



COMMERCIAL

Date 03 August 2007

Our Ref. RE6801 (Revision 1)

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<p>Project Details</p> <p>Project Title Ramsay Hall (Student Accommodation) Project Stage On Site</p>	

<p>Recycled water usage</p> <p>Water Authority Thames Water</p> <p><input checked="" type="checkbox"/> Foul Sewer Connection <input checked="" type="checkbox"/> Surface Water Sewer</p>	<p>Water Cost £1.48 per m³</p> <p>Note</p>
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<p>Water collected</p> <p>Roof Area 400 m² Annual Volume 222 m³</p>	<p>Recycled water usage</p> <p>Toilet Flushing <input checked="" type="checkbox"/> Vehicle Washing <input type="checkbox"/> External Use <input type="checkbox"/> Hot Water <input type="checkbox"/> Industrial Use <input type="checkbox"/> Other</p>	<p>Occupancy</p> <p>Male 45 Female 46 Working Day 24 hours Working Week 7 days W.C.'s Urinal Ranges</p>
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<p>Notes</p> <p>This quotation should be read in conjunction with our full installation details. The tank size has been calculated on industry norms i.e. met office rainfall data, average wc flushes per person per day, max daily rainwater yield from roof area. A mains water supply should be used for supplying the break tank during "no rainwater" available periods and should be controlled by a delayed action float valve (supplied by others). Type "A" air gap (weir overflow) is required. The below ground storage tank requires a concrete surround and or slab to prevent the possibility of floating and protection from imposed traffic loading (design by others i.e. structural engineer). We would recommend the inclusion of electrical contactors on this system as a "Good practice" addition to our standard components.</p>

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Total W.C. & Urinal Flushing per Annum		Weeks	Month	Usage
W.C.'s Male	0 m³	0	Jan	149 m³
W.C.'s Female	0 m³	0	Feb	135 m³
Urinals	0 m³	0	Mar	149 m³
Other Uses	0 m³	0	Apr	145 m³
Total	0 m³/yr	0	May	149 m³
<i>The above is based on 3 flushes/female/day and 1.5 flushes/male/day if urinals are installed. If no urinals are installed male usage is based on 3 flushes/male/day</i>		0	Jun	145 m³
		0	Jul	149 m³
		0	Aug	149 m³
		0	Sep	145 m³
		0	Oct	149 m³
		0	Nov	145 m³
		0	Dec	149 m³
		0		
		0		
		0		
		0		
		0		
Total		0		1,758 m³/yr

Recommmended Tank size to give 7 days continuous supply without E to maximum size of 54000 litres:

Nearest tank size from standard range: 9,000 litres

Savings analysis

Roof Area		400 m ²	Water Cost		£1.48 per m ³	
	Rainfall	Volume Collected	Monthly Demand	Demand Shortfall	Mains Top Up Cost	Monthly Savings
Jan	52 mm	19.8 m ³	149.0 m ³	129.2 m ³	£190.97	£29.20
Feb	34 mm	12.9 m ³	135.0 m ³	122.1 m ³	£180.39	£19.09
Mar	42 mm	16.0 m ³	149.0 m ³	133.0 m ³	£196.58	£23.58
Apr	45 mm	17.1 m ³	145.0 m ³	127.9 m ³	£188.99	£25.27
May	47 mm	17.9 m ³	149.0 m ³	131.1 m ³	£193.77	£26.39
Jun	53 mm	20.1 m ³	145.0 m ³	124.9 m ³	£184.49	£29.76
Jul	38 mm	14.4 m ³	149.0 m ³	134.6 m ³	£198.83	£21.34
Aug	47 mm	17.9 m ³	149.0 m ³	131.1 m ³	£193.77	£26.39
Sep	56 mm	21.3 m ³	145.0 m ³	123.7 m ³	£182.81	£31.44
Oct	62 mm	23.6 m ³	149.0 m ³	125.4 m ³	£185.35	£34.81
Nov	52 mm	19.8 m ³	145.0 m ³	125.2 m ³	£185.05	£29.20
Dec	55 mm	20.9 m ³	149.0 m ³	128.1 m ³	£189.28	£30.88
Total	583 mm	221.5 m³	1,758.0 m³	1,536.5 m³	£2,270.27	£327.35

Quotation

Part No.	Description	Quantity	Price	Value
MT	Envireau Mono-Tech Rainwater Recovery System (100 metre cable lengths required)	1	£1,484.00	£1,484.00
EW0901101	Envireau GRP Rainwater Holding Tank 9000ltr (Twin Turrets)	1	£1,234.00	£1,234.00
P106	P106 U/ground Rainwater Filter - 10ltrs/sec Flow	1	£316.00	£316.00
EWSP1	StandBy Pump & Controller (100 metre cable lengths required)	1	£1,484.00	£1,484.00
Comm	Commissioning Service (One hour on site)	1	£300.00	£300.00
CFL600T	Pedestrian Duty Manhole Cover & Frame	2	£73.00	£146.00
				£0.00
				£0.00
Total including delivery and excluding VAT:				£4,964.00



Flat Roof Drainage Design Software to BSEN-12056:2000

White House Works, Bold Road, Sutton,
St Helens, Merseyside, WA9 4JG
Tel. 01744 648400 Fax. 01744 648401.
e-mail: technical@alumasc-exterior.co.uk



Client: Pelling Limited
Project: UCL Student Accomodation
Designer: CB

y/r:
o/r: SP00001
Date: 05/04/2007

Gutter number: 1
BSEN12056 Rainfall Catagory: Cat 2
Rainfall Intensity (l/s.sq.m): 0.066

Catchment Area:

Roof length (m): 0.00
Roof width (m): 0.00
Effective area (sq.m): 334.0

Green Roof:

Roof type: Green
% Green (%): 60
Soil depth(mm): 60 to 99

Outlets:

Outlet type: AV400T
Diameter (mm):
Rectangular (Side 1)(mm):
Rectangular (Side 2)(mm):
Weir Length (mm):
Sump depth (mm):
Leafguard / strainer: Integral

Results:

Required flow rate (l/s): 16.75
Required outlet flow rate (l/s): 8.38
Achieved outlet flow rate (l/s): 10.71
Number of outlets: 2
Min downpipe size with taper: 0

Notes: All results to BSEN12056:2000, based on input data. Please check that input data has been correctly interpreted.
Results from Alumasc flat roof drainage evaluator, created for Alumasc using Gutterflow technology by
CRM Rainwater Drainage Consultancy Ltd, Copyright CRM Rainwater Drainage Consultancy Ltd © 2001.
All results based on local roof water depth of 35mm. Ensure outlets are positioned to keep water depths reasonable.
Harmer outlets may perform better than figures above suggest. These are limited by 33% downpipe filling rule.