Costin Roe Consulting

Value in Engineering and Management

Costin Roe Consulting Pty Ltd
ABN 50 003 696 446
Level 1, 8 Windmill Street, Walsh Bay
PO Box N419, Sydney, NSW, 1220, Australia
tel: (02) 9251 7699 fax: (02) 9241 3731
email: mail@costinroe.com.au
web: www.costinroe.com.au

3 July 2015

Australand Holdings Limited
Commercial and Industrial Division
Attention: Mr Paul Solomon
Level 3, 1C Homebush Bay Drive
RHODES NSW 2138

Dear Sir

Re: Rainwater Tank Water Balance
Horsley Drive Business Park, Wetherill Park, NSW (Martin Brower)

The proposed facility encompasses a proposed 20KL rainwater tank to provide rainwater re-use for internal uses. We have undertaken a preliminary water balance calculation for the proposed 20KL rainwater tank at the proposed Martin Brower Facility, Horsley Drive Business Park.

Preliminary calculations show a 20KL rainwater tank is sufficient for the internal water demand (toilet flushing) to provide a 50% potable water demand. Calculation is based on a maximum of 180 employees being present at any one particular time. Please refer to the enclosed table for calculations.

Please note that the 20KL rainwater tank is preliminary and is subject to detailed analysis during construction certificate stage the Hydraulic Engineering Consultant.

Yours faithfully,
COSTIN ROE CONSULTING PTY LTD

MARK WILSON MIEAust CPEng NPER
Associate Director
Encl Design Calculation

RAINWATER RE-USE WATER BALANCE CALCULATION

Project No: 11492.09 Martin Brower Date: 03.07.15

DATA		WATER DEMAND		
A - The efficiency of collection (%)	0.9	Internal Water Demand		
B - The loss associated with absorption (mm)	0.5	Water demand per person (litres)	10	L
Total Roof Catchment Areas	4600	No. of people	180	ea.
% Roof Catchment Area	100	**Monthly People Demand**	**54000**	L
Modelled Roof Catchment Area (sq.m)	**4600**	External Water Demand		
		Landscaping Area	0	m2
Min tank size =	17181.82 L	**Monthly LS Demand (Summer)**	**0**	L
Sydney Water (Approx Size)	(5000L/ 100sqm roof)			
	115000 L	**Total Monthly Water Demand**		
Modelled Tank Size (litres)	20000 L	**Monthly water Demand (Summer) =**	**54000**	L
		Monthly water Demand (winter)=	**54000**	L
Demand Reduction	50 %			

MONTH	RAINFALL	Collected Run-off	Consumption	Volume Remaining (Vt)	
		Initial Volume		13333	
January	100	411930	27000	20000	OK
February	114	469890	27000	20000	OK
March	102	420210	27000	20000	OK
April	73	300150	27000	20000	OK
May	71	291870	27000	20000	OK
June	78	320850	27000	20000	OK
July	43	175950	27000	20000	OK
August	55	225630	27000	20000	OK
September	46	188370	27000	20000	OK
October	72	296010	27000	20000	OK
November	82	337410	27000	20000	OK
December	70	287730	27000	20000	OK
Annual	**906**				