

Stormwater Management Report

for

Law Architects Pty Ltd

at

New Catholic School – Ellen McDonald Drive, Baranduda VIC 3691

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright



REVISION HISTORY

Revision	Prepared By	Description	Date
1	WL	Preliminary Issue	17.02.2026
2	WL	Town Planning Issue	23.02.2026

**ADVERTISED
PLAN**

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

DOCUMENT ACCEPTANCE

Action	Name	Signed	Date
Prepared by	Wendy Liu	WL	23.02.2026
Reviewed by	Gavin Donohue	GD	23.02.2026
Approved by	Gavin Donohue	GD	23.02.2026
On behalf of	Adams Consulting Engineers Pty Ltd		

This report is of a defined scope and only for this commission. Adams should be consulted where any questions regarding the interpretation or completeness of our report arise.

CONTENTS

1 INTRODUCTION 4

2 EXISTING SCENARIO..... 4

 2.1 Existing Site Description 4

 2.2 Existing Land Flooding Overlays 5

 2.3 Existing Site Features..... 6

3 PROPOSED DEVELOPMENT 7

 3.1 Proposed Site Description 7

 3.2 Wodonga City Council Nominated Legal Point of Discharge..... 7

 3.3 Proposed Overland Flow Path 8

4 DESIGN OBJECTIVES / ANALYSIS INPUTS 8

 4.1 Council Requirements 8

 4.2 IFD Data 8

 4.3 Existing and Proposed Site Permeability 9

 4.4 On-Site Detention Requirements 9

 4.5 Water Sensitive Urban Design Requirements 9

5 ANALYSIS RESULTS 10

 5.1 Allowable Discharge Rate 10

 5.2 On-Site Detention Volume 10

 5.3 Water Sensitive Urban Design (WSUD) Implementation 10

6 CONCLUSION 11

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

**ADVERTISED
PLAN**

1 INTRODUCTION

Adams Consulting Engineers Pty Ltd has been engaged by Law Architects to prepare a Stormwater Management Report (SMP) for the proposed new school development at the corner of John Schubert Drive and Ellen McDonald Drive, Baranduda (the site).

This report outlines the requirements and associated results of:

- Pre and post development stormwater runoff flow from the Site.
- Wodonga City Council Nominated Legal Point of Discharge.
- Overland flow paths through the site.
- Requirements for On-site detention.
- Water Sensitive Urban Design (WSUD) initiatives.

**ADVERTISED
PLAN**

It is understood that this report will form part of the Town Planning submission and will guide the design intent for subsequent phases of work, ensuring continuity throughout the project.

2 EXISTING SCENARIO

2.1 Existing Site Description

The development site is a lot within a new green fields subdivision in Baranduda, approximately 2km north of Baranduda CBD, part of the Wodonga City Council. The total area of the site is approximately 12.7712 hectares.

The site is bordered by Baranduda Lifestyle Estate to the north, Ellen McDonald Drive to the west, John Schubert Drive to the south, and Kiewa Valley Highway to the east. Refer to Figure 1 below for the site aerial image.

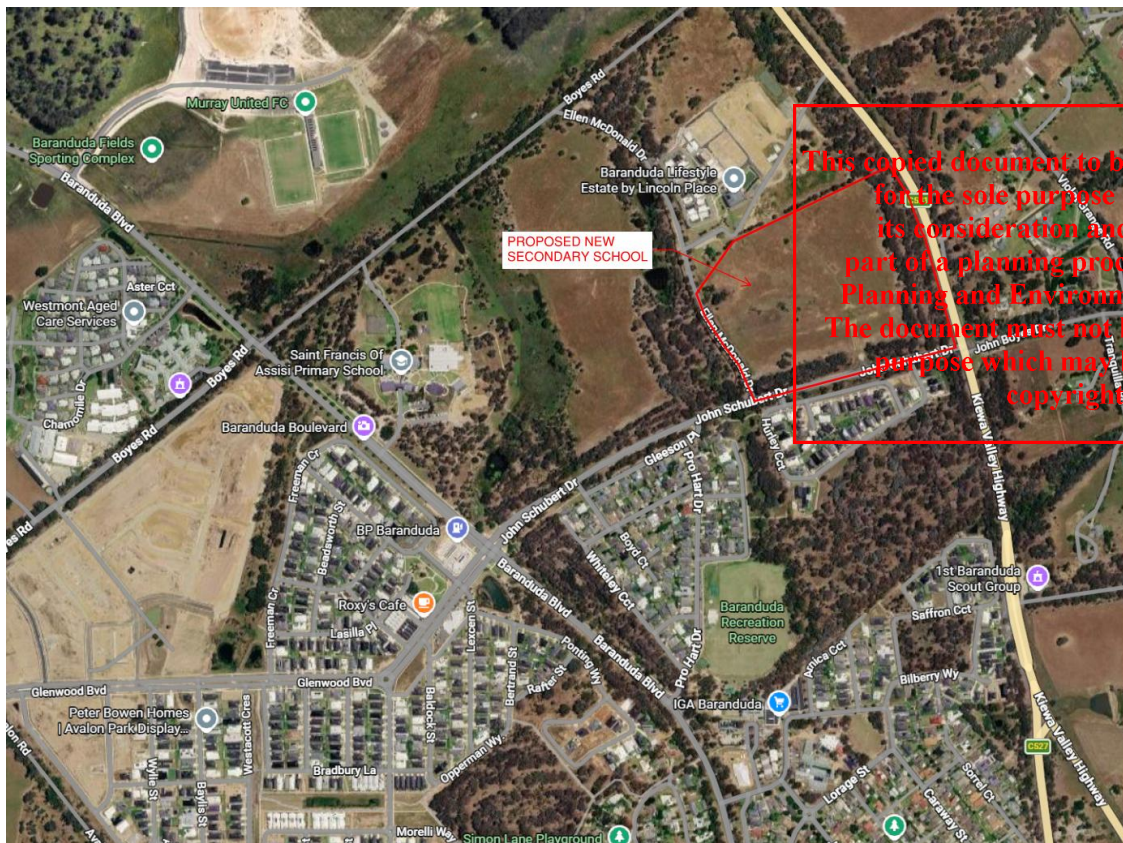


Figure 1 - Site Aerial Image (Google Maps, 2026)

2.2 Existing Land Flooding Overlays

A review of the Department of Environment, Land, Water, and Planning mapping tools (VicPlan), indicates that the site is not located within any Melbourne Water flood zones or subject to any Special Building Overlays (SBO), refer to Figure 2 for the VicPlan map.



Figure 2 - Land Management Overlays – Planning Maps Online (Victoria State Government – Environment, Land, Water and Planning, November 2021)

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

**ADVERTISED
PLAN**

2.3 Existing Site Features

A Feature Survey of the site was completed by Eslers Land Consulting Surveyors & Engineers on 20/07/2023. The survey indicates that the site generally falls from the centre of the south boundary to the north-east and north-west boundaries, refer to Figure 3 for the site survey.

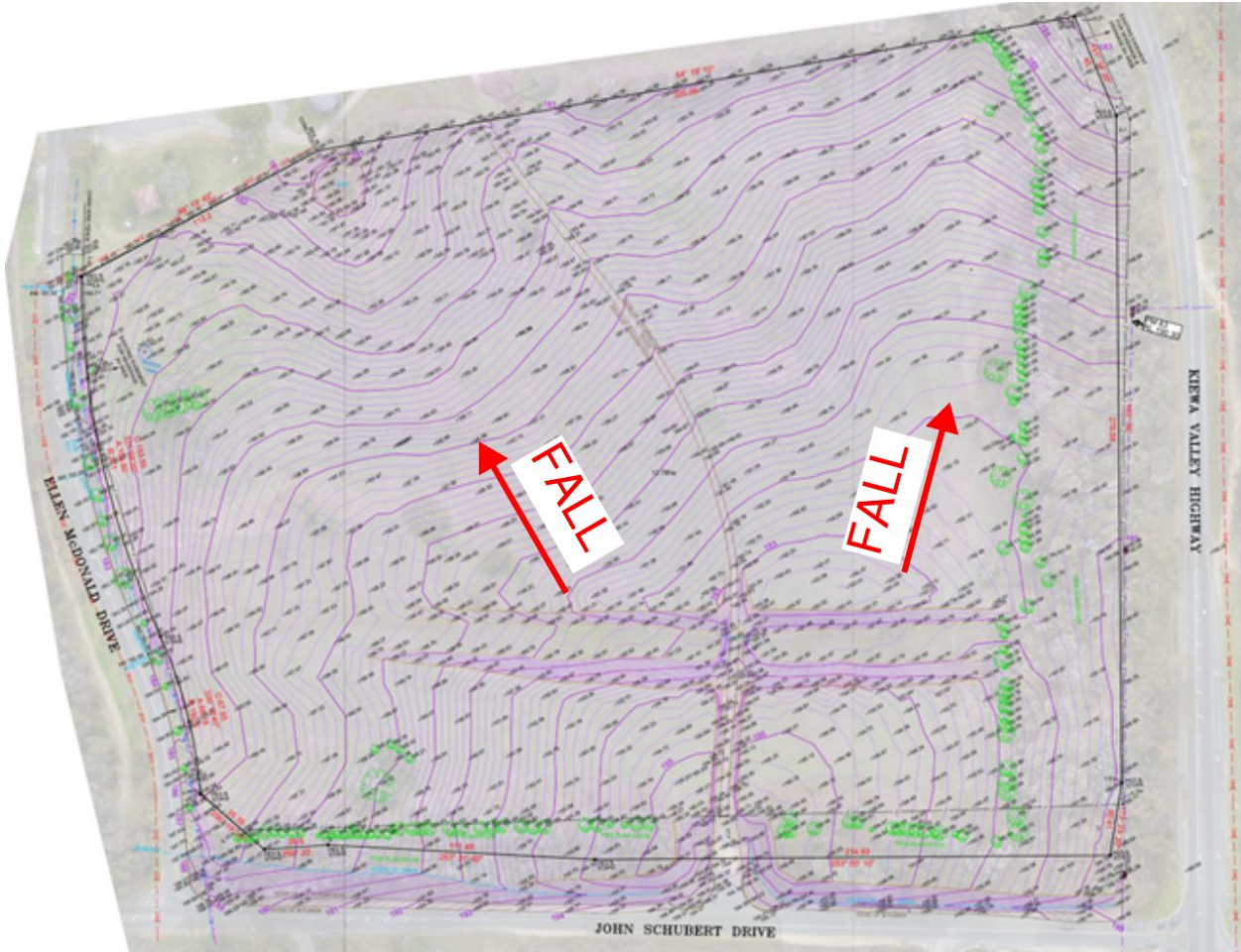


Figure 3 – Site Survey Plan – Eslers Land Consulting Surveyors & Engineers (July 2023)

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

**ADVERTISED
PLAN**

ADVERTISED PLAN

3 PROPOSED DEVELOPMENT

3.1 Proposed Site Description

The site is intended to be developed into a new school. Figure 4 below illustrates the proposed layout.

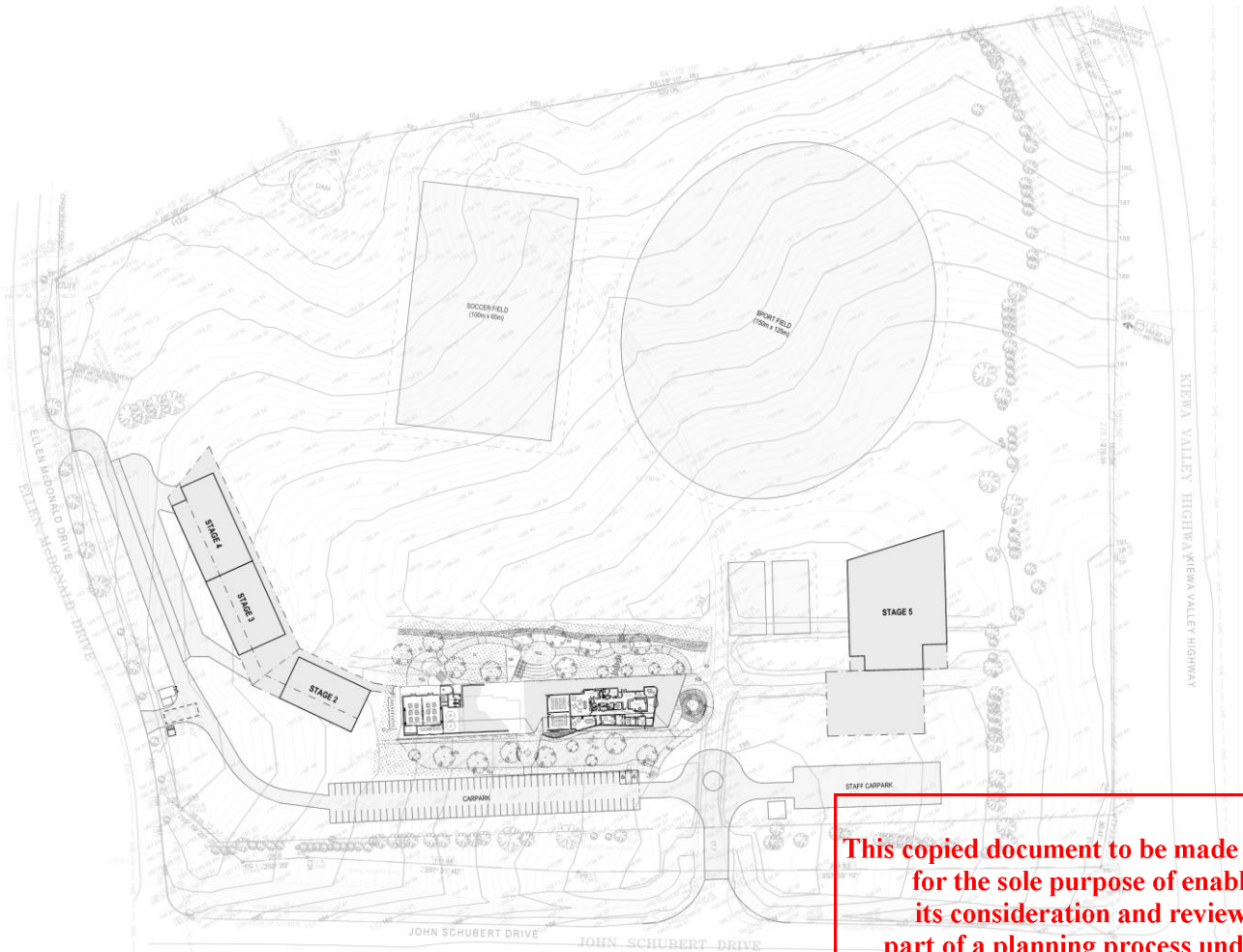


Figure 4 - Proposed Development – Site Plan (Law Architects, November 2025)

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. It must not be used for any purpose which may breach any copyright

3.2 Wodonga City Council Nominated Legal Point of Discharge

At this early stage, Council's recommended Legal Point of Discharge (LPOD) is either onsite disposal or connection to the existing stormwater asset located on the site. The final LPOD will be issued after the planning permit application has been submitted to Council.

The civil concept plan (Drawing No. 250324-SKC001-8) assumes two Legal Points of Discharge (LPODs). All stages of the proposed development will discharge into an on-site detention basin, which will be connected to Council's drainage system on Ellen McDonald Drive. Runoff from the rear area will flow into a grassed swale and be conveyed via a pipe system to the second LPOD, which connects to an existing stub provided by the neighbouring development. The extreme east edge is not planned to be developed and is to remain as natural fall.

Refer to **Appendix A** for the Concept Civil Plan (240963-SKC001-8).

3.3 Proposed Overland Flow Path

The proposed development will be delivered in stages. The stages, including the car park and surrounding landscaping, are designed to direct overland stormwater around the buildings and into grassed swales, which then convey the flow to the downstream stormwater network. The overland flow paths have been designed to accommodate runoff from the entire site.

Refer to Figure 5 for the proposed overland flow paths.

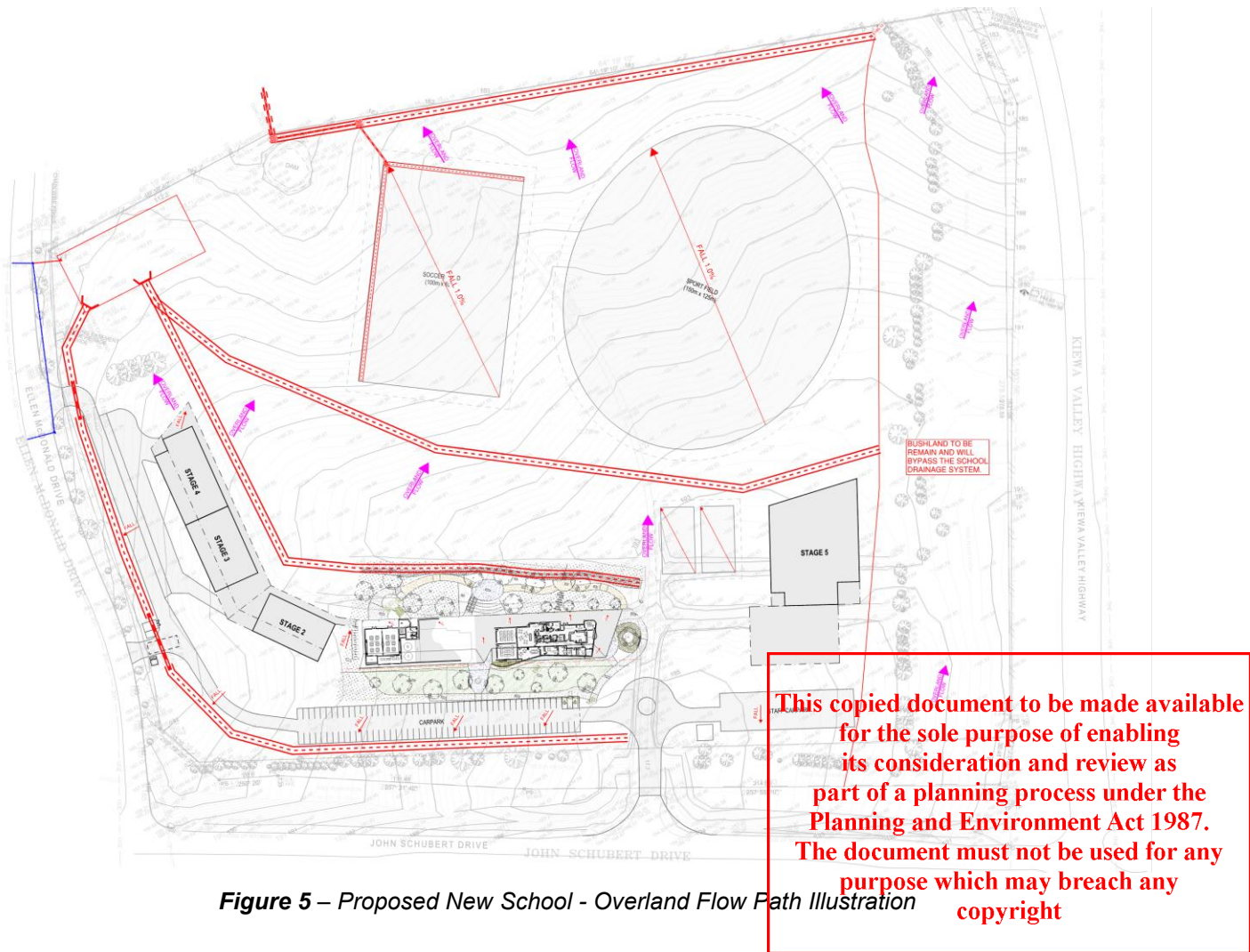


Figure 5 – Proposed New School - Overland Flow Path Illustration

4 DESIGN OBJECTIVES / ANALYSIS INPUTS

4.1 Council Requirements

The Wodonga City Council's adopts the Infrastructure Design Manual (IDM) standards which details the parameters and design criteria for all new developments within the Wodonga City Council area. The document examines the nature of the development and outlines the provision of Water Sensitive Urban Design (WSUD) treatment targets and on-site detention (OSD) requirements.

4.2 IFD Data

Rainfall intensity and duration data was obtained from the Bureau of Meteorology (2016 data).

IFD Table								
Duration (mins)	Index	ARI (Years)						
		1	2	5	10	20	50	100
5	1	67.6	76.2	104	122	141	164	183
6	2	63.3	71.5	97.2	115	132	155	172
10	3	51.1	57.8	78.8	93.2	107	127	142
20	4	35.4	40.1	54.8	64.9	74.9	88.6	99.2
30	5	27.7	31.3	42.7	50.5	58.3	68.9	77.1
60	6	17.5	19.7	26.6	31.5	36.2	42.5	47.4
120	7	10.8	12.1	16.2	18.9	21.7	25.3	28.1
180	8	8.15	9.08	12	14	16	18.6	20.6
360	9	5.07	5.62	7.33	8.49	9.64	11.2	12.4
720	10	3.18	3.51	4.55	5.26	5.95	6.93	7.7
1440	11	1.99	2.2	2.86	3.31	3.76	4.41	4.93
2880	12	1.22	1.35	1.78	2.07	2.37	2.8	3.15
4320	13	0.894	0.996	1.32	1.55	1.77	2.1	2.37

Table 1 – Current BOM data – Rainfall Intensity (mm/hr)

ADVERTISED PLAN

4.3 Existing and Proposed Site Permeability

The existing site consists of an undeveloped greenfield area and is therefore 100% pervious, with a total site area of 127,713 m². The proposed development will be implemented in stages. A portion of the site will remain as bushland, while the rear area will also remain fully pervious. The staged development will include the construction of buildings, play areas, car parks, footpaths, sportsfields and landscaped areas.

Based on the architectural plans, the undeveloped bushland will retain approximately 16% pervious area (20,900 m²), the rear area approximately 37% pervious area (47,885 m²) and the proposed development of all stages will comprise approximately 17% pervious area and 30% impervious area, with a total area of 58,928 m².

Refer to **Appendix B** for the Overall Site Catchment Plan (250324-SK0024).

This area (47,885 m²) and the proposed development must be made available for public use and 30% of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

4.4 On-Site Detention Requirements

The development must comply with Wodonga City Council standards for on-site detention (OSD) requirements.

The discharge flow rate and required on-site detention volume will be calculated using the OSD4W application.

4.5 Water Sensitive Urban Design Requirements

The development is required to comply with the Infrastructure Design Manual (IDM) standards and follow the recommendations of the Water Sensitive Urban Design Guidelines and the *Urban Stormwater: Best Practice Environmental Management Guidelines* to achieve the following water

quality planning objectives:

- 80% retention of the typical urban annual load for Total Suspended Solids (TSS);
- 45% retention of the typical urban annual load for Total Phosphorus (TP);
- 45% retention of the typical urban annual load for Total Nitrogen (TN);
- 70% retention of the typical urban annual load for gross pollutants (litter)

Methods to achieve the above treatment targets can include the use of grass swale and rainwater reuse or detention basins.

Water Sensitive Urban Design (WSUD) must be assessed by using the software MUSIC application.

**ADVERTISED
PLAN**

5 ANALYSIS RESULTS

5.1 Allowable Discharge Rate

The proposed legal point of discharge for the development is to Council's drainage system on Ellen McDonald Drive. The existing Council drainage pipe (375 mm diameter reinforced concrete pipe) has a maximum capacity of approximately 250 L/s. Therefore, the permissible discharge rate has been adopted as 200 L/s, allowing approximately 20% of the existing council pipe capacity to accommodate stormwater runoff from the road.

5.2 On-Site Detention Volume

The On-Site Detention system (OSD) has been designed only for the proposed full stages of development as the undeveloped bushland and rear area of the proposed site will remain as pervious area.

A minimum OSD volume of 528.93 m³ has been calculated for the proposed full development. Therefore, a total OSD storage volume of 530.1 m³ has been provided for the site.

Refer to **Appendix C** for OSD4W results report.

5.3 Water Sensitive Urban Design (WSUD) Implementation

Water Sensitive Urban Design (WSUD) has been assessed using MUSIC modelling. The water quality targets are achieved through the implementation of grassed swales and rainwater reuse tanks for the proposed buildings.

Refer to **Appendix D** for MUSIC Model Results.

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

6 CONCLUSION

Adams Consulting Engineers Pty Ltd (Adams) has been engaged by Law Architects to prepare a Stormwater Management Report for the proposed new school development at corner of Ellen McDonald Drive, Baranduda.

This report outlines the required inputs and associated results of:

- Pre and post development stormwater runoff flow from the Site.
- Wodonga City Council Recommended Legal Point of Discharge.
- Overland flow paths through the site.
- Requirements for On-site detention (OSD).
- Water Sensitive Urban Design initiatives

**ADVERTISED
PLAN**

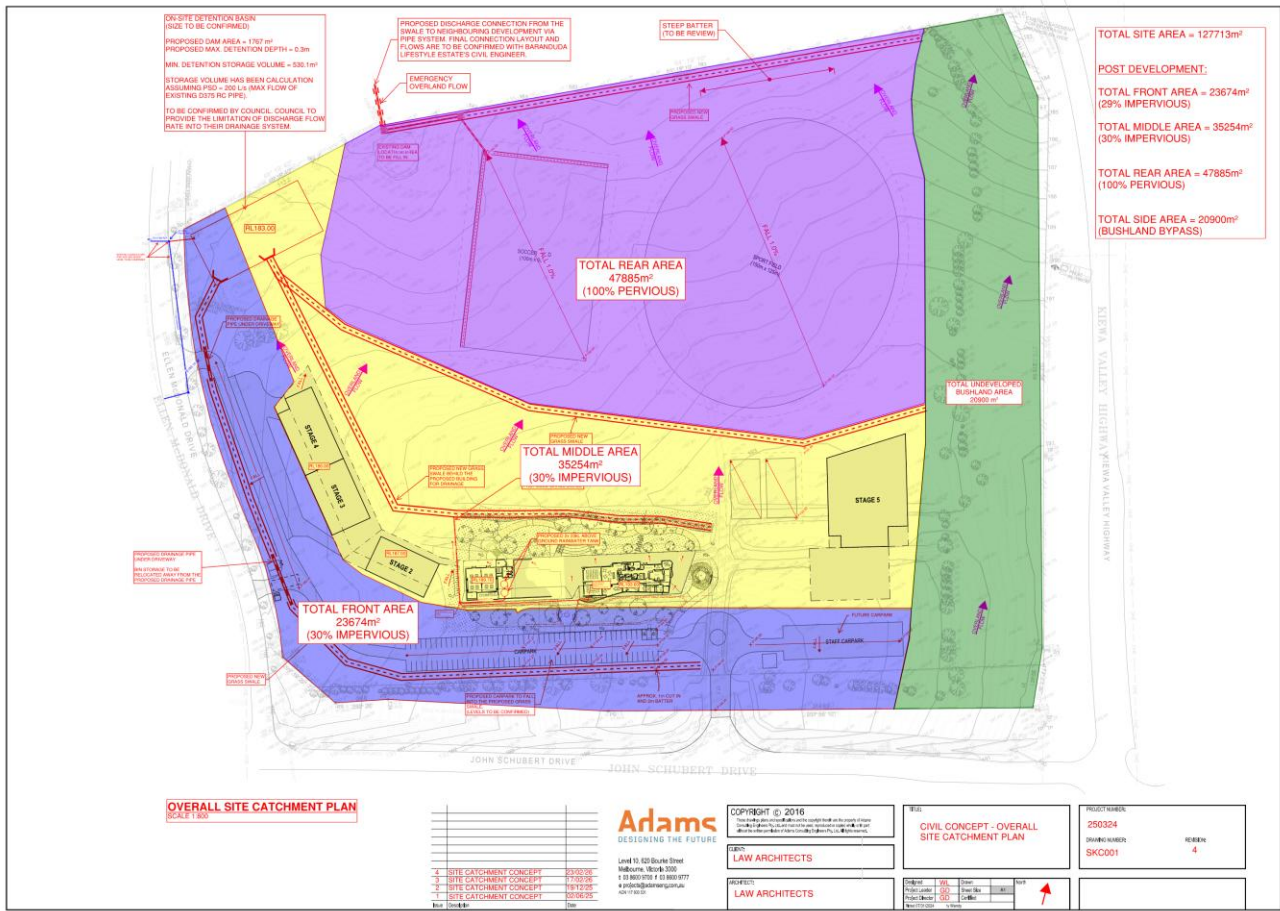
Adams understands that the findings and strategies identified in this report will accompany future planning submissions. It is anticipated that close liaison and design approvals with all relevant authorities will occur during the detailed design phase, prior to construction, should a Planning Permit be granted.

This report outlines the stormwater drainage design strategies for the proposed new school development and the requirements for discharging into the existing council stormwater drainage system. The following key items have been identified:

- The proposed development site is currently a greenfield site with a total area of approximately 12.7713 hectares. The site slopes from the south-west boundary to the north-east boundary.
- The proposed landscaping and car parks are designed to convey overland flows around the buildings and into grassed swales, which then discharge into the downstream road network.
- The site is proposed to have two Legal Points of Discharge (LPDs). The stages of development are assumed to discharge all into an on-site detention (OSD) basin, which will connect to Council's existing drainage system on Ellen McDonald Drive. The second LPD will collect runoff from the rear area via a grassed swale and convey it through a pipe system to an existing stub provided by the neighbouring development. A formal LPD determination is required to confirm the exact location of the discharge points.
- The required allowable site discharge and OSD volume for the proposed development has been calculated to limit the maximum stormwater discharge to 200 L/s, with a minimum OSD volume of 528.93 m³.
- Grassed swales and rainwater reuse tanks have been proposed for the site to achieve the Best Practice Environmental water quality targets.

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

APPENDIX B – Overall Site Catchment Plan



This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

ADVERTISED PLAN

Appendix C – OSD4W Result

ADVERTISED PLAN

*** SUMMARY OSD DESIGN REPORT ***

Printed from *OSD4W* version 1.09.1 S/N # W0-07091
Licensed to :
Prepared by : User1

1. CLIENT DETAILS

Name : ClientName
Address line 1 : ClientDet1.....
Address line 2 : ClientDet2.....
Address line 3 : ClientDet3.....

2. JOB NAME AND REFERENCE

Job Reference : OSD4W-2008-001
Job Name : JobName.....
Job Detail 1 : JobAddress1.....
Job Detail 2 : JobAddress2.....
Job Detail 3 : JobAddress3.....

3. AREAS (sq.m.) & RUN-OFF COEFFICIENTS

Total Site area : 58616

4. EXISTING SITE DETAILS

Aes1 : 0 Ces1 : 0.90
Aes2 : 58616 Ces2 : 0.30
Aes3 : 0 Ces3 : 0.15
Aes4 : 0 Ces4 : 0.12
Weighted C - site Cew : 0.30

5. PROPOSED SITE DETAILS

Aps1 : 17885 Cps1 : 0.90
Aps2 : 40731 Cps2 : 0.30
Aps3 : 0 Cps3 : 0.15
Aps4 : 0 Cps4 : 0.12
Weighted C - site Cpw : 0.48
Uncontrolled portion(s) UPfrac : 0.00

6. CATCHMENT TIMES (minutes)

Time of concentration : 10.00
Travel time from discharge point
to catchment outlet : 5.00

7. OSD DESIGN

Flow Control Device : MC2 Multi-Cell
Storage type : On-Ground
Rainfall zone : WODONGA
ARI for OUTFLOW (years) : 5
ARI for STORAGE (years) : 20
Qptot (L/s) : 350.87
Qu (L/s) : 0.00
Qp (L/s) : 0.00
Calculated PSD (L/s) : 384.79
Nominated PSD (L/s) : 200.00
Adopted PSD (L/s) : 200.00

8. STORAGE DETAILS

Volume (cub.m.) : 528.93
Time to fill storage (mins) : 31.0
Time to empty storage (mins) : 54.5
Critical storm duration (mins) : 41.3

9. STORM DURATIONS & RAINFALL INTENSITIES

PSD Duration : 10.0 min. Intensity : 71.8 mm/hr
MAX. STORAGE Duration : 41.3 min. Intensity : 46.8 mm/hr

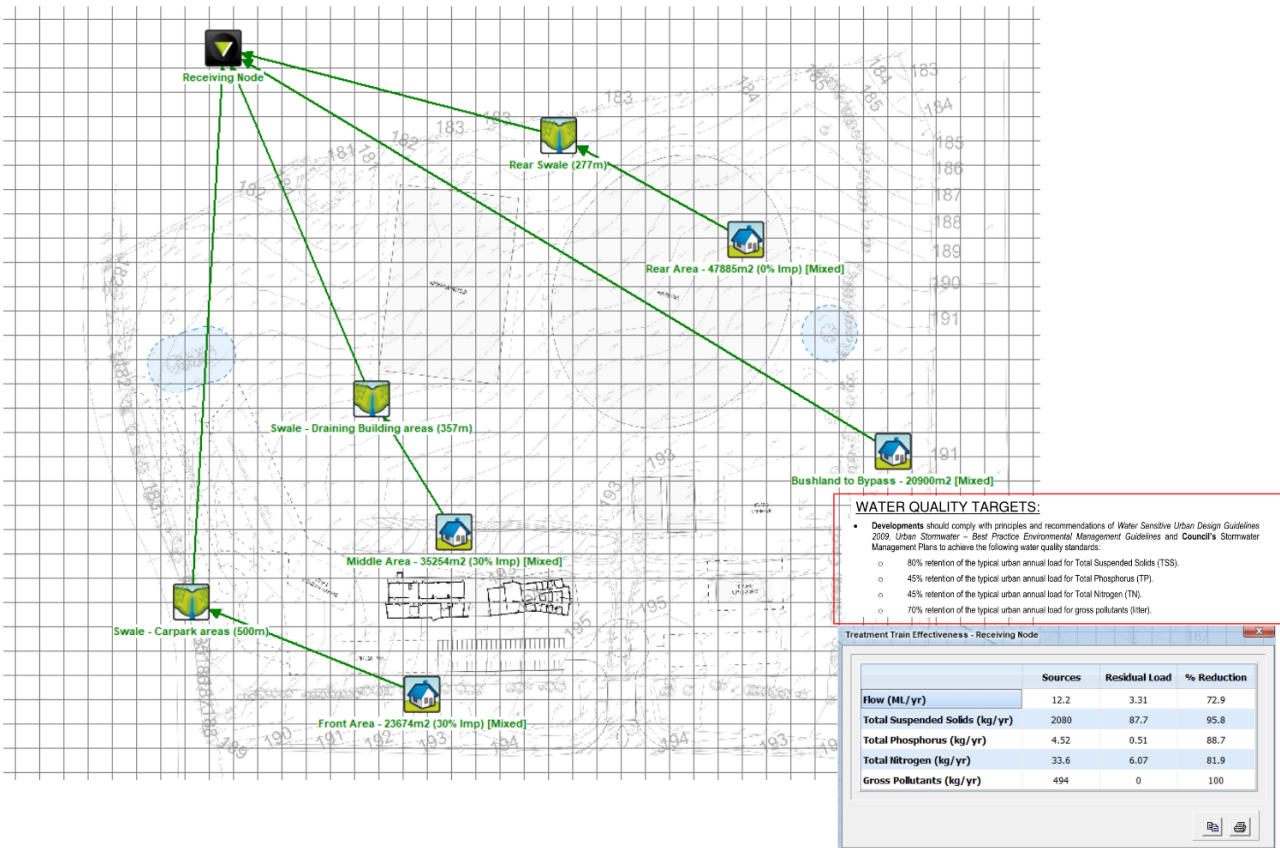
Generated at : 16/02/2026 15:42:31

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

THE PROPOSED PIPE WILL CONNECT TO COUNCIL'S EXISTING DRAINAGE SYSTEM ON ELLEN MCDONALD DRIVE, THE EXISTING COUNCIL DRAINAGE PIPE (D375 RCP) HAS A APPROX. MAX CAPACITY OF 250 L/S.

THE ALLOWABLE SITE DISCHARGE (PSD) HAS THEREFORE BEEN ASSUMED TO BE 200 L/S, ALLOWING APPROX. 20% OF THE EXISTING COUNCIL PIPE CAPACITY TO COLLECT STORMWATER FROM THE ROAD.

Appendix D – MUSIC Modelling Result



ADVERTISED PLAN

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright