

MEMORANDUM

TO:	Okin Capital	REF:	J1385-CIV-REP-0001
FROM:	Jake Sleeman, Civil Design Lead	REV:	P1
PROJECT:	Patawalonga Apartments	DATE:	11/12/2025
TITLE:	Stormwater Management Plan	PAGES:	6

1.0 Introduction

Innovis has been engaged by Okin Capital to assess the stormwater runoff associated with the proposed development at 3 Patawalonga Frontage, Glenelg North, known as Patawalonga Apartments, and to prepare a Stormwater Management Plan as part of the Development Approval process. The subject site can be seen from Figure 1.

This Stormwater Management Plan report provides an overview of the current site conditions, assesses the existing stormwater infrastructure, and outlines the proposed stormwater drainage collection system, including the required stormwater detention volume.



Figure 1 Site Location (Highlighted in Yellow Polygon)

1.1 Subject site

The site is currently occupied by a single-storey house, a garage and shed. There is no existing underground drainage system in close proximity to the site. The nearest side entry pit (SEP) is located approximately 45 meters South of the site, on Patawalonga Frontage, as shown in Figure 2. Currently all roof runoff from the house and other properties along Patawalonga Frontage discharges onto Patawalonga Frontage through kerb outlet. Discharge ultimately joins the Council drainage system at the existing SEP South of the proposed site.



Figure 2 Existing Council Side Entry Pit

1.2 Proposed Development

The proposed development covers approx. 0.085ha and includes a 4-storey residential apartment building, and basement-level car parking, as shown in Figure 3. For detailed architectural information, refer to the Architectural Design Report by Enzo Caroscio Architecture.

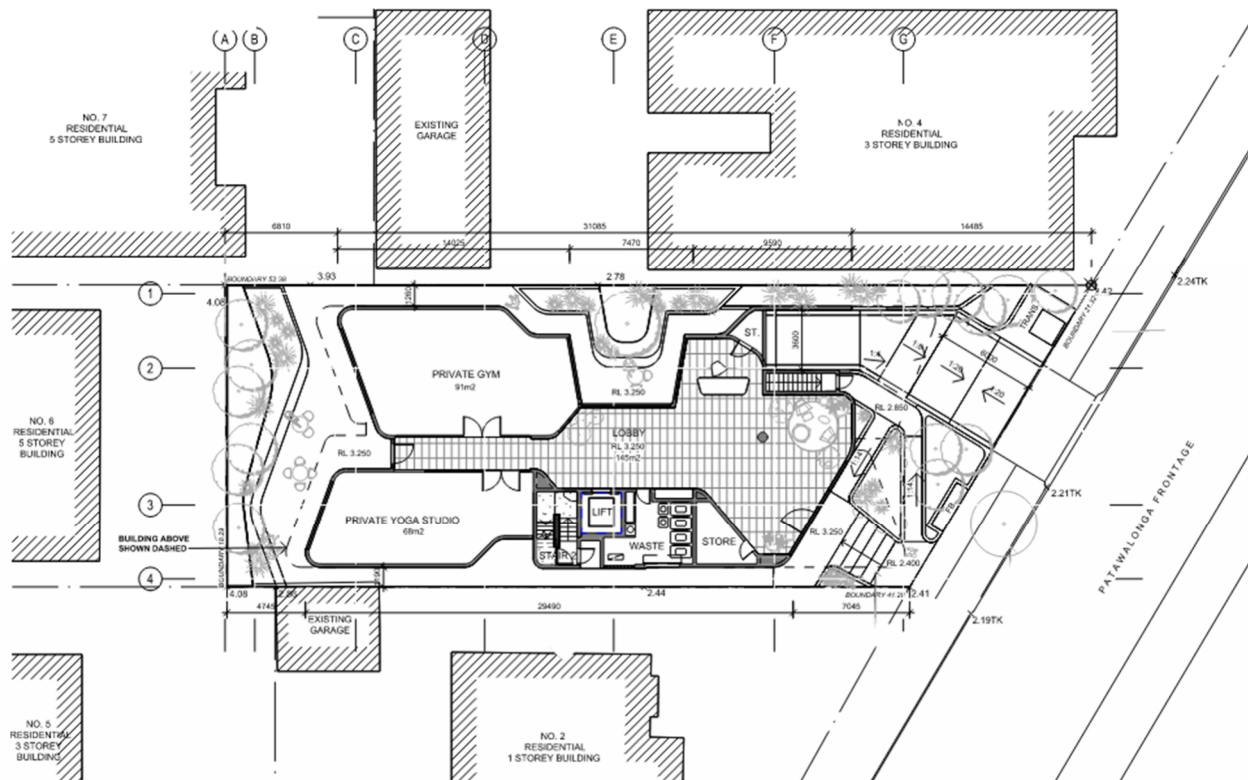


Figure 3 Proposed Architecture and Landscape Design Layout

2.0 Stormwater Management Objectives

The Council has listed the below stormwater management design objectives:

- All minor drainage systems to be designed for the 20% AEP design events;
- All major drainage systems to be designed for the 1% AEP design events; and
- Detention shall be provided to limit the 1% AEP post-development peak flowrate to the 20% AEP predevelopment flowrate.

In accordance with the South Australian Water Sensitive Urban Design (WSUD) policy to create more liveable and water sensitive cities in South Australia, the key state-wide stormwater runoff performance targets for WSUD have been adopted for the site below (refer Appendix A):

- 80% reduction in Total Suspended Solids (TSS)
- 60% reduction in Total Phosphorous (TP)
- 45% reduction in Total Nitrogen (TN)
- 90% reduction in Gross Pollutant (GP); and
- No visible oils/hydrocarbons for flows up to three-month storm

3.0 Stormwater Management Design

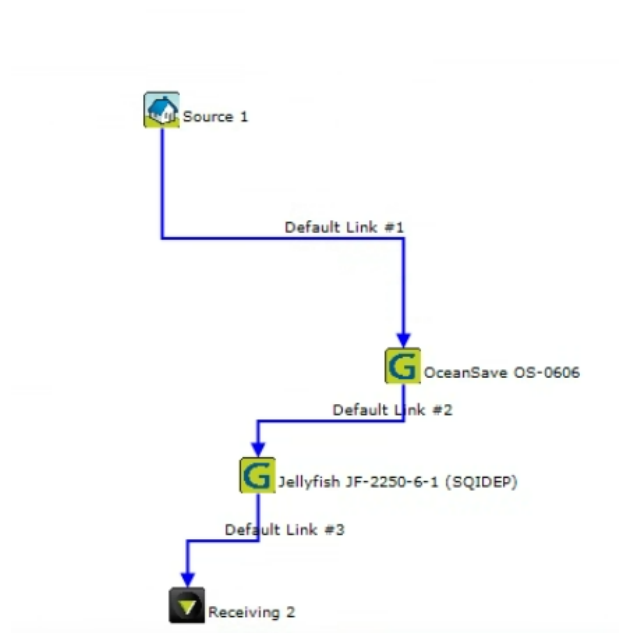
3.1 Legal Point of Discharge (LPD)

Based on the existing drainage infrastructures and the proposed design layout, one legal point of discharge (LPD) is proposed for the site, which will be a kerb outlet located to the Southern end of the site on Patawalonga Frontage.

3.2 Proposed Stormwater Management Strategies

To restrict the 1% AEP post-development flow rate to the 20% AEP pre-development flow rate, stormwater management measures have been developed in accordance with the current site design. The pre-development flow rate for a 20% AEP event is 13 L/s, while the maximum allowable discharge from the site for a 10-year ARI rainfall event is limited to 10 L/s. To meet these requirements and manage peak discharge, an 11 m³ on-site detention (OSD) tank will be provided. Refer Appendix B.

APPENDIX A – WSUD Stormwater Runoff Performance



	Sources	Residual Load	% Reduction
Flow (ML/yr)	0.2754	0.2754	0
Total Suspended Solids (kg/yr)	61.72	1.37	97.78
Total Phosphorus (kg/yr)	0.1226	0.0369	69.9
Total Nitrogen (kg/yr)	0.5795	0.3083	46.8
Gross Pollutants (kg/yr)	11.56	0	100

APPENDIX B – Proposed Detention Tank Sizing - Pumped

CLIENT:	Okin Capital	PROJECT NO:	J1385		
PROJECT:	Patawalonga Apartments	By:	JS	Date:	25.06.25
SUBJECT:	Detention Tank Sizing Pumped	Chk:	LL	Sheet No:	1

SITE SPECIFIC AREA

Pre-development		Area (m2)	Runoff Coefficient	Area (%)
Roof		403	1	47%
Pavement		149	0.9	17%
Gravel Pavement		0	0.65	0%
Landscape		302	0.12	35%
Total		854	0.67	100%

Post Development		Area (m2)	Runoff Coefficient	Area (%)
Roof		545	1	64%
Pavement		204	0.9	24%
Landscape		105	0.12	12%
Total		854	0.87	100%

IFD DATA LOCATION: -----

Duration	Rainfall Intensity (mm/h)						
	ARI (years)						
	1	2	5	10	20	50	100
1 min	76.9	87.8	126	155	186	232	272
2 min	67.1	76.7	110	136	164	206	241
3 min	59.9	68.4	98.2	121	146	183	214
4 min	54.3	62	88.9	110	132	165	193
5 min	49.8	56.9	81.4	100	121	151	176
10 min	36.2	41.3	59.1	72.7	87.3	109	127
15 min	29.1	33.2	47.5	58.5	70.3	87.7	103
20 min	24.6	28.2	40.3	49.6	59.7	74.5	87.1
25 min	21.6	24.6	35.3	43.5	52.3	65.3	76.4
30 min	19.3	22	31.6	38.9	46.8	58.5	68.4
45 min	15	17.1	24.5	30.2	36.4	45.5	53.2
1 hour	12.4	14.2	20.4	25.1	30.2	37.8	44.2
1.5 hour	9.54	10.9	15.6	19.2	23.1	28.9	33.8
2 hour	7.9	9.02	12.9	15.9	19.1	23.8	27.8
3 hour	6.03	6.88	9.81	12	14.4	17.9	20.9
4.5 hour	4.59	5.23	7.42	9.08	10.8	13.4	15.6
6 hour	3.78	4.29	6.06	7.4	8.82	10.9	12.6

FLOW CALCULATIONS

Minor Storm (Q_s)

Design Minor Storm:
Design Intensity (Minor)
Time of Concentration
Design Flow, Pre Development

ARI_minor	5 year
I_minor	81.40 mm/hr
tc_minor	5 minutes
Q_minor_pre	13.0 L/s
	0.0130 m ³ /s

Based on site specific IFD data for: -----
I = rainfall depth/duration
Q=CIA/3600

PUMP TANK SIZING

Adopt Pumping Rate **10.00 l/s**
0.0100 m³/s

Duration (min)	100 ARI Intensity (mm/hr)	Inflow (Roof) (m ³ /s)	Inflow (Pavement) (m ³ /s)	Inflow (Landscape) (m ³ /s)	Total Inflow Vol (m ³)	Outflow Vol (m ³)	Storage (m ³)
5	176.00	0.02664	0.00898	0.00062	10.87	3.00	7.87
10	127.00	0.01923	0.00648	0.00044	15.69	6.00	9.69
15	103.00	0.01559	0.00525	0.00036	19.09	9.00	10.09
20	87.10	0.01319	0.00444	0.00030	21.52	12.00	9.52
25	76.40	0.01157	0.00390	0.00027	23.59	15.00	8.59
30	68.40	0.01036	0.00349	0.00024	25.35	18.00	7.35
45	53.20	0.00805	0.00271	0.00019	29.57	27.00	2.57
60	44.20	0.00669	0.00225	0.00015	32.76	36.00	0.00
90	33.80	0.00512	0.00172	0.00012	37.58	54.00	0.00
120	27.80	0.00421	0.00142	0.00010	41.21	72.00	0.00
180	20.90	0.00316	0.00107	0.00007	46.47	108.00	0.00
Required Tank Volume					10.09 m ³		



LEGEND

SITE BOUNDARY LINE

GRATED INLET PIT
(NEW/EXISTING)

JUNCTION PIT
(NEW/EXISTING)

GTD
GRATED TRENCH DRAIN

Ø225
PROPOSED STORMWATER PIPE

RM
RISING MAIN

OSD
ON-SITE DETENTION TANK

I.O.
INSPECTION OPENING

S14208

EXISTING
BUILDING
C21793

EXISTING
BUILDING
D130042

PRIVATE GYM

PRIVATE YOGA STUDIO

LOBBY

LIFT

WASTE

STORE

EXISTING
GARAGE

EXISTING
BUILDING
F1091

FRONTAGE

PATAWALONGA

TBM : Masonry nail in the top of
Adopted elevation = 2.21m AHD

NOT FOR CONSTRUCTION

CLIENT:	REV:	DATE:	DESCRIPTION:	APR'D:	TITLE:	NAME:
					DRAFTER	JS
					DRAFTING CHECK	JS
					DESIGNER	JS
					DESIGN CHECK	BA
					PROJECT MANAGER	JA
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					PROJECT DIRECTOR	JA

PATAWALONGA APARTMENTS

GROUND FLOOR
STORMWATER PLAN

INNOVIS Agile Outcomes			
SCALE:	DATE:	PHASE:	SHT SIZE:
1:100	11/12/2025	PRELIMINARY	A1
DRAWING NUMBER:		REVISION:	
J1385-CIV-DRG-C211		P1	

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LEGEND

SITE BOUNDARY LINE

GRATED INLET PIT
(NEW/EXISTING)

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(NEW/EXISTING)

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GRATED TRENCH DRAIN

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PROPOSED STORMWATER PIPE

RM

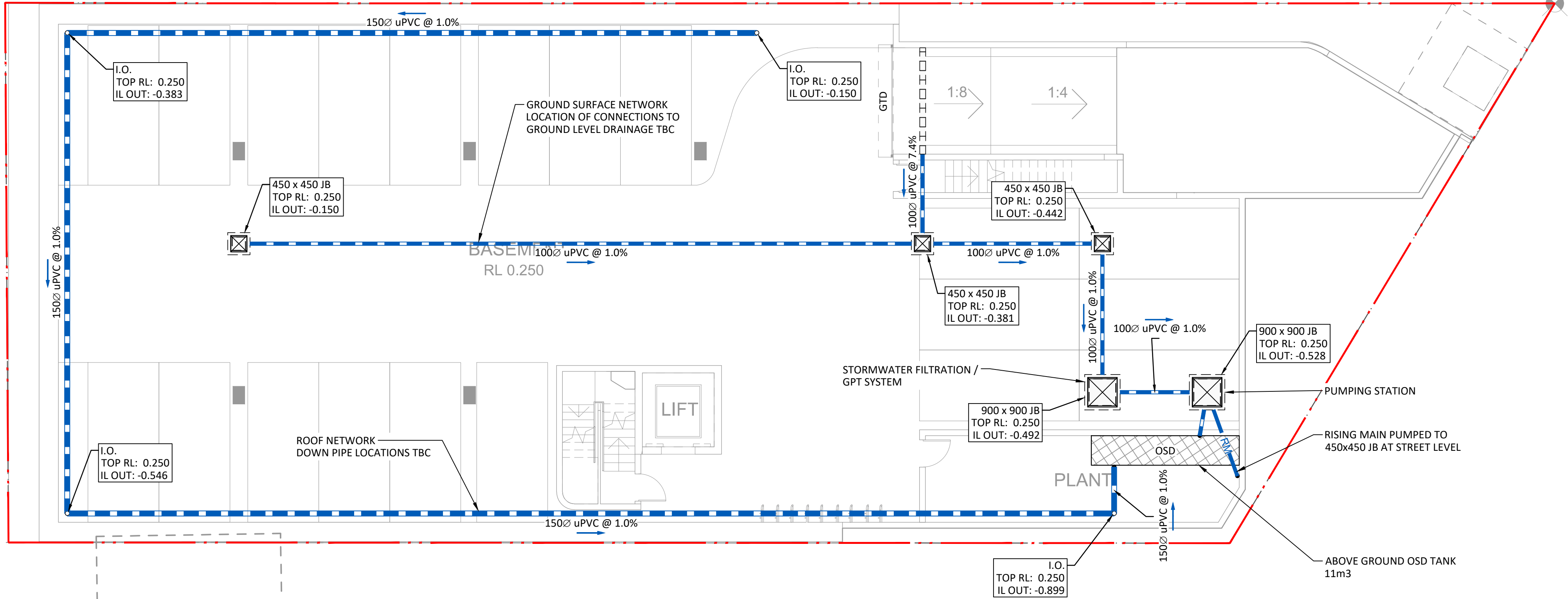
RISING MAIN

OSD

ON-SITE DETENTION TANK

I.O.

INSPECTION OPENING



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					DRAFTING CHECK	JS
					DESIGNER	JS
					DESIGN CHECK	BA
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PATAWALONGA APARTMENTS

BASEMENT
STORMWATER PLAN

		www.innovis.com.au INNOVIS Agile Outcomes	
SCALE: 1:100	DATE: 11/12/2025	PHASE: PRELIMINARY	SHT SIZE: A1
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