

Technical Memorandum

Title	4 – 8 Spruhan Avenue, Norlane, Vic, 3214 Drainage and WSUD Treatment Options.		
Client	Norlane Community Initiatives Ltd	Project No	18707-99
Date	JUNE 2022	Status	
Author	A.Shiels	Discipline	Civil
Reviewer	B.Johnson	Office	Geelong

1.1 Purpose

The purpose of this memorandum is to outline proposed stormwater management systems, including drainage works and retention, detention and discharges of stormwater. The site in question is 4 to 8 Spruhan Avenue, Norlane. In order to satisfy the following standard permit requirements:

- The site stormwater discharge is not increased by the proposed development. An appropriate on-site detention system is designed in accordance with the Infrastructure Design manual may be required.
- Runoff is to be treated to achieve current best practice pollutant removal targets by connection to an appropriate Water Treatment Facility, with capacity to treat at least a 3-month ARI storm event, unless approved otherwise by the responsible Authority. The Water Treatment Facility must be maintained to the satisfaction of the Responsible Authority.

1.2 Site Conditions.

The proposed development site is currently developed and is used by Norlane Community Initiatives Ltd, a registered charity, who run various community programs from the site including neighbourhoods' meals, urban farming, social events, community co-operatives and education programs.

The pre-developed site consisted of an existing dwelling running from west to east along the northern boundary, a gravel carpark located within in the eastern portion of the development and a church located on the western boundary.

The overall site is 1952m², in which the existing dwellings roof catchment was 481m², the church 108m² when it stood and a gravel carpark making up 317m².

The existing site conditions consist of the existing dwelling running from west to east along the northern boundary with minor roof additions (591m²), and a building for residence located in the south-east of the site (230m²). It is also proposed that the original carpark which has been removed, be relocated to the south-west corner of the site with an area of 266m².

1.3 Treatment Options

As part of the planning permit, stormwater runoff needs to be treated to best practice pollutant removal. In order to achieve this within this development a Melbourne Water STORM Report was produced to show what drainage treatment options are possible for the site.

As per the landscaping master plan, rainwater tanks were located adjacent to both buildings to capture runoff from the roof catchments. As stated earlier, the existing building roof catchment to the north with minor additions is 591m² and the building to the south-east roof catchment is 230m². From the STORM report it shows that the building to the north and the building to the south-east require 12,500L and 10,000L rainwater tanks respectfully in order to help treat runoff.

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As the proposed carpark is now sealed treatment needs to be provided to ensure that the planning permit conditions are met, one method for proposed treatment is rain gardens. It is proposed to construct rain gardens along the eastern and western boundaries of the carpark. Based upon the STORM report, a carpark of 266m² would require a raingarden area totalling 52m² for adequate water treatment.

1.4 Detention

Another condition of the planning permit requires the amount of stormwater runoff discharged from the site is not increased from existing site conditions. In order to achieve this, appropriate on-site detention systems may not be needed to limit the amount of runoff put back into existing drainage network located in Spruhan Avenue.

Given the site area was previously made up of two buildings and an existing carpark the proposed conditions generally match pre-developed conditions. This indicates that the proposed conditions for runoff should be the same as pre-developed conditions. Given with the landscaping master plan that there is proposed vegetable garden, grassed areas and garden beds the amount of impervious to pervious is balanced indicating no worsening of conditions.

If detention was required, the rainwater tanks previously stated in section 1.3 provides detention for the roof water on site, this water can be re-used as well to further provide less impact on existing drainage systems.

1.5 Conclusion

In conclusion, based upon the STORM report it is proposed that the site meets planning permit conditions if the proposed drainage options were to be included. As there is no increase in site runoff into existing drainage systems and best practice pollutant removal has been achieved, stormwater quality and management permit conditions have been met.



STORM Rating Report

TransactionID: 1384490
 Municipality: GREATER GEELONG
 Rainfall Station: GREATER GEELONG
 Address: 4-8 Spruhan Avenue

Norlane
 VIC 3214

Assessor: A.Shiels
 Development Type: Residential - Mixed Use
 Allotment Site (m2): 1,952.16
 STORM Rating %: 101

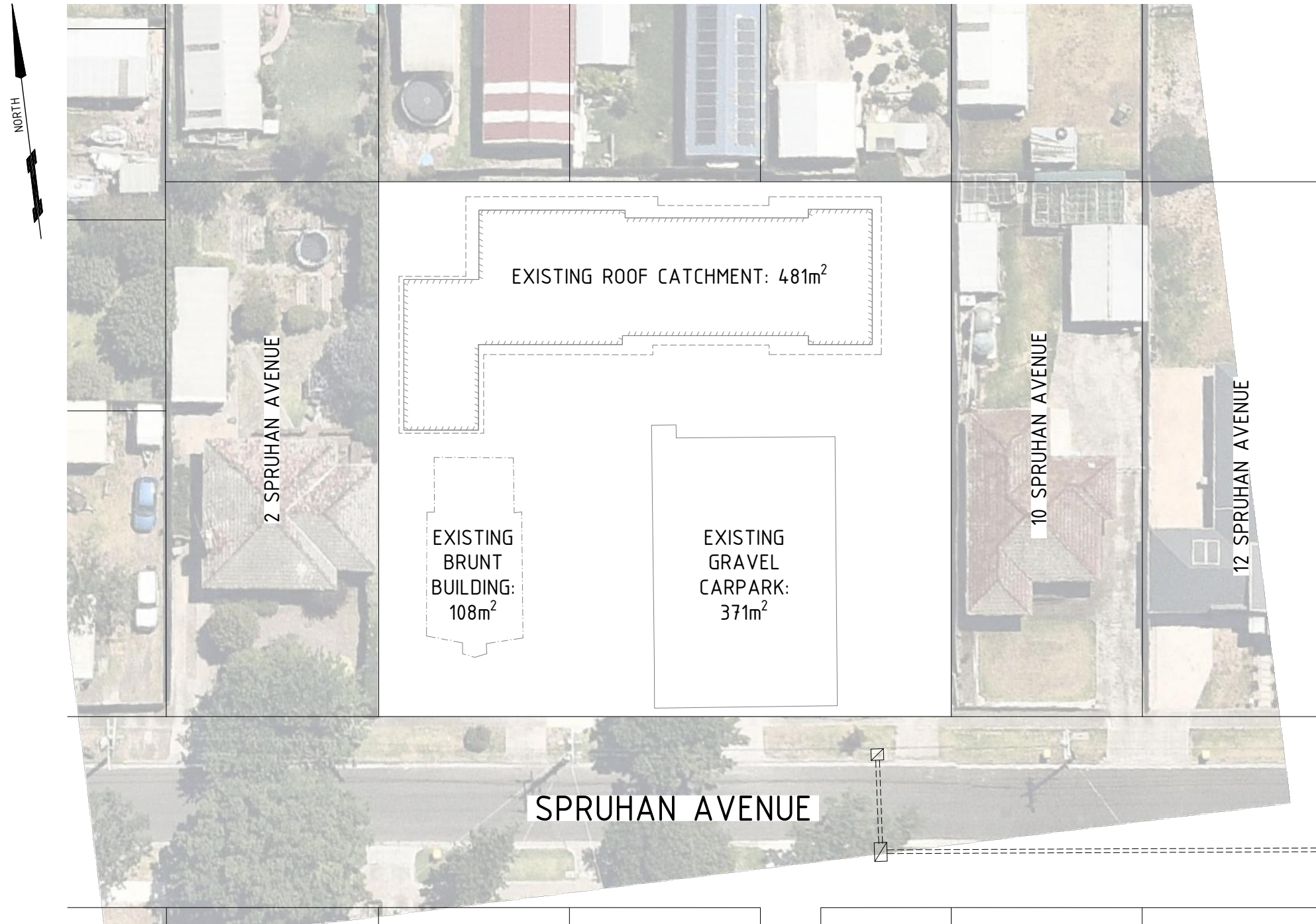
Description	Impervious Area (m2)	Treatment Type	Treatment Area/Volume (m2 or L)	Occupants / Number Of Bedrooms	Treatment %	Tank Water Supply Reliability (%)
Proposed Carpark	266.00	Raingarden 300mm	52.00	0	134.00	0.00
Existing/Proposed Roof Catchment	591.00	Rainwater Tank	12,500.00	5	77.90	97.00
Constructed Dwelling	230.00	Rainwater Tank	10,000.00	5	120.00	97.90

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**4-8 SPRUHAN AVENUE
NORLANE, VIC, 3214
PRE-DEVELOPED CONDITIONS**

1:500 (@A3)
JUNE 2022
Rev. 02

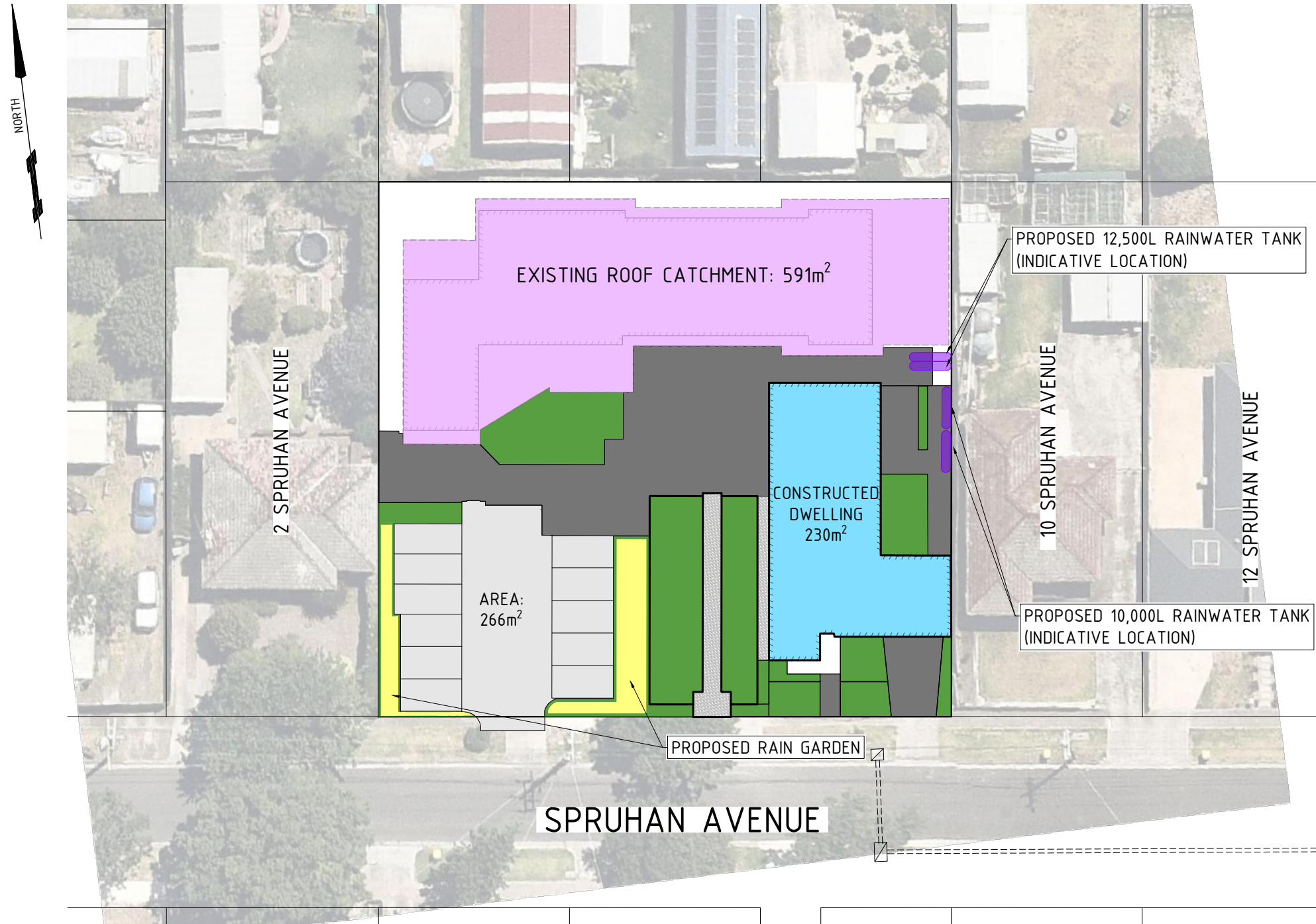


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**4-8 SPRUHAN AVENUE
NORLANE, VIC, 3214
PROPOSED CONDITIONS**

1:500 (@A3)
JUNE 2022
Rev. 02



LEGEND:

- CONSTRUCTED DWELLING:
- PROPOSED CAR PARK:
- PROPOSED RAINWATER TANK:
- EXISTING AND PROPOSED BUILDINGS:
- EXISTING PIT/PIPE DRAINAGE:
- PAVED/CONCRETED AREAS:
- GRASSED/GARDEN BED/VEGETABLE GARDEN:



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