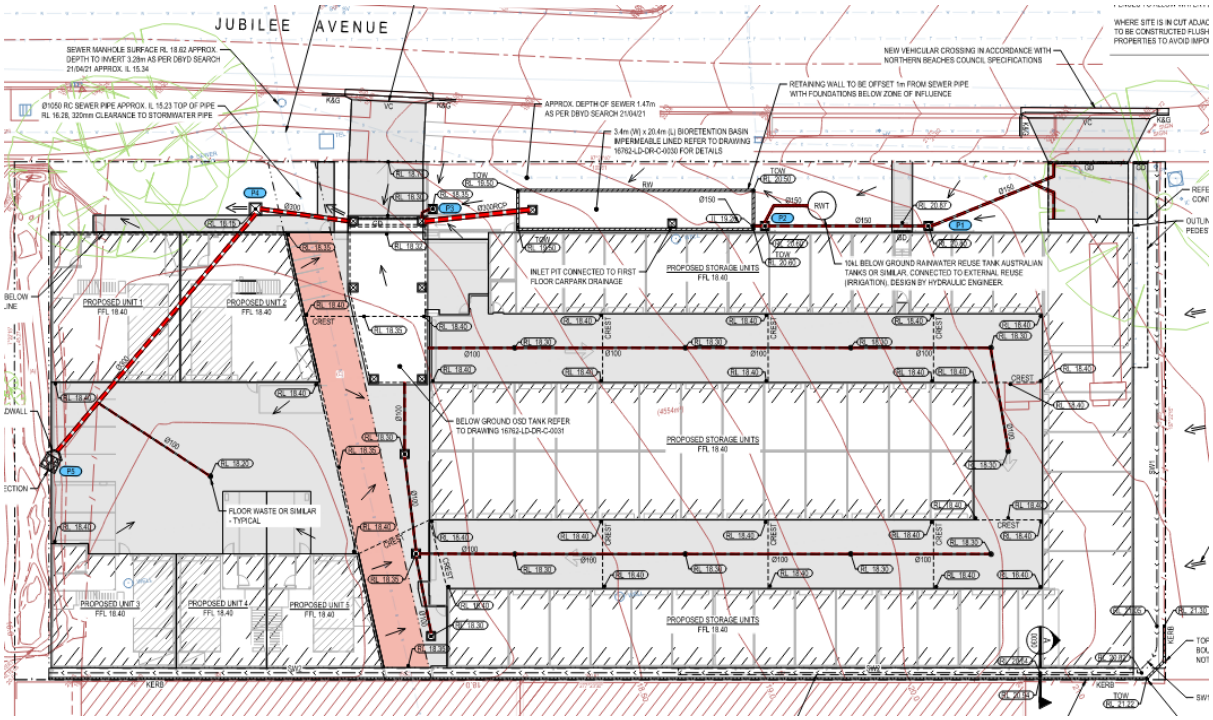
FLOOD RISK MANAGEMENT & EVACUATION STRATEGY REPORT:

15 JUBILEE AVENUE, WARRIEWOOD

Project No.00016762

Date: 7th May 2021



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Client: Trend Living Pty Ltd
Project: 15 Jubilee Avenue, Warriewood
Project No: 00016762

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Contents

Introduction

This report has been prepared to accompany the Development Application for the development known as LOT 202 DP 1019363 – 15 Jubilee Avenue, Warriewood.

This report details the flood risk management strategies and recommendations to address the flood related controls that apply to the development. Upon review of the Ingleside, Elanora and Warriewood Overland Flow Flood Study 2019 it appears that the site is affected by flooding waters during storms events up to the 1% Annual Exceedance Probability (AEP) and Probable Maximum Flood Event (PMF).

The assessment takes into consideration the safety, economic, engineering, environmental and social aspects of to effectively address the flood evacuation of people who are within the vicinity of the development site.

Site Context

The proposed development address is 15 Jubilee Avenue, Warriewood (the Site) also known as Lot 202 DP1019363. The existing greenfield site covers an area of approximately 4550m2 bordered by Jubilee avenue along the northern boundary, industrial units along the western and southern boundaries, and a single residential dwelling along the eastern boundary. A generalised slope runs from northeast to southwest across the site, consisting mostly of short grass with some mild to dense vegetation in the southwest corner. Easements are located along the southern boundary, over an existing channel along the western boundary and over a sewer pipe that runs in a north-south direction through the site. The site is accessed via a single driveway access point along Jubilee Avenue. The location of the site is shown in Figure 1.

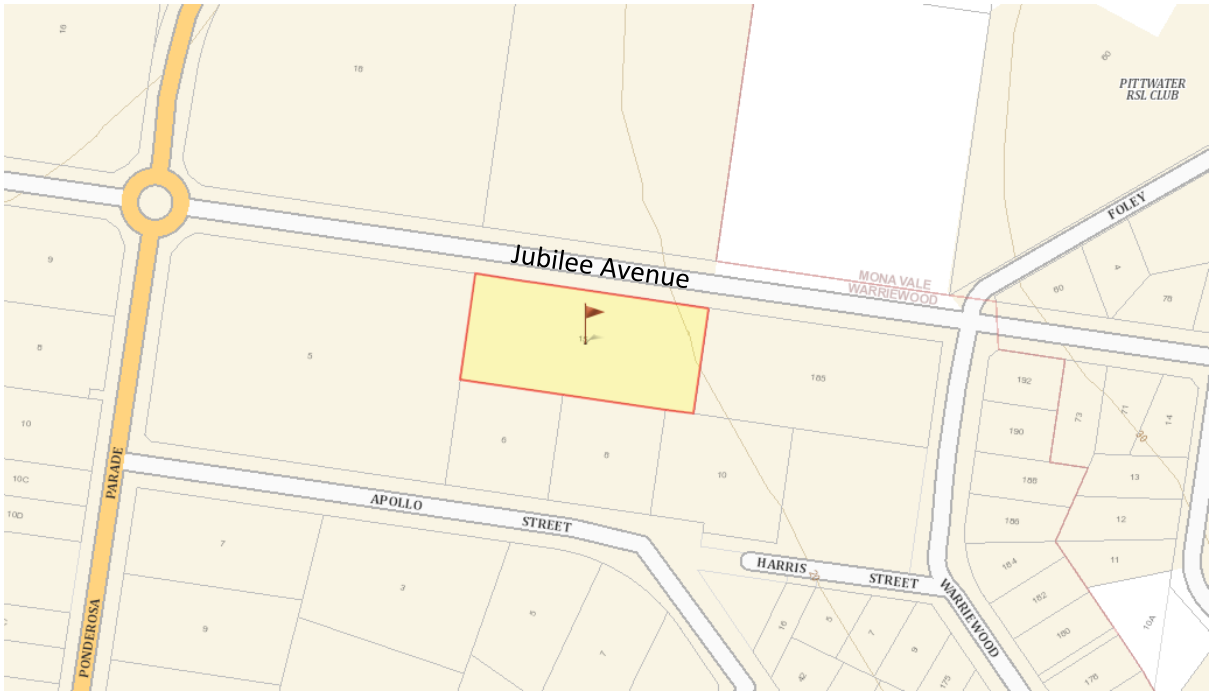

Figure 1 – Locality map (Source: https://maps.six.nsw.gov.au/, accessed 12/02/21).

Proposed Development

The proposed development upon completion of all works will consist of new warehouse units, storage units and hardstand pavement with associated parking spaces, landscaped areas, a bioretention basin, and a below ground on-site detention (OSD) tank. Refer to Appendix C for the proposed development architectural site plan.

Existing Flood Regime

Review of the following available information was undertaken to assess the existing flood regime on the development site:

- Ingleside, Elanora and Warriewood Overland Flow Flood Study – 2019
- Flood hazard mapping tool – Northern Beaches Council eServices

Further to the available information from Council's resources, Council have provided further advice on the flood specific levels identified for the site reported below.

- % Annual Exceedance Probability (AEP) existing flood levels applicable to the site are approximately:
  - North Western corner of the site RL 17.86m AHD
  - South Western corner of the site RL 17.90m AHD
- Probable Maximum Flood level RL 18.7m AHD

In review of the above information, we have considered that the Flood Planning Level (FPL) to be the 1% AEP flood level + 0.5m freeboard. Therefore, an appropriate FPL is RL 18.4m AHD.

It appears from the flood mapping available the existing open channel along the western boundary has some areas of high hazard flows. However, internal to the site the hazard is considered medium risk (see Appendix A for extract of the flood hazard for the site).

Extracts taken from the Ingleside, Elanora and Warriewood Overland Flow Flood Study depict the extent of flooding for the development site and surrounding areas for the events of 20% (Annual Exceedance Probability) up to the 1% AEP and Probable Maximum Flood (PMF) and presented below.

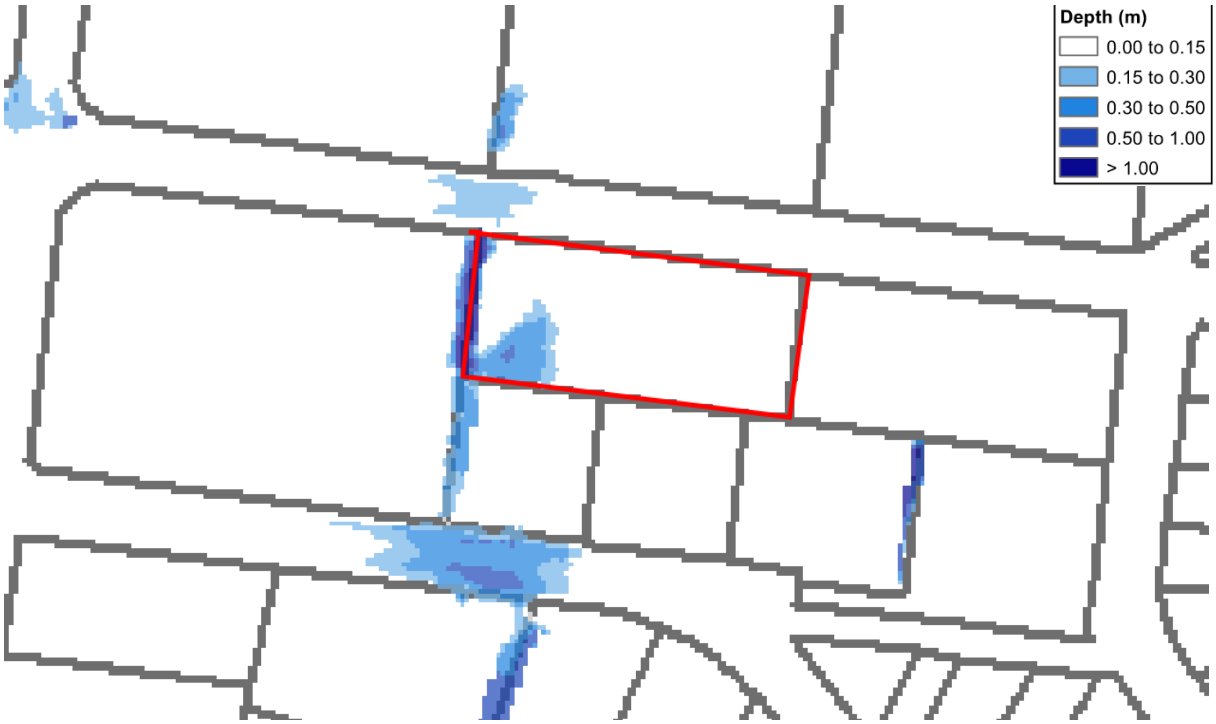

Figure 2 - 20% AEP Flood extent.

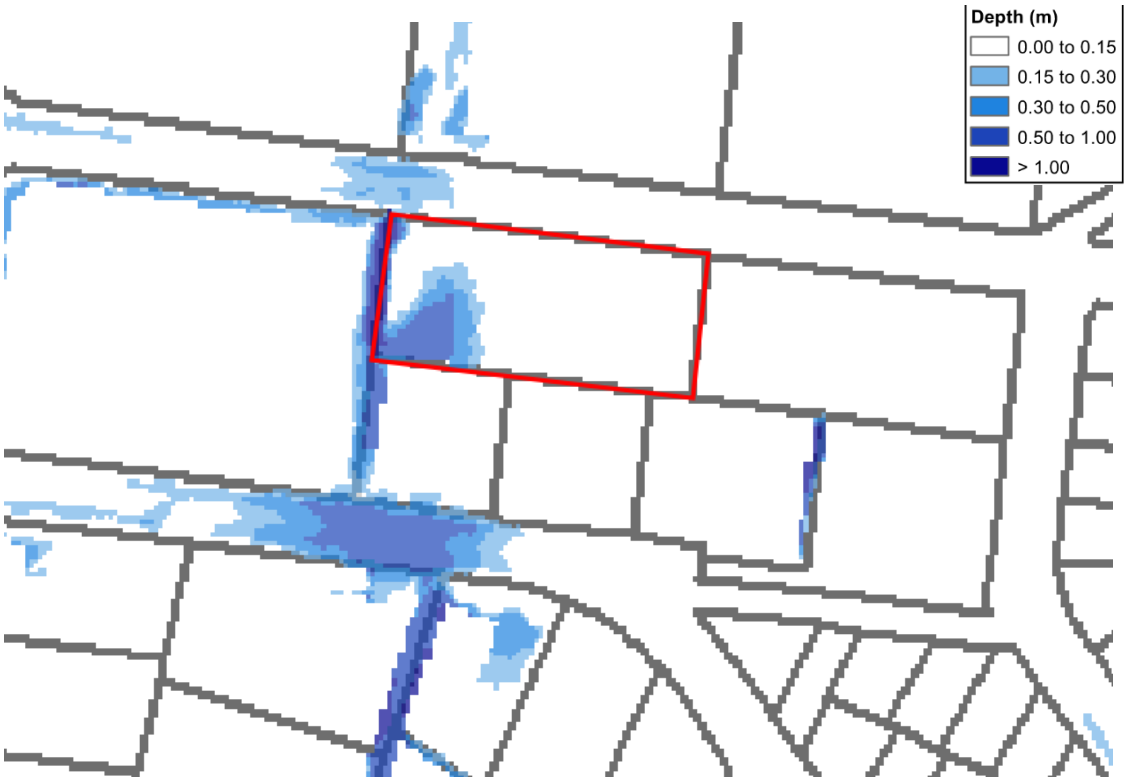

Figure 3 - 1% AEP Flood extent.

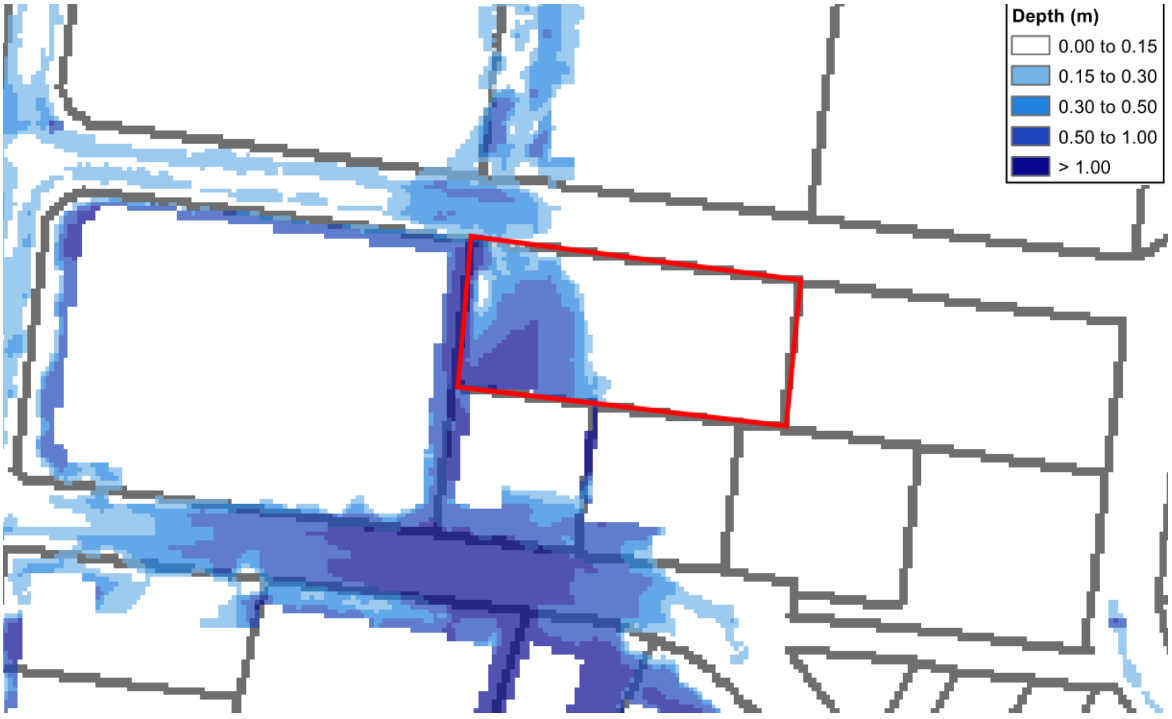

Figure 4 - PMF extent.

The flood extent within the development site (but outside of the open channel along the Western Boundary) experiences an extremely low velocity. This would indicate that the type of flooding in this area is slowly rising floodwaters most likely as a result of back flow from the downstream capacity constraints (i.e. buildings), refer to Figure 6. This is particularly important when proposing the location of column structures within the flood extent, as this would be considered to have negligible impact on the existing flood regime. This is further described in this report.

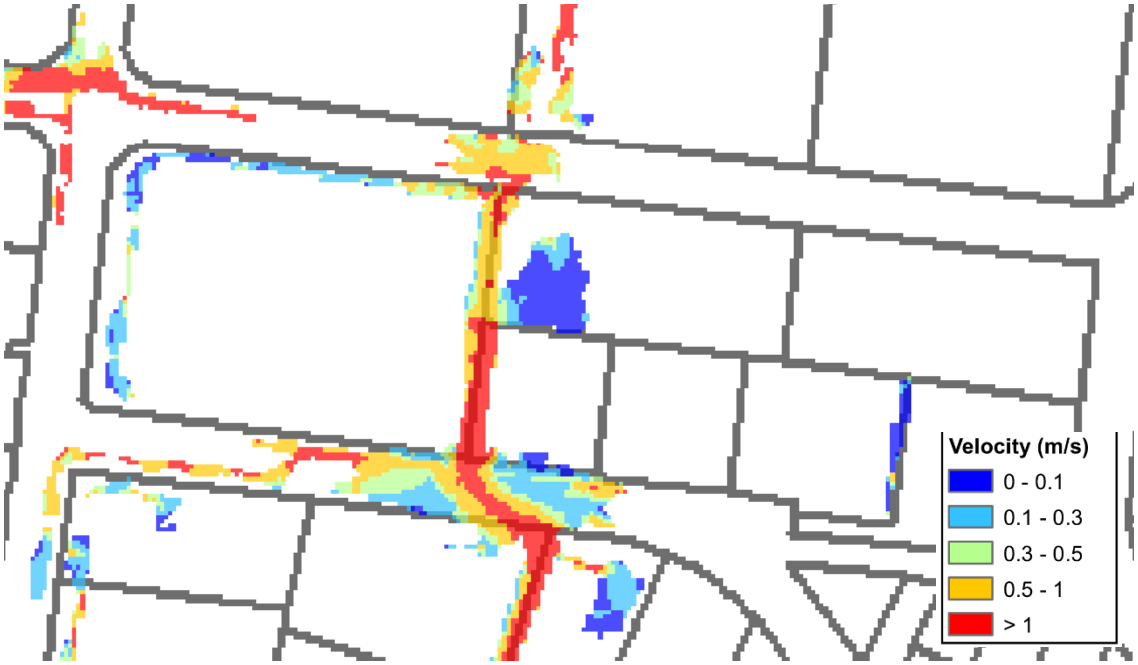

Figure 5 – Flood velocity within the site during 1% AEP

Flood Mitigation

A slab on ground is proposed to the east of the sewer easement for constructability and to facilitate a removable panel system for future sewer access. A portion of the on-ground slab area falls within the existing flood 1% AEP flood extent, the volume below this portion will be infilled and results in a flood storage loss. Proposed building area to the west of the sewer easement will be suspended at the FPL via piers to ensure no net loss of site flood storage (1% AEP event) can be achieved. Excavation below the suspended slab is proposed to allow a minimum 0.7m vertical clearance for inspections/access and to offset the flood storage loss due to the slab on ground and edge footing.

An assessment of the 1% AEP flood storage alteration has determined an additional 107m^3 is achieved from the earthworks below the suspended slab that will offset a 55m^3 flood storage loss due to the in ground slab. Details of the flood extent and earthworks volumes are provided in the Flood Volume Assessment and Sections drawings (16762-LD-SK-C-0001 to C-0002) in Appendix B.

Further to the above, it was proposed to provide columns outside of the main existing channel (carrying a higher velocity of flow) to avoid impacting the overland flow extent. As described previously, it has been determined and discussed with Council engineers, that the columns located within the low velocity

flood extent will had negligible impact on the flood regime. As a result, columns have been aligned with a 2.8m clearance from the western easement boundary, positioned outside areas with a greater flow velocity. This positioning avoids any restrictions to channel flows and increased scour caused by the columns. Figure 7 demonstrates the positioning of the columns in relation to the flood velocity map from Figure 6.

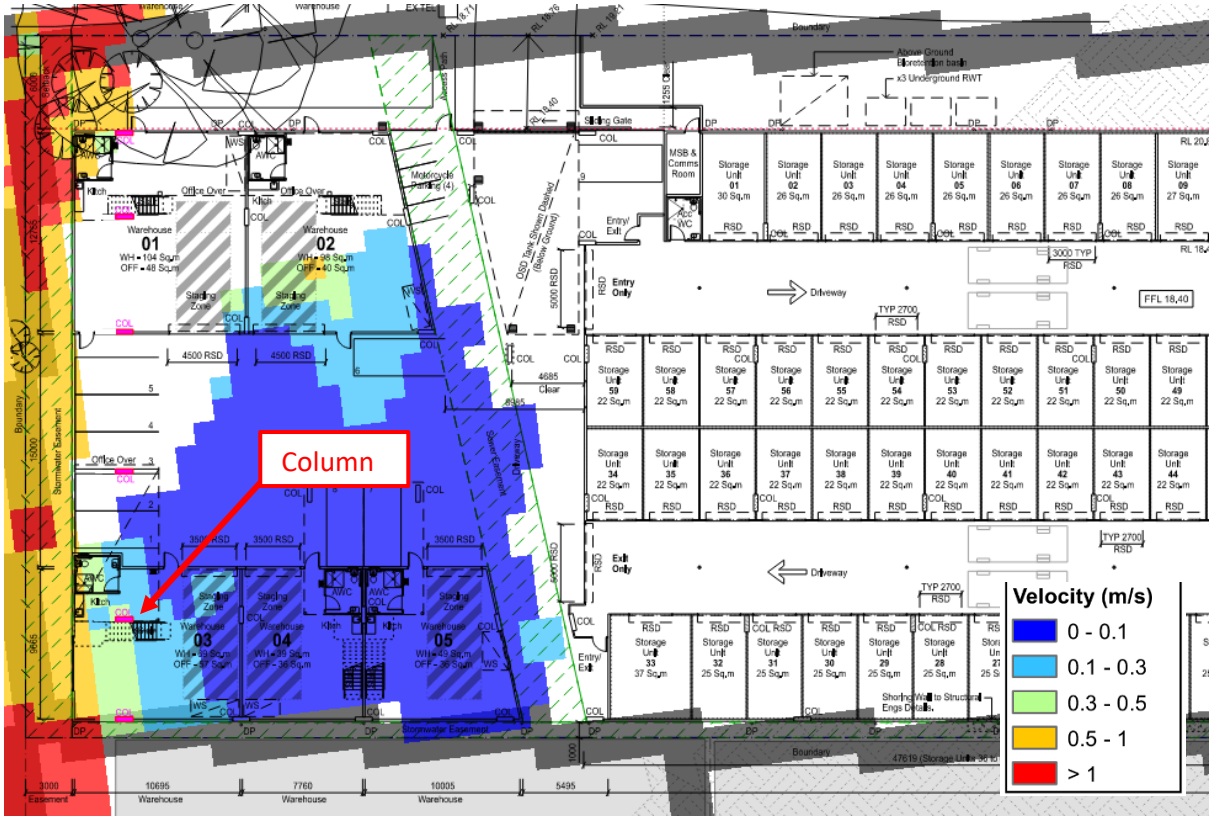

Figure 6 – Flood velocity overlay, columns closest to easement channel shown in magenta.

Flooding Management

Given the existing flood regime for the development site, the below information addresses compliance with the Council development controls that apply.

Information relied on to prepare the flood risk and evacuation strategy for the development site include:

- Northern Beaches Council – Flood Management Report
- Pittwater 21 DCP – Part B3.11 Flood Prone Land'
- NSW Floodplain development manual 2005
- Australian Rainfall and Runoff 2019

The site has been classified as a medium risk precinct and land use type ‘’Business and Industrial Use” as the development is considered “Storage premises” and “Warehouse or distribution centre”. We have undertaken an analysis of how the flood controls will be addressed on site following the Flood Risk Matrix guidelines stipulated in Council’s Pittwater 21 DCP – Part B3.11 Flood Prone Land. Refer to Table 1 for the controls applicable to the development.

Table 1 – Controls applicable to development.

Medium Flood Risk		
		Business & Industrial
A	**Flood effects caused by Development**	A1
		A2
B	**Building Components & Structural**	B1
		B2
		B3
C	**Floor Levels**	C1
		C3
		C4
		C6
		C7
D	**Car Parking**	D1
		D2
		D3
		D4
		D5
		D6
E	**Emergency Response**	E1
F	**Fencing**	F1
G	**Storage of Goods**	G1
H	**Pools**	H1

Flood effects caused by Development

A1	Development shall not be approved unless it can be demonstrated in a Flood Management Report that it has been designed and can be constructed so that in all events up to the 1% AEP event: a) There are no adverse impacts on flood levels or velocities caused by alterations to the flood conveyance; and b) There are no adverse impacts on surrounding properties; and c) It is sited to minimise exposure to flood hazard. Major developments and developments likely to have a significant impact on the PMF flood regime will need to	Lindsay Dynan have prepared this Flood Risk Management Report to address these issues. Lindsay Dynan consider that this site would not constitute the development, nor as ignificantly impacting the impact the PMF flood regime.

	demonstrate that there are no adverse impacts in the Probable Maximum Flood.	
A2	Development shall not be approved unless it can be demonstrated in a Flood Management Report that in all events up to the 1% AEP event there is no net loss of flood storage. Consideration may be given for exempting the volume of standard piers from flood storage calculations. If Compensatory Works are proposed to balance the loss of flood storage from the development, the Flood Management Report shall include detailed calculations to demonstrate how this is achieved.	Proposed development is designed to not reduce flood storage, finished levels and carpark areas to be suspended above the flood extent. Earthworks also proposed to offset flood storage loss due to proposed building construction. Refer to Appendix B for Flood Volume Assessment and Sections drawings (16762-LD-SK-C-0001 to C-0002).

Building Components and Structural Soundness

B1	All buildings shall be designed and constructed with flood compatible materials in accordance with "Reducing Vulnerability of Buildings to Flood Damage: Guidance on Building in Flood Prone Areas", Hawkesbury-Nepean Floodplain Management Steering Committee (2006).	Noted.
B2	All new development must be designed and constructed to ensure structural integrity up to the Flood Planning Level, taking into account the forces of floodwater, wave action, flowing water with debris, buoyancy and immersion. Where shelter-in-place refuge is required, the structural integrity for the refuge is to be up to the Probable Maximum Flood level. Structural certification shall be provided confirming the above.	Noted. Structural design and certification to be provided at Construction Certificate stage.
B3	All new electrical equipment, power points, wiring, fuel lines, sewerage systems or any other service pipes and connections must be waterproofed and/or located above the Flood Planning Level. All existing electrical equipment and power points located below the Flood Planning Level within the subject structure must have residual current devices installed that turn off all electricity supply to the property when flood waters are detected.	Noted.

Floor Levels

C1	New floor levels within the development shall be at or above the Flood Planning Level.	Noted. The proposed development will be constructed at or above the Flood Planning Level.

C3	All new development must be designed and constructed so as not to impede the floodway or flood conveyance on the site, as well as ensuring no net loss of flood storage in all events up to the 1% AEP event. For suspended pier/pile footings: a) The underfloor area of the dwelling below the 1% AEP flood level is to be designed and constructed to allow clear passage of floodwaters, taking into account the potential for small openings to block; and b) At least 50% of the perimeter of the underfloor area is of an open design from the natural ground level up to the 1% AEP flood level; and c) No solid areas of the perimeter of the underfloor area would be permitted in a floodway	Noted, with proposed development civil engineering plans noting that underfloor area to remain at existing levels and clear of obstructions. Refer to Appendix B for Flood Volume Assessment and Sections drawings (16762-LD-SK-C-0001 to C-0002).
C4	A one-off addition or alteration below the Flood Planning Level of less than 30 square metres (in total, including walls) may be considered only where: a) it is an extension to an existing room; and b) the Flood Planning Level is incompatible with the floor levels of the existing room; and c) out of the 30 square metres, not more than 10 square metres is below the 1% AEP flood level. This control will not be permitted if this provision has previously been utilised since the making of this Plan. The structure must be floodproofed to the Flood Planning Level, and the Flood Management Report must demonstrate that there is no net loss of flood storage in all events up to the 1% AEP event.	N/A
C6	Consideration may be given to the retention of an existing floor level below the Flood Planning Level when undertaking a first-floor addition provided that: a) it is not located within a floodway; and b) the original foundations are sufficient to support the proposed final structure above them. The Flood Management Report must include photos and the structural certification required as per Control B2 must consider whether the existing foundations are adequate or should be replaced; and c) none of the structural supports/framing of existing external walls of are to be removed unless the building is to be extended in that location; and d) the ground floor is floodproofed.	N/A
C7	Consideration may be given to a floor level below the Flood Planning Level within the first 5 metres from the street front in an existing business zone provided it can be demonstrated that: a) The minimum floor level is no lower than the adjacent footpath level, and	Noted.

	b) The maximum internal distance from the front of the building is 5 metres, which can only apply to one side of an individual premises and c) The maximum area for the floor area to be below the Flood Planning Level for an individual premises is 30 square metres, and d) There is direct internal access between areas above and below the Flood Planning Level for each individual premises	

Car Parking

D1	Open carpark areas and carports shall not be located within a floodway.	Proposed development is designed to not reduce flood storage with finished levels including carpark areas to be suspended above open channel floodway.
D2	The lowest floor level of open carparks and carports shall be constructed no lower than the natural ground levels, unless it can be shown that the carpark or carport is free draining with a grade greater than 1% and that flood depths are not increased.	Proposed development is designed to not reduce flood storage with finished levels including carpark areas to be suspended above open channel floodway. Details of this are presented in the civil engineering plans prepared by Lindsay Dynan.
D3	Carports must be of open design, with at least 2 sides completely open such that flow is not obstructed up to the 1% AEP flood level. Otherwise it will be considered to be enclosed. When undertaking a like-for-like replacement and the existing garage/carport is located on the street boundary and ramping is infeasible, consideration may be given for dry floodproofing up to the 1% AEP flood level.	N/A
D4	Where there is more than 300mm depth of flooding in a car park or carport during a 1% AEP flood event, vehicle barriers or restraints are to be provided to prevent floating vehicles leaving the site. Protection must be provided for all events up to the 1% AEP flood event	Noted, the proposed development will be constructed at or above the Flood Planning Level. Therefore, there would be no areas of flooding at the site.
D5	Enclosed Garages must be located at or above the 1% AEP level	All proposed parking facilities located above the 1% AEP flood level.
D6	All enclosed car parks (including basement carparks) must be protected from inundation up to the Flood Planning Level. All access, ventilation, driveway crests and any other potential water entry points to any enclosed car parking shall be above the Flood Planning Level. Where a driveway is required to be raised it must be demonstrated that there is no net loss to available flood	Proposed development designed to protect from inundation up to the flood planning level.

	storage in any event up to the 1% AEP flood event and no impact on flood conveyance through the site. Council will not accept any options that rely on electrical, mechanical or manual exclusion of the floodwaters from entering the enclosed carpark	

Emergency Response

E1	If the property is affected by a Flood Life Hazard Category of H3 or higher, then Control E1 applies and a Flood Emergency Assessment must be included in the Flood Management Report. If the property is affected by a Flood Life Hazard Category of H6, then development is not permitted unless it can be demonstrated to the satisfaction of the consent authority that the risk level on the property is or can be reduced to a level below H6 or its equivalent. If the property is flood affected but the Flood Life Hazard Category has not been mapped by Council, then calculations for its determination must be shown in the Flood Management Report, in accordance with the "Technical Flood Risk Management Guideline: Flood Hazard", Australian Institute for Disaster Resilience (2012). Where flood-free evacuation above the Probable Maximum Flood level is not possible, new development must provide a shelter-in-place refuge where: a) The floor level is at or above the Probable Maximum Flood level; and b) The floor space provides at least 2m2 per person where the flood duration is long (6 or more hours) in the Probable Maximum Flood event, or 1m2 per person for less than 6 hours; c) It is intrinsically accessible to all people on the site, plainly evident, and self-directing, with sufficient capacity of access routes for all occupants without reliance on an elevator; and d) It must contain as a minimum: sufficient clean water for all occupants; portable radio with spare batteries; torch with spare batteries; and a first aid kit Class 10 classified buildings and structures (as defined in the Building Codes of Australia) are excluded from this control. In the case of change of use or internal alterations to an existing building, a variation to this control may be considered if justified appropriately by a suitably qualified professional. Note that in the event of a flood, occupants would be required to evacuate if ordered by Emergency Services personnel regardless of the availability of a shelter-in-place refuge.	Noted, refer to the Flooding Emergency Response Strategy (FERS) section of this report.

Fencing

F1	Fencing, (including pool fencing, boundary fencing, balcony balustrades and accessway balustrades) shall be designed so as not to impede the flow of flood waters and not to increase flood affectation on surrounding land. At least 50% of the fence must be of an open design from the natural ground level up to the 1% AEP flood level. Less than 50% of the perimeter fence would be permitted to be solid. Openings should be a minimum of 75 mm x 75mm.	Noted

Storage of Goods

G1	Hazardous or potentially polluting materials shall not be stored below the Flood Planning Level unless adequately protected from floodwaters in accordance with industry standards.	Noted.

Pools

H1	Pools located within the 1% AEP flood extent are to be in-ground, with coping flush with natural ground level. Where it is not possible to have pool coping flush with natural ground level, it must be demonstrated that the development will result in no net loss of flood storage and no impact on flood conveyance on or from the site. All electrical equipment associated with the pool (including pool pumps) is to be waterproofed and/or located at or above the Flood Planning Level. All chemicals associated with the pool are to be stored at or above the Flood Planning Level. All chemicals associated with the pool are to be stored at or above the flood planning level.	N/A

Flooding Emergency Response Strategy (FERS)

The FERS sets out the potential consequences of flooding, the time at which action should be taken to evacuate and the procedures to be followed in a possible flood event. The FERS should be provided as part of the contract for all development lots and should be conditioned to be mounted in prominent locations throughout the future development where it can be seen by the occupants/patrons (for example; in hallways, the garage, where medical provisions are kept, electrical switchboard box, etc...) The FERS outlines that the occupants to move outdoor equipment, garbage, chemicals and poisons to higher locations and also plan which indoor items they will raise or empty if water threatens the home (e.g. freezers and refrigerators), check their emergency kit and safeguard their pets. They need to communicate with friends, family and neighbours about their plans etc.

The FERS also describes what should be done after a flood event.

A copy of the FERS for the development should be used as a guideline for the occupants/patrons as they may wish to adjust some of the items included in the document.

It should be noted that the proposed warehouses and car spaces on the development site resides above the Flood Planning Level. The building finished floor level at the time of documenting this report was RL 18.40m AHD. The PMF level is approximately RL 18.7m AHD.

It is therefore advised that during any potential flood event, that any occupants on the site at his time should take shelter in place at the first floor level which is proposed at RL23.90

At this time, further advice should be sort from the relevant authorities outlined below.

Procedure in Case of Flooding

The procedure outlined below is in accordance with the NSW Government – NSW State Emergency Services (SES) 'Flood Safe' guidelines.

In lieu of any flood event, a 'Business Flood Safe Toolkit' should be undertaken and regularly updated. The primary goal of the 'Business Flood Safe Toolkit' may assist you in reducing the impact flooding may have on your business. The 'Toolkit' can be completed online at:

(http://floodsafe.ses.org.au/floodsafe/businesstoolkit/)

Steps to be Followed in the Event of Possible Flooding

1. Flood information including 'Flood Watches' and 'Flood Warnings' issued by the Bureau of Meteorology (BOM), road closures and advice on evacuations and property protection will be updated on the BOM website (http://www.bom.gov.au/nsw/warnings/), broadcast over ABC, other national, state and local radio stations. The ABC is the Emergency Services Broadcaster.

2. The NSW SES issue Flood Bulletins to radio stations which inform people about what is expected to happen during flooding. SES Flood Bulletins provide information on likely flood consequences and what actions are required to protect yourself and your property. Radio stations are asked to read the Flood Bulletin 'word for word' over a period of time.

3. Other ways you may be informed of possible flooding is through doorknocking by emergency services, through word of mouth or the SES may issue an Emergency Alert. An Emergency Alert is a message that is sent to your landline or mobile phone as a voice or text message. The SES advises people to always follow instructions given by the emergency services and make sure neighbours, family friends are aware of possible flooding.

In the event that the state emergency services has not provided an emergency alert message or are unable to be contacted, the following instructions should be followed. However, any message and instructions received by state emergency services should govern the trigger levels outlined below.

1. During floods many local and major streets and roads may be cut off by floodwaters that may make the escape by vehicle extremely difficult. Travelling through floodwaters on foot or in a vehicle can be very dangerous as obstructions can be hidden under the floodwaters, or you could be swept away, even if in a car, or the water may be polluted. It is recommended staying within the building as much as practical as this is the safest option. If you urgently need to leave the building, do so early in the flood event.

2. In the unlikely event that flood waters have risen up to the building, do not evacuate the building at this time unless instructed to do so by the SES or the Police. Floodwaters are much deeper, run much faster and are more dangerous outside. Any disabled person/s should be assisted and moved to the nominated level in the building as outlined above.

3. In the case of a medical or life threatening emergency ring '000' as normal, but explain about the flooding.

4. Stay tuned on a battery powered radio for official advice and warnings

5. Don't return home until authorities have said it is safe to do so

6. Stay away from drains, culverts and water over knee-deep

7. Do not turn on gas and electricity until it has been checked by a professional/licensed repairer.

8. Avoid using gas or electrical appliances which have been in flood water until checked by for safety by a suitably qualified person.

9. Take photos for insurance purposes.

After the Flood

- Stay tuned to ABC 702 on a battery powered radio for official advice and warnings
- Don't return home until authorities have said it is safe to do so
- Don't allow children to play in or near flood waters

- Avoid entering flood waters, it is dangerous. If you must, wear solid shoes and check depth and current with a stick
- Stay away from drains, culverts and water over knee-deep
- Don't turn on your gas and electricity until it has been checked by a professional/licensed repairer
- Avoid using gas or electrical appliances which have been in flood water until checked for safety
- Boil tap water until supplies have been declared safe
- Watch for trapped animals
- Beware of fallen power lines
- Take many photos for all damage for insurance purposes
- Notify family and friends of your whereabouts

Important Phone Numbers

State Emergency Service: Emergency 132 500 General Enquires: 4251 6111

Police, Fire, Ambulance: Emergency 000

Bureau of Meteorology (Website): http://www.bom.gov.au/weather

Land, Weather and Flood Warnings, phone: 1300 659 215

Northern Beaches Council: .....

Manager: .....

Strata Manager:.....

Other: .....

Should you require any further advice or clarification of any of the above, please do not hesitate to contact us.

Yours faithfully
LINDSAY DYNAN
CONSULTING ENGINEERS PTY LIMITED

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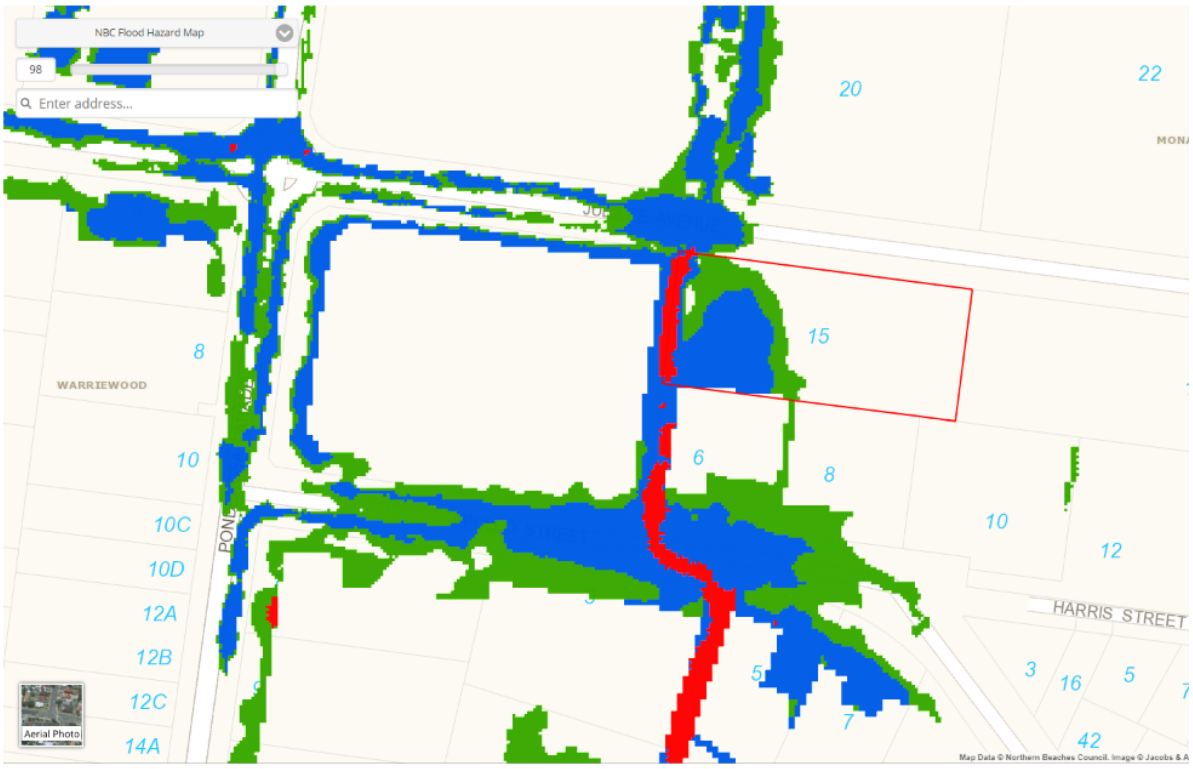
Senior Civil Engineer

APPENDIX A – FLOOD HAZARD MAPPING



NBC Flood Hazard Map
- High risk precinct
- Medium risk precinct
- Low risk precinct

APPENDIX B – FLOOD VOLUME ASSESSMET PLAN AND SECTIONS

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PROJECT NORTH

DESIGN INTENT

THE PROPOSED BUILDING INCLUDES A RETAINING WALL TO FACILITATE AN ON-GROUND SLAB AT THE FPL RL 18.40. FILL MATERIAL REQUIRED BEHIND THE RETAINING WALL WILL REDUCE THE SITE FLOOD STORAGE VOLUME. ALLOWANCE HAS BEEN MADE FOR EXCAVATION ON THE LOW SIDE OF THE RETAINING WALL (BELOW THE SUSPENDED SLAB) TO ENSURE THERE IS NO NET LOSS IN FLOOD STORAGE VOLUME FOR THE SITE. REFER TO CALCULATED STORAGE VOLUMES BELOW.

VOLUME CALCULATION

FLOOD STORAGE LOSS BEHIND RETAINING WALL (ORANGE HATCH AREA), V1 = 55 m^3
FLOOD STORAGE GAIN IN FRONT OF RETAINING WALL (GREEN HATCH AREA), V2 = 502 m^3
EXISTING FLOOD STORAGE IN FRONT OF RETAINING WALL (RED DASHED LINE AREA), V3 = 395 m^3

TOTAL FLOOD STORAGE GAINED V4 = V3 - V2 = 107 m^3

V1 < V4, THEREFORE NO NET LOSS IN FLOOD STORAGE VOLUME.

JUBILEE AVENUE

PROPOSED EARTHWORKS TO TIE INTO EXISTING TOP OF BANK I.E. EXISTING EASEMENT CHANNEL TO REMAIN UNCHANGED

EDGE OF FOOTING TO RETAIN SOIL

PROPOSED CARPARK AND UNITS 1 - 5
UNDERSIDE OF SUSPENDED SLAB RL 18.15

PROPOSED STORAGE UNITS
BENCH 18.15

EXISTING 1% AEP FLOOD EXTENT.
TOP WATER LEVEL 17.90

(4554m²)

PROPOSED STORAGE UNITS
BENCH 18.15

PROPOSED STORAGE UNITS
BENCH 18.15

SP 39131
SP 73963
SP 37005
201 DP 1019363
503 DP 773791

(A) EASEMENT TO DRAIN WATER 3 WIDE (DP1019363)
(B) EASEMENT TO DRAIN WATER 1 WIDE (DP1019363)
(C) EASEMENT FOR SEWERAGE PURPOSES 4 WIDE (3951558)

1. THE BOUNDARY OF LOT 202 IN DP 1019363 IS COMPILED FROM DP 1019363 AND NOT VERIFIED BY SURVEY
2. A NOTATION OF PLAN FOR PROPOSED EASEMENT FOR SEWER (DP1000308) IS SHOWN ON THE TITLE OF LOT 202 IN DP 1019363

FLOOD SKETCH

SCALE 1:200

0 4 8 12 16m
1:200 (A1)

NOT FOR CONSTRUCTION

Lindsay Dynan

Sydney | Perth | Newcastle | Central Coast

PROJECT
PROPOSED INDUSTRIAL DEVELOPMENT
15 JUBILEE AVENUE, WARRIEWOOD, NSW, 2102

CLIENT
TREND LIVING PTY LTD

THIS DRAWING CONTAINS COLOURED INFORMATION C M Y

LEGEND

- EXISTING 1% AEP FLOOD AREA BEHIND RETAINING WALL TO BE FILLED IN
- EXTENT OF EARTH MATERIAL REMOVED TO ALLOW ACCESS/MAINTENANCE TO UNDERSIDE OF SUSPENDED BUILDING SLAB
- EXISTING FLOOD AREA IN FRONT OF RETAINING WALL
- EXISTING 1% AEP FLOOD EXTENT
- EXISTING CONTOUR
- EXISTING SPOTLEVEL
- BULK EARTHWORKS CONTOUR
- BOUNDARY LINE
- EXISTING FENCE
- EXISTING ELECTRICAL SERVICE
- EXISTING SEWER SERVICE
- EXISTING TELSTRA SERVICE
- EXISTING COMMUNICATIONS SERVICE
- EXISTING WATER SERVICE
- EXISTING POWER POLE
- EXISTING TREE

NOTES

THE POSITION OF ALL EXISTING SERVICES SHOWN SHOULD BE REGARDED AS APPROXIMATE ONLY AND NOT NECESSARILY COMPREHENSIVE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE EXACT SERVICE LOCATIONS AND INFORM ALL AUTHORITIES PRIOR TO ANY EXCAVATION.

DURING CONSTRUCTION, THE STRUCTURE SHALL BE MAINTAINED IN A STABLE CONDITION AND NO PART OF THE STRUCTURE SHALL BE OVER-STRESSED. TEMPORARY STRUCTURES, FORMWORK, FALSEWORK, TEMPORARY BRACING, SHORING AND THE LIKE SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

ALL HANDRAILS, IF REQUIRED, ARE TO ARCHITECT'S LOCATION & DETAIL.

BENCHMARKS TO BE PROVIDED PRIOR TO COMMENCEMENT OF CONSTRUCTION.

CONTRACTOR TO VERIFY SETOUT BEFORE COMMENCING EARTHWORKS. REFER ANY DISCREPANCIES TO ENGINEER.

EXISTING CONTOURS ARE SHOWN AT 0.5m INTERVALS.

TREATMENT OF ALL EXPOSED / DISTURBED AREAS TO ARCHITECT'S DETAILS U.N.O.

DETAIL OF LANDSCAPING IS TO TAKE INTO CONSIDERATION OVERLAND FLOW PATHS.

ALL FENCES ARE TO BE DETAILED WITH 100mm GAP UNDER OR TO BE NON SOLID FENCES TO ALLOW WATER FLOW.

WHERE SITE IS IN CUT ADJACENT TO SITE BOUNDARY, TOP OF RETAINING WALLS TO BE CONSTRUCTED FLUSH WITH EXISTING SURFACE OF NEIGHBOURING PROPERTIES TO AVOID IMPOUNDING WATER ON NEIGHBOURING PROPERTIES.

REV	DATE	DESCRIPTION	DRN	APP
P01	07.05.21	ISSUED FOR DA APPROVAL	R.C.F.	S.S.

TITLE
FLOOD VOLUME ASSESSMENT

DOCUMENT STATUS			SHEET SIZE
FOR APPROVAL			A1
DRAWN	DESIGNED	APPROVED	SCALE
I.Judd	L.Kleyn	C.Sharma	1:200
DOCUMENT No.			REVISION
16762-LD-SK-C-0001			P01

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PLOTTED: 07/05/2021 6:16 PM

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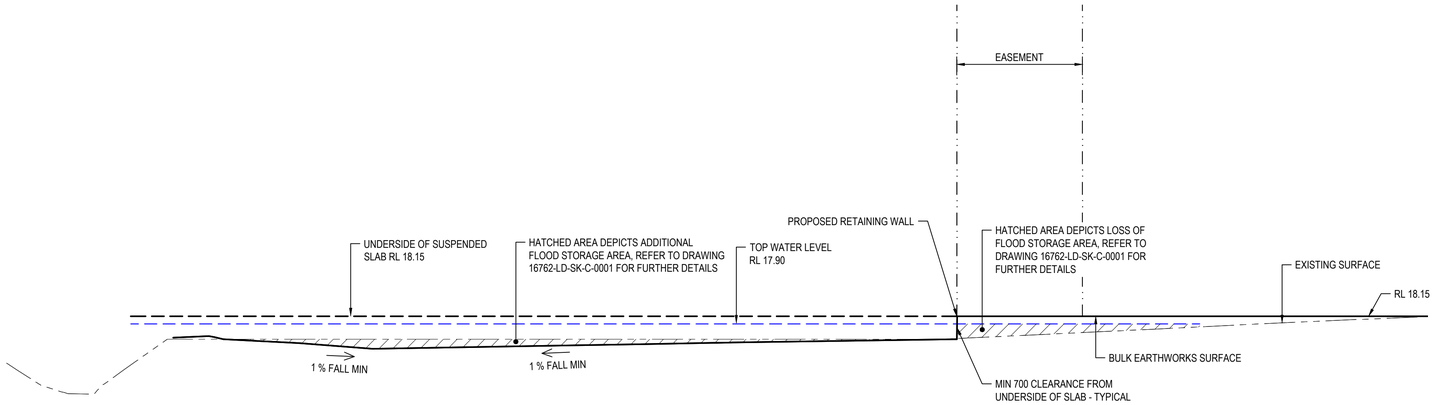
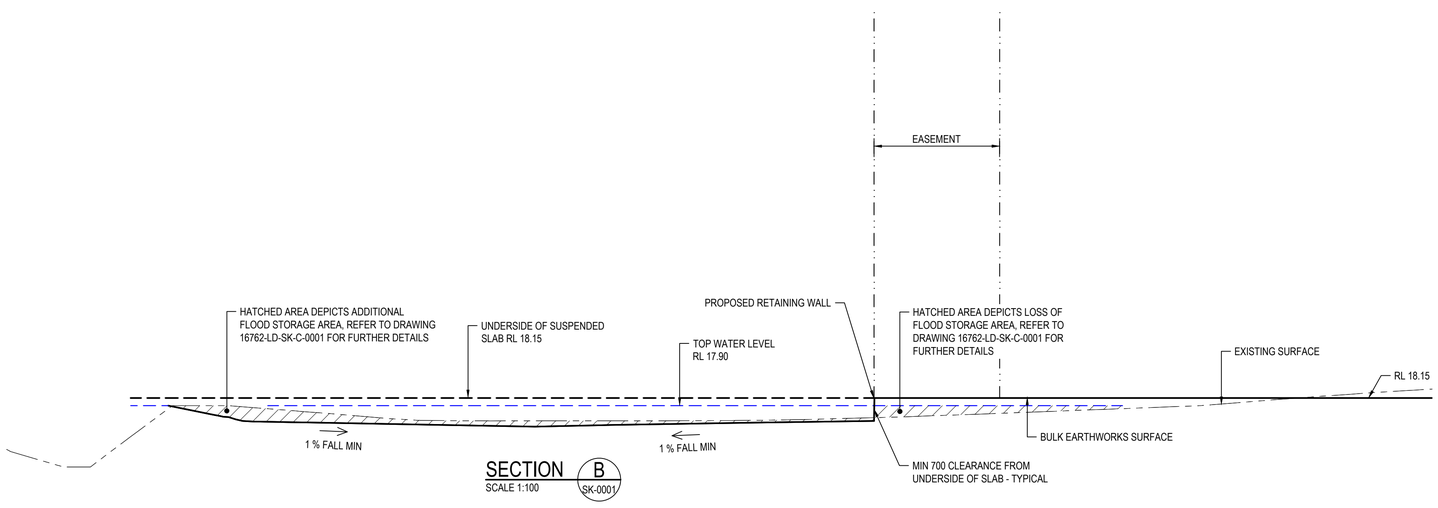
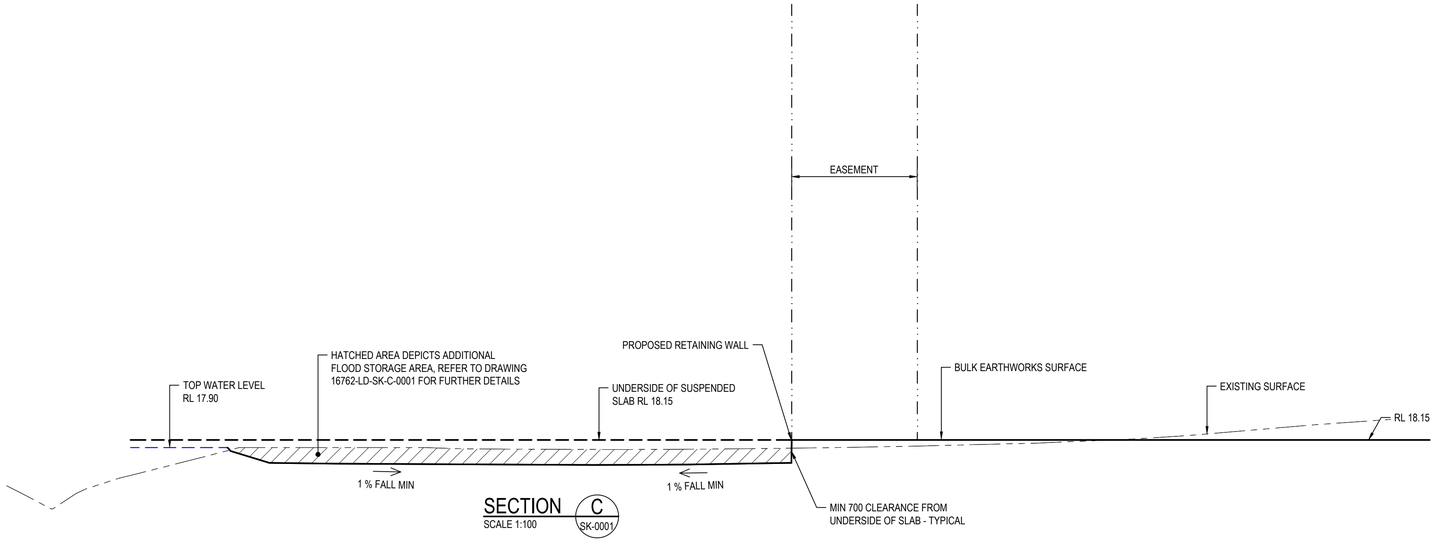


SECTION A
SCALE 1:100
SK-0001



SECTION B
SCALE 1:100
SK-0001



SECTION C
SCALE 1:100
SK-0001

Lindsay Dynan

Sydney | Perth | Newcastle | Central Coast

PROJECT
PROPOSED INDUSTRIAL DEVELOPMENT
15 JUBILEE AVENUE, WARRIEWOOD, NSW, 2102

CLIENT
TREND LIVING PTY LTD

REV	DATE	DESCRIPTION	DRN	APP
P01	07.05.21	ISSUED FOR INFORMATION	S.M.	S.S.

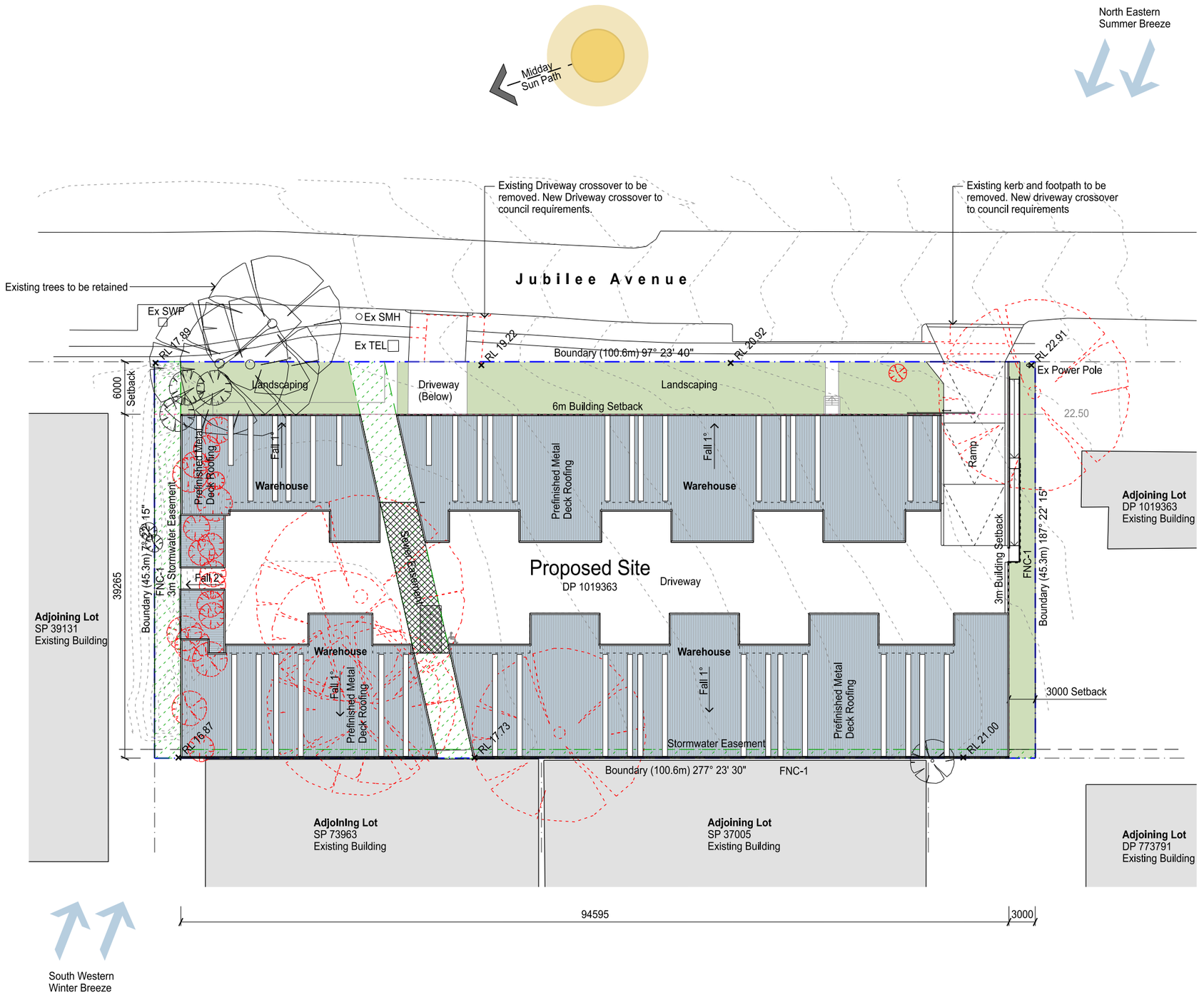
TITLE
FLOOD VOLUME ASSESSMENT - SECTIONS

DOCUMENT STATUS			SHEET SIZE
FOR INFORMATION			A1
DRAWN	DESIGNED	APPROVED	SCALE
S.Mireylees	S.Mireylees	S.Sharma	1:100
DOCUMENT No.			REVISION
16762-LD-SK-C-0002			P01

NOT FOR CONSTRUCTION

APPENDIX C – ARCHITECHURAL SITE PLAN

Development Schedule		
Site Area	4,555	sqm
Offices	956	sqm
Storage units (Excluding Public amenities)	1,551	sqm
Warehouses	1,491	sqm
Public Amenities (Excluding Warehouse Amenities)	7	sqm
Building Gross Floor Area	4,005	sqm
Site Cover	88	%
Floor Space Ratio	0.88	:1
Areas Excluded from GFA		
Staging Zone	706	sqm
Waste Storage Area	78	sqm
Stairs (Including Fire Stairs)	102	sqm
Driveways	3,208	sqm
Total Gross Floor Area	4,094	sqm
Carparking		
Ground	9	
Level 1 (Inclusive of x1 Disabled Parking Space)	30	
Total Carparking	39	



LEGEND

- Building Setback Line
- Existing trees to be removed.
- Existing trees to be retained.
- Easements
- Landscape area
- Paved Area
- Building Area

01 DA100 Site & Site Analysis Plan 1:500

DEVELOPMENT APPLICATION

SBA ARCHITECTS
Commercial Industrial Residential Retail Industrial Design
Suite 702, 83 Mount Street, North Sydney, NSW 2060
T: 02 9929 9988 F: 02 9929 8899
E: info@sbaarch.com.au W: www.sbaarch.com.au

ISSUE	REV.	DESCRIPTION	DATE
	B	Development Application Issue	06.05.2021
	A	Development Application Issue	30.04.2021

Proposed Industrial Development

15 Jubilee Avenue, Warriewood, NSW 2102

DRAWING TITLE
Site, Roof & Site Analysis Plan

DATE	SCALE	JOB NO.	DRAWING NO.	
06.05.2021	1:500@A3	20259	DA 100	B