



BELL MUNRO CONSULTING LTD.

**72 Errwood Road
Burnage**

**Hydraulic Calculations
December 2020**

	Initials	Signature	Date
Prepared by:	SJB		12 / 2020
Checked by:	CM		12 / 2020
Approved by:	CM		12 / 2020

Bell Munro Consulting Ltd.
Consulting Civil and Structural Engineers
Turing House
5 Archway
Manchester
M15 5RL
Tel: 0161 209 8032
Fax: 0161 209 8033
E-Mail: consulting@bellmunro.co.uk
Ref: J7036



BELL MUNRO CONSULTING LIMITED

TITLE 72 Errwood Road, Burnage	JOB NO. J7036	PAGE NO. 1	REVISION
LOCATION Hydraulic Calculations	CALCULATION BY SJB	CHECKED BY CM	DATE 12/20

1. BROWNFIELD RUN-OFF RATE:

Based on 50mm/hr

Existing hardstanding area = 383 sqm

Therefore existing flow rate = $383 \times 50 / 60 / 60 = 5.319444$ l/s

Apply 50% reduction to existing brownfield flow rate

$5.319 \times 0.5 = 2.659722$ l/s

Therefore to comply with planning condition restrict proposed flow rate to 2.65l/s

2. CONSIDER ATTENUATION REQUIREMENT

Calculations on following pages.

Wavin Stormwater Management



CONNECT TO BETTER

Wavin Stormwater Management

Project Details

Project Name 72 Errwood Road, Burnage

Produced By Simon Berry

Client Name

Site Address , M19 2QH

Date 23/12/2020

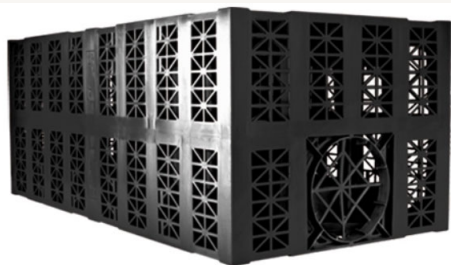
Modular Units and Tank Details - J7036

Length	5m	5 units
Width	5m	10 units
Depth	0.8m	2 units
Total Number of Units	100 units	

Void	95%
Cover Depth	0.5m
Installation Depth	1.3m

Recommended Unit

Wavin recommend using the following unit for your installation.



AquaCell Core R

Product Number: 6LB150

AquaCell Core R has been designed for use in deep applications, subject to both regular and heavy traffic loadings, such as cars and HGV's (for vehicles up to 44 tonnes).

Drainage Details

Area	588m ²
Catchment Type	Roof + Hardstanding
Area Reduction Factor	0.9
Soil Type	Over consolidated clay

Allowable Discharge	2.65 ltr/sec
Climate Change	40%
Effective Area	740.88m ²
Factor of Safety	1

Rainfall Data

R Value	0.33
----------------	------

Storm Return Period	1 in 100 years
----------------------------	----------------

M5-60	18	County	Greater Manchester
-------	----	--------	--------------------

Time	Z1 Value	y mm	Z2 Value	p mm	Inflow	Outflow	Storage Volume
5min	0.35	6.3	1.81	11.4	8.45	0.8	7.65
10min	0.5	9	1.89	17.01	12.6	1.59	11.01
15min	0.61	10.98	1.91	20.97	15.54	2.39	13.15
30min	0.78	14.04	1.91	26.82	19.87	4.77	15.1
1hr	1	18	1.99	35.82	26.54	9.54	17
2hr	1.22	21.96	2.03	44.58	33.03	19.08	13.95
4hr	1.56	28.08	2.01	56.44	41.82	38.16	3.66
6hr	1.72	30.96	1.97	60.99	45.19	57.24	-12.05
10hr	2	36	1.97	70.92	52.54	95.4	-42.86
24hr	2.6	46.8	1.89	88.45	65.53	228.96	-163.43
48hr	3.25	58.5	1.81	105.89	78.45	457.92	-379.47

Critical storm duration (hrs)	1hr
Required Storage Height	17m
Volume from Dimensions	19m ³

Area Sales Manager

If you would like to find out how to purchase, please contact your Area Sales Manager

Name	Michael Rose
Phone Number	07966 333620

Aquacell Disclaimer

- All information generated by this tool is supplied in good faith and without charge to enable reasonable assessment of the practical performance of Wavin products.
- Wavin offers a program of continuous improvement and reserves the right to modify the specification of products without notice.
- All information in this publication is believed to be correct at time of preparation. However, no responsibility can be accepted for any errors or omissions. Final determination of the suitability of information or material for the use contemplated and the manner of the use is the sole responsibility of the user
- Calculations are based upon relevant industry standards in accordance with the Wallingford Procedure, and should be verified by a qualified engineer.