

Technical Note

Project: 382 Longleaze Lane, Melksham

Subject: Drainage Technical Note (Revised Layout)

Client:	Aspire LPP		
Project No:	07040	Version:	B
Document Ref:	07040-CE-TN-002	Author:	JG
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I Introduction

- 1.1.1 This technical note sets out the principles of the drainage design for the proposed care home development at Longleaze Lane, Melksham (herein referred to as the Site).
- 1.1.2 A Flood Risk Assessment and Drainage Strategy was prepared to support the planning submission for the proposed development (Wiltshire Council application ref. PL/2023/06725). The Drainage Strategy (PJA drawing ref. 07040-0501-P4) forms an appendix to the Flood Risk Assessment (PJA document ref. 07040/FRA/0003 P3).
- 1.1.3 Following planning approval the Drainage Strategy was developed to provide a greater level of detail to support discharge of planning conditions, with further changes to account for the findings of additional surveys and investigation work. This is herein referred to as the previous design. PJA Technical Note 07040-CE-TN-001 sets out the key changes, supported by relevant drawings and calculations.
- 1.1.4 The proposed layout has since been adjusted slightly to provide an alternative access and parking arrangement, as well as relocated bin store and sub-station. These changes require corresponding adjustments to the drainage design, the details of which are set out in this technical note.

2 Previous Drainage Design Development

2.1.1 This section provides a brief overview of the principles of the drainage design. For full details, refer to the FRA prepared for the original planning submission (PJA document ref. 07040/FRA/0003 P3) and the Drainage Technical Note prepared for the discharge of conditions application (PJA document ref. 07040-CE-TN-001-B).

2.1.2 In summary, the drainage proposals for the development comprise the following:

- Surface water run-off will drain via gravity to the existing surface water sewer in Snowberry Lane.
- A flow control upstream of the sewer connection will restrict surface water discharge from the Site to a maximum rate of 3.0l/s.
- Surface water attenuation storage will be provided through a combination of permeable sub-base, rain garden, and geocellular attenuation tanks.
- The surface water network will be designed to convey run-off during all storm events up to and including the critical 1 in 100 year storm event with a 45% allowance for climate change.
- Treatment of run-off from the car park will be achieved by draining these areas via a combination of rain garden and permeable pavement.
- The existing foul sewer crossing the Site will be diverted to enable the construction of the parking area and access, deepening the sewer to provide sufficient cover to trafficked areas before connecting into the existing foul sewer in Snowberry Lane.
- Foul water from the proposed development will drain via gravity to connect into the public sewer network via the diverted sewer noted above.

3 Development of the Drainage Design

3.1.1 The drainage plan and associated design documents have been updated to suit the revised access and parking layout.

3.1.2 The key changes from the previous design are:

- All but 3 parking bays to be constructed as permeable pavement. Several parking bays in the previous design were located above the foul sewer diversion, which prevented the use of permeable pavement in these areas. In the updated layout, only one small row of parking bays lies within the diversion easement.

- Reprofilng of the car parking area to suit the revised layout.
- Relocation of the rain garden to suit the revised layout. The new location enables the rain garden to function as an exceedance flow path for more of the surrounding areas than in the previous design.
- Rearranging the geocellular attenuation tank to suit the revised layout.
- Minor adjustments to the alignment of foul and surface water drainage runs to suit the changes noted above.

3.1.3 The proposed drainage plan is included in Appendix A.

3.2 Surface Water Drainage

3.2.1 As per the previous design, the surface water drainage network drains from south to north, with a Hydro-Brake flow control at the northern boundary to restrict peak discharge rates from the Site to a maximum of 3.0l/s.

3.2.2 Attenuation storage will be provided by a combination of permeable sub-base in block paved parking bays; geocellular tanks located beneath the parking aisles/bays; and a rain garden located between paved areas.

3.2.3 Final connection to the existing Wessex Water surface water sewer in Snowberry Lane will be subject to approval under S106 of the Water Industry Act 1991.

3.2.4 A network model has been created in Causeway Flow to assess the operation of the proposed surface water system during a range of storm events, including the critical 1 in 100 year storm with a 45% allowance for climate change. The Flow model output report is included at Appendix B. The catchment plan used to determine the drained areas for the model is included at Appendix C. The model confirms that the proposed surface water drainage system is able to convey the design storm event without flooding, while controlling discharge to the receiving sewer network to a maximum of 3.0l/s.

3.2.5 The table below provides a summary of the peak discharge rates during a range of storm events and a comparison against the equivalent greenfield run-off rates for each return period, to demonstrate the degree of betterment achieved.

Table 1: Peak Discharge Rate Summary

Return Period (years)	Greenfield Run-off Rate (l/s)	Peak Discharge Rate (l/s)	Betterment (%)
1	2.97	2.3	23%
2.3 (Qbar)	3.80	2.3	39%
30	7.42	2.3	69%
100	9.25	2.3	75%
100 + 45% CC	13.4 (estimated as 100yr x 1.45)	3.0	78%

3.2.6 In the event that a storm occurs with a return period beyond that of the design storm, or in the event of a blockage/failure in the network, there may be surface water flooding on-site. Ground levels around the building will be set to fall away from entrances/thresholds to direct exceedance flows away from the building and towards the soft landscaped areas in the surrounding garden. To the north of the site, flood water will flow along channels created by kerb lines before temporarily ponding in low spots throughout the car park until eventually entering the drainage system via the permeable sub-base and/or gullies. In the central part of the parking area, excess water will flow into the central rain garden where it will enter the drainage system via the perforated underdrain and/or the overflow gully. Appendix D contains the exceedance flow plan for the proposed development.

3.3 Foul Water Drainage

3.3.1 The existing 100mmØ foul sewer that crosses the Site will be diverted to enable the construction of the proposed car park. The existing sewer is a small shallow pipe originating from properties to the east of the Site.

3.3.2 The proposed sewer diversion will begin in an area of soft landscaping at the eastern site boundary, where the existing 100mmØ pipe enters the site from the east. The existing pipe will be connected to a new shallow chamber, at which point the route will divert north while also falling steeply to achieve suitable cover depth. The diversion will then head west at a suitable depth to pass under the trafficked areas, continuing along the site access road to connect to the existing 225mmØ foul sewer in Snowberry Lane. The diversion will be subject to Wessex Water approval under S185 of the Water Industry Act 1991.

3.3.3 Foul water from the proposed development will be drained via a new foul drainage network, which will flow north across the car park to connect onto the route of the diverted sewer in the site access road, for discharge into the existing 225mmØ foul sewer running in Snowberry Lane.

4 Water Quality

4.1.1 In accordance with Table 26.2 of CIRIA C753 The SuDS Manual, run-off from residential roofs is classified as a 'very low' pollution risk, requiring removal of gross sediments only, for which catchpits are provided.

4.1.2 The car parking area is classified as a 'low' pollution risk. 'Low' pollution hazard levels require application of a 'simple index approach' for water quality risk assessment for discharge to surface and groundwaters. The 'pollution hazard indices' for a low pollution site are given in the table below.

Table 2: Pollution Hazard Indices for a Low Pollution Hazard Site

Total Suspended Solids (TSS)	Metals	Hydrocarbons
0.5	0.4	0.4

4.1.3 The proposed drainage design includes multiple SuDS features to provide treatment of run-off from the low pollution risk areas.

4.1.4 Permeable paving provides high-quality treatment of run-off through:

- Filtration of silt and the attached pollutants
- Biodegradation of organic pollutants, such as petrol and diesel
- Adsorption of pollutants to materials within the construction
- Settlement and retention of solids

4.1.5 In addition to permeable pavement, the proposed rain garden will serve to treat run-off from some of the trafficked areas by functioning as a bioretention system.

4.1.6 In terms of the simple index approach, the mitigation indices for the proposed SuDS features are set out in the table below.

Table 3: Indicative SuDS Mitigation Indices

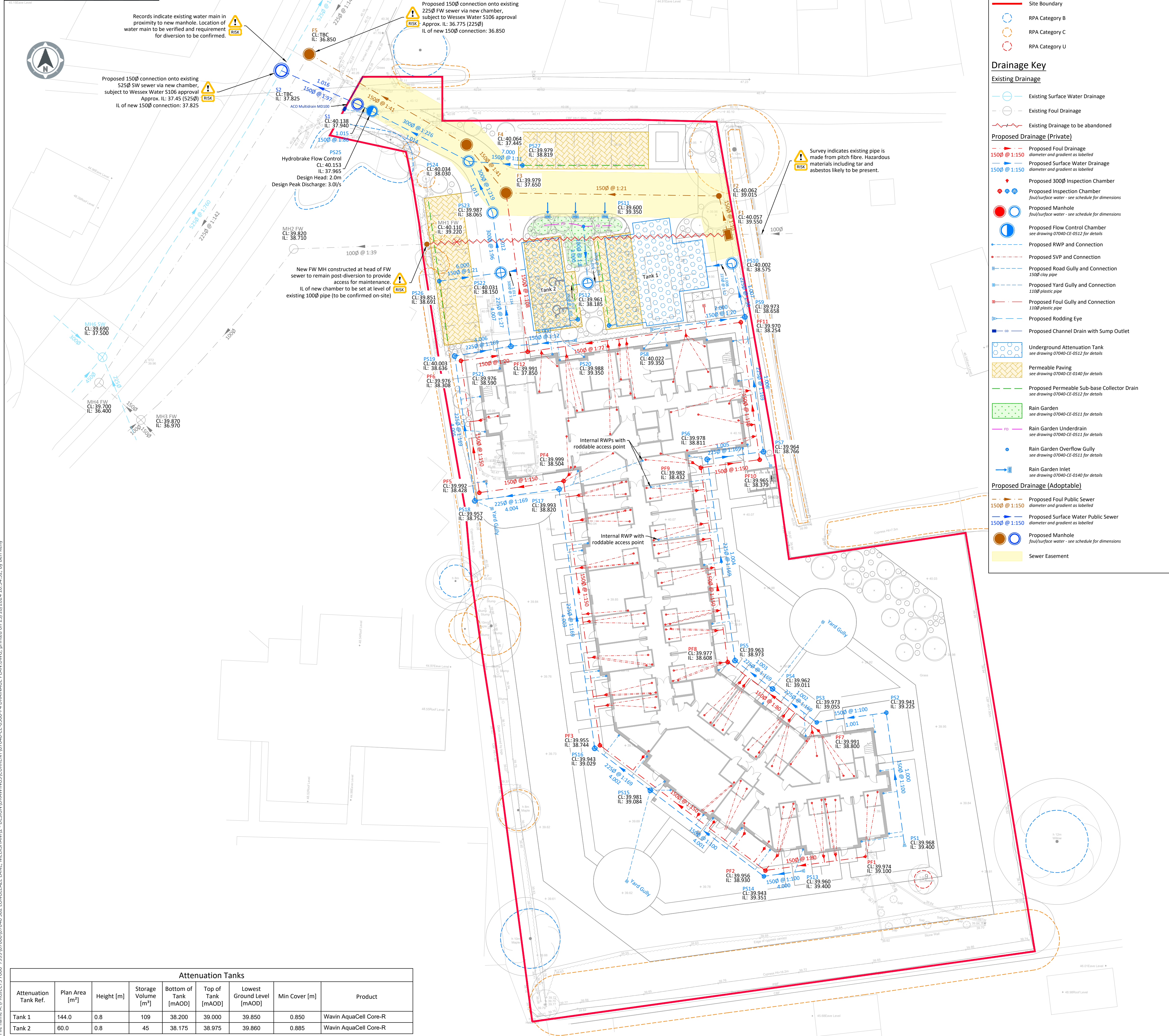
SuDS component	Mitigation Indices		
	Total Suspended Solids (TSS)	Metals	Hydrocarbons
Permeable pavement	0.7	0.6	0.7
Bioretention system	0.8	0.8	0.8

- 4.1.7 The mitigation indices for the proposed SuDS features are greater than the pollution hazard indices for each pollutant type. Therefore, the proposed drainage system complies with the water quality requirements of the SuDS standards.

5 Conclusion

- 5.1.1 This technical note sets out the key developments to the drainage proposals for the approved care home development at Longleaze Lane, Melksham.
- 5.1.2 The proposed drainage design has been developed to provide a sustainable solution for the development foul and surface water drainage systems. The drainage proposals have been adjusted to account for changes to the proposed layout, however the principles of the previous design have been maintained.
- 5.1.3 Along with the appended information, this note provides the necessary information to confirm that the revised drainage proposals have been designed to a suitable standard that meets the requirements of the planning permission.

Appendix A Proposed Drainage Plan



Key

- Site Boundary
- RPA Category B
- RPA Category C
- RPA Category U

Drainage Key

Existing Drainage

- Existing Surface Water Drainage
- Existing Foul Drainage
- Existing Drainage to be abandoned

Proposed Drainage (Private)

- Proposed Foul Drainage diameter and gradient as labelled
- Proposed Surface Water Drainage diameter and gradient as labelled
- Proposed 3000 Inspection Chamber
- Proposed Inspection Chamber foul/surface water - see schedule for dimensions
- Proposed Manhole foul/surface water - see schedule for dimensions
- Proposed Flow Control Chamber see drawing 07040-CE-0512 for details
- Proposed RWP and Connection
- Proposed SVP and Connection
- Proposed Road Gully and Connection 1500 clay pipe
- Proposed Yard Gully and Connection 1100 plastic pipe
- Proposed Foul Gully and Connection 1100 plastic pipe
- Proposed Rodding Eye
- Proposed Channel Drain with Sump Outlet
- Underground Attenuation Tank see drawing 07040-CE-0512 for details
- Permeable Paving see drawing 07040-CE-0140 for details
- Proposed Permeable Sub-base Collector Drain see drawing 07040-CE-0512 for details
- Rain Garden see drawing 07040-CE-0511 for details
- Rain Garden Underdrain see drawing 07040-CE-0511 for details
- Rain Garden Overflow Gully see drawing 07040-CE-0511 for details
- Rain Garden Inlet see drawing 07040-CE-0140 for details

Proposed Drainage (Adoptable)

- Proposed Foul Public Sewer diameter and gradient as labelled
- Proposed Surface Water Public Sewer diameter and gradient as labelled
- Proposed Manhole foul/surface water - see schedule for dimensions
- Sewer Easement

Existing Drainage

- Existing drainage to be used in the design or connected into shall be proven and cleaned in accordance with the building regulations and best practice guidance.
- All existing drainage systems shall be fully maintained throughout the works.
- Prior to connecting to any existing chambers or drains, trial holes shall be dug (as required) to verify connection levels. Any levels higher than the design or significantly lower should be brought to the attention of the Engineer.
- All existing sewers and manholes abandoned due to the proposed works are to be either removed and suitably backfilled, or grouted up.
- The Contractor shall obtain consent for direct connections to the existing water authorities network through a Section 106 application.

Site Drainage

- Prior to commencing work on the drainage, all existing drains, sewers, manholes, and outfalls to remain shall be located, identified, and a CCTV condition survey carried out. Where necessary, protection to the existing drainage infrastructure shall be provided.
- Drainage works to start at the outfall connection and work upstream. Any discrepancies of existing invert levels to be reported immediately as this may alter the design.
- The contractor shall be responsible for checking all tie-ins for line and level with existing foul and surface water systems before commencing any works.
- Temporary protection to be provided to drainage work during construction as necessary.
- All materials and workmanship related to private sewers shall be in accordance with Part H of the Building Regulations and BS EN 752 and best practice.
- All materials and workmanship related to adoptable sewers shall be in accordance with the Design and Construction Guidance 2020 as published by Water UK and any subsequent revisions shown by the water authority.
- All sustainable drainage systems to be designed and maintained in accordance with CIRIA C753 The SuDS Manual and best practice guidance.
- All drains in the vicinity of existing or proposed trees to be constructed in accordance with the requirements of MHCB Practice Note 3.
- Gully and channel gratings shall be ductile iron to BS EN 124, Load Class D400, and kitemarked.
- Manhole covers and frames to be ductile iron to BS EN 124 Class D400 in carriageways/trafficked areas and Class B125 in non-trafficked areas unless otherwise specified. Covers may be kitemarked and badged 'SW' or 'FW' as appropriate unless otherwise instructed by the water authority. Brick/brick infilled manhole covers are not to be used on adoptable manholes.
- The following types of pipe may be used unless noted or agreed otherwise:
 - Pipes up to 300mmØ to be Structured Walled to BS EN 13476, Polypropylene to BS EN 1852, PVC-U to BS EN 1401, or Vitrified Clay to BS EN 295.
 - Pipes over 300mmØ to be Concrete to BS 5911, Structured Walled to BS EN 13476, Polypropylene to BS EN 1852, or PVC-U to BS EN 1401.
- Both Clay and Concrete pipes shall be strength class 120 (100/150mm min crushing strength 29kN/m). Thermoplastic pipes shall have a minimum ring stiffness of SN4.
- Pipes which run adjacent to buildings shall be installed in strict accordance with Part H, Clauses 2.2.2 to 2.2.5. Diagrams 7 and 8 are of particular relevance and shall be complied with.
- All pipes, chambers, and fittings shall be installed, bedded, and backfilled in accordance with the manufacturers instructions subjects to the following minimum requirements table.

Location	Cover to crown	Bedding Clay/Concrete Pipe	Bedding Plastic Pipe	Backfill
Roads (HGV)	>1.2m <1.2m	Class S Class 'A' (Concrete)	Class S (S1 or 2) Class 'A' (Concrete)	Type 1 Granular
Drives/car parking	>0.9m <0.9m	Class S Class 'A' (Concrete)	Class S (S1 or 2) Class 'A' (Concrete)	Type 1 Granular
Hard and soft landscaping	>0.6m <0.6m	Class S Class 'A' (Concrete)	Class S (S1 or 2) Class 'A' (Concrete)	Suitable as dug material

19. For pipes penetrating walls:

- An opening is to be formed through walls to give pipes at least 50mm clearance all round. Brickwork over shall be supported by a lintel. Opening to be masked each side with rigid sheet material.
- Pipes embedded in walls shall have joints formed within 150mm of either wall face. Adjacent rocker pipes of max 600mm length with flexible joints shall continue the pipework.

20. All underfloor hung drainage to be ductile iron in accordance with BS EN 545:1994 and BS EN 588:1994 unless explicitly noted on the drawing.

21. The first flexible joint in pipes adjacent to a manhole shall be max 600mm from inside face of manhole, connecting to rocker pipe. For pipes of 150-450mmØ, the rocker pipe length shall be 500mm-750mm and for pipes of 451-750mmØ the rocker pipe shall be 750mm-1000mm.

22. Pipes shall be laid to their true line and level by laser or by boning each end and middle.

23. All soft spots within pipe trenches shall be removed.

24. No water shall be allowed to accumulate in pipe trenches during construction.

25. All fill material shall be consolidated in layers not exceeding 225mm.

26. All insitu concrete used in pipe protection shall consist of bitumen impregnated insulating board to BS 1142 at each pipe joint.

27. All pipe runs to be laid with flexible joints.

28. If the contractor finds any discrepancies in the information provided then they must notify the Engineer immediately before any materials are ordered or works undertaken.

29. All under slab drainage at minimum 1:40 gradient.

Fixing Covers and Frames

- All new or reconstructed brickwork shall be a minimum of 225mm thick in English Bond, using Class B Engineering Bricks.
- Corbelling of brickwork should be no more than 30mm per course, in excess of this, corbelling shall be supported by 12.5mm thick galvanized steel plates.
- Depth of mortar joints in brickwork and under the ironwork shall be 5mm - 15mm. Where proprietary cementitious material or epoxy resins are used, depths should be in accordance with the manufacturers requirements.
- Fine adjustment in levels should be carried out in reduced thickness Class B Engineering Bricks, and should be laid below the final course of brickwork.
- The mortar and frame bedding material must be allowed sufficient time (minimum 10 days) to gain strength before it is subjected to any loading.
- Where it is necessary to subject the frame to loading within 24 hours, a proprietary cementitious material or epoxy resin should be used. This material should be capable of reaching a strength of 10M/m² within 2 hours when used in accordance with the manufacturers instructions.
- Where Ordinary Portland cement mortar is used, it should comply with Class 1 mortar to SHW Clause 2404. Sands for mortar shall be washed sand complying with BS 1200 Table 1.

General Notes

- Do not scale from this drawing.
- All dimensions in metres and levels in metres above ordnance datum Newlyn (mAOD) unless stated otherwise.
- This drawing is to be read in conjunction with all other relevant Engineering and Architect's details.
- The design details presented must be reviewed in conjunction with the wider site information and site constraints which may not be evident on drawing and must be requested if not already provided. This includes, but is not limited to, ground conditions (geotechnical and environmental), groundwater levels, buried services, remnant obstructions, ecology, tree protection, and topography.
- The Engineer shall be notified immediately, in writing, should any errors or discrepancies be found prior to the commencement or continuation of any works.
- Drawing is based on topographical survey conducted by Geopoint Ltd (ref. Geo22-132_T dated October 2022).
- Details of existing sewers are based on drainage survey undertaken by Solum Surveying Ltd (ref. 12676-R0 dated 21/06/2024).
- Site layout is based on RDT Architects drawing (ref. 13771-RDT-ZZ-XX-DR-A-1101 Rev P1 dated July 2024) provided by Aspire LPP on 01/08/2024.
- Building drainage points based on RDT Architects Proposed Drainage Sketch dated 31/07/2024 provided by Aspire LPP on 01/08/2024.
- Levels at site entrance based on tie-in to RGP S278 site access junction proposals (ref. 6804-RGP-ZZ-00-DR-C-0111 Rev P01 dated July 2024) provided by Aspire LPP on 25/07/2024.
- Where shown, root protection areas are based on those included within RDT Architects site layout (ref. 13771-RDT-ZZ-XX-DR-A-1100 Rev P2 dated July 2024) provided by Aspire LPP on 01/08/2024.
- All work is to be carried out in accordance with current British Standards, Building Regulations, and Sewerage Sector Guidance as appropriate.
- It is the responsibility of the Contractor to execute the works at all times in strict accordance with the requirements of the Health and Safety at Work Act 1974 and the CDM Regulations 2015. The Contractor will be deemed to have allowed for full compliance within their rates.
- Any existing details which are shown on this drawing are for guidance only and are to be checked on site by the Contractor. Any variations are to be recorded and reported to the engineer immediately.
- The Contractor shall undertake appropriate on-site investigations to confirm the presence of underground utilities prior to any excavation.

P4	25/10/2024	EASEMENT AMENDED AS AGREED WITH WESSEX WATER	JG	DS	JM
P3	06/09/2024	MINOR AMENMENT AS CLOUDED	JG	DS	DMCC
P2	06/09/2024	UPDATED TO SUIT REVISED LAYOUT	JG	DS	DMCC
P1	28/08/2024	UPDATED TO CLIENT COMMENTS	JG	DF	DMCC
PO	16/08/2024	FIRST ISSUE	JG	DS	
Rev	Date	Revision Note	Drw	Chk	App

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Client
Aspire LPP

Project
382 Longleaze Lane, Melksham

Title
Drainage Plan

Drawing Issue Status
For Approval

PJA Ref 07040 Scale @ A1 1:250 Date 29.05.24

Drawing No. 07040-CE-0500 Revision P4

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Appendix B Flow Model Output Report



Design Settings

Rainfall Methodology	FEH-22	Minimum Velocity (m/s)	1.00
Return Period (years)	100	Connection Type	Level Soffits
Additional Flow (%)	0	Minimum Backdrop Height (m)	1.000
CV	1.000	Preferred Cover Depth (m)	1.200
Time of Entry (mins)	5.00	Include Intermediate Ground	✓
Maximum Time of Concentration (mins)	5.00	Enforce best practice design rules	x
Maximum Rainfall (mm/hr)	50.0		

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)
PS1	0.016	5.00	39.968	180	391400.460	163080.244	0.568
PS2			39.941	450	391398.067	163097.612	0.716
PS3	0.015	5.00	39.973	600	391388.686	163096.320	0.918
PS4	0.006	5.00	39.962	600	391382.726	163100.836	0.951
PS5	0.022	5.00	39.963	600	391377.688	163104.654	0.990
PS6	0.017	5.00	39.978	600	391373.953	163131.765	1.167
PS7	0.004	5.00	39.964	600	391381.519	163132.807	1.198
PS8	0.007	5.00	40.022	180	391366.979	163149.317	0.672
PS9			39.973	600	391379.015	163150.975	1.315
PS10			40.002	1200	391377.264	163158.191	1.427
Tank 1	0.020	5.00	39.946	100	391367.309	163156.884	1.746
PS11	0.023	5.00	39.800	300	391357.280	163163.164	0.450
PS12			39.961	1200	391357.850	163155.516	1.771
Tank 2	0.012	5.00	39.910	100	391353.865	163154.983	1.735
PS13	0.002	5.00	39.960	180	391386.408	163076.231	0.560
PS14	0.010	5.00	39.943	450	391381.564	163075.563	0.592
PS15	0.017	5.00	39.981	600	391366.254	163087.164	0.897
PS16	0.025	5.00	39.943	600	391358.786	163092.823	0.914
PS17	0.021	5.00	39.993	600	391353.974	163127.750	1.173
PS18	0.009	5.00	39.957	600	391342.631	163126.187	1.205
PS19	0.002	5.00	40.003	600	391339.942	163145.692	1.367
PS20	0.010	5.00	39.988	180	391355.660	163147.757	0.638
PS21			39.976	600	391347.498	163147.024	1.386
PS26	0.026	5.00	39.851	450	391337.859	163155.790	1.160
PS22			40.031	1200	391346.133	163156.930	1.881
PS23			39.987	1200	391345.022	163164.996	1.922
PS27	0.012	5.00	39.979	450	391349.030	163171.399	1.160
PS24			40.034	1200	391341.806	163171.944	2.004
PS25	0.003	5.00	40.153	1200	391328.776	163178.704	2.188
S1			40.138	1200	391326.835	163179.635	2.198
S2			40.150	1500	391316.577	163184.160	2.325

Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
1.000	PS1	PS2	17.532	0.600	39.400	39.225	0.175	100.2	150	5.00	50.0
1.001	PS2	PS3	9.470	0.600	39.225	39.130	0.095	99.7	150	5.00	50.0
1.002	PS3	PS4	7.478	0.600	39.055	39.011	0.044	170.0	225	5.00	50.0
1.003	PS4	PS5	6.321	0.600	39.011	38.973	0.038	166.3	225	5.00	50.0
1.004	PS5	PS6	27.367	0.600	38.973	38.811	0.162	168.9	225	5.00	50.0
1.005	PS6	PS7	7.637	0.600	38.811	38.766	0.045	169.7	225	5.00	50.0
1.006	PS7	PS9	18.340	0.600	38.766	38.658	0.108	169.8	225	5.00	50.0
2.000	PS8	PS9	12.150	0.600	39.350	38.733	0.617	19.7	150	5.00	50.0
1.007	PS9	PS10	7.425	0.600	38.658	38.575	0.083	89.5	225	5.00	50.0
1.008	PS10	Tank 1	3.524	0.600	38.575	38.275	0.300	11.7	225	5.00	50.0
1.009	Tank 1	PS12	3.075	0.600	38.200	38.190	0.010	307.5	300	5.00	50.0
3.000	PS11	PS12	7.670	0.600	39.350	38.390	0.960	8.0	100	5.00	50.0
1.010	PS12	Tank 2	3.075	0.600	38.190	38.175	0.015	205.0	300	5.00	50.0
1.011	Tank 2	PS22	3.339	0.600	38.175	38.150	0.025	133.6	300	5.00	50.0
4.000	PS13	PS14	4.890	0.600	39.400	39.351	0.049	99.8	150	5.00	50.0
4.001	PS14	PS15	19.208	0.600	39.351	39.159	0.192	100.0	150	5.00	50.0
4.002	PS15	PS16	9.370	0.600	39.084	39.029	0.055	170.4	225	5.00	50.0
4.003	PS16	PS17	35.256	0.600	39.029	38.820	0.209	168.7	225	5.00	50.0
4.004	PS17	PS18	11.450	0.600	38.820	38.752	0.068	168.4	225	5.00	50.0
4.005	PS18	PS19	19.690	0.600	38.752	38.636	0.116	169.7	225	5.00	50.0
4.006	PS19	PS21	7.672	0.600	38.636	38.590	0.046	166.8	225	5.00	50.0
5.000	PS20	PS21	8.195	0.600	39.350	38.665	0.685	12.0	150	5.00	50.0
4.007	PS21	PS22	10.000	0.600	38.590	38.225	0.365	27.4	225	5.00	50.0
6.000	PS26	PS22	8.352	0.600	38.691	38.300	0.391	21.4	150	5.00	50.0

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)	Pro Depth (mm)	Pro Velocity (m/s)
1.000	1.004	17.7	2.9	0.418	0.566	0.016	0.0	41	0.739
1.001	1.006	17.8	2.9	0.566	0.693	0.016	0.0	41	0.741
1.002	1.000	39.8	5.6	0.693	0.726	0.031	0.0	57	0.709
1.003	1.011	40.2	6.7	0.726	0.765	0.037	0.0	62	0.753
1.004	1.003	39.9	10.7	0.765	0.942	0.059	0.0	80	0.853
1.005	1.001	39.8	13.7	0.942	0.973	0.076	0.0	91	0.910
1.006	1.000	39.8	14.5	0.973	1.090	0.080	0.0	94	0.922
2.000	2.280	40.3	1.3	0.522	1.090	0.007	0.0	18	1.042
1.007	1.383	55.0	15.7	1.090	1.202	0.087	0.0	82	1.197
1.008	3.839	152.6	15.7	1.202	1.446	0.087	0.0	49	2.507
1.009	0.891	63.0	19.3	1.446	1.471	0.107	0.0	114	0.787
3.000	2.751	21.6	4.2	0.350	1.471	0.023	0.0	30	2.141
1.010	1.094	77.3	23.5	1.471	1.435	0.130	0.0	113	0.964
1.011	1.358	96.0	25.7	1.435	1.581	0.142	0.0	106	1.157
4.000	1.006	17.8	0.4	0.410	0.442	0.002	0.0	15	0.397
4.001	1.004	17.7	2.2	0.442	0.672	0.012	0.0	35	0.683
4.002	0.999	39.7	5.2	0.672	0.689	0.029	0.0	55	0.695
4.003	1.004	39.9	9.8	0.689	0.948	0.054	0.0	76	0.834
4.004	1.004	39.9	13.6	0.948	0.980	0.075	0.0	90	0.909
4.005	1.000	39.8	15.2	0.980	1.142	0.084	0.0	96	0.934
4.006	1.009	40.1	15.5	1.142	1.161	0.086	0.0	97	0.947
5.000	2.929	51.8	1.8	0.488	1.161	0.010	0.0	19	1.368
4.007	2.509	99.8	17.3	1.161	1.581	0.096	0.0	63	1.888
6.000	2.188	38.7	4.7	1.010	1.581	0.026	0.0	35	1.492

Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
1.012	PS22	PS23	8.142	0.600	38.150	38.065	0.085	95.8	300	5.00	50.0
1.013	PS23	PS24	7.656	0.600	38.065	38.030	0.035	218.7	300	5.00	50.0
7.000	PS27	PS24	7.245	0.600	38.819	38.180	0.639	11.3	150	5.00	50.0
1.014	PS24	PS25	14.679	0.600	38.030	37.965	0.065	225.8	300	5.00	50.0
1.015	PS25	S1	2.153	0.600	37.965	37.940	0.025	86.1	150	5.00	50.0
1.016	S1	S2	11.211	0.600	37.940	37.825	0.115	97.5	150	5.00	50.0

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)	Pro Depth (mm)	Pro Velocity (m/s)
1.012	1.606	113.6	47.7	1.581	1.622	0.264	0.0	136	1.539
1.013	1.059	74.8	47.7	1.622	1.704	0.264	0.0	174	1.120
7.000	3.009	53.2	2.2	1.010	1.704	0.012	0.0	21	1.487
1.014	1.042	73.6	49.9	1.704	1.888	0.276	0.0	181	1.117
1.015	1.083	19.1	50.4	2.038	2.048	0.279	0.0	150	1.104
1.016	1.018	18.0	50.4	2.048	2.175	0.279	0.0	150	1.037

Pipeline Schedule

Link	Length (m)	Slope (1:X)	Dia (mm)	Link Type	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
1.000	17.532	100.2	150	Circular	39.968	39.400	0.418	39.941	39.225	0.566
1.001	9.470	99.7	150	Circular	39.941	39.225	0.566	39.973	39.130	0.693
1.002	7.478	170.0	225	Circular	39.973	39.055	0.693	39.962	39.011	0.726
1.003	6.321	166.3	225	Circular	39.962	39.011	0.726	39.963	38.973	0.765
1.004	27.367	168.9	225	Circular	39.963	38.973	0.765	39.978	38.811	0.942
1.005	7.637	169.7	225	Circular	39.978	38.811	0.942	39.964	38.766	0.973
1.006	18.340	169.8	225	Circular	39.964	38.766	0.973	39.973	38.658	1.090
2.000	12.150	19.7	150	Circular	40.022	39.350	0.522	39.973	38.733	1.090
1.007	7.425	89.5	225	Circular	39.973	38.658	1.090	40.002	38.575	1.202
1.008	3.524	11.7	225	Circular	40.002	38.575	1.202	39.946	38.275	1.446
1.009	3.075	307.5	300	Circular	39.946	38.200	1.446	39.961	38.190	1.471
3.000	7.670	8.0	100	Circular	39.800	39.350	0.350	39.961	38.390	1.471
1.010	3.075	205.0	300	Circular	39.961	38.190	1.471	39.910	38.175	1.435
1.011	3.339	133.6	300	Circular	39.910	38.175	1.435	40.031	38.150	1.581

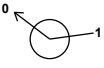
Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
1.000	PS1	180	Manhole	Adoptable	PS2	450	Manhole	Adoptable
1.001	PS2	450	Manhole	Adoptable	PS3	600	Manhole	Adoptable
1.002	PS3	600	Manhole	Adoptable	PS4	600	Manhole	Adoptable
1.003	PS4	600	Manhole	Adoptable	PS5	600	Manhole	Adoptable
1.004	PS5	600	Manhole	Adoptable	PS6	600	Manhole	Adoptable
1.005	PS6	600	Manhole	Adoptable	PS7	600	Manhole	Adoptable
1.006	PS7	600	Manhole	Adoptable	PS9	600	Manhole	Adoptable
2.000	PS8	180	Manhole	Adoptable	PS9	600	Manhole	Adoptable
1.007	PS9	600	Manhole	Adoptable	PS10	1200	Manhole	Adoptable
1.008	PS10	1200	Manhole	Adoptable	Tank 1	100	Manhole	Adoptable
1.009	Tank 1	100	Manhole	Adoptable	PS12	1200	Manhole	Adoptable
3.000	PS11	300	Manhole	Adoptable	PS12	1200	Manhole	Adoptable
1.010	PS12	1200	Manhole	Adoptable	Tank 2	100	Manhole	Adoptable
1.011	Tank 2	100	Manhole	Adoptable	PS22	1200	Manhole	Adoptable

Pipeline Schedule

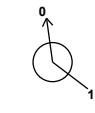
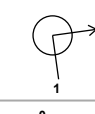
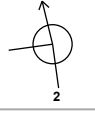
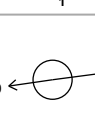
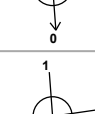
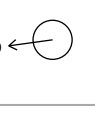
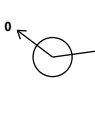
Link	Length (m)	Slope (1:X)	Dia (mm)	Link Type	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
4.000	4.890	99.8	150	Circular	39.960	39.400	0.410	39.943	39.351	0.442
4.001	19.208	100.0	150	Circular	39.943	39.351	0.442	39.981	39.159	0.672
4.002	9.370	170.4	225	Circular	39.981	39.084	0.672	39.943	39.029	0.689
4.003	35.256	168.7	225	Circular	39.943	39.029	0.689	39.993	38.820	0.948
4.004	11.450	168.4	225	Circular	39.993	38.820	0.948	39.957	38.752	0.980
4.005	19.690	169.7	225	Circular	39.957	38.752	0.980	40.003	38.636	1.142
4.006	7.672	166.8	225	Circular	40.003	38.636	1.142	39.976	38.590	1.161
5.000	8.195	12.0	150	Circular	39.988	39.350	0.488	39.976	38.665	1.161
4.007	10.000	27.4	225	Circular	39.976	38.590	1.161	40.031	38.225	1.581
6.000	8.352	21.4	150	Circular	39.851	38.691	1.010	40.031	38.300	1.581
1.012	8.142	95.8	300	Circular	40.031	38.150	1.581	39.987	38.065	1.622
1.013	7.656	218.7	300	Circular	39.987	38.065	1.622	40.034	38.030	1.704
7.000	7.245	11.3	150	Circular	39.979	38.819	1.010	40.034	38.180	1.704
1.014	14.679	225.8	300	Circular	40.034	38.030	1.704	40.153	37.965	1.888
1.015	2.153	86.1	150	Circular	40.153	37.965	2.038	40.138	37.940	2.048
1.016	11.211	97.5	150	Circular	40.138	37.940	2.048	40.150	37.825	2.175

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
4.000	PS13	180	Manhole	Adoptable	PS14	450	Manhole	Adoptable
4.001	PS14	450	Manhole	Adoptable	PS15	600	Manhole	Adoptable
4.002	PS15	600	Manhole	Adoptable	PS16	600	Manhole	Adoptable
4.003	PS16	600	Manhole	Adoptable	PS17	600	Manhole	Adoptable
4.004	PS17	600	Manhole	Adoptable	PS18	600	Manhole	Adoptable
4.005	PS18	600	Manhole	Adoptable	PS19	600	Manhole	Adoptable
4.006	PS19	600	Manhole	Adoptable	PS21	600	Manhole	Adoptable
5.000	PS20	180	Manhole	Adoptable	PS21	600	Manhole	Adoptable
4.007	PS21	600	Manhole	Adoptable	PS22	1200	Manhole	Adoptable
6.000	PS26	450	Manhole	Adoptable	PS22	1200	Manhole	Adoptable
1.012	PS22	1200	Manhole	Adoptable	PS23	1200	Manhole	Adoptable
1.013	PS23	1200	Manhole	Adoptable	PS24	1200	Manhole	Adoptable
7.000	PS27	450	Manhole	Adoptable	PS24	1200	Manhole	Adoptable
1.014	PS24	1200	Manhole	Adoptable	PS25	1200	Manhole	Adoptable
1.015	PS25	1200	Manhole	Adoptable	S1	1200	Manhole	Adoptable
1.016	S1	1200	Manhole	Adoptable	S2	1500	Manhole	Adoptable

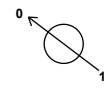
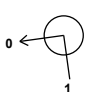
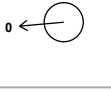
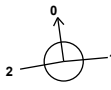
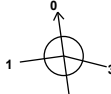
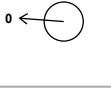
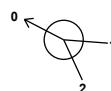
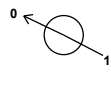
Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
PS1	391400.460	163080.244	39.968	0.568	180				
						0	1.000	39.400	150
PS2	391398.067	163097.612	39.941	0.716	450		1	1.000	39.225
						0	1.001	39.225	150
PS3	391388.686	163096.320	39.973	0.918	600		1	1.001	39.130
						0	1.002	39.055	225

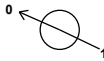
Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
PS4	391382.726	163100.836	39.962	0.951	600	 1	1.002	39.011	225
						0	1.003	39.011	225
PS5	391377.688	163104.654	39.963	0.990	600	 1	1.003	38.973	225
						0	1.004	38.973	225
PS6	391373.953	163131.765	39.978	1.167	600	 1	1.004	38.811	225
						0	1.005	38.811	225
PS7	391381.519	163132.807	39.964	1.198	600	 1	1.005	38.766	225
						0	1.006	38.766	225
PS8	391366.979	163149.317	40.022	0.672	180	 0			
						0	2.000	39.350	150
PS9	391379.015	163150.975	39.973	1.315	600	 1	2.000	38.733	150
						2	1.006	38.658	225
PS10	391377.264	163158.191	40.002	1.427	1200	 1	1.007	38.658	225
						0	1.007	38.658	225
PS11	391367.309	163156.884	39.946	1.746	100	 1	1.007	38.575	225
						0	1.008	38.575	225
Tank 1	391367.309	163156.884	39.946	1.746	100	 1	1.008	38.275	225
						0	1.009	38.200	300
PS12	391357.280	163163.164	39.800	0.450	300	 0			
						0	3.000	39.350	100
PS13	391357.850	163155.516	39.961	1.771	1200	 1	1.009	38.390	100
						2	1.009	38.190	300
Tank 2	391353.865	163154.983	39.910	1.735	100	 1	1.010	38.190	300
						0	1.010	38.175	300
PS14	391353.865	163154.983	39.910	1.735	100	 0			
						0	4.000	39.400	150
PS15	391381.564	163075.563	39.943	0.592	450	 1	4.000	39.351	150
						0	4.001	39.351	150

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
PS15	391366.254	163087.164	39.981	0.897	600	 1	4.001	39.159	150
						0	4.002	39.084	225
PS16	391358.786	163092.823	39.943	0.914	600	 1	4.002	39.029	225
						0	4.003	39.029	225
PS17	391353.974	163127.750	39.993	1.173	600	 1	4.003	38.820	225
						0	4.004	38.820	225
PS18	391342.631	163126.187	39.957	1.205	600	 1	4.004	38.752	225
						0	4.005	38.752	225
PS19	391339.942	163145.692	40.003	1.367	600	 1	4.005	38.636	225
						0	4.006	38.636	225
PS20	391355.660	163147.757	39.988	0.638	180	 0			
						0	5.000	39.350	150
PS21	391347.498	163147.024	39.976	1.386	600	 1	5.000	38.665	150
						2	4.006	38.590	225
						0	4.007	38.590	225
PS26	391337.859	163155.790	39.851	1.160	450	 0			
						0	6.000	38.691	150
PS22	391346.133	163156.930	40.031	1.881	1200	 1	6.000	38.300	150
						2	4.007	38.225	225
						3	1.011	38.150	300
						0	1.012	38.150	300
PS23	391345.022	163164.996	39.987	1.922	1200	 1	1.012	38.065	300
						0	1.013	38.065	300
PS27	391349.030	163171.399	39.979	1.160	450	 0			
						0	7.000	38.819	150
PS24	391341.806	163171.944	40.034	2.004	1200	 1	7.000	38.180	150
						2	1.013	38.030	300
						0	1.014	38.030	300
PS25	391328.776	163178.704	40.153	2.188	1200	 1	1.014	37.965	300
						0	1.015	37.965	150

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)	
S1	391326.835	163179.635	40.138	2.198	1200		1	1.015	37.940	150
							0	1.016	37.940	150
S2	391316.577	163184.160	40.150	2.325	1500		1	1.016	37.825	150

Simulation Settings

Rainfall Methodology	FEH-22	Analysis Speed	Detailed	Starting Level (m)
Rainfall Events	Singular	Skip Steady State	x	Check Discharge Rate(s) x
Summer CV	1.000	Drain Down Time (mins)	1440	Check Discharge Volume x
Winter CV	1.000	Additional Storage (m³/ha)	0.0	

Storm Durations

15	60	180	360	600	960	2160
30	120	240	480	720	1440	2880

Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
1	0	0	0
2	0	0	0
30	0	0	0
30	40	0	0
100	0	0	0
100	45	0	0

Node S2 Surcharged Outfall

Overrides Design Area	x	Depression Storage Area (m²)	0	Evapo-transpiration (mm/day)	0
Overrides Design Additional Inflow	x	Depression Storage Depth (mm)	0		

Applies to All storms

Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)
0	0.150	225	0.150	450	0.150	675	0.150	900	0.150	1125	0.150
15	0.150	240	0.150	465	0.150	690	0.150	915	0.150	1140	0.150
30	0.150	255	0.150	480	0.150	705	0.150	930	0.150	1155	0.150
45	0.150	270	0.150	495	0.150	720	0.150	945	0.150	1170	0.150
60	0.150	285	0.150	510	0.150	735	0.150	960	0.150	1185	0.150
75	0.150	300	0.150	525	0.150	750	0.150	975	0.150	1200	0.150
90	0.150	315	0.150	540	0.150	765	0.150	990	0.150	1215	0.150
105	0.150	330	0.150	555	0.150	780	0.150	1005	0.150	1230	0.150
120	0.150	345	0.150	570	0.150	795	0.150	1020	0.150	1245	0.150
135	0.150	360	0.150	585	0.150	810	0.150	1035	0.150	1260	0.150
150	0.150	375	0.150	600	0.150	825	0.150	1050	0.150	1275	0.150
165	0.150	390	0.150	615	0.150	840	0.150	1065	0.150	1290	0.150
180	0.150	405	0.150	630	0.150	855	0.150	1080	0.150	1305	0.150
195	0.150	420	0.150	645	0.150	870	0.150	1095	0.150	1320	0.150
210	0.150	435	0.150	660	0.150	885	0.150	1110	0.150	1335	0.150

Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)
1350	0.150	2160	0.150	2970	0.150	3780	0.150	4590	0.150	5400	0.150
1365	0.150	2175	0.150	2985	0.150	3795	0.150	4605	0.150	5415	0.150
1380	0.150	2190	0.150	3000	0.150	3810	0.150	4620	0.150	5430	0.150
1395	0.150	2205	0.150	3015	0.150	3825	0.150	4635	0.150	5445	0.150
1410	0.150	2220	0.150	3030	0.150	3840	0.150	4650	0.150	5460	0.150
1425	0.150	2235	0.150	3045	0.150	3855	0.150	4665	0.150	5475	0.150
1440	0.150	2250	0.150	3060	0.150	3870	0.150	4680	0.150	5490	0.150
1455	0.150	2265	0.150	3075	0.150	3885	0.150	4695	0.150	5505	0.150
1470	0.150	2280	0.150	3090	0.150	3900	0.150	4710	0.150	5520	0.150
1485	0.150	2295	0.150	3105	0.150	3915	0.150	4725	0.150	5535	0.150
1500	0.150	2310	0.150	3120	0.150	3930	0.150	4740	0.150	5550	0.150
1515	0.150	2325	0.150	3135	0.150	3945	0.150	4755	0.150	5565	0.150
1530	0.150	2340	0.150	3150	0.150	3960	0.150	4770	0.150	5580	0.150
1545	0.150	2355	0.150	3165	0.150	3975	0.150	4785	0.150	5595	0.150
1560	0.150	2370	0.150	3180	0.150	3990	0.150	4800	0.150	5610	0.150
1575	0.150	2385	0.150	3195	0.150	4005	0.150	4815	0.150	5625	0.150
1590	0.150	2400	0.150	3210	0.150	4020	0.150	4830	0.150	5640	0.150
1605	0.150	2415	0.150	3225	0.150	4035	0.150	4845	0.150	5655	0.150
1620	0.150	2430	0.150	3240	0.150	4050	0.150	4860	0.150	5670	0.150
1635	0.150	2445	0.150	3255	0.150	4065	0.150	4875	0.150	5685	0.150
1650	0.150	2460	0.150	3270	0.150	4080	0.150	4890	0.150	5700	0.150
1665	0.150	2475	0.150	3285	0.150	4095	0.150	4905	0.150	5715	0.150
1680	0.150	2490	0.150	3300	0.150	4110	0.150	4920	0.150	5730	0.150
1695	0.150	2505	0.150	3315	0.150	4125	0.150	4935	0.150	5745	0.150
1710	0.150	2520	0.150	3330	0.150	4140	0.150	4950	0.150	5760	0.150
1725	0.150	2535	0.150	3345	0.150	4155	0.150	4965	0.150	5775	0.150
1740	0.150	2550	0.150	3360	0.150	4170	0.150	4980	0.150	5790	0.150
1755	0.150	2565	0.150	3375	0.150	4185	0.150	4995	0.150	5805	0.150
1770	0.150	2580	0.150	3390	0.150	4200	0.150	5010	0.150	5820	0.150
1785	0.150	2595	0.150	3405	0.150	4215	0.150	5025	0.150	5835	0.150
1800	0.150	2610	0.150	3420	0.150	4230	0.150	5040	0.150	5850	0.150
1815	0.150	2625	0.150	3435	0.150	4245	0.150	5055	0.150	5865	0.150
1830	0.150	2640	0.150	3450	0.150	4260	0.150	5070	0.150	5880	0.150
1845	0.150	2655	0.150	3465	0.150	4275	0.150	5085	0.150	5895	0.150
1860	0.150	2670	0.150	3480	0.150	4290	0.150	5100	0.150	5910	0.150
1875	0.150	2685	0.150	3495	0.150	4305	0.150	5115	0.150	5925	0.150
1890	0.150	2700	0.150	3510	0.150	4320	0.150	5130	0.150	5940	0.150
1905	0.150	2715	0.150	3525	0.150	4335	0.150	5145	0.150	5955	0.150
1920	0.150	2730	0.150	3540	0.150	4350	0.150	5160	0.150	5970	0.150
1935	0.150	2745	0.150	3555	0.150	4365	0.150	5175	0.150	5985	0.150
1950	0.150	2760	0.150	3570	0.150	4380	0.150	5190	0.150	6000	0.150
1965	0.150	2775	0.150	3585	0.150	4395	0.150	5205	0.150	6015	0.150
1980	0.150	2790	0.150	3600	0.150	4410	0.150	5220	0.150	6030	0.150
1995	0.150	2805	0.150	3615	0.150	4425	0.150	5235	0.150	6045	0.150
2010	0.150	2820	0.150	3630	0.150	4440	0.150	5250	0.150	6060	0.150
2025	0.150	2835	0.150	3645	0.150	4455	0.150	5265	0.150	6075	0.150
2040	0.150	2850	0.150	3660	0.150	4470	0.150	5280	0.150	6090	0.150
2055	0.150	2865	0.150	3675	0.150	4485	0.150	5295	0.150	6105	0.150
2070	0.150	2880	0.150	3690	0.150	4500	0.150	5310	0.150	6120	0.150
2085	0.150	2895	0.150	3705	0.150	4515	0.150	5325	0.150	6135	0.150
2100	0.150	2910	0.150	3720	0.150	4530	0.150	5340	0.150	6150	0.150
2115	0.150	2925	0.150	3735	0.150	4545	0.150	5355	0.150	6165	0.150
2130	0.150	2940	0.150	3750	0.150	4560	0.150	5370	0.150	6180	0.150
2145	0.150	2955	0.150	3765	0.150	4575	0.150	5385	0.150	6195	0.150

Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)
6210	0.150	6870	0.150	7530	0.150	8190	0.150	8850	0.150	9510	0.150
6225	0.150	6885	0.150	7545	0.150	8205	0.150	8865	0.150	9525	0.150
6240	0.150	6900	0.150	7560	0.150	8220	0.150	8880	0.150	9540	0.150
6255	0.150	6915	0.150	7575	0.150	8235	0.150	8895	0.150	9555	0.150
6270	0.150	6930	0.150	7590	0.150	8250	0.150	8910	0.150	9570	0.150
6285	0.150	6945	0.150	7605	0.150	8265	0.150	8925	0.150	9585	0.150
6300	0.150	6960	0.150	7620	0.150	8280	0.150	8940	0.150	9600	0.150
6315	0.150	6975	0.150	7635	0.150	8295	0.150	8955	0.150	9615	0.150
6330	0.150	6990	0.150	7650	0.150	8310	0.150	8970	0.150	9630	0.150
6345	0.150	7005	0.150	7665	0.150	8325	0.150	8985	0.150	9645	0.150
6360	0.150	7020	0.150	7680	0.150	8340	0.150	9000	0.150	9660	0.150
6375	0.150	7035	0.150	7695	0.150	8355	0.150	9015	0.150	9675	0.150
6390	0.150	7050	0.150	7710	0.150	8370	0.150	9030	0.150	9690	0.150
6405	0.150	7065	0.150	7725	0.150	8385	0.150	9045	0.150	9705	0.150
6420	0.150	7080	0.150	7740	0.150	8400	0.150	9060	0.150	9720	0.150
6435	0.150	7095	0.150	7755	0.150	8415	0.150	9075	0.150	9735	0.150
6450	0.150	7110	0.150	7770	0.150	8430	0.150	9090	0.150	9750	0.150
6465	0.150	7125	0.150	7785	0.150	8445	0.150	9105	0.150	9765	0.150
6480	0.150	7140	0.150	7800	0.150	8460	0.150	9120	0.150	9780	0.150
6495	0.150	7155	0.150	7815	0.150	8475	0.150	9135	0.150	9795	0.150
6510	0.150	7170	0.150	7830	0.150	8490	0.150	9150	0.150	9810	0.150
6525	0.150	7185	0.150	7845	0.150	8505	0.150	9165	0.150	9825	0.150
6540	0.150	7200	0.150	7860	0.150	8520	0.150	9180	0.150	9840	0.150
6555	0.150	7215	0.150	7875	0.150	8535	0.150	9195	0.150	9855	0.150
6570	0.150	7230	0.150	7890	0.150	8550	0.150	9210	0.150	9870	0.150
6585	0.150	7245	0.150	7905	0.150	8565	0.150	9225	0.150	9885	0.150
6600	0.150	7260	0.150	7920	0.150	8580	0.150	9240	0.150	9900	0.150
6615	0.150	7275	0.150	7935	0.150	8595	0.150	9255	0.150	9915	0.150
6630	0.150	7290	0.150	7950	0.150	8610	0.150	9270	0.150	9930	0.150
6645	0.150	7305	0.150	7965	0.150	8625	0.150	9285	0.150	9945	0.150
6660	0.150	7320	0.150	7980	0.150	8640	0.150	9300	0.150	9960	0.150
6675	0.150	7335	0.150	7995	0.150	8655	0.150	9315	0.150	9975	0.150
6690	0.150	7350	0.150	8010	0.150	8670	0.150	9330	0.150	9990	0.150
6705	0.150	7365	0.150	8025	0.150	8685	0.150	9345	0.150	10005	0.150
6720	0.150	7380	0.150	8040	0.150	8700	0.150	9360	0.150	10020	0.150
6735	0.150	7395	0.150	8055	0.150	8715	0.150	9375	0.150	10035	0.150
6750	0.150	7410	0.150	8070	0.150	8730	0.150	9390	0.150	10050	0.150
6765	0.150	7425	0.150	8085	0.150	8745	0.150	9405	0.150	10065	0.150
6780	0.150	7440	0.150	8100	0.150	8760	0.150	9420	0.150	10080	0.150
6795	0.150	7455	0.150	8115	0.150	8775	0.150	9435	0.150		
6810	0.150	7470	0.150	8130	0.150	8790	0.150	9450	0.150		
6825	0.150	7485	0.150	8145	0.150	8805	0.150	9465	0.150		
6840	0.150	7500	0.150	8160	0.150	8820	0.150	9480	0.150		
6855	0.150	7515	0.150	8175	0.150	8835	0.150	9495	0.150		

Node PS25 Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	✓	Sump Available	✓
Invert Level (m)	37.965	Product Number	CTL-SHE-0072-3000-1850-3000
Design Depth (m)	1.850	Min Outlet Diameter (m)	0.100
Design Flow (l/s)	3.0	Min Node Diameter (mm)	1200

Node Tank 1 Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	38.200
Side Inf Coefficient (m/hr)	0.00000	Porosity	0.95	Time to half empty (mins)	1350

Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)
0.000	144.0	0.0	0.800	144.0	0.0	0.801	0.0	0.0

Node Tank 1 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	39.140	Slope (1:X)	50.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	375	Depth (m)	0.500
Safety Factor	2.0	Width (m)	12.500	Inf Depth (m)	
Porosity	0.30	Length (m)	5.000		

Node PS11 Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	39.600
Side Inf Coefficient (m/hr)	0.00000	Porosity	1.00	Time to half empty (mins)	

Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)
0.000	15.4	0.0	0.200	33.8	0.0

Node Tank 2 Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	38.175
Side Inf Coefficient (m/hr)	0.00000	Porosity	0.95	Time to half empty (mins)	1410

Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)
0.000	60.0	0.0	0.800	60.0	0.0	0.801	0.0	0.0

Node Tank 2 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	39.150	Slope (1:X)	50.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	375	Depth (m)	0.500
Safety Factor	2.0	Width (m)	12.500	Inf Depth (m)	
Porosity	0.30	Length (m)	5.000		

Node PS26 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	39.115	Slope (1:X)	50.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	420	Depth (m)	0.500
Safety Factor	2.0	Width (m)	20.000	Inf Depth (m)	
Porosity	0.30	Length (m)	5.000		

Node PS27 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	39.875	Slope (1:X)	40.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)		Depth (m)	0.500
Safety Factor	2.0	Width (m)	17.500	Inf Depth (m)	
Porosity	0.30	Length (m)	5.000		

Results for 1 year Critical Storm Duration. Lowest mass balance: 98.85%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	PS1	10	39.431	0.031	1.6	0.0008	0.0000	OK
15 minute summer	PS2	11	39.256	0.031	1.6	0.0050	0.0000	OK
15 minute summer	PS3	11	39.099	0.044	3.1	0.0126	0.0000	OK
15 minute summer	PS4	11	39.060	0.049	3.7	0.0138	0.0000	OK
15 minute summer	PS5	11	39.030	0.057	5.8	0.0163	0.0000	OK
15 minute summer	PS6	11	38.881	0.070	7.4	0.0199	0.0000	OK
15 minute summer	PS7	11	38.835	0.069	7.7	0.0196	0.0000	OK
15 minute summer	PS8	11	39.364	0.014	0.7	0.0003	0.0000	OK
15 minute summer	PS9	11	38.722	0.064	8.4	0.0182	0.0000	OK
15 minute summer	PS10	12	38.614	0.039	8.3	0.0445	0.0000	OK
360 minute summer	Tank 1	240	38.294	0.094	4.5	12.8995	0.0000	OK
15 minute summer	PS11	10	39.373	0.023	2.3	0.0016	0.0000	OK
360 minute summer	PS12	240	38.294	0.104	2.1	0.1179	0.0000	OK
360 minute summer	Tank 2	240	38.294	0.119	3.1	6.7947	0.0000	OK
15 minute summer	PS13	12	39.411	0.011	0.2	0.0003	0.0000	OK
15 minute summer	PS14	11	39.378	0.027	1.2	0.0042	0.0000	OK
15 minute summer	PS15	10	39.124	0.040	2.9	0.0114	0.0000	OK
15 minute summer	PS16	11	39.084	0.055	5.3	0.0155	0.0000	OK
15 minute summer	PS17	11	38.888	0.068	7.2	0.0193	0.0000	OK
15 minute summer	PS18	11	38.823	0.071	8.1	0.0200	0.0000	OK
15 minute summer	PS19	12	38.707	0.071	8.2	0.0202	0.0000	OK
15 minute summer	PS20	11	39.365	0.015	1.0	0.0004	0.0000	OK
15 minute summer	PS21	12	38.638	0.048	9.1	0.0136	0.0000	OK
15 minute summer	PS26	10	38.718	0.027	2.6	0.0043	0.0000	OK
360 minute summer	PS22	240	38.294	0.144	4.0	0.1631	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	PS1	1.000	PS2	1.6	0.625	0.091	0.0460	
15 minute summer	PS2	1.001	PS3	1.6	0.616	0.090	0.0246	
15 minute summer	PS3	1.002	PS4	3.1	0.522	0.078	0.0444	
15 minute summer	PS4	1.003	PS5	3.7	0.515	0.092	0.0453	
15 minute summer	PS5	1.004	PS6	5.8	0.624	0.145	0.2537	
15 minute summer	PS6	1.005	PS7	7.3	0.702	0.184	0.0798	
15 minute summer	PS7	1.006	PS9	7.7	0.778	0.193	0.1808	
15 minute summer	PS8	2.000	PS9	0.7	0.861	0.017	0.0099	
15 minute summer	PS9	1.007	PS10	8.3	1.204	0.151	0.0520	
15 minute summer	PS10	1.008	Tank 1	8.3	1.926	0.055	0.0153	
360 minute summer	Tank 1	1.009	PS12	1.4	0.313	0.022	0.0625	
15 minute summer	PS11	3.000	PS12	2.3	1.755	0.106	0.0100	
360 minute summer	PS12	1.010	Tank 2	2.0	0.444	0.026	0.0735	
360 minute summer	Tank 2	1.011	PS22	2.1	0.438	0.022	0.0994	
15 minute summer	PS13	4.000	PS14	0.2	0.162	0.011	0.0066	
15 minute summer	PS14	4.001	PS15	1.2	0.570	0.067	0.0402	
15 minute summer	PS15	4.002	PS16	2.8	0.468	0.071	0.0573	
15 minute summer	PS16	4.003	PS17	5.2	0.600	0.131	0.3097	
15 minute summer	PS17	4.004	PS18	7.2	0.695	0.181	0.1190	
15 minute summer	PS18	4.005	PS19	8.0	0.750	0.202	0.2112	
15 minute summer	PS19	4.006	PS21	8.2	0.972	0.204	0.0653	
15 minute summer	PS20	5.000	PS21	1.0	1.136	0.019	0.0072	
15 minute summer	PS21	4.007	PS22	9.1	1.524	0.091	0.0598	
15 minute summer	PS26	6.000	PS22	2.6	1.219	0.067	0.0177	
360 minute summer	PS22	1.012	PS23	3.3	0.573	0.029	0.3714	

Results for 1 year Critical Storm Duration. Lowest mass balance: 98.85%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
360 minute summer	PS23	240	38.294	0.229	3.3	0.2592	0.0000	OK
15 minute summer	PS27	10	38.835	0.016	1.2	0.0025	0.0000	OK
360 minute summer	PS24	240	38.294	0.264	3.1	0.2987	0.0000	OK
360 minute summer	PS25	240	38.294	0.329	2.6	0.3722	0.0000	SURCHARGED
15 minute summer	S1	8	37.983	0.043	2.3	0.0484	0.0000	OK
15 minute summer	S2	1	37.975	0.150	2.3	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
360 minute summer	PS23	1.013	PS24	2.9	0.412	0.039	0.4726	
15 minute summer	PS27	7.000	PS24	1.2	1.220	0.023	0.0338	
360 minute summer	PS24	1.014	PS25	2.5	0.246	0.034	0.9990	
360 minute summer	PS25	Hydro-Brake®	S1	2.3				
15 minute summer	S1	1.016	S2	2.3	0.199	0.127	0.1218	11.9

Results for 2 year Critical Storm Duration. Lowest mass balance: 98.85%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	PS1	10	39.439	0.039	2.6	0.0010	0.0000	OK
15 minute summer	PS2	11	39.265	0.040	2.6	0.0063	0.0000	OK
15 minute summer	PS3	11	39.112	0.057	4.9	0.0161	0.0000	OK
15 minute summer	PS4	11	39.074	0.063	5.8	0.0179	0.0000	OK
15 minute summer	PS5	11	39.046	0.073	9.3	0.0207	0.0000	OK
15 minute summer	PS6	11	38.903	0.092	11.9	0.0262	0.0000	OK
15 minute summer	PS7	11	38.856	0.090	12.5	0.0255	0.0000	OK
15 minute summer	PS8	11	39.367	0.017	1.1	0.0004	0.0000	OK
15 minute summer	PS9	11	38.741	0.083	13.6	0.0236	0.0000	OK
15 minute summer	PS10	11	38.626	0.051	13.4	0.0577	0.0000	OK
360 minute summer	Tank 1	256	38.348	0.148	6.3	20.2318	0.0000	OK
15 minute summer	PS11	10	39.379	0.029	3.7	0.0021	0.0000	OK
360 minute summer	PS12	256	38.348	0.158	1.8	0.1786	0.0000	OK
360 minute summer	Tank 2	256	38.348	0.173	3.4	9.8541	0.0000	OK
15 minute summer	PS13	12	39.414	0.014	0.3	0.0003	0.0000	OK
15 minute summer	PS14	11	39.384	0.033	1.9	0.0053	0.0000	OK
15 minute summer	PS15	10	39.136	0.052	4.5	0.0147	0.0000	OK
15 minute summer	PS16	11	39.099	0.070	8.5	0.0197	0.0000	OK
15 minute summer	PS17	11	38.909	0.089	11.7	0.0253	0.0000	OK
15 minute summer	PS18	11	38.844	0.092	13.1	0.0261	0.0000	OK
15 minute summer	PS19	11	38.728	0.092	13.4	0.0261	0.0000	OK
15 minute summer	PS20	10	39.368	0.018	1.6	0.0005	0.0000	OK
15 minute summer	PS21	11	38.652	0.062	14.8	0.0176	0.0000	OK
15 minute summer	PS26	10	38.726	0.035	4.2	0.0055	0.0000	OK
360 minute summer	PS22	256	38.348	0.198	5.1	0.2238	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	PS1	1.000	PS2	2.6	0.701	0.145	0.0645	
15 minute summer	PS2	1.001	PS3	2.6	0.702	0.144	0.0345	
15 minute summer	PS3	1.002	PS4	4.9	0.575	0.123	0.0635	
15 minute summer	PS4	1.003	PS5	5.8	0.573	0.145	0.0644	
15 minute summer	PS5	1.004	PS6	9.3	0.701	0.233	0.3635	
15 minute summer	PS6	1.005	PS7	11.9	0.789	0.299	0.1152	
15 minute summer	PS7	1.006	PS9	12.5	0.885	0.313	0.2581	
15 minute summer	PS8	2.000	PS9	1.1	0.984	0.027	0.0136	
15 minute summer	PS9	1.007	PS10	13.4	1.353	0.244	0.0745	
15 minute summer	PS10	1.008	Tank 1	13.3	2.167	0.087	0.0217	
360 minute summer	Tank 1	1.009	PS12	-1.7	0.310	-0.027	0.1109	
15 minute summer	PS11	3.000	PS12	3.7	2.001	0.170	0.0141	
360 minute summer	PS12	1.010	Tank 2	1.8	0.468	0.023	0.1224	
360 minute summer	Tank 2	1.011	PS22	-2.9	0.425	-0.030	0.1524	
15 minute summer	PS13	4.000	PS14	0.3	0.184	0.017	0.0089	
15 minute summer	PS14	4.001	PS15	1.8	0.647	0.104	0.0546	
15 minute summer	PS15	4.002	PS16	4.5	0.523	0.113	0.0809	
15 minute summer	PS16	4.003	PS17	8.4	0.674	0.211	0.4423	
15 minute summer	PS17	4.004	PS18	11.7	0.778	0.292	0.1716	
15 minute summer	PS18	4.005	PS19	13.1	0.853	0.328	0.3016	
15 minute summer	PS19	4.006	PS21	13.3	1.104	0.331	0.0929	
15 minute summer	PS20	5.000	PS21	1.6	1.300	0.031	0.0100	
15 minute summer	PS21	4.007	PS22	14.7	1.730	0.148	0.0852	
15 minute summer	PS26	6.000	PS22	4.2	1.395	0.108	0.0250	
360 minute summer	PS22	1.012	PS23	3.5	0.540	0.030	0.4809	

Results for 2 year Critical Storm Duration. Lowest mass balance: 98.85%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
360 minute summer	PS23	256	38.348	0.283	3.5	0.3199	0.0000	OK
15 minute summer	PS27	10	38.838	0.019	1.9	0.0031	0.0000	OK
360 minute summer	PS24	256	38.348	0.318	3.2	0.3594	0.0000	SURCHARGED
360 minute summer	PS25	256	38.348	0.383	2.7	0.4328	0.0000	SURCHARGED
15 minute winter	S1	7	37.984	0.044	2.3	0.0494	0.0000	OK
15 minute summer	S2	1	37.975	0.150	2.3	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
360 minute summer	PS23	1.013	PS24	3.0	0.412	0.040	0.5331	
15 minute summer	PS27	7.000	PS24	1.9	1.363	0.036	0.0528	
360 minute summer	PS24	1.014	PS25	2.6	0.252	0.035	1.0337	
360 minute summer	PS25	Hydro-Brake®	S1	2.3				
15 minute winter	S1	1.016	S2	2.3	0.200	0.127	0.1225	19.1

Results for 30 year Critical Storm Duration. Lowest mass balance: 98.85%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	PS1	10	39.468	0.068	7.1	0.0017	0.0000	OK
15 minute summer	PS2	11	39.294	0.069	7.0	0.0110	0.0000	OK
15 minute summer	PS3	10	39.160	0.105	13.6	0.0297	0.0000	OK
15 minute summer	PS4	10	39.131	0.120	16.2	0.0338	0.0000	OK
15 minute summer	PS5	10	39.104	0.131	25.7	0.0372	0.0000	OK
15 minute summer	PS6	11	38.997	0.186	32.9	0.0527	0.0000	OK
15 minute summer	PS7	11	38.939	0.173	34.6	0.0491	0.0000	OK
15 minute summer	PS8	10	39.378	0.028	3.1	0.0007	0.0000	OK
15 minute summer	PS9	11	38.809	0.151	37.6	0.0427	0.0000	OK
360 minute winter	PS10	352	38.690	0.115	5.2	0.1300	0.0000	OK
360 minute winter	Tank 1	352	38.684	0.484	9.7	66.2159	0.0000	SURCHARGED
15 minute summer	PS11	10	39.402	0.052	10.2	0.0037	0.0000	OK
360 minute winter	PS12	352	38.684	0.494	3.5	0.5588	0.0000	SURCHARGED
360 minute winter	Tank 2	352	38.684	0.509	6.2	29.0223	0.0000	SURCHARGED
15 minute summer	PS13	10	39.423	0.023	0.9	0.0006	0.0000	OK
15 minute summer	PS14	10	39.408	0.057	5.3	0.0091	0.0000	OK
15 minute summer	PS15	10	39.181	0.097	12.6	0.0275	0.0000	OK
15 minute summer	PS16	11	39.151	0.122	23.6	0.0345	0.0000	OK
15 minute summer	PS17	11	39.000	0.180	32.4	0.0511	0.0000	OK
15 minute summer	PS18	11	38.935	0.183	36.0	0.0517	0.0000	OK
15 minute summer	PS19	11	38.802	0.166	36.8	0.0470	0.0000	OK
15 minute summer	PS20	10	39.381	0.031	4.4	0.0008	0.0000	OK
15 minute summer	PS21	11	38.697	0.107	41.0	0.0304	0.0000	OK
15 minute summer	PS26	10	38.750	0.059	11.5	0.0094	0.0000	OK
360 minute winter	PS22	352	38.684	0.534	7.3	0.6041	0.0000	SURCHARGED

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	PS1	1.000	PS2	7.0	0.898	0.397	0.1374	
15 minute summer	PS2	1.001	PS3	7.0	0.914	0.392	0.0722	
15 minute summer	PS3	1.002	PS4	13.5	0.681	0.339	0.1479	
15 minute summer	PS4	1.003	PS5	16.0	0.706	0.399	0.1438	
15 minute summer	PS5	1.004	PS6	25.7	0.863	0.644	0.8095	
15 minute summer	PS6	1.005	PS7	32.9	0.968	0.828	0.2597	
15 minute summer	PS7	1.006	PS9	34.6	1.130	0.870	0.5606	
15 minute summer	PS8	2.000	PS9	3.1	1.203	0.077	0.0679	
15 minute summer	PS9	1.007	PS10	37.5	1.694	0.681	0.1637	
360 minute winter	PS10	1.008	Tank 1	6.5	1.521	0.043	0.1060	
360 minute winter	Tank 1	1.009	PS12	-3.4	0.309	-0.053	0.2165	
15 minute summer	PS11	3.000	PS12	10.2	2.589	0.470	0.0301	
360 minute winter	PS12	1.010	Tank 2	-2.1	0.452	-0.027	0.2165	
360 minute winter	Tank 2	1.011	PS22	-5.5	0.451	-0.057	0.2351	
15 minute summer	PS13	4.000	PS14	0.9	0.234	0.049	0.0190	
15 minute summer	PS14	4.001	PS15	5.1	0.860	0.289	0.1151	
15 minute summer	PS15	4.002	PS16	12.5	0.653	0.315	0.1795	
15 minute summer	PS16	4.003	PS17	23.3	0.840	0.583	0.9891	
15 minute summer	PS17	4.004	PS18	32.2	0.940	0.807	0.3931	
15 minute summer	PS18	4.005	PS19	36.0	1.091	0.906	0.6492	
15 minute summer	PS19	4.006	PS21	36.7	1.456	0.915	0.1922	
15 minute summer	PS20	5.000	PS21	4.4	1.743	0.085	0.0214	
15 minute summer	PS21	4.007	PS22	40.9	1.828	0.410	0.2770	
15 minute summer	PS26	6.000	PS22	11.5	1.788	0.297	0.0867	
360 minute winter	PS22	1.012	PS23	3.1	0.545	0.027	0.5734	

Results for 30 year Critical Storm Duration. Lowest mass balance: 98.85%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
360 minute winter	PS23	352	38.684	0.619	3.1	0.7001	0.0000	SURCHARGED
15 minute summer	PS27	10	38.851	0.032	5.3	0.0051	0.0000	OK
360 minute winter	PS24	352	38.684	0.654	2.9	0.7397	0.0000	SURCHARGED
360 minute winter	PS25	352	38.684	0.719	2.5	0.8131	0.0000	SURCHARGED
30 minute summer	S1	6	37.982	0.042	2.3	0.0479	0.0000	OK
15 minute summer	S2	1	37.975	0.150	2.3	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
360 minute winter	PS23	1.013	PS24	2.7	0.414	0.036	0.5391	
15 minute summer	PS27	7.000	PS24	5.3	1.502	0.099	0.0737	
360 minute winter	PS24	1.014	PS25	2.5	0.271	0.033	1.0337	
360 minute winter	PS25	Hydro-Brake®	S1	2.3				
30 minute summer	S1	1.016	S2	2.3	0.200	0.127	0.1215	69.2

Results for 30 year +40% CC Critical Storm Duration. Lowest mass balance: 98.85%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	PS1	10	39.483	0.083	9.9	0.0021	0.0000	OK
15 minute summer	PS2	11	39.311	0.086	9.8	0.0136	0.0000	OK
15 minute summer	PS3	12	39.233	0.178	19.0	0.0502	0.0000	OK
15 minute summer	PS4	11	39.223	0.212	22.2	0.0600	0.0000	OK
15 minute summer	PS5	11	39.209	0.236	34.2	0.0667	0.0000	SURCHARGED
15 minute summer	PS6	11	39.084	0.273	42.2	0.0772	0.0000	SURCHARGED
15 minute summer	PS7	11	39.004	0.238	44.3	0.0673	0.0000	SURCHARGED
15 minute summer	PS8	10	39.383	0.033	4.3	0.0008	0.0000	OK
480 minute winter	PS9	464	38.939	0.281	6.0	0.0794	0.0000	SURCHARGED
480 minute winter	PS10	464	38.939	0.364	12.6	0.4113	0.0000	SURCHARGED
480 minute winter	Tank 1	464	38.939	0.739	20.8	101.0549	0.0000	SURCHARGED
15 minute summer	PS11	10	39.415	0.065	14.3	0.0046	0.0000	OK
480 minute winter	PS12	464	38.939	0.749	4.6	0.8467	0.0000	SURCHARGED
480 minute winter	Tank 2	464	38.939	0.764	7.7	43.5341	0.0000	SURCHARGED
15 minute summer	PS13	11	39.426	0.026	1.2	0.0007	0.0000	OK
15 minute summer	PS14	10	39.420	0.069	7.4	0.0110	0.0000	OK
15 minute summer	PS15	12	39.252	0.168	17.9	0.0476	0.0000	OK
15 minute summer	PS16	11	39.241	0.212	32.8	0.0601	0.0000	OK
15 minute summer	PS17	11	39.125	0.305	41.6	0.0863	0.0000	SURCHARGED
15 minute summer	PS18	11	39.024	0.272	46.1	0.0771	0.0000	SURCHARGED
480 minute winter	PS19	464	38.939	0.303	5.8	0.0857	0.0000	SURCHARGED
15 minute summer	PS20	9	39.385	0.035	6.2	0.0009	0.0000	OK
480 minute winter	PS21	464	38.939	0.349	6.5	0.0987	0.0000	SURCHARGED
480 minute winter	PS26	464	38.939	0.248	1.8	0.0394	0.0000	SURCHARGED
480 minute winter	PS22	464	38.939	0.789	8.3	0.8919	0.0000	SURCHARGED

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	PS1	1.000	PS2	9.8	0.966	0.554	0.1782	
15 minute summer	PS2	1.001	PS3	9.7	0.985	0.543	0.1090	
15 minute summer	PS3	1.002	PS4	18.5	0.696	0.466	0.2702	
15 minute summer	PS4	1.003	PS5	21.5	0.706	0.535	0.2483	
15 minute summer	PS5	1.004	PS6	32.8	0.887	0.823	1.0884	
15 minute summer	PS6	1.005	PS7	41.9	1.054	1.054	0.3037	
15 minute summer	PS7	1.006	PS9	44.1	1.165	1.108	0.6759	
15 minute summer	PS8	2.000	PS9	4.3	1.156	0.106	0.0964	
480 minute winter	PS9	1.007	PS10	7.2	1.146	0.131	0.2953	
480 minute winter	PS10	1.008	Tank 1	15.1	1.431	0.099	0.1402	
480 minute winter	Tank 1	1.009	PS12	-4.4	0.315	-0.071	0.2165	
15 minute summer	PS11	3.000	PS12	14.2	2.779	0.659	0.0393	
480 minute winter	PS12	1.010	Tank 2	-3.1	0.428	-0.040	0.2165	
480 minute winter	Tank 2	1.011	PS22	-6.9	0.451	-0.072	0.2351	
15 minute summer	PS13	4.000	PS14	1.2	0.255	0.068	0.0245	
15 minute summer	PS14	4.001	PS15	7.3	0.937	0.411	0.1768	
15 minute summer	PS15	4.002	PS16	17.3	0.686	0.435	0.3310	
15 minute summer	PS16	4.003	PS17	29.9	0.878	0.750	1.3861	
15 minute summer	PS17	4.004	PS18	40.8	1.025	1.021	0.4554	
15 minute summer	PS18	4.005	PS19	46.1	1.161	1.159	0.7627	
480 minute winter	PS19	4.006	PS21	5.8	0.899	0.145	0.3051	
15 minute summer	PS20	5.000	PS21	6.2	1.794	0.119	0.0390	
480 minute winter	PS21	4.007	PS22	6.5	0.986	0.065	0.3977	
480 minute winter	PS26	6.000	PS22	1.8	0.925	0.047	0.1470	
480 minute winter	PS22	1.012	PS23	3.3	0.541	0.029	0.5734	

Results for 30 year +40% CC Critical Storm Duration. Lowest mass balance: 98.85%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
480 minute winter	PS23	464	38.939	0.874	3.3	0.9880	0.0000	SURCHARGED
480 minute winter	PS27	464	38.939	0.120	0.8	0.0190	0.0000	OK
480 minute winter	PS24	464	38.939	0.909	3.1	1.0275	0.0000	SURCHARGED
480 minute winter	PS25	464	38.938	0.973	2.7	1.1010	0.0000	SURCHARGED
15 minute winter	S1	5	37.987	0.047	2.3	0.0528	0.0000	OK
15 minute summer	S2	1	37.975	0.150	2.5	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
480 minute winter	PS23	1.013	PS24	2.9	0.417	0.038	0.5391	
480 minute winter	PS27	7.000	PS24	0.8	0.714	0.015	0.1183	
480 minute winter	PS24	1.014	PS25	2.6	0.257	0.035	1.0337	
480 minute winter	PS25	Hydro-Brake®	S1	2.3				
15 minute winter	S1	1.016	S2	2.3	0.200	0.128	0.1248	74.4

Results for 100 year Critical Storm Duration. Lowest mass balance: 98.85%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	PS1	10	39.479	0.079	9.1	0.0020	0.0000	OK
15 minute summer	PS2	10	39.305	0.080	9.0	0.0128	0.0000	OK
15 minute summer	PS3	11	39.184	0.129	17.5	0.0366	0.0000	OK
15 minute summer	PS4	11	39.167	0.156	20.7	0.0441	0.0000	OK
15 minute summer	PS5	11	39.152	0.179	32.7	0.0506	0.0000	OK
15 minute summer	PS6	11	39.061	0.250	41.2	0.0708	0.0000	SURCHARGED
15 minute summer	PS7	11	38.989	0.223	42.6	0.0630	0.0000	OK
15 minute summer	PS8	10	39.382	0.032	4.0	0.0008	0.0000	OK
600 minute winter	PS9	570	38.881	0.222	4.7	0.0630	0.0000	OK
600 minute winter	PS10	570	38.880	0.305	8.0	0.3455	0.0000	SURCHARGED
600 minute winter	Tank 1	570	38.880	0.680	12.1	93.0928	0.0000	SURCHARGED
15 minute summer	PS11	10	39.411	0.061	13.1	0.0043	0.0000	OK
600 minute winter	PS12	570	38.880	0.690	3.3	0.7809	0.0000	SURCHARGED
600 minute winter	Tank 2	570	38.880	0.705	5.5	40.2163	0.0000	SURCHARGED
15 minute summer	PS13	11	39.425	0.025	1.1	0.0006	0.0000	OK
15 minute summer	PS14	10	39.417	0.066	6.8	0.0105	0.0000	OK
15 minute summer	PS15	11	39.202	0.118	16.4	0.0334	0.0000	OK
15 minute summer	PS16	11	39.186	0.157	30.5	0.0444	0.0000	OK
15 minute summer	PS17	11	39.097	0.277	41.9	0.0783	0.0000	SURCHARGED
15 minute summer	PS18	11	39.002	0.250	44.5	0.0706	0.0000	SURCHARGED
600 minute winter	PS19	570	38.880	0.244	4.6	0.0692	0.0000	SURCHARGED
15 minute summer	PS20	9	39.384	0.034	5.7	0.0008	0.0000	OK
600 minute winter	PS21	570	38.880	0.290	5.1	0.0822	0.0000	SURCHARGED
600 minute winter	PS26	570	38.880	0.189	1.4	0.0301	0.0000	SURCHARGED
600 minute winter	PS22	570	38.880	0.730	6.5	0.8261	0.0000	SURCHARGED
Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	PS1	1.000	PS2	9.0	0.949	0.509	0.1666	
15 minute summer	PS2	1.001	PS3	8.9	0.969	0.501	0.0871	
15 minute summer	PS3	1.002	PS4	17.3	0.692	0.434	0.1978	
15 minute summer	PS4	1.003	PS5	20.2	0.702	0.503	0.1995	
15 minute summer	PS5	1.004	PS6	31.5	0.882	0.791	1.0070	
15 minute summer	PS6	1.005	PS7	40.4	1.016	1.015	0.3034	
15 minute summer	PS7	1.006	PS9	42.5	1.158	1.068	0.6666	
15 minute summer	PS8	2.000	PS9	4.0	1.122	0.099	0.0913	
600 minute winter	PS9	1.007	PS10	4.7	1.070	0.085	0.2949	
600 minute winter	PS10	1.008	Tank 1	7.9	1.409	0.052	0.1402	
600 minute winter	Tank 1	1.009	PS12	-3.2	0.314	-0.050	0.2165	
15 minute summer	PS11	3.000	PS12	13.0	2.733	0.604	0.0366	
600 minute winter	PS12	1.010	Tank 2	-2.1	0.423	-0.027	0.2165	
600 minute winter	Tank 2	1.011	PS22	-4.9	0.439	-0.051	0.2351	
15 minute summer	PS13	4.000	PS14	1.1	0.248	0.062	0.0230	
15 minute summer	PS14	4.001	PS15	6.7	0.918	0.375	0.1396	
15 minute summer	PS15	4.002	PS16	16.2	0.681	0.408	0.2375	
15 minute summer	PS16	4.003	PS17	29.9	0.872	0.749	1.2227	
15 minute summer	PS17	4.004	PS18	39.6	0.997	0.992	0.4554	
15 minute summer	PS18	4.005	PS19	44.5	1.123	1.119	0.7521	
600 minute winter	PS19	4.006	PS21	4.6	0.842	0.115	0.3051	
15 minute summer	PS20	5.000	PS21	5.7	1.836	0.110	0.0346	
600 minute winter	PS21	4.007	PS22	5.1	0.990	0.051	0.3977	
600 minute winter	PS26	6.000	PS22	1.4	0.866	0.036	0.1470	
600 minute winter	PS22	1.012	PS23	2.7	0.533	0.024	0.5734	

Results for 100 year Critical Storm Duration. Lowest mass balance: 98.85%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
600 minute winter	PS23	570	38.880	0.815	2.7	0.9222	0.0000	SURCHARGED
600 minute winter	PS27	570	38.880	0.061	0.6	0.0098	0.0000	OK
600 minute winter	PS24	570	38.880	0.850	2.6	0.9617	0.0000	SURCHARGED
600 minute winter	PS25	570	38.880	0.915	2.4	1.0352	0.0000	SURCHARGED
15 minute winter	S1	5	37.986	0.046	2.3	0.0522	0.0000	OK
15 minute summer	S2	1	37.975	0.150	2.3	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
600 minute winter	PS23	1.013	PS24	2.5	0.406	0.034	0.5391	
600 minute winter	PS27	7.000	PS24	0.6	0.586	0.011	0.0883	
600 minute winter	PS24	1.014	PS25	2.4	0.176	0.033	1.0337	
600 minute winter	PS25	Hydro-Brake®	S1	2.3				
15 minute winter	S1	1.016	S2	2.3	0.200	0.128	0.1244	68.3

Results for 100 year +45% CC Critical Storm Duration. Lowest mass balance: 98.85%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
720 minute winter	PS1	675	39.797	0.397	1.1	0.0099	0.0000	FLOOD RISK
720 minute winter	PS2	675	39.797	0.572	1.1	0.0909	0.0000	FLOOD RISK
720 minute winter	PS3	675	39.797	0.742	2.1	0.2099	0.0000	FLOOD RISK
720 minute winter	PS4	675	39.797	0.786	2.5	0.2223	0.0000	FLOOD RISK
720 minute winter	PS5	675	39.797	0.824	4.0	0.2331	0.0000	FLOOD RISK
720 minute winter	PS6	675	39.797	0.986	5.2	0.2789	0.0000	FLOOD RISK
720 minute winter	PS7	675	39.797	1.031	5.5	0.2917	0.0000	FLOOD RISK
720 minute winter	PS8	675	39.797	0.447	0.5	0.0112	0.0000	FLOOD RISK
720 minute winter	PS9	675	39.797	1.139	6.0	0.3222	0.0000	FLOOD RISK
720 minute winter	PS10	675	39.796	1.221	14.6	1.3815	0.0000	FLOOD RISK
720 minute winter	Tank 1	675	39.796	1.596	11.6	117.9731	0.0000	FLOOD RISK
720 minute winter	PS11	675	39.797	0.447	1.6	4.8471	0.0000	FLOOD RISK
720 minute winter	PS12	675	39.796	1.606	6.3	1.8169	0.0000	FLOOD RISK
720 minute winter	Tank 2	675	39.796	1.621	7.3	54.0934	0.0000	FLOOD RISK
720 minute winter	PS13	675	39.797	0.397	0.1	0.0099	0.0000	FLOOD RISK
720 minute winter	PS14	675	39.797	0.446	0.8	0.0709	0.0000	FLOOD RISK
720 minute winter	PS15	675	39.797	0.713	2.0	0.2017	0.0000	FLOOD RISK
720 minute winter	PS16	675	39.797	0.768	3.7	0.2172	0.0000	FLOOD RISK
720 minute winter	PS17	675	39.797	0.977	5.1	0.2764	0.0000	FLOOD RISK
720 minute winter	PS18	675	39.797	1.045	5.7	0.2956	0.0000	FLOOD RISK
720 minute winter	PS19	675	39.796	1.160	5.8	0.3284	0.0000	FLOOD RISK
720 minute winter	PS20	675	39.796	0.446	0.7	0.0112	0.0000	FLOOD RISK
720 minute winter	PS21	675	39.796	1.206	6.4	0.3414	0.0000	FLOOD RISK
720 minute winter	PS26	675	39.796	1.105	4.0	13.6958	0.0000	FLOOD RISK
720 minute winter	PS22	675	39.796	1.646	7.9	1.8621	0.0000	FLOOD RISK
Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
720 minute winter	PS1	1.000	PS2	1.1	0.549	0.062	0.3086	
720 minute winter	PS2	1.001	PS3	1.1	0.553	0.062	0.1667	
720 minute winter	PS3	1.002	PS4	2.1	0.478	0.053	0.2974	
720 minute winter	PS4	1.003	PS5	2.5	0.464	0.062	0.2514	
720 minute winter	PS5	1.004	PS6	4.0	0.566	0.100	1.0884	
720 minute winter	PS6	1.005	PS7	5.2	0.658	0.131	0.3037	
720 minute winter	PS7	1.006	PS9	5.5	0.726	0.139	0.7294	
720 minute winter	PS8	2.000	PS9	0.5	0.776	0.012	0.2139	
720 minute winter	PS9	1.007	PS10	6.1	1.110	0.112	0.2953	
720 minute winter	PS10	1.008	Tank 1	-9.1	1.345	-0.059	0.1402	
720 minute winter	Tank 1	1.009	PS12	-6.2	0.310	-0.098	0.2165	
720 minute winter	PS11	3.000	PS12	1.6	1.341	0.074	0.0600	
720 minute winter	PS12	1.010	Tank 2	-5.0	0.429	-0.065	0.2165	
720 minute winter	Tank 2	1.011	PS22	-6.5	0.382	-0.067	0.2351	
720 minute winter	PS13	4.000	PS14	0.1	0.154	0.006	0.0861	
720 minute winter	PS14	4.001	PS15	0.8	0.508	0.045	0.3382	
720 minute winter	PS15	4.002	PS16	2.0	0.420	0.050	0.3727	
720 minute winter	PS16	4.003	PS17	3.7	0.547	0.093	1.4022	
720 minute winter	PS17	4.004	PS18	5.1	0.651	0.128	0.4554	
720 minute winter	PS18	4.005	PS19	5.7	0.666	0.143	0.7831	
720 minute winter	PS19	4.006	PS21	5.7	0.879	0.141	0.3051	
720 minute winter	PS20	5.000	PS21	0.7	1.021	0.014	0.1443	
720 minute winter	PS21	4.007	PS22	6.2	0.896	0.062	0.3977	
720 minute winter	PS26	6.000	PS22	-2.6	0.866	-0.067	0.1470	
720 minute winter	PS22	1.012	PS23	3.5	0.524	0.031	0.5734	

Results for 100 year +45% CC Critical Storm Duration. Lowest mass balance: 98.85%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
720 minute winter	PS23	675	39.796	1.731	3.5	1.9581	0.0000	FLOOD RISK
720 minute winter	PS27	675	39.796	0.977	0.8	0.1554	0.0000	FLOOD RISK
720 minute winter	PS24	675	39.796	1.766	3.3	1.9976	0.0000	FLOOD RISK
720 minute winter	PS25	675	39.796	1.831	3.0	2.0709	0.0000	SURCHARGED
30 minute summer	S1	5	37.984	0.044	2.3	0.0493	0.0000	OK
15 minute summer	S2	1	37.975	0.150	2.4	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
720 minute winter	PS23	1.013	PS24	3.1	0.407	0.041	0.5391	
720 minute winter	PS27	7.000	PS24	0.8	0.586	0.015	0.1275	
720 minute winter	PS24	1.014	PS25	3.0	0.176	0.040	1.0337	
720 minute winter	PS25	Hydro-Brake®	S1	3.0				
30 minute summer	S1	1.016	S2	2.3	0.201	0.129	0.1224	129.9

Appendix C Catchment Plan



Refer to RGP S278 design drawings for information on proposed site access junction

Key

Site Boundary

Contours - 100mm

Catchments

- CDM Note
- These drawings have been produced with reference to the CDM Regulations 2015. Please note that these are pre-construction phase drawings and should be subject to further design risk management as required in accordance with Regulation 9.

General Notes

1. Do not scale from this drawing.

2. All dimensions in metres and levels in metres above ordnance datum Newlyn (mAOD) unless stated otherwise.

3. This drawing is to be read in conjunction with all other relevant Engineering and Architect's details.

4. The design details presented must be reviewed in conjunction with the wider site information and site constraints which may not be evident on drawing and must be requested if not already provided. This includes, but is not limited to, ground conditions (geotechnical and environmental), groundwater levels, buried services, remnant obstructions, ecology, tree protection, and topography.

5. The Engineer shall be notified immediately, in writing, should any errors or discrepancies be found prior to the commencement or continuation of any works.

6. Drawing is based on topographical survey conducted by Geopoint Ltd (ref. Geo22-132_T dated October 2022).

7. Details of existing sewers are based on drainage survey undertaken by Solum Surveying Ltd (ref. 12676-R0 dated 21/06/2024).

8. Site layout is based on RDT Architects drawing (ref. 1377T-RDT-ZZ-XX-DR-A-1101 Rev P1 dated July 2024) provided by Aspire LPP on 01/08/2024.

9. Building drainage points based on RDT Architects Proposed Drainage Sketch dated 31/07/2024 provided by Aspire LPP on 01/08/2024.

10. Levels at site entrance based on tying-in to RGP S278 site access junction proposals (ref. 6804-RGP-ZZ-00-DR-C-0111 Rev P01 dated July 2024) provided by Aspire LPP on 25/07/2024.

11. Where shown, root protection areas are based on those included within RDT Architects site layout (ref. 1377T-RDT-ZZ-XX-DR-A-1100 Rev P2 dated July 2024) provided by Aspire LPP on 01/08/2024.

12. All work is to be carried out in accordance with current British Standards, Building Regulations, and Sewerage Sector Guidance as appropriate.

13. It is the responsibility of the Contractor to execute the works at all times in strict accordance with the requirements of the Health and Safety at Work Act 1974 and the CDM Regulations 2015. The Contractor will be deemed to have allowed for full compliance within their rates.

14. Any existing details which are shown on this drawing are for guidance only and are to be checked on site by the Contractor. Any variations are to be recorded and reported to the engineer immediately.

15. The Contractor shall undertake appropriate on-site investigations to confirm the presence of underground utilities prior to any excavation.

P2	06/09/2024	UPDATED TO SUIT REVISED SITE LAYOUT	JG	DS	DMcC
P1	28/08/2024	UPDATED TO CLIENT COMMENTS	JG	DF	DMcC
P0	16/08/2024	FIRST ISSUE	BK	DS	
Rev	Date	Revision Note	Drw	Chk	App

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Client

Aspire LPP

Project

382 Longleaze Lane, Melksham

Title

Catchment Plan

Drawing Issue Status

For Planning

PJA Ref

07040

Scale @ A1

1:250

Date

29.05.24

Drawing No.

07040-CE-0520

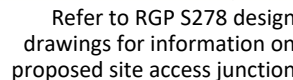
Revision

P2

Primary Contact

joe.garlick@pja.co.uk

Appendix D Exceedance Flow Plan



Key

- Site Boundary
-  Exceedance Flow Route
-  Contours - 100mm

CDM Note

These drawings have been produced with reference to the CDM Regulations 2015.

Please note that these are pre-construction phase drawings and should be subject to further design risk management as required in accordance with Regulation 9.

General Notes

1. Do not scale from this drawing.
2. All dimensions in metres and levels in metres above Ordnance datum Newlyn (MAOD) unless stated otherwise.
3. This drawing is to be read in conjunction with all other relevant Engineering and Architect's details.
4. The design details presented must be reviewed in conjunction with the wider site information and site constraints which may not be evident from this drawing and must be requested if not already provided. This includes, but is not limited to, ground conditions (geotechnical and environmental), groundwater levels, buried services, remnant obstructions, ecology, tree protection, and topography.
5. The Engineer shall be notified immediately, in writing, should any errors or discrepancies be found prior to the commencement or continuation of any works.
6. Drawing is based on topographical survey conducted by Geopoint Ltd (ref. G6e22-132, dated October 2022).
7. Details of existing trees are based on drainage survey undertaken by Solum Surveying Ltd (ref. 12676-R0 dated 21/06/2024).
8. Site layout is based on RDT Architects drawing (ref. 13777-RDT-ZX-XX-DR-A-1101 Rev P1 dated July 2024) provided by Aspire LPP on 01/08/2024.
9. Building drainage points based on RDT Architects Proposed Drainage Sketches dated 31/07/2024 provided by Aspire LPP on 01/08/2024.
10. Levels at site entrance based on 'Being in to RGF 5278 site access junction' (ref. 13004-RGF-ZP-00-DR-C-1111 Rev P01 dated July 2024) provided by Aspire LPP on 25/07/2024.
11. Where shown, root protection areas are based on those included within RDT Architects site layout (ref. 13777-RDT-ZX-XX-DR-A-1100 Rev P2 dated July 2024) provided by Aspire LPP on 01/08/2024.
12. All work is to be carried out in accordance with current British Standards, Building Regulations, and Sewerage Service Guidance as applicable.
13. It is the responsibility of the Contractor to execute the works at all times in strict accordance with the requirements of the Health and Safety at Work Act 1974 and the CDM Regulations 2015. The Contractor will be deemed to have allowed for full compliance within their rates.
14. Any existing details which are shown on this drawing are for guidance only and are to be checked on site by the Contractor. Any variations are to be recorded and reported to the engineer immediately.
15. The Contractor shall undertake appropriate on-site investigations to confirm the presence of underground utilities prior to any excavation

P2	06/09/2024	UPDATED TO SUIT REVISED SITE LAYOUT	JG	DS	DMD
P1	28/08/2024	UPDATED TO CLIENT COMMENTS	JG	DF	DMD
PO	16/08/2024	FIRST ISSUE	BK	DS	
Rev	Date	Revision Note	Drw	Chk	App



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Client

Aspire LPP

Project

Title

Exceedance Flow Plan

Drawing Issue Status

For Planning

PJA Ref	Scale @ A1	Date
07040	1:250	29.05.24

Drawing No.

07040-CE-0530

Primary Contact
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