2 Figtree Drive,
Sydney Olympic Park (Site 53)

Rainwater Strategy

for Mirvac

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Document Control Sheet

Title	Rainwater Strategy
Project	2 Figtree Drive, Sydney Olympic Park
Description	
Key Contact	Steve Osmo

Prepared By

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Revision History

Issued To	Revision and Date								
Mirvac	**REV**	A							
	DATE	7/08/2015							
	REV								
	DATE								
	REV								
	DATE								

Contents

1. Introduction

The proposed site is located at 2 Figtree Drive, Sydney Olympic Park (Site 53). The development site is located within the Auburn City Council Local Government Area (LGA), The rainwater strategy form part of the development application to the NSW Dep't of Planning [SSD7033]. The strategy has been formulated in accordance with Sydney Olympic Park Authority's (SOPA) Stormwater Policy "Stormwater Management and Water Sensitive Urban Design Policy", (The Stormwater Policy), Version 1, Policy Number POL13/04, dated October 2013 (SOPA Environment and Ecology review undertaken January 2014 and January 2015).

The site is located within the SOPA Masterplan 2030 Town Centre Central Precinct. The site is bounded by Figtree Drive to the north, Australia Avenue to the east, the Olympic Sprint Lidcombe Shuffle railway corridor to the south and a Fujitsu Data Centre to the west at 4 Figtree Drive.
The site consist of existing buildings and external carpark on the site that are to be demolished to make way for 422 residential units and approximately 1500sq.m of retail and associated car spaces and landscape..

2. Rainwater harvesting and Re-use

SOPA;s Stormwater Policy requires that a development is to maximise the re-use of rainwater or non potable water to a new proposed development.

Water Reclamation and Management Scheme (WRAMS) infrastructure is located along Figtree Drive, Non potable water main is 150mm and has the capacity to serve the proposed development. Refer to attached Statement of available pressure and flow below.

The proposed project's non potable water demand served by the WRAMS system which will be used for fire service, toilet flushing, laundry washing machine, car washing and spray irrigation, Sydney Water metering policy requires the project to provide a non potable water meter at each termination point for billing purpose.

SOPA's Stormwater Policy notes, where practicable, the project is to provide 90% of the non potable demand by rain water reuse, However by combining the WRAMS system and SOPA conditions for non potable water re-use it is impractical to connect the collected rainwater to individual dwellings which currently be served by WRAMS system for fire service, toilet flushing, laundry washing machine, car washing and spray irrigation.

Consequently the development proposes to collect the rain water and re-use it to provide on average of 90% of the drip irrigation landscape demand.

We have provided the roof catchment calculations and model.

Roof catchment areas per building:

West building – 1,090.65 sqm
North Building –6,15.76 sqm
South building –9,68.97 sqm
East building – 1,095.34 sqm
Total roof – **3,770.72 sqm**

Based on information provided by landscape architect '360 degrees' total area for spray and drip irrigation are as follows:

Lawn area – 458sqm (spray system – Water feed from WRAMS non potable supply)

Garden area - 1,994sqm (drip irrigation feed from rain water tanks)
Total garden - **2,452sqm**

The current modelling allows for 2 litres per square meter of rainwater for drip irrigation,

Garden area = 1,994 sqm x 2 litres per sqm
[2 x 1,994 = 3,988 litres per day on average usage].

This equates to a daily average demand of ~ 4,000 litres per day.

Providing between 20 to 25 days of rain water storage for the drip irrigation the rain water tank size is between 80,000 to 100,000 litres.

We are proposing to provide a 100,000 litres rain water tank for the proposed development.

100,000 litres tank model:

Information from model above are as followed below:

Tank size 100,000 litres.

Yearly average indicated below:

337 days when tank water available (90-92%)
33 days of overflow on average resulting 1,195,094 litres overflow over the year
1,348,113 litres tank water used for drip irrigation
111,887 litres of water from mains supply for time when rain water not available

3. Conclusion

This Rainwater Strategy has provided an overall philosophy for the collection, treatment and re-use of rainwater for the landscape irrigation (drip system) for the proposed development.

The site will incorporate a rainwater collection system and exact layouts and sizing for the rainwater treatment system (including equipment) will be confirmed during detailed design.

For Onsite detention and stormwater filtration system please refer to Civil engineer, stormwater management strategy report.

4. Statement of available pressure and flow

Statement of Available Pressure and Flow

Sydney WATER

JHA Consulting Engineers
Level 3,146 Arthur St
North Sydney, 2060

Attention: Barrie Smith Date: 22/04/2015

Pressure & Flow Application Number: 9077878
Your Pressure Inquiry Dated: Tue April 7 2015
Property Address: 2 Figtree Dr Sydney Olympic Park 2127

The expected maximum and minimum pressures available in the water main given below relate to modelled existing demand conditions, either with or without extra flows for emergency fire fighting, and are not to be construed as availability for normal domestic supply for any proposed development.

ASSUMED CONNECTION DETAILS

Street Name: Figtree Dr	Side of Street: South
Distance & Direction from Nearest Cross Street	110 metres West from Australia Ave
Approximate Ground Level (AHD):	21 metres
Nominal Size of Water Main (DN):	**150 mm Recycled**

EXPECTED WATER MAIN PRESSURES AT CONNECTION POINT

Normal Supply Conditions	
Maximum Pressure	24 metre head
Minimum Pressure	20 metre head

WITH PROPERTY FIRE PREVENTION SYSTEM DEMANDS	Flow l/s	Pressure head m
Fire Hose Reel Installations (Two hose reels simultaneously)	0.66	20
Fire Hydrant / Sprinkler Installations (Pressure expected to be maintained for 95% of the time)	10 15 20 25 30 40 45 50	22 22 22 22 21 20 19 19
Fire Installations based on peak demand (Pressure expected to be maintained with flows combined with peak demand in the water main)	10 15 20 25 30 40 45 50	19 19 19 18 18 16 16 15
Maximum Permissible Flow	67	12

(Please refer to reverse side for Notes)

For any further inquiries regarding this application please email :
connections@sydneywater.com.au

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