BlueRoofDesign Software

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Client:

Project: B234025_The Christie CT Redevelopment

Location: Manchester, M20 4BX

Roof Location: Level 4 Main Blue Roof (Opt.1)

Roof Details:

BlueRoof	1325 m²	x 100 %
Additional Catchment	721 m²	x 100 %
Effective Area	2046 m²	

Storage Details:

Area	1325 m²
Depth	100 mm
Porosity	95 %
Slope	none

Rainfall Details - FEH Method:

Return Period	100 years
Climate Change Factor	45 %

Summer Storm Profile

Duration	Intensity mm	Intensity mm/h	Required storage(m³)
5 min	21.5	258.1	43.1
10 min	31.4	188.4	62.1
15 min	39.2	156.7	76.6
30 min	52.0	104.1	98.4
45 min	59.9	79.8	109.7
60 min	65.9	65.9	117.3
2 hours	78.1	39.0	123.1
6 hours	98.5	16.4	114.9
24 hours	129.2	5.4	69.2
48 hours	149.1	3.1	37.6

Outflow Details:

Attenuation Control	BlueRoof Outlet
Control	Twist Std. Position 4.5
Sump Depth	None
Discharge rate	7.57 l/s
Outlet	2 No
Flow Per Outlet	3.78 l/s

****Emergency overflows are required. See calculation in Red below****

Result:

Outcome	Pass
Critical Storm Duration	2 hrs
Hmax	98 mm
Required Volume	123.1 m³
Time to half empty	2.3 hrs
Roof Loading*	92.91 Kg/m²

The roof loading refers only to the weight of water on the roof.

Industry best practices recommend the provision of a minimum of two outlets per roof area. Where a single blue roof outlet Is specified a second overflow only outlet should be installed.

All results based on input data. Please check that input data has been correctly interpreted.

The Bauder Blue Flat Roof Rainwater Calculation Software will perform calculations in accordance with industry best practice for blue roof design based upon provided data relating to a specific building's dimensions geographical location and the flow rate performance of the selected Bauder rainwater outlet product. Whilst the information contained herein is to the best of our knowledge true and accurate we specifically exclude any liability for errors omissionsor otherwise arising therefrom.

NOTE: These calculations are valid for a zero fall roof with minimal variation in levels. Any significant variation will affect the volume of water stored and the roofs ability to attenuate extreme rain events. Typically variations in roof level should be less than 0 to +30mm with no back falls. Please NOTE: the overflows are designed to ensure the roof cannot be overloaded in an exceedance event. The overflows will require a head of water to achieve the required discharge rate (typically 35mm). This additional height of water and load should be allowed for.

Emergency Overflow requirement (in accordance with BSEN12056-3:2000, CAT 1 storm):

Total overflow discharge: 2046m2 x 0.018l/s/m2 = 36.8l/s.

(This would require 7no. additional DN70 outlets set at Hmax. Max capacity of overflows: 1.9l/s x 2no. (integrated) + 5.4l/s x 7no. (dedicated) = 41.6l/s).