

## BELOW GROUND DRAINAGE TECHNICAL SUMMARY

<b>Project Name:</b>	Camden Street	<b>Project Number:</b>	L19065A
<b>Date:</b>	01/01/2020 (Rev. 2)	<b>Prepared by:</b>	J. Anderson

1. This technical note is a summary of the drainage strategy for construction at 140 – 146 Camden Street. Patrick Parsons are responsible for the design of all below ground drainage, however, are not responsible for any above ground drainage. The blue roof was designed by Radmat Building Products Ltd (contact [MichaelFadian@radmat.com](mailto:MichaelFadian@radmat.com)) and the above ground drainage layout was designed by Robinson Associates Ltd (contact [dhiren.suhang@robinsonengineers.co.uk](mailto:dhiren.suhang@robinsonengineers.co.uk)).
2. The site address is 140 – 146 Camden Street and is with relation to planning application reference 2014/7908/P.
3. The site is brownfield with a total site area of 0.152ha. The greenfield runoff rate for the site was calculated using Microdrainage Source Control which was found to be 0.23 l/s. Following guidance within the current London Plan, the recommended maximum discharge rate is 3 x Greenfield Runoff Rate. This equates to 0.70 l/s for this site.
4. The entirety of the site is covered by the proposed roof of the building. Five separate blue roofs are proposed to drain the roof area which is summarised as follows:

Roof	Area (m <sup>2</sup> )	No. Outfalls	Maximum Discharge Rate (l/s)
A	107.8	2	0.40
B	181.8	2	0.39
C	120.7	2	0.40
D	196.9	2	0.39
E	134.9	2	0.37
<b>Sum</b>	<b>805.1</b>	<b>10</b>	<b>1.95</b>

5. The flow restricted outfalls from the blue roofs are what is used to restrict surface water flows from the site as all surface water discharging from the site is from the blue roof. As can be seen in the table above, the maximum surface water discharge rate for the site is 1.95 l/s. This is 1.25 l/s higher than the greenfield runoff rate. This is because the blue roof designer is unable to restrict flows from the blue roofs any further.
6. The brownfield runoff rate for the site was calculated as follows:

$$Q_b = 3.61 \times C_v \times i \times A_i \quad [1]$$

Where:

$C_v$  = Volumetric Run-off Coefficient = 0.75

$A_i$  = Impermeable Area (ha) = 0.152 ha (100% Impermeability)

$i$  = Average Peak Rainfall Intensity (mm/hr) for 15-minute storm duration – Intensities shown in table below.

Return Period (yr.)	Annual Exceedance Probability (AEP)	Intensity (mm/hr)	Brownfield Runoff Rate (l/s)
1 in 1	100%	118.86	48.9
1 in 2	50%	153.52	63.2
1 in 30	3.3%	291.95	120.1
1 in 100	1%	379.99	156.3

7. In comparing the proposed discharge rates with the sites brownfield runoff rates, it can be seen that the sites runoff rates have been significantly reduced.
8. It is proposed to discharge all surface water and foul water into the Fleet Trunk Sewer via two existing laterals within the site. As the surface water is combined with the foul water at the demarcation chambers, it is not viable to restrict flows any further to meet the greenfield runoff rate requirement.
9. Discharging surface water to the surface water sewers within Bonny Street has been considered however has also not been considered to be sustainable as this would require a pumped outfall.
10. Capacity within the Fleet Trunk Sewer has been confirmed by Thames Water. The proposed connections into the existing fleet sewer has also been approved by Thames Water. For these connections, conditional approval was obtained where we are required to carry out a pre-construction and post-construction CCTV survey of the existing laterals. The pre-construction CCTV survey has been carried out and has been approved by Thames Water.