a 3 hours storm.

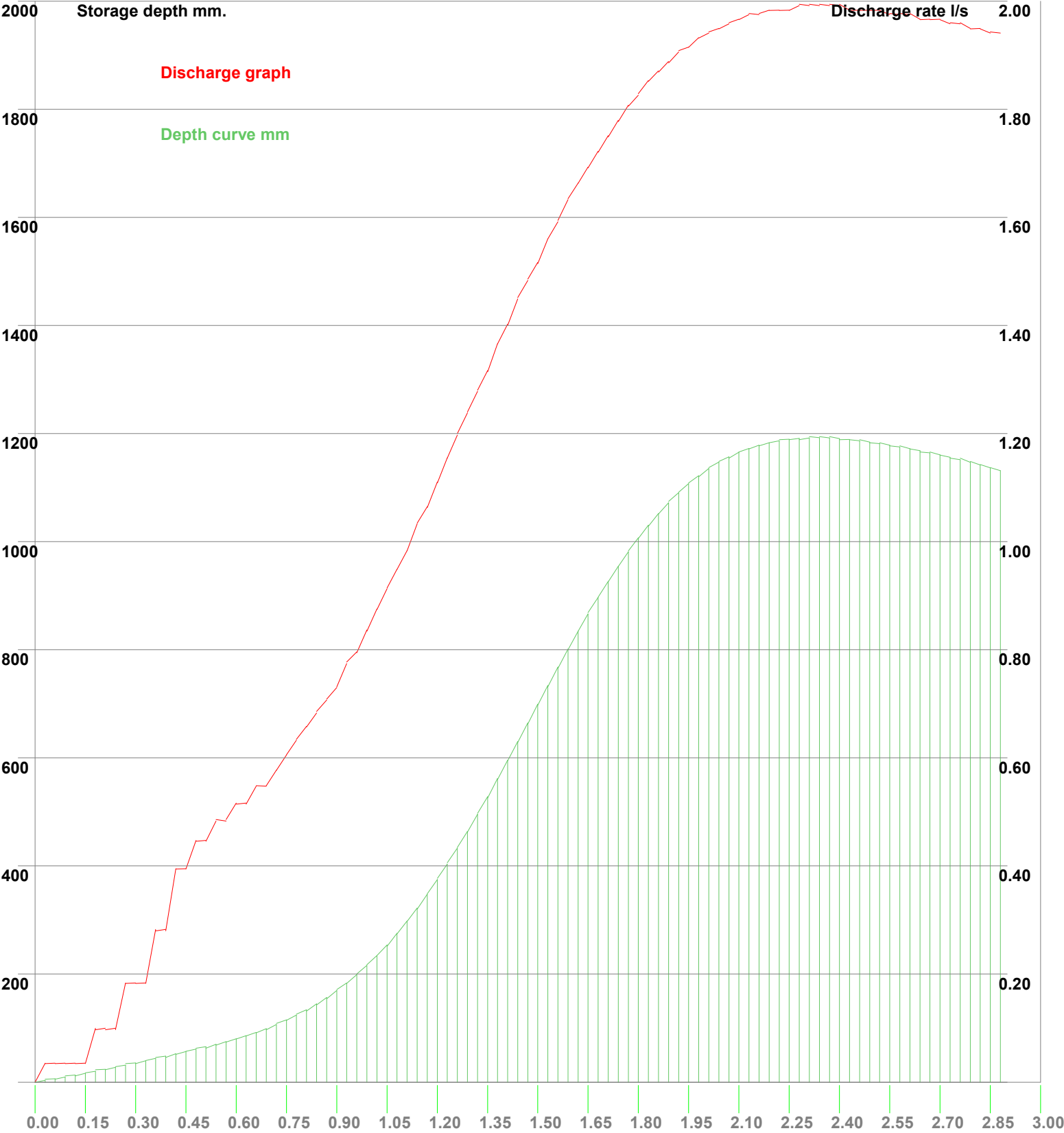
Storage depth mm.

Discharge rate l/s

2.00

Discharge graph

Depth curve mm





Environmental Assessment Services Ltd http://www.easltd.co.uk		London Rd, Hickstead Howards Heath, West Sussex, RH17 5LZ Tel: 01444 882552 email: info@easltd.co.uk		Job No. 862	
				Sheet no. 3	
				Date 22/05/26	
Project Warninglid New Builds		By EAS	Checked	Reviewed	
Title Hydrograph storage analysis (Winter profile) for WARNINGLID BUILDS					

MasterDrain
SW

Incremental rainfall figures.

Storm Mins	Storage Depth mm	Control Flow l/s	Storm Mins	Storage Depth mm	Control Flow l/s
1.8	3.3	0.04	91.8	733.8	1.56
3.6	6.5	0.04	93.6	767.8	1.59
5.4	9.8	0.04	95.4	801.5	1.63
7.2	13.1	0.04	97.2	834.3	1.66
9.0	16.6	0.04	99.0	866.2	1.69
10.8	20.2	0.10	100.8	896.9	1.72
12.6	23.7	0.10	102.6	926.3	1.75
14.4	27.6	0.10	104.4	954.5	1.78
16.2	31.6	0.18	106.2	981.4	1.81
18.0	35.5	0.18	108.0	1006.8	1.83
19.8	39.8	0.18	109.8	1030.4	1.85
21.6	44.2	0.28	111.6	1052.1	1.87
23.4	48.4	0.28	113.4	1072.1	1.89
25.2	52.7	0.39	115.2	1090.5	1.91
27.0	56.9	0.39	117.0	1107.2	1.91
28.8	61.3	0.45	118.8	1122.0	1.93
30.6	65.7	0.45	120.6	1135.4	1.94
32.4	70.3	0.48	122.4	1147.1	1.95
34.2	75.0	0.48	124.2	1157.0	1.96
36.0	80.2	0.52	126.0	1165.3	1.97
37.8	85.9	0.52	127.8	1172.4	1.97
39.6	92.3	0.55	129.6	1178.3	1.97
41.4	99.2	0.55	131.4	1183.1	1.98
43.2	106.9	0.58	133.2	1186.7	1.98
45.0	115.2	0.61	135.0	1189.2	1.98
46.8	124.1	0.63	136.8	1191.0	1.99
48.6	133.9	0.66	138.6	1192.0	1.99
50.4	144.8	0.68	140.4	1192.2	1.99
52.2	156.7	0.71	142.2	1191.8	1.99
54.0	169.7	0.73	144.0	1190.7	1.99
55.8	183.7	0.77	145.8	1188.9	1.98
57.6	198.9	0.80	147.6	1186.7	1.98
59.4	215.9	0.84	149.4	1184.1	1.98
61.2	234.4	0.88	151.2	1181.4	1.98
63.0	254.0	0.91	153.0	1178.5	1.97
64.8	275.3	0.95	154.8	1175.3	1.97
66.6	298.1	0.98	156.6	1171.8	1.97
68.4	322.2	1.03	158.4	1168.2	1.97
70.2	347.7	1.06	160.2	1164.4	1.97
72.0	374.9	1.11	162.0	1160.4	1.97
73.8	403.5	1.15	163.8	1156.1	1.96
75.6	433.2	1.20	165.6	1151.5	1.96
77.4	464.0	1.24	167.4	1146.7	1.95
79.2	495.6	1.28	169.2	1141.7	1.95
81.0	528.3	1.32	171.0	1136.5	1.94
82.8	561.8	1.37	172.8	1131.1	1.94
84.6	595.8	1.40	174.6	1125.6	1.93
86.4	630.4	1.45	176.4	1120.2	1.93
88.2	664.9	1.48	178.2	1114.5	1.92
90.0	699.4	1.52	180.0	1108.9	1.91

Using the Get Max button causes the program to step through a series of storm durations until a maximum volume is obtained.

Each duration is sampled 600 times and the results recorded. The storm durations (hrs) are:-

0.25, 0.5, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 15, 18, 20, 24, 30, 36, 42, 48, 54, 60, 66, 72, 84, 96, 120, 150, 175, 200, 250, 300, 375, 500, 750, 1000, 1250, 1500, 1570, 2000, 2500, 3000, 3500, 4000

It should be noted that the six hour storm frequently requested rarely demonstrates the worst case for storage.



Environmental Assessment Services Ltd

http://www.easltd.co.uk

London Rd, Hickstead
Newmans Heath,
West Sussex, RH17 5LZ
Tel: 01444 882552
email: info@easltd.co.uk

Job No.

862

Sheet no.

4

Date

22/05/26

MasterDrain
SW

Project

Warninglid New Builds

Title

Hydrograph storage analysis (Winter profile) for WARNINGLID BUILDS

By

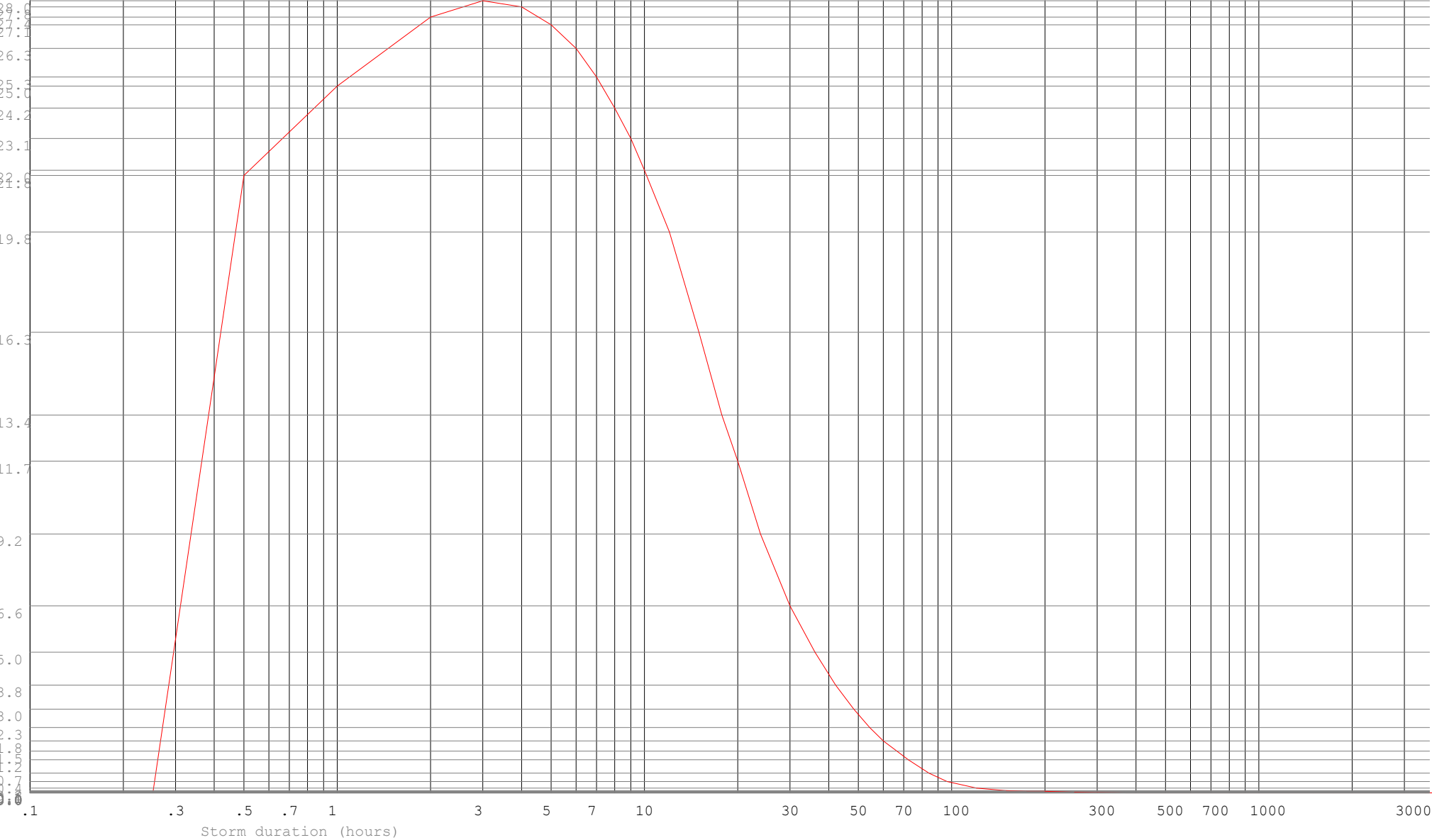
EAS

Checked

Reviewed

Sequential storage volume at specific storm durations.

m³



Environmental Assessment Services Ltd http://www.easltd.co.uk London Rd, Hickstead Haywards Heath, West Sussex, RH17 5LZ Tel: 01444 882552 email: info@easltd.co.uk		Job No. 862		
		Sheet no. 1		
		Date 22/05/26 16:32		
Project Warninglid School		By EAS	Checked	Reviewed
Title Manhole printout for WARNINGLID SCHOOL.SW				

Manhole ref.	X ref	Y ref	Form	Cham diam. or length	Rect. width	Chamb. height	Shaft height	MH Volume	Exit Diam	Exit Crown	Exit Invert	Chamb const	Slab level	Cover Level	Dwnstr MH
SW1	77	131.9	circ	450	N/A	0.50		0.08	100	89.425	89.300	N/A	89.250	89.800	SW2
SW2	78.7	117.3	circ	900	N/A	0.50		0.32	225	88.750	88.500	N/A	88.450	89.000	SW3
SW3	75.4	109.1	circ	1200	N/A	0.50		0.57	225	88.600	88.350	N/A	88.300	88.850	SW4
SW4	61.7	104.1	circ	900	N/A	1.07		0.68	225	88.450	88.200	N/A	88.150	89.270	STORAGE
SW5	75.8	151	circ	450	N/A	0.50		0.08	100	88.725	88.600	N/A	88.550	89.100	SW6
SW6	59.5	144.6	circ	450	N/A	1.32		0.21	150	88.595	88.420	N/A	88.370	89.740	SW7
SW7	53	120	circ	600	N/A	0.91		0.26	225	88.340	88.090	N/A	88.040	89.000	STORAGE
STORAGE	49.7	100.7	circ	7334	N/A	1.40		59.14	100	87.725	87.600	N/A	87.550	89.000	SW8
SW8	44.7	97.4	circ	450	N/A	1.31		0.21	100	87.665	87.540	N/A	87.490	88.850	SEWER

All manholes to be as per 'Sewers for Adoption'

Environmental Assessment Services Ltd

<http://www.easltd.co.uk>

London Rd, Hickstead
Haywards Heath,
West Sussex, RH17 5LZ
Tel: 01444 882552
email: info@easltd.co.uk

Job No.
862

Sheet no.

2

Date

22/05/26 16:32

Project

Warninglid School

By

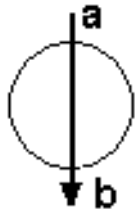
EAS

Checked

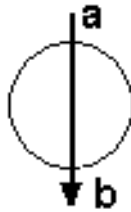
Reviewed

Title

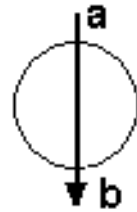
Manhole printout for WARNINGLID SCHOOL.SW



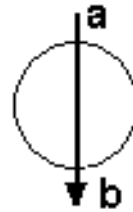
MH = SW1
a=head
b = 100



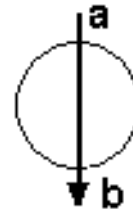
MH = SW2
a= 100
b = 225



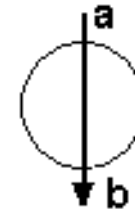
MH = SW3
a= 225
b = 225



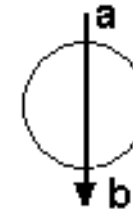
MH = SW4
a= 225
b = 225



MH = SW5
a=head
b = 100

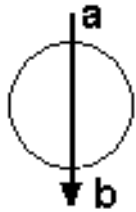


MH = SW6
a= 100
b = 150



MH = SW7
a= 150
b = 225

MH = STORAGE
a= 225
b = 100
c = 225
d = 225



MH = SW8
a= 100
b = 100

Environmental Assessment Services Ltd http://www.easltd.co.uk		London Rd, Hickstead Haywards Heath, West Sussex, RH17 5LZ Tel: 01444 882552 email: info@easltd.co.uk		Job No. 862		
				Sheet no. 3		
				Date 22/05/26 16:32		
Project	Warninglid School			By EAS	Checked	Reviewed
Title						
Manhole printout for WARNINGLID SCHOOL.SW						

These explanatory notes should be read in conjunction with the Manhole printout

- 1) Manhole ref - the reference for the manhole in question
- 2) Form - either circular or rectangular
- 3) Chamber diam or length - diameter of chamber if circular, or length if rectangular - in metres
- 4) Rectangular width - if form is rectangular, this gives the width of the chamber
- 5) Chamber height - height of chamber from invert
- 6) Shaft height - height of access shaft if applicable, from top of chamber to ground level
- 7) Manhole volume - cubic capacity of manhole chamber
- 8) Exit diameter - diameter of pipe leaving this manhole
- 9) Exit crown - crown level of pipe leaving this manhole
- 10) Exit invert - invert level of pipe leaving this manhole
- 11) Chamb const - manhole construction :-
 - N/A - not specified
 - Conc - concrete rings
 - Poly - polypropylene rings surrounded by selected fill
 - Poly/conc - polypropylene rings surrounded by concrete
 - Brick - brick built with waterproof render
 - In situ - concrete cast in situ
- 12) Slab level - surface level of base slab (if no sump, this is placed at 50mm below exit invert to allow levels manipulation).
- 13) Manhole diameters of 9999 have exceeded the sizes available in SfA
- 14) Manhole diameters may have to be modified due to the number of branches

Environmental Assessment Services Ltd http://www.easltd.co.uk London Rd, Hickstead Haywards Heath, West Sussex, RH17 5LZ Tel: 01444 882552 email: info@easltd.co.uk		Job No. 862		
		Sheet no. 1		
		Date 26/05/26 09:37		
Project Warninglid Residences		By	Checked	Reviewed
Title Manhole printout for WARNINGLID RESIDENCES.SW				

Manhole ref.	X ref	Y ref	Form	Cham diam. or length	Rect. width	Chamb. height	Shaft height	MH Volume	Exit Diam	Exit Crown	Exit Invert	Chamb const	Slab level	Cover Level	Dwnstr MH
SW9	52.7	75.7	circ	450	N/A	0.50		0.08	100	88.125	88.000	N/A	87.950	88.500	SW10
SW10	49.6	60.3	circ	900	N/A	0.50		0.32	100	87.775	87.650	N/A	87.600	88.150	SW11
SW11	62.1	57.2	circ	900	N/A	0.50		0.32	150	87.515	87.340	N/A	87.290	87.840	SW12
SW12	63.8	37	circ	1200	N/A	0.50		0.57	225	86.950	86.700	N/A	86.650	87.200	SW13
SW13	46.7	40.5	circ	450	N/A	0.88		0.14	150	86.695	86.520	N/A	86.470	87.400	STORAGE
STORAGE	40.8	33.2	circ	5091	N/A	1.40		28.50	100	86.025	85.900	N/A	85.850	87.300	SW14
SW14	38.5	29.8	circ	450	N/A	1.45		0.23	100	85.975	85.850	N/A	85.800	87.300	SEWER

All manholes to be as per 'Sewers for Adoption'

Environmental Assessment Services Ltd

<http://www.easltd.co.uk>

London Rd, Hickstead
Haywards Heath,
West Sussex, RH17 5LZ
Tel: 01444 882552
email: info@easltd.co.uk

Job No.
862

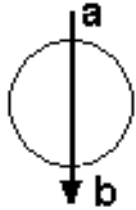
Sheet no.
2

Date
26/05/26 09:37

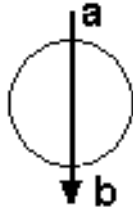
Project
Warninglid Residences

Title
Manhole printout for WARNINGLID RESIDENCES.SW

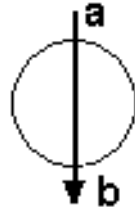
By
Checked
Reviewed



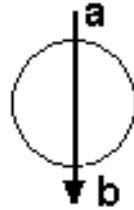
MH = SW9
a=head
b = 100



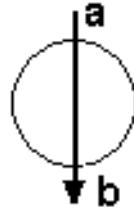
MH = SW10
a= 100
b = 100



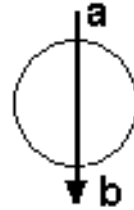
MH = SW11
a= 100
b = 150



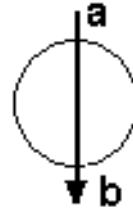
MH = SW12
a= 150
b = 225



MH = SW13
a= 225
b = 150



MH = STORAGE
a= 150
b = 100



MH = SW14
a= 100
b = 100

Environmental Assessment Services Ltd http://www.easltd.co.uk	London Rd, Hickstead Haywards Heath, West Sussex, RH17 5LZ Tel: 01444 882552 email: info@easltd.co.uk			Job No. 862		
				Sheet no. 3		
				Date 26/05/26 09:37		
Project Warninglid Residences				By	Checked	Reviewed
Title Manhole printout for WARNINGLID RESIDENCES.SW						

These explanatory notes should be read in conjunction with the Manhole printout

- 1) Manhole ref - the reference for the manhole in question
- 2) Form - either circular or rectangular
- 3) Chamber diam or length - diameter of chamber if circular, or length if rectangular - in metres
- 4) Rectangular width - if form is rectangular, this gives the width of the chamber
- 5) Chamber height - height of chamber from invert
- 6) Shaft height - height of access shaft if applicable, from top of chamber to ground level
- 7) Manhole volume - cubic capacity of manhole chamber
- 8) Exit diameter - diameter of pipe leaving this manhole
- 9) Exit crown - crown level of pipe leaving this manhole
- 10) Exit invert - invert level of pipe leaving this manhole
- 11) Chamb const - manhole construction :-
 - N/A - not specified
 - Conc - concrete rings
 - Poly - polypropylene rings surrounded by selected fill
 - Poly/conc - polypropylene rings surrounded by concrete
 - Brick - brick built with waterproof render
 - In situ - concrete cast in situ
- 12) Slab level - surface level of base slab (if no sump, this is placed at 50mm below exit invert to allow levels manipulation).
- 13) Manhole diameters of 9999 have exceeded the sizes available in SfA
- 14) Manhole diameters may have to be modified due to the number of branches



MasterDrain
SW

Environmental Assessment Services Ltd

<http://www.easltd.co.uk>

London Rd, Hickstead
Haywards Heath,
West Sussex, RH17 5LZ
Tel: 01444 882552
email: info@easltd.co.uk

Job No. 862		
Sheet no. 1		
Date 22/05/26		
By EAS	Checked	Reviewed

Project
Warninglid School

Title
Surcharge calcs (Sized at 30 yrs storm) for WARNINGLID SCHOOL MAR 26.SW CCF = 45%

Using in-line restrictors
Return period = 100 yrs
Climate change factor = 45

PEAK hydrograph values printed
Storm duration = 15 mins
No offline storage

Mean rain intens. 307.00 mm/hr
Storm profile = Summer
Using FEH data

Peak rain intens. 1203.44 mm/hr
Sample period = 7.5 secs.

Entry	SECT.:	MANHOLE	:	PIPE	:	RATE	:	PIPE	:	CHAMBER	:	INVERT:	WATER	:	GRND	:	SURCHARGE		:	EXCESS	:	FLOODED	:	DRAINED	:	STATUS		
No.	No.:	REF	:	CAPACITY	:	FLOW	:	SIZE	:	DIAM/LxW	:	LEVEL	LEVEL	:	LEVEL	:	:	:	:	:	FLOW	:	VOL	:	AREA (m²):	:		
			:	l/s	:	l/s	:	mm	:	mm	:	m	m	:	m	:	fract.	Depth	:	l/s	:	m³	:	:x FACTOR:	:			
1	I	1.01		SW1		14.4		13.3		100		450	89.30		89.39		89.80		0.93		0.09		0.00		0.000		92	OK
2	I	1.02		SW2		67.8		21.9		225		900	88.50		88.58		89.00		0.32		0.08		0.00		0.000		151	OK
3	I	1.03		SW3		52.7		23.5		225		1200	88.35		88.45		88.85		0.45		0.10		0.00		0.000		163	OK
4	I	1.04		SW4		114.0		44.4		225		900	88.20		88.29		89.27		0.39		0.09		0.00		0.000		307	OK
5	B	2.01		SW5		6.1		4.2		100		450	88.60		88.66		89.10		0.68		0.06		0.00		0.000		29	OK
6	B	2.02		SW6		20.2		13.2		150		450	88.42		88.51		89.74		0.65		0.09		0.00		0.000		91	OK
7	B	2.03		SW7		82.4		28.0		225		600	88.09		88.17		89.00		0.34		0.08		0.00		0.000		193	OK
8	I	1.05	STORAGE#			6.0		2.0		100		7334	87.60		87.64		89.00		0.33		0.04		0.00		0.000		500	OK
9	I	1.06		SW8		6.4		0.0		100		450	87.54		87.54		88.85		0.00		0.00		0.00		0.000		0	OK



MasterDrain
SW

Environmental Assessment Services Ltd

<http://www.easltd.co.uk>

London Rd, Hickstead
Haywards Heath,
West Sussex, RH17 5LZ
Tel: 01444 882552
email: info@easltd.co.uk

Job No. 862		
Sheet no. 2		
Date 22/05/26		
By EAS	Checked	Reviewed

Project
Warninglid School

Title
Surcharge calcs (Sized at 30 yrs storm) for WARNINGLID SCHOOL MAR 26.SW CCF = 45%

Notes

Printout headings

- | | | |
|---|---|--|
| 1) Entry no - position in file | 2) Section no - pipe identifier | 3) Manhole ref - Manhole identifier |
| 4) Pipe cap - full bore capacity of that pipe | 5) Rate of flow - calculated flow rate (l/s) ± = flow restrictor. | 6) Pipe diam - outlet pipe diameter (mm) |
| 7) Chamber diam - chamber diam. at base of MH | 8) Invert level - invert level of manhole | 9) Water level - calculated peak water level. |
| 10) Grnd level - ground / cover level | 11) Surch. fract - calc.flow/pipe capacity | 12) Surch. depth - surcharge level above soffit |
| 13) Overflow - surcharged flow rate (l/s) | 14) Flooded vol - volume of water above cover | 15) Upstrm Vol - upstream pipe vol to previous manhole(s) |
| 16) Status - OK - outlet not surcharged | 17) Status - Surcharged - outlet surcharged | 18) Status - Warning - water level within 299mm of cover level |
| 19) Status - Flooded - cover over-topped | 20) § against diameter indicates throttle pipe used. | |

Title box

Hydrograph data

- | | | |
|---|--------------------------------------|--|
| 1) Ret. period - that used to calculate profile | 2) Duration - length of storm (mins) | 3) Profile - either Winter (75%) or Summer (50%) |
|---|--------------------------------------|--|

Flow restrictors

Manhole reference - STORAGE

Restrictor flowrate - 2 l/s

Flood volumes

Check that the upstream storage of the manhole is adequate to take the flood volume - see Upstrm Vol above.



MasterDrain
SW

Environmental Assessment Services Ltd

<http://www.easltd.co.uk>

London Rd, Hickstead
Haywards Heath,
West Sussex, RH17 5LZ
Tel: 01444 882552
email: info@easltd.co.uk

Job No. 862		
Sheet no. 3		
Date 22/05/26		
By EAS	Checked	Reviewed

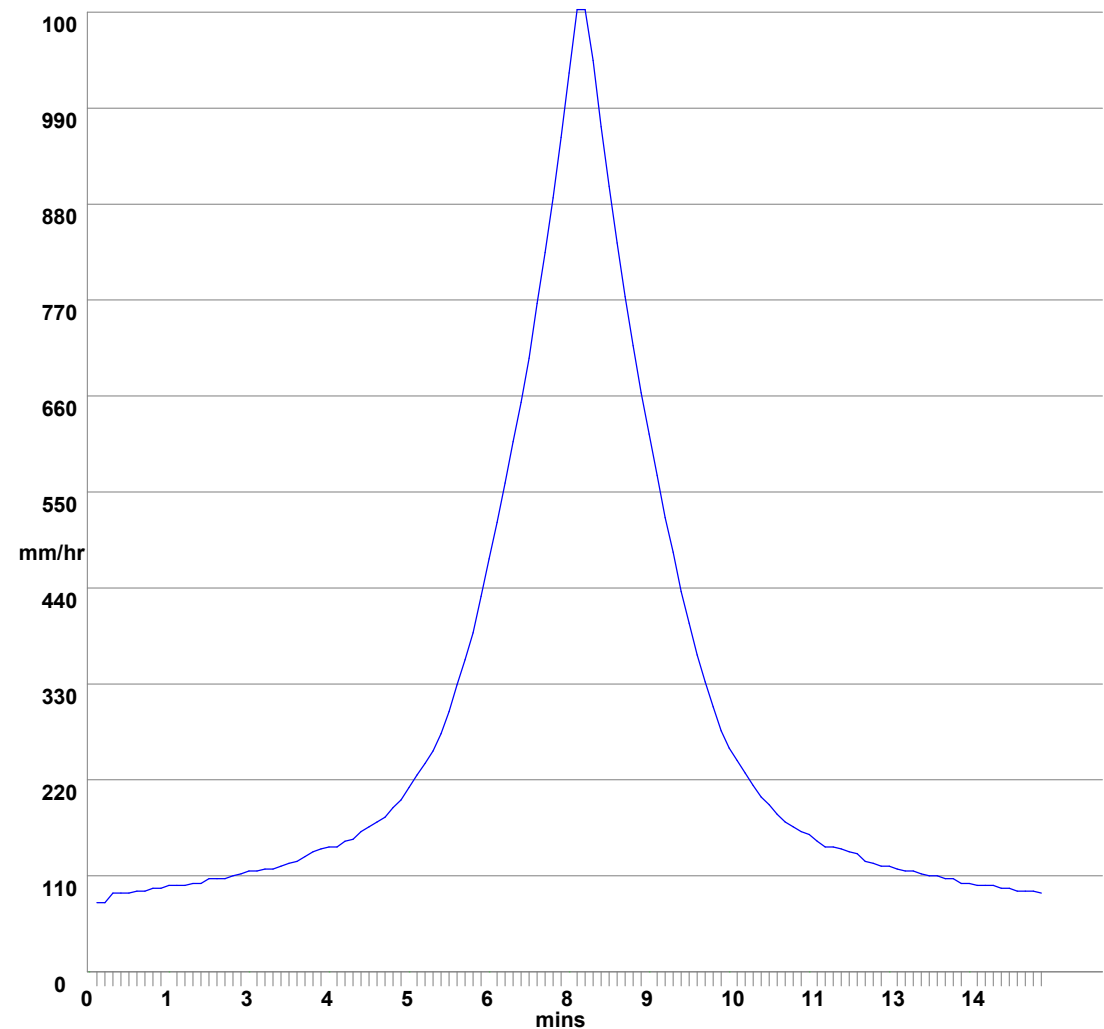
Project
Warninglid School

Title
Surcharge calcs (Sized at 30 yrs storm) for WARNINGLID SCHOOL MAR 26.SW CCF = 45%

Time mins	Rain mm/hr	Time mins	Rain mm/hr	Time mins	Rain mm/hr
0:08	71.60	5:08	204.57	10:08	219.92
0:15	71.60	5:15	217.36	10:15	207.13
0:22	81.83	5:22	230.15	10:22	194.35
0:30	81.83	5:30	248.05	10:30	181.56
0:38	81.83	5:38	271.06	10:38	173.89
0:45	84.39	5:45	299.19	10:45	163.66
0:52	84.39	5:52	324.76	10:52	155.99
1:00	86.94	6:00	352.89	11:00	150.87
1:08	86.94	6:08	391.25	11:08	145.76
1:15	89.50	6:15	429.61	11:15	143.20
1:22	89.50	6:22	467.96	11:22	135.53
1:30	89.50	6:30	508.88	11:30	130.42
1:38	92.06	6:38	552.35	11:38	130.42
1:45	92.06	6:45	593.27	11:45	127.86
1:52	97.17	6:52	639.30	11:52	125.30
2:00	97.17	7:00	695.55	12:00	122.74
2:08	97.17	7:08	749.25	12:08	115.07
2:15	99.73	7:15	805.51	12:15	112.52
2:22	102.29	7:22	869.44	12:22	109.96
2:30	104.84	7:30	935.93	12:30	109.96
2:38	104.84	7:38	1002.42	12:38	107.40
2:45	107.40	7:45	1002.42	12:45	104.84
2:52	107.40	7:52	948.71	12:52	104.84
3:00	109.96	8:00	879.67	13:00	102.29
3:08	112.52	8:08	818.30	13:08	99.73
3:15	115.07	8:15	759.48	13:15	99.73
3:22	120.19	8:22	703.22	13:22	97.17
3:30	125.30	8:30	652.08	13:30	97.17
3:38	127.86	8:38	603.49	13:38	92.06
3:45	130.42	8:45	560.02	13:45	92.06
3:52	130.42	8:52	516.55	13:52	89.50
4:00	135.53	9:00	473.08	14:00	89.50
4:08	138.09	9:08	437.28	14:08	89.50
4:15	145.76	9:15	396.36	14:15	86.94
4:22	150.87	9:22	363.12	14:22	86.94
4:30	155.99	9:30	329.88	14:30	84.39
4:38	161.10	9:38	301.75	14:38	84.39
4:45	171.33	9:45	276.18	14:45	84.39
4:52	179.00	9:52	250.60	14:52	81.83
5:00	191.79	10:00	232.70	15:00	81.83

Hydrograph profile derived from data in the Flood Studies Report

Return period= 100 yrs Duration= 15 mins Profile - summer





MasterDrain
SW

Environmental Assessment Services Ltd

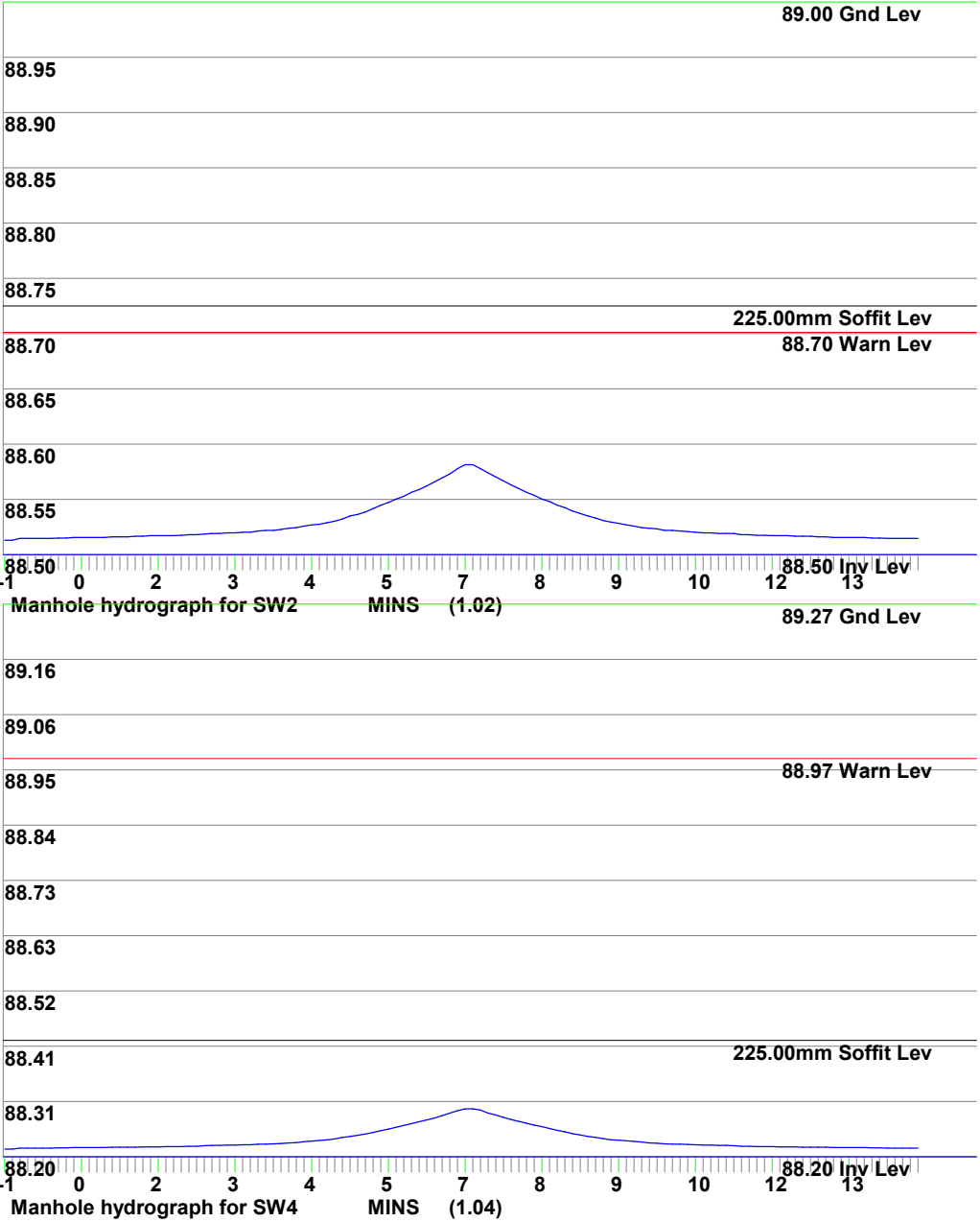
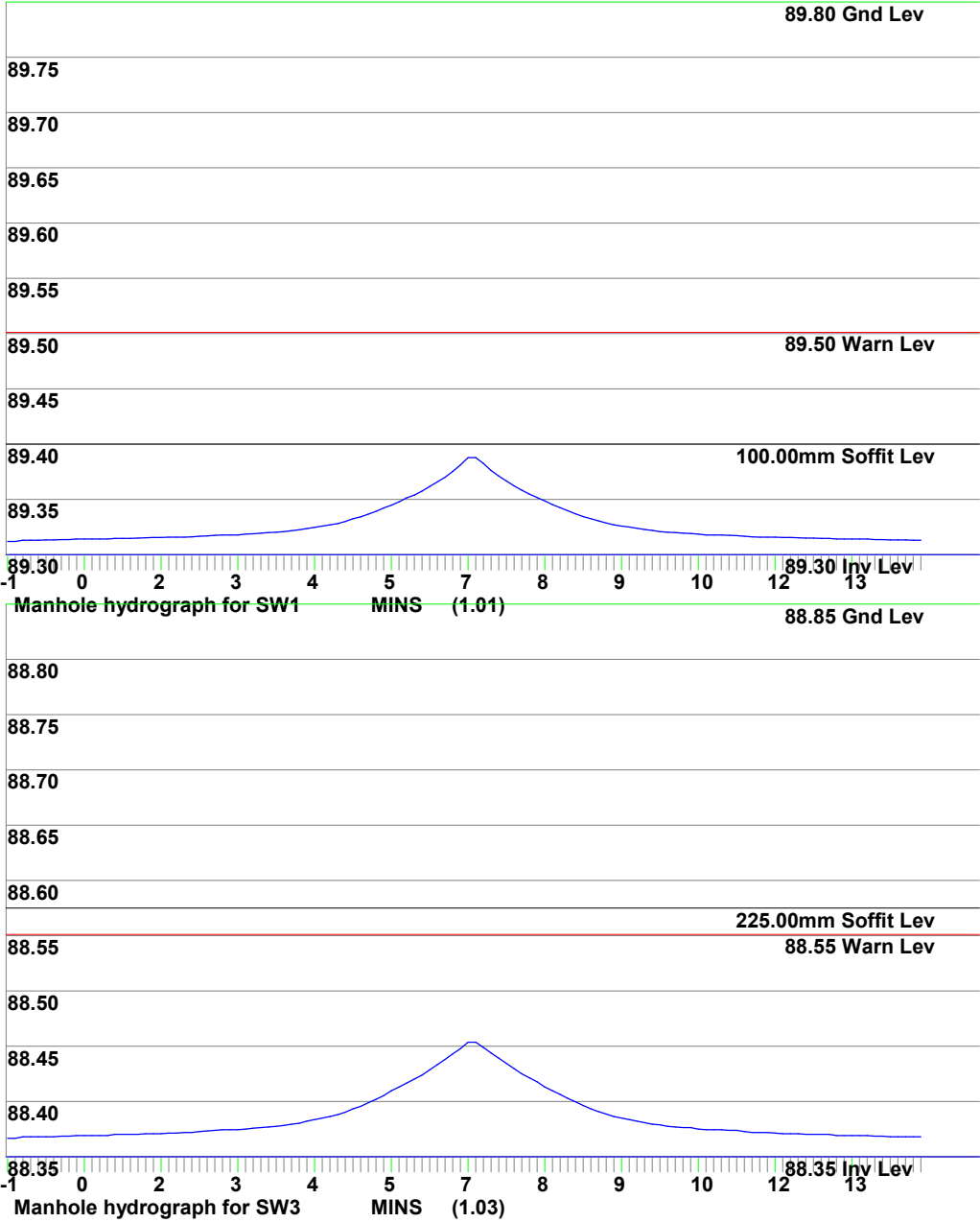
<http://www.easltd.co.uk>

London Rd, Hickstead
Haywards Heath,
West Sussex, RH17 5LZ
Tel: 01444 882552
email: info@easltd.co.uk

Job No. 862		
Sheet no. 4		
Date 22/05/26		
By EAS	Checked	Reviewed

Project
Warninglid School

Title
Surcharge calcs (Sized at 30 yrs storm) for WARNINGLID SCHOOL MAR 26.SW CCF = 45%





MasterDrain
SW

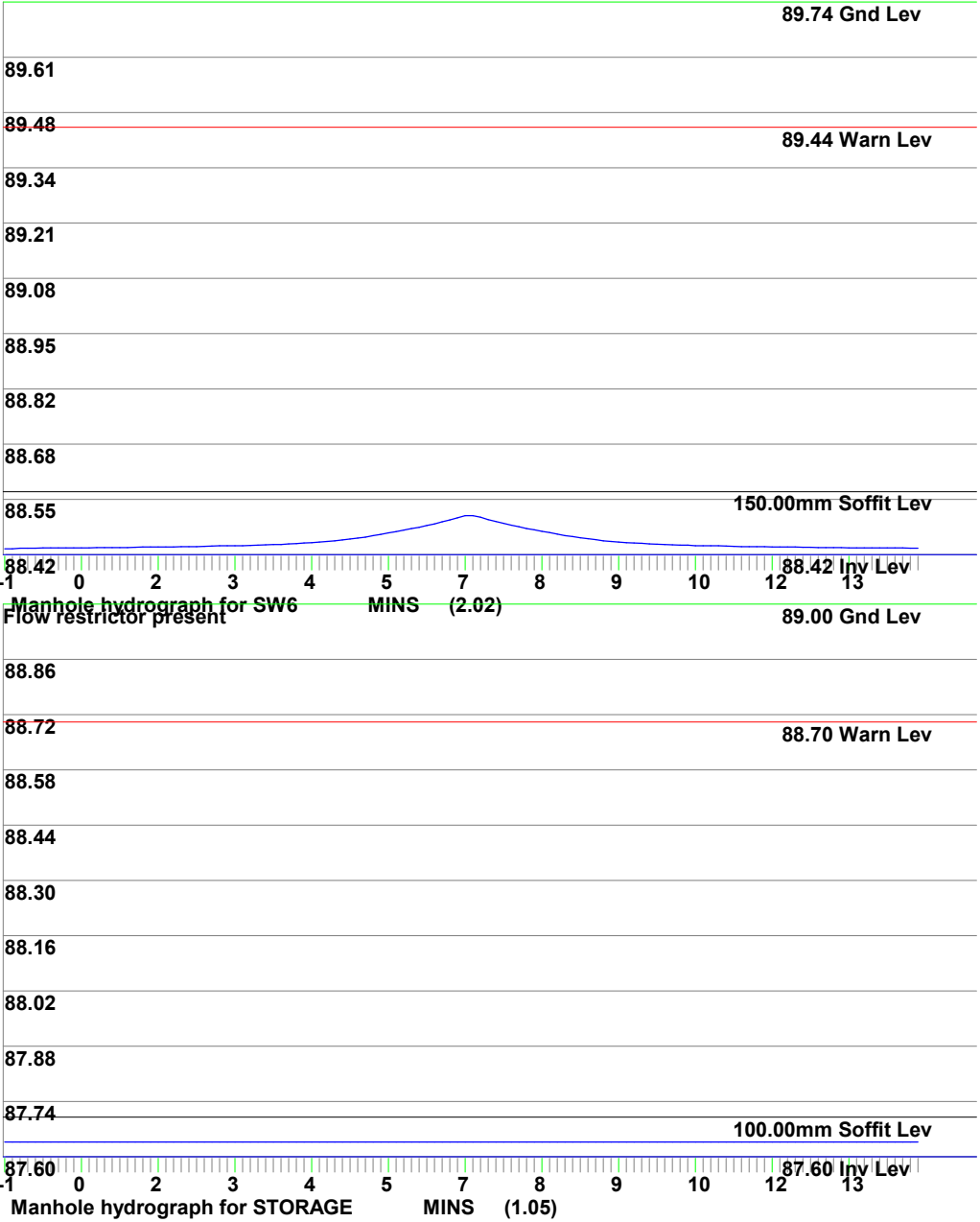
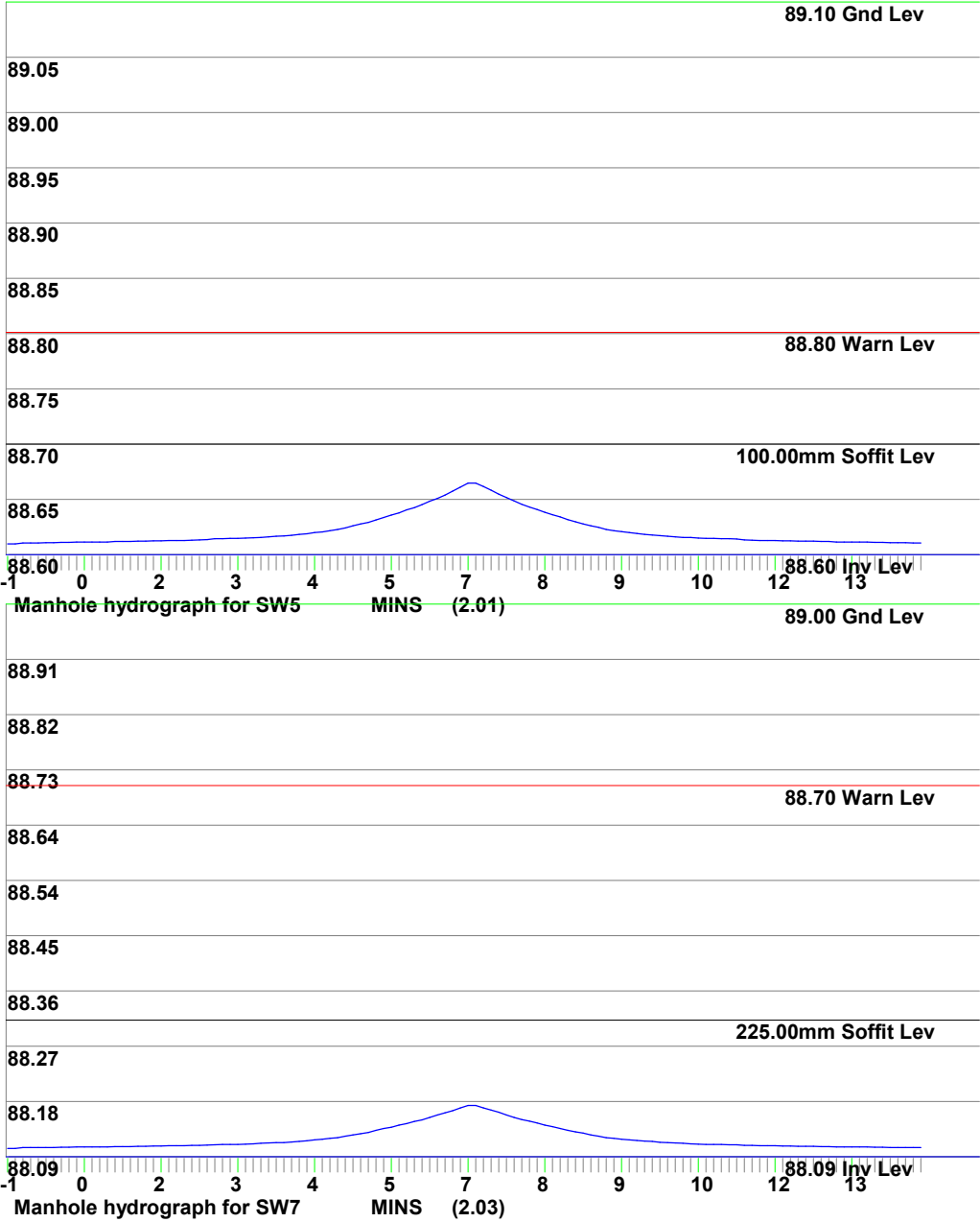
Environmental Assessment
Services Ltd
<http://www.easltd.co.uk>

London Rd, Hickstead
Haywards Heath,
West Sussex, RH17 5LZ
Tel: 01444 882552
email: info@easltd.co.uk

Job No.	862	
Sheet no.	5	
Date	22/05/26	
By	EAS	
Checked		
Reviewed		

Project
Warninglid School

Title
Surcharge calcs (Sized at 30 yrs storm) for WARNINGLID SCHOOL MAR 26.SW CCF = 45%





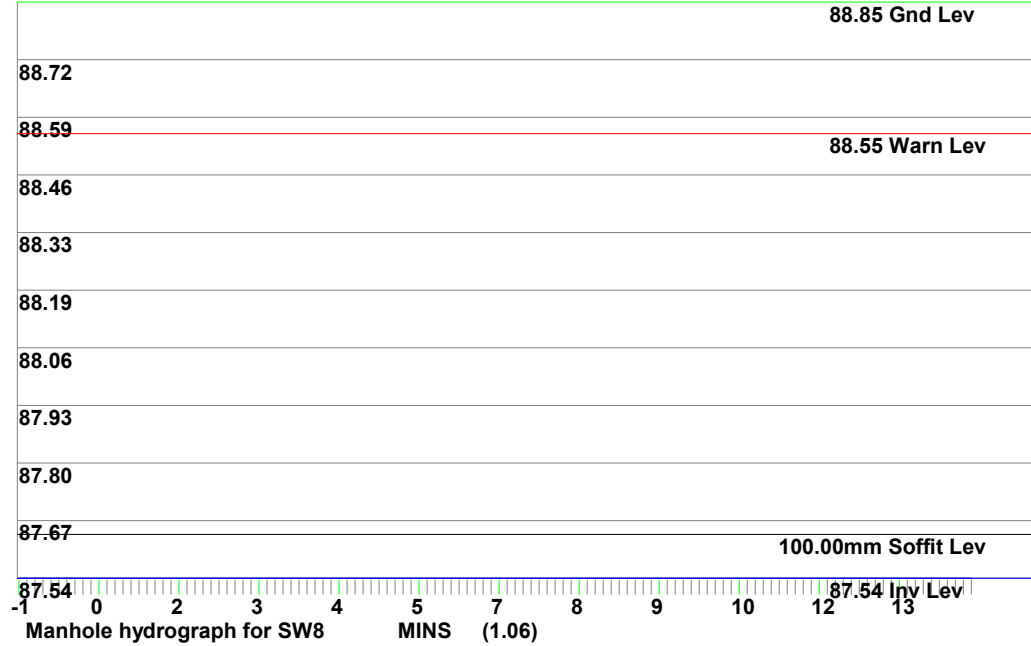
MasterDrain
SW

Environmental Assessment
Services Ltd
<http://www.easltd.co.uk>

London Rd, Hickstead
Haywards Heath,
West Sussex, RH17 5LZ
Tel: 01444 882552
email: info@easltd.co.uk

Job No. 862		
Sheet no. 6		
Date 22/05/26		
By EAS	Checked	Reviewed

Project Warninglid School	By EAS	Checked	Reviewed
Title Surcharge calcs (Sized at 30 yrs storm) for WARNINGLID SCHOOL MAR 26.SW CCF = 45%			





MasterDrain
SW

Environmental Assessment Services Ltd

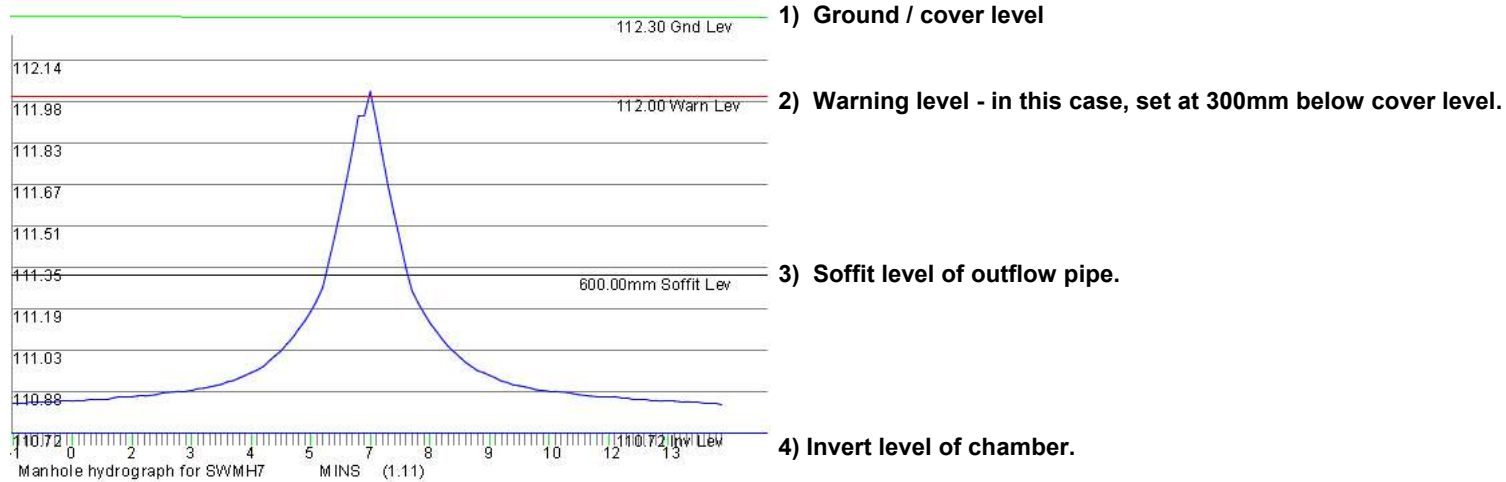
<http://www.easltd.co.uk>

London Rd, Hickstead
Haywards Heath,
West Sussex, RH17 5LZ
Tel: 01444 882552
email: info@easltd.co.uk

Job No. 862	
Sheet no. 7	
Date 22/05/26	
By EAS	Checked Reviewed

Project
Warninglid School

Title
Surcharge calcs (Sized at 30 yrs storm) for WARNINGLID SCHOOL MAR 26.SW CCF = 45%



Notes

- Lower section of the graph shows the water depth filling the channel. Channel is assumed to be a full pipe diameter in depth.
- Upper section of the graph shows the water depth filling the chamber. Chamber has a greater width/diameter than the channel, so increases in depth are proportionally less.
- The top of the graph clips the warning level and would be marked thus on the printout.
- In many cases the invert of the offline storage is required to enter at the channel soffit level, meaning that the pipe will still surcharge but flooding risk reduced.
- The diagram above is a general one and is not part of the current calculation.



MasterDrain
SW

Environmental Assessment
Services Ltd
<http://www.easltd.co.uk>

London Rd, Hickstead
Haywards Heath,
West Sussex, RH17 5LZ
Tel: 01444 882552
email: info@easltd.co.uk

Job No. 862		
Sheet no. 1		
Date 26/05/26		
By	Checked	Reviewed

Project Warninglid Residences	By	Checked	Reviewed
Title Surcharge calcs (Sized at 30 yrs storm) for WARNINGLID.SW CCF = 45%			

Using in-line restrictors
Return period = 100 yrs
Climate change factor = 45

PEAK hydrograph values printed
Storm duration = 15 mins
No offline storage

Mean rain intens. 307.00 mm/hr
Storm profile = Summer
Using FEH data

Peak rain intens. 1203.44 mm/hr
Sample period = 7.5 secs.

Entry No.	SECT. No.	MANHOLE REF	PIPE CAPACITY 1/s	RATE FLOW 1/s	PIPE SIZE mm	CHAMBER DIAM/LxW mm	INVERT LEVEL m	WATER LEVEL m	GRND LEVEL m	SURCHARGE fract. Depth		EXCESS FLOW 1/s	FLOODED VOL m³	DRAINED AREA (m²) :x FACTOR :	STATUS	
1	I	1.01	SW9	9.0	2.4	100	450	88.00	88.03	88.50	0.27	0.03	0.00	0.000	17	OK
2	I	1.02	SW10	9.4	12.7	100	900	87.65	87.79	88.15	1.36	0.14	3.34	0.000	88	Surch.
3	I	1.03	SW11	31.5	25.4	150	900	87.34	87.45	87.84	0.80	0.11	0.00	0.000	175	OK
4	I	1.04	SW12	52.7	36.3	225	1200	86.70	86.85	87.20	0.69	0.15	0.00	0.000	250	OK
5	I	1.05	SW13	46.2	52.0	150	450	86.52	86.94	87.40	1.13	0.42	5.81	0.000	359	Surch.
6	I	1.06	STORAGE#	6.7	2.0	100	5091	85.90	85.93	87.30	0.30	0.03	0.00	0.000	359	OK
7	I	1.07	SW14	6.2	0.0	100	450	85.85	85.85	87.30	0.00	0.00	0.00	0.000	0	OK



MasterDrain
SW

Environmental Assessment Services Ltd

<http://www.easltd.co.uk>

London Rd, Hickstead
Haywards Heath,
West Sussex, RH17 5LZ
Tel: 01444 882552
email: info@easltd.co.uk

Job No. 862		
Sheet no. 2		
Date 26/05/26		
By	Checked	Reviewed

Project	Warninglid Residences
Title	Surcharge calcs (Sized at 30 yrs storm) for WARNINGLID.SW CCF = 45%

Notes

Printout headings

- | | | |
|---|---|--|
| 1) Entry no - position in file | 2) Section no - pipe identifier | 3) Manhole ref - Manhole identifier |
| 4) Pipe cap - full bore capacity of that pipe | 5) Rate of flow - calculated flow rate (l/s) ± = flow restrictor. | 6) Pipe diam - outlet pipe diameter (mm) |
| 7) Chamber diam - chamber diam. at base of MH | 8) Invert level - invert level of manhole | 9) Water level - calculated peak water level. |
| 10) Grnd level - ground / cover level | 11) Surch. fract - calc.flow/pipe capacity | 12) Surch. depth - surcharge level above soffit |
| 13) Overflow - surcharged flow rate (l/s) | 14) Flooded vol - volume of water above cover | 15) Upstrm Vol - upstream pipe vol to previous manhole(s) |
| 16) Status - OK - outlet not surcharged | 17) Status - Surcharged - outlet surcharged | 18) Status - Warning - water level within 299mm of cover level |
| 19) Status - Flooded - cover over-topped | 20) § against diameter indicates throttle pipe used. | |

Title box

Hydrograph data

- | | | |
|---|--------------------------------------|--|
| 1) Ret. period - that used to calculate profile | 2) Duration - length of storm (mins) | 3) Profile - either Winter (75%) or Summer (50%) |
|---|--------------------------------------|--|

Flow restrictors

Manhole reference - STORAGE

Restrictor flowrate - 2 l/s

Flood volumes

Check that the upstream storage of the manhole is adequate to take the flood volume - see Upstrm Vol above.



Environmental Assessment Services Ltd

<http://www.easltd.co.uk>

London Rd, Hickstead
Haywards Heath,
West Sussex, RH17 5LZ
Tel: 01444 882552
email: info@easltd.co.uk

Job No. 862		
Sheet no. 3		
Date 26/05/26		
By	Checked	Reviewed

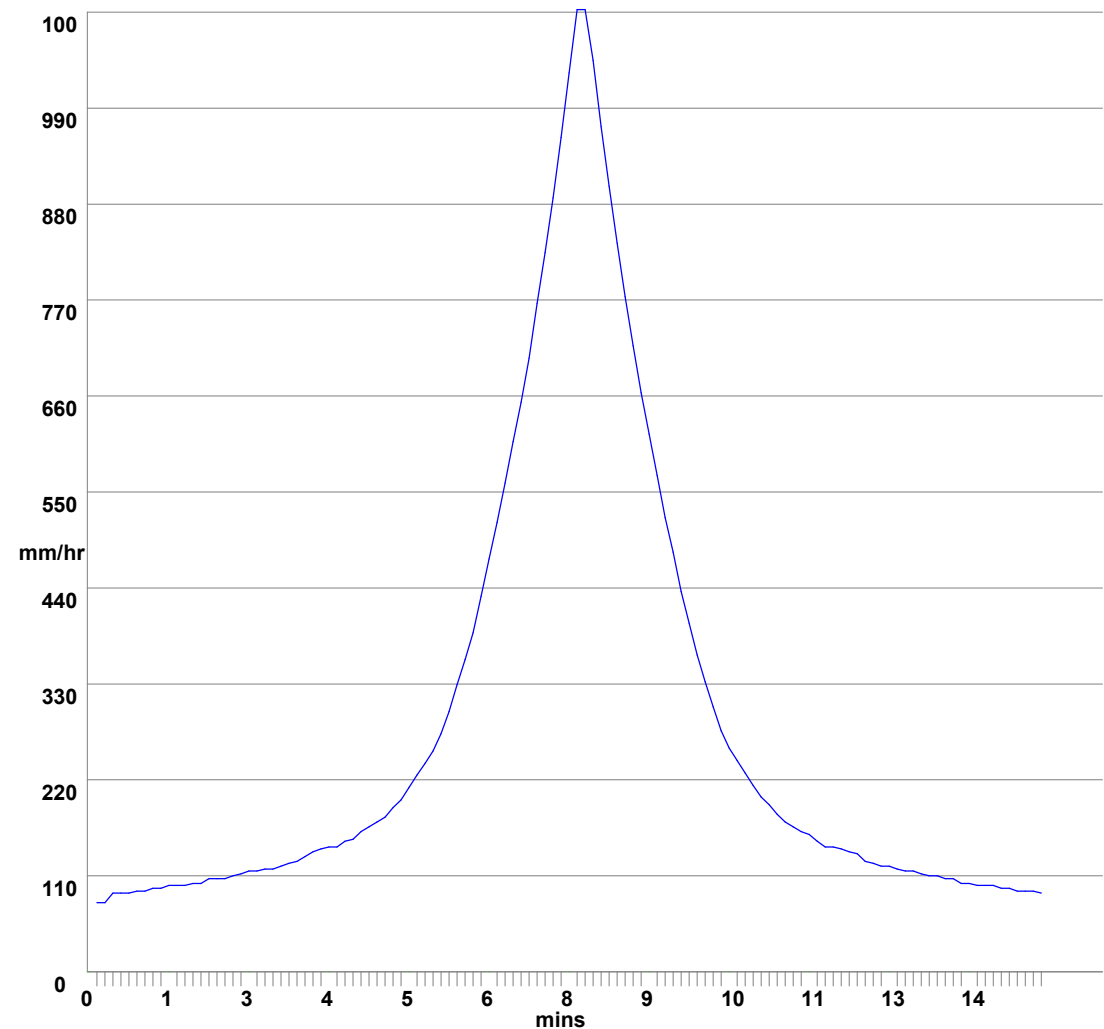
MasterDrain
SW

Project Warninglid Residences
Title Surcharge calcs (Sized at 30 yrs storm) for WARNINGLID.SW CCF = 45%

Time mins	Rain mm/hr	Time mins	Rain mm/hr	Time mins	Rain mm/hr
0:08	71.60	5:08	204.57	10:08	219.92
0:15	71.60	5:15	217.36	10:15	207.13
0:22	81.83	5:22	230.15	10:22	194.35
0:30	81.83	5:30	248.05	10:30	181.56
0:38	81.83	5:38	271.06	10:38	173.89
0:45	84.39	5:45	299.19	10:45	163.66
0:52	84.39	5:52	324.76	10:52	155.99
1:00	86.94	6:00	352.89	11:00	150.87
1:08	86.94	6:08	391.25	11:08	145.76
1:15	89.50	6:15	429.61	11:15	143.20
1:22	89.50	6:22	467.96	11:22	135.53
1:30	89.50	6:30	508.88	11:30	130.42
1:38	92.06	6:38	552.35	11:38	130.42
1:45	92.06	6:45	593.27	11:45	127.86
1:52	97.17	6:52	639.30	11:52	125.30
2:00	97.17	7:00	695.55	12:00	122.74
2:08	97.17	7:08	749.25	12:08	115.07
2:15	99.73	7:15	805.51	12:15	112.52
2:22	102.29	7:22	869.44	12:22	109.96
2:30	104.84	7:30	935.93	12:30	109.96
2:38	104.84	7:38	1002.42	12:38	107.40
2:45	107.40	7:45	1002.42	12:45	104.84
2:52	107.40	7:52	948.71	12:52	104.84
3:00	109.96	8:00	879.67	13:00	102.29
3:08	112.52	8:08	818.30	13:08	99.73
3:15	115.07	8:15	759.48	13:15	99.73
3:22	120.19	8:22	703.22	13:22	97.17
3:30	125.30	8:30	652.08	13:30	97.17
3:38	127.86	8:38	603.49	13:38	92.06
3:45	130.42	8:45	560.02	13:45	92.06
3:52	130.42	8:52	516.55	13:52	89.50
4:00	135.53	9:00	473.08	14:00	89.50
4:08	138.09	9:08	437.28	14:08	89.50
4:15	145.76	9:15	396.36	14:15	86.94
4:22	150.87	9:22	363.12	14:22	86.94
4:30	155.99	9:30	329.88	14:30	84.39
4:38	161.10	9:38	301.75	14:38	84.39
4:45	171.33	9:45	276.18	14:45	84.39
4:52	179.00	9:52	250.60	14:52	81.83
5:00	191.79	10:00	232.70	15:00	81.83

Hydrograph profile derived from data in the Flood Studies Report

Return period= 100 yrs Duration= 15 mins Profile - summer





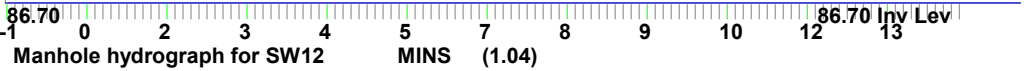
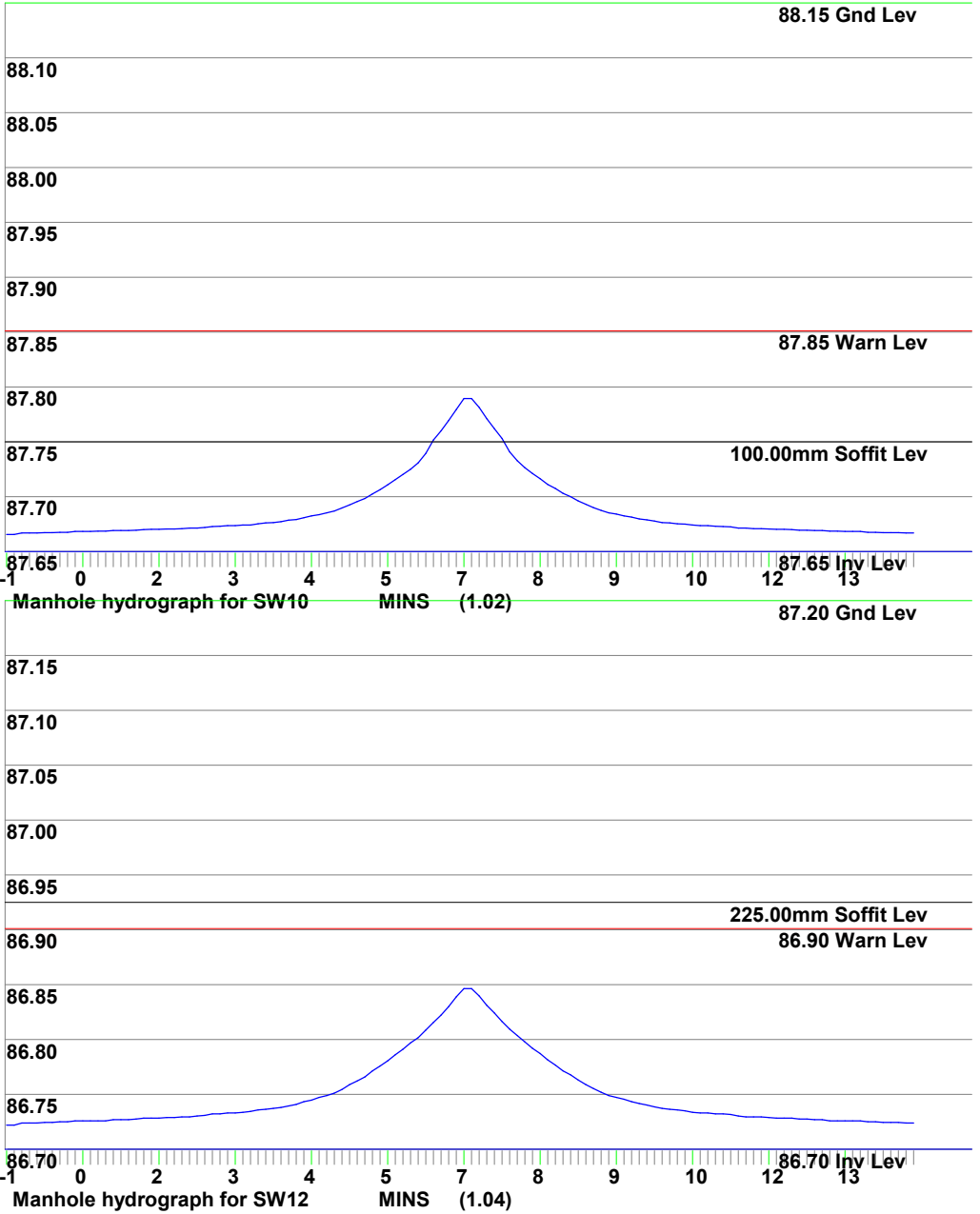
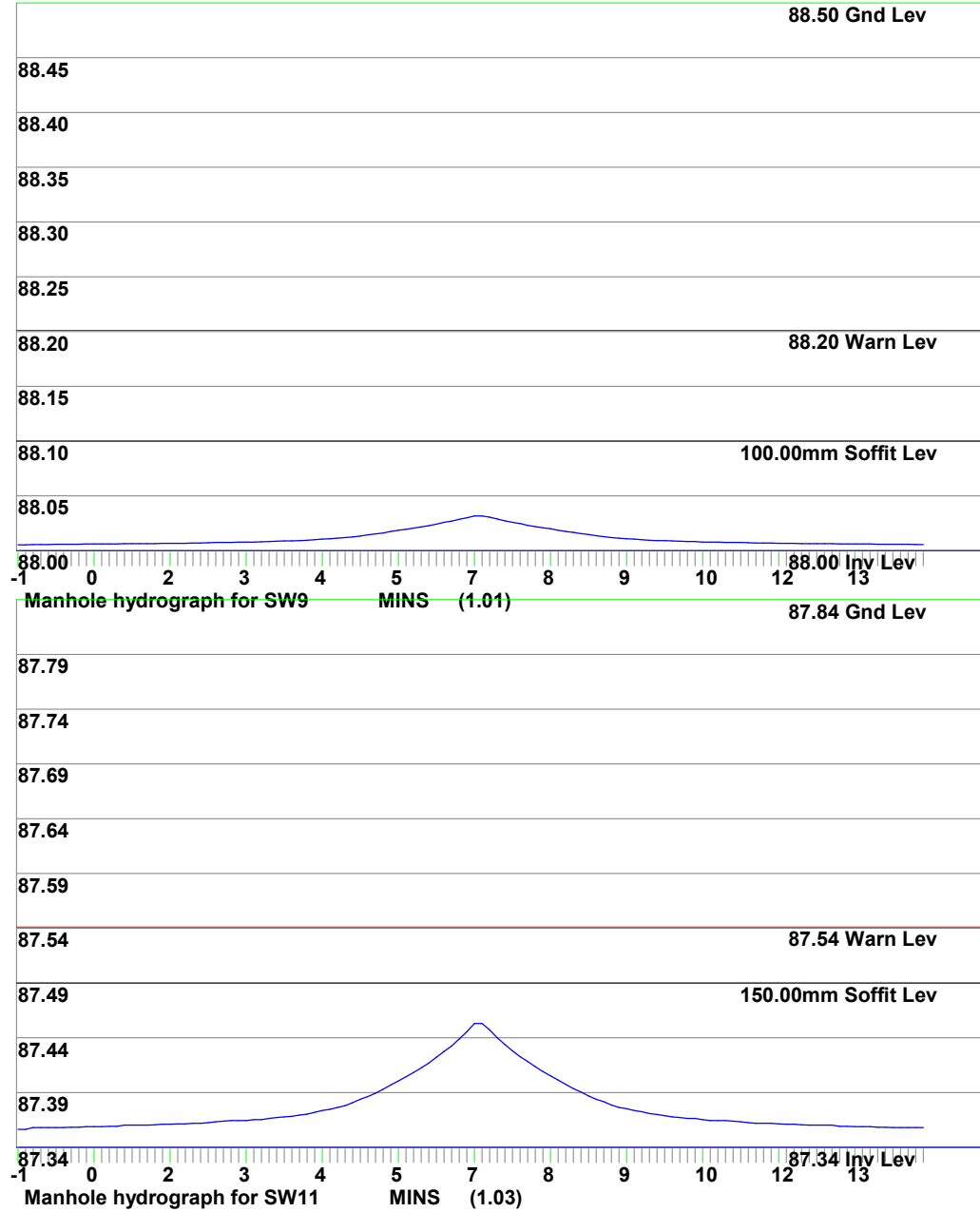
MasterDrain
SW

Environmental Assessment
Services Ltd
<http://www.easltd.co.uk>

London Rd, Hickstead
Haywards Heath,
West Sussex, RH17 5LZ
Tel: 01444 882552
email: info@easltd.co.uk

Job No. 862		
Sheet no. 4		
Date 26/05/26		
By	Checked	Reviewed

Project Warninglid Residences
Title Surcharge calcs (Sized at 30 yrs storm) for WARNINGLID.SW CCF = 45%





MasterDrain
SW

Environmental Assessment Services Ltd

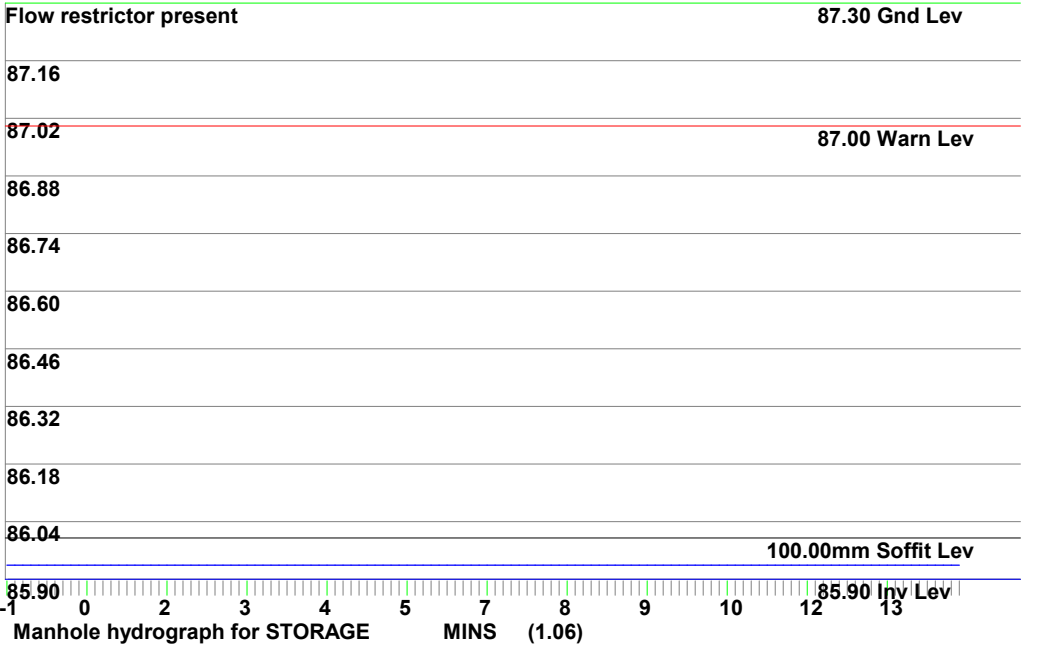
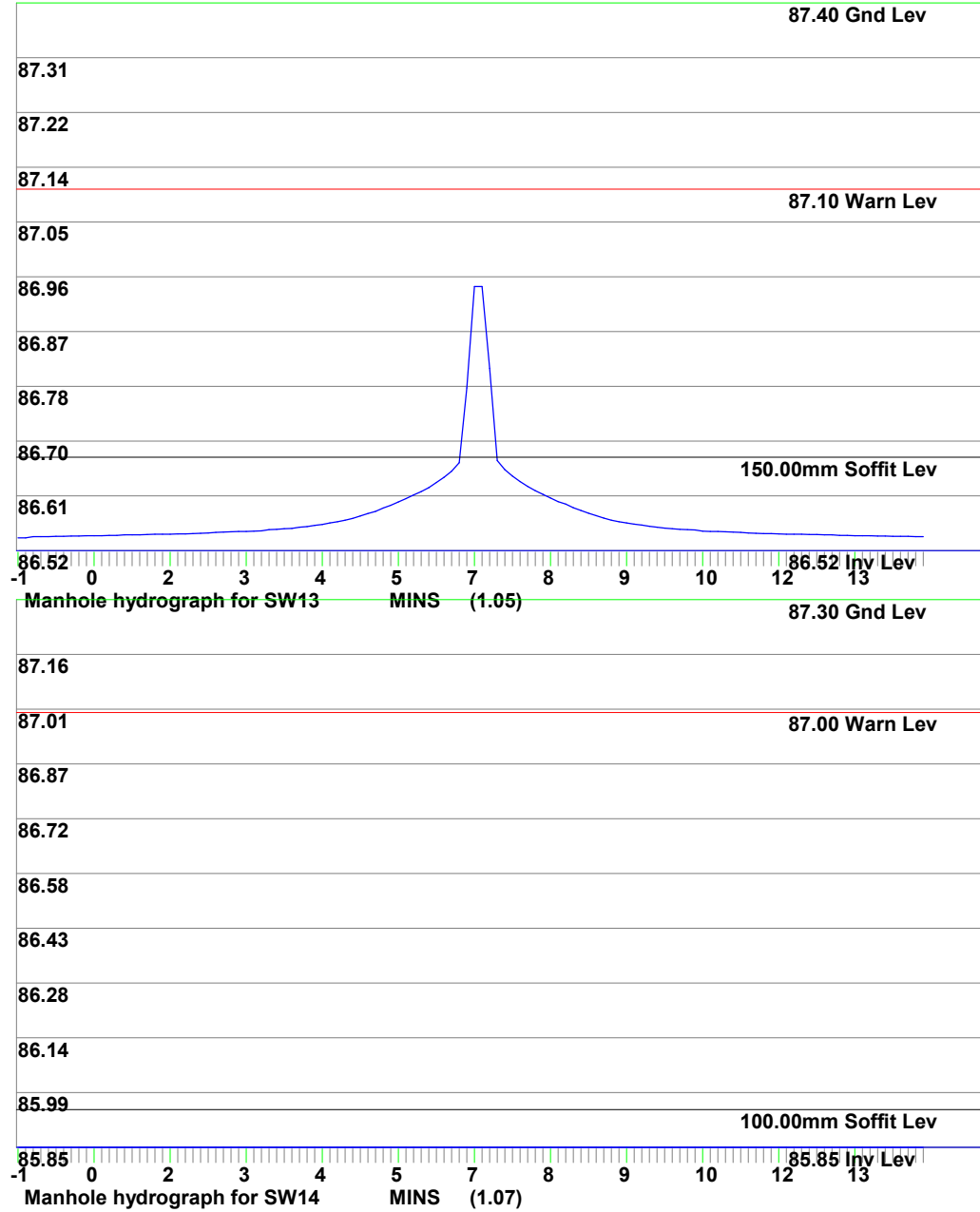
<http://www.easltd.co.uk>

London Rd, Hickstead
Haywards Heath,
West Sussex, RH17 5LZ
Tel: 01444 882552
email: info@easltd.co.uk

Job No. 862		
Sheet no. 5		
Date 26/05/26		
By	Checked	Reviewed

Project **Warninglid Residences**

Title **Surcharge calcs (Sized at 30 yrs storm) for WARNINGLID.SW CCF = 45%**





MasterDrain
SW

Environmental Assessment Services Ltd

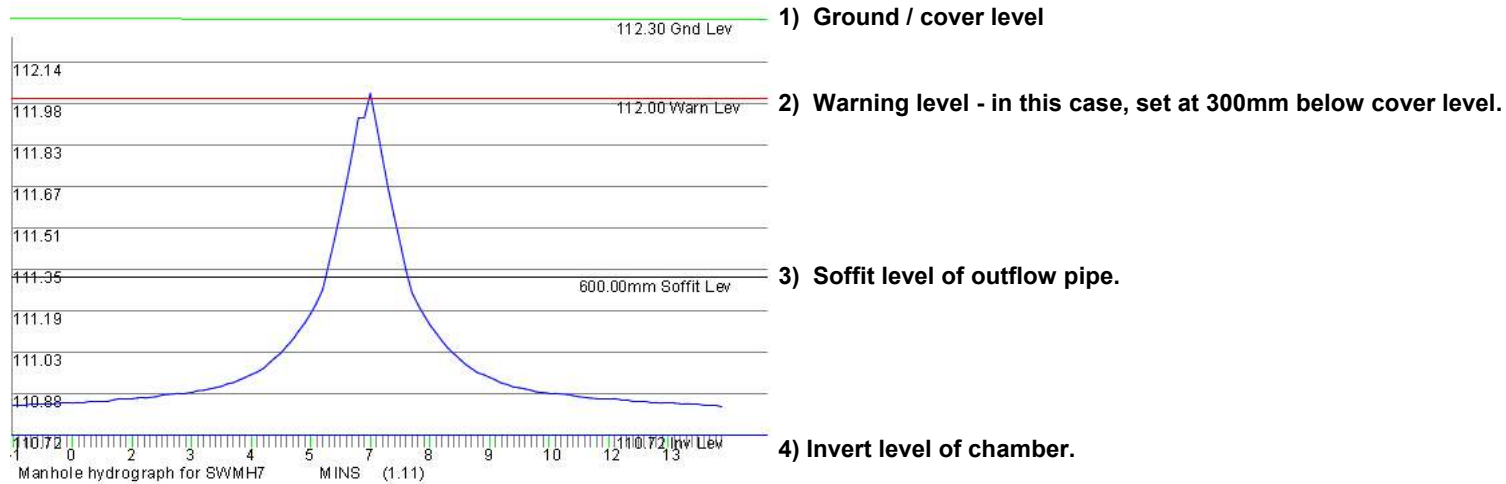
<http://www.easltd.co.uk>

London Rd, Hickstead
Haywards Heath,
West Sussex, RH17 5LZ
Tel: 01444 882552
email: info@easltd.co.uk

Job No. 862		
Sheet no. 6		
Date 26/05/26		
By	Checked	Reviewed

Project
Warninglid Residences

Title
Surcharge calcs (Sized at 30 yrs storm) for WARNINGLID.SW CCF = 45%



Notes

- Lower section of the graph shows the water depth filling the channel. Channel is assumed to be a full pipe diameter in depth.
- Upper section of the graph shows the water depth filling the chamber. Chamber has a greater width/diameter than the channel, so increases in depth are proportionally less.
- The top of the graph clips the warning level and would be marked thus on the printout.
- In many cases the invert of the offline storage is required to enter at the channel soffit level, meaning that the pipe will still surcharge but flooding risk reduced.
- The diagram above is a general one and is not part of the current calculation.



MasterDrain
Foul 11.5

Environmental Assessment Services Ltd

<http://www.easltd.co.uk>

London Rd, Hickstead
Haywards Heath,
West Sussex, RH17 5LZ
Tel: 01444 882552
email: info@easltd.co.uk

Job No. 862		
Sheet no. 0		
Date 22/05/26		
By EAS	Checked	Reviewed

Project
Warninglid School

Title
Manhole printout for WARNINGLID SCHOOL.FL

Manhole ref.	Form	Cham diam. or length	Rect. width	Chamb. height	Shaft height	MH Volume	Ent. Diam	Ent. Crown	Ent. Invert	Exit Diam	Exit Crown	Exit Invert	Chamb const	Cover Level	Dwnstr MH
PC1	circ	1200	N/A	0.50		0.57	Head	----	----	100	89.625	89.500	N/A	90.000	FW1
FW1	circ	1200	N/A	0.55		0.62	100	0.000	0.000	100	89.345	89.220	N/A	89.770	FW2
FW2	circ	1200	N/A	0.50		0.57	100	0.000	0.000	100	88.795	88.670	N/A	89.170	PC2
PC2	circ	1200	N/A	0.50		0.57	100	0.000	0.000	100	88.585	88.460	N/A	88.960	PC3
FW3	circ	1200	N/A	0.50		0.57	Head	----	----	100	87.905	87.780	N/A	88.280	PC3
PC3	circ	1200	N/A	0.90		1.02	100	0.000	0.000	100	87.765	87.640	N/A	88.540	EDC
FW4	circ	1200	N/A	0.50		0.57	Head	----	----	100	88.125	88.000	N/A	88.500	EDC

All manholes to be as per 'Sewers for Adoption'

Levels calculated for level inverts



MasterDrain
Foul 11.5

Environmental Assessment Services Ltd

<http://www.easltd.co.uk>

London Rd, Hickstead
Haywards Heath,
West Sussex, RH17 5LZ
Tel: 01444 882552
email: info@easltd.co.uk

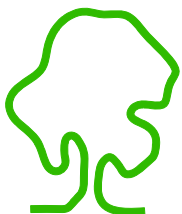
Job No. 862		
Sheet no. 0		
Date 22/05/26		
By EAS	Checked	Reviewed

Project
Warninglid School

Title
Manhole printout for WARNINGLID SCHOOL.FL

These explanatory notes should be read in conjunction with the Manhole printout

- 1) Manhole ref - the reference for the manhole in question
- 2) Form - either circular or rectangular
- 3) Chamber diam or length - diameter of chamber if circular, or length if rectangular - in metres
- 4) Rectangular width - if form is rectangular, this gives the width of the chamber
- 5) Chamber height - height of chamber from invert
- 6) Shaft height - height of access shaft if applicable, from top of chamber to ground level
- 7) Manhole volume - cubic capacity of manhole chamber
- 8) Exit diameter - diameter of pipe leaving this manhole
- 9) Exit crown - crown level of pipe leaving this manhole
- 10) Exit invert - invert level of pipe leaving this manhole
- 11) Manhole diameters of 9999 have exceeded the sizes available in Sfa
- 12) Manhole diameters may have to be modified due to the number of branches



eas ltd

Environmental Assessment Services Ltd

London Road, Hickstead, Haywards Heath, West Sussex RH17 5LZ UK

Phone : +44 (0) 1444 882 552

Fax : +44 (0) 1444 882 553

email : info@easltd.co.uk

web site : www.easltd.co.uk