

Hazard Mitigation Report

INTRODUCTION

The Tonkin and Taylor report has been acknowledged by the appropriate design consultants.

Each design consultant has taken the inundation levels into account in their design documentation and reports to comply with the building code. Please refer to each consultant's advice attached

Compliance includes

- Structure to NZS3101 B2 Coastal Frontage
- Drainage sealed to RL3.0m
- Primary electrical 1.0m above flood levels

Buchan responses are listed in red below

NATURAL HAZARD RISKS

- the type, frequency and scale of the natural hazard and whether adverse (a) effects on the development will be temporary or permanent. **Coastal storm inundation 1 per cent (AEP) plus 1m sea level rise, the 1 per cent (AEP) floodplain. Reference T&T report**
- the type of activity being undertaken and its vulnerability to natural hazard events; **Commercial at street level, storage and car parking. Residential activities are above inundation and flood levels.**
- the consequences of a natural hazard event in relation to the proposed activity and the people likely to be involved in that activity. **Flooding of building, ground floor and basement affect residents, tenants and the public**
- the potential effects on public safety and other property. **Flood damage to ground floor and basement below the inundation levels. Evacuation of the property,**
- 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. **Due to the building scale the building cannot be relocated**
- 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. **Not possible**
- the design and construction of buildings and structures to mitigate the effects of natural hazards. **Structural design of building, podium, habitable floor levels for residential building designed to provide flexibility for future activities at street level (raised floor heights) and driveway access to parking and the basement levels. A "portal barrier" is to be installed around the perimeter to mitigate the flow of water into the facility.**
- the effect of structures used to mitigate hazards on landscape values and public access. **Fire escape stairs from basement to ground floor provide for escape purposes. These stairs also continue up to the podium. The podium has been designed to be the safe zone during a hazzard and is the main level for fire evacuation for residents and public.**

- site layout and management to avoid or mitigate the adverse effects of natural hazards, including access and exit during a natural hazard event; **Site evacuation plan / podium level with access from Tamaki Drive, Patteson Avenue and Marau Crescent (Residents)**
- 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. **Consent duration unlimited however building designed to provide flexibility for future activities at street level (raised floor heights) and driveway access to parking and the basement levels)**
- any measures and/or plans proposed to mitigate the natural hazard or the effects of the natural hazard. **Moveable barriers**
- the design and construction of building services to mitigate the effects of natural hazards; **Primary electrical building services switchboards, transformers and the like are all raised 1000mm above the flood level plane to ensure operation remains during and after a flood. IP rated luminaires and sockets will be provided in the basement areas to withstand the effect of water ingress but during a full long-term inundation these secondary electrical services may need to be replaced.**

Primary mechanical services are all located at roof level except the central chiller plant which is located within a water tight compartment only access from above flood plain levels. Four number dewatering pumps are provided at the lowest level to enable the water to be pumped out after inundation. Pumps are not provided in an attempt to stop the basement areas from inundation but to remove water after a flood