Date: 14/08/2017

Revision 'B

FALKLAND ROAD, KENTISH TOWN
SURFACE WATER DRAINAGE STRATEGY STATEMENT

PROPOSED DRAINAGE SYSTEMS

The surface water drainage system intercepts the roof run-off from the above premises. The rainwater pipework system is split into two systems, serving the front and the rear halves of the roof (refer to drawing no. 9540/SK1S).

The front half discharges to rainwater down pipes at the front of the building, which connect directly to a combined demarcation chamber, prior to the public sewer connection.

The rear half discharges to rainwater downpipes at the rear of the building, which connect to the below ground basement drainage system. A pump station receives the discharge, which pumps to the demarcation chamber. The below ground drainage system has been sized on a 1:5 year storm event (in accordance with Building Regulations Part H clauses 3.8 and 3.9 and BS EN 752:2008 Table 2). However, a retention chamber (chamber S1) has been provided for retention of a 1:100 year storm event with a 30% climate change allowance.

SURFACE WATER DISCHARGE ATTENUATION

The permissible discharge for a Brownfield Site, based on the Modified Rational Method Calculation: $Q = 2.78 \times C \times i \times A$; for the Developed Area at 254m^2, is as follows:-

- 1:5 year = 2.78 x 1.3 x 89 x 0.0254 = 8.2 l/s
- 1:30 year = 2.78 x 1.3 x 126 x 0.0254 = 11.6 l/s
- 1:100 year = 2.78 x 1.3 x 178 x 0.0254 = 16.3 l/s

As advised above, the rainwater run-off from rear half of the roof area will discharge to the basement surface water drainage system and is therefore pumped. The discharge rate has been limited to 3 l/s to provide a reduced discharge rate (betterment) for all design storm conditions exceeding a 1:5 year storm event, as follows:-

- 1:5 year = 2.78 x 1.3 x 89 x 0.0172 = 5.5 l/s + 3 l/s (restricted discharge) = 8.5 l/s
- 1:30 year = 2.78 x 1.3 x 126 x 0.0172 = 7.8 l/s + 3 l/s (restricted discharge) = 10.8 l/s
- 1:100 year = 2.78 x 1.3 x 178 x 0.0172 = 11.1 l/s + 3 l/s (restricted discharge) = 14.1 l/s

SURFACE WATER RETENTION CALCULATIONS

- Return Period: 1 in 100 Year
- Climate Change Allowance: 30%
- Total Impermeable Area: 82 square metres
- Rate of Discharge: 3 l/s

Duration of Storm	Rainfall (mm)	Rainfall with Climate Change (mm)	Total Run-off (m³)	Outfall (m³)	Storage Required (m³)
1 Min	4.4	5.72	0.36	0.18	0.18
2 Mins	7.7	10.01	0.63	0.36	0.27
5 Mins	14.8	19.24	1.21	0.90	0.31*
15 Mins	26.2	34.06	2.15	2.70	0.00
30 Mins	33.8	43.94	2.77	5.40	0.00
1 Hr	41.6	54.08	3.41	10.80	0.00
2 Hrs	49.4	64.22	4.05	21.60	0.00
4 Hrs	57.2	74.36	4.69	43.20	0.00
6 Hrs	61.8	80.34	5.07	64.80	0.00
12 Hrs	70.9	87.75	5.81	129.60	0.00
24 Hrs	80.0	104.0	6.56	259.20	0.00

* - Minimum Volume of Storage Required/to be Provided = 0.31m³