

Project: Infiltration Basins Baldock	Date: 19/08/2025			
	Designed by: MJD	Checked by:	Approved By:	
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase	Company Address: AKTII White Collar Factory, 1 Old Street Yard London EC1Y 8AF			

 Summary Results for Infiltration Basin 5: Rank By: Max. US Depth

Storm Event	Max. US Level (m)	Max. DS Level (m)	Max. US Depth (m)	Max. DS Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Floode d Volume (m³)	Total Lost Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Percentage Available (%)	Status
FEH: 2 years: +40 %: 15 mins: Summer	65.540	65.541	0.840	0.841	1182.4	2917.799	0.000	824.612	0.0	0.000	25.945	OK
FEH: 2 years: +40 %: 15 mins: Winter	65.538	65.539	0.838	0.839	1111.2	2910.953	0.000	824.604	0.0	0.000	26.119	OK
FEH: 2 years: +40 %: 30 mins: Summer	65.522	65.522	0.822	0.822	763.6	2755.308	0.000	1619.855	0.0	0.000	30.069	OK
FEH: 2 years: +40 %: 30 mins: Winter	65.522	65.522	0.822	0.822	716.6	2746.805	0.000	1619.784	0.0	0.000	30.285	OK
FEH: 2 years: +40 %: 60 mins: Summer	65.522	65.522	0.822	0.822	649.0	2721.149	0.000	3102.460	0.0	0.000	30.936	OK
FEH: 2 years: +40 %: 60 mins: Winter	65.522	65.522	0.822	0.822	521.9	2720.167	0.000	3102.439	0.0	0.000	30.961	OK
FEH: 2 years: +40 %: 120 mins: Summer	65.522	65.522	0.822	0.822	555.5	2718.076	0.000	4016.849	0.0	0.000	31.014	OK
FEH: 2 years: +40 %: 120 mins: Winter	65.522	65.522	0.822	0.822	399.8	2714.585	0.000	4017.003	0.0	0.000	31.103	OK
FEH: 2 years: +40 %: 180 mins: Summer	65.522	65.522	0.822	0.822	461.0	2715.723	0.000	4222.325	0.0	0.000	31.074	OK
FEH: 2 years: +40 %: 180 mins: Winter	65.522	65.522	0.822	0.822	317.7	2711.667	0.000	4221.624	0.0	0.000	31.177	OK
FEH: 2 years: +40 %: 240 mins: Summer	65.522	65.522	0.822	0.822	393.0	2713.991	0.000	4362.117	0.0	0.000	31.118	OK
FEH: 2 years: +40 %: 240 mins: Winter	65.522	65.522	0.822	0.822	264.3	2711.128	0.000	4362.486	0.0	0.000	31.190	OK
FEH: 2 years: +40 %: 360 mins: Summer	65.522	65.522	0.822	0.822	301.6	2713.346	0.000	4549.439	0.0	0.000	31.134	OK
FEH: 2 years: +40 %: 360 mins: Winter	65.522	65.522	0.822	0.822	198.7	2710.164	0.000	4548.771	0.0	0.000	31.215	OK
FEH: 2 years: +40 %: 480 mins: Summer	65.522	65.522	0.822	0.822	246.8	2712.811	0.000	4664.439	0.0	0.000	31.148	OK
FEH: 2 years: +40 %: 480 mins: Winter	65.522	65.522	0.822	0.822	159.7	2709.424	0.000	4665.310	0.0	0.000	31.234	OK
FEH: 2 years: +40 %: 600 mins: Summer	65.522	65.522	0.822	0.822	207.4	2713.219	0.000	4749.383	0.0	0.000	31.137	OK
FEH: 2 years: +40 %: 600 mins: Winter	65.522	65.522	0.822	0.822	133.8	2709.960	0.000	4750.018	0.0	0.000	31.220	OK
FEH: 30 years: +40 %: 15 mins: Summer	65.701	65.702	1.001	1.002	2761.8	3545.091	0.000	847.596	0.0	0.000	10.024	OK
FEH: 30 years: +40 %: 15 mins: Winter	65.698	65.699	0.998	0.999	2594.2	3530.891	0.000	847.596	0.0	0.000	10.384	OK
FEH: 30 years: +40 %: 30 mins: Summer	65.701	65.702	1.001	1.002	1808.9	3544.272	0.000	1682.938	0.0	0.000	10.045	OK
FEH: 30 years: +40 %: 30 mins: Winter	65.697	65.698	0.997	0.998	1697.6	3528.092	0.000	1683.019	0.0	0.000	10.455	OK
FEH: 30 years: +40 %: 60 mins: Summer	65.635	65.635	0.935	0.935	1537.8	3282.343	0.000	3259.464	0.0	0.000	16.693	OK
FEH: 30 years: +40 %: 60 mins: Winter	65.629	65.629	0.929	0.929	1236.6	3259.697	0.000	3259.581	0.0	0.000	17.267	OK
FEH: 30 years: +40 %: 120 mins: Summer	65.522	65.522	0.822	0.822	1160.0	2725.457	0.000	5288.529	0.0	0.000	30.827	OK
FEH: 30 years: +40 %: 120 mins: Winter	65.522	65.522	0.822	0.822	834.8	2717.887	0.000	5289.374	0.0	0.000	31.019	OK

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FEH: 30 years: +40 %: 180 mins: Summer	65.522	65.522	0.822	0.822	917.6	2722.935	0.000	5583.006	0.0	0.000	30.891	OK
FEH: 30 years: +40 %: 180 mins: Winter	65.522	65.522	0.822	0.822	632.3	2715.656	0.000	5583.294	0.0	0.000	31.075	OK
FEH: 30 years: +40 %: 240 mins: Summer	65.522	65.522	0.822	0.822	760.7	2718.419	0.000	5780.340	0.0	0.000	31.005	OK
FEH: 30 years: +40 %: 240 mins: Winter	65.522	65.522	0.822	0.822	511.6	2712.083	0.000	5780.651	0.0	0.000	31.166	OK
FEH: 30 years: +40 %: 360 mins: Summer	65.522	65.522	0.822	0.822	564.4	2716.194	0.000	6032.570	0.0	0.000	31.062	OK
FEH: 30 years: +40 %: 360 mins: Winter	65.522	65.522	0.822	0.822	371.8	2711.096	0.000	6032.582	0.0	0.000	31.191	OK
FEH: 30 years: +40 %: 480 mins: Summer	65.522	65.522	0.822	0.822	454.4	2714.427	0.000	6195.514	0.0	0.000	31.107	OK
FEH: 30 years: +40 %: 480 mins: Winter	65.522	65.522	0.822	0.822	294.0	2711.411	0.000	6195.677	0.0	0.000	31.183	OK
FEH: 30 years: +40 %: 600 mins: Summer	65.522	65.522	0.822	0.822	377.7	2715.818	0.000	6313.844	0.0	0.000	31.071	OK
FEH: 30 years: +40 %: 600 mins: Winter	65.522	65.522	0.822	0.822	243.7	2711.187	0.000	6314.483	0.0	0.000	31.189	OK
FEH: 100 years: +40 %: 15 mins: Summer	65.773	65.775	1.073	1.075	3498.0	3835.066	0.000	858.058	0.0	0.000	2.664	OK
FEH: 100 years: +40 %: 15 mins: Winter	65.770	65.771	1.070	1.071	3286.1	3818.431	0.000	858.089	0.0	0.000	3.087	OK
FEH: 100 years: +40 %: 30 mins: Summer	65.797	65.797	1.097	1.097	2306.3	3929.279	0.000	1712.380	0.0	0.000	0.273	OK
FEH: 100 years: +40 %: 30 mins: Winter	65.797	65.798	1.097	1.098	2164.5	3930.544	0.000	1712.446	0.0	0.000	0.241	OK
FEH: 100 years: +40 %: 60 mins: Summer	65.751	65.752	1.051	1.052	1973.8	3744.083	0.000	3334.879	0.0	0.000	4.974	OK
FEH: 100 years: +40 %: 60 mins: Winter	65.744	65.744	1.044	1.044	1587.3	3714.335	0.000	3335.041	0.0	0.000	5.729	OK
FEH: 100 years: +40 %: 120 mins: Summer	65.615	65.615	0.915	0.915	1454.4	3204.608	0.000	5908.037	0.0	0.000	18.666	OK
FEH: 100 years: +40 %: 120 mins: Winter	65.595	65.595	0.895	0.895	1046.6	3128.059	0.000	5908.814	0.0	0.000	20.609	OK
FEH: 100 years: +40 %: 180 mins: Summer	65.522	65.522	0.822	0.822	1142.2	2725.200	0.000	6252.977	0.0	0.000	30.833	OK
FEH: 100 years: +40 %: 180 mins: Winter	65.522	65.522	0.822	0.822	787.2	2714.337	0.000	6253.567	0.0	0.000	31.109	OK
FEH: 100 years: +40 %: 240 mins: Summer	65.522	65.522	0.822	0.822	944.3	2722.870	0.000	6488.532	0.0	0.000	30.892	OK
FEH: 100 years: +40 %: 240 mins: Winter	65.522	65.522	0.822	0.822	635.0	2713.749	0.000	6488.953	0.0	0.000	31.124	OK
FEH: 100 years: +40 %: 360 mins: Summer	65.522	65.522	0.822	0.822	699.9	2718.080	0.000	6797.525	0.0	0.000	31.014	OK
FEH: 100 years: +40 %: 360 mins: Winter	65.522	65.522	0.822	0.822	461.0	2713.074	0.000	6797.081	0.0	0.000	31.141	OK
FEH: 100 years: +40 %: 480 mins: Summer	65.522	65.522	0.822	0.822	563.3	2715.988	0.000	6997.303	0.0	0.000	31.067	OK
FEH: 100 years: +40 %: 480 mins: Winter	65.522	65.522	0.822	0.822	364.5	2709.974	0.000	6997.730	0.0	0.000	31.220	OK
FEH: 100 years: +40 %: 600 mins: Summer	65.522	65.522	0.822	0.822	467.9	2714.559	0.000	7142.381	0.0	0.000	31.103	OK
FEH: 100 years: +40 %: 600 mins: Winter	65.522	65.522	0.822	0.822	301.9	2712.063	0.000	7142.687	0.0	0.000	31.167	OK

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Report Details:	Company Address:			
Type: Stormwater Controls Summary Storm Phase: Phase	AKTII White Collar Factory, 1 Old Street Yard London EC1Y 8AF			



Summary Results for Infiltration Basin 3: Rank By: Max. US Depth

Storm Event	Max. US Level (m)	Max. DS Level (m)	Max. US Depth (m)	Max. DS Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Floode d Volume (m³)	Total Lost Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Percentage Available (%)	Status
FEH: 2 years: +40 %: 15 mins: Summer	60.202	60.202	0.702	0.702	1244.4	4719.954	0.000	52.450	84.4	120.010	23.349	OK
FEH: 2 years: +40 %: 15 mins: Winter	60.202	60.201	0.702	0.701	1169.4	4720.121	0.000	52.450	97.0	117.975	23.346	OK
FEH: 2 years: +40 %: 30 mins: Summer	60.212	60.212	0.712	0.712	803.6	4790.318	0.000	104.997	97.8	252.777	22.206	OK
FEH: 2 years: +40 %: 30 mins: Winter	60.211	60.212	0.711	0.712	754.2	4788.327	0.000	104.993	97.5	256.305	22.239	OK
FEH: 2 years: +40 %: 60 mins: Summer	60.213	60.214	0.713	0.714	683.1	4803.084	0.000	209.819	136.1	467.754	21.999	OK
FEH: 2 years: +40 %: 60 mins: Winter	60.213	60.214	0.713	0.714	549.3	4802.843	0.000	209.820	106.6	468.860	22.003	OK
FEH: 2 years: +40 %: 120 mins: Summer	60.228	60.228	0.728	0.728	584.6	4904.461	0.000	419.126	120.2	887.839	20.353	OK
FEH: 2 years: +40 %: 120 mins: Winter	60.226	60.226	0.726	0.726	420.7	4890.786	0.000	419.137	220.9	880.957	20.575	OK
FEH: 2 years: +40 %: 180 mins: Summer	60.228	60.228	0.728	0.728	485.2	4903.509	0.000	627.210	191.1	1101.416	20.368	OK
FEH: 2 years: +40 %: 180 mins: Winter	60.224	60.224	0.724	0.724	334.4	4878.439	0.000	627.245	167.3	1110.620	20.775	OK
FEH: 2 years: +40 %: 240 mins: Summer	60.223	60.223	0.723	0.723	413.6	4874.123	0.000	834.333	115.2	1255.106	20.845	OK
FEH: 2 years: +40 %: 240 mins: Winter	60.218	60.218	0.718	0.718	278.1	4835.572	0.000	834.407	170.8	1250.133	21.471	OK
FEH: 2 years: +40 %: 360 mins: Summer	60.212	60.212	0.712	0.712	317.4	4792.723	0.000	1246.454	198.1	1406.063	22.167	OK
FEH: 2 years: +40 %: 360 mins: Winter	60.204	60.204	0.704	0.704	209.1	4733.001	0.000	1246.552	95.0	1377.587	23.137	OK
FEH: 2 years: +40 %: 480 mins: Summer	60.200	60.199	0.699	0.699	259.7	4702.833	0.000	1655.995	102.4	1433.792	23.627	OK
FEH: 2 years: +40 %: 480 mins: Winter	60.191	60.190	0.691	0.690	168.1	4638.216	0.000	1656.173	89.2	1416.677	24.676	OK
FEH: 2 years: +40 %: 600 mins: Summer	60.188	60.188	0.688	0.688	218.3	4619.236	0.000	2063.176	121.9	1422.847	24.985	OK
FEH: 2 years: +40 %: 600 mins: Winter	60.178	60.178	0.678	0.678	140.8	4548.263	0.000	2063.439	99.1	1396.825	26.137	OK
FEH: 30 years: +40 %: 15 mins: Summer	60.291	60.291	0.791	0.791	2906.5	5360.538	0.000	52.991	230.6	285.675	12.946	OK
FEH: 30 years: +40 %: 15 mins: Winter	60.291	60.291	0.791	0.791	2730.2	5361.654	0.000	52.992	233.1	284.190	12.928	OK
FEH: 30 years: +40 %: 30 mins: Summer	60.318	60.319	0.818	0.819	1903.7	5560.751	0.000	106.278	300.8	674.559	9.695	OK
FEH: 30 years: +40 %: 30 mins: Winter	60.319	60.319	0.819	0.819	1786.6	5563.831	0.000	106.282	302.0	675.892	9.645	OK
FEH: 30 years: +40 %: 60 mins: Summer	60.329	60.329	0.829	0.829	1618.3	5635.517	0.000	212.310	327.8	1250.893	8.481	OK
FEH: 30 years: +40 %: 60 mins: Winter	60.328	60.328	0.828	0.828	1301.4	5630.303	0.000	212.323	325.1	1248.112	8.565	OK
FEH: 30 years: +40 %: 120 mins: Summer	60.339	60.339	0.839	0.839	1220.8	5709.488	0.000	422.972	355.4	2000.995	7.279	OK
FEH: 30 years: +40 %: 120 mins: Winter	60.333	60.333	0.833	0.833	878.5	5669.236	0.000	423.016	340.2	1998.747	7.933	OK

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FEH: 30 years: +40 %: 180 mins: Summer	60.333	60.333	0.833	0.833	965.7	5667.735	0.000	632.018	339.3	2387.582	7.957	OK
FEH: 30 years: +40 %: 180 mins: Winter	60.324	60.324	0.824	0.824	665.5	5598.332	0.000	632.097	314.2	2400.308	9.084	OK
FEH: 30 years: +40 %: 240 mins: Summer	60.324	60.324	0.824	0.824	800.5	5599.934	0.000	839.993	315.0	2644.320	9.058	OK
FEH: 30 years: +40 %: 240 mins: Winter	60.312	60.312	0.812	0.812	538.4	5510.264	0.000	840.140	283.5	2619.541	10.515	OK
FEH: 30 years: +40 %: 360 mins: Summer	60.304	60.304	0.804	0.804	594.1	5457.240	0.000	1253.683	265.7	2840.276	11.376	OK
FEH: 30 years: +40 %: 360 mins: Winter	60.288	60.288	0.788	0.788	391.3	5340.052	0.000	1253.898	229.0	2857.788	13.279	OK
FEH: 30 years: +40 %: 480 mins: Summer	60.286	60.286	0.786	0.786	478.2	5327.755	0.000	1664.931	310.3	2920.360	13.479	OK
FEH: 30 years: +40 %: 480 mins: Winter	60.268	60.268	0.768	0.768	309.5	5197.331	0.000	1665.266	193.6	2906.985	15.597	OK
FEH: 30 years: +40 %: 600 mins: Summer	60.272	60.272	0.772	0.772	397.5	5220.367	0.000	2074.143	194.7	2911.147	15.222	OK
FEH: 30 years: +40 %: 600 mins: Winter	60.253	60.253	0.753	0.753	256.5	5084.353	0.000	2074.604	181.5	2885.429	17.431	OK
FEH: 100 years: +40 %: 15 mins: Summer	60.329	60.330	0.829	0.830	3681.4	5639.001	0.000	53.227	326.7	390.736	8.424	OK
FEH: 100 years: +40 %: 15 mins: Winter	60.329	60.330	0.829	0.830	3458.4	5642.832	0.000	53.228	327.3	390.741	8.362	OK
FEH: 100 years: +40 %: 30 mins: Summer	60.365	60.365	0.865	0.865	2427.2	5899.087	0.000	106.817	432.6	928.630	4.200	OK
FEH: 100 years: +40 %: 30 mins: Winter	60.365	60.366	0.865	0.866	2277.9	5903.404	0.000	106.821	434.8	928.897	4.130	OK
FEH: 100 years: +40 %: 60 mins: Summer	60.380	60.380	0.880	0.880	2077.3	6008.303	0.000	213.294	481.2	1699.194	2.427	OK
FEH: 100 years: +40 %: 60 mins: Winter	60.377	60.377	0.877	0.877	1670.5	5988.919	0.000	213.312	474.1	1699.604	2.741	OK
FEH: 100 years: +40 %: 120 mins: Summer	60.386	60.386	0.886	0.886	1530.6	6053.771	0.000	424.389	501.2	2601.823	1.688	OK
FEH: 100 years: +40 %: 120 mins: Winter	60.378	60.378	0.878	0.878	1101.5	5995.272	0.000	424.445	474.9	2605.966	2.638	OK
FEH: 100 years: +40 %: 180 mins: Summer	60.378	60.378	0.878	0.878	1202.1	5993.297	0.000	633.771	475.0	3070.700	2.670	OK
FEH: 100 years: +40 %: 180 mins: Winter	60.365	60.365	0.865	0.865	828.5	5897.220	0.000	633.882	431.9	3074.049	4.231	OK
FEH: 100 years: +40 %: 240 mins: Summer	60.366	60.366	0.866	0.866	993.8	5910.572	0.000	842.064	437.8	3353.893	4.014	OK
FEH: 100 years: +40 %: 240 mins: Winter	60.349	60.349	0.849	0.849	668.3	5786.185	0.000	842.209	385.8	3350.086	6.034	OK
FEH: 100 years: +40 %: 360 mins: Summer	60.343	60.343	0.843	0.843	736.6	5742.085	0.000	1256.379	368.3	3611.263	6.750	OK
FEH: 100 years: +40 %: 360 mins: Winter	60.323	60.323	0.823	0.823	485.2	5590.905	0.000	1256.669	311.5	3607.979	9.205	OK
FEH: 100 years: +40 %: 480 mins: Summer	60.323	60.323	0.823	0.823	592.8	5595.617	0.000	1668.301	313.1	3733.056	9.128	OK
FEH: 100 years: +40 %: 480 mins: Winter	60.301	60.301	0.801	0.801	383.6	5430.008	0.000	1668.692	257.0	3731.580	11.818	OK
FEH: 100 years: +40 %: 600 mins: Summer	60.306	60.306	0.806	0.806	492.5	5470.884	0.000	2078.081	270.2	3709.244	11.154	OK
FEH: 100 years: +40 %: 600 mins: Winter	60.283	60.283	0.783	0.783	317.7	5300.441	0.000	2078.619	217.2	3711.536	13.922	OK

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Storm Phase: Phase	White Collar Factory, 1 Old Street Yard London EC1Y 8AF			



Summary Results for Infiltration Basin 2: Rank By: Max. US Depth

Storm Event	Max. US Level (m)	Max. DS Level (m)	Max. US Depth (m)	Max. DS Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Total Lost Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Percentage Available (%)	Status
FEH: 2 years: +40 %: 15 mins: Summer	57.682	57.682	0.182	0.182	1959.3	1540.794	0.000	110.071	0.0	0.000	80.868	OK
FEH: 2 years: +40 %: 15 mins: Winter	57.682	57.682	0.182	0.182	1843.6	1540.790	0.000	110.071	0.0	0.000	80.868	OK
FEH: 2 years: +40 %: 30 mins: Summer	57.711	57.711	0.211	0.211	1303.8	1788.430	0.000	220.958	0.0	0.000	77.793	OK
FEH: 2 years: +40 %: 30 mins: Winter	57.711	57.710	0.211	0.210	1229.3	1786.661	0.000	220.952	0.0	0.000	77.815	OK
FEH: 2 years: +40 %: 60 mins: Summer	57.739	57.739	0.239	0.239	1117.3	2033.724	0.000	443.521	0.0	0.000	74.748	OK
FEH: 2 years: +40 %: 60 mins: Winter	57.739	57.739	0.239	0.239	912.5	2032.559	0.000	443.514	0.0	0.000	74.762	OK
FEH: 2 years: +40 %: 120 mins: Summer	57.812	57.812	0.312	0.312	978.9	2665.799	0.000	894.343	0.0	0.000	66.899	OK
FEH: 2 years: +40 %: 120 mins: Winter	57.811	57.811	0.311	0.311	721.0	2661.649	0.000	894.299	0.0	0.000	66.951	OK
FEH: 2 years: +40 %: 180 mins: Summer	57.845	57.845	0.345	0.345	825.5	2962.749	0.000	1345.954	0.0	0.000	63.212	OK
FEH: 2 years: +40 %: 180 mins: Winter	57.845	57.845	0.345	0.345	587.0	2959.493	0.000	1345.905	0.0	0.000	63.252	OK
FEH: 2 years: +40 %: 240 mins: Summer	57.862	57.862	0.362	0.362	707.6	3105.626	0.000	1796.151	0.0	0.000	61.438	OK
FEH: 2 years: +40 %: 240 mins: Winter	57.861	57.861	0.361	0.361	495.8	3101.806	0.000	1796.109	0.0	0.000	61.485	OK
FEH: 2 years: +40 %: 360 mins: Summer	57.865	57.865	0.365	0.365	549.9	3131.603	0.000	2688.939	0.0	0.000	61.115	OK
FEH: 2 years: +40 %: 360 mins: Winter	57.864	57.864	0.364	0.364	380.6	3127.158	0.000	2688.623	0.0	0.000	61.170	OK
FEH: 2 years: +40 %: 480 mins: Summer	57.843	57.843	0.343	0.343	451.4	2944.381	0.000	3567.860	0.0	0.000	63.440	OK
FEH: 2 years: +40 %: 480 mins: Winter	57.844	57.844	0.344	0.344	305.6	2953.472	0.000	3567.491	0.0	0.000	63.327	OK
FEH: 2 years: +40 %: 600 mins: Summer	57.815	57.815	0.315	0.315	378.4	2694.903	0.000	4432.113	0.0	0.000	66.538	OK
FEH: 2 years: +40 %: 600 mins: Winter	57.814	57.814	0.314	0.314	257.1	2689.813	0.000	4431.714	0.0	0.000	66.601	OK
FEH: 30 years: +40 %: 15 mins: Summer	57.829	57.829	0.329	0.329	4562.7	2819.620	0.000	111.689	0.0	0.000	64.989	OK
FEH: 30 years: +40 %: 15 mins: Winter	57.829	57.829	0.329	0.329	4292.2	2817.987	0.000	111.688	0.0	0.000	65.009	OK
FEH: 30 years: +40 %: 30 mins: Summer	57.923	57.923	0.423	0.423	3118.4	3653.585	0.000	225.767	0.0	0.000	54.634	OK
FEH: 30 years: +40 %: 30 mins: Winter	57.924	57.924	0.424	0.424	2934.7	3656.173	0.000	225.775	0.0	0.000	54.602	OK
FEH: 30 years: +40 %: 60 mins: Summer	58.026	58.026	0.526	0.526	2701.9	4573.867	0.000	456.818	0.0	0.000	43.207	OK
FEH: 30 years: +40 %: 60 mins: Winter	58.026	58.026	0.526	0.526	2201.6	4574.878	0.000	456.818	0.0	0.000	43.194	OK
FEH: 30 years: +40 %: 120 mins: Summer	58.152	58.152	0.652	0.652	2108.5	5729.151	0.000	928.083	0.0	0.000	28.862	OK
FEH: 30 years: +40 %: 120 mins: Winter	58.152	58.152	0.652	0.652	1565.6	5728.257	0.000	928.039	0.0	0.000	28.873	OK

Project: Infiltration Basins Baldock	Date: 19/08/2025			
	Designed by:	Checked by:	Approved By:	
	MJD			
Report Details:	Company Address:			
Type: Stormwater Controls Summary	AKTII			
Storm Phase: Phase	White Collar Factory, 1 Old Street Yard London EC1Y 8AF			

FEH: 30 years: +40 %: 180 mins: Summer	58.211	58.211	0.711	0.711	1710.4	6271.104	0.000	1402.286	0.0	0.000	22.133	OK
FEH: 30 years: +40 %: 180 mins: Winter	58.211	58.211	0.711	0.711	1230.1	6267.011	0.000	1402.163	0.0	0.000	22.183	OK
FEH: 30 years: +40 %: 240 mins: Summer	58.242	58.242	0.742	0.742	1442.5	6557.272	0.000	1875.918	0.0	0.000	18.579	OK
FEH: 30 years: +40 %: 240 mins: Winter	58.241	58.241	0.741	0.741	1021.9	6554.305	0.000	1875.809	0.0	0.000	18.616	OK
FEH: 30 years: +40 %: 360 mins: Summer	58.263	58.263	0.763	0.763	1092.4	6757.124	0.000	2816.214	0.0	0.000	16.098	OK
FEH: 30 years: +40 %: 360 mins: Winter	58.262	58.262	0.762	0.762	768.1	6747.564	0.000	2815.865	0.0	0.000	16.216	OK
FEH: 30 years: +40 %: 480 mins: Summer	58.256	58.256	0.756	0.756	883.5	6689.916	0.000	3743.373	0.0	0.000	16.932	OK
FEH: 30 years: +40 %: 480 mins: Winter	58.255	58.255	0.755	0.755	616.8	6682.857	0.000	3742.850	0.0	0.000	17.020	OK
FEH: 30 years: +40 %: 600 mins: Summer	58.235	58.235	0.735	0.735	748.3	6492.395	0.000	4657.491	0.0	0.000	19.385	OK
FEH: 30 years: +40 %: 600 mins: Winter	58.235	58.235	0.735	0.735	516.5	6495.455	0.000	4656.861	0.0	0.000	19.347	OK
FEH: 100 years: +40 %: 15 mins: Summer	57.899	57.899	0.399	0.399	5779.5	3435.258	0.000	112.449	0.0	0.000	57.345	OK
FEH: 100 years: +40 %: 15 mins: Winter	57.899	57.899	0.399	0.399	5435.2	3435.550	0.000	112.450	0.0	0.000	57.341	OK
FEH: 100 years: +40 %: 30 mins: Summer	58.029	58.029	0.529	0.529	4008.2	4597.464	0.000	228.139	0.0	0.000	42.914	OK
FEH: 100 years: +40 %: 30 mins: Winter	58.029	58.029	0.529	0.529	3772.1	4598.572	0.000	228.141	0.0	0.000	42.900	OK
FEH: 100 years: +40 %: 60 mins: Summer	58.170	58.170	0.670	0.670	3507.1	5894.829	0.000	463.609	0.0	0.000	26.805	OK
FEH: 100 years: +40 %: 60 mins: Winter	58.171	58.171	0.671	0.671	2861.2	5896.090	0.000	463.607	0.0	0.000	26.789	OK
FEH: 100 years: +40 %: 120 mins: Summer	58.321	58.321	0.821	0.821	2686.2	7297.957	0.000	944.929	0.0	0.000	9.382	OK
FEH: 100 years: +40 %: 120 mins: Winter	58.320	58.320	0.820	0.820	1999.1	7297.594	0.000	944.877	0.0	0.000	9.387	OK
FEH: 100 years: +40 %: 180 mins: Summer	58.391	58.391	0.891	0.891	2170.5	7972.081	0.000	1430.415	0.0	0.000	1.012	OK
FEH: 100 years: +40 %: 180 mins: Winter	58.391	58.391	0.891	0.891	1567.0	7970.948	0.000	1430.315	0.0	0.000	1.026	OK
FEH: 100 years: +40 %: 240 mins: Summer	58.431	58.431	0.931	0.931	1831.9	8354.487	0.000	1916.123	2.9	14.634	-3.737	Flood Risk
FEH: 100 years: +40 %: 240 mins: Winter	58.431	58.431	0.931	0.931	1301.2	8348.540	0.000	1915.883	3.5	14.222	-3.663	Flood Risk
FEH: 100 years: +40 %: 360 mins: Summer	58.465	58.465	0.965	0.965	1396.9	8681.481	0.000	2881.859	9.5	37.893	-7.797	Flood Risk
FEH: 100 years: +40 %: 360 mins: Winter	58.465	58.465	0.965	0.965	983.4	8676.861	0.000	2881.604	11.4	42.053	-7.739	Flood Risk
FEH: 100 years: +40 %: 480 mins: Summer	58.468	58.468	0.968	0.968	1141.1	8711.258	0.000	3835.863	13.3	38.917	-8.167	Flood Risk
FEH: 100 years: +40 %: 480 mins: Winter	58.468	58.468	0.968	0.968	792.1	8704.354	0.000	3835.416	7.5	39.947	-8.081	Flood Risk
FEH: 100 years: +40 %: 600 mins: Summer	58.452	58.452	0.952	0.952	957.0	8556.080	0.000	4775.710	8.2	25.117	-6.240	Flood Risk
FEH: 100 years: +40 %: 600 mins: Winter	58.453	58.452	0.953	0.952	663.6	8558.079	0.000	4775.124	3.6	25.814	-6.265	Flood Risk

Project: Infiltration Basins Baldock	Date: 19/08/2025			
	Designed by: MJD	Checked by:	Approved By:	
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase				
Company Address: AKTII White Collar Factory, 1 Old Street Yard London EC1Y 8AF				



Summary Results for Infiltration Basin 1: Rank By: Max. US Depth

Storm Event	Max. US Level (m)	Max. DS Level (m)	Max. US Depth (m)	Max. DS Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Total Lost Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Percentage Available (%)	Status
FEH: 2 years: +40 %: 15 mins: Summer	56.823	56.823	0.823	0.823	281.2	4654.798	0.000	74.404	0.0	0.000	9.259	OK
FEH: 2 years: +40 %: 15 mins: Winter	56.822	56.823	0.822	0.823	264.2	4653.680	0.000	74.404	0.0	0.000	9.280	OK
FEH: 2 years: +40 %: 30 mins: Summer	56.823	56.823	0.823	0.823	181.6	4655.841	0.000	148.769	0.0	0.000	9.238	OK
FEH: 2 years: +40 %: 30 mins: Winter	56.823	56.823	0.823	0.823	170.4	4655.664	0.000	148.769	0.0	0.000	9.242	OK
FEH: 2 years: +40 %: 60 mins: Summer	56.819	56.819	0.819	0.819	154.3	4634.428	0.000	297.129	0.0	0.000	9.656	OK
FEH: 2 years: +40 %: 60 mins: Winter	56.819	56.819	0.819	0.819	124.1	4631.879	0.000	297.128	0.0	0.000	9.705	OK
FEH: 2 years: +40 %: 120 mins: Summer	56.815	56.815	0.815	0.815	132.1	4609.150	0.000	592.746	0.0	0.000	10.148	OK
FEH: 2 years: +40 %: 120 mins: Winter	56.814	56.814	0.814	0.814	95.1	4602.426	0.000	592.745	0.0	0.000	10.279	OK
FEH: 2 years: +40 %: 180 mins: Summer	56.810	56.810	0.810	0.810	109.6	4566.444	0.000	886.099	0.0	0.000	10.981	OK
FEH: 2 years: +40 %: 180 mins: Winter	56.810	56.810	0.810	0.810	75.5	4565.511	0.000	886.097	0.0	0.000	10.999	OK
FEH: 2 years: +40 %: 240 mins: Summer	56.810	56.810	0.810	0.810	93.4	4566.139	0.000	1177.026	0.0	0.000	10.987	OK
FEH: 2 years: +40 %: 240 mins: Winter	56.810	56.810	0.810	0.810	62.8	4565.668	0.000	1177.025	0.0	0.000	10.996	OK
FEH: 2 years: +40 %: 360 mins: Summer	56.810	56.810	0.810	0.810	71.7	4565.887	0.000	1751.363	0.0	0.000	10.992	OK
FEH: 2 years: +40 %: 360 mins: Winter	56.810	56.810	0.810	0.810	47.3	4565.161	0.000	1751.363	0.0	0.000	11.006	OK
FEH: 2 years: +40 %: 480 mins: Summer	56.810	56.810	0.810	0.810	58.7	4565.727	0.000	2315.458	0.0	0.000	10.995	OK
FEH: 2 years: +40 %: 480 mins: Winter	56.810	56.810	0.810	0.810	38.0	4565.521	0.000	2315.457	0.0	0.000	10.999	OK
FEH: 2 years: +40 %: 600 mins: Summer	56.810	56.810	0.810	0.810	49.3	4565.688	0.000	2869.361	0.0	0.000	10.996	OK
FEH: 2 years: +40 %: 600 mins: Winter	56.810	56.810	0.810	0.810	31.8	4565.081	0.000	2869.355	0.0	0.000	11.007	OK
FEH: 30 years: +40 %: 15 mins: Summer	56.849	56.849	0.849	0.849	656.7	4817.263	0.000	74.651	0.0	0.000	6.091	OK
FEH: 30 years: +40 %: 15 mins: Winter	56.849	56.849	0.849	0.849	616.9	4817.236	0.000	74.651	0.0	0.000	6.092	OK
FEH: 30 years: +40 %: 30 mins: Summer	56.857	56.857	0.857	0.857	430.1	4863.172	0.000	149.455	0.0	0.000	5.196	OK
FEH: 30 years: +40 %: 30 mins: Winter	56.857	56.857	0.857	0.857	403.7	4863.379	0.000	149.456	0.0	0.000	5.192	OK
FEH: 30 years: +40 %: 60 mins: Summer	56.859	56.859	0.859	0.859	365.7	4877.872	0.000	298.865	0.0	0.000	4.910	OK
FEH: 30 years: +40 %: 60 mins: Winter	56.860	56.859	0.860	0.859	294.0	4879.456	0.000	298.866	0.0	0.000	4.879	OK
FEH: 30 years: +40 %: 120 mins: Summer	56.858	56.858	0.858	0.858	275.8	4870.068	0.000	596.783	0.0	0.000	5.062	OK
FEH: 30 years: +40 %: 120 mins: Winter	56.858	56.858	0.858	0.858	198.5	4869.576	0.000	596.785	0.0	0.000	5.072	OK

Project: Infiltration Basins Baldock	Date: 19/08/2025			
	Designed by: MJD	Checked by:	Approved By:	
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase				
Company Address: AKTII White Collar Factory, 1 Old Street Yard London EC1Y 8AF				

FEH: 30 years: +40 %: 180 mins: Summer	56.851	56.851	0.851	0.851	218.2	4824.848	0.000	892.602	0.0	0.000	5.944	OK
FEH: 30 years: +40 %: 180 mins: Winter	56.850	56.850	0.850	0.850	150.4	4820.562	0.000	892.606	0.0	0.000	6.027	OK
FEH: 30 years: +40 %: 240 mins: Summer	56.841	56.841	0.841	0.841	180.9	4764.934	0.000	1186.073	0.0	0.000	7.112	OK
FEH: 30 years: +40 %: 240 mins: Winter	56.839	56.839	0.839	0.839	121.6	4754.709	0.000	1186.074	0.0	0.000	7.311	OK
FEH: 30 years: +40 %: 360 mins: Summer	56.818	56.818	0.818	0.818	134.2	4624.818	0.000	1765.563	0.0	0.000	9.843	OK
FEH: 30 years: +40 %: 360 mins: Winter	56.814	56.814	0.814	0.814	88.4	4603.102	0.000	1765.567	0.0	0.000	10.266	OK
FEH: 30 years: +40 %: 480 mins: Summer	56.810	56.810	0.810	0.810	108.1	4566.244	0.000	2334.972	0.0	0.000	10.985	OK
FEH: 30 years: +40 %: 480 mins: Winter	56.810	56.810	0.810	0.810	69.9	4565.264	0.000	2334.974	0.0	0.000	11.004	OK
FEH: 30 years: +40 %: 600 mins: Summer	56.810	56.810	0.810	0.810	89.8	4566.207	0.000	2894.263	0.0	0.000	10.986	OK
FEH: 30 years: +40 %: 600 mins: Winter	56.810	56.810	0.810	0.810	58.0	4565.222	0.000	2894.267	0.0	0.000	11.005	OK
FEH: 100 years: +40 %: 15 mins: Summer	56.862	56.862	0.862	0.862	831.8	4892.891	0.000	74.764	0.0	0.000	4.617	OK
FEH: 100 years: +40 %: 15 mins: Winter	56.862	56.862	0.862	0.862	781.4	4893.302	0.000	74.765	0.0	0.000	4.609	OK
FEH: 100 years: +40 %: 30 mins: Summer	56.873	56.873	0.873	0.873	548.4	4964.144	0.000	149.780	0.0	0.000	3.228	OK
FEH: 100 years: +40 %: 30 mins: Winter	56.873	56.873	0.873	0.873	514.7	4964.398	0.000	149.781	0.0	0.000	3.223	OK
FEH: 100 years: +40 %: 60 mins: Summer	56.880	56.880	0.880	0.880	469.4	5004.916	0.000	299.714	0.0	0.000	2.433	OK
FEH: 100 years: +40 %: 60 mins: Winter	56.880	56.880	0.880	0.880	377.4	5006.879	0.000	299.716	0.0	0.000	2.395	OK
FEH: 100 years: +40 %: 120 mins: Summer	56.880	56.880	0.880	0.880	345.8	5005.834	0.000	598.745	0.0	0.000	2.415	OK
FEH: 100 years: +40 %: 120 mins: Winter	56.880	56.880	0.880	0.880	248.9	5008.233	0.000	598.747	0.0	0.000	2.369	OK
FEH: 100 years: +40 %: 180 mins: Summer	56.873	56.873	0.873	0.873	271.6	4964.753	0.000	895.795	0.0	0.000	3.216	OK
FEH: 100 years: +40 %: 180 mins: Winter	56.873	56.873	0.873	0.873	187.2	4963.211	0.000	895.797	0.0	0.000	3.246	OK
FEH: 100 years: +40 %: 240 mins: Summer	56.864	56.864	0.864	0.864	224.5	4908.305	0.000	1190.584	0.0	0.000	4.317	OK
FEH: 100 years: +40 %: 240 mins: Winter	56.863	56.863	0.863	0.863	151.0	4902.168	0.000	1190.587	0.0	0.000	4.436	OK
FEH: 100 years: +40 %: 360 mins: Summer	56.842	56.842	0.842	0.842	166.4	4773.172	0.000	1773.016	0.0	0.000	6.951	OK
FEH: 100 years: +40 %: 360 mins: Winter	56.839	56.839	0.839	0.839	109.6	4755.145	0.000	1773.020	0.0	0.000	7.302	OK
FEH: 100 years: +40 %: 480 mins: Summer	56.818	56.818	0.818	0.818	133.9	4624.912	0.000	2345.406	0.0	0.000	9.841	OK
FEH: 100 years: +40 %: 480 mins: Winter	56.813	56.813	0.813	0.813	86.7	4595.656	0.000	2345.412	0.0	0.000	10.411	OK
FEH: 100 years: +40 %: 600 mins: Summer	56.810	56.810	0.810	0.810	111.3	4566.274	0.000	2907.528	0.0	0.000	10.984	OK
FEH: 100 years: +40 %: 600 mins: Winter	56.810	56.810	0.810	0.810	71.8	4565.316	0.000	2907.541	0.0	0.000	11.003	OK

Project: Infiltration Basins Baldock	Date: 19/08/2025			
	Designed by: MJD	Checked by:	Approved By:	
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase	Company Address: AKTII White Collar Factory, 1 Old Street Yard London EC1Y 8AF			

 Summary Results for Infiltration Basin 7: Rank By: Max. US Depth

Storm Event	Max. US Level (m)	Max. DS Level (m)	Max. US Depth (m)	Max. DS Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Total Lost Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Percentage Available (%)	Status
FEH: 2 years: +40 %: 15 mins: Summer	70.107	70.107	0.607	0.607	535.6	1773.710	0.000	8.430	0.0	0.000	48.268	OK
FEH: 2 years: +40 %: 15 mins: Winter	70.107	70.107	0.607	0.607	503.3	1773.696	0.000	8.430	0.0	0.000	48.269	OK
FEH: 2 years: +40 %: 30 mins: Summer	70.126	70.126	0.626	0.626	345.9	1831.983	0.000	16.931	0.0	0.000	46.569	OK
FEH: 2 years: +40 %: 30 mins: Winter	70.126	70.126	0.626	0.626	324.6	1831.539	0.000	16.930	0.0	0.000	46.582	OK
FEH: 2 years: +40 %: 60 mins: Summer	70.144	70.144	0.644	0.644	294.0	1890.923	0.000	33.993	0.0	0.000	44.850	OK
FEH: 2 years: +40 %: 60 mins: Winter	70.144	70.144	0.644	0.644	236.4	1890.785	0.000	33.993	0.0	0.000	44.854	OK
FEH: 2 years: +40 %: 120 mins: Summer	70.190	70.190	0.690	0.690	251.6	2036.497	0.000	68.582	0.0	0.000	40.604	OK
FEH: 2 years: +40 %: 120 mins: Winter	70.190	70.190	0.690	0.690	181.1	2036.348	0.000	68.581	0.0	0.000	40.608	OK
FEH: 2 years: +40 %: 180 mins: Summer	70.213	70.213	0.713	0.713	208.8	2112.210	0.000	103.319	0.0	0.000	38.396	OK
FEH: 2 years: +40 %: 180 mins: Winter	70.213	70.213	0.713	0.713	143.9	2112.476	0.000	103.318	0.0	0.000	38.388	OK
FEH: 2 years: +40 %: 240 mins: Summer	70.227	70.227	0.727	0.727	178.0	2158.615	0.000	138.104	0.0	0.000	37.042	OK
FEH: 2 years: +40 %: 240 mins: Winter	70.228	70.228	0.728	0.728	119.7	2159.378	0.000	138.104	0.0	0.000	37.020	OK
FEH: 2 years: +40 %: 360 mins: Summer	70.243	70.243	0.743	0.743	136.6	2208.762	0.000	207.650	0.0	0.000	35.580	OK
FEH: 2 years: +40 %: 360 mins: Winter	70.243	70.243	0.743	0.743	90.0	2210.032	0.000	207.650	0.0	0.000	35.543	OK
FEH: 2 years: +40 %: 480 mins: Summer	70.248	70.248	0.748	0.748	111.8	2226.990	0.000	276.990	0.0	0.000	35.048	OK
FEH: 2 years: +40 %: 480 mins: Winter	70.249	70.249	0.749	0.749	72.3	2228.931	0.000	276.989	0.0	0.000	34.991	OK
FEH: 2 years: +40 %: 600 mins: Summer	70.250	70.250	0.750	0.750	93.9	2231.444	0.000	346.095	0.0	0.000	34.918	OK
FEH: 2 years: +40 %: 600 mins: Winter	70.250	70.250	0.750	0.750	60.6	2233.864	0.000	346.096	0.0	0.000	34.847	OK
FEH: 30 years: +40 %: 15 mins: Summer	70.205	70.206	0.705	0.706	1250.9	2086.929	0.000	8.575	0.0	0.000	39.133	OK
FEH: 30 years: +40 %: 15 mins: Winter	70.205	70.205	0.705	0.705	1175.0	2086.917	0.000	8.575	0.0	0.000	39.133	OK
FEH: 30 years: +40 %: 30 mins: Summer	70.252	70.252	0.752	0.752	819.3	2240.099	0.000	17.331	0.0	0.000	34.666	OK
FEH: 30 years: +40 %: 30 mins: Winter	70.252	70.253	0.752	0.753	768.9	2240.699	0.000	17.332	0.0	0.000	34.648	OK
FEH: 30 years: +40 %: 60 mins: Summer	70.298	70.298	0.798	0.798	696.5	2392.034	0.000	35.001	0.0	0.000	30.234	OK
FEH: 30 years: +40 %: 60 mins: Winter	70.299	70.299	0.799	0.799	560.1	2392.467	0.000	35.002	0.0	0.000	30.222	OK
FEH: 30 years: +40 %: 120 mins: Summer	70.364	70.364	0.864	0.864	525.4	2611.342	0.000	70.912	0.0	0.000	23.838	OK
FEH: 30 years: +40 %: 120 mins: Winter	70.364	70.364	0.864	0.864	378.1	2611.728	0.000	70.914	0.0	0.000	23.827	OK

Project: Infiltration Basins Baldock	Date: 19/08/2025			
	Designed by: MJD	Checked by:	Approved By:	
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase	Company Address: AKTII White Collar Factory, 1 Old Street Yard London EC1Y 8AF			

FEH: 30 years: +40 %: 180 mins: Summer	70.398	70.398	0.898	0.898	415.6	2727.121	0.000	107.063	0.0	0.000	20.461	OK
FEH: 30 years: +40 %: 180 mins: Winter	70.398	70.398	0.898	0.898	286.4	2727.431	0.000	107.066	0.0	0.000	20.452	OK
FEH: 30 years: +40 %: 240 mins: Summer	70.419	70.419	0.919	0.919	344.5	2798.897	0.000	143.304	0.0	0.000	18.368	OK
FEH: 30 years: +40 %: 240 mins: Winter	70.420	70.420	0.920	0.920	231.7	2799.322	0.000	143.306	0.0	0.000	18.355	OK
FEH: 30 years: +40 %: 360 mins: Summer	70.442	70.443	0.942	0.943	255.7	2877.786	0.000	215.800	0.0	0.000	16.067	OK
FEH: 30 years: +40 %: 360 mins: Winter	70.443	70.443	0.943	0.943	168.4	2878.757	0.000	215.802	0.0	0.000	16.039	OK
FEH: 30 years: +40 %: 480 mins: Summer	70.454	70.454	0.954	0.954	205.8	2916.092	0.000	288.181	0.0	0.000	14.950	OK
FEH: 30 years: +40 %: 480 mins: Winter	70.454	70.454	0.954	0.954	133.2	2917.555	0.000	288.185	0.0	0.000	14.907	OK
FEH: 30 years: +40 %: 600 mins: Summer	70.459	70.459	0.959	0.959	171.1	2934.588	0.000	360.376	0.0	0.000	14.410	OK
FEH: 30 years: +40 %: 600 mins: Winter	70.460	70.460	0.960	0.960	110.4	2936.636	0.000	360.381	0.0	0.000	14.350	OK
FEH: 100 years: +40 %: 15 mins: Summer	70.249	70.250	0.749	0.750	1584.4	2231.413	0.000	8.641	0.0	0.000	34.919	OK
FEH: 100 years: +40 %: 15 mins: Winter	70.249	70.250	0.749	0.750	1488.4	2231.795	0.000	8.642	0.0	0.000	34.908	OK
FEH: 100 years: +40 %: 30 mins: Summer	70.311	70.311	0.811	0.811	1044.6	2434.007	0.000	17.519	0.0	0.000	29.010	OK
FEH: 100 years: +40 %: 30 mins: Winter	70.311	70.311	0.811	0.811	980.4	2434.430	0.000	17.520	0.0	0.000	28.998	OK
FEH: 100 years: +40 %: 60 mins: Summer	70.372	70.372	0.872	0.872	894.0	2637.920	0.000	35.489	0.0	0.000	23.063	OK
FEH: 100 years: +40 %: 60 mins: Winter	70.372	70.372	0.872	0.872	718.9	2638.520	0.000	35.491	0.0	0.000	23.045	OK
FEH: 100 years: +40 %: 120 mins: Summer	70.446	70.447	0.946	0.947	658.7	2891.544	0.000	72.032	0.0	0.000	15.666	OK
FEH: 100 years: +40 %: 120 mins: Winter	70.447	70.447	0.947	0.947	474.1	2891.908	0.000	72.033	0.0	0.000	15.655	OK
FEH: 100 years: +40 %: 180 mins: Summer	70.487	70.487	0.987	0.987	517.4	3029.933	0.000	108.879	0.0	0.000	11.629	OK
FEH: 100 years: +40 %: 180 mins: Winter	70.487	70.487	0.987	0.987	356.5	3030.206	0.000	108.881	0.0	0.000	11.621	OK
FEH: 100 years: +40 %: 240 mins: Summer	70.512	70.512	1.012	1.012	427.7	3118.711	0.000	145.859	0.0	0.000	9.040	OK
FEH: 100 years: +40 %: 240 mins: Winter	70.512	70.512	1.012	1.012	287.6	3118.928	0.000	145.862	0.0	0.000	9.034	OK
FEH: 100 years: +40 %: 360 mins: Summer	70.542	70.542	1.042	1.042	317.0	3222.673	0.000	219.930	0.0	0.000	6.008	OK
FEH: 100 years: +40 %: 360 mins: Winter	70.542	70.542	1.042	1.042	208.8	3223.575	0.000	219.934	0.0	0.000	5.982	OK
FEH: 100 years: +40 %: 480 mins: Summer	70.557	70.557	1.057	1.057	255.1	3277.308	0.000	293.946	0.0	0.000	4.415	OK
FEH: 100 years: +40 %: 480 mins: Winter	70.558	70.558	1.058	1.058	165.1	3278.749	0.000	293.953	0.0	0.000	4.372	OK
FEH: 100 years: +40 %: 600 mins: Summer	70.566	70.566	1.066	1.066	211.9	3307.028	0.000	367.803	0.0	0.000	3.548	OK
FEH: 100 years: +40 %: 600 mins: Winter	70.566	70.566	1.066	1.066	136.7	3309.009	0.000	367.812	0.0	0.000	3.490	OK

Project: Infiltration Basins Baldock	Date: 19/08/2025			
	Designed by:	Checked by:	Approved By:	
	MJD			
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase	Company Address: AKTII White Collar Factory, 1 Old Street Yard London EC1Y 8AF			



Summary Results for Infiltration Basin 8: Rank By: Max. US Depth

Storm Event	Max. US Level (m)	Max. DS Level (m)	Max. US Depth (m)	Max. DS Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Total Lost Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Percentage Available (%)	Status
FEH: 2 years: +40 %: 15 mins: Summer	72.215	72.216	0.215	0.216	265.9	98.747	0.000	33.135	0.0	0.000	80.788	OK
FEH: 2 years: +40 %: 15 mins: Winter	72.214	72.216	0.214	0.216	249.8	98.506	0.000	33.334	0.0	0.000	80.835	OK
FEH: 2 years: +40 %: 30 mins: Summer	72.249	72.249	0.249	0.249	171.7	115.258	0.000	70.282	0.0	0.000	77.575	OK
FEH: 2 years: +40 %: 30 mins: Winter	72.248	72.249	0.248	0.249	161.1	114.916	0.000	70.454	0.0	0.000	77.642	OK
FEH: 2 years: +40 %: 60 mins: Summer	72.257	72.257	0.257	0.257	145.9	119.387	0.000	142.324	0.0	0.000	76.772	OK
FEH: 2 years: +40 %: 60 mins: Winter	72.257	72.257	0.257	0.257	117.4	119.208	0.000	142.526	0.0	0.000	76.807	OK
FEH: 2 years: +40 %: 120 mins: Summer	72.307	72.307	0.307	0.307	124.9	144.743	0.000	263.466	0.0	0.000	71.839	OK
FEH: 2 years: +40 %: 120 mins: Winter	72.302	72.302	0.302	0.302	89.9	142.279	0.000	263.373	0.0	0.000	72.318	OK
FEH: 2 years: +40 %: 180 mins: Summer	72.312	72.312	0.312	0.312	103.7	147.530	0.000	309.565	0.0	0.000	71.297	OK
FEH: 2 years: +40 %: 180 mins: Winter	72.300	72.300	0.300	0.300	71.4	141.005	0.000	309.504	0.0	0.000	72.566	OK
FEH: 2 years: +40 %: 240 mins: Summer	72.304	72.304	0.305	0.304	88.4	143.508	0.000	341.130	0.0	0.000	72.079	OK
FEH: 2 years: +40 %: 240 mins: Winter	72.282	72.282	0.282	0.282	59.4	131.964	0.000	341.087	0.0	0.000	74.325	OK
FEH: 2 years: +40 %: 360 mins: Summer	72.275	72.275	0.275	0.275	67.8	128.386	0.000	383.064	0.0	0.000	75.021	OK
FEH: 2 years: +40 %: 360 mins: Winter	72.233	72.233	0.233	0.233	44.7	107.215	0.000	383.036	0.0	0.000	79.140	OK
FEH: 2 years: +40 %: 480 mins: Summer	72.238	72.238	0.238	0.238	55.5	109.707	0.000	409.154	0.0	0.000	78.656	OK
FEH: 2 years: +40 %: 480 mins: Winter	72.179	72.179	0.179	0.179	35.9	80.879	0.000	409.112	0.0	0.000	84.264	OK
FEH: 2 years: +40 %: 600 mins: Summer	72.202	72.202	0.202	0.202	46.6	91.823	0.000	428.232	0.0	0.000	82.135	OK
FEH: 2 years: +40 %: 600 mins: Winter	72.130	72.129	0.130	0.129	30.1	57.617	0.000	428.221	0.0	0.000	88.790	OK
FEH: 30 years: +40 %: 15 mins: Summer	72.497	72.498	0.497	0.498	621.0	249.972	0.000	40.109	0.0	0.000	51.365	OK
FEH: 30 years: +40 %: 15 mins: Winter	72.496	72.497	0.496	0.497	583.3	249.745	0.000	40.315	0.0	0.000	51.410	OK
FEH: 30 years: +40 %: 30 mins: Summer	72.592	72.592	0.592	0.592	406.7	306.927	0.000	87.553	0.0	0.000	40.284	OK
FEH: 30 years: +40 %: 30 mins: Winter	72.592	72.593	0.592	0.593	381.7	306.953	0.000	87.610	0.0	0.000	40.279	OK
FEH: 30 years: +40 %: 60 mins: Summer	72.653	72.654	0.653	0.654	345.8	345.081	0.000	183.000	0.0	0.000	32.861	OK
FEH: 30 years: +40 %: 60 mins: Winter	72.656	72.656	0.656	0.656	278.0	346.999	0.000	182.624	0.0	0.000	32.488	OK
FEH: 30 years: +40 %: 120 mins: Summer	72.704	72.703	0.704	0.703	260.8	377.675	0.000	370.933	0.0	0.000	26.520	OK
FEH: 30 years: +40 %: 120 mins: Winter	72.709	72.709	0.709	0.709	187.7	381.312	0.000	369.962	0.0	0.000	25.812	OK

Project: Infiltration Basins Baldock	Date: 19/08/2025			
	Designed by:	Checked by:	Approved By:	
	MJD			
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase	Company Address: AKTII White Collar Factory, 1 Old Street Yard London EC1Y 8AF			

FEH: 30 years: +40 %: 180 mins: Summer	72.700	72.699	0.700	0.699	206.3	374.877	0.000	537.482	0.0	0.000	27.064	OK
FEH: 30 years: +40 %: 180 mins: Winter	72.701	72.701	0.701	0.701	142.2	375.716	0.000	536.527	0.0	0.000	26.901	OK
FEH: 30 years: +40 %: 240 mins: Summer	72.682	72.681	0.682	0.681	171.0	363.109	0.000	659.878	0.0	0.000	29.354	OK
FEH: 30 years: +40 %: 240 mins: Winter	72.676	72.676	0.676	0.676	115.0	359.917	0.000	659.939	0.0	0.000	29.975	OK
FEH: 30 years: +40 %: 360 mins: Summer	72.634	72.635	0.634	0.635	126.9	333.171	0.000	716.571	0.0	0.000	35.179	OK
FEH: 30 years: +40 %: 360 mins: Winter	72.613	72.613	0.613	0.613	83.6	319.353	0.000	716.621	0.0	0.000	37.867	OK
FEH: 30 years: +40 %: 480 mins: Summer	72.586	72.586	0.586	0.586	102.2	302.614	0.000	753.157	0.0	0.000	41.124	OK
FEH: 30 years: +40 %: 480 mins: Winter	72.545	72.545	0.545	0.545	66.1	277.790	0.000	753.167	0.0	0.000	45.953	OK
FEH: 30 years: +40 %: 600 mins: Summer	72.538	72.537	0.538	0.537	84.9	273.604	0.000	779.887	0.0	0.000	46.768	OK
FEH: 30 years: +40 %: 600 mins: Winter	72.478	72.478	0.478	0.478	54.8	238.593	0.000	779.947	0.0	0.000	53.580	OK
FEH: 100 years: +40 %: 15 mins: Summer	72.613	72.614	0.613	0.614	786.5	320.025	0.000	42.846	0.0	0.000	37.736	OK
FEH: 100 years: +40 %: 15 mins: Winter	72.613	72.614	0.613	0.614	738.9	320.157	0.000	43.032	0.0	0.000	37.710	OK
FEH: 100 years: +40 %: 30 mins: Summer	72.736	72.737	0.736	0.737	518.6	399.648	0.000	94.615	0.0	0.000	22.245	OK
FEH: 100 years: +40 %: 30 mins: Winter	72.737	72.737	0.737	0.737	486.7	399.866	0.000	94.632	0.0	0.000	22.202	OK
FEH: 100 years: +40 %: 60 mins: Summer	72.823	72.823	0.823	0.823	443.8	459.093	0.000	200.005	0.0	0.000	10.679	OK
FEH: 100 years: +40 %: 60 mins: Winter	72.827	72.827	0.827	0.827	356.9	461.396	0.000	199.606	0.0	0.000	10.231	OK
FEH: 100 years: +40 %: 120 mins: Summer	72.881	72.881	0.881	0.881	327.0	499.846	0.000	407.006	0.0	0.000	2.750	OK
FEH: 100 years: +40 %: 120 mins: Winter	72.889	72.889	0.889	0.889	235.3	505.796	0.000	405.846	0.0	0.000	1.593	OK
FEH: 100 years: +40 %: 180 mins: Summer	72.877	72.877	0.877	0.877	256.8	497.173	0.000	593.292	0.0	0.000	3.270	OK
FEH: 100 years: +40 %: 180 mins: Winter	72.881	72.880	0.881	0.880	177.0	499.595	0.000	591.783	0.0	0.000	2.799	OK
FEH: 100 years: +40 %: 240 mins: Summer	72.858	72.858	0.858	0.858	212.3	483.545	0.000	755.751	0.0	0.000	5.922	OK
FEH: 100 years: +40 %: 240 mins: Winter	72.858	72.858	0.858	0.858	142.8	483.754	0.000	754.398	0.0	0.000	5.881	OK
FEH: 100 years: +40 %: 360 mins: Summer	72.808	72.808	0.808	0.808	157.4	448.288	0.000	888.521	0.0	0.000	12.781	OK
FEH: 100 years: +40 %: 360 mins: Winter	72.793	72.793	0.793	0.793	103.7	437.684	0.000	888.567	0.0	0.000	14.844	OK
FEH: 100 years: +40 %: 480 mins: Summer	72.757	72.757	0.757	0.757	126.7	413.098	0.000	933.485	0.0	0.000	19.628	OK
FEH: 100 years: +40 %: 480 mins: Winter	72.724	72.724	0.724	0.724	82.0	391.514	0.000	933.575	0.0	0.000	23.827	OK
FEH: 100 years: +40 %: 600 mins: Summer	72.707	72.707	0.707	0.707	105.2	379.765	0.000	966.022	0.0	0.000	26.113	OK
FEH: 100 years: +40 %: 600 mins: Winter	72.656	72.656	0.656	0.656	67.9	346.997	0.000	966.145	0.0	0.000	32.488	OK



Index Method - SuDS Treatment Train Calculations

Treatment Train 1

Risk Description	Residential roofs
Risk Category	Very low
Discharge To	Ground Water
Description of treatment train	Residential roofs with domestic soakaway

Index approach - necessary treatment requirement

TSS	Metals	Hydrocarbons
0.2	0.2	0.05

Treatment Stage	SUDS Measure	Further Detail	TSS	Metals	Hydrocarbons	TSS Factored	Metals Factored	Hydrocarbons Factored
Stage 1	Infiltration - A soil with good contaminant attenuation potential of at least 300 mm in depth	Soakaway	0.4	0.3	0.3	0.4	0.3	0.3
Total						0.4	0.3	0.3

OK

OK

OK

Treatment Train 2

Risk Description	Other roofs (typically commercial/ industrial roofs)
Risk Category	Low
Discharge To	Ground Water
Description of treatment train	Commercial, Eductaional, Local Centre roofs

Index approach - necessary treatment requirement

TSS	Metals	Hydrocarbons
0.3	0.3	0.05

Treatment Stage	SUDS Measure	Further Detail	TSS	Metals	Hydrocarbons	TSS Factored	Metals Factored	Hydrocarbons Factored
Stage 1	Detention basin	Permeable paving	0.5	0.5	0.6	0.5	0.5	0.6
Total						0.5	0.5	0.6

OK

OK

OK

Treatment Train 3

Risk Description	Individual property driveways, residential car parks, low traffic roads (eg cul de sacs, homezones and general access roads) and non- residential car parking with infrequent change (eg schools, offices) ie < 300 traffic movements/day
Risk Category	Low
Discharge To	Ground Water
Description of treatment train	Residential driveways, car parks and minor access roads

Index approach - necessary treatment requirement

TSS	Metals	Hydrocarbons
0.5	0.4	0.4

Treatment Stage	SUDS Measure	Further Detail	TSS	Metals	Hydrocarbons	TSS Factored	Metals Factored	Hydrocarbons Factored
Stage 1	Permeable pavement	Permeable paving	0.7	0.6	0.7	0.7	0.6	0.7
Total						0.7	0.6	0.7

OK

OK

OK

Treatment Train 4

Risk Description	Commercial yard and delivery areas, non-residential car parking with frequent change (eg hospitals, retail), all roads except low traffic roads and trunk roads/motorways
Risk Category	Medium
Discharge To	Ground Water
Description of treatment train	Main site roads with runoff collected via filter strips and discharged to an infiltration basin

Index approach - necessary treatment requirement

TSS	Metals	Hydrocarbons
0.7	0.6	0.7

Treatment Stage	SUDS Measure	Further Detail	TSS	Metals	Hydrocarbons	TSS Factored	Metals Factored	Hydrocarbons Factored
Stage 1	Filter strip	Filter strip	0.4	0.4	0.5	0.4	0.4	0.5
Stage 2	Pond	Infiltration basin	0.7	0.7	0.5	0.7	0.7	0.5
Total						1.1	1.1	1

OK

OK

OK



Index Method - SuDS Treatment Train Calculations

Treatment Train 5

Risk Description	Commercial yard and delivery areas, non-residential car parking with frequent change (eg hospitals, retail), all roads except low traffic roads and trunk roads/motorways
Risk Category	Medium
Discharge To	Ground Water
Description of treatment train	Main site roads with runoff collected via filter drains and discharged to an infiltration basin

Index approach - necessary treatment requirement

TSS	Metals	Hydrocarbons
0.7	0.6	0.7

Treatment Stage	SUDS Measure	Further Detail	TSS	Metals	Hydrocarbons	TSS Factored	Metals Factored	Hydrocarbons Factored
Stage 1	Filter drain	Filter drain	0.4	0.4	0.4	0.4	0.4	0.4
Stage 2	Pond	Infiltration basin	0.7	0.7	0.5	0.7	0.7	0.5
Total						1.1	1.1	0.9

OK

OK

OK

Treatment Train 6

Risk Description	Commercial yard and delivery areas, non-residential car parking with frequent change (eg hospitals, retail), all roads except low traffic roads and trunk roads/motorways
Risk Category	Medium
Discharge To	Ground Water
Description of treatment train	Main site roads with runoff collected via swales and discharged to an infiltration basin

Index approach - necessary treatment requirement

TSS	Metals	Hydrocarbons
0.7	0.6	0.7

Treatment Stage	SUDS Measure	Further Detail	TSS	Metals	Hydrocarbons	TSS Factored	Metals Factored	Hydrocarbons Factored
Stage 1	Swale	Swale	0.5	0.6	0.6	0.5	0.6	0.6
Stage 2	Pond	Infiltration basin	0.7	0.7	0.5	0.7	0.7	0.5
Total						1.2	1.3	1.1

OK

OK

OK

Treatment Train 7

Risk Description	Commercial yard and delivery areas, non-residential car parking with frequent change (eg hospitals, retail), all roads except low traffic roads and trunk roads/motorways
Risk Category	Medium
Discharge To	Ground Water
Description of treatment train	Main site roads with runoff collected via bio-retention systems and discharged to an infiltration basin

Index approach - necessary treatment requirement

TSS	Metals	Hydrocarbons
0.7	0.6	0.7

Treatment Stage	SUDS Measure	Further Detail	TSS	Metals	Hydrocarbons	TSS Factored	Metals Factored	Hydrocarbons Factored
Stage 1	Bioretention system	Bio-retention system	0.8	0.8	0.8	0.8	0.8	0.8
Stage 2	Pond	Infiltration basin	0.7	0.7	0.5	0.7	0.7	0.5
Total						1.5	1.5	1.3

OK

OK

OK

B.12 Foul Water Flows

One method of calculating the peak foul flow is to use the statistical or "discharge unit" method outlined in BS 12056. This method of design is based on probability theory to estimate the maximum peak flows from appliances. It assumes that only a proportion of appliances will be in use at any one time and that appliances on a factory, school, etc. would be used more frequently than in domestic installations. For this reason discharge units (DU) are given higher values in congested and commercial use than they are for domestic.

Alternatively, foul flows can be computed using the "population method". This method calculates a daily discharge volume from typical figures of discharge per person, per day. It then factors it evenly over the day, to calculate base flow. A peaking factor is then applied (conservatively 6 or a variable factor based upon population such as the Babbitt Formula) to determine peak flow.

Estimates can also be based on internal floor area, which can also be arrived at as a product of an assumed population density and daily discharge per person.

As to which method is the more appropriate, typically, outside the building and at the street and city scale, the population method is considered more accurate and is the preferred method utilised by sewer companies. For sizing pipes inside the building, and in drains near to the point of discharge from the building, the statistical method should be used. Consideration of high peak flows from pump stations is also required.

BS 16933-2 recommends that the statistical method can be used for the design of gravity drains and sewers where the population is less than 1000 and the population method can be used where the population is greater than 500.

B.13 Existing Foul Water

The existing site is considered to be greenfield and therefore there is currently no foul water discharge generated.

B.14 Proposed Foul Water

The foul water discharge from the residential plots can be estimated based on the Sewers for Adoption guidance of a peak flow of 4,000 litres/day per dwelling:

Plot	No. of Dwellings	Peak Discharge (litres/day)	Peak Discharge (litres/sec)
Res01	175	700,000	8.10
Res02	40	160,000	1.85
Res03	10	40,000	0.46
Res04	155	620,000	7.18
Res05	230	920,000	10.65
Res06	120	480,000	5.56
Res07	12	48,000	0.56
Res08	730	2,920,000	33.80
Res09	115	460,000	5.32
Res10	5	20,000	0.23
Res11	5	20,000	0.23
Res12	300	1,200,000	13.89
Res13	821	3,284,000	38.01
Res14	220	880,000	10.19
Res15	10	40,000	0.46
Res16	252	1,008,000	11.67
Residential total	3200	12,800,000	148.15

For the school sites,foul water discharge has been estimated on the rate of 90 litres/day per person and an assumed 8 hour day to convert to litres/sec. For the purposes of foul flows, the educational use option for Fle01 has been considered to provide a worst case.

	No. of pupils	Peak Flow (Litres/day)	Peak Flow (Litres/sec)
Edu01	630	56,700	1.97
Edu02	630	56,700	1.97
Fle01	2,520	226,800	7.88

For the Employment Land and Local Centre plots, the foul water discharge can be estimated based on the following general rates:

- Commercial / retail - 1,980 litres/day per 100m2 (assumed 12 hour day for litres/sec)
- Office and industrial - 4,950 litres/day per 100m2 (assumed 12 hour day for litres/sec)
- Sport Centres & Gyms - 50 litres/day per person (assumed 18 hour day for litres/sec)
- Education / nursery / R&D areas - 90 litres/day per person (assumed 8 hour day for litres/sec)
- Hotel - 250 litres/day per person (assumed 24 hour day for litres/sec)
- Pub - 12 litres/day per person (assumed 12 hour day for litres/sec)
- Health Hub - 450 litres/day per person (assumed 12 hour day for litres/sec)
- Community Centre - 60 litres/day per person (assumed 12 hour day for litres/sec)

This gives:

	Area	Peak Flow (Litres/day)	Peak Flow (Litres/sec)
Office	780 m2	38,610	0.89
Research & Development	1,030 m2	6,300	0.22
Industrial	1,030 m2	50,985	1.18
	2,840 m2	95,895	2.29

	Area	Peak Flow (Litres/day)	Peak Flow (Litres/sec)
Office	15,965 m2	790,268	18.29
Indoor Sport	5,000 m2	3,846	0.06
Research & Development	21,160 m2	126,900	4.41
Industrial	21,160 m2	1,047,420	24.25
Health Hub	6,000 m2	270,000	6.25
	69,285 m2	2,238,434	53.25

	Area	Peak Flow (Litres/day)	Peak Flow (Litres/sec)
Office	3,255 m2	161,123	3.73
Research & Development	4,310 m2	26,100	0.30
Industrial	4,310 m2	213,345	4.94
	11,875 m2	400,568	8.97

	Area	Peak Flow (Litres/day)	Peak Flow (Litres/sec)
Hotel	3,500 m2	87,500	1.01
Pub	750 m2	9,000	0.21
Retail	700 m2	13860.00	0.32
Café	800 m2	15840.00	0.37
Office	550 m2	27,225	0.63
Gym	1,150 m2	11,500	0.18
Health Hub	2,250 m2	101,250	2.34
Community Centre	500 m2	12,000	0.28
Nursery	550 m2	9,900	0.34
	10,750 m2	288,075	5.68

Appendix C

SuDS Option Selection



Disposal methods

C.1 SuDS management train

A useful concept used in the development of sustainable drainage systems is the SuDS management train (sometimes referred to as the treatment train). Just as in a natural catchment, drainage techniques can be used in series to change flow and quality characteristics of the runoff in stages. There are a variety of measures that can be implemented to achieve these goals:

C.1.1 Site management / Prevention

Site management procedures are used to limit or prevent runoff and pollution and include:

- Minimising the hardened areas within the site
- Frequent maintenance of impermeable surfaces
- Minimising the use of de-icing products

C.1.2 Source control

Source control techniques will be used where possible as they control runoff at source in smaller catchments. They can also provide effective pollution control and treatment, thereby improving the quality of the effluent discharged to the receiving waters.

C.1.3 Site control

Where source control techniques do not provide adequate protection to the receiving watercourses in terms of flood protection and pollution control, site control may be required.

C.1.4 Regional control

Where large areas of public space are available regional control can be incorporated to provide additional 'communal' storage and treatment to runoff from a number of sites.

C.2 Drainage hierarchy

Based on the above and in line with the London Plan and the Sustainable Drainage Manual published by CIRIA, the following drainage hierarchy will therefore need to be considered when preparing the surface water disposal strategy:

1. Rainwater use as a resource (for example rainwater harvesting, blue roofs for irrigation)
2. Rainwater infiltration to ground at or close to source
3. Rainwater attenuation in green infrastructure features for gradual release (for example green roofs, rain gardens)
4. Rainwater discharge direct to a watercourse (unless not appropriate)
5. Controlled rainwater discharge to a surface water sewer or drain
6. Controlled rainwater discharge to a combined sewer

C.3 Assessment of SuDS techniques

C.3.1 Rainwater harvesting

This involves the capture of rainwater into a tank for re-use (usually non-potable) such as irrigation, toilet flushing or vehicle cleaning. Systems are now available which combine rain water harvesting with tanked attenuation. This means that water is stored during dry periods for re-use but released ahead of predicted storms in order to ensure that the full attenuation capacity remains available when it is needed.

It is unlikely that rainwater harvesting will be suitable for individual dwellings as the available roof area will not provide sufficient yield to meet enough of the required demand to make the system viable. However, it may be suitable on the larger buildings such as the schools and commercial buildings or as a site / regional solution where a number of dwellings or plots drain to a communal tank for reuse. Therefore, rainwater harvesting tank will be investigated as a potential SuDS solution.

C.3.2 Green / brown / blue roofs

These are used on flat or shallow pitched roofs to provide a durable roof covering which also provides thermal insulation, amenity space, biodiversity habitat as well as attenuation of rainwater. Depending on the design, these roofs can attenuate differing volumes of rainwater. The term 'blue roof' is reserved for those roofs designed to maximise water retention. This is a relatively recent area of increased focus and can involve effectively an attenuation tank at roof level which reduces (or avoids) the need for pumping of basement tanks.

Similar to rainwater harvesting, Green or Blue Roofs are likely to be more suitable for larger buildings such as schools and commercial buildings and will be considered further for these.

C.3.3 Raingardens

Raingardens are planted areas (usually close to buildings but not immediately adjacent) that allow the diversion of a portion of rainwater from either downpipes or the surrounding paved surfaces. These techniques can be incorporated into the landscaping plans for a site and are most effective where the landscaping regime is designed with the aim of capturing as much rainfall as possible. They can either allow infiltration into the ground or have tanked systems for water retention, depending on the site and soil conditions. There are also a number of vertical raingardens attached to building walls with rainwater downpipes diverted through a stacked series of planters.

Similar to rainwater harvesting, raingardens are likely to be more suitable for larger buildings such as schools and commercial buildings and will be considered further for these.

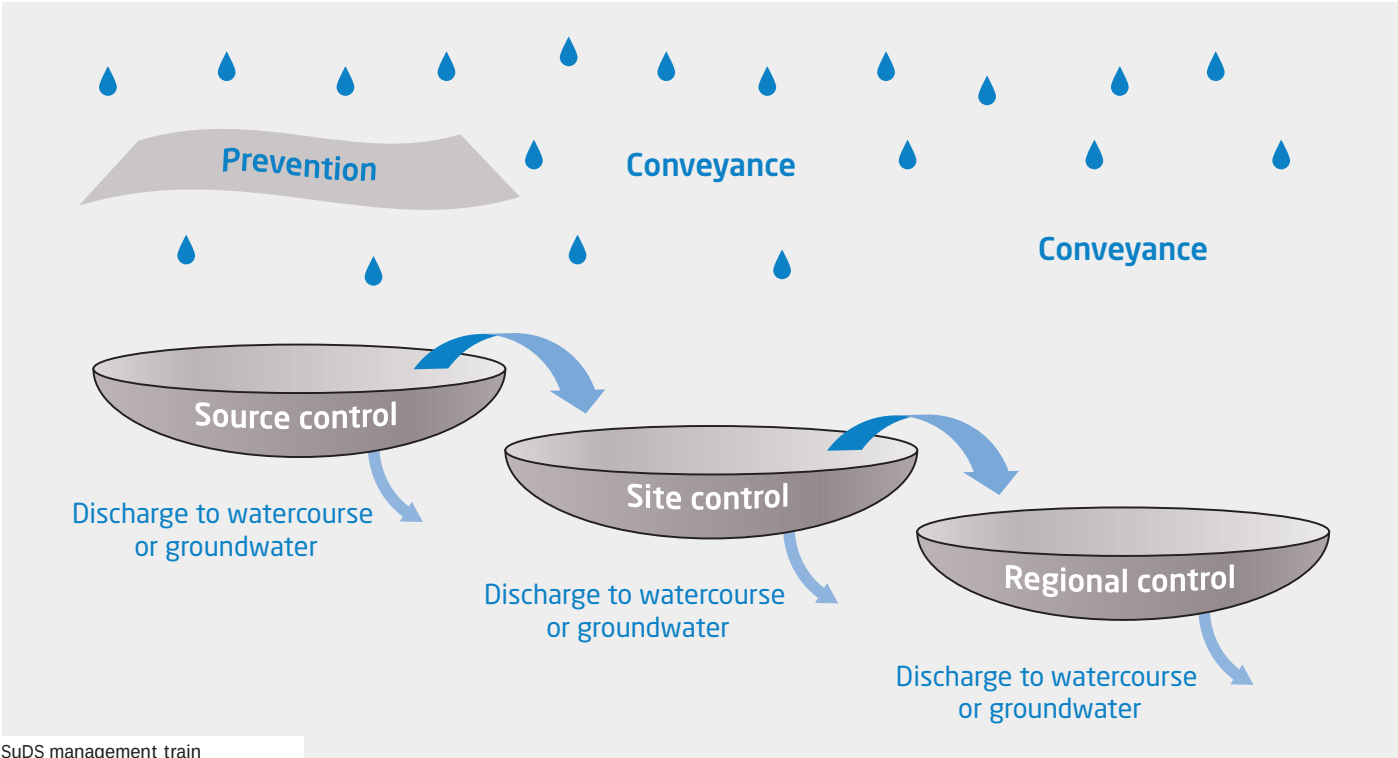
C.3.4 Bio-retention

This refers to a chain of landscaped features, potentially including reed beds, filter drains, etc. designed to hold and treat surface water. They are often used where there is a high risk of low-level pollution, for example from road runoff. However, it does require areas of open space. The design of a bio-retention system can vary widely depending on site conditions and available space. At a small scale this could include flow through planters or tree pits.

Bio-retention areas would be most suitable alongside roads, larger areas of hard landscaping and car park areas and will be considered further for these.

C.3.5 Swales

These are dry ditches used as landscape features to allow the storage, carriage and infiltration of rainwater and are often used as linear features alongside roads, footpaths or rail lines. They can also be integrated into the design of many open spaces and therefore will be considered further and could be designed for conveyance or disposal purposes.



SuDS management train

C.3.6 Infiltration

There are many different types of drainage component that can be used to facilitate infiltration. These include soakaways, infiltration trenches, infiltration blankets and infiltration basins.

Infiltration can contribute to reducing runoff rates and volumes while supporting baseflow and groundwater recharge processes. The rate at which water can be infiltrated depends on the infiltration capacity (permeability) of the surrounding soils.

The site investigation works confirm that there is average to good infiltration rates across the site and so disposal by infiltration will be possible. Infiltration techniques will be used in both Source Control and Regional Control devices. Infiltration test results are contained in Appendix G for reference.

CIRIA guidance document "C574 - Engineering in chalk" states:

Concentrated ingress of water into the chalk can initiate new dissolution features, particularly in low-density chalk, and destabilise the loose backfill of existing ones. For this reason, any soakaways should be sited well away from foundations for structures, roads or railways, as indicated below:

- in areas where dissolution features are known to be prevalent, soakaways should be avoided if at all possible but, if unavoidable, should be sited at least 20 m away from any foundations.
- where the chalk is of low density, or its density is not known, soakaways should be sited at least 10 m away from any foundations.
- where the chalk is of medium density (or higher), the closest part of the soakaway should be at least 5 m away from any foundations.

For the majority of the site, the chalk has been recorded as medium density and so the 5 m clearance will be applicable.

In the areas noted as low density, a 10 m clearance will be adopted which may mean soakaways cannot be located within individual residential plots in certain instances. In these cases, the soakaways will be located in nearby areas of communal car parking or open space. Figure C.2 shows the preliminary chalk density mapping for the site.

No dissolution features have been recorded on the site.

C.3.7 Permeable surfacing

Permeable hard surfaces which work in much the same way as traditional impermeable surfaces apart from the ability to allow rainwater to pass through. Permeable blocks are traditionally used but there are now a range of permeable asphalt and resin bound gravel pavings being used increasingly commonly. Permeable surfaces can either allow infiltration into the ground or have tanked systems for water retention, depending on the site and soil conditions. They are suitable in even the most densely built-up development. However, they're not well suited to roads carrying heavy or fast motor traffic.

Permeable surfacing will be considered extensively across the development. It is suitable for driveways in individual dwellings, general hard landscaped areas, car parks and minor roads. It is unlikely to be suitable on main site roads due to traffic volumes.

C.3.8 Detention basin / ponds

Landscape features designed to store and in some cases infiltrate rainwater. Detentions basins are usually dry, whereas a pond should retain water. These features need areas of open space but can often be combined with other sustainable drainage techniques.

Basins / ponds will form an key part of the landscape proposals and will therefore be integrated into the SuDS scheme as site or regional control measures and also be used to contain / control the existing flooding noted in Section 7. Although the basins are primarily for infiltration the basins on the northern plots are likely to be formed with lined and unlined areas to create wet areas as part of the blue / green corridor being created through the site.

C.3.9 Discharge to tidal river / dock / canals

Discharging clean rainwater directly to tidal rivers, canals or docks isn't normally a sustainable drainage technique. Other more productive techniques should be used first. However, it is generally more sustainable than discharging to the combined or surface drainage systems. Residual surface water can be discharged to tidal / large waterbodies, in some cases with no limitation on volumes. Some storage may be required to allow for outfalls becoming tide locked. Care is needed to prevent scour in the receiving waterbody and potentially to prevent pollution. Consent from the Environment Agency, the asset owner and where applicable the Canal and River Trust is required.

Although there are no adjacent rivers or ponds to discharge to, there are a number of small ditches that currently drain the fields which will be investigated further as potential disposal points.

C.3.10 Storage tanks / geocellular storage

Storage tanks are single GRP units usually located (but not necessarily) below ground level which attenuate rainwater for later slow release back into the drainage system but do not provide the wider benefits of green infrastructure sustainable drainage. They can also have the disadvantage that pumping may be required to empty the tank into the drainage system – especially if the tank is located at or below basement level. Where tanks are designed for large storm events, care is needed to ensure that they still perform a useful sustainable drainage function for low order storms.

Geocellular storage tanks are similar to storage tanks except that the volume is made up from multiple units rather than a single tank meaning they can be more flexible in terms of shape to suit constrained sites.

Storage tanks will be considered and may be necessary in certain locations, but preference will be given to the green infrastructure solutions mentioned above where possible.

C.3.11 Oversized piping

Using larger than necessary pipework creates more room to store rainwater. Potentially more sustainable than storage tanks / geocellular storage if the pipes drain by gravity and do not require pumping. However, lacks the wider benefits of the green infrastructure based techniques and so will not be considered.

C.4 Summary of the proposed SuDS strategy

Rainwater harvesting will be considered for the larger commercial and educational buildings or as a "regional" solution for groups of residential plots. It is unlikely that this will be implemented until later phases once the impact of the infiltration solutions on the existing aquifer has been assessed.

Green or blue roofs will be considered for the larger commercial and educational buildings rather than the residential plots.

Bio-retention, raingardens and swales will all form part of the strategy and will be developed alongside the landscaping proposals.

It is proposed to provide permeable paving across the development for driveways, car parks and potentially minor access roads. The underlying ground conditions will allow for this to be used for disposal purposes.

The primary SuDS strategy will be to maximise the use of infiltration. Residential plots will drain to individual soakaways within the plot where possible and to soakaways located in adjacent communal areas where the chalk density requires. Commercial buildings and roads will be drained to infiltration basins via a mixture of piped and green infrastructure.

Attenuation tanks will be considered as a last resort but green infrastructure will be prioritised.

A schematic SuDS layout is contained in Appendix D for reference.

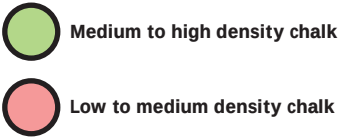
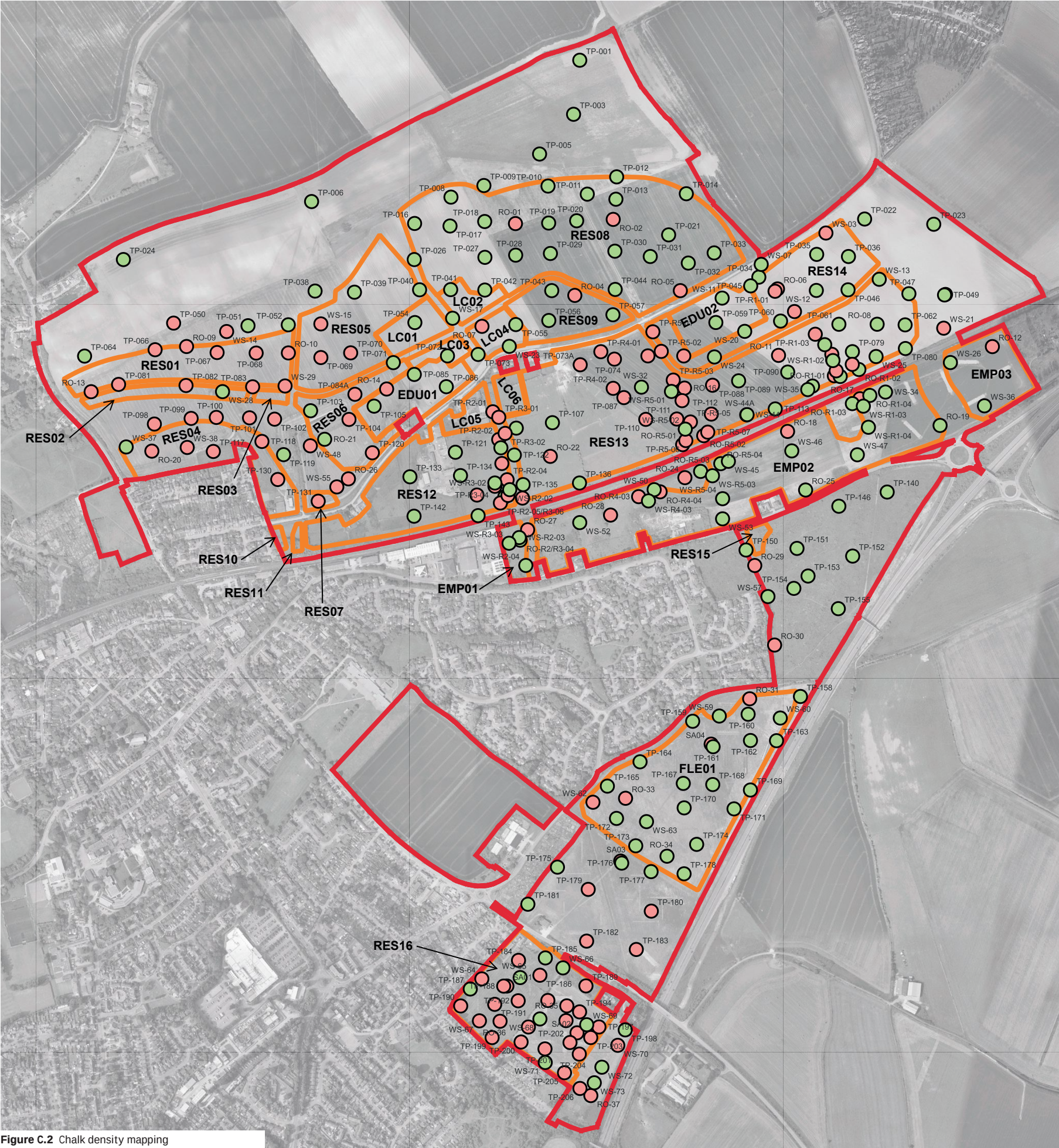
Element	Management stage	Water quantity	Water quality	Amenity & biodiversity	To be considered in scheme
Rainwater harvesting	Prevention	✓	✗	✗	✓
Green / brown / blue roof	Source control	✓	✓	✓	✓
Raingardens	Source control	✓	✓	✓	✓
Bio-retention	Source control	✓	✓	✓	✓
Permeable surfacing	Source control	✓	✓	✗	✓
Swales	Source control	✓	✓	✓	✓
Detention basin / ponds	Source control	✓	✓	✓	✓
Discharge to tidal river / dock / canals	Site control	✓	✗	✗	✓
Storage tanks / Geocellular storage	Site control	✓	✗	✗	✓
Oversized piping	Site control	✓	✗	✗	✗
Design for exceedance	Site control	✓	✗	✗	✓

Figure C.1 Summary of proposed SuDS devices

C.5 Network Rail requirements

In addition to the above, Network Rail requirements must be adhered to in the locating of SuDS devices:

- All surface and foul water drainage from the development area is directed away from Network Rail's retained land and structures into suitable drainage systems, the details of which are to be approved by Network Rail before construction starts on site.
- Water must not be caused to pond on or near railway land either during or after any construction-related activity.
- The construction of soakaways for storm or surface water drainage should not take place within 20m of the Network Rail boundary. Any new drains are to be constructed and maintained so as not to have any adverse effect upon the stability of any Network Rail equipment, structure, cutting or embankment.
- The construction of soakaways within any lease area is not permitted.
- The construction of surface water retention ponds/tanks, SuDS or flow control systems should not take place within 20m of the Network Rail boundary where these systems are proposed to be below existing track level. Full overland flow conditions should be submitted to Network Rail for approval prior to any works on site commencing.



Plot	Predominant Chalk Density
Res01	Low to medium
Res02	Low to medium
Res03	Low to medium
Res04	Low to medium
Res05	Mixed
Res06	Mixed
Res07	Low to medium
Res08	Medium to high
Res09	Medium to high
Res10	No site investigation in plot
Res11	No site investigation in plot
Res12	Medium to high
Res13	Mixed
Res14	Medium to high
Res15	Medium to high
Res16	Low to medium
Emp01	Medium to high
Emp02	Medium to high
Emp03	Medium to high
LC01	Medium to high
LC02	Medium to high
LC03	Medium to high
LC04	Medium to high
LC05	Low to medium
LC06	Low to medium
Edu01	Medium to high
Edu02	Medium to high
Fle01	Medium to high

Figure C.2 Chalk density mapping

Filter Strips

Description

Filter strips are located between areas of hardstanding and a receiving watercourse or surface water drainage system. They are vegetated strips designed to receive runoff as overland flow from upstream development.

ADVANTAGES

- Suited to installation next to large impermeable areas
- Encourages evaporation and can also help promote infiltration
- Easy to construct and has a low construction cost
- Effective pre-treatment option
- Easily integrated into landscaping and can be designed to provide aesthetic benefits

DISADVANTAGES

- Large land-take
- Not suitable on steep sites
- Not suitable for hotspot runoff or for sites with risk of groundwater contamination (unless infiltration is prevented)

PERFORMANCE

Peak flow reduction	Poor
Volume reduction	Poor
Water quality treatment	Medium
Amenity potential	Medium
Ecology potential	Medium

SITE SUITABILITY

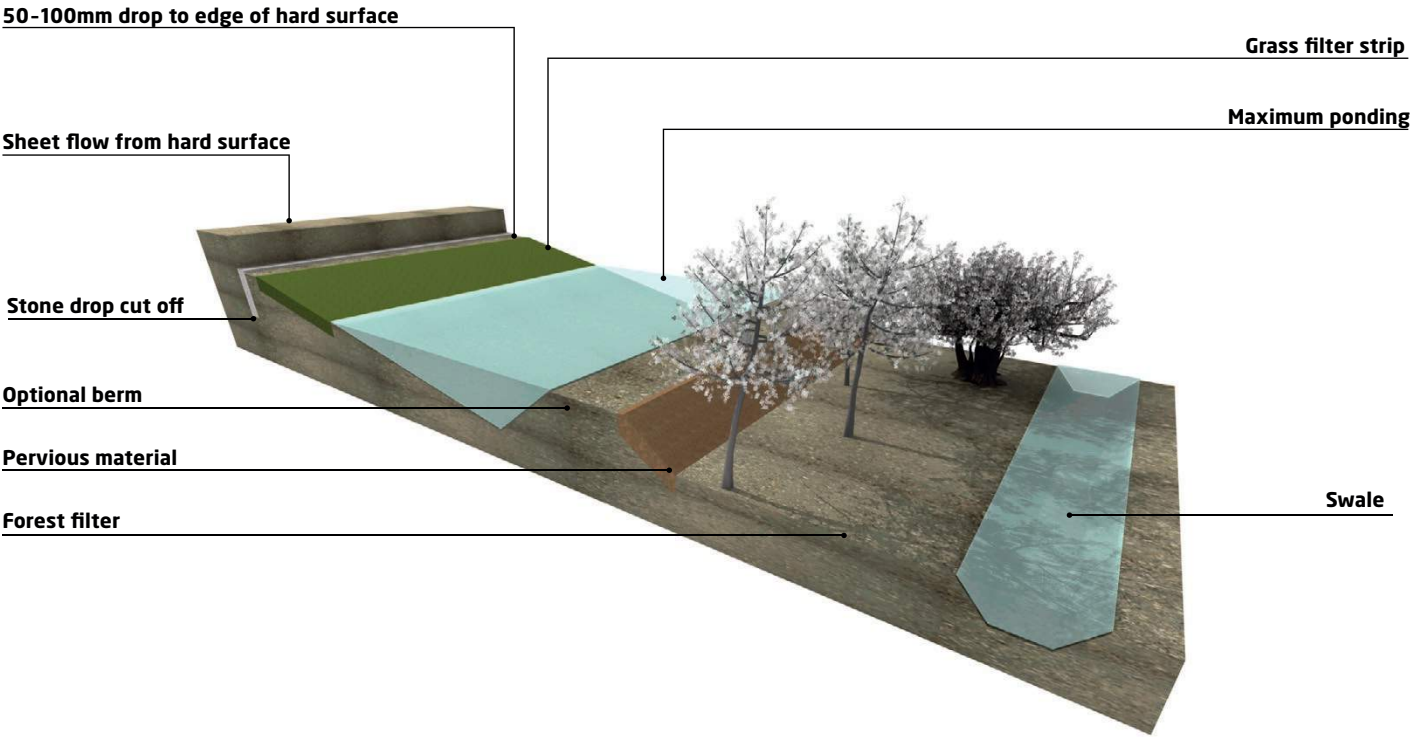
Residential	Yes
Commercial / industrial	Yes
High density	Yes
Retrofit	Yes
Contaminated site / sites above vulnerable groundwater (unless infiltration prevented)	No

COST IMPLICATION

Land-take	High
Capital cost	Low
Maintenance burden	Low

MAINTENANCE

- Removal of litter and debris
- Mowing
- Repair of damaged or eroded areas



Trenches / Soakaways

Description

Trenches are excavations 1–2 m deep filled with stone aggregate to create temporary underground storage for infiltration or filtration of stormwater runoff. Infiltration trenches (IT) allow water to filtrate to the surrounding soil whereas filtration trenches (FT) are used to filter or convey stormwater to downstream disposal systems.

ADVANTAGES

- Infiltration can reduce runoff rates and volumes from site
- Infiltration provides a significant reduction in pollutants discharging to receiving bodies
- Trenches can be incorporated into landscaping and fit well beside roadways

DISADVANTAGES

- High clogging potential without effective pre-treatment therefore not suitable for sites with fine particled soils in upstream catchments
- Build-up of pollution or blockages are difficult to see
- High historic failure rate due to poor maintenance or wrong siting of trench
- Limited to relatively small catchments
- High replacement cost if blockage does occur

PERFORMANCE

Peak flow reduction	Medium
Volume reduction	Low (FT) High (IT)
Water quality treatment	High
Amenity potential	Low
Ecology potential	Low

SITE SUITABILITY

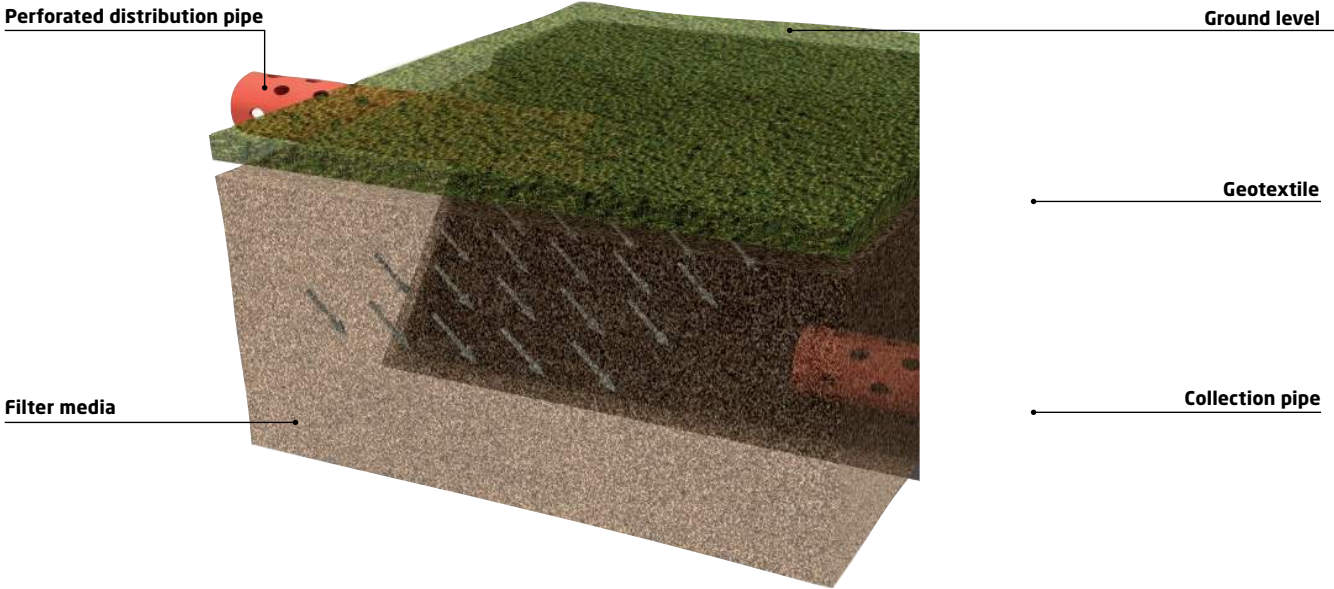
Residential	Yes
Commercial / industrial	Yes
High density	Yes
Retrofit	Yes
Contaminated site / sites above vulnerable groundwater	No (IT) Yes (FT)

COST IMPLICATION

Land-take	Low
Capital cost	Low (IT) Medium (if liner required)
Maintenance burden	Medium

MAINTENANCE

- Regular inspection for signs of clogging
- Removal of sediment from the pre-treatment system
- Removal and cleaning or replacement of stone



Swales

Description

Swales are linear vegetated drainage features in which surface water can be stored or conveyed. They can be designed to allow infiltration and should promote low design velocities to permit suspended particles to settle and remove pollutants. Swales can be used as a replacement for conventional gullies and drainage pipes.

ADVANTAGES

- Easy to incorporate into landscaping
- Good removal of pollutants
- Reduces runoff rates and volumes
- Low capital cost
- Maintenance can be incorporated into the general landscape management
- Pollution and blockages are readily visible and easy to deal with

DISADVANTAGES

- Not suitable for steep areas
- Visually significant
- Not suitable for areas with roadside parking
- Limits the opportunity to use trees for landscaping
- Risk of blockage in connecting pipework

PERFORMANCE

Peak flow reduction	Medium
Volume reduction	Medium
Water quality treatment	Good
Amenity potential	Medium
Ecology potential	Medium

SITE SUITABILITY

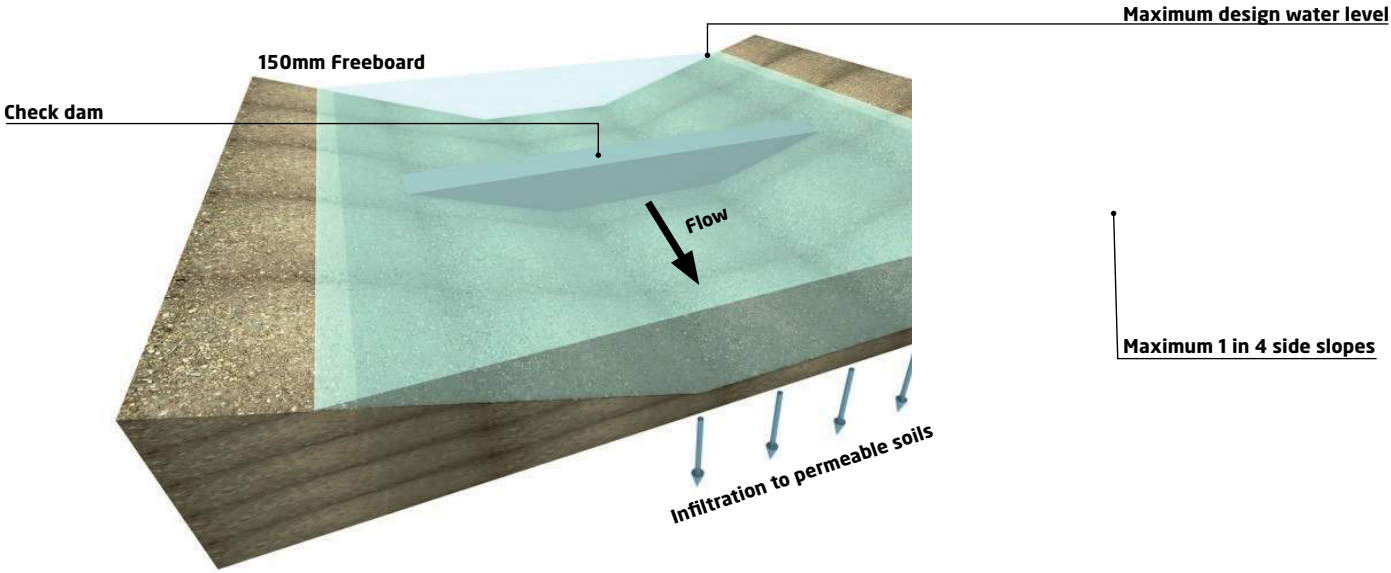
Residential	Yes
Commercial / industrial	Yes
High density	Limited
Retrofit	Limited
Contaminated site/sites above vulnerable groundwater	Yes

COST IMPLICATION

Land-take	High
Capital cost	Low
Maintenance burden	Medium

MAINTENANCE

- Removal of litter and debris
- Mowing and removal of cuttings
- Clearing debris and sediment from inlets, culverts and outlets
- Repair of damaged or eroded areas



Bioretention

Description

Bioretention areas are shallow depressions which are underdrained and rely on engineered soils and enhanced vegetation and filtration to remove pollution and reduce the downstream runoff.

ADVANTAGES

- Can be planned as landscaping features and flexible layout to fit in with overall landscaping scheme
- Effective in removing pollutants
- Can reduce rate and volume of runoff
- Well suited to installation in impermeable areas provided space is available
- Good retrofit capability

DISADVANTAGES

- Requires landscaping and management
- Prone to clogging if maintenance of the surrounding landscaping is poor
- Not suitable for areas with steep gradients

PERFORMANCE

Peak flow reduction	Medium
Volume reduction	Medium
Water quality treatment	Good
Amenity potential	Good
Ecology potential	Medium

SITE SUITABILITY

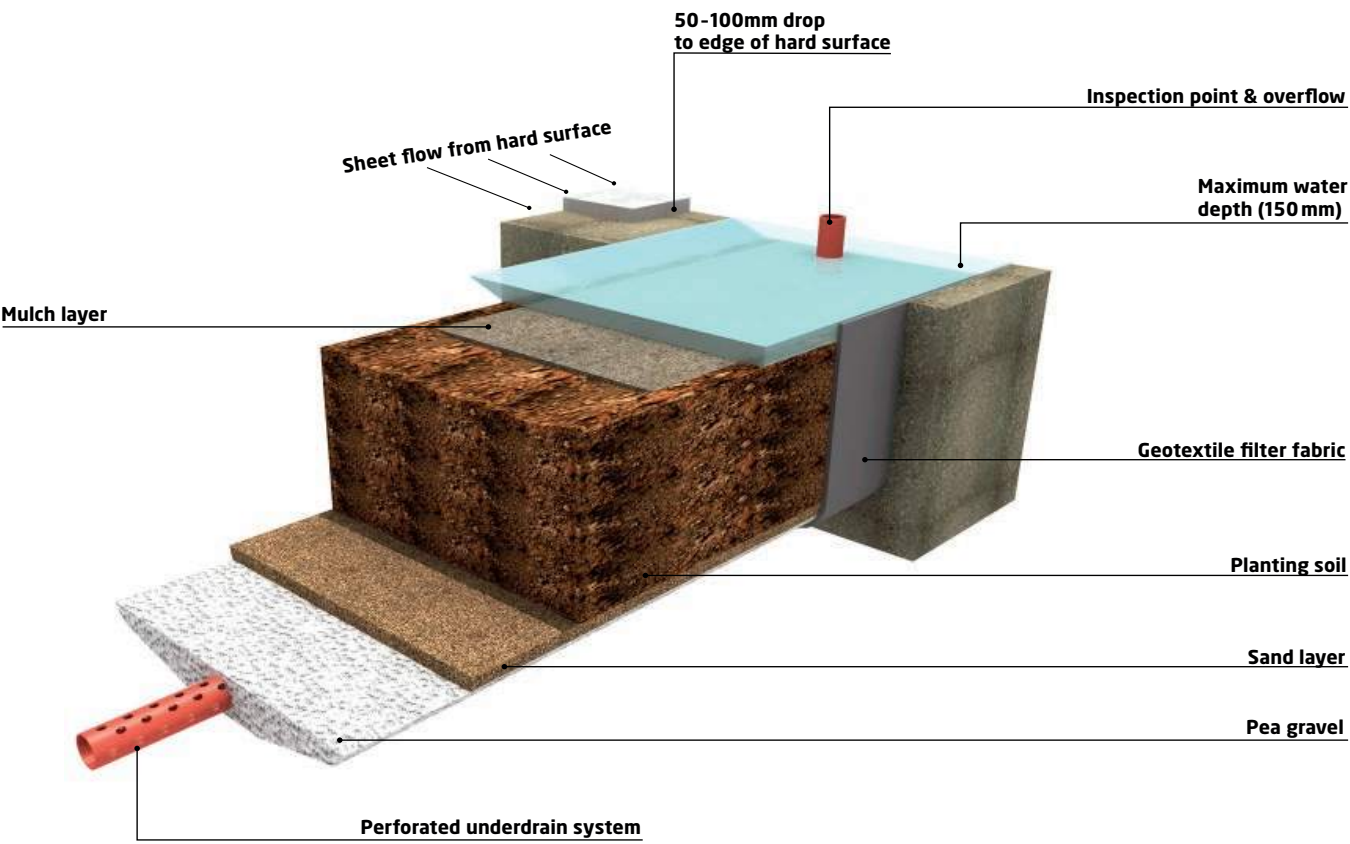
Residential	Yes
Commercial / industrial	Yes
High density	No
Retrofit	Yes
Contaminated site/sites above vulnerable groundwater	Yes

COST IMPLICATION

Land-take	High
Capital cost	Low
Maintenance burden	Medium

MAINTENANCE

- Regular inspection and removal of litter and debris
- Replacement of mulch layer
- Management of vegetation
- Soil spiking and scarifying



Pervious Pavements

Description

Pervious pavements provide a suitable pavement for traffic and /or pedestrians while allowing stormwater to infiltrate through the surface into the underlying soil. The water can be temporarily stored before infiltration to the ground or disposal to a drainage system

ADVANTAGES

- Effective in removing pollutants
- Significant reduction in rate and volume of runoff
- Good retrofit capability
- Low maintenance and no additional land-take as there is dual use of space
- Removes need for gullies and manholes
- Eliminates surface ponding and icing
- Lined systems can be used

DISADVANTAGES

- Can't be used in areas where large sediment loads may be washed on to the surface
- UK current practice is to use only in areas of low traffic volumes, low axle loads and low speed limits therefore limited range of sites
- Risk of long-term clogging and weed growth if poorly maintained

PERFORMANCE

Peak flow reduction	Good
Volume reduction	Good
Water quality treatment	Good
Amenity potential	Poor
Ecology potential	Poor

SITE SUITABILITY

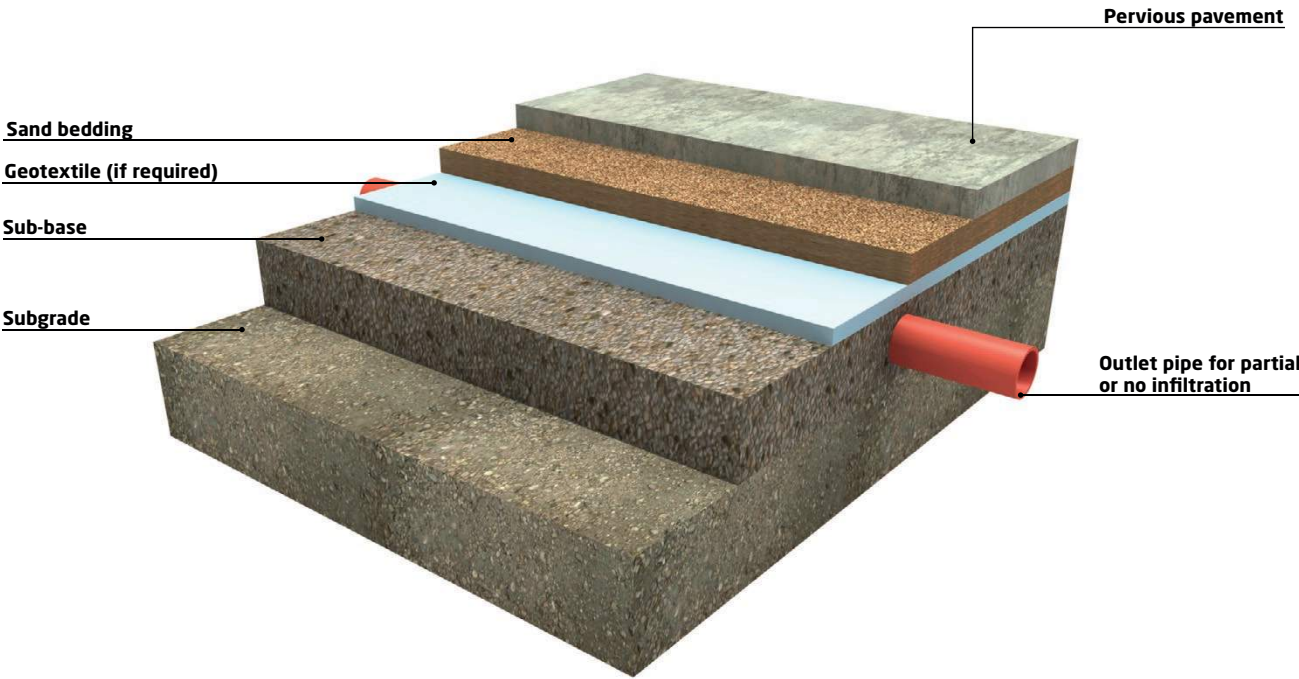
Residential	Yes
Commercial / industrial	Yes
High density	Yes
Retrofit	Yes
Contaminated site / sites above vulnerable groundwater (with liner)	Yes

COST IMPLICATION

Land-take	High
Capital cost	Medium (Net cost low)
Maintenance burden	Low

MAINTENANCE

- Sweeping
- Regular brushing and vacuuming



Geocellular / Modular Systems

Description

Modular plastic geocellular systems have a high void ratio that can be used to create an underground storage structure for attenuated flows

ADVANTAGES

- Modular and flexible (dual use) - robust, lightweight and easy to install
- High void ratio giving large storage capacity
- Can be installed in both trafficked and pedestrian areas and also beneath public open space
- Long-term physical and chemical stability

DISADVANTAGES

- No water quality treatment - purely storage

PERFORMANCE

Peak flow reduction	Good
Volume reduction (storage only)	Poor
Volume reduction (with infiltration)	Good
Water quality treatment	Poor
Amenity potential	Poor
Ecology potential	Poor

SITE SUITABILITY

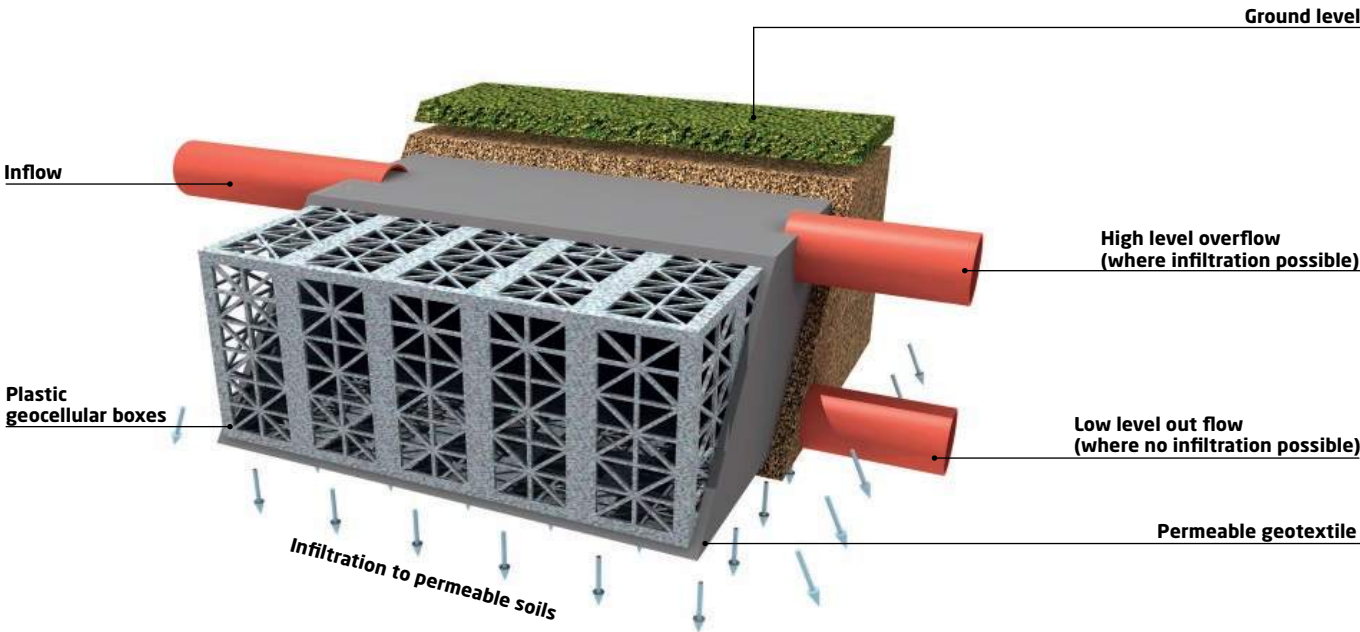
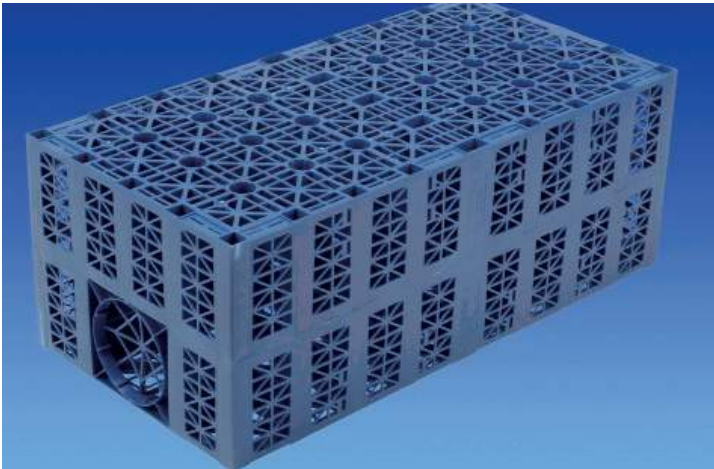
Residential	Yes
Commercial / industrial	Yes
High density	Yes
Retrofit	Yes
Contaminated site/sites above vulnerable groundwater	Yes

COST IMPLICATION

Land-take	Low
Capital cost	Low
Maintenance burden	Low

MAINTENANCE

- Regular inspection of silt traps, manholes and pipework with removal of litter and debris as necessary.



Infiltration Basins

Description

Infiltration basins are vegetated depressions designed to store runoff and infiltrate it gradually to the ground.

ADVANTAGES

- Reduces volume of runoff from area
- Effective in removing pollutants
- Contributes to groundwater recharge
- Simple and cost-effective to construct
- Changes in performance are easy to observe

DISADVANTAGES

- Potentially high failure rates due to improper siting, poor design and poor maintenance
- Requires a large, flat area
- Not appropriate for draining hotspots
- Comprehensive geotechnical investigation required to determine suitability for infiltration

PERFORMANCE

Peak flow reduction	Average
Volume reduction	Good
Water quality treatment	Good
Amenity potential	Good
Ecology potential	Good

SITE SUITABILITY

Residential	Yes
Commercial / industrial	Yes
High density	No
Retrofit	No
Contaminated site/sites above vulnerable groundwater	No

COST IMPLICATION

Land-take	High
Capital cost	Low
Maintenance burden	Low

MAINTENANCE

- Regular inspection for reductions in performance and removal of litter / debris
- Inlet and outlet cleaning
- Management of vegetation
- Regular removal of sediment

