CIVIL STORMWATER ENGINEERING GROUP

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LEVEL 2, SUITE 2, 10 MALLET STREET CAMPERDOWN, 2050

ABN 95 640 561 584
ACN 640 561 584

0491 179 774
www.cseggroup.com.au

Flood Impact Report

Dear Sir/Madam,

December 5, 2024

Address: 5 Warren Avenue, Bankstown
Project ID: CSW2024.121
Governing Council: Canterbury Bankstown
Client: Ridge Design

REVISION	DATE	STATUS	BY
A	12/5/2024	Concept	SCH

Contents

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The Scope

We, Civil Stormwater Engineering Group (CSEG™), the practicing Civil Engineers hereby advise we have been appointed by our client listed within, to assess the proposed Alteration to a Warehouse development at 5 Warren Avenue, Bankstown and to prepare a flood impact assessment in support of a Development Application.

Limitations

This report is intended solely for Ridge Design as the client of CSEG™ 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 composed.

Description

The site known as 5 Warren Avenue, Bankstown, is legally described as 181/DP13506 with a site area of 784m^2 (approximately). The subject site is governed by the Local Government of Canterbury Bankstown and has been identified as flood prone in accordance with council's advice email.

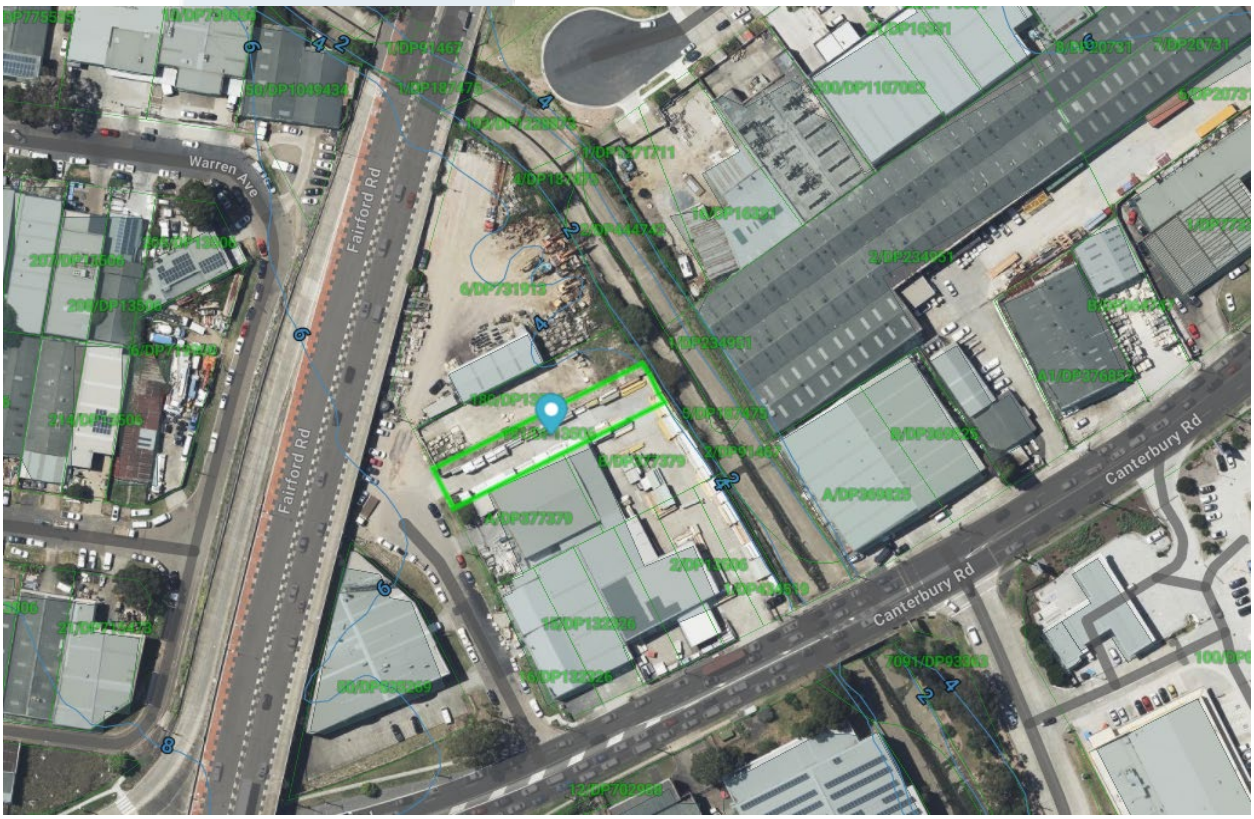

Figure 1 - Site Location. Source: Mecone

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Proposed by Ridge Design is a Warehouse development.

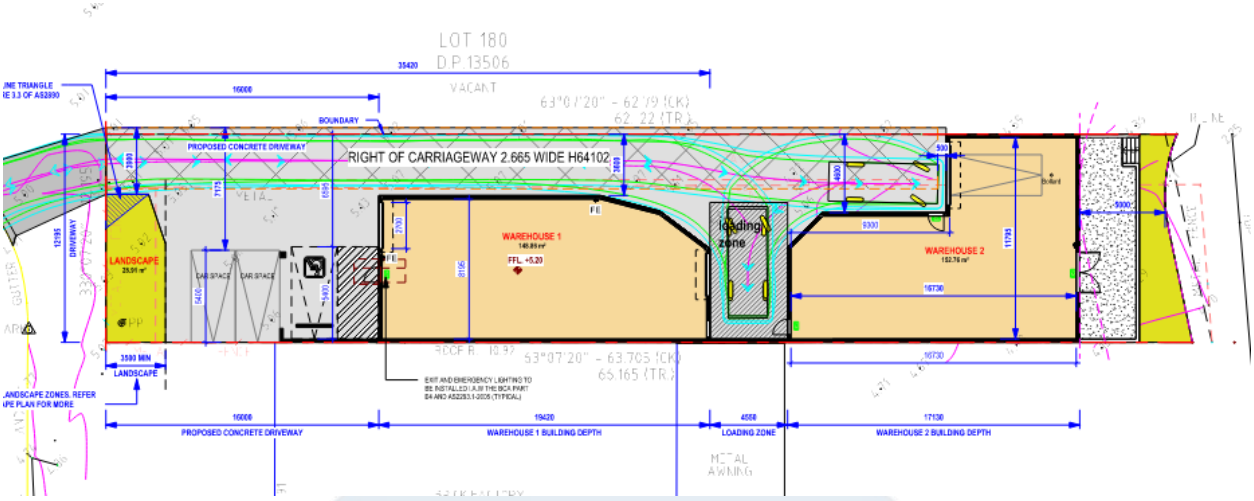

Figure 2 - Single Residential Dwelling - HA Design

Flood Behavior

Existing conditions

A stormwater system report was obtained from council dated 18/07/2024. In accordance with flood advice provided by the council, the site has been identified as flood affected by the 1%AEP.

Flood levels within the site vary between RL 5.20m AHD at the front boundary and 5.10m at the rear boundary AHD for the 1%AEP as per the flood maps provided by the council. The site is also categorized as flood storage area as per the hydraulic category map.

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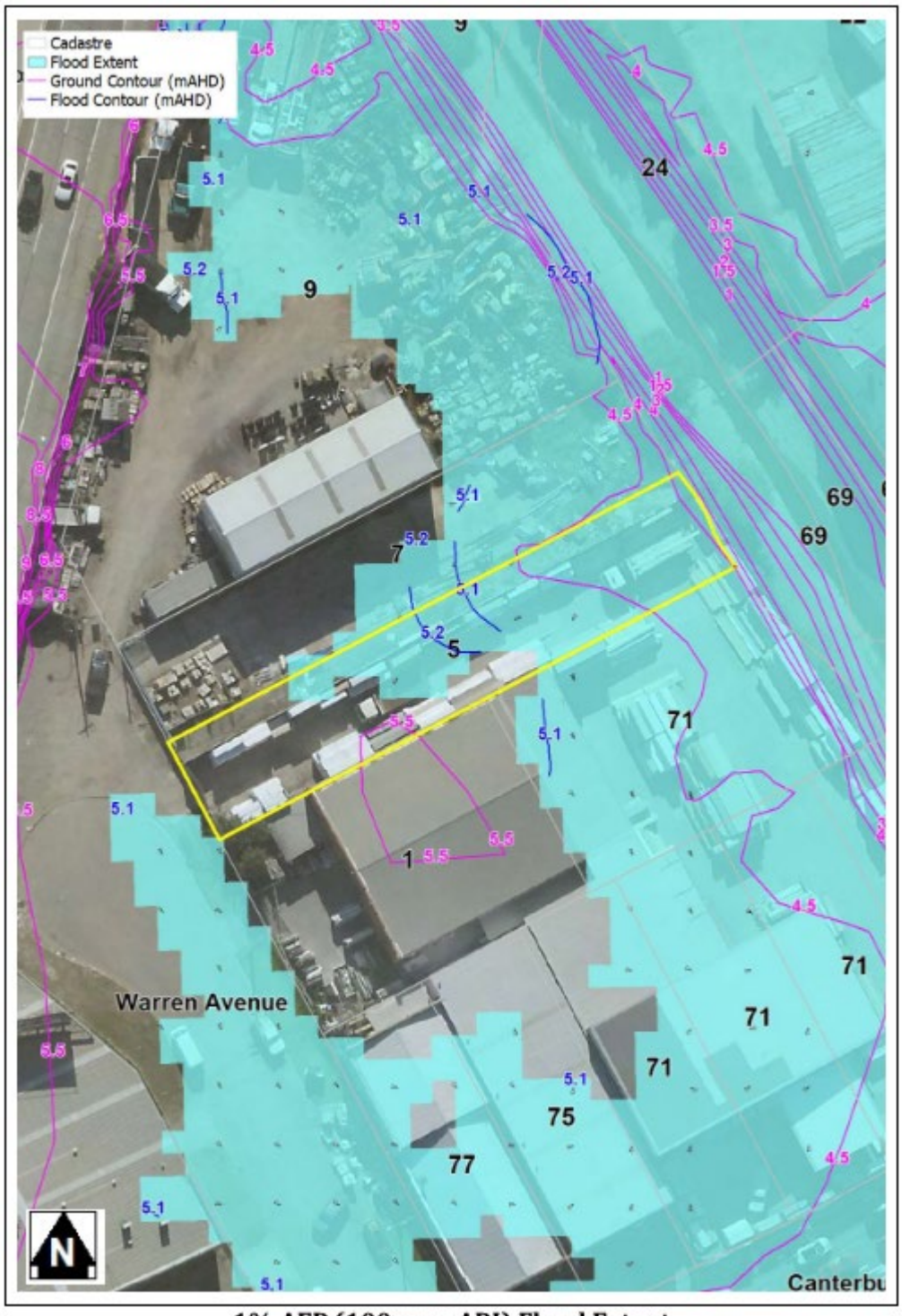

Figure 3 - Flood Maps and depths. Source: Strathfield Council.

Flood Planning Levels

The aim of a flood impact assessment is to ensure that the proposed development, which includes ancillary structures, in flood prone areas does not adversely impact on overland flow paths and that the development is designed to minimise the of the flooding.

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Mandatory Requirements:

1. It must be demonstrated that the development will not cause any increased impact on overland flow paths;
2. All developments must be designed so that habitable floors are at least 500mm above the 1%AEP flood level and non-habitable floors 300mm above the 1% AEP flood level;
3. Development to be constructed of flood compatible materials;
4. Basement structures to be protected from flood waters up to the 1% AEP.
5. Fences within the overland flow path should be of open style and not impede on the flow path.

Objectives

The purpose of this flood impact report is to ensure the development is designed and built in accordance with requirements addressed in C&B Council's Development Control Plan. The DCP provides the fine grain detail of the planning framework and applies in conjunction with LEP. It assists in the preparation of development applications and ensures development takes place in a quality and orderly manner. For residential development rebuild the following requirements need to be addressed and met:

Floor Level

a) Habitable floor levels to be equal to or greater than the 100-year flood level plus freeboard
b) Failsafe Vehicular access (garages, carports etc)

Building Components

a) All structures to have flood compatible building components below or at 100-year flood level plus freeboard

Flood Affectation

a) The impact of the development on flooding elsewhere to be considered
b) Limited filling will be considered for new dwellings between new dwellings/garages

Evacuation

a) Reliable and failsafe access for pedestrians required at or above the 100-year flood level, and not more than 0.5m below the highest floor level. This access is to be adjacent the side boundary.

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b) Reliable and failsafe access for vehicles is not required but encouraged.
c) The development is to be consistent with any relevant flood evacuation strategy or similar plan

Management and Design

a) Site Emergency Response Flood Plan required
b) Applicant to demonstrate that area is available to store goods above the 100-year flood level plus freeboard
c) No external storage of materials below the 100-year flood level plus freeboard, which may cause pollution or be potentially hazardous during a flood.

BUILDING COMPONENT	FLOOD COMPATIBLE MATERIAL	BUILDING COMPONENT	FLOOD COMPATIBLE MATERIAL
Flooring and Sub-floor Structure	• Concrete slab-on-ground monolith construction • Suspension reinforced concrete slab.	**Doors**	• Solid panel with water proof adhesives • Flush door with marine ply filled with closed cell foam • Painted metal construction • Aluminum or Galvanised steel frame
Floor Covering	• Clay tiles • Concrete, precast or in situ • Concrete tiles • Epoxy, formed-in-place • Mastic flooring, formed-in-place • Rubber sheets or tiles with chemical- set adhesives • Silicone floors formed-in-place • Vinyl sheets or tiles with chemical-set adhesive • Ceramic tiles, fixed with mortar or chemical-set adhesive • Asphalt tiles, fixed with water resistant adhesive	**Wall and Ceiling Linings**	• Fibro-cement board • Brick, face or glazed • Clay tile glazed in waterproof mortar • Concrete • Concrete block • Steel with waterproof applications • Stone, natural solid or veneer, waterproof grout • Glass blocks • Glass • Plastic sheeting or wall with waterproof adhesive
Wall Structure	• Solid brickwork, blockwork, reinforced, concrete or mass	**Insulation Windows**	• Foam (closed cell types) • Aluminum frame with stainless steel rollers or

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	concrete		similar corrosion and water-resistant material.
Roofing Structure (for Situations Where the Relevant Flood Level is Above the Ceiling)	• Reinforced concrete construction • Galvanized metal construction	**Nails, Bolts, Hinges and Fittings**	• Brass, nylon or stainless steel • Removable pin hinges • Hot dipped Galvanized steel wire nails or similar

Electrical and Mechanical Equipment	**Heating and Air Conditioning Systems**
For dwellings constructed on land to which this Policy applies, the electrical and mechanical materials, equipment and installation should conform to the following requirements.	Heating and air conditioning systems should, to the maximum extent possible, be installed in areas and spaces of the house above the relevant flood level. When this is not feasible every precaution should be taken to minimise the damage caused by submersion according to the following guidelines.
Main power supply - Subject to the approval of the relevant authority the incoming main commercial power service equipment, including all metering equipment, shall be located above the relevant flood level. Means shall be available to easily disconnect the dwelling from the main power supply.	**Fuel -** Heating systems using gas or oil as a fuel should have a manually operated valve located in the fuel supply line to enable fuel cut-off.
Wiring - All wiring, power outlets, switches, etc., should, to the maximum extent possible, be located above the relevant flood level. All electrical wiring installed below the relevant flood level should be suitable for continuous submergence in water and should contain no fibrous components. Earth core linkage systems (or safety switches) are to be installed. Only submersible-type splices should be used below the relevant flood level. All conduits located below the relevant designated flood level should be so installed that they will be self-draining if subjected to flooding.	**Installation -** The heating equipment and fuel storage tanks should be mounted on and securely anchored to a foundation pad of sufficient mass to overcome buoyancy and prevent movement that could damage the fuel supply line. All storage tanks should be vented to an elevation of 600 millimeters above the relevant flood level.
Equipment - All equipment installed below or partially below the relevant flood level should be capable of disconnection by a single plug and socket assembly.	**Ducting -** All ductwork located below the relevant flood level should be provided with openings for drainage and cleaning. Self-draining may be achieved by constructing the ductwork on a suitable grade. Where ductwork must pass through a water-tight wall or floor below the relevant flood level, the ductwork should be protected by a closure assembly operated from above relevant flood level.

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Reconnection - Should any electrical device and/or part of the wiring be flooded it should be thoroughly cleaned or replaced and checked by an approved electrical contractor before reconnection.	

Proposed Development

A Warehouse development is proposed for the subject site. The development is proposed with flood compatible material and floor levels set to the following:

- Main floor levels at RL 5.20m AHD.
- Offices are proposed at RL 8.80m AHD

Conclusion

- The site has been designed to comply with local and national standards and regulations.
- It has been designed to be a safe refuge for pedestrians during severe flood events.
- The site is proposed above at the 1%AEP flood event.
- The site is proposed to be constructed of flood compatible material.
- A 2.65 x 49m carriage way proposed to act as a flood storage area in lieu of side setbacks.

We confirm the proposed development has been designed to act as a safe refuge during flood events and withstand flood forces up to the 1%AEP.

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Yours Faithfully,

Samir C Hakim,

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