



Bay Street Mixed Use Development, Double Bay

Flood Impact Assessment

Prepared for:

Client name

Loftex Pty Ltd

Date:

19th March 2019

Prepared by:

Ian Harris

Project No. 35571-SYD-C

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Revision

Site Address: 2-10 Bay Street, Double Bay, NSW
Real Property Description: Lots B & C on DP 955406, Lots 25 & 24 on DP 4606 and Lot 100 DP 712017
Proposed Development: Retail/ Residential Development
Client: Loftex Pty Ltd
Local Authority: Woollahra Council
Authority Reference #: N/A
Wood & Grieve Reference: 35571-SYD-C-R-FIS



Ian Harris
For and on behalf of
Wood & Grieve Engineers

REVISION	DATE	COMMENT	APPROVED BY
A	19.03.19	Planning Proposal Issue	IAH

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Introduction

1. Introduction

Wood & Grieve Engineers have been commissioned by Loftex Pty Ltd to prepare this Flood Impact Assessment (FIS) in support of a planning proposal for the proposed development at 2-10 Bay Street and 294-298 New South Head Road, Double Bay. The sites real address is Lots B & C on DP 955406, Lots 25 & 24 on DP 4606 and Lot 100 DP 712017.

This FIS has been prepared to specifically address the following items:

- Assessment of the existing flooding surrounding the development;
- Assessment of the impact if the existing flood condition on the ability of the site to be redeveloped in accordance with the planning controls proposed in the Planning Proposal;
- Identification of measures which could be adopted to mitigate flood impacts based on the indicative concept plans prepared by Tzannes architects.

Existing Site Characteristics

2. Existing Site Characteristics

2.1 Property Detail

Address: 2-10 Bay Street and 294-298 New South Head Road, Double Bay
Real Property Description: Lots B & C on DP 955406, Lots 25 & 24 on DP 4606 and Lot 100 DP 712017
Total Site Area: 1862 m²

The existing site situates itself within Woollahra Council local government authority. The pre-developed site consists of multiple mixed use buildings fronting both Bay Street and New South Head Road. Refer to locality plan in figure 1.

The site is bounded by:

- Adjoining property to the North,
- Bay Street to the East,
- New South Head Road to the South,
- Neighbouring property and Brooklyn Lane to the west.



Figure 1: Site Location Plan (Source: Nearmaps 2017)

The proposed development can be seen on the indicative concept plans in Appendix A of this report. The proposed development will consist of a 5-6 storey building with ground floor retail and a basement level carpark.

Flood Impact Assessment

3. Flood Impact Assessment

When considering a new development, it is important to assess the impact of existing flooding on the proposed development and also the impact of the proposed development on existing or potential flooding both upstream and downstream of the development.

3.1 Existing Flooding

3.1.1 Flood Related Development Controls

Wood and Grieve have reviewed Council's LEP documentation and Council's Flood Studies Double Bay Catchment Flood Study (November 2011) and the site is located within Council's Flood Planning Area (that is affected by overland flow) and is impacted by the 100yr ARI flood event. Figure 4 below illustrates that the flood level for the 100-year storm event is approximately between RL14.00m AHD and RL6.00m AHD with depths ranging from 0.2m to 0.4m.



Figure 2: Double Bay Flood Study 100 YEAR ARI Flood and Water Depth (Source: Bewsher Consulting)

Reference to Woollahra council's Flood study mapping indicates that the site is subject to a high risk classification for flooding.

It can be seen from the 100 Year flood simulation produced by Bewsher Consulting Pty Ltd that the flood depth ranges from 250 to 450mm along New South Head Road, Bay Street and Brooklyn lane. The resulting flood levels, based on these depths and existing street levels, are summarized below.

Flood Impact Assessment

Double Bay Floodplain Risk Management Study and Plan has been used to determine the increase in flood levels as a result of a predicted rise in sea levels. It can be seen that an increase in flood level in the range of 20mm to 50mm is likely. For flood planning purposes, the worst case increase of 50mm will be used.

The table below indicates the 100 year flood levels surrounding the development site.

Street Name	Max Flood Depth(1:100 Year)	2100 Flood increase	RL(Invert of Kerb)	RL + Flood Depth
New South Head Rd (SW)	400mm	50mm	13.53m	13.98m
Bay Street (SE)	400mm	50mm	10.69m	11.14m
Bay Street (NE)	400mm	50mm	5.36m	5.81m
Brooklyn Lane (NW)	400mm	50mm	5.67m	6.12m

Table 1: 100 Year Flood Depth

3.2 Impact of Development on Flooding

The existing development site is currently fully developed with buildings covering the majority of the site area. The currently flood modelling takes this into account and assumes that no flood water can enter the site. The site does not provide flood storage or an overland flow path for stormwater runoff during a large storm event. As a result the proposed development will have no adverse impact on the existing flood extents nor the conveyance of stormwater through the area.

3.3 Flood Planning

Wood & Grieve have assessed the local constraints surrounding and through the site to ascertain the flood planning levels for the development.

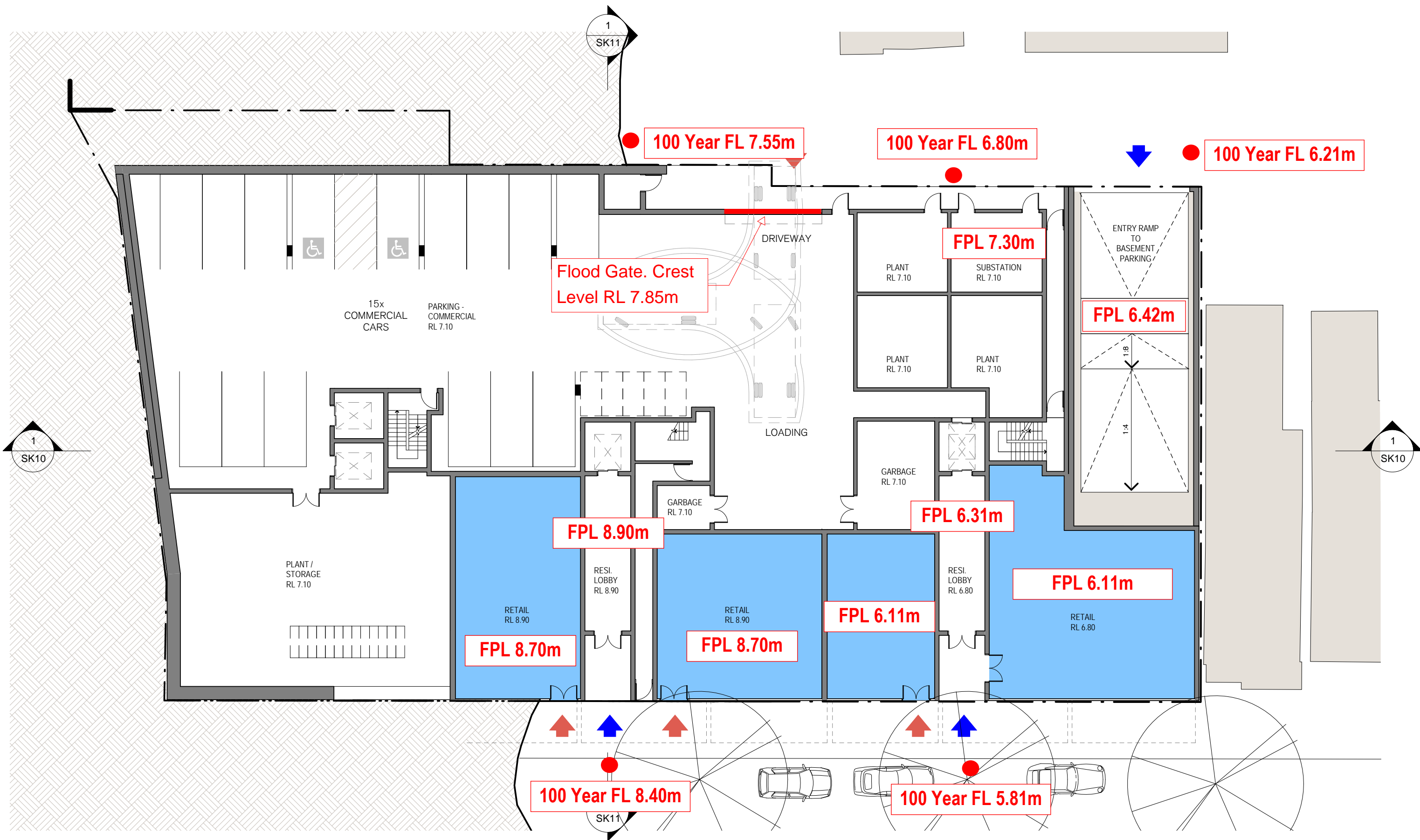
Flood Planning Levels are based on the following freeboards above the 100 year ARI storm event are required in Woollahra DCP 2015;

- 500mm for habitable floor areas
- 300mm for non-habitable floor areas (including retail)
- 300mm for carparks
- 500mm for Substation

The provision of flood mitigation measures such as providing freeboard by lifting entry levels to the building or where this is not possible the provision of flood barriers would result in the development being capable of meeting the flood planning guidelines. As such it has been determined that the site is capable of being developed in accordance with the proposed new planning controls whilst also fully complying with all flood planning requirements of council.

Appendix A – Flood Compliance Sketch

Appendix A – Flood Compliance Sketch



Legend

FL = 100 Year Flood Level
FPL = Flood Planning Level

Tzannes

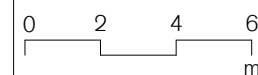
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North



Scale

1:200 @A3



Project
Bay Street Apartments

Address
Bay Street
Double Bay

Status
NOT FOR CONSTRUCTION

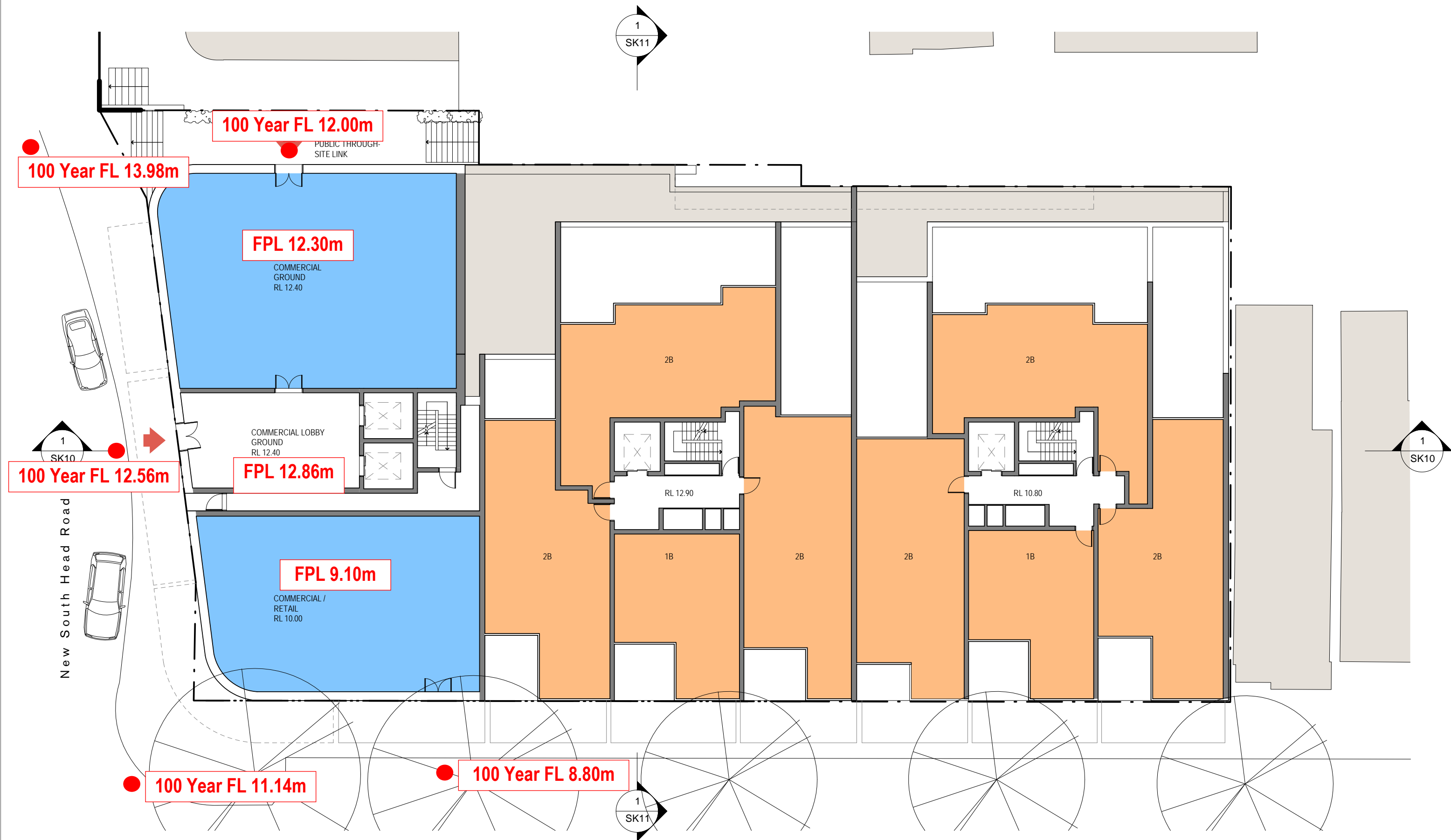
Drawing
Lower Ground

Project No.
16030

Drawing No. Date Revision
SK02 15.03.19 1

Option

Revision



Legend

FL = 100 Year Flood Level
FPL = Flood Planning Level

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	Scale	Bay Street Apartments		Upper Ground	
	1:200 @A3	Address		Project No.	
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		Status	NOT FOR CONSTRUCTION	Drawing No. Date	Option Revision
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