

## Dominion & Valley Road Apartments

## **Flood Report**

for: Precinct Properties Limited



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## **DOCUMENT CONTROL**

This report was prepared by Michael Martin and reviewed by Jan Czyganowsky

Respectfully submitted

MAT

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30 Aug 2024	Rev 0	Michael Martin	-
Date	Version	Author(s)	Reviewer(s)





## **TABLE OF CONTENTS**

DOO	CUME	NT CONTROLi
TAE		CONTENTSii
1	INTR	ODUCTION
2	EXIS	FING SITE DESCRIPTION
	2.1	Site Location and Property Details
	2.2	Existing Features
	2.3	Topography
3	PRO	POSED DEVELOPMENT
4	EXIS	FING FLOOD HAZARDS10
	4.1	Overland Flow Paths
	4.2	Floodplain1
5	PRO	OSED FLOOD HAZARD MANAGEMENT12
	5.1	Proposed Overland Flow Paths
	5.2	Proposed Floodplain14
6	HAZ	ARD RISK ASSESSMENT
7	SUM	MARY AND CONCLUSIONS
Арр	licabi	ity and Limitations20

#### List of Tables

Table 1. Site Properties	.6
Table 2. Proposed Development Surface Areas	.9
Table 3. Existing OLFP Predicted Peak Flows	10
Table 4. Compensatory Flood Storage	14
Table 5: Hazard Risk Assessment	16

#### **List of Figures**

Figure 1. Site Location (from Ashton Michell Architects)	6
Figure 2. Existing Surfaces (from Dominion Constructors)	7
Figure 3. Existing Overland Flow Paths and Floodplain (from Auckland Council GeoMaps)	0
Figure 4. Existing and Proposed Overland Flow Paths1	.2
Figure 5. Blocked Existing Eastern Overland Flow Path1	.3
Figure 6. Existing Neighbouring Wall on North Boundary1	.3





#### List of Appendices

Appendix A Topographical Survey

Appendix B Proposed Development Layout





## **1 INTRODUCTION**

Babbage Consultants Limited (Babbage) have been engaged by **Precinct Properties Limited** (Precinct) to prepare a flood report for the proposed Dominion & Valley Road Apartments, located at the corner of Dominion and Valley Roads, Mount Eden.

This report has been prepared to support a resource consent application for the proposed development and provides information on the flooding aspects of the proposed development as follows:

- existing site
- proposed development
- existing flood hazards
- flood hazard management
- flood hazard risk assessment

We note this assessment is based on preliminary design information only which will be developed through subsequent design stages.





## **2 EXISTING SITE DESCRIPTION**

### 2.1 Site Location and Property Details

The site is located at the corner of Dominion Road and Valley Road as shown in Figure 1 below.



Figure 1. Site Location (from Ashton Michell Architects)

The site consists of four properties as shown on Table 1 below and has total site area of 5,254 m<sup>2</sup>.

#### Table 1. Site Properties

Address	Legal Description
198 & 200 Dominion Road	Lot 1 DP 51797
	Pt Lot 4 DP 182
	Pt Lot 5 DP 182
214 & 218 Dominion Road	Lot 2 DP 54203
	Pt Lot 1 DP 31896
	Pt Lot 3 Allot 8 SEC 10
115 Valley Road	Pt Lot 3 DP1
113 Valley Road	Lot 1 DP 54203





### 2.2 Existing Features

The existing site development is shown in Figure 2 below.



Figure 2. Existing Surfaces (from Dominion Constructors)

The existing site is almost entirely covered by existing building roofs and pavements. There are two existing vehicle accessways from Dominion Road, two from Valley Road and one from Carrick Place. There are existing buildings on neighbouring properties at the western end of the northern boundary and the northern end of the eastern boundary.

#### 2.3 Topography

The current ground contours are shown on Yeoman's Site Survey drawings in Appendix A.

The site measures approximately 95 m from north to south and approximately 70 m from west to east across the central area of the site.

The site generally slopes downwards from the northern boundary to the southern boundary although the low point is within a depression in the north-western area of the site and the southern area of the site is relatively flat.

The existing ground elevation at the north-west corner is approximately RL 55.5 m and at the north-east corner approximately 56.0 m. The existing ground elevation at the south-west corner is approximately





RL 52.4 m and at the south-east corner approximately 52.5 m. The elevation difference between the northern and southern boundaries therefore varies between approximately 3.1 m and 3.5 m. The elevation of the depression in the north-western area is approximately 51.3 m.





## **3 PROPOSED DEVELOPMENT**

The preliminary layout of the proposed development is shown on Ashton Mitchell's Proposed Plan – Level 1 in **Appendix B**.

The development consists of three, five-storey residential buildings with a total of 135 apartments. A basement carpark extends below all three buildings. Retail units on Valley Road frontage.

There are proposed pedestrian accesses from Dominion Road, Valley Road and Carrick Place and proposed vehicle accesses from Valley Road and Carrick Place.

The podium level (Level 1) is at RL 52.25 m. All residential apartments are located on Level 1 to Level 5. The basement carpark is at RL 51.85 m with vehicle access from Valley Road.

The surface areas for the proposed development are shown in Table 2 below.

Table 2. Proposed Development Surface Areas

	Area
Area	(m²)
Building roofs	3,250
External vehicle pavements & footpaths	957
Landscaping	1,067
Total	5,274





## **4 EXISTING FLOOD HAZARDS**

### 4.1 Overland Flow Paths

GeoMaps shows there are overland flow paths (OLFP) and a flood plain affecting the site as shown in Figure 3 below.



Figure 3. Existing Overland Flow Paths and Floodplain (from Auckland Council GeoMaps)

There is a major existing OLFP entering the northern boundary of the site. There are also minor OLFP's entering the north-western and eastern boundaries of the site, however the north-western OLFP has an upstream catchment of less than 4,000 m<sup>2</sup> and as such does not meet the OLFP definition in the Auckland Unitary Plan (AUP). The OLFP's crossing the site join another OLFP along Valley Road adjacent to the site. The predicted peak flows of the OLFP's from GeoMaps, including an allowance for climate change of 3.8 degrees, are shown in Table 3 below.

	2 year	10 year	100 year
OLFP	(m³/s)	(m³/s)	(m³/s)
North-western	0.05	0.08	0.13
Northern	0.53	1.05	1.72
Eastern	0.10	0.20	0.33





## 4.2 Floodplain

#### **Floodplain Extent**

The existing floodplain is also shown in Figure 3 above and extends over almost the entire site, Valley Road and the properties to the south of Valley Road.

#### **Existing Flood Level**

GeoMaps shows the flood prone area associated with the floodplain has a maximum depth of 1.05 m, a storage volume of approximately 600 m<sup>3</sup> and a spill elevation of RL 52.28 m.

We have obtained anecdotal information on the flood levels from the January 2023 flood event (which is considered at least a 250 year event) as follows:

- Eke Panuku advised only the central low point of the site flooded which equates to a flood level at approx. RL 52.0 m.
- A member of the boxing gym near the low point of the site advised flood depth was approx.
  700 mm which equates in a flood level at approx. RL 52.00 m
- The owner of the Total Health shop advised the flood waters got to the entrance of his shop only, which equates to flood level at this location of approximately RL 52.25 m

The anecdotal evidence is consistent with the spill elevation of RL 52.28 m shown on GeoMaps.

In the resource consent pre-application meeting on 22 August 2024. Healthy Waters advised the latest flood modelling showed a 100 year floodplain level at RL 52.30 m and this is an acceptable level for assessing any effects of the proposed development.

#### **Existing Flood Storage**

We have calculated the existing flood storage on the site using the storage volumes for the flood prone areas in GeoMaps.

The flood prone areas are shown on Figure 3 above, however these areas are only partially within the subject site. The total volume of these flood prone areas is 678 m<sup>3</sup>, but the total volume within the site has been calculated at approximately 650 m<sup>3</sup>.





## **5 PROPOSED FLOOD HAZARD MANAGEMENT**

#### 5.1 Proposed Overland Flow Paths

#### **Northern Overland Flow Path**

The existing northern OLFP is to be diverted around the eastern side of the site. This diversion is conceptually shown in Figure 4 below.



#### Figure 4. Existing and Proposed Overland Flow Paths

The entry point for the northern OLFP is to remain the same and the flow capacity within the site is also to be maintained. The overland flow is to be contained within a channel along the northern boundary of the site and then along the vehicle access in the eastern area of the site and then discharge to Valley Road. As the basement entry point is at RL 51.85 m and the exit level to Valley Road is at RL 52.45 m, the overland flow will pond between the building and the boundary to a depth of up to 0.6 m prior to discharge to Valley Road. A flood barrier is to be installed to prevent overland flows entering the basement carpark.

The exit point of the OLFP's is to be diverted approximately 45 m eastwards on Valley Road. While the elevation of the discharge point is slightly higher, the cross-section and longitudinal gradient of the Valley Road carriageway is similar in both locations. The change in location of the exit point is therefore not expected to adversely affect any other properties.





#### Eastern Overland Flow Path

The existing eastern OLFP is blocked from entering the site as shown in Figure 5 below.



Figure 5. Blocked Existing Eastern Overland Flow Path

It is proposed to build a low height retaining wall and fencing along the eastern boundary and as such the eastern overland flow path would remain blocked and no flows would enter the proposed development.

#### Northern Western Overland Flow Path

As discussed above, the upstream catchment of this OLFP is less than 4,000 m<sup>2</sup> and as such does not meet the OLFP definition in the AUP. In addition, the neighbouring property to the north was developed more than 15 years ago with a basement and solid boundary wall which means the overland flows form this property would largely be diverted to Dominion Road. The existing solid boundary wall is shown in Figure 6 below. No mitigation action is proposed for the proposed development.



Figure 6. Existing Neighbouring Wall on North Boundary





## 5.2 Proposed Floodplain

#### Floodplain

The existing floodplain is to be partially removed from the proposed site. This is to be achieved by diverting the existing OLFP's around the eastern boundary of the site.

There will be some of the floodplain retained on the site due to the ponding the diverted OLFP in the eastern area of the site. This volume of this retained floodplain is approximately 275 m<sup>3</sup>.

#### **Compensatory Flood Storage**

As discussed above, there is approximately 650 m<sup>3</sup> of existing flood storage on the site. Compensatory flood storage is to be provided to match the existing flood storage volume via on site soakage, on site tanks and the on site ponding of the overland flow within the eastern vehicle access area as per Table 4 below.

#### Table 4. Compensatory Flood Storage

Storage Device	Volume
Soakage discharge	240 m <sup>3</sup>
Detention tank	135 m <sup>3</sup>
Overland flow ponding in eastern vehicle access	275 m <sup>3</sup>
Total	650 m <sup>3</sup>

The total proposed flood storage shown in Table 4 above provides compensatory storage equivalent to the existing flood storage on the site of  $650 \text{ m}^3$ .

#### Site Flood Protection

The predicted 100 year overland flow and flood level within the adjacent Valley Road present a risk of those flows entering the site and flooding the basement and lower areas of the site. The building floor levels and ground levels along the Valley Road frontage are to have minimum elevation of RL 52.50 m that provides a 200 mm freeboard from the predicted 100 year flood level of RL 52.30 m. This freeboard is considered to be appropriate for these less vulnerable activities for the retail and basement levels.

#### **Proposed Floor Levels**

The proposed floor level for the residential ground floor is RL 55.25 m, which is more than 2.5 m above the maximum predicted 100 year flood level and therefore complies with Auckland Council's Stormwater Code of Practice and the NZ Building Code.

The proposed floor level for the retail units adjacent to Valley Road is RL 52.50m, which is 0.2 m above the maximum predicted 100 year flood level in this area of the site, which complies with the NZ Building Code but does not meet the 300mm required by Auckland Council's Stormwater Code of Practice,





however, given the conservative nature of the predicted 100 year flood level we consider the freeboard is appropriate for these less vulnerable activities.



## 6 HAZARD RISK ASSESSMENT

E36.9(1)(e) of the AUP requires a hazard risk assessment to be provided as a special information requirement when a proposed development is subject to an overland flow path or a floodplain. Our hazard risk assessment in accordance with E36.9(2) of the AUP is provided in Table 5 below.

AUP Hazard Risk Assessment Criteria	Babbage Assessment	<b>Residual Risk</b>
E36.9(2)		
(a) the type, frequency and scale of the natural hazard and whether adverse effects on the development will be temporary or permanent;	The overland flow is infrequent at 10 years or more and short duration (upstream catchment length less than 750 m so duration estimated to be less than 6 hours). Overland flow is diverted around eastern side of site remote from vulnerable activities. Floodplain is removed from site except for 275 m3 of compensatory storage within eastern vehicle access. This is estimated to occur infrequently at 10 years or more, with a maximum depth of 0.6 m and a duration of less than 3 hours. Velocity of the ponding would be very low.	Low
(b) the type of activity being undertaken and its vulnerability to natural hazard events;	As a residential development the activity is more vulnerable, but hazard risk is low as per other comments in this table.	Low
(c) the consequences of a natural hazard event in relation to the proposed activity and the people likely to be involved in that activity;	Overland flow expected is limited to the landscaped areas along the northern boundary and the eastern vehicle access. Residential habitable areas within buildings are remote which provides refuge from hazard. Overland flow and associated ponding is infrequent and short duration, and access/egress is possible at other locations in emergency if required.	Very Low
(d) the potential effects on public safety and other property;	The overland flow is limited to the site and compensatory storage is to be provided for the displaced floodplain, with no increase in overland flows or flood levels on other	Nil

#### Table 5: Hazard Risk Assessment





	property so public safety not adversely affected.	
(e) any exacerbation of an existing natural hazard risks or creation of a new natural hazard risks;	No increase in overland flow frequency, duration, depth or velocity on property or other properties.	Nil
(f) whether any building, structure or activity located on land subject to natural hazards near the coast can be relocated in the event of severe coastal erosion, coastal storm inundation or shoreline retreat;	N/A	Nil
(g) the ability to use of non-structural solutions, such as planting or the retention or enhancement of natural landform buffers to avoid, remedy or mitigate the hazard, rather than hard engineering solutions or protection structures;	N/A	Nil
(h) the design and construction of buildings and structures to mitigate the effects of natural hazards;	Building structure adjacent overland flow and flood plain to be constructed of water resistant materials (concrete, treated timber) at ground level.	Very Low
(i) the effect of structures used to mitigate hazards on landscape values and public access;	No obtrusive new structures are proposed to mitigate hazards. The overland flows are to be diverted in low height channels and compensatory storage provide by underground soakpits and surface ponding.	Nil
(j) site layout and management to avoid or mitigate the adverse effects of natural hazards, including access and exit during a natural hazard event;	Overland flow expected is limited to the landscaped areas along the northern boundary and the eastern vehicle access. Vehicle access to this area will be interrupted for a very short duration. Pedestrian access and egress will be possible from Dominion Road and Valley Road.	Very Low
(k) the duration of consent and how this may limit the exposure for more or less vulnerable activities to the effects of natural hazards including the effects of climate change; and	Climate change has been allowed for in the predicted overland flows. Hazards are therefore worst case from a time perspective.	Very Low





(I) any measures and/or plans proposed to	See comments above in this table.	Very Low
mitigate the natural hazard or the effects of		
the natural hazard.		
	Overall Risk	Verv Low



## 7 SUMMARY AND CONCLUSIONS

- 7.1 GeoMaps shows the site is affected by three existing 100 year overland flow paths (OLFP) and an existing floodplain.
- 7.2 One minor OLFP's does not meet the OLFP definition in the AUP and as such no mitigation action is proposed for the proposed development.
- 7.3 Another minor existing OLFP is blocked from entering the site by an existing boundary wall and is proposed to remain blocked and no flows would enter the proposed development.
- 7.4 The major OLFP entering the site is to be diverted around the eastern side of the site with the entry point and capacity being maintained. The exit point to a public road is to be relocated but no adverse effects on other properties are expected.
- 7.5 The existing floodplain is to be partially removed from the site. Compensatory flood storage is to be provided to match the existing flood storage volume via on-site soakage, on-site tanks and the on-site ponding.
- 7.6 The freeboard to proposed residential floor levels complies with Auckland Council's Stormwater Code of Practice and the NZ Building Code.
- 7.7 The freeboard to proposed retail floor levels complies with the NZ Building Code but does not meet the 300mm required by Auckland Council's Stormwater Code of Practice, however, given the conservative nature of the predicted 100 year flood level we consider the freeboard is appropriate for these less vulnerable activities.
- 7.8 A hazard risk assessment has been undertaken in accordance with the AUP requirements and concludes the risk associated with the OLFP's and the floodplain is very low.





## **APPLICABILITY AND LIMITATIONS**

#### **Restrictions of Intended Purpose**

This report has been prepared solely for the benefit of Precinct Properties Limited as our client with respect to the brief. The reliance by other parties on the information or opinions contained in the report shall, without our prior review and agreement in writing, be at such party's sole risk.

#### **Legal Interpretation**

Opinions and judgements expressed herein are based on our understanding and interpretation of current regulatory standards, and should not be construed as legal opinions. Where opinions or judgements are to be relied on they should be independently verified with appropriate legal advice.

#### Maps and Images

All maps, plans, and figures included in this report are indicative only. Do not scale any of the maps, plans or figures in this report. Sources for map and plan compositions include LINZ Data and Map Services and local council GIS services.





Appendix A Topographical Survey















## **Appendix B**

**Proposed Development Layout** 





ashtonmitchell 



# PROPOSED PLAN - LEVEL 1 COLOUR LEGEND RETAIL CIRCULATION BIKE STORAGE RESIDENT'S LOUNGE PAVILION LOCKERS RETAIL RUBBISH BALCONY TYPE S4 - 1 BEDROOM STUDIO TYPE S6 - 1 BEDROOM STUDIO TYPE 1A - 1 BEDROOM + MULTI TYPE 1C - 1 BEDROOM + 1 BATHROOM TYPE 2A - 2 BEDROOM + 2 BATHROOM TYPE 2E - 2 BEDROOM + 1 BATHROOM (END) TYPE 2J - 2 BEDROOM + 2 BATHROOM TYPE 2L - 2 BEDROOM + 1 BATHROOM TYPE 2P - 2 BEDROOM + 1 BATHROOM

TYPE 2X - 2 BEDROOM + 2 BATHROOM

TYPE 2Y - 2 BEDROOM + 2 BATHROOM

TYPE 3A - 3 BEDROOM (END)

TYPE 3B - 3 BEDROOM (END)

## <u>site legend</u>

address	113-117 Valley Road, Mt Eden 198-202 Dominion Road, Mt Eden 214-222 Dominion Road, Mt Eden
legal description, record of title number	Lot 1 DP 54203, NA5C/568 Pt Lot 3 DP 1, NA185/140 Pt Lot 3 DP 1, NA88C/665 Pt Lot 3 DP 1, NA31B/1219 Lot 1 DP 51797& Pt Lot 4 DP 182, NA3B/311 Pt Lot 5 DP 182, NA262/171 Lot 2 DP 54203 & Pt Lot 1 DP 31896, NA5C/567 Pt Lot 3, Allot 8, Sec10, NA117/69
site area	5173m2
ta planning zone	Auckland Council Business - Local Centre Residential - Terrace Housing and Apartment Buildings (THAB)
climate zone earthquake zone exposure zone lee zone rainfall intensity wind region wind zone	1 1 C No 80-90 A Low

site information obtained from GeoMaps & BRANZMaps

Disclaimer: Design subject to verification by Structural Engineer and other relevant consultants.

project name:

date:

job:

RC-102 (E) 29/08/2024 202328 RC-IO2 E All Drawings are copyright to Ashtonmitchell Residential Ltd



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![](_page_28_Picture_4.jpeg)

PROPOSED PLAN - LEVEL O

## 1:250

## COLOUR LEGEND

RETAIL
CAFE
CARPARKING
CIRCULATION
COURIER DROP-OFF
BIKE STORAGE
RESIDENTIAL RUBBISH
RETAIL RUBBISH
SERVICES
WATER STORAGE

address	113-117 Valley Road, Mt Eden
	198-202 Dominion Road, Mt Eden
	214-222 Dominion Road, Mt Eden
legal description,	Lot 1 DP 54203, NA5C/568
record of title number	Pt Lot 3 DP 1, NA185/140
	Pt Lot 3 DP 1, NA88C/665
	Pt Lot 3 DP 1, NA31B/1219
	Lot 1 DP 51797& Pt Lot 4 DP 182, NA3B/31
	Pt Lot 5 DP 182, NA262/171
	Lot 2 DP 54203 & Pt Lot 1 DP 31896, NA5C/
	Pt Lot 3, Allot 8, Sec10, NA117/69
site area	5173m2
ta	Auckland Council
planning zone	Business - Local Centre
	Residential - Terrace Housing
	and Apartment Buildings (THAB)
climate zone	1
earthquake zone	1
exposure zone	C
lee zone	No
rainfall intensity	80-90
wind region	A
wind zone	Low

Disclaimer: Design subject to verification by Structural Engineer and other relevant consultants.

![](_page_28_Picture_11.jpeg)

![](_page_28_Picture_13.jpeg)

job:

RC-101 (E)