



Integrated Water Management Report (Early Works)

2-4 Gladstone Avenue & 357-363 Crown
Street, Wollongong

Issue B

Prepared For Wollongong Developments No.5
Pty Ltd

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P: 02 8883 4239

A: Suite 311, Level 3, 480 Pacific
Highway, St Leonards NSW 2065




W: www.sgce.com.au

Postal: PO Box 7855,
Baulkham Hills, NSW 2153





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Table of Contents

1	Executive Summary	5
1.1	Addressing Relevant SEARs	5
2	Introduction.....	5
2.1	The Proposal.....	5
2.2	The Site Description.....	6
2.3	Methodology.....	8
2.4	Limitations	8
2.5	Reference Documents	8
3	Assessment & Results	9
3.1	Addressing City of Wollongong Council’s DCP Requirements	9
3.2	NSW Government’s SEPP Requirements	9
3.3	Addressing Wollongong City Council’s DCP Requirements	10
3.3.1	Rainwater Tank.....	10
3.3.2	Water Quality	10
3.3.3	Water Quantity / On-Site Detention.....	10
4	Stormwater Disposal	10
5	Overland Flow Management.....	10
6	Soil & Water Management	10
6.1	Construction Stage	10
7	Maintenance Strategy	12
8	Design Statement.....	12
A1	Appendix 1	13
A2	Appendix 2	15
A3	Appendix 3	19

List of Figures



Figure 1 Aerial image showing site and surrounding area.....7

Figure 3-1 DCP Requirements – Soil Erosion and Sediment Control.....9

Figure 3-2 DCP Requirements – Control Measures.....9

List of Tables

Table 1-1 Relevant SEARS.....5

Table -1 Responses to SEPP Requirements9

1 Executive Summary

1.1 Addressing Relevant SEARs

Table 1-1 Relevant SEARS

This report has been prepared to respond to the Secretary’s Environmental Assessment Requirements (SEARs) for SSD-97973958.

Specifically, this report has been prepared to respond to those SEARs outlined in **Table 2** below

Item	Description	Section Reference
11. Water Management	Detail the proposed drainage design and servicing infrastructure to be incorporated as part of the development (stormwater and wastewater).	Appendix 3 Stormwater Plans
	Demonstrate how the development complies with council’s drainage requirements and identify proposed stormwater treatment and water quality management measures to minimise adverse environmental impacts.	Section 4.3

2 Introduction

2.1 The Proposal

This Integrated Water Management Report (IWMP) has been prepared by S&G Consultants Pty Ltd on behalf of Wollongong Developments No 5 Pty Ltd (the ‘Applicant’). This IWMP supports an Early Works State Significant Development Application (SSDA)(SSD-97973958) as an Amending SSDA to DA-2023/156 for a mixed-use shop top housing development at No. 357-359 and 363 Crown Street, and No. 2 & 4 Gladstone Avenue, Wollongong (the Site).

This Amending DA seeks approval for the undertaking of early construction works comprising bulk excavation and shoring works to enable the excavation of basement parking areas.

The approval of DA-2023/156 included the carrying out of the nominated early works across part of the site. This application seeks consent to extend the area of those approved works to certain other areas of the site. For a further detailed project description, please refer to the Environmental Impact Statement prepared by Planning Ingenuity.

This report should be read in conjunction with the Environmental Impact Statement prepared by Planning Ingenuity, plans of the proposed works prepared by BKA Architecture, and the



other accompanying documents that form part of the State Significant Development Application.

This report concludes that the proposed in-fill affordable housing development is suitable and warrants approval subject to the implementation of the following mitigation measures.

- Provide an On-Site Detention system to limit the post developed discharge;
- Provide a rainwater tank to collect part of the roof runoff and to re-use on site for irrigation of landscaped areas;
- Provide a water quality treatment system capable of meeting the pollutants reduction targets as stipulated by Council; and
- Divert and upgrade the stormwater infrastructure that traverses the site around the footprint of the proposal.

Following the implementation of the above mitigation measures, the remaining impacts are considered appropriate.

2.2 The Site Description

The site is situated at No. 357-359 & 363 Crown Street and No. 2 & 4 Gladstone Avenue, Wollongong. The site is located within the Wollongong Local Government Area (LGA) approximately 70km south of the Sydney CBD.

It is a well-located site, approximately 100m walking distance from the Wollongong Railway Station which provides access to numerous destinations including Sydney, Port Kembla, Shellharbour and Kiama.

The site is in close proximity to the Wollongong Health Precinct including Wollongong Public and Private Hospitals. Wollongong TAFE and Wollongong University are approximately 2km from the site.

Public open spaces near the site include Rotary Park, the Beaton Park Leisure Centre and MacCabe Park in the city centre.

The site consists of the following parcels of land and is legally described as in **Table 1**.

Table 2 Site Legal Description

Street Address	Lot/DP
357-359 Crown Street, Wollongong	Lot 2/DP 201949
363 Crown Street, Wollongong	Lot 1/DP 201949
2 Gladstone Avenue, Wollongong	Lot 6/DP 14480

This report has been prepared to address the Secretary's Environmental Assessment Requirements (SEARs) issued for the project (SSD-97973958).

The land is wholly owned by Wollongong Developments No 5 Pty Ltd. The site is irregular shape with an area of approximately 6,514m², with road frontages to Crown Street and Gladstone Avenue and an unnamed laneway near Frederick Street. In addition, the site benefits from a right of carriageway over the adjacent site to the west providing vehicle access to Parkinson Street.

An aerial of the site is provided in **Figure 1**.



Figure 1 Aerial image showing site and surrounding area



2.3 Methodology

This report describes the stormwater quality and quantity measures proposed to address the local Council's requirements for stormwater drainage and reports on the results of modelling carried out in support of the development for main SSDA. Since, early works SSDA involve Erosion and Sediment Control only, detailed stormwater design for the main SSDA has been added part of the main SSDA report.

The concept stormwater drainage plans have been prepared by S&G Consultants (SGC) to comply with the following:

- Council of the City of Wollongong Development Control Plan 2009 Part E – General Controls - Environmental Controls; and
- Applicable sections from SEPP (State Environmental Planning Policy).

2.4 Limitations

This report is intended solely for Wollongong Developments No.5 Pty Ltd as the Client of SGC and no liability will be accepted for use of the information contained in this report by other parties than this client.

This report is limited to visual observations and to the information including the referenced documents made available at the time when this report was written.

2.5 Reference Documents

The following documents have been referenced in this report:-

1. Site survey prepared by geosurv dated 22/02/2022;
2. Architectural plans prepared by BKA Architects;
3. Engineers Australia, *Australian Rainfall & Runoff* (AR&R 1999);
4. City of Wollongong Council LEP 2009;
5. City of Wollongong Council DCP 2009 Chapter E14 & E15; and
6. Industry Specific SEARs for application number SSD-84127221.

3 Assessment & Results

3.1 Addressing City of Wollongong Council’s DCP Requirements

The stormwater requirements are set out in Part E22 of Wollongong Council DCP 2009 as per below.

2 OBJECTIVES

1. The main objectives of this part of the DCP are to:
 - a) Minimise the amount of sediment and contaminated water which leaves sites whilst improving environmental outcomes throughout construction (i.e. improved surface water quality);
 - b) Minimise the disturbance of sites during land use development activities and preserve, wherever possible, existing vegetation on development sites from either damage or removal as a result of the construction works; and
 - c) Encourage prompt rehabilitation of construction sites by appropriate revegetation strategies.

Figure 3-1 DCP Requirements – Soil Erosion and Sediment Control

4.2 Erosion Control Measures

A range of erosion control measures may be used on building or subdivision sites to address potential soil erosion problems, including:

1. Temporary waterway crossings;
2. Temporary channels / drains and inlet / outlet works, in order to divert water from cut or fill slopes and to intercept off-site run-on water and spring water, especially in areas with moderate or high hazards of land instability;
3. Temporary contour banks or cellular confinement systems, to minimise sheet erosion problems;
4. Rock check dams or other alternative channel linings, to help reduce the erosive energy levels of concentrated water in constructed stormwater drainage channels;
5. Temporary water diversion structures such as earth banks (low flows or high flows);
6. Energy dissipators and outlet protection measures, in order to reduce water velocities to minimise soil erosion problems around drains and outlets; and
7. Sub-sub soil drainage measures, in order to provide controlled water flows through the soil strata.

Figure 3-2 DCP Requirements – Control Measures

3.2 NSW Government’s SEPP Requirements

The table below provides a response to the requirements of the SEPP.

SEPP	<p>Section 6.7(1)(c) and (f) - In deciding whether to grant development consent to development on land in a regulated catchment, the consent authority must consider the following—(c) whether the development will minimise or avoid—(i) the erosion of land abutting a natural waterbody, or (ii) the sedimentation of a natural waterbody and (f) if the development site adjoins a natural waterbody—whether additional measures are required to ensure a neutral or beneficial effect on the water quality of the waterbody.</p>	An erosion & sediment control plan has been prepared as a part of the stormwater concept plan.
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Table -1 Responses to SEPP Requirements



3.3 Addressing Wollongong City Council's DCP Requirements

3.3.1 Rainwater Tank

Given the proposal is for early works only, compliance is not relevant as part of this application and will be addressed as part of the main application SSD-84127221.

3.3.2 Water Quality

Given the proposal is for early works only, compliance is not relevant as part of this application and will be addressed as part of the main application SSD-84127221.

3.3.3 Water Quantity / On-Site Detention

Given the proposal is for early works only, compliance is not relevant as part of this application and will be addressed as part of the main application SSD-84127221.

4 Stormwater Disposal

It is proposed that Stormwater is discharged to an existing stormwater drainage easement running towards Frederick Street as well as an emergency overflow pipe running down towards Gladstone Street. The proposed infrastructure is designed to cater for the flows from the future developed site.

Refer to main SSDA for detailed Stormwater disposal arrangements.

5 Overland Flow Management

A flood review report is prepared by S&G Consultants P/L to address the requirement of the Department of Planning's SEARs item 19. Reference to report for details.

6 Soil & Water Management

6.1 Construction Stage

A Soil and Water Management Plan (SWMP) has been prepared for the DA submission. The implementation of the SWMP shall be in accordance with the guidelines of the NSW Department of Housing publication "Managing Urban Stormwater: Soils & Construction" (The Blue Book) and relative sections of the DCP.

The SWMP outlines the erosion and sediment control processes for the duration of the project. Emphasis should be placed firstly on minimising erosion then on preventing movement of sediment.

The clearing of the site leaves the land surface susceptible to increased erosion. The eroded particles can be transported off site and into natural waterways causing siltation, loss of hydraulic capacity and environmental stress. The SWMP aims to minimise the extent of



erosion of the site, restrict movement of soil particles and mitigate the impacts of the works on the natural environment.

The SWMP provides for the:-

- Protection of disturbed ground through devices such as temporary vegetation, diversion banks and sediment fences;
- Early installation and progressive implementation of erosion controls;
- Early construction of permanent drainage structures, culverts, sediment basins traps and catch drains;
- Progressive revegetation of disturbed areas;
- Use of geotextile to stabilise disturbed surfaces during construction of culverts;
- Control of runoff from embankments through shaping of fill and construction of temporary windrows and batter drains;
- Implementation of erosion control measures at associated sites, including access tracks, roads, office/compound site and extraction sites;
- Progressive and continual implementation of temporary sediment controls;
- Diversion of runoff from disturbed areas to sediment control structures;
- Management of turbid water in basins after rain through flocculation or extraction and use for construction or dust suppression;
- Construction of temporary sediment traps at strategic locations;
- Routine maintenance of sediment control devices to ensure that they remain fully functional at all times;
- Removal of sediment from basins and other structures and placement in secure locations where further movement will not occur;
- Minimisation of transportation of mud and soil by vehicles onto Parkinson Street, through the use of shakers and wash-bays;
- Provision for regular inspections of the control measures by a trained personnel to review and update control measures. Inspections should be conducted weekly and immediately after every significant storm event;
- Dust control through progressive revegetation and application of water;
- A procedure to ensure that water is not released from basins until achieving the appropriate quality standard; and
- Meeting EPA requirements & the guidelines of the Department of Housing publication “Managing Urban Stormwater: Soils & Construction” (Blue Book).



7 Maintenance Strategy

Given the proposal is for early works only, compliance is not relevant as part of this application and will be addressed as part of the main application SSD-84127221.

8 Design Statement

I, Sam Haddad of S&G Consultants P/L, confirm that this report addresses the requirement of SEAR No. 11 "Water Management" (Stormwater component only) and relevant State and local legislation, policies and guidelines including DCP of City of Wollongong Council. I further confirm that none of the information contained in the SSDA is false or misleading.



A1 Appendix 1

Survey Plan



A2 Appendix 2

Architectural Plan

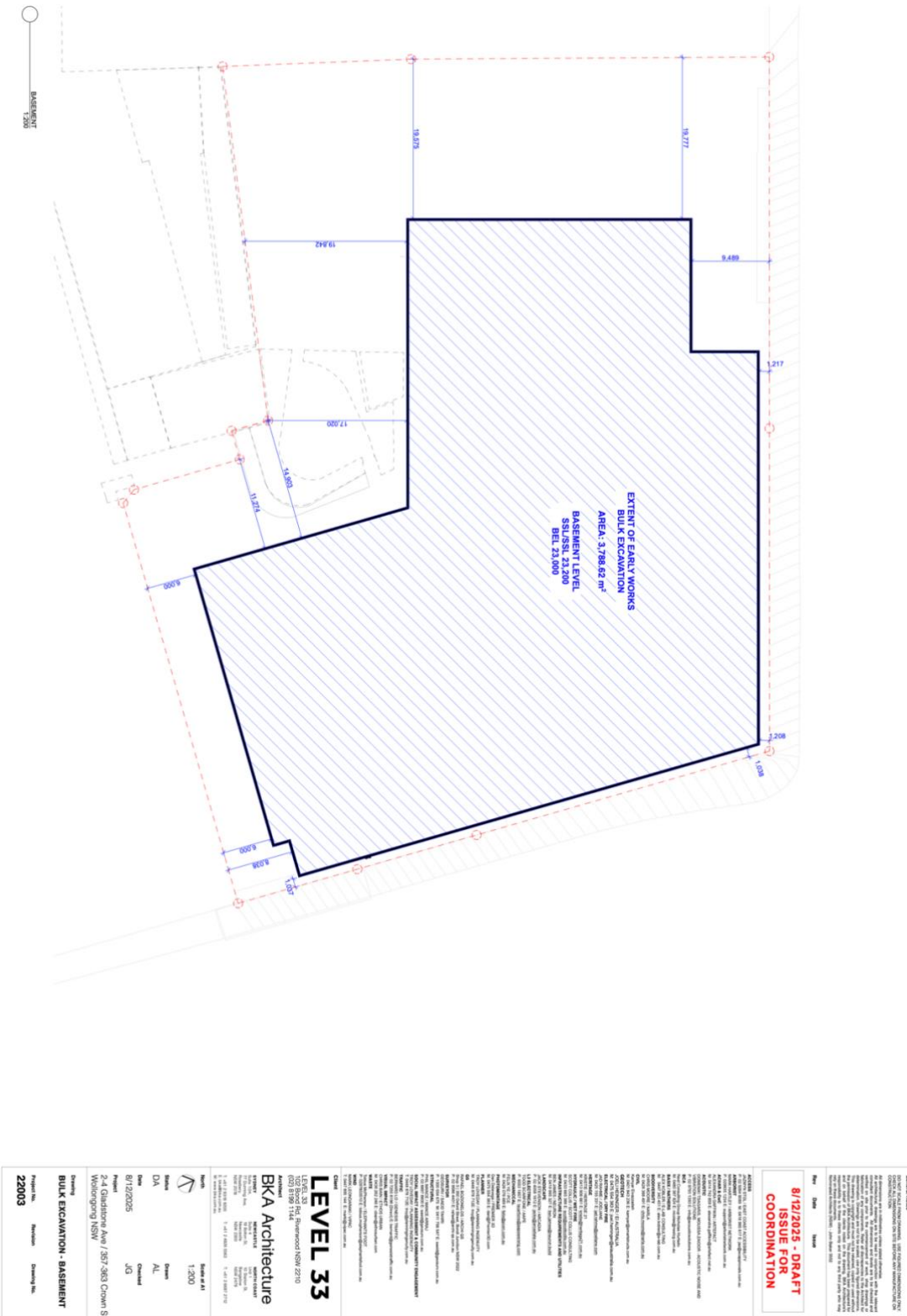


Figure A 2.1Basement Plan

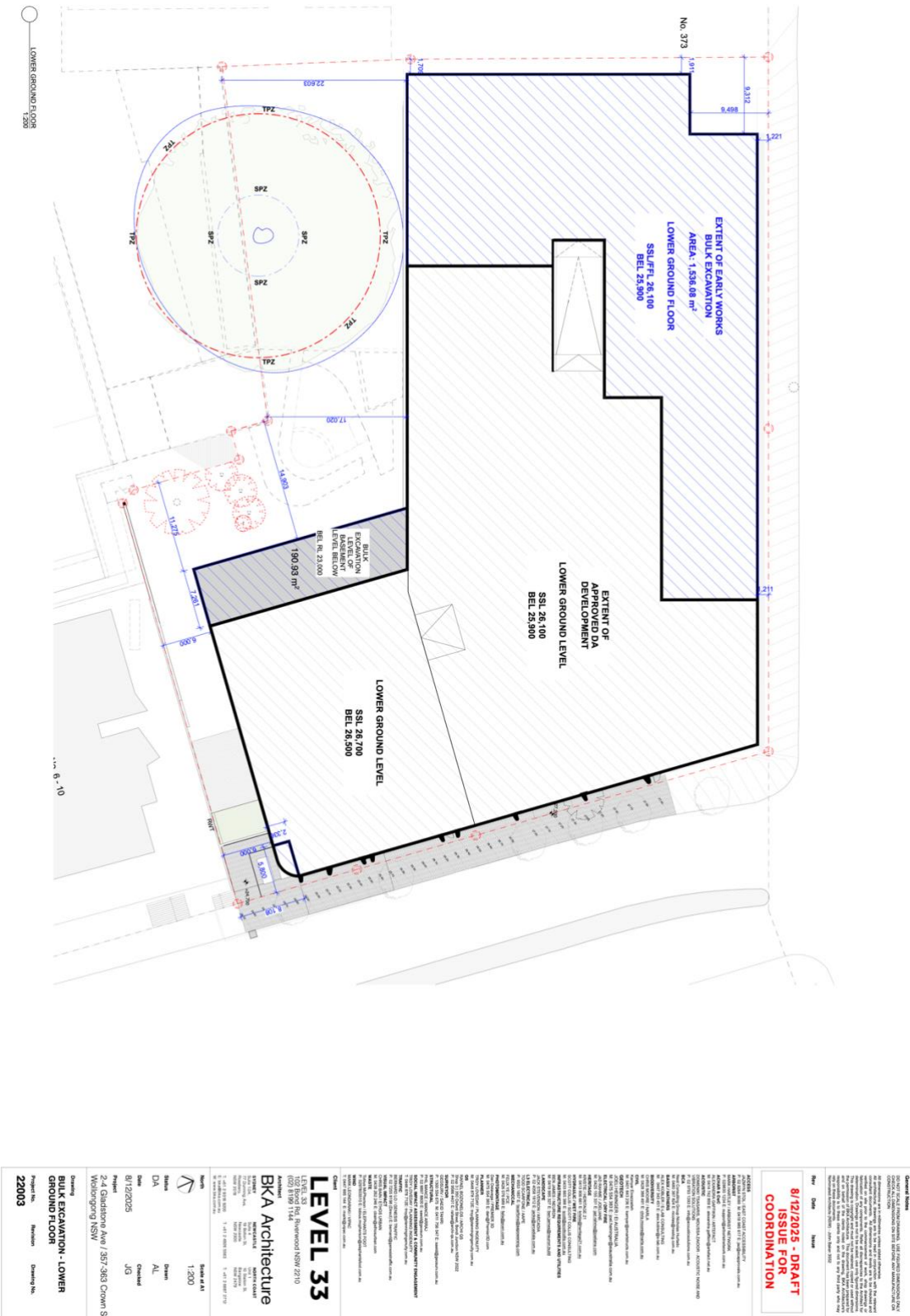


Figure A 2.2 Lower Ground Plan



A3 Appendix 3

Soil and Water Management

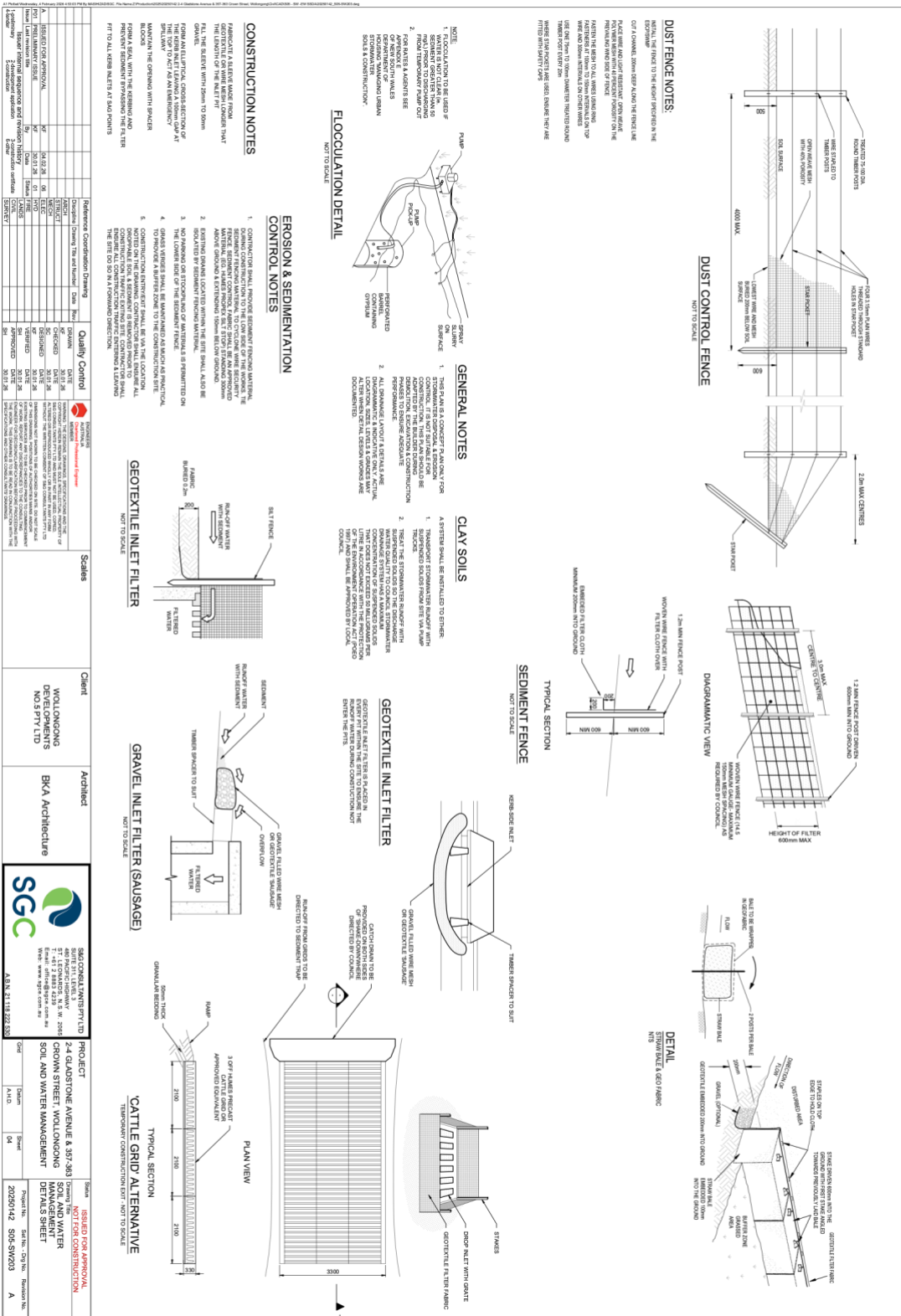


Figure A 3.3 Details Sheet

P: 02 8883 4239

W: www.sgce.com.au

A: Suite 311, Level 3,
480 Pacific Highway,
St Leonards, NSW 2065

