

ACO HYDRAULIC DESIGN



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Project Name: ALchemy,Western Plot Unit 04

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Project Date: 9th July 2026

Location: F48M+R2 Liverpool, UK

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+ INPUTS

M5-60: 18mm/hr

Ratio R: 0.37

RUN / OPTION	LENGTH (m)	AREA (m2)	SLOPE (%)	IMPERM. FACTOR	CALC. EQUATION	RETURN PERIOD (years)	CLIMATE CHANGE (%)	STORM DURATION (mins)	RAINFALL INTENSITY (mm/hr)	INFLOW CONTROL (l/s/m)	Point Inflow Interlinked from	Cumulative Point Inflows (l/s)	Discharge control (l/s)
1A	46.86	2,344.87	100.00	1.0	SVF	100	40	5	173.21	Free	None	0.00	None
2A	31.48	1,611.46	100.00	1.0	SVF	100	40	5	173.21	Free	None	0.00	None
3A	33.87	1,638.70	100.00	1.0	SVF	100	40	5	173.21	Free	None	0.00	None
4A	64.77	2,652.98	100.00	1.0	SVF	100	40	5	173.21	Free	None	0.00	None

+ OUTPUTS

M5-60: 18mm/hr

Ratio R: 0.37

RUN / OPTION	ACO PRODUCT	Part No.	METERAGE (m)	OUTFLOW (l/s)	CAPACITY (%)	MAX* VELOCITY (m/s)	MIN FREEBOARD (m)	EXCAVATION VOLUME (m3)	CONCRETE VOLUME (m3)
1A	Qmax Qmax 350	32810	46.86	112.94	78.73**	1.49**	0.09**	21.42	15.93
2A	Qmax Qmax 350	32810	31.48	239.68	99.08**	2.51**	0.01**	14.39	10.70
3A	Qmax Qmax 350	32810	33.87	243.73	99.20**	2.55**	0.01**	15.48	11.52
4A	Qmax Qmax 350	32810	64.77	127.78	83.66**	1.59**	0.08**	29.60	22.02

*ACO would typically suggest flow velocities of 0.7m/s or greater in channels to be considered self-cleansing velocities. Flow velocities in the upper reaches of linear drainage systems are not likely to achieve self-cleansing velocities.

**The flow in this channel varies between sub-critical and super-critical conditions so the depth / velocity calculation is not precise. However, your selected channel will have sufficient capacity to accomodate the defined flow.

Note that optimised solutions will only suggest non-turbulent, sub-critical flow regimes.

+ SUMMARY OF PARTS

ACO PRODUCT	Cumulative Product Meterage (m)	Part Number	CUMULATIVE OUTFLOW (l/s)	EXCAVATION VOLUME (m3)	CONCRETE VOLUME (m3)
Qmax Qmax 350	176.98	32810	724.13	80.88	60.17