

Summary
Total Site Area ~ 89.3 ha
Greenfield Run-Off Rates
RSK Report 680671-1-R1(100) FRA sets out the green-field run-off rates in Table 7.2 of the report.

Return Period (Years)	Peaks Flow (l/s)	Unit Discharge Rate (l/s/ha)	LLFA Unit Discharge Rate (l/s/ha)
Q_{100}	609.9	7.3	6.83
1	530.6	6.3	5.94
30	1034.0	12.3	11.58
100	1268.5	15.1	14.20

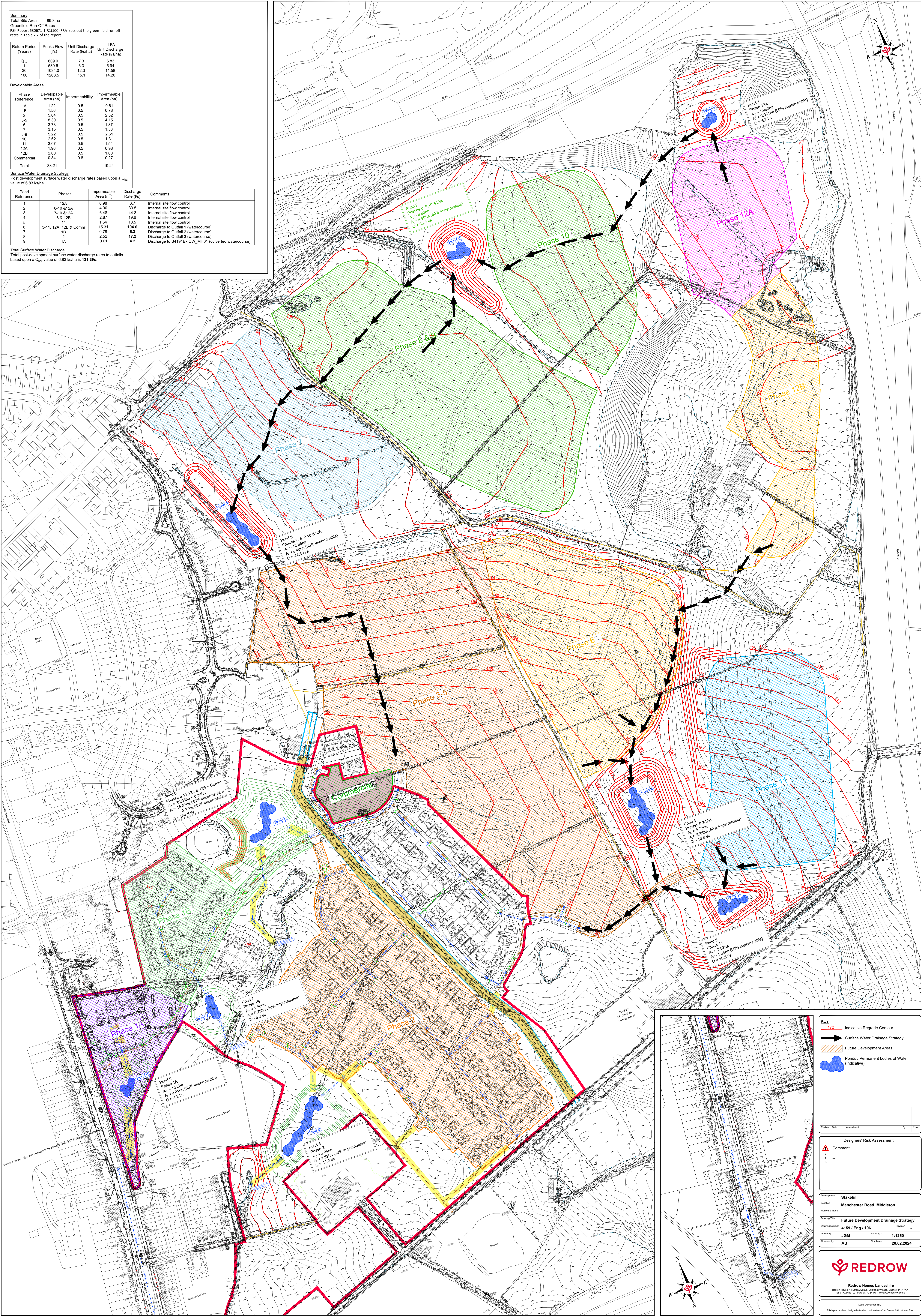
Developable Areas

Phase Reference	Developable Area (ha)	Impermeability	Impermeable Area (ha)
1A	1.22	0.5	0.61
1B	1.56	0.5	0.78
2	5.04	0.5	2.52
3-5	8.30	0.5	4.15
6	3.73	0.5	1.87
7	3.15	0.5	1.58
8-9	5.22	0.5	2.61
10	2.62	0.5	1.31
11	3.07	0.5	1.54
12A	1.96	0.5	0.98
12B	2.00	0.5	1.00
Commercial	0.34	0.8	0.27
Total	38.21		19.24

Surface Water Drainage Strategy
Post development surface water discharge rates based upon a Q_{100} value of 6.83 l/s/ha.

Pond Reference	Phases	Impermeable Area (m ²)	Discharge Rate (l/s)	Comments
1	12A	0.98	6.7	Internal site flow control
2	8-10 & 12A	4.90	33.5	Internal site flow control
3	7-10 & 12A	6.48	44.3	Internal site flow control
4	6 & 12B	2.87	19.6	Internal site flow control
5	11	1.54	10.5	Internal site flow control
6	3-11, 12A, 12B & Comm	15.31	104.6	Discharge to Outfall 1 (watercourse)
7	1B	0.78	5.3	Discharge to Outfall 2 (watercourse)
8	2	2.52	17.2	Discharge to S419/ Ex CW_MH01 (culverted watercourse)
9	1A	0.61	4.2	

Total Surface Water Discharge
Total post-development surface water discharge rates to outfalls based upon a Q_{100} value of 6.83 l/s/ha is 131.3 l/s.



KEY

- 172 Indicative Regrade Contour
- Surface Water Drainage Strategy
- Future Development Areas
- Ponds / Permanent bodies of Water (Indicative)

Revision: _____ Date: _____ Approved: _____ By: _____

Designers' Risk Assessment

Comment
1.
2.
3.

Stakehill
Location: Manchester Road, Middleton
Marketing Name: _____
Drawing Title: Future Development Drainage Strategy
Drawing Number: 4159 / Eng / 106
Drawn By: JGM
Checked By: AB
Scale: Scale A1
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