

2 Greenwich Road, Greenwich Development Application Stormwater Management Plan



FOR / Civil Engineering Services

CLIENT / Marchese Partners

DOCUMENT NO / S20018-RPT-A-001 REV /1 DATE / 29/04/2020

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CONTENTS

1	INTRODUCTION	3
2	STORMWATER MANAGEMENT	3
2.1	Council Drainage Requirements	3
2.2	Developed Catchments	3
2.3	On-Site Detention	3
2.4	Gross Pollutant Trap	4
2.5	Required Drainage Connection to Anglo Road	4
2.6	Hydrological Modelling	4
3	CONCLUSION	5

Appendices

Appendix A Pre-Development Meeting Minutes

Appendix B Detailed Survey

Appendix C Concept Stormwater Management Plan

Appendix D Catchment Plan

Appendix E OSD Calculation Sheet

Document Control					
Revision	Date	Description	Prepared	Reviewed	Approved
1	29/04/20	Issued for Development Application	BO	AW	PS

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1 INTRODUCTION

BG&E have been commissioned to undertake the stormwater management plan for Development Application at 2 Greenwich Road - Greenwich, a redevelopment for seniors housing comprising multiple storeys for 44 independent living units, ground level commercial premises, residential facilities and three levels of basement parking.

2 STORMWATER MANAGEMENT

2.1 Council Drainage Requirements

Lane Cove Council's Pre-DA meeting minutes dated 28/1/2020 outlines that drainage to Anglo Road will be required through a drainage easement with new pit and pipe to be installed on Anglo Road. Furthermore, Council require the basement to drain via pump-out to OSD and a gross pollutant trap to be included in the design.

The Pre-DA meeting minutes are attached for reference in **Appendix A**.

2.2 Developed Catchments

Catchments for the proposed site have been identified based on the Lower-Ground and Ground Level architectural drawings provided by Marchese Partners dated 20/04/2020. Roof areas have been accounted for by the areas identifying "roof above". **Table 1** outlines the catchment breakdown by type. For the purposes of sizing the on-site detention tank; roof areas and other impervious surfaces have been consolidated into combined paved catchment. A small amount of paved catchment at the Greenwich Road frontage will be allowed to bypass the OSD and drain directly to public road.

Catchment Type	Paved Area to OSD Tank	Paved Area Bypassing OSD	Grassed / Pervious Area
Area (m ²)	1665	95	380

Table 1 – Summary of Catchments

Appendix D illustrates the catchment boundaries of the proposed site.

2.3 On-Site Detention

The on-site detention system has been sized based on the requirements of permissible site discharge and minimum site storage requirement as per the Lane Cove Council DCP.

The configuration of the proposed 80,000L on-site detention tank will feature a high-early discharge control pit to enable efficient discharge in minor storm events. An orifice of approximate 100 mm diameter will control the rate of discharge to the permissible flow of 21.65L/s. **Table 2** summarises the preliminary concept of the OSD tank and OSD Calculation sheet is documented in **Appendix E**. 600 x 600 Access grates spaced no more than 10m apart will provide safe egress for maintenance operators. In the event the tank capacity is exceeded, an emergency overflow path will safely convey flows out of the tank, through to the drainage easement and into Anglo Road.

All stormwater being captured by the roof will need to be reticulated through internal drainage (by others) to drain to the on-site detention tank. An alternative arrangement can include a rainwater tank (by others) to intercept the roof flows and all overflows from the rainwater facility can spill into the proposed on-site detention tank.

Paved areas in the private open space can drain directly into the tank via capture by 300 x 300 pits at the low points of the region. These 300 x 300 pits and subsequent grading of the private open space must be situated higher than the level of the emergency overflow pit of the tank.

Paved areas associated with the driveway and basement will also be conveyed to the on-site detention tank, by gravity if possible. In the event stormwater bypasses capture and enters the basement; pump out and reticulation (by others) will be required to capture these additional flows and discharge to the OSD.

Storage Required (m ³)	Permissible Site Discharge (L/s)	Preliminary Tank Plan Area (m ²)	Preliminary Tank Internal Height (m)
80	21.65	120	1.1

Table 2 – OSD Summary

See **Appendix C** for drawings illustrating the stormwater management concept.

2.4 Gross Pollutant Trap

Council has indicated the requirement of a gross pollutant trap to capture pollutants present in stormwater. OceanProtect's OceanGuard litter basket is the recommended gross pollutant trap as it provides pollutant removal with high hydraulic efficiency with added benefit in ease of maintenance. Other proprietary products which typically require wet sumps to function; will typically require vehicular access 3.5m width minimum for maintenance with a vacuum service truck. OceanGuard captures 100% of sediment and debris 200 micron and larger and can be easily fitted and maintained in square pits without requiring confined space entry.

2.5 Required Drainage Connection to Anglo Road

The OSD tank flows will be piped to new pit and pipe network within the proposed drainage easement before discharging to Anglo Road.

Council have indicated that the applicant will need to install new pit and pipe stormwater network in Anglo Road to accommodate discharge from the proposed development. We note that, subject to detailed survey, the nearest connection to existing Council network may be 100 m downstream at the sag inlet pit fronting 16 Anglo Road. Direct discharge into kerb and gutter without pit and pipe network will generally be unaccepted by Council.

2.6 Hydrological Modelling

Hydrological modelling through ILSAX has been undertaken using DRAINS software to estimate rainfall-runoff and flows for the existing scenario and the developed scenario. AR&R 1987 rainfall IFD values were adopted as per the Lane Cove Council Development Control Plan 2010 Part O: Stormwater.

3 CONCLUSION

The development application for 2 Greenwich Road, Greenwich has civil engineering plans coordinated with landscape architect and the architect to deliver the concept design for on-site detention tank, stormwater drainage, overland flow and grading of the areas external to the building footprint in accordance with the Lane Cove Council DCP Part O: Stormwater Specifications. The application also incorporates the guidance provided in the Pre-DA meeting with Lane Cove Council. A complete appendix covering, Pre-DA meeting commentary, survey plan, civil engineering plans is included

APPENDIX A

Pre-Development Meeting Minutes

Pre-DA Lodgement Meeting Minutes – 28 January 2020



Applicant:	Alceon		
Contact:	louise.campling@alceon.com.au mrowe@ethosurban.com bthomas@ethosurban.com		
Property:	2 Greenwich Road, Greenwich Lot 1 DP 662215 Lot 2 DP 566041		
Site Area:	Lot 1 DP 662215: 283.2m ² Lot 2 DP 566041: 1,857m ² Total to be Confirmed by Survey: 2,140.2m ²		
Zoning:	B3 Commercial Core		
Description of Proposal:	Seniors Housing Development (44 units) pursuant to SEPP (Housing for Seniors or People with a Disability) 2004		
Attendance:	Council Staff		
	<u>Name</u>	<u>Title</u>	
	Rajiv Shankar	Manager Development Assessment	
	David Wilson	Manager Environmental Health	
	Millie Saddleton	Waste Co-ordinator	
	Henry Burnett	Senior Town Planner	
	Elise Newman	Landscape Architect	
	Maran Muthiah	Development Engineer	
	Dennis Anthonyamy	Traffic Engineer	
Plans/ Documents Submitted:	Plan No.	Author	Date
	Architectural Plans	Marchese Partners	20 December 2019
	Architectural Plans canvased at Meeting (Hard-copy Only)	Marchese Partners	28 January 2020
	Pre-DA Letter	Ethos Urban	20 December 2019
Relevant Environmental Planning Instruments and Codes	SEPP (Housing for Seniors or People with a Disability) 2004 Lane Cove LEP 2009 Lane Cove DCP 2010 Notification policy SEPP 65 – Design Quality of Residential Apartment Development SEPP 55 – Remediation of land SEPP (BASIX) 2004 *The above is not intended to replace/replicate Part 2, Section 1, of a Planning Certificate under Section 10.7 of the Environmental Planning and Assessment Act 1979 which may include additional relevant planning instruments and codes.		
Key Issues	i. Residential Accommodation in a B3 Commercial Core Zone		

1. The Site

The site is known as 2 Greenwich Road, Greenwich and is located south of the intersection of the Pacific Highway and Greenwich Road. The site currently contains a building that has been used as the Northside Clinic mental health hospital. The site is comprised of two individual allotments with a total area of 2,140.2m². The site slopes from north to south with the fall of Greenwich Road.



2. Strategic Background Context

A proponent-led planning proposal was lodged within Council on 11 April 2017 in relation to the land which sought to amend Lane Cove Local Environmental Plan 2009 to incorporate, among other things, additional permitted use of shop top housing (a form of residential accommodation) in the B3 Commercial Core zone.

The planning proposal was assessed by Council staff as being inconsistent with the relevant regional, local and precinct strategic planning controls chiefly because it had the potential to diminish employment lands through the replacement of employment uses with a mostly residential use.

The planning proposal was subsequently subject to a referral to the Independent Planning Commission for Gateway Determination Review. The review concludes that while the Draft St Leonards and Crows Nest 2036 Plan has yet to be finalised, the employment outcomes for a mixed use zoning of the site (that is allowing residential accommodation) would not be consistent with the employment objectives of the 2036 Plan.

Council's view has not changed in relation to the use of the site for residential accommodation and this should be closely considered before lodgement of any Development Application.

3. The Proposal

The proposal seeks to develop the site for seniors housing pursuant to SEPP (Housing for Seniors or People with a Disability) 2004. The proposal would be for an eight storey

building (potentially nine storeys depending on the classification of the roof access comprising 44 independent living units, a ground level commercial premises and residential facilities, and three basement levels for parking.

4. Preliminary Comments

A. Strategic Planning

While it appears that the SEPP is facultative, it enables the making of an application, a full assessment of the merits in accordance with Section 4.15(1) of the Environmental Planning and Assessment Act, 1979, is still required. In the circumstances of this case concern is raised that the proposal is incompatible with the objectives of the B3 Commercial Core Zone and the Draft St Leonards and Crows Nest 2036 Plan in relation to the maintenance/enhancement of employment lands.

B. Other Planning Matters

While the matters in (A) are pre-eminent, should the matters in (A) be resolved, the following primary matters will be required to be addressed (in addition to a complete assessment against the relevant plans, codes and policies):

- **Site Area:** A detailed understanding of whether Lot 1 DP 66215 can be included in the site area for the purposes of calculating Floor Space Ratio is to be provided including addressing both Clause 4.5(3), 4.5(4(a)), 4.5(6) and 4.5(9).
- **Right of Carriageway:** The proposal seeks to modify area (A) including driveway realignment and basement excavation. A review of the Dealing (P273085) could not find details of the limitation in height through stratum levels. Written consent from the benefitting allotment is required for any works within the right of carriageway. Further detail is required as to how Right of Carriageway (B) within the adjoining allotment will be restored at the completion of works as the submitted plans do not detail how this will be dealt with. Owners consent of No. 154 Pacific Highway will be required for these works.
- **Substation:** Consultation with the energy provider regarding proximity to the electricity substation is to be undertaken and the design suitably informed by any restrictions prior to lodgement.
- **Clause 19 of SEPP Seniors:** The entire ground floor is to be made commercial in accordance with Clause 19 of SEPP Seniors. The amount of commercial floor area provided in the concept plans is tokenistic and not in keeping with the intent of Clause 19.
- **Commercial Floor to Ceiling Height:** The ground floor ceiling height is to be a minimum 3.3m in accordance with the Apartment Design Guide (ADG).
- **Building Height:** The proposed building height is to be amended to comply with the provisions of Lane Cove Local Environmental Plan 2009. A building height variation at a zone and development standard transition point is not considered supportable.
- **Access:** A detailed access report is to be provided accompanying any Development Application demonstrating compliance with the access requirements of the SEPP (both internally and external to the site).

- **Front Setback:** The front setback will have to have regard to its context and the setback of the adjoining commercial building (154 Pacific Highway) and adjoining residential flat building (4 Greenwich Road). The provision of a 5m front setback would result in a building situated well forward of the established front building line. It is noted the setback provisions in D.1 of the DCP are a minimum and not a maximum, and the over-riding objective of reducing the impact of scale is to be achieved. (in this way the concepts submitted with the planning proposal were more appropriate in terms of front setbacks achieved).
- **Solar Access:** The solar access outcome to adjoining properties between 9am and 3pm mid-winter must be closely considered and where an existing building receives less than the required solar access, the proposal is not permitted to worsen that situation.

C. Tree Management

The applicant will need to provide a detailed Arborist Report applying retention values to all of the trees located within 10 metres of the proposal. The report is to be an Impact Assessment that includes recommendations to mitigate impacts and clearly specifies what is intended to be removed and retained. It is noted the Survey Plan appears to be incomplete with regard to trees shown.

D. Landscaping

The design of the development must be informed by an Arborist Report. Landscape architectural plans are to include dense at the zone transition interfaces, suitable sections through the ground, basement and any rooftop on-structure planting, deep soil percentages shown on the landscape plans, and preparation of plans in accordance with Council's Landscape Checklist.

E. Waste Management

Operational Waste Management Plan will be required (in addition to WMP for demolition/construction phase). The OWMP will be required to detail the chute/carousel system with 1 x blue and yellow 240L bin made available on each level. Appears to be insufficient room for bin storage on the basement plan (plans should show bins to demonstrate adequate size), in addition 30m² bulk store is to be provided, 1.7m door provided to both bin rooms. The proposal is to demonstrate compliance with Part Q of Lane Cove Development Control Plan 2010.

F. Environmental Health

A contamination report addressing SEPP 55 prepared in accordance with EPA Guidelines is to accompany the application.

G. Parking and Traffic

A comprehensive traffic and parking report is to be provided including detailed demonstration of compliance with Australian Standards (swept paths, dimensioned spaces, aisle widths, driveway cross-sections), an assessment against the parking provisions of SEPP Seniors (and any other provisions such as an ambulance bay if required) and consideration of traffic impacts, queuing and sightlines.

H. Engineering

Drainage to Anglo Road will be required through a drainage easement with new pit and pipe to installed on Anglo Road. The basement is to drain via pump-out to the On-site Detention System and a Gross Pollutant Trap is required in the design. The design is to comply with Part O of Lane Cove Development Control Plan 2010.

Disclaimer

The Major Development Checklist will be required to be completed prior to the lodgement of any Development Application.

The aim of pre development application consultation is to provide a service to people who wish to obtain the views of Council staff about the various aspects of a preliminary proposal, prior to lodging a development application (DA). The advice can then be addressed or at least known, prior to lodging a DA. This has the following benefits: -

- Allowing a more informed decision about whether to proceed with a DA; and
- Allowing matters and issues to be addressed especially issues of concern, prior to lodging a DA. This could then save time and money once the DA is lodged.

All efforts are made to identify issues of relevance and likely concern with the preliminary proposal. However, the comments and views in this letter are based only on the plans and information submitted for preliminary assessment and discussion at the pre DA consultation. You are advised that: -

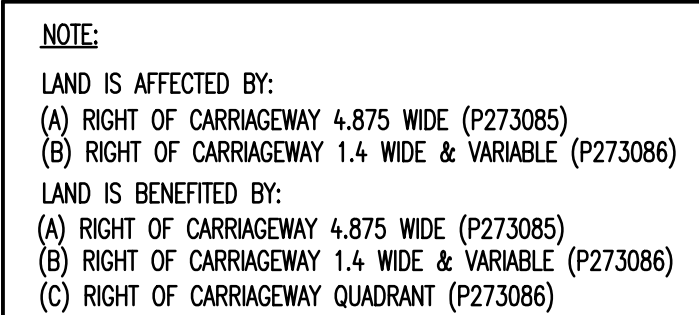
- The views expressed may vary once detailed plans and information are submitted and formally assessed in the development application process, or as a result of issues contained in submissions by interested parties;
- Given the complexity of issues often involved and the limited time for full assessment, no guarantee is given that every issue of relevance will be identified;
- Amending one aspect of the proposal could result in changes which would create a different set of impacts from the original plans and therefore require further assessment and advice;
- This Pre-DA advice does not bind Council officers, the elected Council members, or other bodies beyond Council in any way whatsoever.



Henry Burnett
Senior Town Planner
Lane Cove Council
6 March 2020

APPENDIX B

Detailed Survey



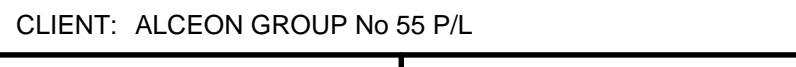
TYPICAL NOTES:

1. ORIGIN OF LEVELS SHOWN 37993, 18.780 (A.H.I.)
2. BEARINGS ARE ON MAGNETIC NORTH
3. A SATELLITE BOUNDARY SURVEY HAS BEEN UNDERTAKEN
4. BOUNDARIES SHOULD BE MARKED PRIOR TO ANY WORKS BEING CARRIED OUT ON OR NEAR THE BOUNDARIES.
5. RELATIONS OF IMPROVEMENTS AND DETAIL TO BOUNDARIES IS DIAGRAMMATIC ONLY AND SPECIFIC DETAILS, WILL, REQUIRE FURTHER SURVEY.
6. SERVICES SHOWN ARE BASED ON VISIBILE SURFACE INDICATORS DETAINED AT THE DATE OF SURVEY AND THE RELEVANT SERVICE DIAGRAMS OF THE VARIOUS AUTHORITIES. ALL SERVICES MUST BE CHECKED ON SITE PRIOR TO ANY WORK BEING UNDERTAKEN. VISITS AUSTRALIA PTY LTD BEAR NO RESPONSIBILITY FOR THE ACCURACY OR COMPLETENESS OF THE SERVICES SHOWN HEREIN.
7. ROAD AND A QUATER HEIGHTS HAVE BEEN OBTAINED BY AN INDIRECT METHOD AND ARE ACCURATE FOR PLANNING PURPOSES ONLY.
8. ADJOINING BUILDINGS AND DWELLINGS HAVE BEEN PLOTTED FOR DIAGRAMMATIC PURPOSES ONLY AND SPECIFIC DETAILS, IF OTHER, WILL REQUIRE FURTHER SURVEY.
9. THE DIAMETER (ϕ), SPEED (ϕ) AND HEIGHT (H) OF EACH TREE ARE INDICATIVE ONLY AND SPECIFIC DETAILS, WILL, REQUIRE FURTHER SURVEY.

LEGEND OF TYPICAL SERVICES			
G	COMMUNICATIONS CABLE	EW	RECYCLED WATER
CSWP	CERAMIC STORMWATER PIPE	SW	SEWING HALL
E	UNDERGROUND ELECTRICITY CABLES	PMS	ROADS & MARITIME SERVICE
AE	ADDITIONAL UNDERGROUND ELECTRICITY & OPTIC CABLES	SW	SEWER
FS	FIRE SERVICE	SO	SEWER OUTFALL
G	GAS LINE	SN	SHARED TRASH
GS	GAS LINE & ELECTRICITY CABLES	SW	STORM WATER
NE	NATURAL BRASS BATH CABLES	SW	STORMWATER CREEK
NG	NATURAL GAS LINE	CK	TELSTRA CABLE
NO	OVERHEAD CABLES		TELSTRA & GAS CABLE
OPT	OPTIC CABLE	VO	UNKNOWN SERVICE
PR	PRIVATE ELECTRICITY	VO	VOICED CABLES
PS	PRIVATE SEWER	W	WATER SUPPLY
		WM	WATER MAIN

 Liability limited by a scheme approved under Professional Standards Legislation

 The Essential First Step



PLAN OF DETAIL & LEVELS AT GREENWICH ROAD GREENWICH



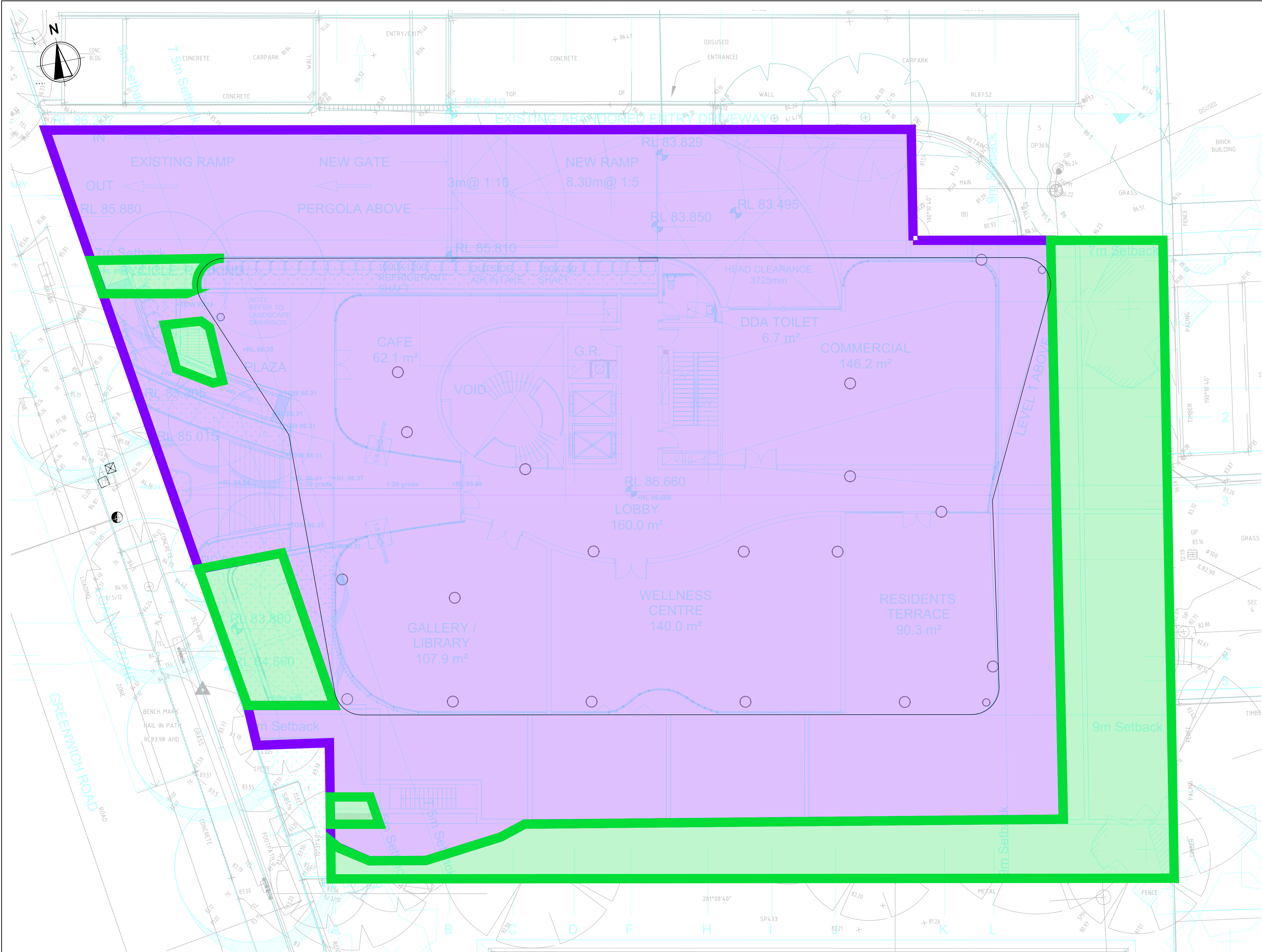
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APPENDIX C

Concept Stormwater Management Plan

APPENDIX D

Catchment Plan



LEGEND

- SITE BOUNDARY
- ARCHITECTURAL LAYOUT
- STORMWATER CATCHMENT LANDSCAPED AREA
- STORMWATER CATCHMENT PAVED AREA
- STORMWATER CATCHMENT IDENTIFIER AND AREA

1:1
241.0m²

CATCHMENT SUMMARY

CATCHMENT TYPE	PAVED AREA TO OSD TANK	PAVED AREA BYPASSING OSD	GRASSED/ PERVIOUS AREA
AREA (m2)	1665	95	380

0 1 2 3 4 5 6m
SCALE 1:100 AT A1 SIZE

REV	DATE	DESCRIPTION	REVISIONS	REV	DATE	DESCRIPTION	REVISIONS
A	29.01.20	ISSUED FOR DEVELOPMENT APPLICATION	PS				

CLIENT

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PROJECT

2 GREENWICH ROAD
GREENWICH, NSW 2065

STATUS

ISSUED FOR APPROVAL
NOT TO BE USED FOR CONSTRUCTION

DRAWN	DESIGNED	CHECKED	APPROVED
GV	BO	AW	PS
DATUM	GRID	SCALE	AT
AHD	MGA-56	1:100	A1 SIZE

TITLE

CATCHMENT PLAN

PROJECT No.	DRAWING No.	REV.
S20018	DRG-C-0350	A

APPENDIX E

OSD Calculation Sheet

Appendix 14 – OSD Calculation Sheet

ON-SITE DETENTION CALCULATION SHEET

DEVELOPMENT TYPE: SENIORS HOUSING DEVELOPMENT

ADDRESS: 2 GREENWICH ROAD, GREENWICH



Site Area (m²) 2140 (A)

Total Impervious Area (roofs, driveways, hardstand etc) (m²) 1665 (B)

Total Area draining to the Storage Facility (m²) (impervious and pervious areas) 1665 (C)

New Impervious Area bypassing the Storage Facility 95 (D)

$\frac{(B)+(D)}{(B)} =$ 1.06 (E)

cannot be greater than 1.25.

Permitted Site Discharge (PSD) rate per m²

If (D) = 0 then PSD = 0.014 l/sec/m²

If (D) ≠ 0 then PSD = 0.014x(E)^{-1.37} l/sec/m² 0.013 (F)

PERMITTED SITE DISCHARGE (l/s) (C) x (F)

1665 x 0.013

21.65 l/s

Storage Volume per m²

(G) = 0.0255 m³/m² for all Catchments 0.0255 (G)

SITE STORAGE REQUIREMENT (m³) ((C) + (D)) x (G)

45 m³

OUTLET CONTROL - using a Sharp Edged Orifice Plate

Height Difference between top water level and Centre of Orifice (m) 1 (H)

ORIFICE DIAMETER (mm)

102 mm

$$= 21.9 \sqrt{\frac{PSD}{\sqrt{(H)}}}$$

Should pipe and pit losses be used to control outflow, the calculations are to be attached.