Clancy Consulting Ltd		Project Sale, Manchester Calcs for				Job no. 1/21541 Start page no./Revision	
Norwic	h,	Calcs by	Calcs date	Checked by	Checked date	Approved by	Approved da
NR3 1R	IB.	CN	27/01/2023				
PLANE INFILT	RATION SYSTI	EM DESIGN					
In accordance	with CIRIA C7	53 SUDS				Tedds calcula	ation version 2
Design rainfall	l intensity						
Location of cate	chment area		Mancheste	r			
Impermeable area drained to the		ne system	A = 533.0 n	A = 533.0 m ²			
Return period			Period = 100 yr				
Ratio 60 min to	2 day rainfall of	t 5 yr return perio	r = 0.360	10.0			
b-year return pe	eriod rainfall of (ou minutes durat	ion Mb_60min	= 1 8.0 mm %			
		e to global warm	$\frac{119}{110} \text{ pclimate} = 43$	70			
Infiltration bla	nket details						
Base area of blanket			A 500.0	2			
Base area of bl	anket		A _b = 533.0	m ²			
Base area of bl Porosity Drainage ratio	anket		A _b = 533.0 n = 0.3 B = A / A _b =	m ² = 1 0			
Base area of bl Porosity Drainage ratio Soil infiltration r	anket rate		A _b = 533.0 n = 0.3 R = A / A _b = f = 3.99*10 [.]	m ² = 1.0 ⁶ m/s			
Base area of bl Porosity Drainage ratio Soil infiltration r Table equation	anket rate		A _b = 533.0 n = 0.3 R = A / A _b = f = 3.99*10	m² = 1.0 ⁶ m/s			
Base area of bl Porosity Drainage ratio Soil infiltration r Table equatior Rainfall intensit	anket rate 15		A _b = 533.0 n = 0.3 R = A / A _b = f = 3.99*10 i = M100 / [m ² = 1.0 ⁶ m/s			
Base area of bl Porosity Drainage ratio Soil infiltration r Table equatior Rainfall intensit Minimum depth	anket rate 15 17 19 1 required (Eq. 2	25.1)	$A_b = 533.0$ n = 0.3 $R = A / A_b =$ $f = 3.99*10^{\circ}$ i = M100 / I H = D / n *	m ² = 1.0 ⁶ m/s O (R * i - f)			
Base area of bl Porosity Drainage ratio Soil infiltration r Table equatior Rainfall intensit Minimum depth Duration, D (min)	anket rate ns ry required (Eq. 2 Growth factor Z1	5.1) M5 rainfalls (mm)	A _b = 533.0 n = 0.3 R = A / A _b = f = 3.99*10 ⁻ i = M100 / [H = D / n * Growth factor Z2	m ² = 1.0 ⁶ m/s (R * i - f) 100 year rainfall,	Intensity, (mm/hr)	i Depth	(mm)
Base area of bl Porosity Drainage ratio Soil infiltration r Table equatior Rainfall intensit Minimum depth Duration, D (min)	anket rate ns ry required (Eq. 2 Growth factor Z1	25.1) M5 rainfalls (mm) 9.4·	A _b = 533.0 n = 0.3 R = A / A _b = f = 3.99*10 ⁻¹ i = M100 / I H = D / n * Growth factor Z2	m ² = 1.0 ⁶ m/s (R * i - f) 100 year rainfall, M100 (mm) 17 8.	Intensity, (mm/hr)	i Depth	(mm)
Base area of bl Porosity Drainage ratio Soil infiltration r Table equatior Rainfall intensit Minimum depth Duration, D (min) 5 10	anket rate ns y required (Eq. 2 Growth factor Z1 0.36; 0.51:	25.1) M5 rainfalls (mm) 9.4; 13.3:	$A_{b} = 533.0$ $n = 0.3$ $R = A / A_{b} =$ $f = 3.99*10^{\circ}$ $i = M100 / I$ $H = D / n *$ Growth factor Z2 $1.90;$ $1.96;$	m ² = 1.0 ⁶ m/s (R * i - f) (R * i - f) 100 year rainfall, M100 (mm) 17.8; 26.1:	Intensity, (mm/hr) 213.72; 156.78:	i Depth	(mm) 5;
Base area of bl Porosity Drainage ratio Soil infiltration r Table equatior Rainfall intensit Minimum depth Duration, D (min) 5 10 15	anket rate ns y required (Eq. 2 Growth factor Z1 0.36; 0.51; 0.62:	25.1) M5 rainfalls (mm) 9.4; 13.3; 16.2:	$A_{b} = 533.0$ $n = 0.3$ $R = A / A_{b} =$ $f = 3.99*10^{\circ}$ $i = M100 / I$ $H = D / n *$ Growth factor Z2 $1.90;$ $1.96;$ $2.00;$	m ² = 1.0 ⁶ m/s (R * i - f) 100 year rainfall, M100 (mm) 17.8; 26.1; 32.4;	Intensity, (mm/hr) 213.72; 156.78; 129.42:	i Depth 55 79 90	(mm) 5; 9;
Base area of bl Porosity Drainage ratio Soil infiltration r Table equatior Rainfall intensit Minimum depth Duration, D (min) 5 10 15 30	anket rate ns or required (Eq. 2 Growth factor Z1 0.36; 0.51; 0.62; 0.79;	25.1) M5 rainfalls (mm) 9.4; 13.3; 16.2; 20.6;	$A_{b} = 533.0$ $n = 0.3$ $R = A / A_{b} =$ $f = 3.99*10^{\circ}$ $i = M100 / I$ $H = D / n *$ Growth factor Z2 $1.90;$ $1.96;$ $2.00;$ $2.03;$	m ² = 1.0 ⁶ m/s (R * i - f) 100 year rainfall, M100 (mm) 17.8; 26.1; 32.4; 41.8;	Intensity, (mm/hr) 213.72; 156.78; 129.42; 83.61;	i Depth 55 75 90 11	(mm) 5; 9; 6; 5;
Base area of bl Porosity Drainage ratio Soil infiltration r Table equatior Rainfall intensit Minimum depth Duration, D (min) 5 10 15 30 60	anket rate ns y required (Eq. 2 Growth factor Z1 0.36; 0.51; 0.62; 0.79; 1.00;	25.1) M5 rainfalls (mm) 9.4; 13.3; 16.2; 20.6; 26.1;	$\begin{array}{c} A_{b} = \textbf{533.0} \\ n = \textbf{0.3} \\ R = A \ / \ A_{b} = \\ f = \textbf{3.99*10} \\ \hline \\ i = M100 \ / \ I \\ H = D \ / \ n \ * \\ \hline \\ \textbf{Growth} \\ \textbf{factor Z2} \\ \hline \\ 1.90; \\ 1.96; \\ 2.00; \\ 2.03; \\ 2.00; \\ 2.00; \end{array}$	m ² = 1.0 ⁶ m/s (R * i - f) 100 year rainfall, M100 (mm) 17.8; 26.1; 32.4; 41.8; 52.2;	Intensity, (mm/hr) 213.72; 156.78; 129.42; 83.61; 52.23;	i Depth 55 75 90 111 12	(mm) 5; 9; 5; 5; 26;
Base area of bl Porosity Drainage ratio Soil infiltration r Table equatior Rainfall intensit Minimum depth Duration, D (min) 5 10 15 30 60 120	anket rate ns y required (Eq. 2 Growth factor Z1 0.36; 0.51; 0.62; 0.79; 1.00; 1.22;	25.1) M5 rainfalls (mm) 9.4; 13.3; 16.2; 20.6; 26.1; 31.8;	$\begin{array}{c} A_{b} = \textbf{533.0} \\ n = \textbf{0.3} \\ R = A \ / \ A_{b} = \\ f = \textbf{3.99*10} \\ \hline \\ i = M100 \ / \ I \\ H = D \ / \ n \ ^{*} \\ \hline \\ \textbf{Growth} \\ \textbf{factor Z2} \\ \hline \\ 1.90; \\ 1.96; \\ 2.00; \\ 2.03; \\ 2.00; \\ 1.96; \\ \end{array}$	m ² = 1.0 ⁶ m/s (R * i - f) 100 year rainfall, M100 (mm) 17.8; 26.1; 32.4; 41.8; 52.2; 62.3;	Intensity, (mm/hr) 213.72; 156.78; 129.42; 83.61; 52.23; 31.13;	i Depth 51 79 90 111 12 11	(mm) 5; 9; 6; 5; 6; 2;
Base area of bl Porosity Drainage ratio Soil infiltration r Table equatior Rainfall intensit Minimum depth Duration, D (min) 5 10 15 30 60 120 240	anket rate ns y required (Eq. 2 Growth factor Z1 0.36; 0.51; 0.62; 0.79; 1.00; 1.22; 1.48;	25.1) M5 rainfalls (mm) 9.4; 13.3; 16.2; 20.6; 26.1; 31.8; 38.6;	$\begin{array}{c} A_{b} = \textbf{533.0} \\ n = \textbf{0.3} \\ R = A \ / \ A_{b} = \\ f = \textbf{3.99*10} \\ \hline \\ i = M100 \ / \ I \\ H = D \ / \ n \ ^{*} \\ \hline \\ \textbf{Growth} \\ \textbf{factor Z2} \\ \hline \\ 1.90; \\ \hline \\ 2.00; \\ 2.00; \\ \hline \\ 2.00; \\ \hline \\ 1.96; \\ \hline \\ 1.90; \\ \hline \end{array}$	m ² = 1.0 ⁶ m/s (R * i - f) 100 year rainfall, M100 (mm) 17.8; 26.1; 32.4; 41.8; 52.2; 62.3; 73.4;	Intensity, (mm/hr) 213.72; 156.78; 129.42; 83.61; 52.23; 31.13; 18.36;	i Depth 55 79 90 11 12 11 55	(mm) 5; 9; 5; 5; 2; 2; 3;
Base area of bl Porosity Drainage ratio Soil infiltration r Table equatior Rainfall intensit Minimum depth Duration, D (min) 5 10 15 30 60 120 240 360	anket rate ns y required (Eq. 2 Growth factor Z1 0.36; 0.51; 0.62; 0.79; 1.00; 1.22; 1.48; 1.67;	25.1) M5 rainfalls (mm) 9.4; 13.3; 16.2; 20.6; 26.1; 31.8; 38.6; 43.6;	$\begin{array}{c} A_{b} = \textbf{533.0} \\ n = \textbf{0.3} \\ R = A \ / \ A_{b} = \\ f = \textbf{3.99*10} \\ i = M100 \ / \ I \\ H = D \ / \ n \ * \end{array}$ $\begin{array}{c} i = M100 \ / \ I \\ H = D \ / \ n \ * \end{array}$ $\begin{array}{c} \textbf{Growth} \\ \textbf{factor Z2} \\ \hline 1.90; \\ 1.96; \\ 2.00; \\ 2.00; \\ 1.96; \\ 1.96; \\ 1.90; \\ 1.86; \end{array}$	m ² = 1.0 ⁶ m/s D (R * i - f) 100 year rainfall, M100 (mm) 17.8; 26.1; 32.4; 41.8; 52.2; 62.3; 73.4; 81.1;	Intensity, (mm/hr) 213.72; 156.78; 129.42; 83.61; 52.23; 31.13; 18.36; 13.52;	i Depth 55 79 90 111 12 11 55 0	(mm) 5; 9; 5; 5; 6; 2; 3; ;
Base area of bl Porosity Drainage ratio Soil infiltration r Table equatior Rainfall intensit Minimum depth Duration, D (min) 5 10 15 30 60 120 240 360 600	anket rate ns y required (Eq. 2 Growth factor Z1 0.36; 0.51; 0.62; 0.79; 1.00; 1.22; 1.48; 1.67; 1.90;	25.1) M5 rainfalls (mm) 9.4; 13.3; 16.2; 20.6; 26.1; 31.8; 38.6; 43.6; 49.6;	$\begin{array}{c} A_{b} = {\bf 533.0} \\ n = {\bf 0.3} \\ R = A \ / \ A_{b} = \\ f = {\bf 3.99*10} \\ \hline \\ i = M100 \ / \ I \\ H = D \ / \ n \ ^* \end{array}$	m ² = 1.0 ⁶ m/s (R * i - f) 100 year rainfall, M100 (mm) 17.8; 26.1; 32.4; 41.8; 52.2; 62.3; 73.4; 81.1; 89.9;	Intensity, (mm/hr) 213.72; 156.78; 129.42; 83.61; 52.23; 31.13; 18.36; 13.52; 8.99;	i Depth 5: 7: 90 111 12 11 5: 00 00	(mm) 5; 9; 6; 5; 6; 2; 3; ;

PASS - Infiltration system discharge time less than or equal to 24 hours