

Storm Drainage Strategy Technical Note

Project name: Village Hotels – Eastleigh – Padel Courts
Author: Mark Wheeler
Date: 14th March 2025
Project number: P24-3082

Proposed two canopied padel courts and an outdoor gym area for Village Hotel Club.

This note is intended to be provided to Eastleigh Borough Council to support the planning application to be read in conjunction with the Storm Drainage Strategy drawing (Drawing no. P24-3083-PEG-XX-XX-DR-C-0200).

Existing drainage

In the immediate area to the proposed padel courts and outdoor gym area, located to the north, there is a swale which then outfalls to the private drainage network shown in Appendix A. There are multiple existing gravel filter trenches and tree pits downstream of this and a geocellular attenuation tank which ensures runoff leaving the site is cleansed and mitigates any pollution risk downstream.

Impact of development on Surface Water Runoff

Canopied Padel Courts

The proposed padel courts are located on an existing landscaped area, so there will be an increase in impermeable area due to the padel court canopy.

Outdoor gym area

The outdoor gym area is proposed to be made up of a permeable material, there is however a container for gym equipment

Ground Conditions

BGS mapping shows that the majority of the site consists of "Wittering Formation consisting of Sand, Silt and Clay".

Soilscapes mapping shows that the site consists of "naturally wet very acid sandy and loamy soils". The mapping suggests that site soils are naturally wet due to a relatively high water table and therefore very low (negligible) infiltration rates can be expected.

Proposed Surface Water Strategy

A storm drainage strategy has been produced to support the planning application.

As described in the impact of development on surface water runoff section, the overall impact of surface water due to the proposed development is an increase due to the addition of the canopied padel courts and the outdoor gym area.

Despite the above, gravel trenches have been proposed on site surrounding the padel courts to capture runoff from the proposed development and to increase the time of entry into the existing storm water network. An orifice plate has also been proposed downstream of the gravel trench to limit the flow of the storm water into the existing swale and therefore limiting the extra flow into the existing network. It is expected that the proposed padel courts and outdoor gym area will have an overall addition of 2.5l/s in a 100 year + CC storm event into the existing swale.

Conclusions

The attached calculations shown in Appendix C include 100% of the overall area from the padel courts and outdoor gym area for 1 year, 30 year and 1 in 100-year storms + 40% CC have been simulated. And the existing drainage has also been modelled for the same storm events as above shown in Appendix B. Overall, there is not an increase in flow for the existing storm water drainage network.

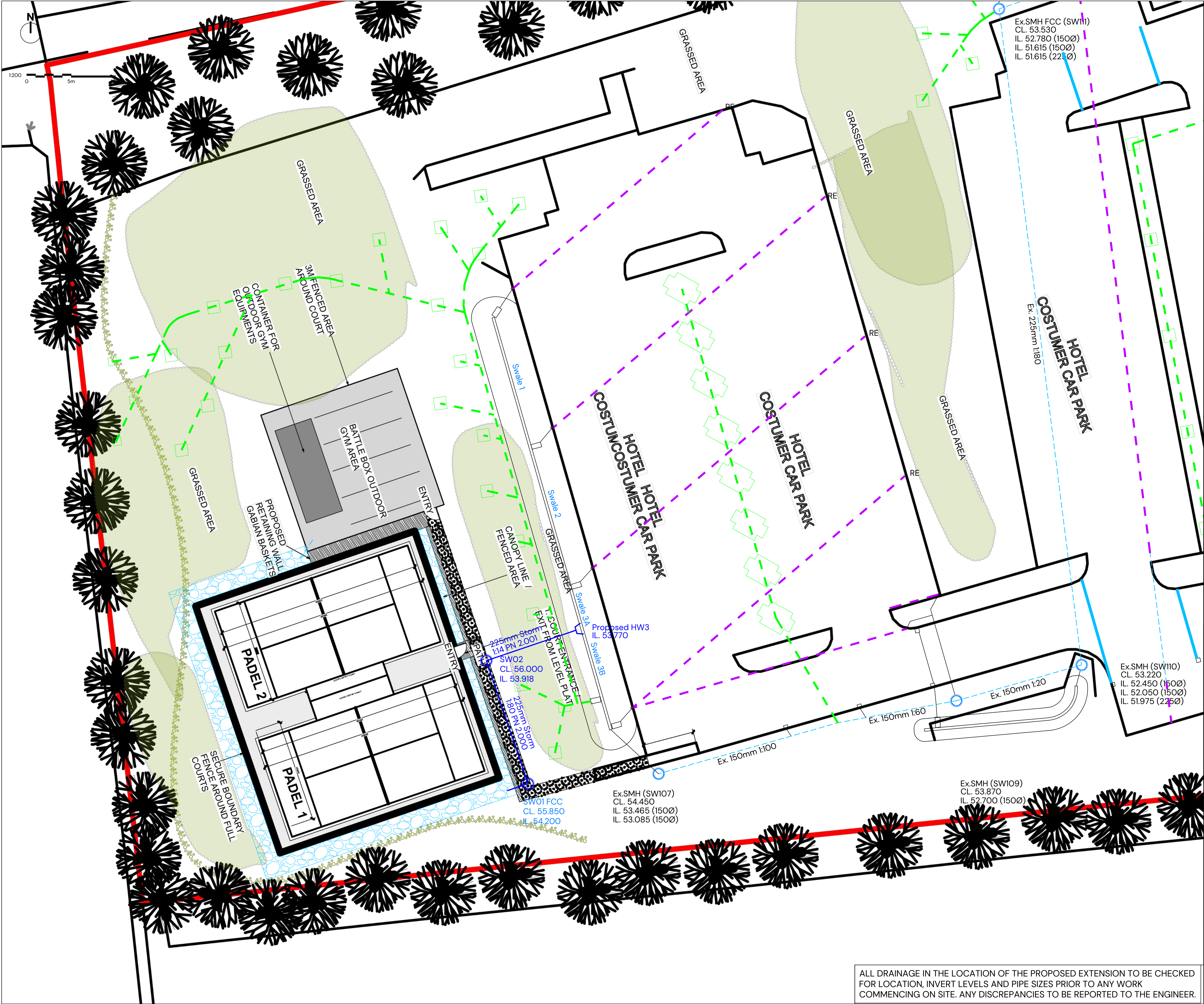
Mark Wheeler

Senior Infrastructure Engineer

14.03.2025

Appendix A

(Proposed Storm Water Drainage Strategy)

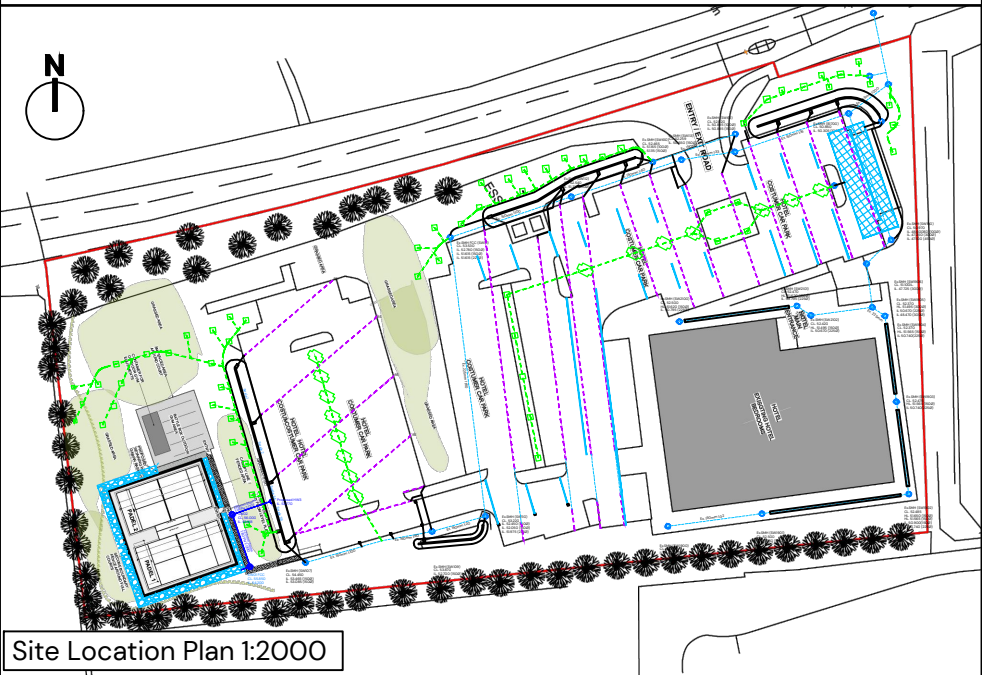


- Notes
1. This drawing has been produced by Pegasus Group for the client and should not be used for anything outside of its intended purpose. Pegasus Group accepts no liability for the misuse of this drawing.
 2. Do not use this drawing to scale from.
 3. All measurements are in metres unless stated otherwise.
 4. Drainage strategy redesign has been based on the superimposition of drawing '424/24/4-412' Proposed Site Plan by ARKA Sportiva. Pegasus Group accepts no liability for the accuracy of these drawings.

Key

- Existing - Foul Network
- Existing - Foul Water Chamber
- Existing - Surface Water Network
- Existing - Surface Water Chamber
- Proposed - Foul Network
- Proposed - Surface Water Network
- Proposed - Surface Water Chamber
- Existing ACO MD Series slot Drain
- Existing Tree Pits and associated Drainage
- Existing perforated pipes
- Gravel Trench

Existing & Proposed Site Discharge Rates		
Storm Duration (Critical)	Existing Total Discharge Rate from Ex.SMH (SW107) (l/s)	Proposed Total Discharge Rate from Ex.SMH (SW107) (l/s)
1 Year	14.7	15.5
30 Year	28.9	28.8
100 Year + 40% CC	36.2	36.1



PI	14/03/2025	First Issue	MW	SD	SD
REV	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED

Village Hotels - Eastleigh
Padel Courts - Drainage Strategy Plan

Bournemouth Road
Chandler's Ford, SO53 3YJ

CLIENT:
Village Hotels

DATE: 03.03.2024 SCALE: 1:200 @ A1 DRAWN BY: MW
CHECKED BY: SD
APPROVED BY: SD

DRAWING NUMBER: P24-3082-PEG-XX-XX-DR-C-0200-PI PG OFFICE / TEAM: BIR / INF

PEGASUS REF No: P24-3082 DRAWING STATUS: S2 **PEGASUS GROUP**

ALL DRAINAGE IN THE LOCATION OF THE PROPOSED EXTENSION TO BE CHECKED FOR LOCATION, INVERT LEVELS AND PIPE SIZES PRIOR TO ANY WORK COMMENCING ON SITE. ANY DISCREPANCIES TO BE REPORTED TO THE ENGINEER.

Appendix B

(Flow Existing Drainage Calculations)

Design Settings

Rainfall Methodology	FSR	Maximum Time of Concentration (mins)	30.00
Return Period (years)	5	Maximum Rainfall (mm/hr)	75.0
Additional Flow (%)	0	Minimum Velocity (m/s)	1.00
FSR Region	England and Wales	Connection Type	Level Soffits
M5-60 (mm)	20.000	Minimum Backdrop Height (m)	0.200
Ratio-R	0.400	Preferred Cover Depth (m)	1.200
CV	0.750	Include Intermediate Ground	✓
Time of Entry (mins)	6.00	Enforce best practice design rules	✓

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)
Swale Start	0.038	10.00	55.269	100	1653.344	337.529	0.800
HW1	0.055	10.00	54.977	100	1657.537	322.899	0.800
HW2	0.057	10.00	54.663	100	1661.987	307.253	0.800
Swale End	0.028	10.00	54.343		1666.580	291.202	0.800
Ex.SMH (SW107)			54.450		1671.952	286.235	0.985

Links

Name	US Node	DS Node	Length (m)	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
Swale 1	Swale Start	HW1	15.219	54.469	54.177	0.292	52.1	800	10.04	75.0
Swale 2	HW1	HW2	16.267	54.177	53.863	0.314	51.8	800	10.08	75.0
Swale 3	HW2	Swale End	16.695	53.863	53.543	0.320	52.2	800	10.13	75.0
1.000	Swale End	Ex.SMH (SW107)	7.316	53.543	53.465	0.078	93.8	300	10.33	75.0

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)
Swale 1	6.214	13421.3	7.7	0.000	0.000	0.038	0.0	23	0.893
Swale 2	6.232	13462.0	18.9	0.000	0.000	0.093	0.0	38	1.185
Swale 3	6.210	13414.6	30.5	0.000	0.000	0.150	0.0	50	1.366
1.000	0.612	43.3	36.2	0.500	0.685	0.178	0.0	210	0.685

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)
Swale 1	15.219	52.1	800	Swale	55.269	54.469	0.000	54.977	54.177	0.000
Swale 2	16.267	51.8	800	Swale	54.977	54.177	0.000	54.663	53.863	0.000
Swale 3	16.695	52.2	800	Swale	54.663	53.863	0.000	54.343	53.543	0.000
1.000	7.316	93.8	300	Circular	54.343	53.543	0.500	54.450	53.465	0.685

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
Swale 1	Swale Start	100	Manhole	Adoptable	HW1	100	Manhole	Adoptable
Swale 2	HW1	100	Manhole	Adoptable	HW2	100	Manhole	Adoptable
Swale 3	HW2	100	Manhole	Adoptable	Swale End		Junction	
1.000	Swale End		Junction		Ex.SMH (SW107)		Junction	

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)	
Swale Start	1653.344	337.529	55.269	0.800	100		0	Swale 1	54.469	800
HW1	1657.537	322.899	54.977	0.800	100		1	Swale 1	54.177	800
HW2	1661.987	307.253	54.663	0.800	100		0	Swale 2	54.177	800
							1	Swale 2	53.863	800
Swale End	1666.580	291.202	54.343	0.800			0	Swale 3	53.863	800
							1	Swale 3	53.543	800
Ex.SMH (SW107)	1671.952	286.235	54.450	0.985			0	1.000	53.543	300
							1	1.000	53.465	300

Simulation Settings

Rainfall Methodology	FSR	Analysis Speed	Normal
Rainfall Events	Singular	Skip Steady State	x
FSR Region	England and Wales	Drain Down Time (mins)	1440
M5-60 (mm)	20.000	Additional Storage (m³/ha)	0.0
Ratio-R	0.400	Starting Level (m)	
Summer CV	0.750	Check Discharge Rate(s)	x
Winter CV	0.840	Check Discharge Volume	x

Storm Durations

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

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

Node Swale End Online Orifice Control

Flap Valve	x	Design Depth (m)	0.800	Discharge Coefficient	0.600
Replaces Downstream Link	✓	Design Flow (l/s)	40.0		
Invert Level (m)	53.543	Diameter (m)	0.150		

Results for 1 year Critical Storm Duration. Lowest mass balance: 99.88%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	Swale Start	12	54.484	0.015	3.6	0.0001	0.0000	OK
15 minute winter	HW1	13	54.202	0.025	8.9	0.0002	0.0000	OK
15 minute winter	HW2	13	53.896	0.033	14.3	0.0003	0.0000	OK
15 minute winter	Swale End	15	53.737	0.194	17.0	0.0000	0.0000	OK
15 minute summer	Ex.SMH (SW107)	1	53.465	0.000	14.7	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)
15 minute winter	Swale Start	Swale 1	HW1	3.6	0.501	0.000	0.1110	
15 minute winter	HW1	Swale 2	HW2	8.9	0.795	0.001	0.1828	
15 minute winter	HW2	Swale 3	Swale End	14.3	0.284	0.001	1.5376	
15 minute winter	Swale End	Orifice	Ex.SMH (SW107)	16.2				11.6

Results for 30 year Critical Storm Duration. Lowest mass balance: 99.88%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	Swale Start	13	54.494	0.025	8.9	0.0002	0.0000	OK
15 minute winter	HW1	13	54.218	0.041	21.8	0.0003	0.0000	OK
15 minute winter	HW2	16	54.025	0.162	51.7	0.0013	0.0000	OK
15 minute winter	Swale End	18	54.032	0.489	100.6	0.0000	0.0000	SURCHARGED
15 minute summer	Ex.SMH (SW107)	1	53.465	0.000	28.9	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)
15 minute winter	Swale Start	Swale 1	HW1	8.9	0.671	0.001	0.2048	
15 minute winter	HW1	Swale 2	HW2	21.8	1.036	0.002	1.1716	
15 minute winter	HW2	Swale 3	Swale End	96.3	0.327	0.007	7.7937	
15 minute winter	Swale End	Orifice	Ex.SMH (SW107)	30.2				28.3

Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 99.88%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	Swale Start	13	54.504	0.035	16.2	0.0003	0.0000	OK
30 minute winter	HW1	27	54.268	0.091	38.4	0.0007	0.0000	OK
30 minute winter	HW2	27	54.266	0.403	104.1	0.0032	0.0000	OK
30 minute winter	Swale End	25	54.262	0.719	134.9	0.0000	0.0000	FLOOD RISK
15 minute summer	Ex.SMH (SW107)	1	53.465	0.000	36.2	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)
15 minute winter	Swale Start	Swale 1	HW1	16.2	0.806	0.001	0.3112	
30 minute winter	HW1	Swale 2	HW2	39.3	1.038	0.003	5.3988	
30 minute winter	HW2	Swale 3	Swale End	123.3	0.322	0.009	19.4332	
30 minute winter	Swale End	Orifice	Ex.SMH (SW107)	37.8				67.8

Appendix C

(Flow Proposed Drainage Calculations)

Design Settings

Rainfall Methodology	FSR	Maximum Time of Concentration (mins)	30.00
Return Period (years)	5	Maximum Rainfall (mm/hr)	75.0
Additional Flow (%)	0	Minimum Velocity (m/s)	1.00
FSR Region	England and Wales	Connection Type	Level Soffits
M5-60 (mm)	20.000	Minimum Backdrop Height (m)	0.200
Ratio-R	0.400	Preferred Cover Depth (m)	1.200
CV	0.750	Include Intermediate Ground	✓
Time of Entry (mins)	6.00	Enforce best practice design rules	✓

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)
Swale Start	0.038	10.00	55.269	100	1653.344	337.529	0.800
HW1	0.055	10.00	54.977	100	1657.537	322.899	0.800
HW2	0.057	10.00	54.663	100	1661.987	307.253	0.800
SW01	0.102	6.00	55.850	1200	1657.263	285.131	1.100
SW02			56.000	1200	1652.577	298.956	1.432
Proposed HW3	0.000	10.00	54.570	100	1663.304	302.601	0.800
Swale End	0.028	10.00	54.343		1666.580	291.202	0.800
Ex.SMH (SW107)			54.450		1671.952	286.235	0.985

Links

Name	US Node	DS Node	Length (m)	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
Swale 1	Swale Start	HW1	15.219	54.469	54.177	0.292	52.1	800	10.04	75.0
Swale 2	HW1	HW2	16.267	54.177	53.863	0.314	51.8	800	10.08	75.0
Swale 3A	HW2	Proposed HW3	4.835	53.863	53.770	0.093	52.0	800	10.10	75.0
2.000	SW01	SW02	14.598	54.750	54.568	0.182	80.2	225	6.17	75.0
2.001	SW02	Proposed HW3	11.329	54.568	53.770	0.798	14.2	225	6.22	75.0
Swale 3B	Proposed HW3	Swale End	11.860	53.770	53.543	0.227	52.2	800	10.18	64.3
1.000	Swale End	Ex.SMH (SW107)	7.316	53.543	53.465	0.078	93.8	375	10.35	75.0

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)
Swale 1	6.214	13421.3	7.7	0.000	0.000	0.038	0.0	23	0.893
Swale 2	6.232	13462.0	18.9	0.000	0.000	0.093	0.0	38	1.185
Swale 3A	6.221	13438.2	30.5	0.000	0.000	0.150	0.0	50	1.368
2.000	1.461	58.1	20.7	0.875	1.207	0.102	0.0	93	1.341
2.001	3.490	138.8	20.7	1.207	0.575	0.102	0.0	58	2.526
Swale 3B	2.516	5434.8	43.9	0.000	0.000	0.252	0.0	100	0.739
1.000	0.710	78.4	56.9	0.425	0.610	0.280	0.0	237	0.774

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)
Swale 1	15.219	52.1	800	Swale	55.269	54.469	0.000	54.977	54.177	0.000
Swale 2	16.267	51.8	800	Swale	54.977	54.177	0.000	54.663	53.863	0.000
Swale 3A	4.835	52.0	800	Swale	54.663	53.863	0.000	54.570	53.770	0.000
2.000	14.598	80.2	225	Circular	55.850	54.750	0.875	56.000	54.568	1.207
2.001	11.329	14.2	225	Circular	56.000	54.568	1.207	54.570	53.770	0.575
Swale 3B	11.860	52.2	800	Swale	54.570	53.770	0.000	54.343	53.543	0.000
1.000	7.316	93.8	375	Circular	54.343	53.543	0.425	54.450	53.465	0.610

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
Swale 1	Swale Start	100	Manhole	Adoptable	HW1	100	Manhole	Adoptable
Swale 2	HW1	100	Manhole	Adoptable	HW2	100	Manhole	Adoptable
Swale 3A	HW2	100	Manhole	Adoptable	Proposed HW3	100	Manhole	Adoptable
2.000	SW01	1200	Manhole	Adoptable	SW02	1200	Manhole	Adoptable
2.001	SW02	1200	Manhole	Adoptable	Proposed HW3	100	Manhole	Adoptable
Swale 3B	Proposed HW3	100	Manhole	Adoptable	Swale End		Junction	
1.000	Swale End		Junction		Ex.SMH (SW107)		Junction	

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
Swale Start	1653.344	337.529	55.269	0.800	100				
HW1	1657.537	322.899	54.977	0.800	100		0 Swale 1	54.469	800
HW2	1661.987	307.253	54.663	0.800	100		0 Swale 2	54.177	800
SW01	1657.263	285.131	55.850	1.100	1200		0 Swale 3A	53.863	800
SW02	1652.577	298.956	56.000	1.432	1200		0 2.000	54.750	225
Proposed HW3	1663.304	302.601	54.570	0.800	100		0 2.000	54.568	225
Swale End	1666.580	291.202	54.343	0.800			0 2.001	54.568	225
							0 2.001	53.770	225
							0 Swale 3A	53.770	800
							0 Swale 3B	53.770	800
							0 Swale 3B	53.543	800
							0 1.000	53.543	375

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
Ex.SMH (SW107)	1671.952	286.235	54.450	0.985		1 1	1.000	53.465	375

Simulation Settings

Rainfall Methodology	FSR	Analysis Speed	Normal
Rainfall Events	Singular	Skip Steady State	x
FSR Region	England and Wales	Drain Down Time (mins)	1440
M5-60 (mm)	20.000	Additional Storage (m³/ha)	0.0
Ratio-R	0.400	Starting Level (m)	
Summer CV	0.750	Check Discharge Rate(s)	x
Winter CV	0.840	Check Discharge Volume	x

Storm Durations

15	30	60	120	180	240	360	480	600	720	960	1440
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Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
1	0	0	0
30	0	0	0
100	40	0	0

Node SW01 Online Orifice Control

Flap Valve	x	Design Depth (m)	1.000	Discharge Coefficient	0.600
Replaces Downstream Link	✓	Design Flow (l/s)	2.7		
Invert Level (m)	54.750	Diameter (m)	0.036		

Node Swale End Online Orifice Control

Flap Valve	x	Design Depth (m)	0.800	Discharge Coefficient	0.600
Replaces Downstream Link	✓	Design Flow (l/s)			
Invert Level (m)	53.543	Diameter (m)	0.150		

Node SW01 Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	54.750
Side Inf Coefficient (m/hr)	0.00000	Porosity	0.30	Time to half empty (mins)	220

Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)
0.000	178.0	0.0	1.000	178.0	0.0

Results for 1 year Critical Storm Duration. Lowest mass balance: 99.54%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	Swale Start	12	54.484	0.015	3.6	0.0001	0.0000	OK
15 minute winter	HW1	13	54.202	0.025	8.9	0.0002	0.0000	OK
15 minute winter	HW2	13	53.898	0.035	14.3	0.0003	0.0000	OK
180 minute winter	SW01	136	54.924	0.174	3.5	9.5022	0.0000	OK
180 minute winter	SW02	136	54.582	0.014	1.1	0.0161	0.0000	OK
15 minute winter	Proposed HW3	14	53.828	0.058	15.0	0.0005	0.0000	OK
15 minute winter	Swale End	15	53.750	0.207	17.7	0.0000	0.0000	OK
15 minute summer	Ex.SMH (SW107)	1	53.465	0.000	15.5	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)
15 minute winter	Swale Start	Swale 1	HW1	3.6	0.501	0.000	0.1110	
15 minute winter	HW1	Swale 2	HW2	8.9	0.758	0.001	0.1921	
15 minute winter	HW2	Swale 3A	Proposed HW3	14.3	0.704	0.001	0.1004	
180 minute winter	SW01	Orifice	SW02	1.1				
180 minute winter	SW02	2.001	Proposed HW3	1.1	1.033	0.008	0.0277	
15 minute winter	Proposed HW3	Swale 3B	Swale End	15.0	0.216	0.003	1.2944	
15 minute winter	Swale End	Orifice	Ex.SMH (SW107)	17.1				18.2

Results for 30 year Critical Storm Duration. Lowest mass balance: 99.54%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	Swale Start	13	54.494	0.025	8.9	0.0002	0.0000	OK
15 minute winter	HW1	13	54.218	0.041	21.8	0.0003	0.0000	OK
15 minute winter	HW2	17	54.031	0.168	44.8	0.0013	0.0000	OK
180 minute winter	SW01	144	55.195	0.445	8.1	24.2395	0.0000	SURCHARGED
120 minute winter	SW02	132	54.586	0.018	1.8	0.0202	0.0000	OK
15 minute winter	Proposed HW3	17	54.014	0.244	76.9	0.0020	0.0000	OK
15 minute winter	Swale End	16	54.029	0.486	88.0	0.0000	0.0000	SURCHARGED
15 minute summer	Ex.SMH (SW107)	1	53.465	0.000	28.8	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)
15 minute winter	Swale Start	Swale 1	HW1	8.9	0.671	0.001	0.2048	
15 minute winter	HW1	Swale 2	HW2	21.8	1.024	0.002	1.2105	
15 minute winter	HW2	Swale 3A	Proposed HW3	75.5	0.835	0.006	0.9391	
180 minute winter	SW01	Orifice	SW02	1.8				
120 minute winter	SW02	2.001	Proposed HW3	1.8	1.192	0.013	0.0578	
15 minute winter	Proposed HW3	Swale 3B	Swale End	81.9	0.231	0.015	6.5216	
15 minute winter	Swale End	Orifice	Ex.SMH (SW107)	30.2				44.4

Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 99.54%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	Swale Start	13	54.504	0.035	16.2	0.0003	0.0000	OK
30 minute winter	HW1	27	54.266	0.089	38.4	0.0007	0.0000	OK
30 minute winter	HW2	27	54.269	0.406	61.8	0.0032	0.0000	OK
180 minute winter	SW01	168	55.628	0.878	14.9	47.8892	0.0000	FLOOD RISK
180 minute winter	SW02	168	54.589	0.021	2.5	0.0238	0.0000	OK
30 minute winter	Proposed HW3	27	54.267	0.497	87.4	0.0040	0.0000	OK
30 minute winter	Swale End	28	54.263	0.720	85.3	0.0000	0.0000	FLOOD RISK
15 minute summer	Ex.SMH (SW107)	1	53.465	0.000	36.1	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)
15 minute winter	Swale Start	Swale 1	HW1	16.2	0.806	0.001	0.3564	
30 minute winter	HW1	Swale 2	HW2	38.3	1.084	0.003	5.4100	
30 minute winter	HW2	Swale 3A	Proposed HW3	85.5	0.838	0.006	3.6379	
180 minute winter	SW01	Orifice	SW02	2.5				
180 minute winter	SW02	2.001	Proposed HW3	2.5	1.300	0.018	0.1820	
30 minute winter	Proposed HW3	Swale 3B	Swale End	73.9	0.218	0.014	15.7847	
30 minute winter	Swale End	Orifice	Ex.SMH (SW107)	37.7				106.5