23 October 2024

#### REFERRAL RESPONSE (supplementary advice) – DRAINAGE

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| FILE NO: | **Development Applications:** 240/2024/1 |
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| ADDRESS: | 80 Drumalbyn Road BELLEVUE HILL 2023 |
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| PROPOSAL: | Demolition of the existing three (3) residential flat buildings and associated structures on the sites and the construction of a new residential flat building comprising 26 units, two swimming pools & landscaping with the sites consolidated |
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| FROM: | Michael Casteleyn |
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| TO: | George Fotis |

1. **ISSUES**

Supplementary advice is provided on;

* Compliance with LEP s.5.21
* Whether further modelling is required.
* Whether the flooding situation likely to be exacerbated by climate change.

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1. **DOCUMENTATION**

I refer to the following documents received for this report:

* Plan - Architectural Plans - DA2024/240/1 – 80 - 84 Drumalbyn Road BELLEVUE HILL Project Number 23-048, 9 May2025, MHNDUNION
* Flood Study 80-84 Drumalbyn Road, Bellevue Hill – Overland Flow Assessment 21 June 2024 MA Engineers
1. **ASSESSMENT**

The Development Application has been identified as subject to flooding and is situated in an area that is included in the Rose Bay floodplain catchment area.

The Development Application has reviewed with regards to the flood protection objectives in DCP 2015 E2.3

* To minimise risk to people and property.
* To ensure that development does not cause flood levels to rise or exacerbate flooding on the surrounding floodplain.
* To ensure existing overland flow paths are maintained and to ensure new structures do not obstruct the free flow of floodwaters.

In response to Planning Panel the following detailed responses are provided.

* The flood study supplied determined the rear “Natural Valley” contained slow flowing water at a depth of 800mm and was therefore judged to be an ineffective flow area. The provision of pools and landscaping in flood areas that are slow flowing is unlikely to backup and raise flood levels on surrounding properties and is therefore an appropriate use.
* The provided flood study calculated that 1.38 hectares drains to the rear “Natural Valley” and it was judged that flow produced by this relatively minor area will be able to be adequately handled by the development proposal without causing any adverse effects on the adjacent properties.
* The proposed installation of flood protection at the front boundary by flood barriers and walls will prevent water flowing from the street frontage to the rear and therefore reduce the flood levels in the natural valley at the rear, when compared to the current situation.
* The development’s proposed drainage system provides infiltration areas and a large rain tank, which will significantly improve the internal drainage and reduce flood levels in the area.
* Further flood modelling of the proposal is not warranted as the provided flood study identified that the “Natural Valley “contained slow moving water and it is therefore unlikely that the flood levels in the area will be adversely affected by the proposed development. The supplied modelling used the program Hec-RAS which is a program that is widely used and accepted.
* The flood modelling supplied uses the latest temporal patterns and rainfall intensities and it is judged that climate change is unlikely to significantly increase flood levels on the development site.
* The flood conditions that were provided (see below) for the development have been reviewed are judged significantly robust and able to reduce the flood risk for future occupants and ensure that the development proposal has no adverse effects on the surrounding properties.
1. **RECOMMENDATION**

Council’s Drainage Engineer determined that the proposal is satisfactory, subject to the following original proposed conditions:

* 1. Flood Protection

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| **D** |  | **Flood Protection** |
| Before the issue of any construction certificate, the construction certificate plans and specifications required under clause 7 of the Development Certification and Fire Safety Regulation, must include a Flood Risk Management Plan on the basis of the Flood Planning Level (FPL). Flood Warning:1. A permanent flood risk management plan shall be installed in a prominent area of the basement carpark,

Fencing1. All fences traversing the rear over land flow path shall be designed to be flow through,
2. The development shall be protected by a waterproof front wall designed to protect the development to the flood planning level

Below Ground Car parking1. The driveway entry shall be protected by an automatic mechanical flood barrier with the threshold set to the flood planning level of 56.8 m AHD,
2. Permanent brass plaques shall be mounted adjacent to all automatic mechanical flood barriers explaining their purpose and operation,
3. Emergency self-powered lights, indicting the safe exit to a flood free area above the probable maximum flood (PMF) shall be installed in the car parking area,

Floor levels 1. The pedestrian entry shall be protected by an automatic mechanical flood barrier with the threshold set to the flood planning level of 55.3m AHD,
2. All habitable floor level entry points shall be a minimum of 300mm above the adjacent ground level,

Flood Proof Material1. Flood compatible materials shall be used for all flood exposed construction,

Electricals1. All flood exposed electrical wiring and equipment shall be waterproofed,

Overland Flow Paths1. A permanent informative sign shall be mounted adjacent to the overland flow path indicting that the area is an overland flow path and must be keep clear and unobstructed at all times,

Certification 1. All flood protection measures shall be inspected and certified as fit for purpose after construction is complete by an engineer experienced in flood mitigation,

Flood protection is to comply with Woollahra DCP 2015, Part E General Controls for All Development, Chapter E2 –Stormwater and Flood Risk Management.**Notes:*** The revised driveway profile, gradients and transitions must be in accordance with Australian Standard 2890.1, Part 1: Off-street car parking. The driveway profile submitted to Council must contain all relevant details: reduced levels, proposed grades and distances. Council will not allow alteration to existing reduced levels within the road or any other public place to achieve flood protection.
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|  |  | **Condition Reason:** To ensure the development incorporates flood inundation protection measures. |

Michael Casteleyn 6 June 2025

Drainage Engineer **Completion Date**