



Spencer Group Engineering

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Computation Sheet **DETENTION COMPUTATIONS** Project No. **5696**  
Project Title **OURLADY - SUNSHINE** Date **24.06.2021**  
Designer **O.A.** Sheet **1** of **3**

**PROPOSED SITE AREA :- 866 m<sup>2</sup> APPR.**

**EXISTING CATCHMENT AREAS :-**

TYPE	AREA (m <sup>2</sup> )	C.	EQUV. AREA (m <sup>2</sup> )
ROOF	540	1.0	540
MIX	326	0.50	163
	<b>866</b>	<b>0.812</b>	<b>703</b>

**PROPOSED CATCHMENT AREA :-**

TYPE	AREA (m <sup>2</sup> )	C.	EQUV AREA (m <sup>2</sup> )
ROOF	712	1.0	712
MIX	154	0.50	77
	<b>866</b>	<b>0.911</b>	<b>789</b>

USING THE ABOVE PARAMETER IN OSD4 W SOFTWARE TO COMPUTE THE REQUIRED DETENTION VOLUME, THE REQUIRED VOLUME IS 5.14 m<sup>3</sup>. REFER NEXT PAGE FOR COMPUTATION REPORT.

1. CLIENT DETAILS

Name : ClarkeHopkinsClarke  
Address line 1 : ClientDet1.....  
Address line 2 : ClientDet2.....  
Address line 3 : ClientDet3.....

2. JOB NAME AND REFERENCE

Job Reference : 5696  
Job Name : Our Lady of the Immaculate Conception PS  
Job Detail 1 : JobAddress1.....  
Job Detail 2 : JobAddress2.....  
Job Detail 3 : 32 Station PI, Sunshine

3. AREAS (sq.m.) & RUN-OFF COEFFICIENTS

Total Site area : 866

4. EXISTING SITE DETAILS

Aes1 : 540 Ces1 : 1.00  
Aes2 : 326 Ces2 : 0.50  
Aes3 : 0 Ces3 : 0.15  
Aes4 : 0 Ces4 : 0.12  
Weighted C - site Cew : 0.81

5. PROPOSED SITE DETAILS

Aps1 : 712 Cps1 : 1.00  
Aps2 : 154 Cps2 : 0.50  
Aps3 : 0 Cps3 : 0.15  
Aps4 : 0 Cps4 : 0.12  
Weighted C - site Cpw : 0.91  
Uncontrolled portion(s) UPfrac : 0.00

6. CATCHMENT TIMES (minutes)

Time of concentration : 5.00  
Travel time from discharge point  
to catchment outlet : 3.00

7. OSD DESIGN

Flow Control Device : MC2 Multi-Cell  
Storage type : Pipe  
Rainfall zone : ALTONA  
ARI for OUTFLOW (years) : 5  
ARI for STORAGE (years) : 10  
Qptot (L/s) : 17.36  
Qu (L/s) : 0.00  
Qp (L/s) : 0.00  
Calculated PSD (L/s) : 20.85  
Nominated PSD (L/s) : 14.00  
Adopted PSD (L/s) : 14.00

8. STORAGE DETAILS

Volume (cub.m.) : 5.14  
Time to fill storage (mins) : 8.5  
Time to empty storage (mins) : 11.7  
Critical storm duration (mins) : 12.2

9. STORM DURATIONS & RAINFALL INTENSITIES

PSD ..... Duration : 5.0 min. Intensity : 88.9 mm/hr  
MAX. STORAGE ..... Duration : 12.2 min. Intensity : 70.0 mm/hr





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Designer **O.A** Sheet **3** of **3**

### DETENTION VOLUME PROVIDED :-

VOLUME (m <sup>3</sup> )	DESCRIPTION
2.70	0.30 EXTENDED DETENTION FOR RAISED RAINGARDEN. $9.0 \text{ m}^2 \times 0.3 =$ DETENTION VOLUME.
0.182	2 NO. $450 \times 450$ PITS PROPOSED WITH $450 \text{ mm}$ DEPTH.
0.288	1 NO. $600 \times 600$ PIT PROPOSED WITH $800 \text{ mm}$ DEPTH (CONTROL PIT)
1.085	APPR. $61.5 \text{ m}$ OF $150 \phi$ PIPE
0.947	APPR. $24.0 \text{ m}$ OF $225 \phi$ PIPE
5.202	TOTAL DETENTION VOLUME AVAILABLE IN THE PROPOSED SYSTEM.