



SMALL TOWNHOUSE DEVELOPMENT PREFERRED SOLUTION

ESD April 2019

The development site is 735 m². Six new residential units are proposed for the site. The townhouses will each have three stories and three bedrooms. The table below shows a breakdown of surface types within the site. Each unit has a 10 m² balcony. Rainwater tanks are used to treat as much roof area as possible. Permeable paving will be used for all of the driveway and non-trafficable paving within the development.

Surface type	Area (m ²)	Typology for purpose of stormwater quality assessment
Unit 1 roof to tank (2,500 L)	65	Impervious
Unit 2 roof to tank (2,000 L)	45	Impervious
Unit 3 roof to tank (2,000 L)	45	Impervious
Unit 4 roof to tank (2,000 L)	45	Impervious
Unit 5 roof to tank (2,000 L)	45	Impervious
Unit 6 roof to tank (2,500 L)	65	Impervious
Unit 1 roof untreated (balcony only)	10	Impervious
Unit 2 roof untreated (includes balcony)	20	Impervious
Unit 3 roof untreated (includes balcony)	20	Impervious
Unit 4 roof untreated (includes balcony)	20	Impervious
Unit 5 roof untreated (includes balcony)	20	Impervious
Unit 6 roof untreated (balcony only)	10	Impervious
Driveway to inground raingarden	150	Pervious
Paths (permeable paving)	100	Pervious
Garden beds	75	Pervious
TOTAL	735	

Stormwater runoff from the site will be treated using rainwater tanks and permeable paving.

a) Rainwater tanks

Runoff from the roofs of Units 1 to 6 (excluding balcony) will be diverted to 2,000 L or 2,500 L above ground rainwater tanks. Rainwater will be used for toilet flushing and cold laundry taps within Units 1 to 6. Rainwater tank overflows will be directed to the legal point of discharge.

Note that some roof runoff from Units 2 to 5 will not drain to rainwater tanks due to constraints on draining the whole roof to the tank (i.e. charged stormwater pipes should not go under buildings).

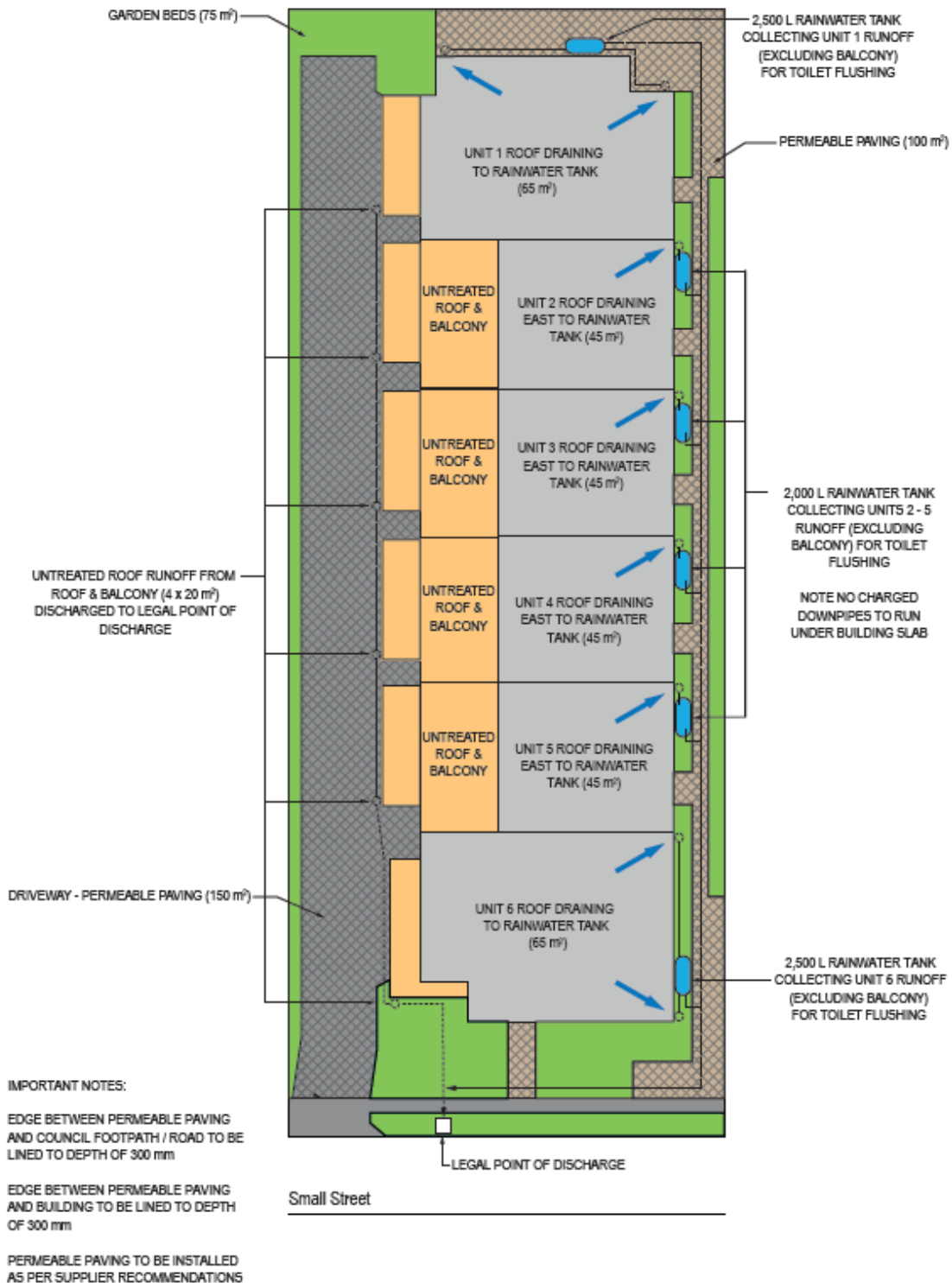
b) Permeable paving

Stormwater runoff from all of the driveway and footpaths will be infiltrated to the underlying soils using permeable paving. During large rainfall events, stormwater that cannot be infiltrated via the permeable paving will flow either overland or through underground drainage to the legal point of discharge.

c) Other catchment areas

No treatment will be provided for balconies and parts of the Unit 2 to 5 roofs that drain to the south. Rainfall on garden beds and turfed areas to the front and rear of the property will be directly infiltrated to the in situ soils.


Site layout plan





STORM Report

The STORM report is shown below. Note that only impervious surfaces are entered into the STORM tool.

 **STORM Rating Report**

TransactionID: 760386
 Municipality: MORELAND
 Rainfall Station: MORELAND
 Address: Small Street
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 Assessor:
 Development Type: Residential - Multiunit
 Allotment Site (m2): 735.00
 STORM Rating %: 127

Description	Impervious Area (m2)	Treatment Type	Treatment Area/Volume (m2 or L)	Occupants / Number Of Bedrooms	Treatment %	Tank Water Supply Reliability (%)
Unit 1 roof to tank	65.00	Rainwater Tank	2,500.00	3	166.00	82.00
Unit 2 roof to tank	45.00	Rainwater Tank	2,000.00	3	170.00	82.00
Unit 3 roof to tank	45.00	Rainwater Tank	2,000.00	3	170.00	82.00
Unit 4 roof to tank	45.00	Rainwater Tank	2,000.00	3	170.00	82.00
Unit 5 roof to tank	45.00	Rainwater Tank	2,000.00	3	170.00	82.00
Unit 6 roof to tank	65.00	Rainwater Tank	2,500.00	3	166.00	82.00
Unit 1 roof untreated	10.00	None	0.00	0	0.00	0.00
Unit 2 roof untreated	20.00	None	0.00	0	0.00	0.00
Unit 3 roof untreated	20.00	None	0.00	0	0.00	0.00
Unit 4 roof untreated	20.00	None	0.00	0	0.00	0.00
Unit 5 roof untreated	20.00	None	0.00	0	0.00	0.00
Unit 6 roof untreated	10.00	None	0.00	0	0.00	0.00

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