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Made by : **BWE**
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Revision : **-**

Ref:	CALCULATIONS		Output.																		
RESIDENTIAL DEVELOPMENT AT LLYS WERN NEATH, NEATH PORT TALBOT SA10 7PR																					
Client: TAI TARIAN																					
RCA Brief: Foul Water Drainage Design.																					
Design Data: - Building Regulations Approved Document Part H. - Sewers for Adoption 7th Edition. - Site Location Co-Ordinates: E 274398 N 198631 - Site Grid Reference: SS743986 - Welsh Ministers Standards.																					
Information Provided: Architectural Site Plan. Land Survey.																					
Drainage Design By: Microdrainage 2018.1																					
Revisions: <table border="1" style="width: 100%;"> <thead> <tr> <th>Revision Version:</th> <th>Description:</th> <th>Date:</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </tbody> </table>				Revision Version:	Description:	Date:															
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Calculations Prepared By: Ben Edwards		Calculations Checked By: Philip Lawrence																			
Signed: 		Signed: 																			
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Micro Drainage		Network 2018.1.1

FOUL SEWERAGE DESIGN

Design Criteria for FOUL DESIGN.fws

Pipe Sizes STANDARD Manhole Sizes STANDARD

Industrial Flow (l/s/ha)	0.00	Add Flow / Climate Change (%)	0
Industrial Peak Flow Factor	1.00	Minimum Backdrop Height (m)	0.200
Flow Per Person (l/per/day)	160.00	Maximum Backdrop Height (m)	0.000
Persons per House	3.00	Min Design Depth for Optimisation (m)	1.200
Domestic (l/s/ha)	0.00	Min Vel for Auto Design only (m/s)	0.75
Domestic Peak Flow Factor	1.00	Min Slope for Optimisation (1:X)	1000

Designed with Level Soffits

Network Design Table for FOUL DESIGN.fws

PN	Length (m)	Fall (m)	Slope (1:X)	Area (ha)	Houses	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Section Type	Auto Design
1.000	1.410	0.035	40.3	0.000	1	0.0	1.500	o	100	Pipe/Conduit	
1.001	3.763	0.047	80.1	0.000	0	0.0	1.500	o	100	Pipe/Conduit	
1.002	1.359	0.017	79.9	0.000	0	0.0	1.500	o	100	Pipe/Conduit	
1.003	3.701	0.046	80.5	0.000	1	0.0	1.500	o	100	Pipe/Conduit	
1.004	1.550	0.020	77.5	0.000	0	0.0	1.500	o	100	Pipe/Conduit	
1.005	8.633	0.108	79.9	0.000	0	0.0	1.500	o	100	Pipe/Conduit	
1.006	1.151	0.015	76.7	0.000	1	0.0	1.500	o	100	Pipe/Conduit	
1.007	3.512	0.044	79.8	0.000	0	0.0	1.500	o	100	Pipe/Conduit	
1.008	1.136	0.014	81.1	0.000	0	0.0	1.500	o	100	Pipe/Conduit	
1.009	4.300	0.054	79.6	0.000	1	0.0	1.500	o	100	Pipe/Conduit	
1.010	1.195	0.015	79.7	0.000	0	0.0	1.500	o	100	Pipe/Conduit	
1.011	1.987	0.065	30.6	0.000	0	0.0	1.500	o	100	Pipe/Conduit	

Network Results Table

PN	US/IL (m)	Σ Area (ha)	Σ Base Flow (l/s)	Σ Hse	Add Flow (l/s)	P.Dep (mm)	P.Vel (m/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
1.000	40.740	0.000	0.0	1	0.0	2	0.12	1.05	8.3	0.0
1.001	40.705	0.000	0.0	1	0.0	3	0.10	0.74	5.8	0.0
1.002	40.658	0.000	0.0	1	0.0	3	0.10	0.74	5.8	0.0
1.003	40.641	0.000	0.0	2	0.0	4	0.13	0.74	5.8	0.0
1.004	40.595	0.000	0.0	2	0.0	4	0.13	0.76	5.9	0.0
1.005	40.575	0.000	0.0	2	0.0	4	0.13	0.74	5.8	0.0
1.006	40.467	0.000	0.0	3	0.0	4	0.15	0.76	6.0	0.0
1.007	40.452	0.000	0.0	3	0.0	4	0.15	0.74	5.8	0.0
1.008	40.408	0.000	0.0	3	0.0	4	0.14	0.74	5.8	0.0
1.009	40.394	0.000	0.0	4	0.0	5	0.16	0.75	5.9	0.0
1.010	40.340	0.000	0.0	4	0.0	5	0.16	0.75	5.9	0.0
1.011	40.325	0.000	0.0	4	0.0	4	0.22	1.21	9.5	0.0

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PIPELINE SCHEDULES for FOUL DESIGN.fws

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
1.000	o	100	1	41.440	40.740	0.600	Open Manhole	450
1.001	o	100	2	41.440	40.705	0.635	Open Manhole	450
1.002	o	100	3	41.557	40.658	0.799	Open Manhole	450
1.003	o	100	4	42.007	40.641	1.266	Open Manhole	450
1.004	o	100	5	41.890	40.595	1.195	Open Manhole	450
1.005	o	100	6	41.890	40.575	1.215	Open Manhole	450
1.006	o	100	7	42.040	40.467	1.473	Open Manhole	450
1.007	o	100	8	42.040	40.452	1.488	Open Manhole	450
1.008	o	100	9	42.146	40.408	1.638	Open Manhole	450
1.009	o	100	10	42.596	40.394	2.102	Open Manhole	450
1.010	o	100	11	42.490	40.340	2.050	Open Manhole	450
1.011	o	100	12	42.490	40.325	2.065	Open Manhole	450

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
1.000	1.410	40.3	2	41.440	40.705	0.635	Open Manhole	450
1.001	3.763	80.1	3	41.557	40.658	0.799	Open Manhole	450
1.002	1.359	79.9	4	42.007	40.641	1.266	Open Manhole	450
1.003	3.701	80.5	5	41.890	40.595	1.195	Open Manhole	450
1.004	1.550	77.5	6	41.890	40.575	1.215	Open Manhole	450
1.005	8.633	79.9	7	42.040	40.467	1.473	Open Manhole	450
1.006	1.151	76.7	8	42.040	40.452	1.488	Open Manhole	450
1.007	3.512	79.8	9	42.146	40.408	1.638	Open Manhole	450
1.008	1.136	81.1	10	42.596	40.394	2.102	Open Manhole	450
1.009	4.300	79.6	11	42.490	40.340	2.050	Open Manhole	450
1.010	1.195	79.7	12	42.490	40.325	2.065	Open Manhole	450
1.011	1.987	30.6	13	42.490	40.260	2.130	Open Manhole	450

Simulation Criteria for FOUL DESIGN.fws

Volumetric Runoff Coeff	0.750	Additional Flow - % of Total Flow	0.000
Areal Reduction Factor	1.000	MADD Factor * 10m³/ha Storage	2.000
Hot Start (mins)	0	Inlet Coefficient	0.800
Hot Start Level (mm)	0	Flow per Person per Day (l/per/day)	0.000
Manhole Headloss Coeff (Global)	0.500	Run Time (mins)	60
Foul Sewage per hectare (l/s)	0.000	Output Interval (mins)	1
Number of Input Hydrographs	0	Number of Storage Structures	0
Number of Online Controls	0	Number of Time/Area Diagrams	0
Number of Offline Controls	0	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model	FSR	Region	England and Wales
Return Period (years)	0 M5-60 (mm)		0.000

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<u>Synthetic Rainfall Details</u> Ratio R 0.000 Cv (Winter) 0.840 Profile Type Summer Storm Duration (mins) 30 Cv (Summer) 0.750		
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