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RESIDENTIAL DEVELOPMENT

Lot 110, Leonay Parade

LEONAY

WSUD Operations & Maintenance Report
Issue 1

Prepared for PRETECH Pty Ltd

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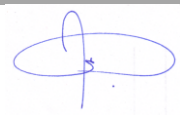
+61 2 8883 4239

P.O.Box 7855 Baulkham Hills NSW 2153

Suite 5.03, L5, 156 Pacific Highway St Leonards NSW 2065

ENGINEERS AUSTRALIA
Chartered Professional Engineer
MEMBER

Revision Table

Revision	Date	Issue Description	Issued by:	Approved by:	Signed:
1	18.12.18	Submission To Council	LA	Selh	

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1 Introduction

This document outlines the Water Sensitive Urban Design (WSUD) Strategy for the proposed townhouses located at Lot110 Leonay Parade, Leonay. This strategy looks at the principles, objectives and targets for WSUD, the opportunities and constraints to the implementation of WSUD, as well as the proposed WSUD measures to be implemented as part of the proposed works.

1.1 Reference Documents

The following documents are referenced in this report:-

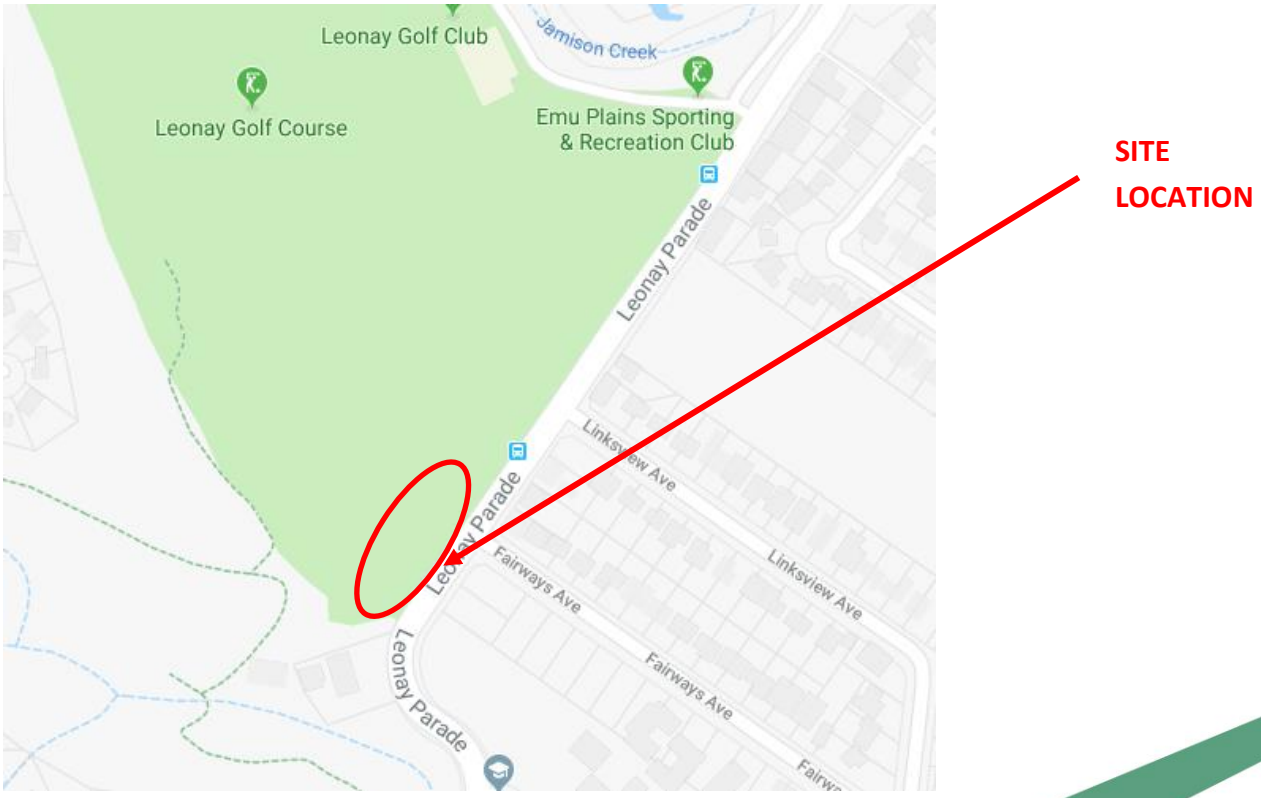
1. Occupational Health & Safety Act 2000;
2. Occupational Health & Safety Regulation 2001; and
3. Workers Compensation Act 1987.

1.2 Site Description

The site is legally described as Lot 110 DP 1135581. PreTech Pty Ltd is proposing to construct eight (8) townhouses.

The locality map below shows the location of the site.

Figure 1 Locality Plan



2 Operations & Maintenance Schedule

2.1 General

The maintenance schedule covers all the stormwater quality measures adopted for the townhouse development. These measures are as outlined in the following sections of this report. The maintenance of these measures is controlled by manufacturers' requirements for mechanical devices and industry standards for environmental measures.

2.2 WSUD Measures

There are two(2) WSUD devices proposed for this development that operate in a treatment train approach. The roof water is collected in rainwater tanks and then overflows into the stormwater infrastructure and finally into the raingarden. The driveway surface water and the site runoff flows into the raingarden. The recommended maintenance procedures by the manufacturers of these products are summarised in this section. Refer to Appendix 1 for location of WSUD measures within the development.

2.2.1 Rainwater Tanks

The maintenance of the individual rainwater tank is the responsibility of each townhouse owner. The tanks should be inspected on yearly basis as a minimum for sludge accumulation and silt deposits unless noted otherwise by the manufacturer. The tanks should be cleaned once every 12 months. Refer to manufacturers specifications for further details.

1.2.1 Raingarden Pond

Following its construction, the raingarden pond should be inspected every 1 to 3 months (or after each major rainfall event) for the initial vegetation establishment period to determine whether or not the bio-retention zone requires maintenance or the media requires replacement. The following critical items should be monitored:

- Ponding, clogging and blockage of the filter media;
- Establishment of desired vegetation/plants and density; and
- Blockage of the outlet from the bio-retention system.

After the initial establishment period (typically 1 to 2 years), inspections may be extended to the frequencies shown in the maintenance frequency table below.

If the raingarden system is not maintained frequently, the entire filter media may need to be replaced due to clogging of the media material with fine particles. This can result in frequent maintenance being more cost effective in the long-term.

The following maintenance activities will be required with inspection frequencies shown in Table 1 below.

- Maintenance of flow to and through the system;
- Maintaining the surface vegetation;
- Preventing undesired overgrowth vegetation/weeds from taking over the area;
- Removal of accumulated sediments; and
- Debris removal.

The recommended maintenance frequency for the raingarden pond is included in Table 1 below.

Table 1 Raingarden Pond Maintenance Frequency

ITEM	PERIOD	RESPONSIBILITY	MAINTENANCE PROCEDURE
Inspection – Minor Maintenance	6 mths and after major storms	Maintenance Contractor	Debris clean out including surface of bio-retention, inlet, outlet and overflow
Inspection – Minor Maintenance	6 mths and after major storms	Maintenance Contractor	Trench surface vegetation. Trimming, weed infestation, erosion.
Inspection – Minor Maintenance	6 mths and after major storms	Maintenance Contractor	Dewatering between storms, top soil layer replacement or possibly entire media layer replacement
Inspection – Major Maintenance	1 year and after major storms	Maintenance Contractor	Pit and grate condition. Evidence of cracking or spalling of concrete structures. Evidence of erosion in downstream channel

3 Conclusion

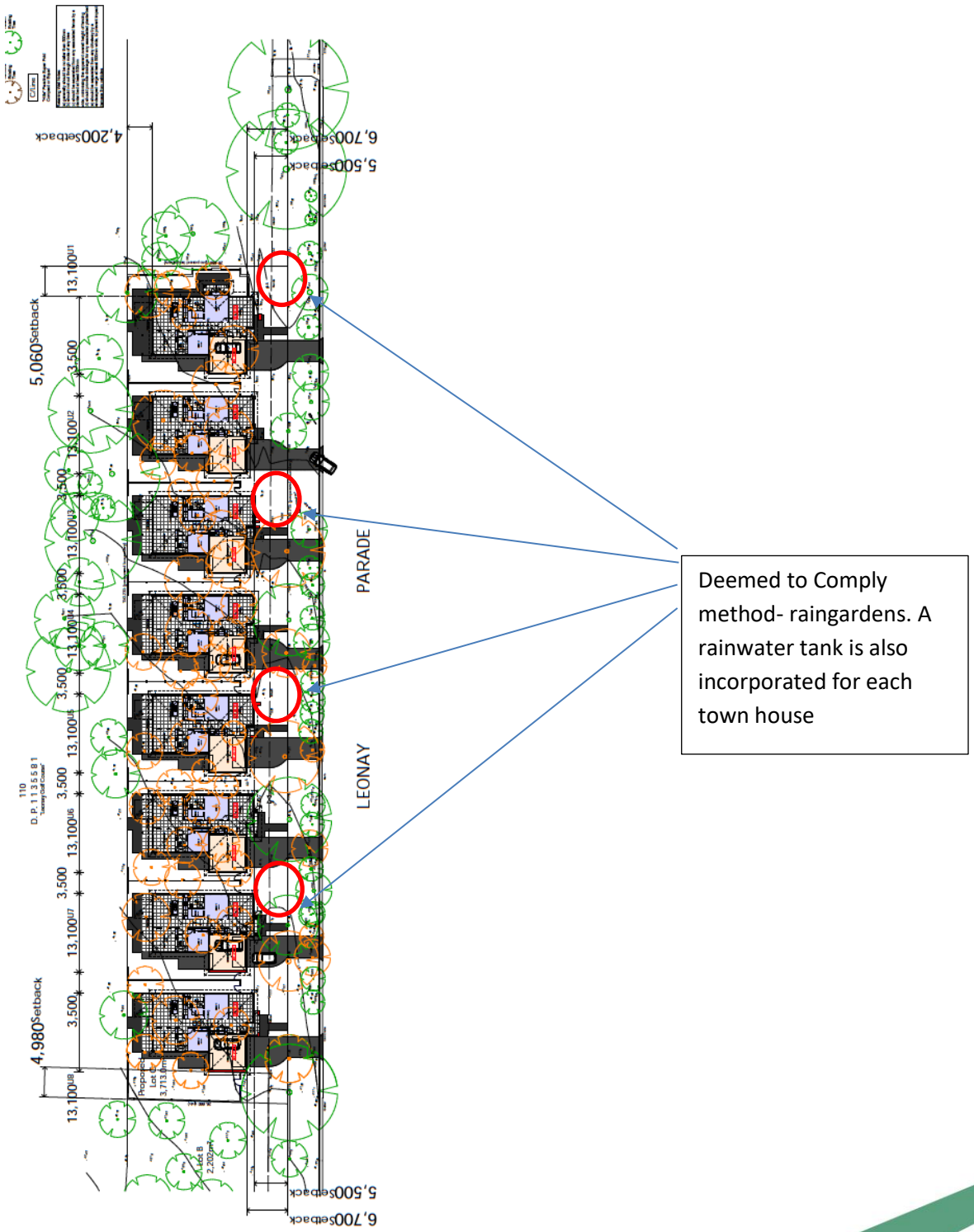
An investigation of the proposed site and stormwater treatment train has been undertaken for lot 110 Leonay Parade, Leonay.

A detailed MUSIC model was established for the site. The model was based on the parameters provided within the Penrith City Council WSUD Technical Guidelines. Using a combination of rainwater tanks and raingardens, the proposed stormwater treatment train will meet the WSUD Targets adopted by Penrith City Council.

Name of Designer:	Laith Almoil
Qualifications:	BEng.(Civil)
Date:	18.12.2018
Signed:	

Appendix 1

Site Plan



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