



Stormwater Management Report

3-5 Gilba Road, Pendle Hill
Issue A

Prepared For SK2V Pty Ltd

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1 Executive Summary

This document details the water management statement for the proposed mixed-use development proposed at 3-5 Gilba Road, Pendle Hill.

SK2V Pty Ltd is proposing to develop the site into a residential development. The site plan is illustrated in Figure 1.1 below.



Figure 1.1 Site Plan

This report describes the stormwater quality and quantity measures proposed to address the local Council's requirements for stormwater drainage.

In summary, the following is proposed:

- An OSD system is provided to reduce the site discharge.

2 Introduction

2.1 Brief

S&G Consultants Pty Ltd (SGC) have been engaged by SK2V Pty Ltd to prepare the water management statement for the proposed mixed-use development at 3-5 Gilba Road, Pendle Hill.

The following tasks were carried out:

- Supplied documents and previous studies were reviewed;
- A concept stormwater drainage design has been prepared including supporting calculations; and
- This report has been compiled.

2.2 Objectives

The purpose of this report is to outline the stormwater strategy for the proposed development and respond to the requirements of the guidelines by the relevant authorities.

The report addresses the following matters:-

- On-site stormwater management including:
- Authorities requirements;
- Internal drainage and discharge;
- On-site detention;
- Overland Flowpath Management;
- Soil and water management; and
- Maintenance Strategy.

2.3 Limitations

This report is intended solely for SK2V 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.

2.4 Reference Documents

The following documents have been referenced in this report:-

1. Site survey prepared by C&A SURVEYORS ref. 16889-21 DET dated 16x/03/2021;



2. Architectural plans prepared by WEN Architects;
3. Cumberland Council DCP;
4. WorkCover Authority of NSW Occupational Health & Safety Act 1983 and Confined Spaces Regulation;
5. Occupational Health & Safety Act 2000;
6. Occupational Health & Safety Regulation 2001; and
7. Workers Compensation Act 1987.

3 Natural & Built Environment

The site is located along Gilba Road in the suburb of Pendle Hill. The land is located in the Local Government Area of Cumberland Council.

The site is bounded by adjoining properties in the North and East Direction, with Billabong Street to the West. The use of the site has been previously for residential purposes.

Figure 3.1 shows the location of the site.



Figure 3.1 Locality Plan



3.1 Proposed Development

The proposed development involves the demolition of the existing residential building and the re-development of the site into a mixed-use development as follows:-

- A 3-storey residential building;
- A one-level basement containing 26 parking spaces;
- Two commercial units;
- A child care centre;
- Communal facilities;
- Associated landscaping
- Provision of plant and infrastructure services.

Reference should be made to the architectural drawings by WEN Architects.

4 On-Site Water Management

4.1 General

The management of the stormwater on site covers several aspects of the design. It is divided into the following sections:

- Indicative roof drainage design; and
- Internal drainage design including provision of on-site detention and discharge into Council's infrastructure.

These components have been designed to address the requirements of Parramatta City Council.

4.2 Authorities Requirements

The site is within the Cumberland City Council now and formerly located in Holroyd City Council.

The Holroyd City Council's On-Site Stormwater Detention Policy details the requirements as follows:-

- The OSD policy is to apply to all commercial, industrial and special-use development and buildings and structures;
- The permissible site detention (PSD) and site storage requirements (SSR) shall comply with the Upper Parramatta River Catchment Trust requirements.
- Stormwater OSD system shall be designed with an unobstructed overflow spillway in case of any pipe blockage;

The Cumberland City Council's Miscellaneous Development Controls -part G4 indicates the requirements as follows:-

- All development applications for sites of 2500m², or more in area must be supported by a Water Sensitive Urban Design Strategy suitable experience.

4.3 Internal Drainage

4.3.1 Roof Drainage

The roof drainage system is a conventional rainwater outlet system designed to cater for 20-year ARI storm event. The system is a series of outlets and downpipes to be coordinated with the architectural layout in future detailed design stages. As a concept design, only indicative outlet locations have been documented and to be confirmed during CC stage.

4.3.2 Surface Drainage

The internal drainage system will be generally designed in accordance with Council's requirements.

The internal drainage system would generally be designed to cater for 100-year ARI storm.

The runoff from the buildings will be directed to the On-Site Detention (OSD) systems prior to discharging into the kerb and gutter.

The subsoil discharge and any runoff from the basement car park ramps will be collected in pump-out pits inside the basement. prior to being pumped into the OSD systems. The design of pump out systems will be in accordance with council's requirements.

4.4 On-Site Detention

On-Site Stormwater Detention is a Council requirement to reduce the runoff from the site and its impact on public infrastructure and main waterways. Council's On-Site Stormwater Detention Policy also states mixed-use buildings within the Council should require an OSD tank.

4.4.1 Sizing

The design of the OSD is controlled by Council's On-Site Stormwater Detention Policy and Upper Parramatta River Catchment Trust (UPRCT) On-site Stormwater Detention (OSD) Handbook (3rd and 4th editions)

As the development located in Pendle Hill area, the following OSD parameters apply :-

Whilst the On-Site Stormwater Detention policy applies to the whole Council area, a different standard applies to the area that drains to the Upper Parramatta River than to the rest of Holroyd which drains to Prospect Creek, A'Becketts Creek and Duck Creek. The Upper Parramatta River catchment includes the suburbs of Girraween, Toongabbie, Pendle Hill, Wentworthville, Mays Hill, South Wentworthville and part of Greystanes and Merrylands West. The following permissible site discharge and site storage requirement apply for each area: -

Catchment	Max. Permissible Site Discharge (P.S.D.) - Litres/sec/Hectare	Min. Site Storage (S.S.R.) - cu.metre/Hectare
Upper Parramatta River	80	470
Prospect Creek, A'Becketts Creek & Duck Creek	140	300

Figure 4.1 Council's PSD and SSR Requirements

Error! Reference source not found.. below shows the volume and flow rate for the development.

Table 4.1 PSD and SSR for proposed Development

Sub-Catchment Area (m ²)	Max. Permissible Site Discharge (PSD) (L/s/ha)	Min. Site Storage (SSR) (cum/ha)
1066	80	470
Site SSR & PSD	5.79 L/s	51.76 cum

4.5 Water Quality

As per Cumberland City Council's Miscellaneous Development Controls – Part G4, all development applications for sites with an area of 2,500 square metres or more must be supported by a Water Sensitive Urban Design (WSUD) Strategy prepared by a suitably experienced professional.

Since the total site area of the proposed development is 1,066 square metres, a WSUD Strategy is not required for this development.

4.6 Stormwater Disposal

The OSD has been designed with an internal overflow pipe. In case of any blockage to the orifice, water would collect by the the overflow pipe and discharge through the boundary pit.

A secondary overflow arrangement has been maintained through the tank grate located at the northeast side of OSD tank. This ensures the overland flow path from OSD tank in case the whole pipe system is blocked. This overland flow is directed towards the Billabong Street, where it would be collected via Council's drainage system.

5 Soil & Water Management

5.1 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 Sections 6.3 & 6.4 of Part A 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 Gordon Avenue and Hammond Lane, 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).

6 Maintenance Strategy

The maintenance strategy relating to the internal drainage system involves inspecting and maintaining the following structures:-

- On-Site Detention systems including the orifice plates and the mesh screens;

The corporate body managing the development, or their contractors have the obligation to inspect and maintain these structures.

The following table indicates the minimum requirements for the inspection of the above structures and the maintenance procedures to be adopted.

Table 6.1 OSD Maintenance Strategy Requirements

Item	Inspection Frequency	Inspection Check Items	Maintenance Procedures
OSD Tanks	6 monthly	Clogging and blockage of mesh screen. Sediment depth in trap	Leaves and debris to be removed from screen. Trap flood to be cleaned out



7 Conclusion

To summarise, the proposed Stormwater Management Scheme complies with all relevant Council's requirements.

Summary of key recommendations are:

- On-Site Detention and overflows from the tank to be constructed at correct levels;
- Ensure timely and periodic maintenance of all stormwater elements; and

A1 Appendix 1

Survey Plans

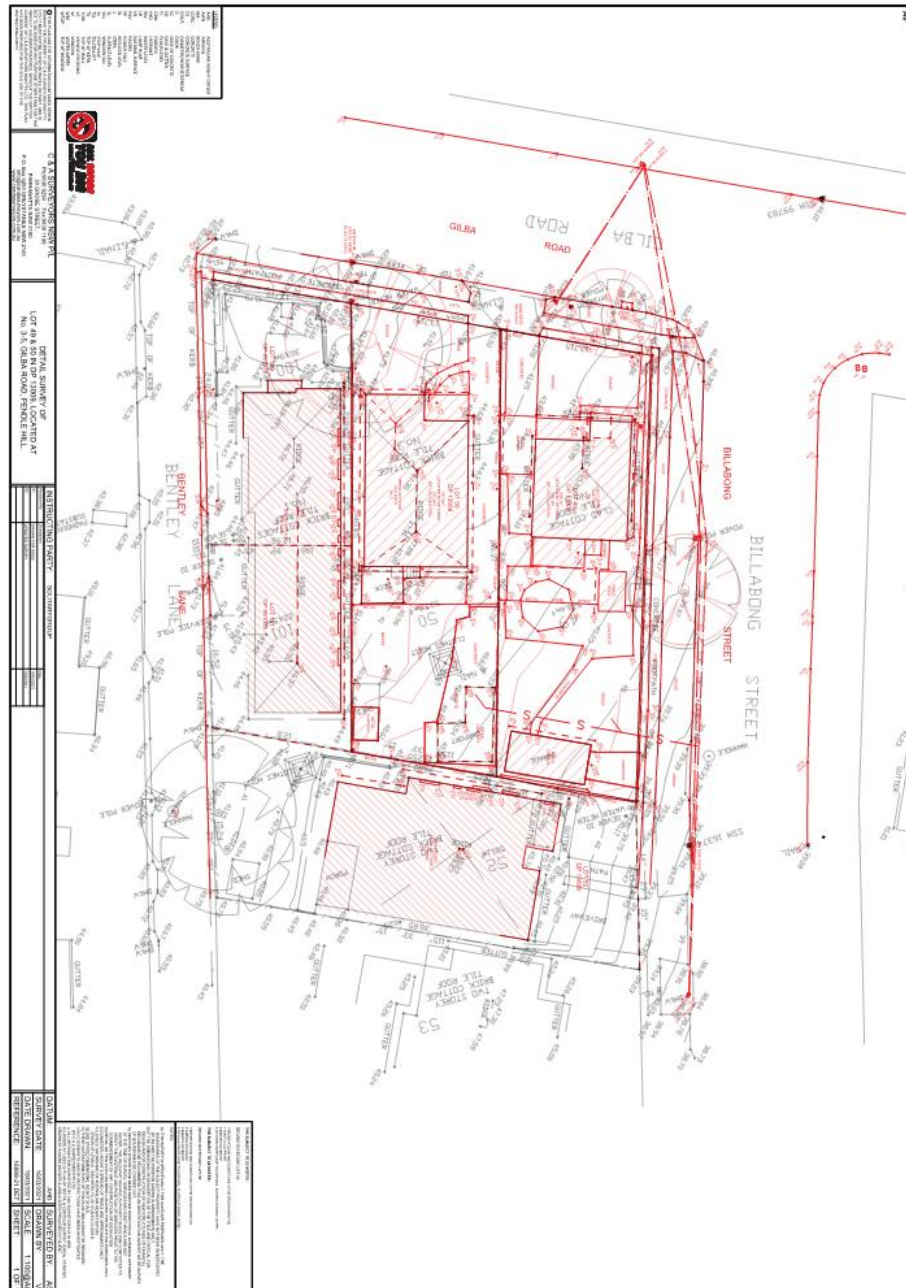




Figure A 1.1 Survey Plan

A2 Appendix 2

Architectural Plans



Figure A 2.1 Ground Floor Plan

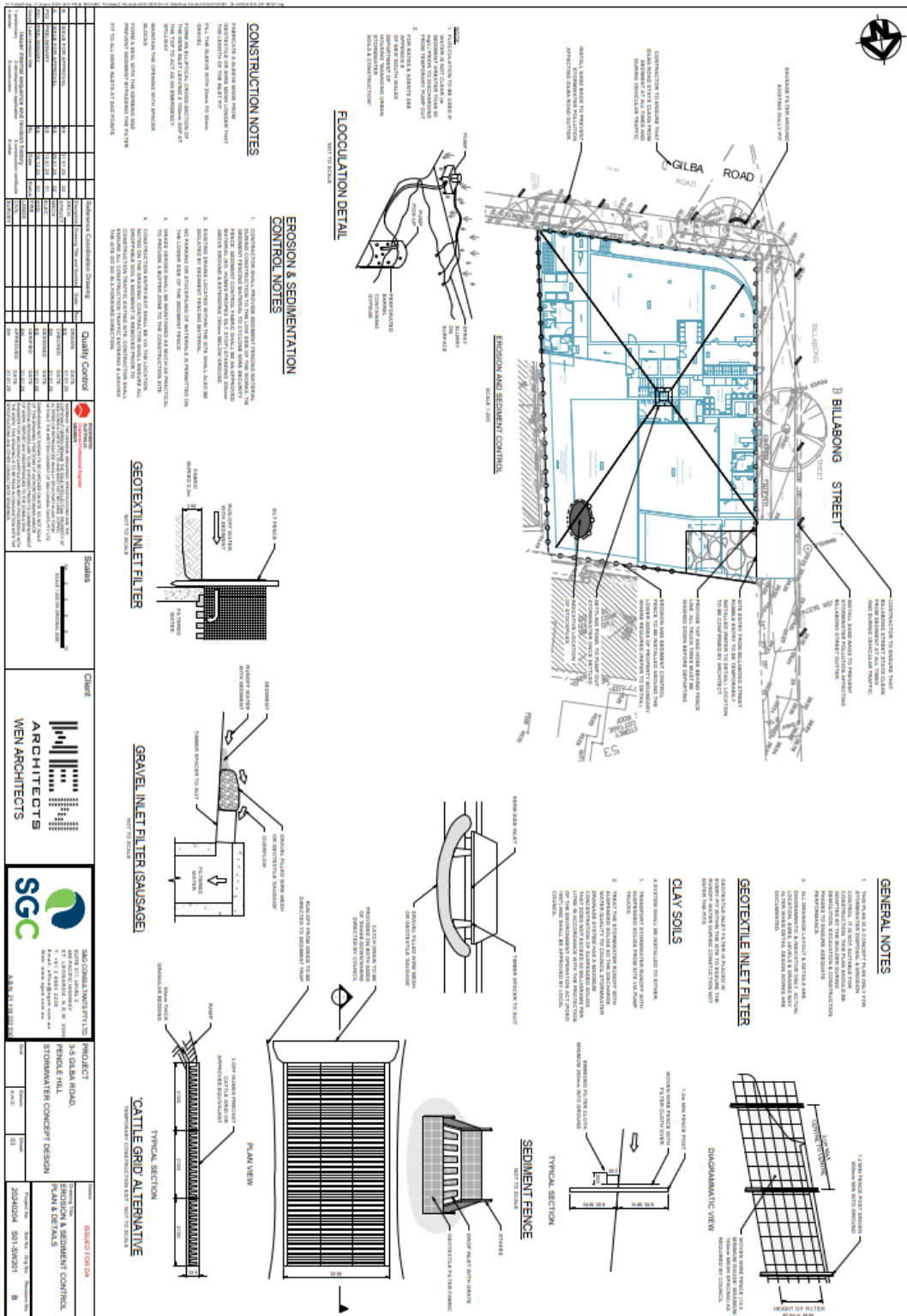


Figure A 3.2 Soil and Water Management Plan (ESCP)



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