



One Tasman Pukeahu Park Apartments

1 to 23 Tasman Street Wellington

DRAFT CONSTRUCTION MANAGEMENT PLAN

January 2023



TABLE OF CONTENTS

Section 0.0	2
Table of contents	2
Section 1.0	3
Project Introduction and CMP Objectives	3
Section 2.0	4
Scope of Work	4
Section 3.0	9
Site Establishment	9
Section 4.0	10
Proposed Site Plan	10
Section 5.0	11
Proposed Traffic Management Plan	11
Section 6.0	12
Proposed Crane Location	12
Section 7.0	13
Proposed LTM Signage	13
Section 8.0	14
Roles and Responsibilities	14
Section 9.0	15
Preliminary Programme	15
Section 10.0	16
LTM Complaints Procedure	16
Section 11.0	17
Protection of Existing Structures	17
Section 12.0	18
Demolition Management Plan	18
Section 13.0	20
Waste Management Plan	20
Section 14.0	21
Health and Safety Management Plan	21
Section 15.0	22
Excavation Management Plan	22
Section 16.0	41
Environmental Management Plan	41

Appendices:

- 1.0 One Tasman Pukeahu Park - Structural Effects and Construction Methodology

SECTION 1.0

PROJECT INTRODUCTION AND CMP OBJECTIVES

Project Introduction

This Construction Management Plan covers the proposed construction works to re-develop the site at 1-23 Tasman Street Wellington.

The existing buildings will be removed and the site re-developed into a residential campus, featuring two nine story apartment towers, a three-level carpark building along with a mix of 2- 3 storey high townhouses, set in a landscaped environment.

The two apartment tower buildings will be steel diagrid base isolated buildings, with the carpark being a conventional concrete frame and the 3-town house blocks a mix of concrete, steel and timber.

Main access to the carpark, North and South tower buildings will be from Tasman Street, with secondary pedestrian access to the North tower and to the town houses being available from Buckle Street.

The tower buildings will be base isolated.

CMP Objectives

- To outline a construction methodology for the 1-23 Tasman Street re-development
- Identify any works during the course of the construction that have the potential to impact on the local environment.
- To demonstrate management procedures to deal with the potential effects of construction activity on the local environment.
- To establish how public interface will be managed.
- To ensure the safety of public at all times during the works.
- To outline potential issues and corrective procedures in consultation between neighbouring buildings, public and contractor.

SECTION 2.0

SCOPE OF WORK

Project Scope of Works

The main works associated with the project, which may run concurrently include:

Stage 1 – Site clearance and removal of contaminated ground (pending testing from Tonkin + Taylor) from the site/existing obstructions/services.

Stage 2 – Northern tower apartments, comprising:

1. Enabling Works
2. Excavation
3. Piling (Driven piles)
4. Inground building services
5. Foundations and base isolation
6. Construction of the building structure
7. Façade and external envelope
8. Internal fit out
9. Associated external siteworks and landscaping
10. Completion, Defects, Commissioning and Handover

Stage 3 – Carpark, comprising

1. Excavation
2. Piling (Driven piles)
3. Inground building services
4. Foundations
5. Construction of the building structure
6. External envelope
7. Internal fit out
8. Associated external siteworks and landscaping
9. Completion, Defects, Commissioning and Handover

Stage 4 – Town Houses, comprising:

1. Excavation
2. Inground building services
3. Foundations
4. Construction of the building structure
5. Façade and external envelope
6. Internal fit out
7. Associated external siteworks and landscaping
8. Completion, Defects, Commissioning and Handover

Stage 5 – Southern tower apartments, comprising:

1. Excavation
2. Piling (Driven piles)
3. Inground building services
4. Foundations and base isolation
5. Construction of the building structure
6. Façade and external envelope
7. Internal fit out
8. Associated external siteworks and landscaping
9. Completion, Defects, Commissioning and Handover

Project Phasing Summary

Phase 1 of the project is to clear existing structures and obstructions within the ground.

Phase 2 involves the bulk excavation for the base isolation basement areas to the Northern and Southern apartment towers, both excavations are approximately 1.8m deep generally (noting there are some isolated instances where the excavation depth may approach 4m in lieu of 3 within the carpark footprint). Included in this phase is also the benching excavations for the town houses along the northern edge of the site, to Buckle street which is stepped in-line with foot path gradients and levels.

Small elements of dewatering may be required throughout the above excavation works.

Phase 3 will involve the piling and foundation works including base isolators to the Northern apartment tower.

Phase 4 involves the construction of the concrete and structural steel structure to the Northern tower. This structure is made up of concrete/steel columns, steel braces throughout and Comflor flooring systems. The façade, roofing, building services and all other works above ground level are also included in this phase.

Phase 5 includes the foundation works to the town house buildings and 3 level carparking building while works continue simultaneously on the Northern tower.

Phase 6 incorporates the fit out and services installation to the Northern tower building.

Phase 7 will be the construction of the carpark building structure along with the townhouses.

Phase 8 is the landscaping of the site away from the Southern apartment tower building.

Phase 9 involves the piling, foundations and base isolators to the Southern apartment building.

Phase 10 is the fit out complete of the carparking building and town house blocks

Phase 11 will be completion of works, rectifying any defects and then commission and handover of the Northern apartment tower, car park and town houses.

Phase 12 involves the construction of the concrete and structural steel structure to the southern tower. This structure is made up of concrete/steel columns, steel braces throughout and Comflor flooring systems. The façade, roofing, building services and all other works above ground level are also included in this phase.

Phase 13 incorporates the fit out and services installation to the Southern tower building.

Phase 14 is the landscaping of the Southern apartment tower building

Phase 15 will be completion of works, rectifying any defects and then commission and handover of the Southern apartment tower and end of works to the campus.

It is anticipated that the construction period for this project will be around 36 months.

Loading

Construction traffic will enter and leave the site via Tasman Street. Two primary site entrances to the site are planned to be in use, one at the south end of the site and one in the middle between the 2 apartment towers. Gatemens will be deployed at these site entrances to ensure the flow of traffic is unaffected on to Tasman Street and that pedestrians can continue safely. Formation of loading zones & protective gantries to footpaths, outside the site to Tasman Street, including suitable signage will assist with public safety.

Demolition excavated material will leave the site from one of the two Tasman Street entrances and travel North to Haining Street being shortest route to the WCC landfill, where possible.

Dust Control

Dust will be mitigated and managed through:

- Scaffolding & Scrim
- Sprinklers / misters / wheel washers
- Dust fighters

All machinery / trucks and wheels will be hosed down prior to departing site to prevent any risk of dust transportation out of site.



SECTION 3.0

SITE ESTABLISHMENT

Traffic Management

LT McGuinness will engage traffic design engineers for design of the temporary loading zones and access points to the site from Tasman Street. Please see adjacent site management plan.

Hoardings & Site Security

A mix of 1.8m high wire mesh and 2.4m high timber/plywood fencing will be used to separate the public areas and the construction zone along the public boundaries to Tasman and Buckle Street. Pedestrian protection gantries will be erected along Tasman Street for the length of the site, except at the entry gateways where a gateman will patrol this area.

Signage will be installed at the edges of the site to educate the public of the environment. A security company will be engaged to undertake frequent patrols of the site afterhours, with the frequency of visits adjusted as required and all visits logged and recorded. Additionally, a CCTV camera system will be installed at such time as the site has communication capabilities.

Plant, Machinery & Deliveries

Due to the nature of this new build, a substantial amount of plant and equipment will be required to facilitate the construction stage. Demolition and piling rigs, excavators and large trucks will be required initially. All vehicles entering and exiting the site where there is a possible dust risk will be required to have their loads covered. We anticipate waiting times for trucks and deliveries to be minimised as much as possible through programmed management. However, these can be located in the loading zone or within the site if required or be sent off site to return at a more suitable time. Traffic management consultant to be engaged to advise and compile a site-specific traffic management plan.

Cranage

LT McGuinness proposes to erect two tower cranes, one per apartment tower. Both locations will allow full reach over the footprint of the apartment building they are servicing and their associated loading bays. The crane will be used for erection of the structural frame, pre-cast and Comflor floor structure and façade installation. All necessary approvals and air space compliance from affected building and land owners will be arranged by the site owner.

The loading zones along Tasman Street adjacent the site have been positioned to be within the cranes' reach and lifting capabilities, due to the size of the building and weights of the structural components.

SECTION 5.0

PROPOSED TMP

TMP

LT McGuinness will develop a site-specific traffic management plan in consultation with a specialist traffic design consultancy to ensure efficient vehicle movement and safety for pedestrians and vehicular traffic along Tasman Street

SECTION 8.0

ROLES AND RESPONSIBILITIES

Site Project Manager

Wade Pulford

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Email: Wade@mcquinness.co.nz

Construction Director

Kerrin Manuel

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Commercial Manager

Sam Boulton

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Health and Safety Manager

Daniel O'Connor

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Head Office

9 Francis Place

H: (04) 384 8455

F: (04) 801 8455

SECTION 9.0
PRELIMINARY PROGRAMME


TBC to be included in final CMP

SECTION 10.0

LTM COMPLAINTS PROCEDURE

The following communication and complaints procedure will be implemented on the Tasman Street Apartments re-development project;

1. All complaints will be directed in the first instance to the Site Managers.
2. They will have the responsibility to ensure that the complaints procedure process is enacted and communicated correctly.
3. The One Tasman Pukeahu Park Apartments project will prominently display alongside the works 3 signboards with the 24-hour contact number of LT McGuinness site management.
4. LT McGuinness will maintain on site a complaint register and log of actions taken. The register will include the following;
 - A standard complaints procedure proforma
 - Date of complaint log
 - Complaint names log
 - Actions taken log
 - Report back on log
 - Close out log to be completed within 48 hours of the complain

	<h2 style="margin: 0;">COMPLAINTS FORMS</h2> <h3 style="margin: 0;">Environmental Incidents</h3>	
Incident:		
<small>Part A: Details of complaint/incident (to be completed by Environmental Officer)</small>		
Date of incident:	Time of incident:	Incident Report No.
Name and phone number of complainant:		
Description of incident/concern:		
Immediate actions/control measures to rectify the incident/complain:		
Was The Environmental Control Officer notified? Yes/No(circle) by: Phone/letter(circle)		
Was Client? Yes/No(circle) by: Phone/letter(circle)		
Other authorities notified? Who? _____ e.g., water authorities) by: Phone/letter(circle)		
Print Name: _____ Signature _____ Date: __/__/__		
<small>Part B Follow up details: (to be completed by Project Manager)</small>		
Action Taken:		
Print Name: _____ Signature _____ Date: __/__/__		
Was the complainant/ other authorities informed of the actions taken?		

SECTION 11.0

PROTECTION OF EXISTING STRUCTURES

Collateral Damage Measures

Existing building damage survey to be completed prior to work starting on site to any key adjoining structures. Key risks are to be assessed and managed by the construction team. Methodologies to minimise or eliminate the risk of damage to nearby structures and vehicles are to be incorporated in the Site-Specific Safety Plan during construction. Monitoring measures may include the following:

- Survey pins and markers strategically placed once permission is granted by building owners
- Photographic survey
- Engineering and consultant professional advice TBC
- Increased signage
- Removal and protection of identified at risk items if possible
- Protection of structures by means of ply coverings and signage
- Actions agreed at the monthly liaison meetings with affected neighbours and business

Tasman Street

Photos of the original road condition are to be taken prior to works commencing. Protection to the existing kerb line and existing service markers/chambers etc are to be considered and protected as best possible as a significant increase of traffic will occur in this location.

Buckle Street

Photos of the original footpath and landscaping condition are to be taken prior to works commencing and regularly monitored to ensure no damage is occurring.



SECTION 12.0

DEMOLITION MANAGEMENT PLAN

DEMOLITION SCOPE OF WORKS

The main works associated with this project include:

Demolition of the existing apartment tower, podium, gym, town house buildings, old vet clinic building, plus any existing remaining foundations/obstructions/hard landscaping across the site.

- Asbestos survey
- Removal of asbestos based products prior to demolition commencement.
- Temporary hoardings and screens as required
- Removal of kerbing and asphalt as installed on site
- Removal of existing WEL transformer

ASBESTOS

An invasive asbestos survey will be undertaken to identify all possible areas of asbestos or other hazardous materials prior to commencement of the demolition works.

The ground soil throughout the site may contain asbestos. These will require removal prior to the commencement of any demolition if tests confirm asbestos is present.

Removal of all asbestos will comply with the NZ guidelines.

All asbestos material will be disposed off-site by an approved permit at the Wellington City Council Landfill.

WEL TRANSFORMER

Removal of a WEL electrical transformer is required and will be completed only once an alternative transformer has been installed adjacent Tasman Street near the southern boundary, to serve the neighboring premises and the site's temporary power, prior to it supplying electricity to the new buildings on the campus.

LOADING

Trucks and machinery coming in/out of the premises will be assisted by gateman and staff to ensure the safety of the public and staff on to Tasman Street.

Loads leaving the site with demolition materials will need to be covered.

Signage, hoardings and site fences will also facilitate public control and risk mitigation to the public. Compliance with the Traffic Management Plan will be required.

It is anticipated that a maximum of 3 heavy truck and trailer movements will be required per hour during the times listed below for the proposed 25-week demolition and bulk excavation period.

	HOURS OF GENERAL WORK	HOURS OF NOISY WORKS
MONDAY	6:30am - 7pm	7.30am – 6:30pm
TUESDAY	6:30am - 7pm	7.30am – 6:30pm
WEDNESDAY	6:30am - 7pm	7.30am – 6:30pm
THURSDAY	6:30am - 7pm	7.30am – 6:30pm
FRIDAY	6:30am - 7pm	7.30am – 6:30pm
SATURDAY	7am - 7pm	7.30am – 6:30pm
SUNDAY	By Agreement with WCC	By Agreement with WCC
PUBLIC HOLIDAYS	No work	No work

DUST CONTROL

Dust will be mitigated and managed through:

- Scaffolding and scrim in places
- Sprinklers/misters
- Dust fighters
- Where required all machinery/trucks will be hosed down prior to departing site to prevent any risk of dust transportation out of site
- Trucks entering and leaving the site will need to have load covers where a risk of dust and the like is present.

DEMOLITION NOISE

There will be increased noise associated with the demolition activities carried out within this project, some examples of noises that can be expected are:

- Demolition (concrete breaking)
- Compressor running
- Saw cutting
- Core drilling of concrete
- Power tools operating

LT McGuinness will take a proactive approach to noise management through the following measures:

- Establish and agree a tolerance control regime
- Advising tenants/neighbours 48 hours in advance of potential noise issues
- Inform the Council Noise Control officers of any works that is likely to be noisy or have an impact on the neighbours
- Schedule out of hours works appropriately in order to minimize any impact with business; and residential neighbours
- In some instances, and where practicable to mitigate against noise LT McGuinness may install machinery baffling or wall baffles.

Demolition activities will wherever possible adopt the best practical option at all times to ensure the emission of noise from the site does not exceed a reasonable level in accordance with Section 16 of the Resource Management Act 1991.

SECTION 13.0 WASTE MANAGEMENT PLAN

WASTE MINIMISATION RECORD (Use the REBRI Resource Routing Calculator to determine the destination of materials.)

MATERIAL	Normal % sent to landfill	Target % sent to landfill	On-site recycling method or reuse	Waste destination – contacts and information	Actual quantity recycled, reused etc	Actual % sent to landfill	Actual cost or saving
Metals							
Aluminium							
Steel							
Brass							
Copper							
Various metals							
TOTAL							
Miscellaneous (cardboard and paper, glass, organic material, hazardous, insulation)							
TOTAL							
Concrete/masonry							
Concrete-based							
Clay-based							
Ceramic							
TOTAL							
Plasterboard							
TOTAL							
Plastics							
Grade 1							
Grade 2							
Grade 3							
Grade 4							
Grade 5							
Grade 6							
Grade 7							
Timber							
Treated							
Untreated							
TOTAL							
Soil							
TOTAL							
Building components for reuse							
TOTAL							
Other							
TOTAL							

SECTION 14.0

HEALTH AND SAFETY PLAN

Health and Safety Management Plan

LT McGuinness will ensure that its Health and Safety policy is implemented throughout the project duration. This policy has been prepared by LT McGuinness.

The demolition zones will be hoarded off to keep the construction and public zones separate. Appropriate signs will be installed on both public and construction sides of the hoardings.

LT McGuinness is committed to the protection of its employees, sub-contractors, clients and the general public from accidental injury or damage from work carried out by and on behalf of the company and adopts health and safety and welfare as a fundamental business objective.

LTM has ISO45001 certification and is a full member of Site Safe NZ, in which all personnel working on site must carry a Site Safe NZ Passport or a ConstructSafe card.

Daniel O'Connor is LT McGuinness's Health and Safety Manager, with Alex Emrys as Health and Safety Advisor and an onsite Health and Safety Manager.

Our management team will develop a comprehensive Health and Safety Management Plan before commencing work on site. This would capture all hazards and potential dangers through all the stages of the project.

The Health and Safety Management Plan will cover but not be limited to the following:

Height Safety Permit
Confined Space Permit
Hot Works Permit
Sprinkler Fit out Permit
Task analysis
Tool Box Talk
Accident/Incident Report and Induction Forms and Register
Health and Safety, Environmental J20 Task Analysis
Site Safety Meeting Template
Weekly Self Inspection Improvement Form
Method Statement Template

SECTION 15.0

EXCAVATION MANAGEMENT PLAN

ENVIRONMENTAL VISION/POLICY STATEMENT

Vision

LT McGuinness Environmental Vision is to be regarded as an environmentally responsible construction company. LT McGuinness is committed to creating a sustainable future by utilising both people and resources in the care of the environment during the construction process in an effort to maintain the quality of the environment for future generations.

Policy

LT McGuinness is committed to undertaking its activities in an environmentally responsible manner and effectively managing any risk that may impact the environment. LT McGuinness will manage its work activities in a manner that is consistent with the principles of ecologically sustainable development and will deliver continuous improvement in environmental performance.

LT McGuinness will take all steps necessary to ensure that its activities do not compromise this commitment.

All LT McGuinness staff and subcontractors have a responsibility to actively contribute towards elimination, isolation, or minimisation of environmental impacts in their day-to-day activities. Employees and subcontractors must monitor the continued effective installation and operation of environmental controls within the scope of their day-to-day work.

LT McGuinness undertakes to consult its employees, contractors and the client on safety and environmental matters especially where any workplace change of practice may impact the environment or their obligations.

EXCAVATION MANAGEMENT PLAN

Introduction

LT McGuinness Excavation Management Plan provides information and guidance on how LT McGuinness will meet all requirements of the contract and local authorities.

By implementing this management plan, LT McGuinness aims to ensure that appropriate protection measures are implemented on works undertaken within the work site.

PRE-CONSTRUCTION REVIEW

Project	TASMAN STREET APARTMENTS
Date	
Completion Date	2026
Address	1-23 Tasman Street

Project Manager	Wade Pulford
Construction Director	Kerrin Manuel
Commercial Manager	Sam Boulton
Safety Manager	Daniel O'Connor
Engineer	Dunning Thornton Consultants/Tonkin + Taylor
Client Representative	Willis Bond
Toilets	Existing toilets be reused then, temporary toilets to be in place before works begin
Safety Fences	Temporary safety fences/hoardings to be in place
Water	Temporary water supply to be in place before works
Electricity	Supplied by client as needed
Maximum excavation depth from existing ground level	≈4.0m TBC (excl. piles)
Traffic Control	TBC
Tipping Locations	WCC Happy Valley Tip

EXCAVATION DESCRIPTION

Access to the site will be from two site entry points, one located at the south end of the site and the other in the middle of the site at 1-23 Tasman Street, please refer to the Construction Site Plan.

The project involves bulk excavation to form the lower car park level, which eastern edge is close to the existing ground levels, excavation for the base isolation basement areas to the Northern and Southern apartment towers, both approximately 1.8m deep generally (noting there are some isolated instances where the excavation depth may approach 4m) of as well as excavation benching for the town houses along the northern edge of the site, though these generally follow the exiting Buckle Street foot path gradients and levels.

A summary of the excavation works and structural methodology is provided by Dunning Thornton Consultants preliminary "Tasman Street Apartments Re-development - Structural Effects and Construction Methodology" report attached.

Further excavation will be required to form ground beams, lift pits, services trenches along with back filling and base coursing to concrete slabs on grade, which will involve much smaller excavated volumes and well as excavation works associated with the hard and soft landscaping installation across the campus.

WORKING HOURS

Day	Hours of General Works	Hours of Night Works	Hours of Noisy Works
Monday	6:30am – 7pm		7.30am – 6:30pm
Tuesday	6:30am – 7pm		7.30am – 6:30pm
Wednesday	6:30am – 7pm		7.30am – 6:30pm
Thursday	6:30am – 7pm		7.30am – 6:30pm
Friday	6:30am – 7pm		7.30am – 6:30pm
Saturday	7am – 7pm		7.30am – 6:30pm
Sunday	By agreement with WCC		By agreement with WCC
Public Holidays	No work	No work	No work

PLANNING

Earthworks approvals, licenses and permits

LT McGuinness will ensure that any approvals, licences and permits as required by the Resource Consent, Greater Wellington Regional Council, WCC Consents or bylaws, acts and Regulations and any other legislative requirements are obtained before works commence.

Environmental protection requirements

LT McGuinness undertakes its own project-level risk assessment. A site risk assessment is carried out by the working team before works commence; findings from the risk assessment are then incorporated into the Construction Management Plan and site staff and subcontractors are inducted pre-commencement of works as reasonably practicable.

Site earthworks rules and protocol

All employees and subcontractors working on site will be inducted on the site rules. Furthermore, the rules will be displayed on notice boards or at other suitable locations on the work site.

COMMUNICATION AND COMPLAINTS PROCEDURE

Communication

The Site Manager is the contact point to deal with all earthworks issues and emergencies on site. He or she is responsible for ensuring all such issues are resolved. Staff members must notify the Site Manager firstly of any earthworks issues on site.

The Construction Manager and Site Manager have been nominated to be available to relevant external authorities on a 24-hour basis. They have the authority to take any action on site as directed by an authorised officer of any relevant external authority. (See Attachment A for the contact numbers).

All relevant authorities, affected property owners and others in the vicinity or affected by specific works will be informed of the project, activity and timeframes if required.

Emerging earthworks issues on site are discussed and consulted through regular Toolbox meetings. These records are retained as project records and reviewed on a regular basis by the Site Manager who will address any concerns and incorporate if necessary into the weekly check list.

Complaints Management

Any complaints which concern any aspect of the project are recorded and investigated on LT McGuinness' Complaint form as part of our complaint's procedure. A Complaints Report register will be maintained. The Complaints Report shows the details and nature of the complaint, the complainant, the date and actions taken as a result of the investigation.

If an earthworks complaint (such as a complaint regarding noise or pollution) is received, LT McGuinness will write a report to be presented to the clients' representative within 3 days of a working day. This report includes details of the complaint, action taken to correct the problem and proposed measures to prevent the occurrence of a similar incident. If an incident is of a serious nature notice must be given to the relevant Council(s) and the Client's representative within 24hrs or immediately depending.

EMERGENCY PREPAREDNESS AND RESPONSE

All earthworks incidents are dealt with promptly to minimise any potential impacts. Unexpected or accidental earthworks incidents will be managed in accordance with the sites' incident response and reporting procedures. All earthworks incidents/complaints are reported using Complaints form (refer section 10).

Likely emergencies and incidents may involve:

- Fuel or chemical spills
- Evidence of spoil being tracked off site
- Unlicensed discharge of pollutants to environment (air, water, noise, soil)

The Site Manager on site is responsible for undertaking the incident response according to this procedure.

Any incidents on site, which are likely to cause material harm to the environment, will be immediately reported to the Client's Representative.

The Wellington City Council (Client's representative to be copied in) will be notified of pollution incidents on or around the site which have occurred in the course of the works.

Emergency contact numbers are displayed at the site entry and in this management plan.

Procedure in case of any incident

- First check that you are not in danger yourself.
- Notify your works Supervisor or most Senior Management person on site immediately.
- The works Supervisor or most Senior Management person handles the emergency according to procedures

below:

Procedure in case of fire

- Warn & rescue any person in immediate danger - only if safe to do so!
- Call the fire brigade 111.
- Extinguish the fire using the right fire extinguisher if safe to do so.
- Evacuate to the emergency assembly area if directed or in danger.
- Remain at assembly area & ensure everybody is accounted for.

Procedure in case of chemical spills

Spills on the worksite are most likely to be hydraulic oil or engine oil/fuel spilled from plant items. If a spillage occurs the following procedure is to be followed:

- Immediately identify the spilled material and notify the works supervisor. Subcontractors are to notify LT McGuinness site personnel
- Contain the spill as soon as possible so it doesn't spread. Refer to MSDS for personal protective clothing needed
- If containment is required, contain using earth mound and/or absorbent socks/spill kit. If you can't do this let your supervisor know.
- Use the relevant clean up procedure as instructed by the MSDS
- Once the spill has been contained, your supervisor will arrange removal and disposal as soon as possible. Dispose of material using a licensed contractor and keep records of disposal on site.
- Complete an Incident Report Form and forward it to the Project Manager for reporting to Client representative and Wellington Regional Council if necessary.

MANAGING SUBCONTRACTORS ON SITE

The Site Manager applies a level and type of control to subcontractors appropriate to the risks associated with the subcontracted works.

LT McGuinness provides site induction to subcontractors on site by:

- Informing the subcontractors of their responsibilities
- Identifying those LT McGuinness' staff (Project Manager, Site Managers and Environmental Officer) who have authority to direct subcontractors to stop work if their activities breach safety or earthworks and consent requirements

LT McGuinness provides instruction on any systems or documentation that the subcontractor is expected to work under or use.


LT McGuinness monitors all subcontractors' work for compliance with earthworks and consent requirements. This is done through regular inspections.

METHODOLOGY

Please refer to the attached One Tasman Pukeahu Apartments- Structural Effects and Construction Methodology, Appendix 1.

Following on from the demolition of existing structures on site the bulk excavation works will be undertaken progressively to the benched RL's for the new buildings across the campus, starting at the northern end and working south, with the exception of the existing gym which will be retained for a longer period as it is proposed it will house a temporary sales show suite. This building will be demolished and associated excavation works will be undertaken approximately 12 months after the balance of the site.

Following the bulk excavation works the piles will be driven, then the detailed excavation works to the building's foundation will be under taken, which will then be followed by preparation of the on-grade floor slab excavation trade works.

		LT McGuinness Ltd			
		Earthworks Protection Measures			
Project:	One Tasman Pukeahu Park	Issue No.		Issue date	
Earthworks Protection Measures				Sign Off	
<p>Note: 'Sign Off' for simple, once-only actions the sign off column may be initialed and dated; Sign off on reoccurring actions will be evidenced in the Earthworks inspection checklist.</p> <p>Applies to all of the following Areas of Construction Activity:</p> <ol style="list-style-type: none"> 1. During Work Phase all areas below will be monitored as work is been conducted 2. Complaints, Non-Conformances, Corrective actions will be recorded as events occur 3. Site Manager has the right to stop any construction activity which fails to meet any subcontractor's method statements earthworks considerations and consent conditions which are not being adhered to. 					
a) Demolition					
Demolition works necessary to allow for Piling, Lift Shafts, Foundation Beams and the like.					
Pre-works phase					
All construction barricades, acoustic barriers positioned according to works been undertaken.					
Works Method Statements, Environmental protection plan received from demolition contractors and reviewed by LT McGuinness. (refer Environmental Method Statements folder).					
Asbestos pre-work assessment conducted and Method statement received.					
Works Phase					
Earthworks protection measures to be checked by LTM/Contractor pre-works starting.					

b) Construction Noise	
Areas identified to cause significant noise during construction are Pile driving and concrete works. These construction activities will be monitored under Table 2 of NZS 6803: 1999 and under the conditions of the Resource Consent. General Construction activities during normal working hours will comply with Table	
2. (Refer Construction Management Plan).	
Pre-works phase - enabling	
Investigations for services relocations and abandonment.	
Notify all affected neighbours and businesses 2 days prior to potential night time concrete works.	
Method statements to be received by Piling contractor on how earthworks noise, vibration will be mitigated.	
Noise reducing fencing, baffles, acoustic measures to be in place pre-works.	
Works Phase	
Construction noise to be confined to hours as per the Construction Management Plan and the Resource Consent.	
Noise mitigation methods installed pre-works and maintained.	
c) Dust	
Wind break mesh/hoardings will be erected along the length of the construction boundary. The screens will reduce the effects of dust produced with the demolition work. Due to the proximity of the surrounding buildings the site will require damping down of the construction dust and will be carried out with hand held hoses, sprinklers and misters. Activities which generate dust will be monitored closely along with weather conditions so any foreseeable issues will be minimized. Housekeeping will be maintained vigilantly with routine sweep ups to minimize dust clouds during construction phase and constant dampening as required. Hydrocarbons (such as hydraulic oils) shall not be used as a method of controlling dust.	
Pre-works phase	
Method Statements from Subcontractors conducting dry concrete cutting, demolition removal, soil excavation to show how airborne dust will be mitigated to reduce environmental contamination this is to be reviewed by LTM.	
Erect all dust screens as required.	
Works Phase	

Maintain dust protection measures.	
d) Vibration	
The effects of vibration from piling and demolition works will be monitored in existing structures during the upgrade of the building. The demolition and piling vibration is not likely to be discernible in adjacent areas and buildings. This will be monitored.	
Pre-works phase	
Method statements from demolition, earthworks and piling subcontractors to show mitigation methods to reduce vibration. LTM to review plans.	
Works Phase	
Checks to be made to surrounding buildings/areas.	
e) Wind	
The exposed nature of the site will require constant monitoring as the wind poses significant issues which need to be addressed: <ol style="list-style-type: none"> 1. Dust from demolition/excavation. 2. General construction debris. 3. Scaffolding and wind mesh. 	
Pre-works phase	
Method statements from demolition and earthworks contractors to show systems in place to deal with strong gusts, material removal, protection systems to safe guard environment.	
Spill kits and site fencing in place.	
Works Phase	
Ensure all above are operating correctly.	
f) Piling	
The piling required for the new structures will be bored and driven piles. The scope of work is as follows: <ol style="list-style-type: none"> 1. Removal of obstructions 2. Bored and driven piles 3. Crane piles 	
Pre-works phase	
Method Statement from Piling/demolition contractor to cover <ol style="list-style-type: none"> 1. Acoustic considerations 2. Effects of vibration on the environment 3. Disposal of excavated material 	

<p>4. Prevention of spillage into the storm water systems, fuel, grout and slurry</p> <p>5. Concrete placement</p>	
<p>All construction barricades, acoustic barriers positioned according to works being undertaken.</p>	
<p>Works Phase</p>	
<p>Piling is restricted to the following days and hours: Monday to Friday 7am - 7pm, Saturday 7am -4pm.</p>	
<p>g) Construction Traffic</p>	
<p>Construction traffic will use only the Tasman Street entries. Bulk of the deliveries will be between 7:30am and 6pm Monday to Friday and Saturday 7:30am to 4pm.</p> <p>A construction traffic management plan will be prepared for the project for each phase in accordance with the Wellington City Council Code of Practice for Temporary Traffic Management Control as required. Included will be details of construction traffic management, including procedures and practices for manning the gatehouse and supervising the arrival and departure of vehicles; details of on-site parking arrangements; detail of any provisions required to facilitate pedestrian and vehicle movement in the vicinity of any temporary</p>	
<p>Pre-works phase</p>	
<p>Where possible, all works shall be programmed and undertaken in a manner least disruptive to local businesses and access ways shall not be blocked at</p>	
<p>The works site shall be appropriately fenced to prevent unauthorised access.</p>	
<p>Obtain any necessary permits.</p>	
<p>Works Phase</p>	
<p>Care should be taken to ensure access is not affected. If work is near roads warning signs should be erected.</p>	
<p>Warning signs need to be erected to alert road users of the change in conditions. Any council conditions will be followed.</p>	
<p>Warning signs need to be erected to alert road users of the change in conditions. For major road closures signs should be erected a few days before the works commence. Any council or Roads Authority conditions will be followed.</p>	

Site Earthworks Rules

Project/Location: One Tasman Pukeahu

General Site Management

1.	All vehicles to remain on clean all weather surface within the site
2.	Install appropriate silt fences and other sediment control structures
3.	Ensure sediment control measures are in place before starting clearing and excavation activities
4.	Install a fence at the site boundary to limit site access from footpath
5.	Fence off no-go areas to minimise disturbance
6.	Stockpile materials only in designated areas behind sediment fences and cover
7.	Order only the required quantities of materials
8.	Minimise chemicals stored on site – store in dangerous goods shed
9.	Make staff aware of emergency phone numbers (such as the Fire Brigade) to use in the case of a large spill
10.	Keep Material Safety Data Sheets (MSDS's) on site at all times
11.	If a spill occurs, stop the source, contain it, clean up in accordance with MSDS's and notify relevant authorities
12.	Damp down dusty areas as required
13.	Identify site access with minimal impacts on residents and instruct trucks to use this access
14.	Avoid parking site vehicles where they will unduly impact local use of the street
15.	Do not place waste containers, skip bins or building materials on road or footpath - store all materials within the work site
16.	Limit hours of operations to suit council requirements listed in consent conditions
17.	Take appropriate care when using construction equipment adjacent to any buildings
18.	Identify and protect heritage items present on site if required
19.	All trucks entering at exiting site are to be assisted by designated gatemen and spotters for public safety, and to ensure wheels are cleaned by the provided wheel wash areas prior to leaving site.

Demolition/Excavation	
20.	Stockpile materials only in designated areas behind sediment fences
21.	Cover stockpiled materials with weighted plastic/ bidum cloth to prevent erosion by wind and
22.	Install a fence around the site with a cloth barrier to act as a wind break if dust is a problem
23.	Damp down surfaces such as stockpiles as required to reduce windblown dust
24.	Implement the site Demolition Waste Management Plan
25.	Do not mix hazardous materials with other demolition materials
26.	Fuel refilling is to be in designated areas located a minimum distance of 5m away from bunded storm water systems.
Concreting	
27.	Wash out trucks at supplier's depot when possible
28.	Wash out in an area where water cannot enter storm water drains, footpaths or roads up slope from a sediment control device –wheel wash areas refer CMP
Building services	
29.	Fill in service trenches as soon as work is completed to minimise erosion

PERIMETER BUNDING

The existing and natural ground levels at 1-23 Tasman Street slope away below the roadway which will naturally prevent any surface water run-off. If any areas end up higher than Tasman Street or risk run off onto Buckle Street a "channel" will be dug lower than the adjacent foot path to the affected areas of the site, as the first operation.

At the two site entry points wheel washers and bunding will be installed to mitigate any water or silt runoff from the site.

All adjacent and perimeter roadway sumps to Tasman and Buckle Streets will be sand bagged and/or geotextile cloth installed and maintained regularly to prevent contaminates entering the storm water system.

Fuel refilling is to be in designated areas located a minimum distance of 5m away from the storm water systems.

Note: A spill should be reported to the Pollution Hotline (phone 0800 496 734) if:

The actual or potential harm to the health or safety of human beings or ecosystem is not trivial.

WHEEL WASH STATION

A cattle grid wheel wash station will be erected at the site exit points. This wheel wash may need to be progressively relocated as the excavation works progress to ensure that all vehicles are diligently washed down with high pressure hoses/water blasters to prevent any soil being tracked off site.

DEWATERING (if required)

If excavation works are to be carried out below the water table, then pumps will be used to control this locally on site. Water will be pumped to settling tanks where the water will be distilled before pumping it off site. This will only be after GWRC/WCC consents are achieved.

During the below ground level construction, rainwater may need to be pumped from the internal layout. This will be done by using smaller pumps to again pump into the settling tanks.

Sediment from the settlement tank will be regularly pumped/cleaned out with the waste being discharged at an appropriate disposal facility.



Asbestos Contaminated Soil

Further testing is required to establish whether asbestos is present in the surface soils of 1-23 Tasman Street.

A contamination survey of the site will be undertaken.

Under the 2016 Work Safe Approved code of Practice for the Management and Removal of Asbestos the excavation works to the asbestos contaminated area can be undertaken as "Related Asbestos Work".

ASBESTOS RELATED WORKS CONTROL PLAN - TRACE ASBESTOS IN SOIL

This is a template of an asbestos related work plan for traces asbestos in soil. It is designed to incorporate the elements of the Asbestos Regulations.

Note If during the course of the works the concentrations of asbestos become more than "trace" then works should stop immediately and the area cleared as works will need to be undertaken as asbestos removal works which requires a site specific asbestos work plan and alternative methodologies which are not covered in this document.

This Control Plan has two parts -

Complete part A when planning for the asbestos related excavation works

Complete part B after the asbestos related excavation works are complete.

Part A To be completed before asbestos related excavation works starts

Prepared by

Date

For Asbestos Contaminated excavation works and removal at 1-23 Tasman Street, on behalf of the site owner Wellington City Council

Identification

Have asbestos Records been reviewed: Yes (by Tonkin + Taylor)

Location of Trace asbestos in soil Please refer Tonkin + Taylor report which Identifies further testing to be carried out.

The following shall be notified prior to asbestos related works commencing:

Client Representative Willis Bond	Project Manager -TBC
LT McGuinness Project Director	Kerrin Manuel – KerrnM@mcguinness.co.nz
LT McGuinness Project Manager	Wade Pulford – WadeP@mcguinness.co.nz
LT McGuinness Site Health and Safety Officer	Daniel O'Connor - DanielO@mcguinness.co.nz
Excavation Sub Contractor Health and Safety Officer	TBC
Supervisors under taking the works	TBC, TBC



ASBESTOS RELATED WORKS CONTROL PLAN - Part A

Workers

List the workers who will be working at the asbestos contaminated soil section of the site:

Name	Supervisor
------	------------

Timing of removal work

Planned start date:

Emergency and service contact details are listed in the excavation section of this Construction Management Plan.

Personal Protective Equipment (PPE)

The following PPE must be worn within the Asbestos contaminated ground area whilst removal works are being undertaken.

Fitted asbestos respirator

Disposable Overalls

Gloves

Gumboots

Demarcation and Isolation of Asbestos Zone

The asbestos area of the contamination on the site is to be clearly marked using a stakes, signage and Asbestos Hazard Tape. This will be put in place before and during the excavation works. The stakes and Asbestos Hazard tape is to be erected a minimum 5m beyond the area of contamination to provide a safety buffer zone.

The health and safety site map will show the boundary of the isolated work area where trace level contamination is presence. Persons entering this area will be advised of the trace level asbestos contamination in the marked and isolated area during the site-specific health and safety induction process, this will include all persons that enter the site including Engineers, Architects etc.

Reassurance Air monitoring will be undertaken downwind of the contaminated area during the excavation works.

The air monitoring to be undertaken a competent and qualified company to undertake this works.

Number of air monitors	One (set at the downwind boundary of the asbestos related works)
Frequency of samples/testing	Air monitoring and testing is to be undertaken on each of the first two days of the asbestos related excavation works. Then at a minimum of every 5 working days thereafter, or as specifically advised by the licenced asbestos assessor.

Decontamination facilities

- Decontamination Room

A decontamination room will be provided at the entry to the decontamination zone. The decontamination room will have an area for removal of overalls, changing of clothes, supply of fresh disposable overalls and other PPE plus suitable asbestos waste bins. All solid waste will be treated as contaminated waste and will be removed from site in 200 micron thick Asbestos Waste bags and disposed of at an appropriate land fill, documentation will be provided.

Temporary water will be provided to the exterior of this room for the washing of gumboots prior to entry.

- Truck entry to the contaminated soil zone

A temporary truck wheel wash will be required at the entry to the contaminated zone.

All trucks, diggers and equipment used for the excavation and removal works will be required to use this wash down facility before leaving the contamination zone.

Management and Disposal of Asbestos Contaminated Soil

Water Misting of the asbestos contaminated zone is required during the excavation phase, up until a suitable geotextile cloth cover is installed to capture any dust and asbestos fibres.

The excavated contaminated asbestos will be removed immediately from site where practicable.

Any stock piled asbestos contaminated spoil will need to be covered with polythene and kept damp before being removed at the earliest practicable time.

The trucks trays transporting the asbestos contaminated spoil will need to be fully lined with 2 layers of heavy weight polythene, which will be required to be wrapped and sealed entirely around the contaminated soil load. Further to this a full cover or cargo net is required to protect the sealed polythene from unravelling.

The asbestos contaminated soil can only then be transported to and disposed at WCC land fill for asbestos waste

Encapsulation at Completion of Excavation

All exposed faces of the excavation works are to be covered in a geotextile matt, with steel pins at 2m centres each way and along edges, with a minimum overlap of 500mm between joins.

At completion of this stage of the works the clients contaminated land specialist, Tonkin + Taylor is to sign off on the Geotextile installation, including a photographic survey.

Following approval of the geotextile installation the asbestos controls and decontamination facilities can be appropriately cleaned and removed and the enclosure markings removed.

Declaration and sign-off

I declare that the information contained in part A is accurate to the best of my knowledge

Signed by

Date

ASBESTOS RELATED WORKS CONTROL PLAN - Part B

Part B To be completed once asbestos related excavation works above are complete.

Start date of asbestos related works Completion date.....

List of significant stages the asbestos related works was undertaken in:

- 1)
- 2)
- 3)

Total quantity of asbestos contaminated soil deposited of site to asbestos contaminated landfill.

=

Air Monitoring

Can the area be reoccupied and did the final test result not exceed 0.01 fibres/ml

Yes

No

Attach summary air monitoring results

The Site Emergency Plan is to maintain the location of the asbestos contamination zone, as any subsequent works will be required to conform to this Asbestos Related Works Control Plan.

Clearance Declaration and sign-off

I declare that the information contained in part B is accurate to the best of my knowledge and that I could find no visible asbestos or likely residue

The geotextile encapsulation is in good condition and has been laid in a professional manner and is fit for purpose.

The final air monitoring results shows the respirable fibre level does not exceed 0.01 fibres/ml and

As far as can be determined from the visual clearance inspection, the contaminated spoil area does not pose a risk to health and safety from exposure to asbestos.

Adequate provision has been made in the site-specific safety plan that process is in place

identifying this area and what asbestos related works management process need to be undertaken should the Geotextile matt and soil underneath need to be disturb at a future date.

Signed by

Date

SECTION 16.0

ENVIRONMENTAL MANAGEMENT PLAN

VISION

LT McGuinness' environmental objective is to be regarded as an environmentally responsible construction company.

LT McGuinness is committed to creating a sustainable future by utilising both people and resources in the care of the environment during the construction process in an effort to maintain the quality of the environment for future generations.

POLICY

To support our environmental vision, LT McGuinness will:

- Implement and maintain environmental systems, including measurable objectives and targets.
- Ensure employees, subcontractors and suppliers are made aware of environmental issues through ongoing training, communication and reporting.
- Comply with environmental legislation, RMA requirements and relevant regulations.
- Ensure that all construction works, where applicable, are carried out in accordance with the Heritage Management Plan.
- Ensure staff are accountable and provided with adequate resources to deliver good environmental outcomes.
- Ensure any archaeological finds will be dealt with in accordance with the Accidental Discovery Protocol.
- Where possible we will reduce, reuse or recycle materials to minimise waste in line with REBRI guidelines.
- Regularly review this environmental policy.

ROLES AND RESPONSIBILITIES

There are four groups with responsibility for the environmental management of the contract;

- The Client;
- LT McGuinness together with its subcontractors;
- Greater Wellington Regional Council and Wellington City Council
- The client's consultants who audit the works and monitor compliance with resource consent conditions and the environmental management plan.

The Consultants are as follows:

Architect:	Athfield Architects
Structural Engineer:	Dunning Thornton Consultants
Building Services Engineer	Aurecon
Geotechnical Engineer:	Tonkin + Taylor

LT McGuinness shall appoint an Environmental Officer responsible for the environmental performance and compliance where they apply to the works in the contract.

The Environmental Officer will liaise directly with the Site Project Manager.

ENVIRONMENTAL CONSIDERATIONS AS A RESULT OF CONSTRUCTION ACTIVITY

- Dirt and Droppings
- Damage and Nuisance
- Construction Noise
- Dust Mitigation
- Waste Management
- Wind
- Construction Traffic
- Cement, Grout and Concrete waste
- Fire Prevention
- Contaminated Spoil

DIRT AND DROPPINGS

Dirt and droppings deposited on public or private thoroughfares from vehicles servicing the site are to be removed by the contractor to the satisfaction of the appropriate authorities. In the event roads or footpaths are spoiled by dirt and droppings, we will ensure roads and footpaths are returned to their original state by means of road sweepers, yard brooms and collection equipment, road wash and wet vacuuming as necessary. We will have a permanent gateman that will monitor the operations both into and from site. Wheel wash stations and truck covers are the prevention measures.

DAMAGE AND NUISANCE

LT McGuinness will take all reasonable precautions to prevent damage and nuisance from water, fire, smoke, dust, rubbish and all other hazards resulting from the construction works.

A photographic Building Damage Record will be undertaken of the adjoining neighbouring buildings prior to commencement of any construction.

CONSTRUCTION NOISE

The increased noise associated with the construction activities will be as a result of the construction works, these include:

- Excavation Pneumatic breaking; Saw cutting

- Concrete pumping and placing; Construction plant.

Significant construction activities will take place during daytime 7:30 am to 6 pm hours weekdays and Saturdays as far as is reasonably practical and noise will be managed in accordance with the requirements of the Construction Noise and Management Plan and applicable resource consent conditions.

DUST MITIGATION

Hoardings/fences with scrim will be erected around the construction site. The screens will reduce the effects of dust produced by the demolition work. Activities which generate dust will be monitored closely along with weather conditions so any foreseeable issues will be minimised. As per the EDSC plan, housekeeping will be maintained vigilantly with routine sweep ups to minimise dust clouds during construction phase. Water misters and task isolating measures will be implemented. The use of stockpiles and handling of excavated materials will be limited.

WASTE MANAGEMENT

A waste management plan for the project will be completed and reviewed on an ongoing basis in line with REBRI guidelines. Refer to section 14 for Waste Management Plan.

This will incorporate the following:

- A waste management system and process for separating of waste.
- As much as possible waste materials recycled and/or reused.
- Tracking and monitoring of waste.

WIND

The exposed nature of the site will require constant monitoring as the wind poses significant issues which need to be addressed:

- Dust from demolition;
- Concrete slurry from skip and pump;
- General construction debris.

All of the above will require constant monitoring during windy weather. To mitigate the effects by keeping exposed areas free from built up piles of construction debris, dampening down where necessary, proper containment and removal of concrete slurry. All temporary structural elements will be designed by a certified engineer

CONSTRUCTION TRAFFIC

Before construction activities begin construction, temporary construction signage will be installed where deemed necessary by all parties involved. The signs will inform the public of the project and provide restrictions of access where necessary. Signs should contain main contact numbers, a brief construction description and approximate time frame of the development.

A Construction Traffic Management Plan is prepared for the project in accordance with the Wellington City Council Code of Practice for Temporary Traffic Management Control as required. The Construction Traffic Management Plan will include the following;

- Brief description of works

- Staging
- Traffic and pedestrian control during the construction
- Temporary Traffic Control to close the footpath during loading out times to be installed. This work will be carried out outside of normal working hours.
- Truck and vehicle movements to and from site
- Applicable signage
- Parking and turning areas
- Public safety
- STMS and TC details

CEMENT, GROUT AND CONCRETE WASTE

Concrete has the potential to impact upon water quality through the release of fine particles through a localised increase in pH. This is most likely to occur during the washing down of cement truck sluices prior to departing the site.

No waste concrete or grout materials are to be discharged down (or where they can run into) storm water grates or into the marine environment.

Concrete trucks after placing are to wash down in the designated wash bay into collection buckets and containers or return to their depot for cleaning. Pump trucks are to blow back into the concrete truck for disposal back at the quarry.

Waste concrete will be stored in appropriate skips for later removal.

All vehicles requiring cleaning will be washed over the site wheel wash system which consists of either a 4-sided asphalt bund containing no smaller than 70AP ballast aggregate and lined with filter cloth to ensure no waste product is discharged into the local storm water systems or a purpose made cattle stop type tray system with discharge points filtered. The wheel wash will be maintained regularly as part of our daily inspection regime, the resulting waste products are then removed and placed in suitable collection bins for removal from site.

APPENDICES:

- Appendix 1. One Tasman Pukeahu Park - Structural Effects and Construction Methodology



One Tasman Pukeahu Park Structural Effects & Construction Methodology

Structural Effects

The site of the proposed One Tasman Pukeahu Park development has a moderate to high exposure to natural hazard risks. While Wellington generally has a high seismic shaking hazard, the site risks arising from flooding, liquefaction/lateral spreading potential and Tsunami/Seiche waves are low to moderate. The site is on the flanks of Mt Cook (Wellington), around 18m above mean sea level and so has natural protection from local inundation and foreseeable sea-level rise.

The structural, geotechnical and architectural design addresses and mitigates the natural hazards with a high-performance structure expected to perform well in excess of code minimum requirements. In addition, the development will result in some remediation of existing in-ground (low-level) contamination and remove/dispose of hazard materials within the existing buildings [Refer also to Tonkin & Taylor Statement dated 13 September 2021].

The site is on swamp deposits/alluvial/colluvial soils with depth to rock varying across the site between 10-30metres. The upper subsoils (below groundwater level) have a potential for localised liquefaction and the heavier (concrete) structures will be supported on piles founded either on rock or in the Lower Alluvium that comprise typically dense gravel/sand or stiff silt. Piles are proposed to be bored and concreted type (e.g. Continuous-Flight-Auger drilled piles or bored piles). The installation of these piles generates negligible vibration and only relatively low noise levels.

The proposed development involves removal of all the existing buildings on the site and construction of five new structures:

- Two apartment tower blocks on the western side of the site (Northern Apartments & Southern Apartments).
- A two level carparking building along the eastern side of the site which will support two timber-framed, town-house blocks (Courtyard Terraces).
- A series of concrete town-house units in the north-west corner of the site (Pukeahu Terrace Houses).
- A row of timber-framed town-house units in the north-east corner of the site (Buckle Street Terrace Houses).

The two apartment tower blocks will be base-isolated to provide a high level of seismic life-safety protection coupled with damage avoidance, and protection of contents, in excess of code expectations. Above the base isolators these

structures will be predominantly steel framed to provide the strength and resilience at the least weight/mass. The upper floor slabs will be predominantly reinforced concrete with options of some timber substitution to improve carbon embedment. The other structures will be more conventional but designed for low-ductility demands and low-damage.

The lowest inhabited levels of each of the structures has been set above adjoining road levels to provide mitigation against localised inundation.

Demolition material from the existing structures may be recycled where practical and feasible, particularly steel, concrete aggregate, aluminium and glass. Hazardous demolition material together with any in-ground contamination will be taken to secure hazardous-waste landfill. Non-recyclable demolition material and non-contaminated excavation material will be taken to solid-waste landfills.

Bulk excavation will be carried out generally as shown on the attached drawings. The volume of excavation is expected to be approximately 10,000m³. Note that some areas will require limited fill to bring the ground level to underside of new ground floor slab levels. This is in areas of existing basements and existing low-lying areas. The fill volume expected to be approximately 800m³. Fill will be a mixture of re-compacted excavated material from the site, crushed demolition aggregate and imported hardfill.

Excavation will typically be shallow, with the exception of the piles. Pile depths are likely to be in the order of 15-25m. Excavated pile material will be tested for contamination and treated/disposed as appropriate.

Along the west side (Tasman St), the excavation will typically be battered to meet existing back-of pavement levels. In localised areas, temporary retaining will be required. Along the north (Old Buckle St) boundary, low-level battering will be required. Along the adjoining property boundaries (east and south sides), bulk excavation levels are typically above neighbouring land or will abut adjoining walls. Minor battering/temporary retaining will be carried out as required.

All run-off will be contained and treated on site as appropriate, refer to the LT McGuinness draft site management plan. Localised de-watering may be required to enable formation of lift pits and possibly some of the deeper foundation beams. No significant lowering of the water-table is anticipated, any effects will be extremely localised.

Specialist geotechnical engineering input is being provided by Tonkin and Taylor.

Construction Methodology

The One Tasman Pukeahu Park development foundations will be constructed fully within the site. In-ground construction activities will include demolition, excavation, removal of existing foundations, piling, minor de-watering and construction of the reinforced foundation beams, concrete slabs and lift pits. The following steps outline, in concept, the construction methodology that will be used. Refer also to the LT McGuinness draft site management plan

1. Additional proof-drilling / pile testing to determine depths for piles.
2. Site establishment, hoardings, protective footpath gantries, site sheds etc.
3. Storm-water protection/diversion etc. Temporary filters, kerbs etc. to prevent construction and excavation materials entering the storm-water system.
4. Demolition of the existing structures on the site. Note that the gym building at the north end of the site will remain during the construction of the northern apartment tower, to act as an apartment show/sales suite.
5. Site-wide excavation generally as shown on the bulk excavation plans, attached. This will include localised excavation to expose the existing foundations for demolition. The excavated/demolished material shall be assessed for contamination, treated if required and disposed to landfill/cleanfill as appropriate.
6. Drilling and pouring piles.
7. Additional localised excavation, as required, to the underside of the ground floor foundation beams. The excavated material shall be assessed for contamination, treated if required and disposed to landfill/cleanfill as appropriate.
8. Construction of a concrete tidy slab under foundation beams and the ground/sub-ground floor slabs as required.
9. Construction of the foundation beams, reinforced-concrete ground/sub-ground floor slab and lift pits.
10. Installation of the base-isolators, for the tower blocks.
11. Construction of the superstructures.

Note that the construction of the different buildings will be staged, commencing with the northern apartment tower.

Dunning Thornton Consultants Ltd

230111 – RC Amendment