

# **Rainwater drainage disposal**

For

**Glass houses**

At

**Land at New River Gate  
Holbeach St John  
Spalding  
Lincolnshire  
PE12 0RY**

Client

**Blofield Nurseries Ltd**

To be read in conjunction with

- Plans 17-1708-1 to 17-1708-10

Project Reference	17-1708
Status	Issued for planning approval
Date	22 <sup>nd</sup> May 2018
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## Proposed water usage at glass houses at Land at New River Gate, Holbeach St John

Proposed Water Usage								
Month	Minutes of water per month	Litres of water used per month	mm of Rainfall per month	m3 of rain of rain collected from building	litres of rain collected from building	Plus/minus per month	Plus/minus - running total	Assuming reservoir empty at November running total
January	20	246,360	0.051	1,011.38	1,011,381	765,021	765,021	-650,123
February	20	246,360	0.035	694.09	694,085	447,725	1,212,746	-202,398
March	60	739,080	0.042	832.90	832,902	93,822	1,306,568	-108,576
April	90	1,108,620	0.043	852.73	852,733	- 255,887	1,050,681	-364,463
May	90	1,108,620	0.053	1,051.04	1,051,043	- 57,577	993,104	-422,040
June	160	1,970,880	0.053	1,051.04	1,051,043	- 919,837	73,267	-1,341,877
July	160	1,970,880	0.05	991.55	991,550	- 979,330	- 906,063	-2,321,207
August	160	1,970,880	0.06	1,189.86	1,189,860	- 781,020	- 1,687,083	-3,102,227
September	120	1,478,160	0.055	1,090.71	1,090,705	- 387,455	- 2,074,538	-3,489,682
October	90	1,108,620	0.062	1,229.52	1,229,522	120,902	- 1,953,636	-3,368,780
November	40	492,720	0.055	1,090.71	1,090,705	597,985	- 1,355,651	-2,770,795
December	20	246,360	0.048	951.89	951,888	705,528	- 650,123	-2,065,267
<b>Total</b>	<b>1030</b>	<b>12,687,540</b>	<b>0.61</b>	<b>12,037.42</b>	<b>12,037,417</b>			

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Proposed Water Usage allowing for a 1 in 100 year storm									
Month	Minutes of water per month	Litres of water used per month	mm of Rainfall per month	1 in 100 year storm + 30%	m3 of rain of rain collected from building	litres of rain collected from building	Plus/minus per month	Plus/minus - runing total	Assuming reservoir empty at November running total
January	20	246,360	0.051		1,011.38	1,011,381	765,021	765,021	847,153
February	20	246,360	0.035	0.1105	2,191.36	2,191,361	1,945,001	2,710,022	2,792,153
March	60	739,080	0.042		832.90	832,902	93,822	2,803,844	2,885,975
April	90	1,108,620	0.043		852.73	852,733	- 255,887	2,547,957	2,630,088
May	90	1,108,620	0.053		1,051.04	1,051,043	- 57,577	2,490,380	2,572,511
June	160	1,970,880	0.053		1,051.04	1,051,043	- 919,837	1,570,543	1,652,674
July	160	1,970,880	0.05		991.55	991,550	- 979,330	591,213	673,344
August	160	1,970,880	0.06		1,189.86	1,189,860	- 781,020	- 189,808	-107,676
September	120	1,478,160	0.055		1,090.71	1,090,705	- 387,455	- 577,263	-495,131
October	90	1,108,620	0.062		1,229.52	1,229,522	120,902	- 456,361	-374,229
November	40	492,720	0.055		1,090.71	1,090,705	597,985	141,625	223,756
December	20	246,360	0.048		951.89	951,888	705,528	847,153	929,284
Total	1030	12,687,540	0.61		13,534.69	13,534,693			

Red months show when more water is collected than used, with green months indicating more water used than collected.

Watering assumed a nozzle providing 200 litres /per hour = 3.33 litres per min mm

Nozzles spaced at 1.5m apart along sprayline, spraylines spaced at 3.2m apart

1 nozzle is therefore required per 5m<sup>2</sup>

Glass House area = 18,495m<sup>2</sup> divided by 5m<sup>2</sup> = 3,699 nozzles

3,699 nozzles x 3.33 litres = 12,318 litres per minute

1 in 100 year storm will produce 85mm of rainfall, x 30% = 110.5mm

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Rain fall data taken from Met office website <https://www.metoffice.gov.uk/public/weather/climate/u12hg1nxt>

The proposed reservoir as shown on plans 17-1708-3, 17-1708-9 and 17-1708-10 has a capacity of 4,000,000 litres (4,000m<sup>3</sup>), well in excess of that likely to be required should the 1 in 100 year storm occur.

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