

Please see attached updated drawings and refer to my notes in red below to clarify LCC comments.

1. 40% Allowance for Climate Change

The condition clearly states that a climate change allowance of 40% should be applied, the previously submitted drainage calculations however show a climate change allowance of 30% having been applied. **40% climate change allowance has been applied to drainage calculations, please refer to document 19310-EDGE-XX-XX-CA-C-0001_SURFACE WATER NETWORK[P01]**

2. Evidence of how Urban Creep has been included

The two widely accepted methods of demonstrating evidence of how an urban creep allowance has been applied to the development, is by applying an additional 10% within the drainage calculations or by providing an impermeable area plan that shows that a 10% allowance has been applied to the site. **Urban creep has been included by applying a 10% allowance to impermeable areas, please refer to drawing 19310-EDGE-XX-XX-DR-C-C2003_CATCHMENT ANALYSIS[P05], which shows the total impermeable areas across the site.**

Screenshots below also show how the urban creep has been applied to the simulations:

Fig1. Actual impermeable area drained by pipe.



Fig 2. Increased impermeable areas used in calculations to account for urban creep.

Network Design Table for SW

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Section Type	Auto Design
1.000	18.580	0.111	167.4	0.144	5.00	0.0	0.600	o	225	Pipe/Conduit	
1.001	36.068	0.147	245.4	0.087	0.00	0.0	0.600	o	300	Pipe/Conduit	
1.002	35.623	0.253	140.8	0.140	0.00	0.0	0.600	o	300	Pipe/Conduit	
1.003	26.998	0.180	150.0	0.043	0.00	0.0	0.600	o	375	Pipe/Conduit	
2.000	25.358	0.079	321.0	0.099	5.00	0.0	0.600	o	375	Pipe/Conduit	
1.004	36.673	0.091	403.0	0.158	0.00	0.0	0.600	o	450	Pipe/Conduit	
1.005	18.005	0.044	409.2	0.060	0.00	0.0	0.600	o	525	Pipe/Conduit	



3. Flood Water Exceedance routes



The Lead Local Flood Authority acknowledges the drainage layout that was submitted, this however only depicts an area of exceedance around the surface water attenuation pond, we would expect to see the surface water flow routes for the whole site, in order to establish the path and direction that surface water would take due to road and cover levels for example in the event that the system became overloaded or flooding to occur on site in access of the 1 in 200 year event plus climate change. **Please refer to drawing 19310-EDGE-XX-XX-DR-C-C-2009_FLOOD ROUTING PLAN[P02] for the exceedance plan showing flooding routes for extreme events (calculations undertaken for 1 in 200 year plus climate change) or in case of system failure.**

Hope this covers everything but please let us know if you need anything further.

Kind regards,


Team Leader – Civil

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