110 Jervois Quay

DRAFT CONSTRUCTION MANAGEMENT PLAN

TABLE OF CONTENTS

Appendices:

SECTION 1.0

PROJECT INTRODUCTION AND CMP OBJECTIVES

Project Introduction

This construction management plan covers the proposed construction work at a project known as MFC Carpark.

A 9-storey base isolated office building, sitting on the junction between Wakefield Street and Jervois Quay. This will be built on the existing carpark, where the Royal New Zealand Ballet currently occupies in a temporary building.

The nine-storey building comprises; ground floor entry lobbies, retail and front of house office space, and office space.

The structure: Bottom end, driven steel piles filled with reinforced concrete is proposed, with grout filled structural steel diagrid system and reinforced concrete slabs. A high performance external mixed façade of solid and glazed elements and warm roof to complete the external envelope. The office floors will be serviced to an A-grade standard

Externally, the intention is that the area surrounding the new build is landscaped to integrate with WCC proposed landscape solution for this important area of Wellington.

CMP Objectives

- To outline a construction methodology for the MFC Carpark Project.
- 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 this project include the following:

Stage 1 - Basement works

1. Additional proof-drilling to determine depths for piles.
2. Site Establishment, hoardings, protective footpath gantries, and enabling.
3. Removal of contaminated spoil and bulk excavation to the sub-basement area; removal of the 'Guy Ngan' sculpture which will be stored safely and reinstated to an alternative location on site at completion of the project works.
4. Temporary retaining work to sub-basement excavation.
5. Protection and possible strengthening work as required to the existing underground emergency waste water tank and storm water culvert.
6. Driven Piling.
7. Demolition – pre-existing buildings foundations, the elevated pedestrian bridge across Wakefield Street.
8. Salvage and reinstatement of identified items: Guy Ngan Sculpture, lamp posts, nominated trees, furniture and services.
9. New incoming in-ground services.
10. Formation of ground beams, tanking, new basement slab, and perimeter walls.
11. Formation of basement pedestal columns and installation of base isolators.

Stage 2 - Structure works

1. Installation of structural steel building frame.
2. Installation of comflor reinforced concrete flooring systems.
3. Formation of lift shaft, core areas, and stair wells.

Stage 3 - Façade & Envelope

1. Installation of unitised curtain wall system.
2. Installation of warm roof membrane system.

Stage 4 - Base build, and Fitout Works

1. Building Services.
2. Building amenities.
3. Internal finishes.
4. Fit out works.
5. External landscaping

Stage 5 – Completion activities

1. Landscaping
2. Commissioning and compliance
3. Defecting
4. Handover

SECTION 3.0

LOCATIONS OF DRIVEN PILES

Willis Bond & Co	MFC CARPARK	PILE PLAN REVISED	Dunning Thornton consultants	SKETCH	Dunning Thornton consultants

JOB NAME:	MFC CARPARK OFFICE DEVELOPMENT		
JOB NO:	DRAWN BY:	DATE:	SKT NO:
7662	CRB	11.08.22	SKETCH SK1.01

Revision : A

IF IN DOUBT ASK DO NOT SCALE VERIFY ALL DIMENSIONS ON SITE PRIOR TO COMMENCING ANY WORK

SECTION 4.0

SITE ESTABLISHMENT

Site Access, Loading, & Cranage

During the initial basement phase of work material and plant will be delivered to and from site via the Wakefield Street site entry. As the project progresses this will be maintained as one of two delivery points.

As the initial basement works commence a loading bay will be formed on Wakefield Street, providing further loading points.

The loading bay on Wakefield Street will be serviced by one (1) tower crane, as shown in section 6.0, overhead protection for pedestrians will be provided in the form of temporary gantries. Refer to the site plan in section 5.0 for further information.

Supplementary mobile cranage will be utilised for the air bridge and loads unreachable for a tower crane.

Dust Control

Dust will be mitigated and managed through the use of dust screens and water misting as required. Managing dust at its source will be the key focus of our detailed methodologies and work plans.

When required, all machinery / trucks and wheels will be hosed down prior to departing site to prevent any risk of dust migrating from site. Trucks entering and leaving the site will need to have loads covered where risk of dust and the like is present.

Contaminated Ground Conditions

If contaminated soil is discovered procedures will be required during the excavation and transportation of soil from the site to protect site workers, the public and the environment. These procedures are set out in the Environment Management Plan, if required. Any groundwater is expected to be suitable for either discharge to storm water or to trade waste, both of which will require GWRC permits. This will be subject to further testing of groundwater.

Traffic Management

LT McGuinness will develop a site-specific traffic management plan in consultation with a specialist traffic design consultancy. This is to ensure efficient safe vehicle movement with Michael Fowler Centre and Civic Square; safety for pedestrians around the site perimeter and vehicular traffic along Wakefield Street and Jervois Quay.

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. Pedestrian protection gantries will be erected along Wakefield Street for the length of the site.

Signage will be installed on the five corners of the site to educate the public of the environment. A security company will be engaged to undertake frequent patrols of the entire site. Additionally, a CCTV camera system will be installed.

Plant, Machinery & Deliveries

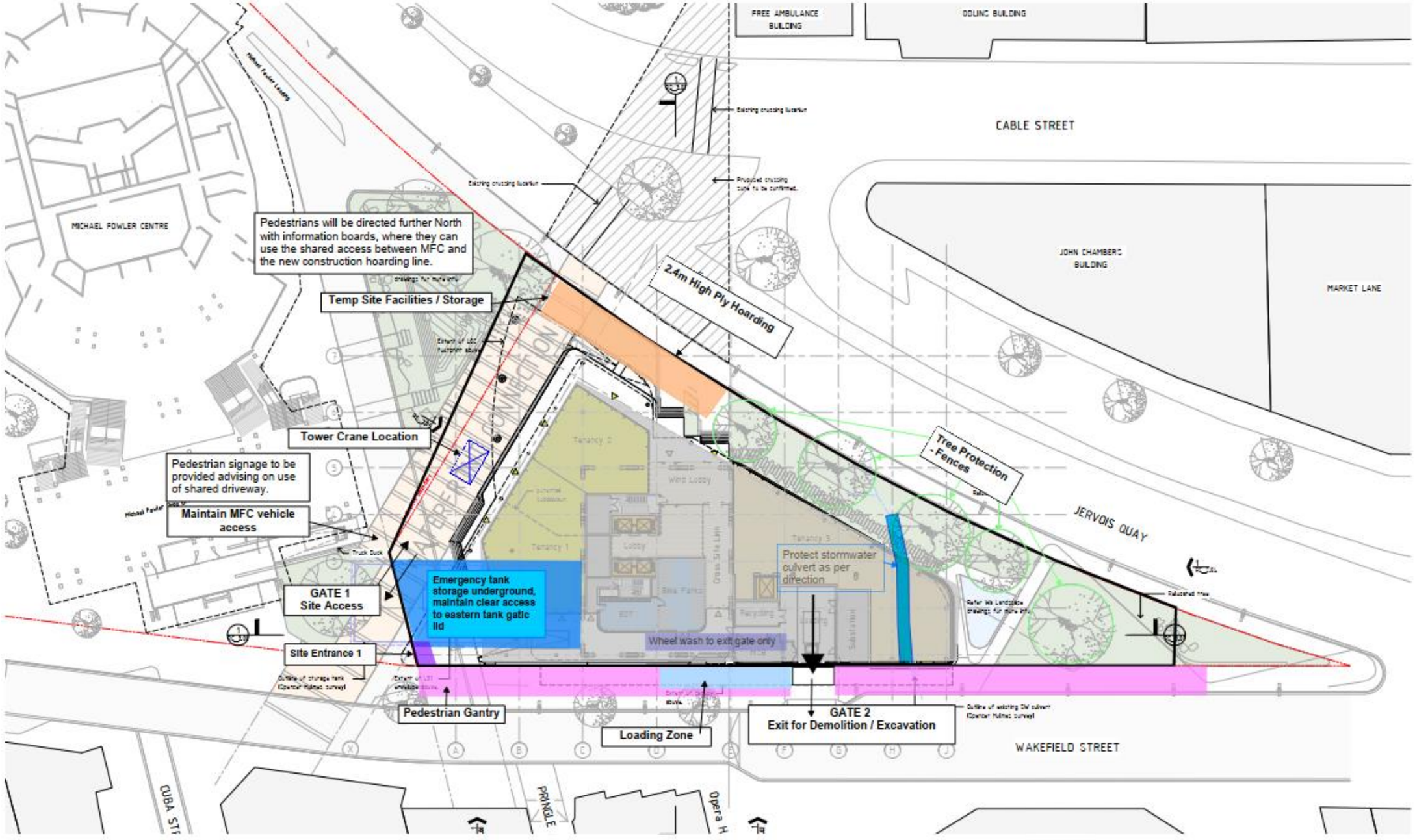
Due to the nature of this new build, a substantial amount of plant and equipment will be required to facilitate the construction stage. Piling rigs, crawler crane, excavators and large trucks will be required initially. All vehicles entering and exiting the site will be accompanied and guided by ground staff personnel to ensure safety of all. 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 waiting bay or within the site if required or be sent off site to return at a more suitable time.

Cranage

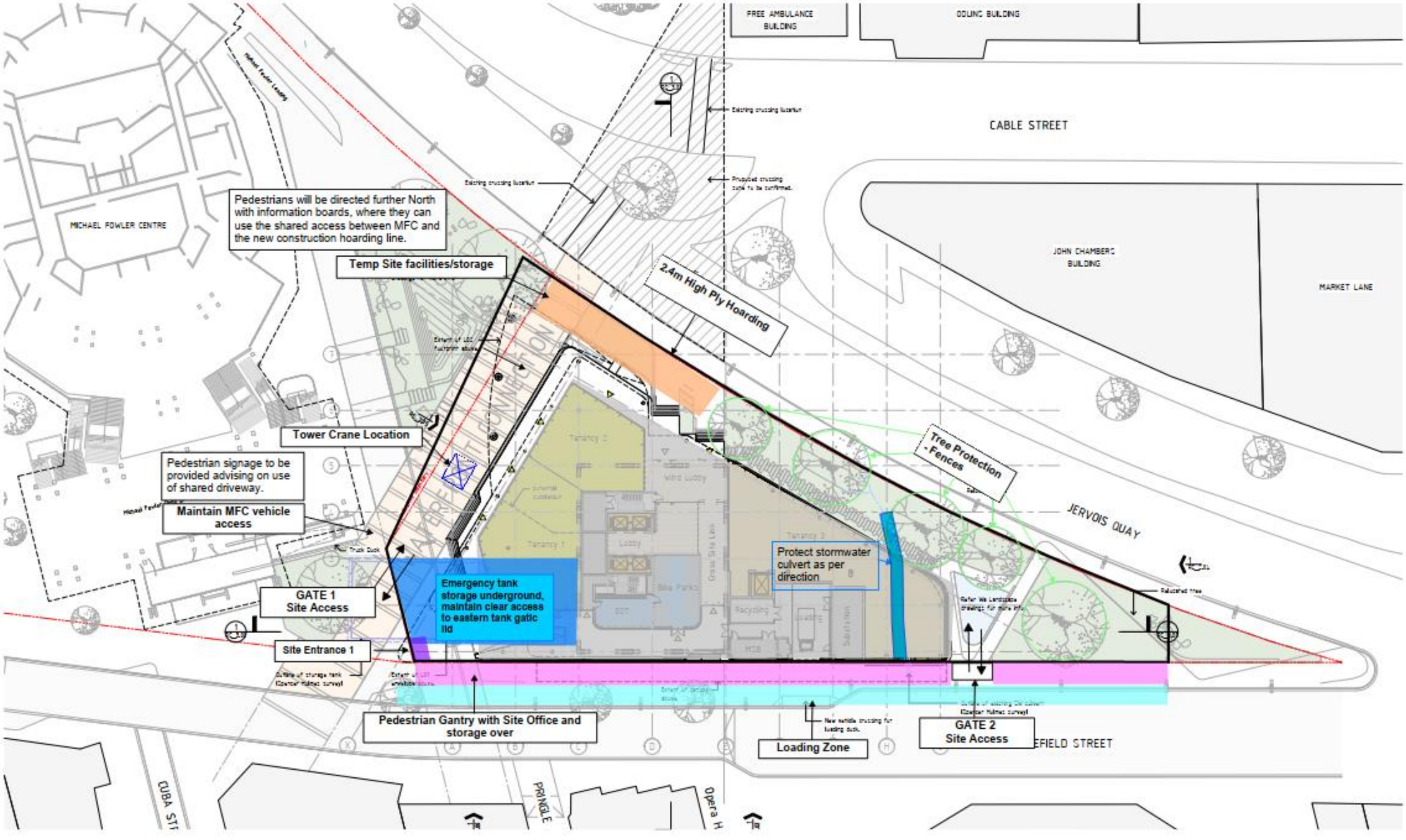
LT McGuinness proposes to erect one tower crane located as per Section 6.0 Crane Plan. These proposed locations will allow full reach over the footprint of the building and the loading bays. All necessary approvals and air space compliance from affected building and land owners will be arranged by the site owner.

SECTION 5.0

PROPOSED SITE PLAN



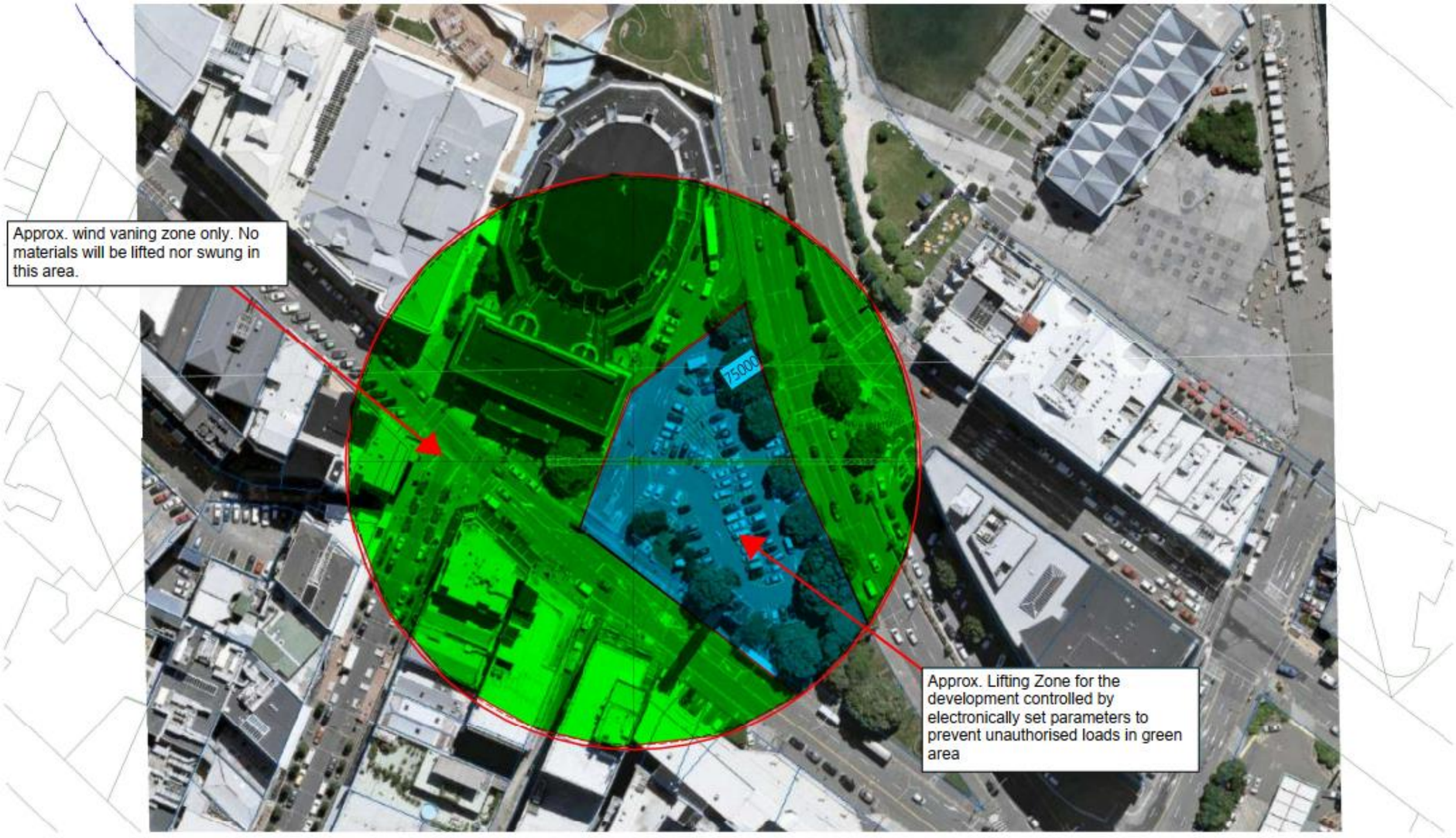
LTM DRAFT SITE DEMOLITION AND EXCAVATION PLAN



LTM PROPOSED DRAFT SITE PLAN

SECTION 6.0

PROPOSED CRANE PLAN



REFER STRUCTURAL DOCUMENTATION FOR ALL STRUCTURAL SCOPE OF WORK

PRELIM (1) CRANE A1
1 : 1000

L.T McGuinness LIMITED BUILDING CONTRACTORS

NOTES:
1. ALL WORK TO BE IN ACCORDANCE WITH NZS3604, NZS 4229, NZBC.
2. DO NOT SCALE FROM DRAWINGS. DIMENSIONS GOVERN.
3. ALL DIMENSIONS ARE SHOWN IN MILLIMETRES UNLESS OTHERWISE NOTED.
4. ALL DIMENSIONS SHALL BE VERIFIED ON SITE BEFORE PROCEEDING WITH THE WORK.
5. ALTERATIONS TO THE DRAWINGS MUST BE NOTIFIED TO THE ARCHITECT IN WRITING.

if in doubt, ask

CRANE A1 - 75m 60H
scale on A3: 1 : 1000 A4: 71% scale reduction

Rev	Description	Date

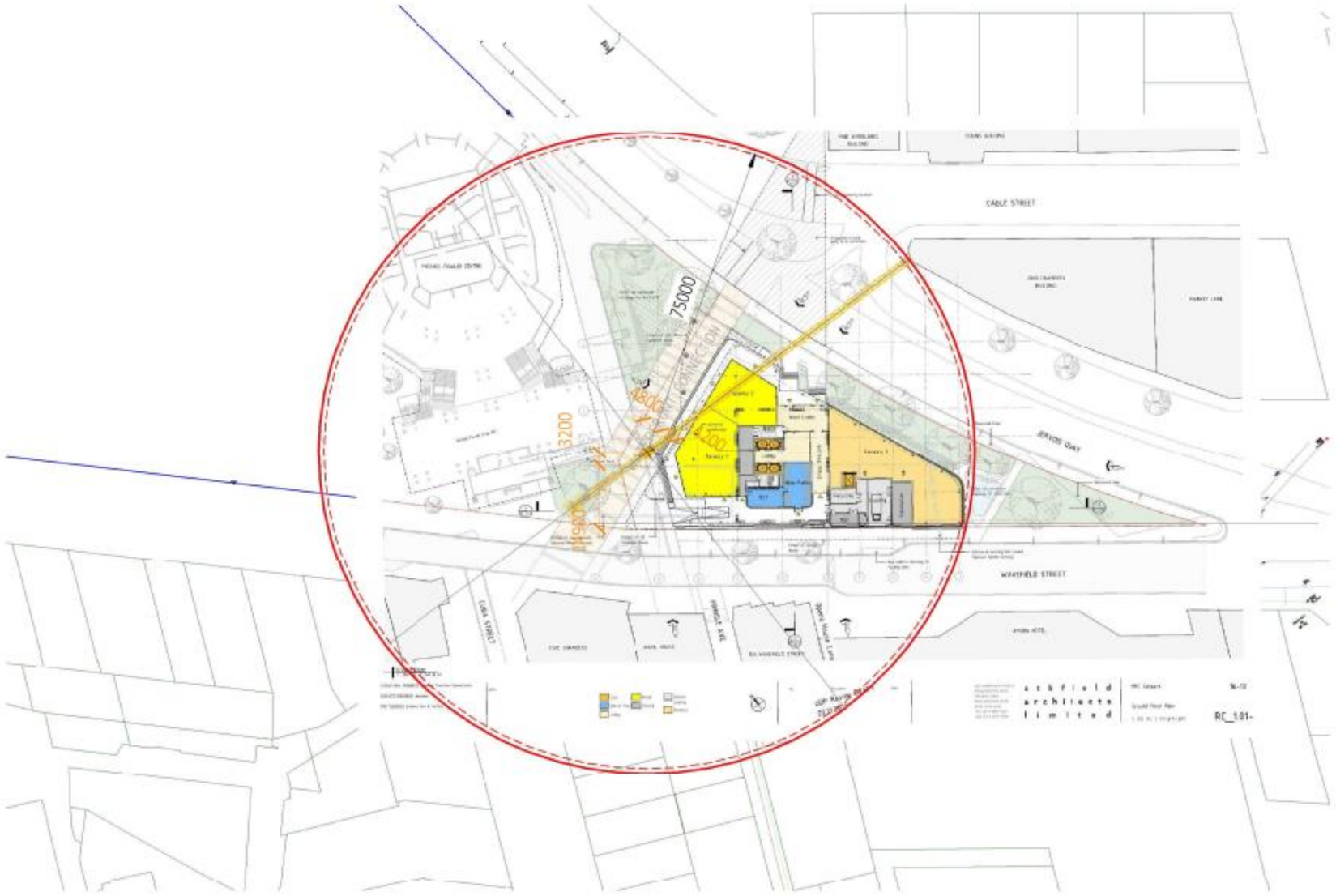
MFC CARPARK
Wellington

MFC

9 Fremois Place Te Aro Wellington 6011
PO Box 9639 Marion Square 6141
+4 384 8455

14.12.2021

A901



REFER STRUCTURAL DOCUMENTATION FOR ALL STRUCTURAL SCOPE OF WORK

PRELIM

1 CRANE A2

1 : 1000

L.T McGuinness LIMITED BUILDING CONTRACTORS

NOTES:
1. ALL WORK TO BE IN ACCORDANCE WITH NZS3604, NZS 4229, NZBC.
2. DO NOT SCALE FROM DRAWINGS. DIMENSIONS GOVERN.
3. ALL DIMENSIONS ARE SHOWN IN MILLIMETRES UNLESS OTHERWISE NOTED.
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if in doubt, ask

CRANE A2 - 75m 60H

scale on A3: 1 : 1000 A4: 71% scale reduction

Rev	Description	Date

MFC CARPARK

Wellington

9 Francis Place Te Aro Wellington 6011
PO Box 9839 Marion Square 6141
+4 384 8455

MFC

14.12.2021

A902

Wakefield St Context Elevation
1 : 500 @ A1 ; 1 :1000 @ A3

CLIENT: Willis Bond

STRUCTURAL ENGINEER: Dunning Thornton Consultants

SERVICES ENGINEER: Aurecon

FIRE ENGINEER: Holmes Fire & Safety

KEY:

No.	Description	Date
1	Resource Consent	26.02.2022
2	Resource Consent Update	13.08.2022

105 AMRITSAR STREET
WELLINGTON 6035
PO BOX 9364
WELLINGTON 6140
NEW ZEALAND
TEL 64 4 499 1727
FAX 64 4 499 1960

athfield architects limited

110 Jervois Quay 16-10

Wakefield Street Context Elevation

1 : 500 @ A1 ; 1 :1000 @ A3 RC_2.00-

SECTION 7.0

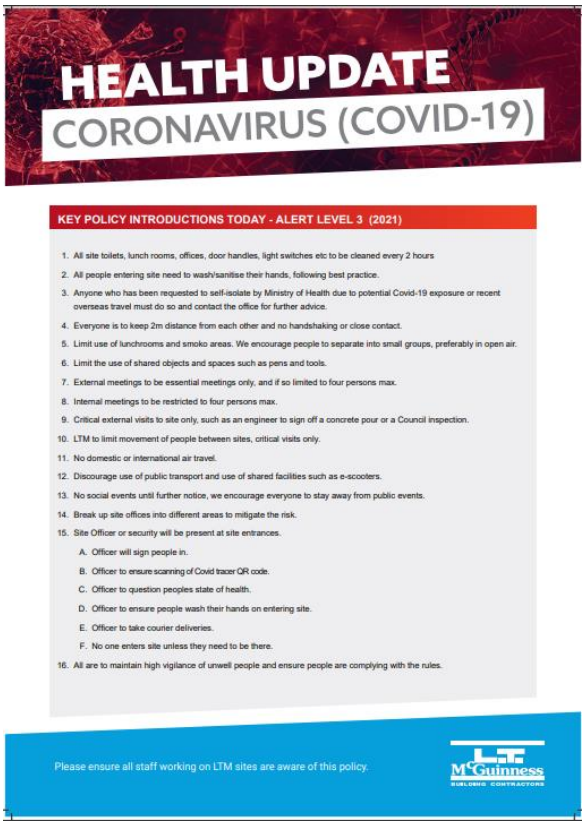
PROPOSED TRAFFIC MANAGEMENT PLAN

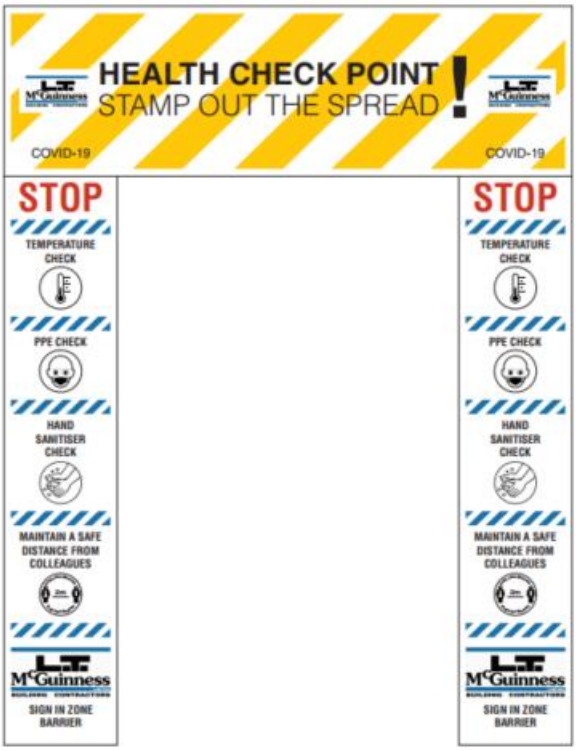
TMP

LT McGuinness will develop a site-specific traffic management plan in consultation with a specialist traffic design consultancy. This is to ensure efficient safe vehicle movement with Michael Fowler Centre and Civic Square; safety for pedestrians around the site perimeter and vehicular traffic along Wakefield Street and Jervois Quay.

SECTION 8.0

PROPOSED LTM SIGNAGE





SECTION 9.0

KEY PERSONNEL

Construction Director: Kerrin Manuel

Mob: 027 471 1036

Email: KerrinM@mcguinness.co.nz

Commercial Director: John Malthus

Mob: 021 423 401

Email: JohnM@mcguinness.co.nz

Site Project Manager: TBC
Mob:

Email:

Project Manager: TBC

Mob:

Email:

Health and Safety Manager: Daniel O'Connor

Mob: 021 596 689

Email: danielo@mcguinness.co.nz

Head Office

9 Francis Place

H: (04) 384 8455

F: (04) 801 8455

SECTION 10.0

PRELIMINARY PROGRAMME

TBC to be included in final CMP

SECTION 11.0

LTM COMPLAINTS PROCEDURE

The following communication and complaints procedure will be implemented on the MFC Carpark project;

1. All complaints will be directed in the first instance to the key personnel.
2. They will have the responsibility to ensure that the complaints procedure process is enacted and communicated correctly.
3. The MFC Carpark project will prominently display alongside the works, 5 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

COMPLAINTS FORMS

Environmental Incidents

Incident:

Part A: Details of complaint/incident (to be completed by Environmental Officer)

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/complaint:

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:___/___/____

Part B Follow up details: (to be completed by Project Manager)

Action Taken:

Print Name: _____ Signature _____ Date:___/___/____

Was the complainant/ other authorities informed of the actions taken?

SECTION 12.0

PROTECTION OF EXISTING STRUCTURES

Collateral Damage Measures

Existing building damage survey to be completed prior to work on the 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

Wakefield 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. Any light poles on Wakefield Street that need to be removed will be stored off site for reinstatement towards the end of the project.

Jervois Quay

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

SECTION 13.0

DEMOLITION MANAGEMENT PLAN

DEMOLITION SCOPE OF WORKS

The main works associated with this project include:

Demolition of pre-existing foundations and 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

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 is thought to contain asbestos. This will require careful management during any demolition and excavation works.

Removal of all asbestos will comply with the NZ guidelines and performed under direct consultant instruction and direction

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

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 Wakefield 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	7am - 7pm	7.30am – 6pm
TUESDAY	7am – 7pm	7.30am – 6pm
WEDNESDAY	7am - 7pm	7.30am – 6pm
THURSDAY	7am - 7pm	7.30am – 6pm
FRIDAY	7am - 7pm	7.30am – 6pm
SATURDAY	7am - 7pm	7.30am – 6pm
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)
- Driven piles and sheet piles
- Structural steel tensioning rattle drills
- Breakers
- Compressors
- 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 are likely to be noisy or have an impact on the neighbours

- Schedule out of hours work when possible, in order to minimise any impact with business and neighbours
- Establish liaison groups and lines of communication with neighbours
- Engage Marshall Day Acoustic engineering monitoring services

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 with direction from Acoustic Consultant

SECTION 14.0

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 15.0

HEALTH AND SAFETY PLAN

Health and Safety Management Plan

LT McGuinness will ensure that its Health and Safety policy is implemented throughout the MFC Carpark 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. Appropriatesigns 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 onsite 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 SafetyAdvisor and an onsite Health and Safety Manager.

Our management team will develop a comprehensive Health and Safety Management Plan before commencing work on the MFC Carpark 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:

Covid Safety Planning
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

ENTRY REQUIREMENTS

Inductions

LT McGuinness site management and Contractors shall ensure that their workers undertake LTMcGuinness company and site inductions.

1. **Digital Induction**: All workers must have completed a digital induction prior to arriving onsite through Hammertech. This induction covers company expectations and site-specific requirements.
2. **Face-to-face Induction Signoff**: Once workers arrive on site, they will have a face-to-face induction with a member of LT McGuinness site management.

Signing In & Out

All workers and visitors that enter the site are required to sign in and out of site using the systems provided (usually Hammertech). All workers and visitors must sign out at the end of the day or if they are leaving the site for an extended period. Visitors must be escorted by LTM management at all times.

Personal Protective Equipment

All personnel shall have and maintain adequate PPE when working on any LT McGuinness project.

Minimum PPE required on LT McGuinness projects is:

- *Safety footwear*
- *Hi-vis apparel worn correctly and over top of any other clothing*
- *Hard hat*

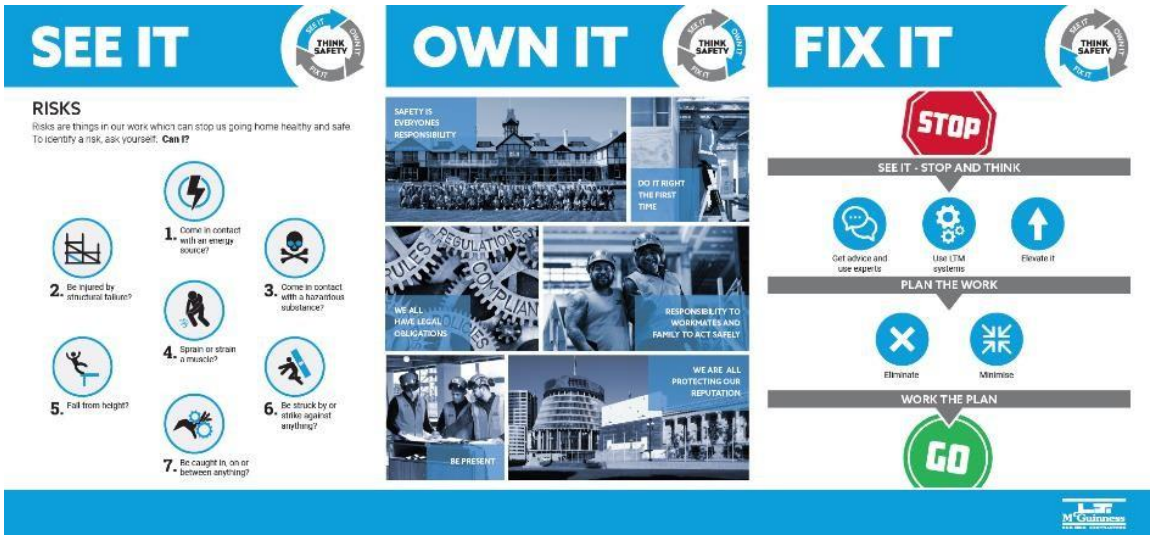
Be aware that some sites may require specific additional PPE to be worn

Drug and Alcohol Policy

LT McGuinness may conduct pre-employment, random, post incident and/or reasonable cause testing on any LT McGuinness project. Should any personnel return non-negative results, they will be stood down from site immediately. Re-entry to projects will be at the sole discretion of LT McGuinness.

Risk Management

LT McGuinness expect all workers on our site to see, own, and fix health and safety risks to themselves and others on site. We expect workers to take ownership of what's happening around them and act to make things safer or raise issues with management.



Cards

LT McGuinness use a card system on our sites to promote safe behavior (green), warn against unsafe behaviour (yellow), and, in cases of critical unsafe acts, remove workers from site (red). The issuing of cards is at the discretion of LT McGuinness Site Management and is not limited to the actions listed below.

Safe Work Method Statements (SWMS)

Safe work method statements (SWMS) must be produced in advance for tasks which are **high risk,unusual, complex, or upon request**. The following is a non-exclusive list of tasks that will always require a risk assessment to be completed before the work can begin.

Permits

Permits exist to oversee controlled works. Permits include:

Confined Space	Remove Structural Elements (with CPEng consultation)
Harness	Ladder
Roof and unprotected edge	Permit to Dig
After Hours Work	Platform Ladder
Basement Access	Remove Sprinklers
Cut or Core Concrete	Live Services
Hot Works	
Load Falsework or Propping	

Workers undertaking the works above must approach LT McGuinness site management to request permission to begin work. Permission is granted through issuing of a permit on Hammertech.

COMMUNICATIONS

Meetings

LTM request all staff to attend required HSE meetings to receive relevant information and to communicate latest issues, innovations, incidents and events etc. These may include the following;

Prestart Meetings, Toolbox Meetings, Site Coordination meetings

Reporting

All accidents must be reported verbally to LT McGuinness Site Management within 1 hour ofoccurrence and in writing within 24 hours. ***Serious harm*** incidents must be reported as soon as possible by phone to LT McGuinness company management. Direct these to the HSE Team in the first instance. If not available, contact a Company Director.

EQUIPMENT

Electrical equipment

Ensure all mains powered electrical equipment has a current test & tag. Electrical equipment must be visually inspected by the operator before use to ensure that it is not damaged. Damaged equipment should be labelled as defective and taken out of service until it is able to be repaired.

Electrical equipment should always be plugged into an RCD.

Ladders

Platform ladders are to be used only. If works require use of a non-platform (Straight or A-Frame ladder) then a Permit will need to be applied for and approved by LT McGuinness management.

The use of two or three step ladders is prohibited LT McGuinness projects.

Critical requirements of ladder use:

- Ladders must be regularly inspected and kept free of defects to ensure they are safe to use
- Users must maintain three points of contact wherever possible.
- In a workplace, a ladder must be compliant with the AS/NZ 1892 standard and rated industrial to 120-150kgs

Hazardous substances

All personnel involved with the storage, handling or transport of hazardous substances shall have the appropriate training and or licenses for the quantities involved. Please familiarize yourself with the respective SDS and refer to these as required. You may require additional PPE or change your working environment (i.e., increased ventilation) dependent on the chemical that you are using.

Training

We expect LT McGuinness managers and our contractors to assign appropriately trained and competent personnel for works on site. You must have specific training and competency for the following works regularly undertaken by LTM staff:

Confined space entry	Forklift
Working at height	MEWP incl. Knuckle booms
Traffic Management	Lifting Operations (cranage and dogman)
Rope access	Asbestos (awareness)
Scaffold	Powder actuated tools

****Training may be required for other specialist tasks as and when required**

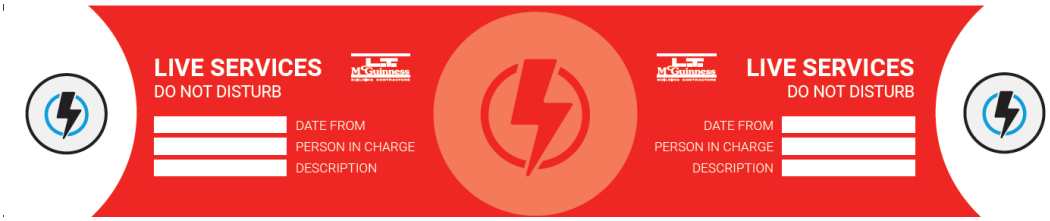
If you are not comfortable, trained or competent to complete a task please speak up and ask for help

HIGH RISK WORKS

While working on LTM site you may undertake High Risk Works, these include but are not limited to:

Work around live services

Workers should assume that services are live unless told otherwise by site management or arelevant tradesman. All live services are required to be identified and tagged with the LTM live services tag



Asbestos

Asbestos is a known cause of cancer and premature death for construction workers. To keep our staff from risks associated with asbestos we undertake surveys in all buildings and plant constructed before the year 2000 and use licensed asbestos removalist to complete the work. In the event that our staff find suspected asbestos the following steps must be followed:

1. All works in the area must be stopped
2. An asbestos assessor must inspect and test the suspected material
3. No-LTM staff are to be directly involved in the removal, modification. Relocation or work with an asbestos containing material (ACM)

Penetrations

Floor penetrations carry a risk of falls and dropped objects that must be carefully managed. The following controls are required to be identified in the associated works SWMS:

1. For a penetration more than 300mm wide, edge protection is required and further measures to mitigate fall hazards
2. Exclusion zones are required for open penetration to protect against uncontrolled risks, both around the works and in the “drop zone”
3. Personnel undertaking the works must be suitably trained and experienced with appropriate competencies
4. When works are completed, the penetration, void or edge must be left safe. I.e., Secured with a fixed cover capable of withstanding foreseeable loads and with clear signage. SWMS must be completed anytime the cover is removed

Concrete cutting and coring

SWMS must be completed for works involving concrete cutting and coring due to the following risks:

1. Silica dust inhalation (controlled with the use of vacuum extraction, wet down, respirator and PPE use)
2. Service strikes (controlled by surveying for live services and concrete scanning)
3. Structural damage (controlled by engineer’s approval required prior to coring or cutting through load bearing structures)

Working at Height

Working at height is a critical risk, to work in a harness you must be trained and competent. All works at height must be planned appropriately and detailed in a SWMS with an associated rescue plan. The SWMS must include:

1. Who is included in the works?
2. How dropped items will be controlled
3. Exclusion zone sizes and who the spotter will be if working near an open edge
4. Are you working in fall restraint or fall arrest and why?
5. How the works will be completed and area made safe, i.e., edge protection reinstated?
6. A detailed copy of the rescue plan

SECTION 16.0

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	MFC Carpark
Date	
Completion Date	TBC
Address	110 Jervois Quay / 121 Wakefield Street

Project Manager	TBC
Construction Director	Kerrin Manuel
Commercial Manager	TBC
Safety Manager	Daniel O'Connor
Engineer	Dunning Thornton Consultants/Tonkin + Taylor
Client Representative	Willis Bond
Toilets	Toilets will be removed as part of the removal of the RNZB building by others; 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 fromexisting 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 on Wakefield Street please refer to the Proposed Site Plan, section 5.0.

The project involves bulk excavation to form the base isolator rattle space approximately 1.2m deep generally (noting there are some isolated instances where the excavation depth may approach 2.4m).

A summary of the excavation works and structural methodology is provided by Dunning Thornton Consultants preliminary "Michael Fowler Centre Carpark Development – Structural Effects and Construction Methodology" report attached under Appendix 2

Further excavation will be required to form ground beams, 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 site.

WORKING HOURS

Day	Hours of General Works	Hours of Night Works	Hours of Noisy Works
Monday	7am – 7pm		7.30am – 6pm
Tuesday	7am – 7pm		7.30am – 6pm
Wednesday	7am – 7pm		7.30am – 6pm
Thursday	7am – 7pm		7.30am – 6pm
Friday	7am – 7pm		7.30am – 6pm
Saturday	7am – 7pm		7:30am – 6pm
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 on the MFC Carpark site.

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 ofworks as reasonably practicable.

Site earthworks rules and protocol

All employees and subcontractors working on site will be inducted on the site rules. Furthermore, therules 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 Managerfirstly of any earthworks issues on site.

The Construction Manager and Site Manager have been nominated to be available to relevant externalauthorities 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.
All relevant authorities, affected property owners and others in the vicinity or affected by specificworks 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 Complaint 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 willwrite 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 andreporting procedures.
All earthworks incidents/complaints are reported using Complaints form (refer to section 10.0)

Likely emergencies and incidents may involve:

- Fuel or chemical spills
- Evidence of spoil being tracked offsite
- 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 onor 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 spillageoccurs the following procedure is to be followed:

- Immediately identify the spilled material and notify the works supervisor. Subcontractors are to notifyLT 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 towork 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 MFCC Development – Structural Effects and Construction Methodology contained in Appendix 2.

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 site, starting at the northern end and working south.

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 basement slab excavation trade works.

LT McGuinness Ltd

Earthworks Protection Measures

Project:	MFC Carpark	Issue No.		Issue date	

Earthworks Protection Measures	Sign Off
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. Applies to all of the following Areas of Construction Activity: 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 worksbeen 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 nighttime concrete works.	
Method statements to be received by Piling contractor on how earthwork 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 construction of the building. The demolition and piling vibration will be discernible in adjacent areas and buildings, but will not cause structural damage. 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: 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: 1. Removal of obstructions 2. Bored and driven piles 3. Crane piles	
Pre-works phase	
Method Statement from Piling/demolition contractor to cover 1. Acoustic considerations 2. Effects of vibration on the environment 3. Disposal of excavated material 4. Prevention of spillage into the storm water systems, fuel, grout and slurry 5. Concrete placement All construction barricades, acoustic barriers positioned according to works being undertaken.	
Works Phase	
Piling is restricted to the following days and hours: Monday to Friday 7am - 7pm, Saturday 7am - 7pm.	

g) Construction Traffic	
Construction traffic will use only the Wakefield Street entries. Bulk of the deliveries will be between 7:30am and 6pm Monday to Friday and Saturday 7:30am to 7pm. A construction traffic management plan will be prepared for the project foreach 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 structures.	
Pre-works phase	
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 time.	
The works site shall be appropriately fenced to prevent unauthorised access.	
Obtain any necessary permits.	
Works Phase	
Care should be taken to ensure access is not affected. If work is near roads warning signs should be erected.	
Warning signs need to be erected to alert road users of the change in conditions. Any council conditions will be followed.	
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.	

Site Earthworks Rules

Project/Location: 110 Jervois Quay / 121 Wakefield Street

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 wheelwash 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 froma 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

Any areas end up higher than Wakefield Street or Jervois Quay or at risk of run off 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 run of from the site.

All adjacent and perimeter roadway sumps to Wakefield Street or Jervois Quay 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 watersystems.

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 washeddown 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 offsite. 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 110 Jervois Quay / 121 Wakefield Street.

A limited contamination survey has been conducted which has indicated the presence of contamination and not representative of the whole site as once RNZB building is removed a full survey 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 theelements 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 undertakenas 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

worksComplete 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 110 Jervois Quay / 121 Wakefield Street on behalf of the site owner Wellington CityCouncil

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 – KerrinM@mcguinness.co.nz
LT McGuinness Project Manager	TBC
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 ConstructionManagement Plan.

Personal Protective Equipment (PPE)

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

Fitted asbestos

respiratorDisposable

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 are 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 inductionprocess, 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 theexcavation 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 work 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 asuitable 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 dampbefore 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 forasbestos 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 tosign off on the Geotextile installation, including a photographic survey.

Following approval of the geotextile installation the asbestos controls and decontamination facilitiescan 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

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 deposed 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 mannerand is fit for purpose.

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

As far as can be determined from the visual clearance inspection, the contaminated spoilarea 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 beundertaken should the Geotextile matt and soil underneath need to be disturb at a futuredate.

Signed by

SECTION 17.0

ENVIRONMENTAL MANAGEMENT PLAN

Vision

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

LT McGuinness Limited 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 Limited 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

On the MFC Carpark Project there are four groups with responsibility for the environmental management of the contract;

- The Client;
- LT McGuinness Limited 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 Limited
	Structural Engineer:	Dunning Thornton Consultants
	Building Services Engineer	Aurecon
	Geotechnical Engineer:	Tonkin + Taylor

LT McGuinness Limited 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 Limited 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 7:00 am to 7 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.

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 will be prepared for the MFC Carpark 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.

Contaminated Ground

If there is ground contamination present, it may have the following implications:

- Additional health and safety requirements during the works.
- Landfill disposal of surplus soil that has to be disposed off-site (i.e., not clean fill).
- Pre-treatment would be required if highly contaminated material is present.
- Odour management during works and to prevent odour entering buildings.
- Contaminated Site Management Plan before works begin and a Site Validation Report on completion of works.
- A Long-Term Site Management Plan if contamination remains onsite (e.g., beneath building or paving).

All of the above will be confirmed on final testing and design and an updated and agreed Construction Management Plan will be established prior to any construction activities commencing on site. This CMP will incorporate a detailed Contaminated Site Management Plan, and all ground works will be carried out in accordance with the CSMP, which will be reviewed and updated regularly

REPORT

Tonkin+Taylor

Michael Fowler Centre Carpark Site

Ground Contamination Assessment

Prepared for
Willis Bond & Co
Prepared by
Tonkin & Taylor Ltd
Date
November 2016
Job Number
1001014

Exceptional thinking together
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Table of contents

1 Introduction

Tonkin & Taylor Ltd (T+T) has been commissioned by Willis Bond & Co to undertake a ground contamination investigation in support of pre-purchase for the Michael Fowler Centre (MFC) Carpark, 111 Wakefield Street, Wellington ("the site"). The location of the site is presented below. This investigation was undertaken in accordance with our proposal of 1 November 2016.

This report has been prepared and reviewed by a suitably qualified and experienced practitioner as required by the NES Soil[1] and as described in the NES Soil Users' Guide[2]. This report meets the general requirements of a preliminary site investigation (PSI) and detailed site investigation (DSI) as outlined in the NES Soil User's Guide.

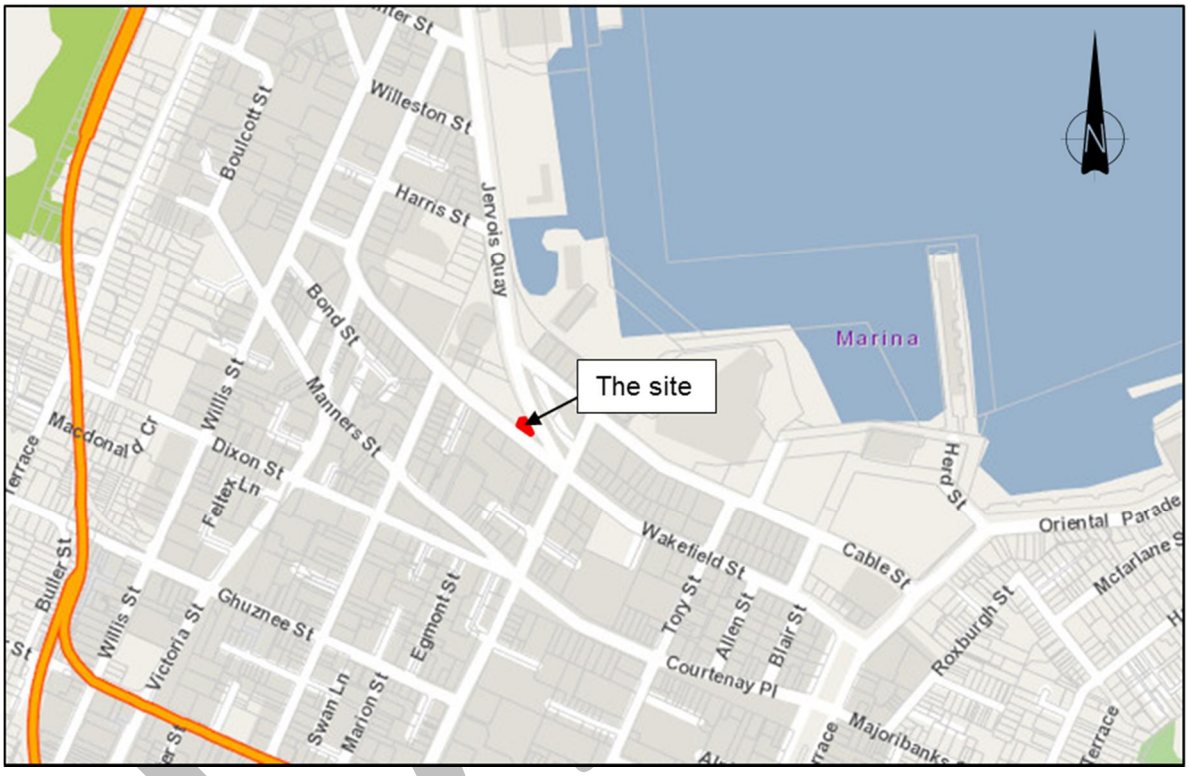


Figure 1.1 Site location plan. Selected map content sourced from LINZ datasets. Crown Copyright Reserved.

1.1 Background and objectives

We understand that the Willis Bond & Co proposes to purchase the site from Wellington City Council (WCC) and construct two apartment blocks: one 4-storey and one 8-storey. At this stage, a single level basement may possibly be constructed.

The Greater Wellington Regional Council Selected Land Use Register (the SLUR) shows no potentially contaminating industries or activities on the site. However, from our experience of adjacent sites, approximately 4 to 5m of reclamation fill could be present (placed in 1886/1889), with the boundary between phases of reclamation potentially passing through the site. Additionally, information provided by yourselves indicates that a tramway power house was historically present (demolished circa 1930). Subsequently an air raid bunker was constructed on the site.

[1] Ministry for the Environment (2011) Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011.
[2] Ministry for the Environment (2012) Users' Guide National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health.

Given the former industrial use of the site and the potential for the site to be founded on reclaimed land, there is a possibility that the soil has been contaminated.

Willis Bond & Co has engaged T+T to undertake an assessment of potential ground contamination issues at the site, and to identify what implications ground contamination may have for the proposed development, including, but not limited to the need for contamination remediation or management and soil disposal requirements.

1.2 Scope of work

- A desk-based assessment to identify potential sources of contamination at the site comprising our review of:
  - Selected property files from the WCC archive.
  - WCC Thomas Ward maps archive.
  - Historical aerial photographs provided by WCC.
  - Historical certificates of title (CoT) provided by Land Information New Zealand (LINZ).
  - Alexander Turnbull Library collection photographic archive.
- Site investigation comprising:
  - A site walkover to identify any visible areas of surficial contamination.
  - The collection of soil/fill samples from borehole investigations undertaken across the site at eight locations to a maximum depth of 5 m below ground level (bgl).
  - The analysis of soil samples for key contaminants to assess contaminant concentrations in soil/fill to be disturbed and removed during the site's redevelopment.
  - Comparison of detected contaminant concentrations against relevant risk-based landuse and worker health and safety criteria, and disposal facilities acceptance criteria.
- Preparation of this report.

2 Site Description

2.1 Site identification

The site is located in the Wellington Central Business District and is bounded by Jervois Quay to the east and Wakefield Street to the west. The legal description of the site including its current planning zoning is provided in Table 2.1 below.

Table 2.1: Site identification

Street address	111 Wakefield Street, Wellington
Legal description	Part Lot 1 DP 10802
Site Owner	Wellington City Council
Site area	2,180 m^2
Zoning	Open space A

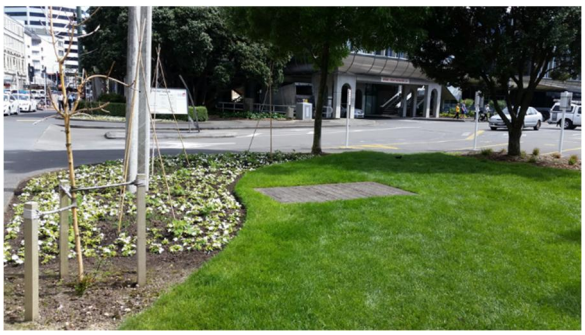
2.2 Site condition

A contaminated land specialist completed a walkover visual survey on 09 November 2016. Relevant observations made at the time of the inspection are summarised below with key areas of interest shown on Figure 2, Appendix A and Photographs 1-4.

- The site is generally flat with no major topographical features within the site.
- The site generally comprises an asphalt carpark for the Michael Fowler Centre (Photograph 1). A number of cut/ patch areas were observed on the carpark, which appear to be associated with repairs to underground services (Photograph 2).
- Within the northwest of the site, there is a small grassed area (approximately 160 m^2), which contains a concrete pad (Photograph 3). It is likely that underlying the concrete pad is a pump for a stormwater overflow tank, which extends into the northwest corner of the site.
- Within the southeast section of the site, there is a landscaped area vegetated with grass and trees. No evidence of vegetated stress, which may indicate potential ground contamination, was observed (Photograph 4).
- The land uses surrounding the site comprises commercial, residential, and retail.

Photograph 1: The site comprises a carpark to the Michael Fowler Centre. Photograph taken on 9 November 2016. Photograph facing southeast.

Photograph 2: Cut/patch areas within the carpark. Photograph taken on 9 November 2016.



Photograph 3: Grassed area within the northwest corner of the site. The concrete pad, which is likely overlying a stormwater pump, can be seen in the centre of the photograph. Photograph taken on 9 November 2016. Photograph facing north.

Photograph 4: Landscaped area within the southeast section of the site. Wakefield Street can be seen in the background. Photograph taken on 9 November 2016. Photograph facing southwest.

2.3 Geology, hydrology and hydrogeology

2.3.1 Published geology

Published geological information indicates that the site is underlain by reclaimed land with fill consisting of domestic waste, sand, boulders, and rock (Q1n)[3].

Semmens (2010)[4] indicates that the site and surrounds were reclaimed in two stages: 1886 (western section of the site) and 1889 (eastern section of the site). The appropriate boundary between the two reclamation fill areas is shown in Figure 3, Appendix A. Reclamation fill comprised "locally quarried, end dumped, weather greywacke sandstone, mudstone and spoil, domestic waste (brick, glass, wood etc.), sand, boulders and engineering fill poorly compacted to compact"[4].

2.3.2 Site geological information

The soil profile onsite was inferred from a T+T geotechnical investigation[5] conducted in 2016. The inferred soil profile is in Table 2.2.

Table 2.2. Inferred soil profile

Depth to top of layer (m)	Thickness (m)	Description
0	3.6 – 4.4	Reclamation fill: mixed loose silty/ sandy GRAVEL and gravelly SILT.
3.6 – 4.4	0.5 – 1.9	Beach sand: Upper layers comprise loose SAND, grading to medium dense gravelly SAND. Contains shells.
4.1 – 6.3	Unknown. Approximately 50 - 60	Alluvium: Comprises interbedded SAND and GRAVEL with SILT lenses
>55	-	Greywacke rock

[3] Begg, J. G., Johnston, M. R. (compilers) 2000. Geology of the Wellington area. Institute of Geological and Nuclear Sciences 1:250 000 geological map 10. 1 sheet + 64 p. Lower Hutt, New Zealand: Institute of Geological and Nuclear Sciences Limited.

[4] Semmens S. (2010). An Engineering Geological Investigation of the Central Wellington Area.

[5] T+T (2016). Michael Fowler Centre Carpark Development, Wellington: Geotechnical Feasibility Report. Report prepared for Wellington City Council. T+T ref: 86042.000.

2.3.3 Hydrogeology and hydrology

The depth to groundwater has been inferred from the T+T geotechnical investigation.

Groundwater was encountered in the boreholes conducted for this investigation between 1.9 m and 2.2 m bgl, as discussed Section 4.3. Groundwater levels are expected to fluctuate with tidal cycles.

Groundwater is expected to discharge to Wellington Harbour located approximately 160 m northeast of the site.

Water supply is reticulated in Wellington. Groundwater bores are present in the vicinity but none of these have been identified for extractive use[6]. Groundwater quality in the near vicinity of the site will be low given the extent of the reclamation. Site history and potential for contamination

2.4 Site history

Historical information relating to activities undertaken on the site was collected from the information described in Appendix B, a summary of which is provided in this section.

The site is situated on land reclaimed in 1886 and 1889; the fill materials used for the land reclamation included building demolition materials such as bricks, glass, and wood. Following land reclamation, the earliest known use of the site was for a tramway powerhouse. The former tramway powerhouse comprised a brick chimney stack (likely coal-fired) in the southeast section of the site, an electric substation in the north eastern section of the site, and a boiler house in the north western section of the site. It is reported that that the powerhouse tramway was decommissioned in the late 1920's and the former brick chimney stack was demolished in circa 1930. We understand that the balance of the former powerhouse buildings were not demolished when the powerhouse was decommissioned.

Following the decommissioning of the tramway powerhouse, a portion of the site (possibly in the northwest section of the site) was used as a skating rink. The remainder of the former powerhouse building(s) was proposed to be redeveloped as a sport centre; however, it is reported that the proposed redevelopment of the site did not occur.

During World War II, the former powerhouse buildings were used for storage of foodstuffs until 1943. Photographs of Wakefield Street indicate that an air raid shelter may have been constructed on the site; however, the location of the air raid shelter is unknown.

It is documented in a letter dated 1964, that Departmental Buildings on Wakefield Street were demolished; it is unclear from the letter whether the Departmental Buildings refer to the Tramway Powerhouse. The earliest historical aerial photograph indicates that the site has been used as a carpark and landscaped area since at least 1969. The layout of the site remained relatively similar since the 1969 aerials, with the exception that the carpark was extended further south in the 1980's.

The site is not listed on the Greater Wellington Regional Council (GWRC) selected land use register (SLUR) of potential contaminated sites.

2.5 Potential for Ground Contamination

This investigation has identified that HAIL[7] activities were (or are likely to have been) undertaken at the site. The activities, potential contaminants and an assessment of the likelihood, potential magnitude and possible extent of contamination are presented in Table 3.1.

[6] Greater Wellington Regional Council GIS viewer accessed 29th November 2016.
[7] Ministry for the Environment (October 2011) Hazardous Activities and Industries List (HAIL).

Table 2.1: Potentially contaminating activities

Land use/activity	HAIL reference	Potential contaminants	Magnitude, possible extent and likelihood of contamination
Land reclamation (1886 / 1889)	G3 - landfilling	Unknown but a broad range of contaminants likely depending on the materials used during the reclamation. Potential contaminants include polycyclic aromatic hydrocarbons (PAH) and metals.	Possible contamination of soils across the site to a depth of approximately 4 m if contaminated materials were used during land reclamation.
Tramway powerhouse	B4 – power stations, substations or switchyards	Hydrocarbons	A tramway power station was operating on the site until circa 1930. It is likely that oils and greases for machinery were used within the powerhouse. Use of polychlorinated biphenyls (PCBs) is not considered likely as PCBs were not manufactured until 1930. There is a low potential for hydrocarbon contamination underlying the former powerhouse. However, it is likely that these soils have been disturbed and distributed during any subsequent redevelopment of the site.
Coal-fired boiler room	E5 – coal or coke yards	Metals and PAH	There was a coal-fired boiler room located within the northern section of the site until circa 1930. It is likely that coal would have been stored within or near the boiler room, and therefore, possibly within the site boundary. There is a potential for coal-related contamination in the surface soils beneath or adjacent to the coal yard areas. Details of historical coal-ash waste disposal are unknown. There is a possibility that coal-ash was disposed onsite. However, there was no visual indications during the field investigation that this has occurred.
Building demolition	E1 – Asbestos products manufacture or disposal	Asbestos, lead based paints	Possible contamination of shallow soils due to demolition of buildings (i.e. Powerhouse) altered during the period in which asbestos materials were commonly used in New Zealand (1950s -1980s).
Historical filling	G5 – waste disposal to land	Metals, PAH, asbestos	There is a possibility that former air raid shelters may have been located onsite, and subsequently infilled after World War II. Possible localised contamination of soils from historical filling with contaminated materials.

3 Field investigation

3.1 Field programme and rationale

The T+T field investigation was conducted on 9 - 10 November 2016. Eight boreholes, BH1 – BH 8, were drilled using a window sampler at the locations shown on Figure 2, Appendix A. In general, the boreholes were located approximately 20 m apart to establish the nature of the underlying fill materials. BH1 and BH5 were located on the 1886 reclamation area; the balance of the sampling locations were located on the 1889 reclamation area.

The boreholes were drilled to a maximum depth of 5 m; in most sample locations the target drill depth was unable to be reached due to refusal, as detailed in Table 4.1.

A large portion of the site was unable to be sampled due to the following constraints: operational road, private carparks, overflow tank, and underground services.

The materials encountered were logged in general accordance with the NZ Geotechnical Society guidelines[8].

Table 4.1. Target sampling depths and actual depths reached.

Sample location	Reclamation date	Target depth (m)	Drilled depth (m)	Comment
BH1	1886	3	3	-
BH2	1889	5	0.75	Three attempts to drill to 5 m depth within a 0.5 m radius of BH2 were undertaken. Refusal was encountered between 0.4 – 0.75 m due to concrete.
BH3	1889	3	1.4	Two attempts to drill to 3 m depth within a 0.5 m radius of BH3 were undertaken. Refusal was encountered at 1.4 m due to suspected concrete.
BH4	1889	3	2	Two attempts to drill to 3 m depth within a 0.5 m radius of BH4 were undertaken. Refusal was encountered at 2 m due to concrete. Poor sample recovery was encountered in the second drilled borehole.
BH5	1886	5	5	-
BH6	1889	5	1.4	One attempt to drill to 5 m was undertaken. Refusal encountered at 1.4 m due to concrete.
BH7	1889	5	0.5	One attempt to drill to 5 m was undertaken. Refusal encountered at 0.5 m due to concrete.
BH8	1889	5	0.9	One attempt to drill to 5 m was undertaken. Refusal encountered at 0.9 m due to concrete.

[8] NZ Geotechnical Society Inc (2005). Field description of soil and rock: guidelines for the field classification and description of soil and rock for engineering purposes.

3.2 Soil/fill sampling procedures

Soil/ fill sampling was undertaken as follows:

- Samples of soil were collected from key lithology units.
- Freshly gloved hands were used to collect the samples from the recovered core. Samples were subdivided for chemical and asbestos analysis and the subsamples were placed immediately into the appropriate laboratory supplied sample containers.
- Sampling equipment (hand trowel, core casings) was decontaminated between sample locations using clean water and Decon 90 (a phosphate-free detergent) rinses.
- Soil samples were shipped, under chain of custody documentation, to Hill Laboratories (in chilled containers) for chemical contaminants and asbestos analysis.
- Three samples which contained the highest contaminant concentrations were tested using the toxicity characteristic leaching potential (TCLP) procedure by the analysing laboratory.

3.3 Stratigraphy

The following generalised stratigraphy was observed during the field investigation:

- 1886 reclamation fill (fill type 1) was encountered underlying topsoil from 0.4 to 5 m bgl (BH1 and BH5). This reclaimed fill comprised a mixture of sandy gravels, silty gravels, and sandy silts (Photograph 5).
- Fill materials (fill type 2) were encountered at BH2-4 and BH6-8 from 0.05 m to 2.0 m bgl. This fill generally comprised sandy gravels with trace to some brick and concrete fragments (Photograph 6). It was not clear from observing the strata whether the materials encountered were representative of 1889 reclaimed fill, demolition wastes from the powerhouse or imported fill materials during the carpark development.

Borehole logs are provided in Appendix C.

Hydrocarbon odours (possibly petrol or oil) and black gravels/slag were observed in shallow fill materials at sample BH5 from 0.3 m to 0.5 m bgl.

Groundwater was encountered in the boreholes between 1.9 m and 2.2 m bgl.

Photograph 5: Recovered core from BH5. Black gravels/slag can be observed at 0.3 m. Photo taken on 9 November 2016. Photo sourced from Geotechnics Limited.

Photograph 6: Recovered core from BH4. Photo taken on 9 November 2016. Photo sourced from Geotechnics Limited.

3.4 Soil analysis results

3.4.1 Data quality

A quality assurance and quality control (QA/QC) program was implemented as part of field procedures, which included:

- Sampling equipment decontamination between sampling locations.
- Preservation of samples with ice during transport from the field to the laboratory.
- Transportation of samples with accompanying Chain of Custody documentation.
- Compliance with laboratory sample holding times.

The laboratory testing was undertaken by Hill Laboratories Ltd, which is accredited and audited annually by International Accreditation New Zealand (IANZ). The laboratory's quality control measures include testing of blanks with all batches of samples and frequent replicates and spikes, along with peer review of worksheets.

Standard laboratory QA/QC reports were not reviewed for this project, but are available from the laboratory upon request.

Laboratory testing was restricted due to limited sample recovery and on this basis no duplicate sampling was undertaken. Similarly, only presence/absence testing was undertaken.

3.4.2 Results evaluation and assessment criteria

A summary of the laboratory test results for soil/fill materials are provided in Table 4.2 and a summary of the leachate potential of fill material are provided in Table 4.3. Full laboratory transcripts attached in Appendix D.

The results in Table 4.2 and Table 4.3 have been evaluated against guidance documents (where appropriate) and standards that have been selected in accordance with the MfE CLMG No. 2[9] and are as follows:

- URS (2003) Determination of Common Pollutant Background Soil Concentrations for the Wellington Region (maximum concentrations recorded for Wellington Region) with respect to disposal as cleanfill.
- MfE (2004) Module 2 – Hazardous waste guidelines: landfill waste acceptance criteria and landfill classification with respect to disposal as Class A landfill.
- NES Soil soil contaminant standards (SCS) for an outdoor worker (unpaved) land use with respect to the protection of workers during soil disturbance.
- NES Soil SCS for a high-density residential land use with respect to the proposed future use of the site for residential purposes.
- Where the NES Soil standards are not available, applicable standards include:
  - NEPC (2013) national environment protection (assessment of site contamination) measures for commercial/industrial and high-density residential land use (NEPM).
  - MfE (August 1999) Guidelines for assessing and managing petroleum hydrocarbon contaminated sites in New Zealand (SAND, residential and commercial/industrial, all pathways, surface).
  - MfE (August 1999) Guidelines for assessing and managing contaminated gasworks sites in New Zealand (high-density residential and commercial/industrial, adopted).

Evaluation of the available laboratory results against the assessment criteria show:

- In general, the topsoil and fill (type 1 and 2) samples tested contained at least one metal or PAH contaminant above the published background concentrations.
- At least one sample of the topsoil and fill (type 1 and 2) tested contained metals above the Class A landfill screening assessment. However, further testing of selected samples using the TCLP indicates that metal concentrations in leachate are below the Class A acceptance criteria.
- Two samples of fill type 2 contained arsenic (BH4 at 0.5 - 0.7) and BaP equivalent (BH3 at 0.8 – 1.1) concentrations nearly double the SCS for a high-density residential land use and SCS for an outdoor worker.
- The fill sample that had detectable odours of hydrocarbons did not contain volatile organic compounds (VOCs) above the analytical detection limit.
- One out of four samples of fill type 1 tested positive for the presence of asbestos; three out of six samples of fill type 2 tested positive for the presence of asbestos.

Asbestos was detected in various lithology units between 0 m to 1 m bgl, and therefore, as the presence of asbestos was not confined to a particular fill type. Due to the site-constraints on borehole locations, there is insufficient data to laterally distinguish materials that may contain asbestos from materials that may not. However, it is likely (but not certain) that asbestos contamination is confined to a particular depth, i.e. the maximum depth that fill materials that were disturbed during the demolition of the former tramway powerhouse. Therefore, as a precautionary

[9] Ministry for the Environment (revised 2011) Contaminated Land Management Guideline No.2 - Hierarchy and Application in New Zealand of Environmental Guideline Values.

measure, all fill materials between 0 m to 1.5 m bgl should be assumed to contain asbestos. Soils below 1.5 m may also contain asbestos, however, additional site investigation works would be required to confirm this.

Table 4.2. Soils results – Michael Fowler Centre Carpark (mg/kg)

	Strata	Topsoil	Fill type 1 (from 1886)					Fill type 2 (either 1889 fill, demolition fill or imported fill)										
	Sample Location	BH5	BH5	BH5	BH5	BH5	BH1	BH2	BH3	BH3	BH4	BH4	BH4	BH6				
	Sample Depth (m)	0.0 - 0.3	0.3 - 0.5	0.6 - 0.8	1.5 - 1.7	3.6 - 3.8	0.5 - 0.7	0.5 - 0.7	0.4 - 0.6	0.8 - 1.1	0.5 - 0.7	1.0 - 1.65	1.9 - 2.0	0.8 - 0.9	Background[1]	Class A[2]	Residential	Commercial
Metals	Arsenic	6	11	4	-	5	4	7	8[8]	43	100	-	9	6	7	100	45[3]	70[3]
	Cadmium	0.4	0.2	< 0.10	-	0.11	< 0.10	< 0.10	0.2	< 0.10	0.67	-	0.89	< 0.10	0.2	20	230[3]	1300[3]
	Chromium	18	18	16	-	15	15	20	16	12	16	-	16	15	21	100	1500[3]	6300[3]
	Copper	62	60	11	-	19	9	20	79[8]	40	94	-	27	29	25	100	NL[3]	NL[3]
	Lead	310	199	25	-	320	28	39	250	71	182	-	61	59	180	100	500[3]	3300[3]
	Mercury	0.33	0.17	< 0.10	-	0.55	< 0.10	0.1	0.54[8]	0.13	4.4	-	0.17	0.34	2.6	4	1000[3]	4200[3]
	Nickel	10	17	8	-	10	9	17	14	10	28	-	15	13	21	200	1200[4]	6000[4]
	Zinc	181	199	40	-	350	48	100	194	74	410	-	820	77	201	200	60000[4]	400000[4]
Asbestos		-	Present	ND	ND	-	ND	ND	Present	ND	Present	ND	-	Present	ND	Present	<0.001 w/w[5]	<0.001 w/w[5]
PAH	Acenaphthene	-	1.58	0.07	-	0.08	< 0.03	< 0.03	0.11	1.78	< 0.03	-	< 0.03	0.38	-	-	NA[6]	NA[6]
	Acenaphthylene	-	10	0.54	-	0.13	< 0.03	< 0.03	0.60	2.50	0.12	-	0.04	3.30	-	-	NA[6]	NA[6]
	Anthracene	-	10.10	0.48	-	0.32	< 0.03	< 0.03	1.13	10.10	0.17	-	< 0.03	4.30	0.05	-	NA[6]	NA[6]
	Benzo[a]anthracene	-	12.80	0.55	-	0.99	< 0.03	0.04	5.60	38	0.76	-	0.08	14.40	-	-	-	-
	Benzo[a]pyrene (BAP)	-	15.10	0.62	-	1.17	< 0.03	0.08	5.90	36	0.86	-	0.15	16.50	0.33	300	-	-
	Benzo[b]fluoranthene + Benzo[j]fluoranthene	-	16.30	0.67	-	1.30	< 0.03	0.09	7.10	39	1.22	-	0.19	18.20	-	-	-	-
	Benzo[g,h,i]perylene	-	12.80	0.48	-	0.78	< 0.03	0.09	3.90	19.40	0.73	-	0.12	9.30	-	-	-	-
	Benzo[k]fluoranthene	-	6.70	0.26	-	0.49	< 0.03	0.03	2.70	17.40	0.45	-	0.07	7.30	-	-	-	-
	Chrysene	-	12.30	0.48	-	0.90	< 0.03	0.04	4.60	31	0.81	-	0.08	12.60	-	-	-	-
	Dibenzo[a,h]anthracene	-	1.90	0.07	-	0.16	< 0.03	< 0.03	0.79	4.90	0.16	-	0.03	2.10	-	-	-	-
	Fluoranthene	-	42	2	-	2.30	< 0.03	0.08	11.30	69	1.57	-	0.05	32	0.57	-	-	-
	Fluorene	-	5.50	0.30	-	0.11	< 0.03	< 0.03	0.12	1.53	0.03	-	< 0.03	0.91	-	-	NA[6]	NA[6]
	Indeno(1,2,3-c,d)pyrene	-	10.90	0.45	-	0.80	< 0.03	0.09	4.10	20	0.71	-	0.13	9.60	-	-	-	-
	Naphthalene	-	10.30	0.63	-	< 0.16	< 0.13	< 0.13	< 0.13	0.59	0.30	-	< 0.13	0.29	0.02	20	58[7]	190[7]
	Phenanthrene	-	50	2.50	-	1.24	< 0.03	0.05	4.70	25	1.03	-	0.04	12.50	0.35	-	NA[6]	NA[6]
	Pyrene	-	44	1.98	-	2.30	< 0.03	0.10	11	66	1.51	-	0.06	30	0.60	-	1600[7]	NA[7]
	BaP equivalent	-	22.21	0.91	-	1.72	<0.03	0.46	8.80	53.34	1.36	-	0.23	24	-	300	24[3]	35[3]
BTEX	Benzene	-	< 0.4	-	-	-	-	-	-	-	-	-	-	-	-	10	1.1[7]	3[7]
	Toluene	-	< 0.7	-	-	-	-	-	-	-	-	-	-	-	-	2000	68[7]	94[7]
	Ethylbenzene	-	< 0.4	-	-	-	-	-	-	-	-	-	-	-	-	1000	53[7]	180[7]
	m&p-Xylene	-	< 0.4	-	-	-	-	-	-	-	-	-	-	-	-			
	o-Xylene	-	< 0.4	-	-	-	-	-	-	-	-	-	-	-	-	2000	48[7]	150[7]

"ND" = not detected, "NA" = contaminant not limiting as estimated health-based criterion is significantly higher than that likely to encountered onsite, "NL" = no limit, "-" = not available.
Green indicates that the published background has been exceeded, Blue indicates that the relevant standards for a high density residential land use and outdoor worker, Orange indicates that the Class A landfill screening criteria has been exceeded.
1 URS (2003) Determination of Common Pollutant Background Soil Concentrations for the Wellington Region (maximum concentration in Wellington Region).
2 MfE (2004) Module 2 – Hazardous waste guidelines: landfill waste acceptance criteria.
3 NES Soil (2012) soil contaminant standards (SCS).
4 NEPC (2013) national environment protection (assessment of site contamination) measures (NEPM).
5 Western Australian Department of Health (May 2009) Guidelines for the assessment, remediation and management of asbestos contaminated sites in Western Australia.
6 MfE (August 1999) Guidelines for assessing and managing contaminated gasworks sites in New Zealand.
7 MfE (August 1999) Guidelines for assessing and managing petroleum hydrocarbon contaminated sites in New Zealand.
8 Replicate analyses performed by the laboratory showed greater variation than would normally be expected due to the heterogeneity of the sample.

Table 4.3: Leachable (TCLP) concentrations - Michael Fowler Centre Carpark (mg/l).

Sample location	BH4	BH4	BH5	Class A[1]
Sample depth (m)	0.5 – 0.7	1.9 – 2.0	3.6 – 3.8	
Arsenic	0.12	<0.021	<0.021	5
Cadmium	0.0037	0.0064	<0.0011	1
Chromium	<0.011	<0.011	<0.011	5
Copper	0.015	<0.011	<0.011	5
Lead	0.0065	0.005	0.133	5
Mercury	<0.0021	<0.0021	<0.0021	0.2
Nickel	<0.011	<0.011	0.023	10
Zinc	0.68	1.86	1.83	10

1 MfE (2004) Module 2 – Hazardous waste guidelines: landfill waste acceptance criteria (concentrations in leachate).

3.5 Conceptual site model

A conceptual model as defined by the MfE in the CLMG No.5, sets out known and potential sources of contamination, potential exposure pathways, and potential receptors. For there to be an effect from the proposed activity there has to be a contamination source and a mechanism (pathway) for contamination to affect human health or the environment (receptor).

A conceptual site specific model has been developed for the proposed activity which takes into account the available information about the site, and our understanding of the potential effects on human health and the environment. This model is presented below as Table 4.4.

Table 4.4: Conceptual site model

Source	Pathway	Current receptors	Future receptors (during/ post ground disturbance works)
Contaminated fill materials, including asbestos, PAH, and metal contamination	Inhalation of dust or asbestos fibres if the soils are disturbed, dermal contact, and incidental ingestion.	Carpark users - not applicable because site is paved.	Construction and excavation workers during possible site development. Wider environment with respect to disposal of materials. Ingestion and or dermal exposure for future site residents – not applicable because onsite encapsulation or disposal of contaminated materials is likely. Inhalation exposure for future residents - low potential given past land uses unlikely to include volatile chemical use.
	Groundwater flows to the Wellington Harbour.	Flora and fauna of the Wellington Harbour.	

4 Development implications

4.1 Metals and hydrocarbon contamination

Analytical results for chemical contaminants indicate that topsoil and fill type 1 (from 1886) are below the NES SCS high-density residential land use criteria. Contaminant levels in fill type 2 (from 1889) are generally below the NES SCS high-density residential criteria, although two results exceed these criteria.

Given the heterogeneous nature of the materials at the site and limited ability for sample recovery, we do not consider that differing management of the two types of fill identified is warranted. Further, we note that it is unlikely that localised remediation or management will be possible to target where contaminants have been identified above criteria.

However, the fill should be able to be retained onsite as long as it remains under sealed areas or under a sub-surface barrier layer, subject to geotechnical and building support considerations.

The investigations conducted to date have been hampered by access limitations and refusal during drilling. More characterisation is required to better define the nature of the contamination to inform development of the site including potential for groundwater impacts. Soils excavation at the site would be best undertaken using an excavator to dig test pits or a sonic drill rig and monitoring wells would be required for a groundwater assessment. Contamination sources identified to date do not indicate the need to design and install measures to protect the building from volatile contaminants but the assessment has been limited and the possibility of the need for building protection measures, although unlikely, cannot be ruled out.

4.2 Soil disposal

Based on the TCLP testing, fill materials meet criteria for disposal at Class A landfills (e.g. Silverstream Landfill) subject to approval by the landfill operator.

Disposal of Class A landfill materials will likely cost approximately $153/ tonne excluding haulage fees. A basement across the footprint of the entire site could generate some 6,000m^3 of cut[10] and at 2 tonnes/m^3, the disposal fee (i.e. gate fee at the landfill) would in the vicinity of $2M. Landfill rates can vary with time and disposal operator, and so it would be prudent to confirm the landfill gate fee at each stage of the development planning.

4.3 Management of contamination during the works

A range of controls will be necessary to manage contamination during redevelopment. Management of contaminated groundwater may also be required, depending on the basement excavations. Further, a long-term solution for groundwater will be required for a basement, with solution being dependent upon contaminant levels, which are currently unknown.

A Site Management Plan (SMP) will be needed to fulfil the requirements for supporting applications for resource consents (see Section 5.5 below), detailing the nature of the management controls. The SMP will need to provide procedures for managing, safe handling and disposing of contaminated materials along with health and safety procedures for workers and measures for validating the site (i.e. documenting the site condition) on completion of the development works. Environmental risks are expected to be less than minor, if the work is completed according to the procedures which will be stipulated in a robust SMP.

[10] Assuming that the majority of the footprint of the site includes a basement (2000 m^2) to a depth of 3m bgl.

4.4 Asbestos controls

The presence of asbestos fines means the Health and Safety at Work (Asbestos) Regulations (2016) and the Worksafe NZ Code of Practice (CoP) - Management and Removal of Asbestos (May 2016) need to be considered. The management of asbestos-in-soils under the Regulations is currently under development. However, the key requirements of the CoP are that works must be undertaken with appropriate asbestos controls in place and that contaminated soil removed must be disposed of as asbestos waste to an approved disposal site.

Testing to date consists of identifying presence/absence only. Soil or fill which contains <0.001% w/w would be deemed 'asbestos-related works'; soil or fill which contains >0.001% would be deemed 'Class A asbestos removal works'. Worksafe has not provided clear direction regarding the controls required for 'asbestos-related works' where asbestos is present in soil, but our interpretation is that Class A controls (including dust controls, air monitoring, decontamination units and PPE) would apply but without the requirement for notification and supervision.

An indicative cost for asbestos removal works (i.e. for the controls stated above) could be in the order of $1000 - $2000/day. However, costs can decrease over time, if air monitoring during the ground breaking works suggests that the risk of asbestos fibres being released to the atmosphere is minimal. The presence of asbestos can also add costs to disposal.

Further testing of soils samples will be required to ascertain the levels of asbestos. Test pits would provide better access to gather the samples volumes required. Further, test pits would provide access to inspecting the nature of demolition materials present and for testing potential ACMs. However, we understand that test pitting may not be possible if continuous operation of the carpark is required. If test pitting cannot be conducted, drilling (e.g. with a sonic drill rig) may be used instead. However, it should be noted that the quality of data (i.e. from observing the strata and demolition materials) may not be as good from drilling as with test pitting.

4.5 Regulatory implications

The review of historical information has identified HAIL activities have been undertaken at the site in the past which means that that it will be regulated under the NES Soil. Redevelopment will require consents under the NES Soil and potentially under the regional plan for discharges. A review of regulatory requirements will be required to determine consenting requirements.

5 Conclusion

T+T has been commissioned by Willis Bond & Co to undertake a ground contamination investigation for the MFC Carpark, 111 Wakefield Street, Wellington.

The investigations were undertaken to identify current and historical activities at the site and the potential for these activities to have resulted in ground contamination. The scope included limited soil sampling and testing. The results found that:

- The site and area beyond comprises reclaimed land which was filled in 1886 and 1889. PAH and metal contamination was encountered in the soils investigations indicating contaminated fill has been used for such land reclamation.
- The earliest known use of the site was as a tramway powerhouse. The powerhouse was decommissioned in circa 1930. The former powerhouse buildings were likely demolished in the early 1960's.
- Asbestos contamination of fill is present and this may have occurred during the demolition of the powerhouse buildings. Testing indicates the presence of asbestos in four of the ten soil samples tested.
- During World War II, the site may have been used as an air raid shelter; however, we were unable to confirm this.
- The site has been used as a carpark from at least the late 1960's to present day.

Based on an assessment of the current information which is available to us, the implications for the proposed redevelopment works are expected to be as follows:

- During earthworks, standard worker health and safety provisions will apply (i.e. maintaining good hygiene standards and not working in dusty conditions).
- Test data indicates materials require disposal to a Class A licensed landfill facility. Excavations, for a single-storey basement, could result in disposal fees (i.e. landfill gate fees) in the vicinity of $2M (excluding excavation and transport).
- An indicative cost for asbestos removal works (i.e. for the controls stated above) could be in the order of $1000 - $2000/day. However, costs can decrease over time, if air monitoring during the ground breaking works suggests that the risk of asbestos fibres being released to the atmosphere is minimal.
- Due to site constraints, investigation to only 1.5 m over a significant proportion of the site could be achieved. Therefore, further testing is required to fully assess the implications for the site development.
- A SMP will be required to support the application for resource consents under the NES Soil and potentially regional plans. An SMP must provide procedures for managing, handling and disposing of contaminated materials during the proposed construction along with procedure to manage dust during earthworks activities, health and safety procedures for workers, and measures for validating the site.

Based on the results of the investigation, the following ground contamination related risks have been identified for the development:

- Pre-treatment of fill materials from below 1.5 m depth for disposal as Class A landfill.
- Concrete obstructions in the ground, e.g. relic foundations.
- Indicative landfill and asbestos removal costs can vary over time.

- Groundwater contamination could be present, this may add additionally cost for dewatering during the site development. Additionally, in the worst case scenario, groundwater clean-up may be required.

6 Applicability

This report has been prepared for the exclusive use of our client Willis Bond & Co, with respect to the particular brief given to us and it may not be relied upon in other contexts or for any other purpose, or by any person other than our client, without our prior written agreement.

All recommendations and opinions which are contained in this report are based on data from discrete soil samples. The nature and continuity of subsoil away from the investigation points are inferred but it must be appreciated that actual conditions could vary from the assumed model.

Tonkin & Taylor Ltd

Environmental and Engineering Consultants

Report prepared by:	Authorised for Tonkin & Taylor Ltd by:
.....	.....
Louise Murphy	Stuart Palmer
Environmental Scientist	Project Director

Report certified by a suitably qualified and experienced practitioner as prescribed under the NES Soil Users Guide (April 2012):

.....

Chris Bailey

Environmental Consultant

30-Nov-16

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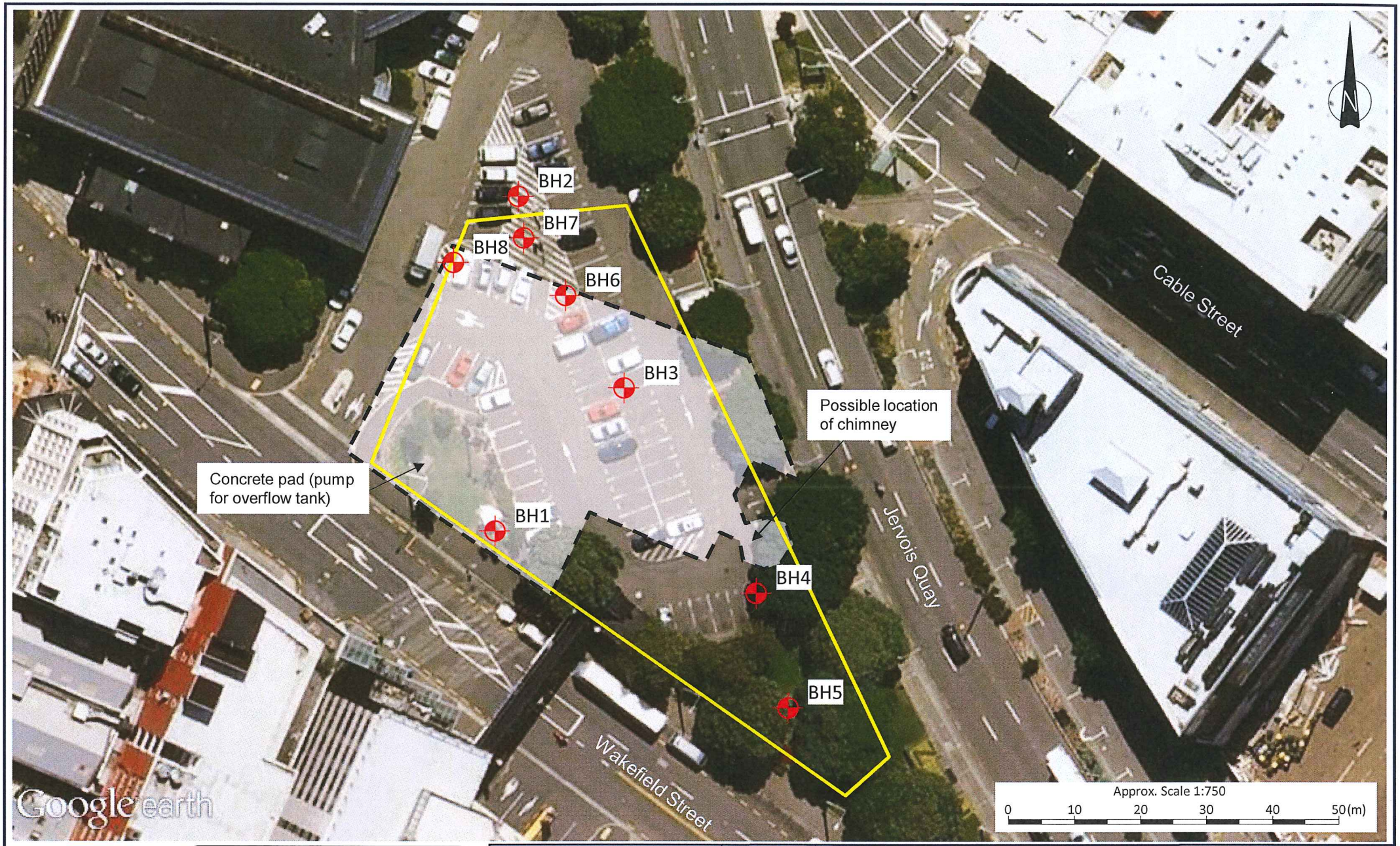
Appendix A: Figures



Notes:
1. Aerial image sourced from Google Earth Pro. Copyright 2016 Google. Image date 03/02/2009.

LEGEND

BH1 Sample location

Indicative location of former powerhouse

Site extent

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DRAWN	LUM	Nov 16
DRAFTING CHECKED	SJK	NOV 16
APPROVED		
FILE : 1001014.Figure2.pptx		
APPROX. SCALE (AT A4 SIZE) AS SHOWN		
PROJECT No. 1001014		

WILLIS BOND & CO

GROUND CONTAMINATION ASSESSMENT

MICHAEL FOWLER CENTRE CARPARK

Sample Location Plan and Key Site Features

FIG. No. Figure 2

REV. 0

A3 SCALE 1: 1000

0 5 10 15 20 30 40 50 (m)

ORIGINAL IN COLOUR

NOTES:

1. Aerial photo sourced from Terralink International (Copyright 2002–2005 Terralink International Limited and its licensors).
2. Reclamation boundaries are approximate only. Based on Semmens (2010) – An Engineering Geological Investigation of the Central Wellington Area.

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DRAWN	LUM	Nov 16
DRAFTING CHECKED		
APPROVED		
FILE : 1001014.Figure3.pptx		
APPROX. SCALE (AT A3 SIZE) AS SHOWN		
PROJECT No. 1001014		

WILLIS BOND & CO

GROUND CONTAMINATION ASSESSMENT
MICAHEL FOWLER CENTRE CARPARK
Land Reclamation Areas

FIG. No. Figure 3

REV. 0

Appendix B: Site history

B Site history

Historical information relating to the site has been collected from a variety of sources. The information presented documents onsite activities, except for the aerial photograph review where comments are also provided on readily observable surrounding land use. The information that has been reviewed is summarised in this appendix.

B 1 Certificates of title (CoT)

A summary of the CoT provided by LINZ is provided below.

Table B1: Summary of CoT information

CT reference	Date issued	Summary
WN3/224	1870	A CoT was issued for land reclaimed from the sea, known as Reserve K, which included the site. The CoT indicates that the site and surrounds were divided into Lots and subsequently sold to various parties
WN269/81	1920	The CoT indicates that the site was transferred to the Major Councillors and Citizens of the City of Wellington in 1920 for public utility purposes
WN125/1	Possibly 1930	This CoT is illegible
WNC1/1333	1964	The CoT for a portion of the site was issued to the Major Councillors and Citizens of the City of Wellington in 1964. The CoT indicates departmental dealings to add a purpose of Electric Tramway Purposes in July 2016.

Copies of the certificates of title are provided in Appendix E.

B 2 Aerial photograph review

Historical aerial photographs from the T+T and WCC library have been reviewed and are summarised below in in Table B2. Selected aerials have been provided in Appendix E.

Table B2: Summary of aerial photograph review

Date and source	Key site features	Surrounding land features
1969 (T+T library)	• The central and northern section of the site is used as a carpark. The balance of site comprise a landscaped area, which includes a 'v'-shaped walkway	• The site is located within a commercially developed area • A building is located to the immediate northeast of the site • Wellington harbour is visible to the east of the site
1970 (WCC library)	• Similar to previous	• Similar to previous
1977 (WCC library)	• Similar to previous	• Similar to previous
1980 (WCC library)	• Similar to previous • A builder's yard appears to extend into the western boundary the site	• The MFC is being constructed to the immediate north of the site
1986 (WCC library)	• The site remains a carpark; however, the layout of the carpark has slightly changed • The 'v'-shaped walkway has been replaced with carparks	• The MFC construction is complete • The building to the immediate northeast of the site has been demolished

	• A landscaped area is located within the northwest section of the site. A small structure is situated on the landscaped area	• Alternations to the buildings located to the immediate southwest of the site are apparent
1996 (WCC webmap)	• Similar to previous	• Similar to previous. Alterations to the southwest buildings are complete
2013 (WCC webmap)	• Similar to previous	• Similar to previous

B 3 Client provided information

The client conducted an internal review of historical information relating to the site. The information obtained from the historical review was provided to T+T; the key information is summarised below and is included in Appendix E.

- A tramway powerhouse was located within the southern section of site prior to being demolished in circa 1930. The area was subsequently beautified with a concrete edged lawn. To the north of former tramway powerhouse (northern section of the site), buildings associated with the decommissioned powerhouse remained on the site till at least the 1940's.
- An undated photograph shows that an engine room was located in the tramway powerhouse; however, it is unclear if the engine room was located within the site.
- An air raid shelter was constructed within the site (exact location unknown) during World War Two (1942).
- A locality plan of Wellington City (undated) indicates that a watercourse (Polhill Gully) ran through the centre of the site.

B 4 Council property file review

The following relevant information was identified by T+T during its review of the WCC property files on 8 November 2016.

- In 1929, a tender to demolish the former Brick Chimney Stack at the old Tramway Powerhouse was accepted.
- An undated plan (likely in 1933) of a portion of the site indicates that an electric substation (old boiler house) was located on Lot 6, situated within the northeast section of the site. The plan indicates that a skating rink was located within the northwest section of the site (Lot 10).
- A plan of a portion of the site (altered in 1937), details a slightly different site layout to the aforementioned plan. The plan indicates that a bus barn was located on Lot 10. An old boiler house and engine room are situated in the northern section of the site.
- The old boiler house was leased to the Blundel Brothers in 1933.
- A letter dated 1964 documents that buildings on Wakefield Street should be demolished (it is unknown if the buildings refer to the former powerhouse).

Key information is provided in Appendix E.

B 5 Alexander Turnbull Library

Information in the Alexander Turnbull Library relevant to the site was reviewed by T+T on 15 November 2016. Only information not detailed in Section B3 is discussed below.

- A news article dated 1943 indicates that the old tramway powerhouse building and the Glide Rink (skating rink) was used to store bulk foodstuff during World War II. The article indicates

that the proposed redevelopment of the old tramway powerhouse building to a sports centres did not occur (provided in Appendix E).

B 6 Thomas Ward Map

The Thomas Ward Map of Wellington City was reviewed by T+T on 7 November 2016. The map indicates that the site is situated on reclaimed land. No other information pertinent to ground contamination was observed.

B 7 Council contamination enquiry

A contamination enquiry was placed by T+T with the Greater Wellington Regional Council (GWRC) on 7 November 2016. The site is not listed on the Selected Land Use Register (SLUR) as a potentially contaminated site and no resource consents for holding dangerous good were found for the site.

Appendix C: Borehole logs

BOREHOLE LOG

BOREHOLE No:BH1
Hole Location: Refer to test location plan
SHEET 1 OF 1

PROJECT: GWN MFC CARPARK-WS-TT	LOCATION: Michael Fowler Centre Carpark	JOB No: 1001014.0010
CO-ORDINATES:	DRILL TYPE: Window Sampler	HOLE STARTED: 10/11/16
	DRILL METHOD: Percussion	HOLE FINISHED: 10/11/16
R.L.:		DRILLED BY: Geotechnics Ltd
DATUM:	DRILL FLUID: N/A	LOGGED BY: EJWL CHECKED:

GEOLOGICAL									ENGINEERING DESCRIPTION										
GEOLOGICAL UNIT, GENERIC NAME, ORIGIN, MINERAL COMPOSITION.	FLUID LOSS	WATER	CORE RECOVERY (%)	METHOD	CASING	TESTS	SAMPLES	R.L. (m)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MOISTURE CONDITION / WEATHERING	STRENGTH/DENSITY CLASSIFICATION	SHEAR STRENGTH (kPa)	COMPRESSIVE STRENGTH (MPa)	DEFECT SPACING (mm)	SOIL DESCRIPTION: Soil type, minor components, plasticity or particle size, colour. ROCK DESCRIPTION: Substance: Rock type, particle size, colour, minor components. Defects: Type, inclination, thickness, roughness, filling.	
		1.90mbgl	100	WS-80mmØ	N/A	*0.05-0.1m Chem	●		0		ML	M	NR				SILT with minor sand, brown. Moist, low plasticity. Sand is fine. Trace rootlets.	
											ML	M	NR				SILT, light grey. Moist, low plasticity.	
						*0.5-0.7m Asb+Chem	●				GW	M	NR				Sandy fine to coarse GRAVEL with trace silt, orange brown. Moist, well graded. Gravel is angular. Sand is fine to coarse. 0.5m- trace red brick fragments and black flecks.	
									1									1
			50	WS-60mmØ													1.0 to 1.5m- no recovery.	
											GW	M	NR				Sandy fine to coarse GRAVELwith trace silt, orange brown. Moist, well graded. Gravel is angular. Sand is fine to coarse.	
												S					1.9m- saturated.	
			100	60mm					2									2
			25	WS-35mmØ													2.2 to 2.8m- no recovery.	
						*2.8-3.0m Chem	●				SW	S	NR				Fine to coarse SAND with some gravel and some silt, bluish grey. Saturated, well	
									3									3
																	graded. Gravel is fine to coarse, angular to subangular.	
																	End of borehole at 3.0mbgl (target depth)	
									4									4
									5									5
									6									

T+T DATATEMPLATE.GDT img

Log Scale 1:30

BORELOG 20161122.JMG.1001014.001.WS.GPJ 23-Nov-2016

BOREHOLE LOG

BOREHOLE No:BH2
Hole Location: Refer to test location plan
SHEET 1 OF 1

PROJECT: GWN MFC CARPARK-WS-TT	LOCATION: Michael Fowler Centre Carpark	JOB No: 1001014.0010
CO-ORDINATES:	DRILL TYPE: Window Sampler	HOLE STARTED: 10/11/16
	DRILL METHOD: Percussion	HOLE FINISHED: 10/11/16
R.L.:		DRILLED BY: Geotechnics Ltd
DATUM:	DRILL FLUID: N/A	LOGGED BY: EJWL CHECKED:

GEOLOGICAL									ENGINEERING DESCRIPTION							
GEOLOGICAL UNIT, GENERIC NAME, ORIGIN, MINERAL COMPOSITION.	FLUID LOSS	WATER	CORE RECOVERY (%)	METHOD	CASING	TESTS	SAMPLES	R.L. (m)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MOISTURE CONDITION / WEATHERING	STRENGTH/DENSITY CLASSIFICATION	SHEAR STRENGTH (kPa) 10 25 50 100 200	COMPRESSIVE STRENGTH (MPa) 1 5 20 50 100 250	DEFECT SPACING (mm) 50 250 1000 2000	SOIL DESCRIPTION: Soil type, minor components, plasticity or particle size, colour. ROCK DESCRIPTION: Substance: Rock type, particle size, colour, minor components. Defects: Type, inclination, thickness, roughness, filling.
		NONE ENCOUNTERED	100	WS-60mmØ	N/A	*0.5-0.7m Asb+Chem	●		0		GW	M	NR				ASPHALT.
			100	35							GW	M	NR				Sandy fine to coarse GRAVEL, dark grey. Moist, well graded. Gravel is angular. Sand is fine to coarse.
																	Fine to coarse GRAVEL with some sand, brown. Moist, well graded. Gravel is angular, unweathered sandstone. Trace concrete fragments.
									1								**End of borehole at 0.75mbgl (refusal)**
									2								
									3								
									4								
									5								
									6								

T+T DATATEMPLATE.GDT img

Log Scale 1:30

BORELOG 20161122.JMG.1001014.001.WS.GPJ 23-Nov-2016

BOREHOLE LOG

BOREHOLE No:BH3
Hole Location: Refer to test location plan
SHEET 1 OF 1

PROJECT: GWN MFC CARPARK-WS-TT	LOCATION: Michael Fowler Centre Carpark	JOB No: 1001014.0010
CO-ORDINATES:	DRILL TYPE: Window Sampler	HOLE STARTED: 9/11/16
	DRILL METHOD: Percussion	HOLE FINISHED: 9/11/16
R.L.:		DRILLED BY: Geotechnics Ltd
DATUM:	DRILL FLUID: N/A	LOGGED BY: EJWL CHECKED:

GEOLOGICAL									ENGINEERING DESCRIPTION							
GEOLOGICAL UNIT, GENERIC NAME, ORIGIN, MINERAL COMPOSITION.	FLUID LOSS	WATER	CORE RECOVERY (%)	METHOD	CASING	TESTS	SAMPLES	R.L. (m)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MOISTURE CONDITION / WEATHERING	STRENGTH/DENSITY CLASSIFICATION	SHEAR STRENGTH (kPa) 10 25 50 100 200	COMPRESSIVE STRENGTH (MPa) 1 5 20 50 100 250	DEFECT SPACING (mm) 50 250 1000 2000	SOIL DESCRIPTION: Soil type, minor components, plasticity or particle size, colour. ROCK DESCRIPTION: Substance: Rock type, particle size, colour, minor components. Defects: Type, inclination, thickness, roughness, filling.
		NONE ENCOUNTERED	100	WS-60mmØ	N/A	*0.4-0.6m Asb+Chem	●		0								ASPHALT.
											GW	M	NR				Sandy fine to coarse GRAVEL, brown. Moist, well graded. Gravel is angular. Sand is fine to coarse. 0.4m- trace red brick fragments. 0.5m- trace silt. 0.6 to 0.7m- black flecks.
						*0.8-1.1m Asb+Chem	●				SW	M	NR				Fine to coarse SAND with trace gravel, dark grey with white flecks. Moist, well graded. Gravel is fine to coarse, rounded. 1.1m- red brick fragments.
			100	60mm					1								
			100	35mm													**End of borehole at 1.4mbgl (refusal)**
									2								
									3								
									4								
									5								
									6								

T+T DATATEMPLATE.GDT img

Log Scale 1:30

BOREHOLE LOG

BOREHOLE No:BH4
Hole Location: Refer to test location plan
SHEET 1 OF 1

PROJECT: GWN MFC CARPARK-WS-TT	LOCATION: Michael Fowler Centre Carpark	JOB No: 1001014.0010
CO-ORDINATES:	DRILL TYPE: Window Sampler	HOLE STARTED: 9/11/16
	DRILL METHOD: Percussion	HOLE FINISHED: 9/11/16
R.L.:		DRILLED BY: Geotechnics Ltd
DATUM:	DRILL FLUID: N/A	LOGGED BY: EJWL CHECKED:

GEOLOGICAL | ENGINEERING DESCRIPTION

GEOLOGICAL UNIT, GENERIC NAME, ORIGIN, MINERAL COMPOSITION.	FLUID LOSS	WATER	CORE RECOVERY (%)	METHOD	CASING	TESTS	SAMPLES	R.L. (m)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MOISTURE CONDITION / WEATHERING	STRENGTH/DENSITY CLASSIFICATION	SHEAR STRENGTH (kPa) 10 25 50 100 200	COMPRESSIVE STRENGTH (MPa) 1 5 20 50 100 250	DEFECT SPACING (mm) 50 250 1000 2000	SOIL DESCRIPTION / ROCK DESCRIPTION
		NONE ENCOUNTERED	100	WS-60mmØ	N/A	*0.5-0.7m Asb+Chem	●		0		GW	M	NR				ASPHALT.
																	Sandy fine to coarse GRAVEL, grey. Moist, well graded. Gravel is angular. Sand is fine to coarse.
											SW	M	NR				Fine to coarse SAND, black with white flecks. Moist, well graded. Some red brick fragments, coarse gravel size.
											GW	M	NR				Sandy fine to coarse GRAVEL, orange brown with red flecks. Moist, well graded. Sand is fine to coarse. Trace red brick fragments.
			35	WS-60mmØ		*1.0-1.65m Asb+Chem	●		1		.	.	.				1.0 to 1.65m- no recovery.
											GW	M	NR				Sandy fine to coarse GRAVEL, grey. Moist, well graded. Gravel is angular. Sand is fine to coarse.
						*1.9-2.0m Asb+Chem	●		2			W					1.9m- some silt, wet.
																	End if borehole at 2.0mbgl (refusal)
									3								
									4								
									5								
									6								

T+T DATATEMPLATE.GDT img

Log Scale 1:30

BORELOG 20161122.JMG.1001014.001.WS.GPJ 23-Nov-2016

BOREHOLE LOG

BOREHOLE No:BH5
Hole Location: Refer to test location plan
SHEET 1 OF 1

PROJECT: GWN MFC CARPARK-WS-TT	LOCATION: Michael Fowler Centre Carpark	JOB No: 1001014.0010
CO-ORDINATES:	DRILL TYPE: Window Sampler	HOLE STARTED: 9/11/16
	DRILL METHOD: Percussion	HOLE FINISHED: 9/11/16
R.L.:		DRILLED BY: Geotechnics Ltd
DATUM:	DRILL FLUID: N/A	LOGGED BY: EJWL CHECKED:

GEOLOGICAL										ENGINEERING DESCRIPTION							
GEOLOGICAL UNIT, GENERIC NAME, ORIGIN, MINERAL COMPOSITION.	FLUID LOSS	WATER	CORE RECOVERY (%)	METHOD	CASING	TESTS	SAMPLES	R.L. (m)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MOISTURE CONDITION / WEATHERING	STRENGTH/DENSITY CLASSIFICATION	SHEAR STRENGTH (kPa) 10 25 50 100 200	COMPRESSIVE STRENGTH (MPa) 1 5 20 50 100 250	DEFECT SPACING (mm) 50 250 1000 2000	SOIL DESCRIPTION: Soil type, minor components, plasticity or particle size, colour. ROCK DESCRIPTION: Substance: Rock type, particle size, colour, minor components. Defects: Type, inclination, thickness, roughness, filling.
			100	WS-80mmØ		*0.0-0.3m Chem	●				ML	M	NR				SILT, brown. Moist, low plasticity. Trace rootlets.
						*0.3-0.5m Asb+Chem	●				.	.	NR				Black gravel/slag, strong hydrocarbon odour.
											ML	M	NR				SILT, brown. Moist, low plasticity. Trace rootlets. Strong hydrocarbon odour.
						*0.6-0.8m Asb+Chem	●				GM	M	NR				Silty fine to coarse GRAVEL with trace sand, orange brown. Moist, well graded. Gravel is angular. Sand is fine to coarse.
			70	WS-80mmØ					1		.	.	.				1.0 to 1.3m- no recovery.
						*1.5-1.7m Asb+Chem	●				GM	M	NR				Silty fine to coarse GRAVEL with trace sand, orange brown. Moist, well graded. Gravel is angular. Sand is fine to coarse. 1.5m- minor sand.
		2.2mbgl							2		.	.	.				2.0 to 2.3m- no recovery.
			70	WS-60mmØ	N/A						GM	S	NR				Silty, sandy fine to coarse GRAVEL, orange brown. Saturated, well graded. Gravel is angular. Sand is fine to coarse.
						*2.6-2.8m Asb+Chem	●		3								3.5m- bluish grey.
			100	WS-60mmØ		*3.6-3.8m Asb+Chem	●				ML	S	NR				Sandy SILT, bluish grey. Saturated, low plasticity. Sand is fine to coarse. Trace fibrous organics. Organic odour.
									4		.	.	.				4.0 to 4.5m- no recovery.
			50	WS-35mmØ		*4.5-4.8m Chem	●				GW	S	NR				Sandy fine to coarse GRAVEL, bluish grey. Saturated, well graded. Gravel is angular to subrounded. Sand is fine to coarse. Trace shell fragments.
						*4.8-5.0m Chem	●				GW	W	NR				Sandy fine to coarse GRAVEL, orange
									5								brown. Wet, well graded. Gravel is angular. Sand is fine to coarse. **End of borehole at 5.0mbgl (target depth)**
									6								

T+T DATATEMPLATE.GDT img

Log Scale 1:30

BORELOG 20161122.JMG.1001014.001.WS.GPJ 28-Nov-2016

BOREHOLE LOG

BOREHOLE No:BH6
Hole Location: Refer to test location plan
SHEET 1 OF 1

PROJECT: GWN MFC CARPARK-WS-TT	LOCATION: Michael Fowler Centre Carpark	JOB No: 1001014.0010
CO-ORDINATES:	DRILL TYPE: Window Sampler	HOLE STARTED: 10/11/16
	DRILL METHOD: Percussion	HOLE FINISHED: 10/11/16
R.L.:		DRILLED BY: Geotechnics Ltd
DATUM:	DRILL FLUID: N/A	LOGGED BY: EJWL CHECKED:

GEOLOGICAL									ENGINEERING DESCRIPTION							
GEOLOGICAL UNIT, GENERIC NAME, ORIGIN, MINERAL COMPOSITION.	FLUID LOSS	WATER	CORE RECOVERY (%)	METHOD	CASING	TESTS	SAMPLES	R.L. (m) / DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MOISTURE CONDITION / WEATHERING	STRENGTH/DENSITY CLASSIFICATION	SHEAR STRENGTH (kPa) 10 25 50 100 200	COMPRESSIVE STRENGTH (MPa) 1 5 20 50 100 250	DEFECT SPACING (mm) 50 250 1000 2000	SOIL DESCRIPTION: Soil type, minor components, plasticity or particle size, colour. ROCK DESCRIPTION: Substance: Rock type, particle size, colour, minor components. Defects: Type, inclination, thickness, roughness, filling.
		NONE ENCOUNTERED	100	WS-60mmØ	N/A	*0.8-0.9m Asb+Chem	●	0								ASPHALT.
										GW	M	NR				Sandy fine to coarse GRAVEL, grey. Moist, well graded. Gravel is angular. Sand is fine to coarse.
			100	60mmØ				1		GM	M	NR				Silty, sandy fine to coarse GRAVEL, grey with red flecks. Moist, well graded. Gravel is angular. Sand is fine to coarse. Some concrete and brick fragments.
																End of borehole at 1.4mbgl (refusal)
								2								
								3								
								4								
								5								
								6								

T+T DATATEMPLATE.GDT img

Log Scale 1:30

BORELOG 20161122.JMG.1001014.001.WS.GPJ 23-Nov-2016

BOREHOLE LOG

BOREHOLE No:BH7
Hole Location: Refer to test location plan
SHEET 1 OF 1

PROJECT: GWN MFC CARPARK-WS-TT	LOCATION: Michael Fowler Centre Carpark	JOB No: 1001014.0010
CO-ORDINATES:	DRILL TYPE: Window Sampler	HOLE STARTED: 10/11/16
	DRILL METHOD: Percussion	HOLE FINISHED: 10/11/16
R.L.:		DRILLED BY: Geotechnics Ltd
DATUM:	DRILL FLUID: N/A	LOGGED BY: EJWL CHECKED:

GEOLOGICAL	ENGINEERING DESCRIPTION

GEOLOGICAL UNIT, GENERIC NAME, ORIGIN, MINERAL COMPOSITION.	FLUID LOSS	WATER	CORE RECOVERY (%)	METHOD	CASING	TESTS	SAMPLES	R.L. (m)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MOISTURE CONDITION / WEATHERING	STRENGTH/DENSITY CLASSIFICATION	SHEAR STRENGTH (kPa) 10 25 50 100 200	COMPRESSIVE STRENGTH (MPa) 1 5 20 50 100 250	DEFECT SPACING (mm) 50 250 1000 2000	SOIL DESCRIPTION / ROCK DESCRIPTION
		NONE ENCOUNTERED	100 100	60mmØ 60	N/A						GW	M	NR				Sandy fine to coarse GRAVEL, grey. Moist, well graded. Gravel is angular. Sand is fine to coarse.
									1								**End of borehole at 0.5mbgl (refusal)**
									2								
									3								
									4								
									5								
									6								

SOIL DESCRIPTION
Soil type, minor components, plasticity or particle size, colour.

ROCK DESCRIPTION
Substance: Rock type, particle size, colour, minor components.
Defects: Type, inclination, thickness, roughness, filling.

BOREHOLE LOG

BOREHOLE No:BH8
Hole Location: Refer to test location plan
SHEET 1 OF 1

PROJECT: GWN MFC CARPARK-WS-TT	LOCATION: Michael Fowler Centre Carpark	JOB No: 1001014.0010
CO-ORDINATES:	DRILL TYPE: Window Sampler	HOLE STARTED: 10/11/16
	DRILL METHOD: Percussion	HOLE FINISHED: 10/11/16
R.L.:		DRILLED BY: Geotechnics Ltd
DATUM:	DRILL FLUID: N/A	LOGGED BY: EJWL CHECKED:

GEOLOGICAL									ENGINEERING DESCRIPTION							
GEOLOGICAL UNIT, GENERIC NAME, ORIGIN, MINERAL COMPOSITION.	FLUID LOSS	WATER	CORE RECOVERY (%)	METHOD	CASING	TESTS	SAMPLES	R.L. (m) / DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MOISTURE CONDITION / WEATHERING	STRENGTH/DENSITY CLASSIFICATION	SHEAR STRENGTH (kPa) 10 25 50 100 200	COMPRESSIVE STRENGTH (MPa) 1 5 20 50 100 250	DEFECT SPACING (mm) 50 250 1000 2000	SOIL DESCRIPTION: Soil type, minor components, plasticity or particle size, colour. ROCK DESCRIPTION: Substance: Rock type, particle size, colour, minor components. Defects: Type, inclination, thickness, roughness, filling.
		NONE ENCOUNTERED	100	WS-60mmØ	N/A					GW	M	NR				Sandy fine to coarse GRAVEL, grey. Moist, well graded. Gravel is angular. Sand is fine to coarse.
								1								**End of borehole at 0.9mbgl (refusal)**
								2								
								3								
								4								
								5								
								6								

T+T DATATEMPLATE.GDT img

Log Scale 1:30

BORELOG 20161122.JMG.1001014.001.WS.GPJ 23-Nov-2016

Appendix D: Laboratory transcripts

Hill Laboratories
BETTER TESTING BETTER RESULTS

R J Hill Laboratories Limited
1 Clyde Street
Private Bag 3205
Hamilton 3240, New Zealand

Tel +64 7 858 2000
Fax +64 7 858 2001
Email mail@hill-labs.co.nz
Web www.hill-labs.co.nz

ANALYSIS REPORT

Client:	Tonkin & Taylor	**Lab No:**	1678698	SPv3
Contact:	Louise Murphy	**Date Received:**	11-Nov-2016	
	C/- Tonkin & Taylor	**Date Reported:**	28-Nov-2016	
	PO Box 13055	**Quote No:**	80842	
	Christchurch 8141	**Order No:**	1001014	
		Client Reference:	1001014	
		Submitted By:	Louise Murphy	

Sample Type: Soil

Sample Name:		BH3 0.4-0.6 09-Nov-2016	BH3 0.8-1.1 09-Nov-2016	BH1 0.5-0.7 09-Nov-2016	BH4 0.5-0.7 09-Nov-2016	BH4 1.0-1.65 09-Nov-2016
Lab Number:		1678698.1	1678698.2	1678698.4	1678698.6	1678698.7
Individual Tests						
Dry Matter	g/100g as rcvd	86	94	84	89	-
TCLP Weight of Sample Taken	g	-	-	-	100	-
TCLP Initial Sample pH	pH Units	-	-	-	9.3	-
TCLP Acid Adjusted Sample pH	pH Units	-	-	-	3.0	-
TCLP Extractant Type*		-	-	-	NaOH/Acetic acid at pH 4.93 +/- 0.05	-
TCLP Extraction Fluid pH	pH Units	-	-	-	5.0	-
TCLP Post Extraction Sample pH	pH Units	-	-	-	6.4	-
Total Recoverable Arsenic	mg/kg dry wt	8 #1	-	-	-	-
Total Recoverable Copper	mg/kg dry wt	79 #2	-	-	-	-
Total Recoverable Mercury	mg/kg dry wt	0.54 #3	-	-	-	-
Heavy Metals with Mercury, Screen Level						
Total Recoverable Arsenic	mg/kg dry wt	-	43	4	100	-
Total Recoverable Cadmium	mg/kg dry wt	0.20	< 0.10	< 0.10	0.67	-
Total Recoverable Chromium	mg/kg dry wt	16	12	15	16	-
Total Recoverable Copper	mg/kg dry wt	-	40	9	94	-
Total Recoverable Lead	mg/kg dry wt	250	71	28	182	-
Total Recoverable Mercury	mg/kg dry wt	-	0.13	< 0.10	4.4	-
Total Recoverable Nickel	mg/kg dry wt	14	10	9	28	-
Total Recoverable Zinc	mg/kg dry wt	194	74	48	410	-
Asbestos in Soil						
As Received Weight	g	-	-	-	-	227.7
Dry Weight	g	-	-	-	-	217.4
Asbestos Presence / Absence		-	-	-	-	Asbestos NOT detected.
Description of Asbestos Form		-	-	-	-	-
Polycyclic Aromatic Hydrocarbons Screening in Soil						
Acenaphthene	mg/kg dry wt	0.11	1.78	< 0.03	< 0.03	-
Acenaphthylene	mg/kg dry wt	0.60	2.5	< 0.03	0.12	-
Anthracene	mg/kg dry wt	1.13	10.1	< 0.03	0.17	-
Benzo[a]anthracene	mg/kg dry wt	5.6	38	< 0.03	0.76	-
Benzo[a]pyrene (BAP)	mg/kg dry wt	5.9	36	< 0.03	0.86	-
Benzo[b]fluoranthene + Benzo[j] fluoranthene	mg/kg dry wt	7.1	39	< 0.03	1.22	-
Benzo[g,h,i]perylene	mg/kg dry wt	3.9	19.4	< 0.03	0.73	-
Benzo[k]fluoranthene	mg/kg dry wt	2.7	17.4	< 0.03	0.45	-
Chrysene	mg/kg dry wt	4.6	31	< 0.03	0.81	-
Dibenzo[a,h]anthracene	mg/kg dry wt	0.79	4.9	< 0.03	0.16	-

Sample Type: Soil						
Sample Name:		BH3 0.4-0.6 09-Nov-2016	BH3 0.8-1.1 09-Nov-2016	BH1 0.5-0.7 09-Nov-2016	BH4 0.5-0.7 09-Nov-2016	BH4 1.0-1.65 09-Nov-2016
Lab Number:		1678698.1	1678698.2	1678698.4	1678698.6	1678698.7
Polycyclic Aromatic Hydrocarbons Screening in Soil						
Fluoranthene	mg/kg dry wt	11.3	69	< 0.03	1.57	-
Fluorene	mg/kg dry wt	0.12	1.53	< 0.03	0.03	-
Indeno(1,2,3-c,d)pyrene	mg/kg dry wt	4.1	20	< 0.03	0.71	-
Naphthalene	mg/kg dry wt	< 0.13	0.59	< 0.13	0.30	-
Phenanthrene	mg/kg dry wt	4.7	25	< 0.03	1.03	-
Pyrene	mg/kg dry wt	11.0	66	< 0.03	1.51	-

Sample Name:		BH4 1.9-2.0 09-Nov-2016	BH5 0-0.3 10-Nov-2016	BH5 0.3-0.5 10-Nov-2016	BH5 0.6-0.8 10-Nov-2016	BH5 3.6-3.8 10-Nov-2016
Lab Number:		1678698.8	1678698.9	1678698.10	1678698.11	1678698.14
Individual Tests						
Dry Matter	g/100g as rcvd	88	-	87	85	73
TCLP Weight of Sample Taken	g	97	-	-	-	100
TCLP Initial Sample pH	pH Units	9.5	-	-	-	9.0
TCLP Acid Adjusted Sample pH	pH Units	1.6	-	-	-	1.6
TCLP Extractant Type*		NaOH/Acetic acid at pH 4.93 +/- 0.05	-	-	-	NaOH/Acetic acid at pH 4.93 +/- 0.05
TCLP Extraction Fluid pH	pH Units	5.0	-	-	-	5.0
TCLP Post Extraction Sample pH	pH Units	5.0	-	-	-	5.0
Heavy Metals with Mercury, Screen Level						
Total Recoverable Arsenic	mg/kg dry wt	9	6	11	4	5
Total Recoverable Cadmium	mg/kg dry wt	0.89	0.40	0.20	< 0.10	0.11
Total Recoverable Chromium	mg/kg dry wt	16	18	18	16	15
Total Recoverable Copper	mg/kg dry wt	27	62	60	11	19
Total Recoverable Lead	mg/kg dry wt	61	310	199	25	320
Total Recoverable Mercury	mg/kg dry wt	0.17	0.33	0.17	< 0.10	0.55
Total Recoverable Nickel	mg/kg dry wt	15	10	17	8	10
Total Recoverable Zinc	mg/kg dry wt	820	181	199	40	350
Polycyclic Aromatic Hydrocarbons Screening in Soil						
Acenaphthene	mg/kg dry wt	< 0.03	-	1.58	0.07	0.08
Acenaphthylene	mg/kg dry wt	0.04	-	10.0	0.54	0.13
Anthracene	mg/kg dry wt	< 0.03	-	10.1	0.48	0.32
Benzo[a]anthracene	mg/kg dry wt	0.08	-	12.8	0.55	0.99
Benzo[a]pyrene (BAP)	mg/kg dry wt	0.15	-	15.1	0.62	1.17
Benzo[b]fluoranthene + Benzo[j] fluoranthene	mg/kg dry wt	0.19	-	16.3	0.67	1.30
Benzo[g,h,i]perylene	mg/kg dry wt	0.12	-	12.8	0.48	0.78
Benzo[k]fluoranthene	mg/kg dry wt	0.07	-	6.7	0.26	0.49
Chrysene	mg/kg dry wt	0.08	-	12.3	0.48	0.90
Dibenzo[a,h]anthracene	mg/kg dry wt	0.03	-	1.9	0.07	0.16
Fluoranthene	mg/kg dry wt	0.05	-	42	2.0	2.3
Fluorene	mg/kg dry wt	< 0.03	-	5.5	0.30	0.11
Indeno(1,2,3-c,d)pyrene	mg/kg dry wt	0.13	-	10.9	0.45	0.80
Naphthalene	mg/kg dry wt	< 0.13	-	10.3	0.63	< 0.16
Phenanthrene	mg/kg dry wt	0.04	-	50	2.5	1.24
Pyrene	mg/kg dry wt	0.06	-	44	1.98	2.3
BTEX in VOC Soils by Purge&Trap GC-MS						
Benzene	mg/kg dry wt	-	-	< 0.4	-	-
Toluene	mg/kg dry wt	-	-	< 0.7	-	-
Ethylbenzene	mg/kg dry wt	-	-	< 0.4	-	-
m&p-Xylene	mg/kg dry wt	-	-	< 0.4	-	-
o-Xylene	mg/kg dry wt	-	-	< 0.4	-	-
Halogenated Aliphatics in VOC Soils by Purge&Trap GC-MS						
Bromomethane (Methyl Bromide)	mg/kg dry wt	-	-	< 3	-	-
Carbon tetrachloride	mg/kg dry wt	-	-	< 0.4	-	-
Chloroethane	mg/kg dry wt	-	-	< 1.0	-	-

Sample Type: Soil						
Sample Name:		BH4 1.9-2.0 09-Nov-2016	BH5 0-0.3 10-Nov-2016	BH5 0.3-0.5 10-Nov-2016	BH5 0.6-0.8 10-Nov-2016	BH5 3.6-3.8 10-Nov-2016
Lab Number:		1678698.8	1678698.9	1678698.10	1678698.11	1678698.14
Halogenated Aliphatics in VOC Soils by Purge&Trap GC-MS						
Chloromethane	mg/kg dry wt	-	-	< 1.0	-	-
1,2-Dibromo-3-chloropropane	mg/kg dry wt	-	-	< 1.0	-	-
1,2-Dibromoethane (ethylene dibromide, EDB)	mg/kg dry wt	-	-	< 1.0	-	-
Dibromomethane	mg/kg dry wt	-	-	< 1.0	-	-
Dichlorodifluoromethane	mg/kg dry wt	-	-	< 1.0	-	-
1,1-Dichloroethane	mg/kg dry wt	-	-	< 0.4	-	-
1,2-Dichloroethane	mg/kg dry wt	-	-	< 1.0	-	-
1,1-Dichloroethene	mg/kg dry wt	-	-	< 0.4	-	-
cis-1,2-Dichloroethene	mg/kg dry wt	-	-	< 0.4	-	-
trans-1,2-Dichloroethene	mg/kg dry wt	-	-	< 0.4	-	-
Dichloromethane (methylene chloride)	mg/kg dry wt	-	-	< 10	-	-
1,2-Dichloropropane	mg/kg dry wt	-	-	< 1.0	-	-
1,3-Dichloropropane	mg/kg dry wt	-	-	< 1.0	-	-
1,1-Dichloropropene	mg/kg dry wt	-	-	< 0.4	-	-
cis-1,3-Dichloropropene	mg/kg dry wt	-	-	< 1.0	-	-
trans-1,3-Dichloropropene	mg/kg dry wt	-	-	< 1.0	-	-
Hexachlorobutadiene	mg/kg dry wt	-	-	< 0.4	-	-
1,1,1,2-Tetrachloroethane	mg/kg dry wt	-	-	< 0.4	-	-
1,1,2,2-Tetrachloroethane	mg/kg dry wt	-	-	< 1.0	-	-
Tetrachloroethene (tetrachloroethylene)	mg/kg dry wt	-	-	< 1.0	-	-
1,1,1-Trichloroethane	mg/kg dry wt	-	-	< 0.4	-	-
1,1,2-Trichloroethane	mg/kg dry wt	-	-	< 1.0	-	-
Trichloroethene (trichloroethylene)	mg/kg dry wt	-	-	< 0.4	-	-
Trichlorofluoromethane	mg/kg dry wt	-	-	< 0.4	-	-
1,2,3-Trichloropropane	mg/kg dry wt	-	-	< 1.0	-	-
1,1,2-Trichlorotrifluoroethane (Freon 113)	mg/kg dry wt	-	-	< 4	-	-
Vinyl chloride	mg/kg dry wt	-	-	< 1.0	-	-
Haloaromatics in VOC Soils by Purge&Trap GC-MS						
Bromobenzene	mg/kg dry wt	-	-	< 0.4	-	-
Chlorobenzene (monochlorobenzene)	mg/kg dry wt	-	-	< 0.4	-	-
2-Chlorotoluene	mg/kg dry wt	-	-	< 0.4	-	-
4-Chlorotoluene	mg/kg dry wt	-	-	< 0.4	-	-
1,2-Dichlorobenzene	mg/kg dry wt	-	-	< 0.4	-	-
1,3-Dichlorobenzene	mg/kg dry wt	-	-	< 0.4	-	-
1,4-Dichlorobenzene	mg/kg dry wt	-	-	< 0.4	-	-
1,2,3-Trichlorobenzene	mg/kg dry wt	-	-	< 0.4	-	-
1,2,4-Trichlorobenzene	mg/kg dry wt	-	-	< 0.4	-	-
1,3,5-Trichlorobenzene	mg/kg dry wt	-	-	< 0.4	-	-
Monoaromatic Hydrocarbons in VOC Soils by Purge&Trap GC-MS						
n-Butylbenzene	mg/kg dry wt	-	-	< 0.4	-	-
tert-Butylbenzene	mg/kg dry wt	-	-	< 0.4	-	-
Isopropylbenzene (Cumene)	mg/kg dry wt	-	-	< 0.4	-	-
4-Isopropyltoluene (p-Cymene)	mg/kg dry wt	-	-	< 0.4	-	-
n-Propylbenzene	mg/kg dry wt	-	-	< 0.4	-	-
sec-Butylbenzene	mg/kg dry wt	-	-	< 0.4	-	-
Styrene	mg/kg dry wt	-	-	< 0.4	-	-
1,2,4-Trimethylbenzene	mg/kg dry wt	-	-	< 0.4	-	-
1,3,5-Trimethylbenzene	mg/kg dry wt	-	-	< 0.4	-	-
Ketones in VOC Soils by Purge&Trap GC-MS						
Acetone	mg/kg dry wt	-	-	< 32	-	-

Sample Type: Soil						
Sample Name:		BH4 1.9-2.0 09-Nov-2016	BH5 0-0.3 10-Nov-2016	BH5 0.3-0.5 10-Nov-2016	BH5 0.6-0.8 10-Nov-2016	BH5 3.6-3.8 10-Nov-2016
Lab Number:		1678698.8	1678698.9	1678698.10	1678698.11	1678698.14
Ketones in VOC Soils by Purge&Trap GC-MS						
2-Butanone (MEK)	mg/kg dry wt	-	-	< 6	-	-
Methyl tert-butylether (MTBE)	mg/kg dry wt	-	-	< 4	-	-
4-Methylpentan-2-one (MIBK)	mg/kg dry wt	-	-	< 10	-	-
Trihalomethanes in VOC Soils by Purge&Trap GC-MS						
Bromodichloromethane	mg/kg dry wt	-	-	< 0.4	-	-
Bromoform (tribromomethane)	mg/kg dry wt	-	-	< 1.0	-	-
Chloroform (Trichloromethane)	mg/kg dry wt	-	-	< 0.4	-	-
Dibromochloromethane	mg/kg dry wt	-	-	< 0.4	-	-
Other VOC in Soils by Purge&Trap GC-MS						
Carbon disulphide	mg/kg dry wt	-	-	< 6	-	-
Naphthalene	mg/kg dry wt	-	-	9.1	-	-
System monitoring Compounds for VOC - % Recovery						
4-Bromofluorobenzene	%	-	-	92	-	-
Toluene-d8	%	-	-	99	-	-

Sample Name:		BH2 0.5-0.7 10-Nov-2016	BH6 0.8-0.9 10-Nov-2016			
Lab Number:		1678698.16	1678698.17			
Individual Tests						
Dry Matter	g/100g as rcvd	88	90	-	-	-
Heavy Metals with Mercury, Screen Level						
Total Recoverable Arsenic	mg/kg dry wt	7	6	-	-	-
Total Recoverable Cadmium	mg/kg dry wt	< 0.10	< 0.10	-	-	-
Total Recoverable Chromium	mg/kg dry wt	20	15	-	-	-
Total Recoverable Copper	mg/kg dry wt	20	29	-	-	-
Total Recoverable Lead	mg/kg dry wt	39	59	-	-	-
Total Recoverable Mercury	mg/kg dry wt	0.10	0.34	-	-	-
Total Recoverable Nickel	mg/kg dry wt	17	13	-	-	-
Total Recoverable Zinc	mg/kg dry wt	100	77	-	-	-
Polycyclic Aromatic Hydrocarbons Screening in Soil						
Acenaphthene	mg/kg dry wt	< 0.03	0.38	-	-	-
Acenaphthylene	mg/kg dry wt	< 0.03	3.3	-	-	-
Anthracene	mg/kg dry wt	< 0.03	4.3	-	-	-
Benzo[a]anthracene	mg/kg dry wt	0.04	14.4	-	-	-
Benzo[a]pyrene (BAP)	mg/kg dry wt	0.08	16.5	-	-	-
Benzo[b]fluoranthene + Benzo[j] fluoranthene	mg/kg dry wt	0.09	18.2	-	-	-
Benzo[g,h,i]perylene	mg/kg dry wt	0.09	9.3	-	-	-
Benzo[k]fluoranthene	mg/kg dry wt	0.03	7.3	-	-	-
Chrysene	mg/kg dry wt	0.04	12.6	-	-	-
Dibenzo[a,h]anthracene	mg/kg dry wt	< 0.03	2.1	-	-	-
Fluoranthene	mg/kg dry wt	0.08	32	-	-	-
Fluorene	mg/kg dry wt	< 0.03	0.91	-	-	-
Indeno(1,2,3-c,d)pyrene	mg/kg dry wt	0.09	9.6	-	-	-
Naphthalene	mg/kg dry wt	< 0.13	0.29	-	-	-
Phenanthrene	mg/kg dry wt	0.05	12.5	-	-	-
Pyrene	mg/kg dry wt	0.10	30	-	-	-

Sample Type: Aqueous						
Sample Name:		BH4 0.5-0.7 [TCLP extract]	BH4 1.9-2.0 [TCLP extract]	BH5 3.6-3.8 [TCLP extract]		
Lab Number:		1678698.19	1678698.20	1678698.21		
Individual Tests						
Total Mercury	g/m³	< 0.0021	< 0.0021	< 0.0021	-	-
Heavy metals, totals, screen As,Cd,Cr,Cu,Ni,Pb,Zn						
Total Arsenic	g/m³	0.120	< 0.021	< 0.021	-	-

Sample Type: Aqueous						
Sample Name:		BH4 0.5-0.7 [TCLP extract]	BH4 1.9-2.0 [TCLP extract]	BH5 3.6-3.8 [TCLP extract]		
Lab Number:		1678698.19	1678698.20	1678698.21		
Heavy metals, totals, screen As,Cd,Cr,Cu,Ni,Pb,Zn						
Total Cadmium	g/m³	0.0037	0.0064	< 0.0011	-	-
Total Chromium	g/m³	< 0.011	< 0.011	< 0.011	-	-
Total Copper	g/m³	0.015	< 0.011	< 0.011	-	-
Total Lead	g/m³	0.0065	0.0050	0.133	-	-
Total Nickel	g/m³	< 0.011	< 0.011	0.023	-	-
Total Zinc	g/m³	0.68	1.86	1.83	-	-

Analyst's Comments

#1 It should be noted that the replicate analyses performed on this sample as part of our in-house Quality Assurance procedures showed greater variation than would normally be expected. This may reflect the heterogeneity of the sample. Replicate 1: 8 mg/kg, Replicate 2: 26 mg/kg, Replicate 3: 7 mg/kg.

#2 It should be noted that the replicate analyses performed on this sample as part of our in-house Quality Assurance procedures showed greater variation than would normally be expected. This may reflect the heterogeneity of the sample. Replicate 1: 79 mg/kg. Replicate 2: 7200 mg/kg, Replicate 3: 74 mg/kg.

#3 It should be noted that the replicate analyses performed on this sample as part of our in-house Quality Assurance procedures showed greater variation than would normally be expected. This may reflect the heterogeneity of the sample. Replicate 1: 0.54 mg/kg, Replicate 2: 0.27 mg/kg, Replicate 3: 0.21 mg/kg.

SUMMARY OF METHODS

The following table(s) gives a brief description of the methods used to conduct the analyses for this job. The detection limits given below are those attainable in a relatively clean matrix. Detection limits may be higher for individual samples should insufficient sample be available, or if the matrix requires that dilutions be performed during analysis.

Sample Type: Soil			
Test	**Method Description**	**Default Detection Limit**	**Sample No**
Individual Tests			
Dry Matter (Env)	Dried at 103°C for 4-22hr (removes 3-5% more water than air dry) , gravimetry. US EPA 3550. (Free water removed before analysis).	0.10 g/100g as rcvd	1-2, 4, 6, 8, 10-11, 14, 16-17
Total Recoverable Arsenic	Dried sample, sieved as specified (if required). Nitric/Hydrochloric acid digestion, Interference removal by Kinetic Energy Discrimination, ICP-MS, screen level. US EPA 200.2.	2 mg/kg dry wt	1
Total Recoverable Copper	Dried sample, sieved as specified (if required). Nitric/Hydrochloric acid digestion, Interference removal by Kinetic Energy Discrimination, ICP-MS, screen level. US EPA 200.2.	2 mg/kg dry wt	1
Total Recoverable Mercury	Dried sample, sieved as specified (if required). Nitric/Hydrochloric acid digestion, Interference removal by Kinetic Energy Discrimination, ICP-MS, screen level. US EPA 200.2.	0.10 mg/kg dry wt	1
Heavy Metals with Mercury, Screen Level	Dried sample, < 2mm fraction. Nitric/Hydrochloric acid digestion US EPA 200.2. Complies with NES Regulations. ICP-MS screen level, interference removal by Kinetic Energy Discrimination if required.	0.10 - 4 mg/kg dry wt	1-2, 4, 6, 8-11, 14, 16-17
Polycyclic Aromatic Hydrocarbons Screening in Soil	Sonication extraction, Dilution or SPE cleanup (if required), GC-MS SIM analysis (modified US EPA 8270). Tested on as received sample. [KBIs:5786,2805,2695]	0.010 - 0.05 mg/kg dry wt	1-2, 4, 6, 8, 10-11, 14, 16-17
Volatile Organic Compounds Screening in Soil by Purge&Trap	Sonication extraction, Purge & Trap, GC-MS FS analysis. Tested on as received sample [KBIs:31662,28233,2694]	0.10 - 22 mg/kg dry wt	10
TCLP Profile*	Extraction at 30 +/- 2 rpm for 18 +/- 2 hours, (Ratio 1g sample : 20g extraction fluid). US EPA 1311	-	6, 8, 14
Asbestos in Soil			
As Received Weight	Measurement on analytical balance. Analysed at Hill Laboratories - Asbestos; 101c Waterloo Road, Christchurch.	0.1 g	7
Dry Weight	Sample dried at 100 to 105°C, measurement on balance. Analysed at Hill Laboratories - Asbestos; 101c Waterloo Road, Christchurch.	0.1 g	7
Asbestos Presence / Absence	Examination using Low Powered Stereomicroscopy followed by 'Polarised Light Microscopy' including 'Dispersion Staining Techniques'. Analysed at Hill Laboratories - Asbestos; 101c Waterloo Road, Christchurch. AS 4964 (2004) - Method for the Qualitative Identification of Asbestos in Bulk Samples.	-	7

Sample Type: Soil			
Test	**Method Description**	**Default Detection Limit**	**Sample No**
Description of Asbestos Form	Description of asbestos form and/or shape if present.	-	7
TCLP Profile			
TCLP Weight of Sample Taken	Gravimetric. US EPA 1311.	0.1 g	6, 8, 14
TCLP Initial Sample pH	pH meter. US EPA 1311.	0.1 pH Units	6, 8, 14
TCLP Acid Adjusted Sample pH	pH meter. US EPA 1311.	0.1 pH Units	6, 8, 14
TCLP Extractant Type*	US EPA 1311.	-	6, 8, 14
TCLP Extraction Fluid pH	pH meter. US EPA 1311.	0.1 pH Units	6, 8, 14
TCLP Post Extraction Sample pH	pH meter. US EPA 1311.	0.1 pH Units	6, 8, 14

Sample Type: Aqueous			
Test	**Method Description**	**Default Detection Limit**	**Sample No**
Individual Tests			
Total Digestion with HCl	Nitric/hydrochloric acid digestion. APHA 3030 E 22nd ed. 2012 (modified).	-	19-21
Total Digestion of Extracted Samples*	Nitric acid digestion. APHA 3030 E 22nd ed. 2012 (modified).	-	19-21
Total Mercury	Acid digestion, ICP-MS, screen level. APHA 3125 B 22nd ed. 2012.	0.0021 g/m^3	19-21
Heavy metals, totals, screen As,Cd,Cr,Cu,Ni,Pb,Zn	Nitric acid digestion, ICP-MS, screen level. APHA 3125 B 22nd ed. 2012.	0.0011 - 0.021 g/m^3	19-21

These samples were collected by yourselves (or your agent) and analysed as received at the laboratory.

Samples are held at the laboratory after reporting for a length of time depending on the preservation used and the stability of the analytes being tested. Once the storage period is completed the samples are discarded unless otherwise advised by the client.

Graham Corban MSc Tech (Hons)
Client Services Manager - Environmental

Hill Laboratories
BETTER TESTING BETTER RESULTS

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Hamilton 3240, New Zealand

Tel +64 7 858 2000
Fax +64 7 858 2001
Email mail@hill-labs.co.nz
Web www.hill-labs.co.nz

ANALYSIS REPORT

Client:	Tonkin & Taylor	**Lab No:**	1679341	A2Pv1
Contact:	Louise Murphy	**Date Received:**	12-Nov-2016	
	C/- Tonkin & Taylor	**Date Reported:**	18-Nov-2016	
	PO Box 13055	**Quote No:**	80842	
	Christchurch 8141	**Order No:**	1001014	
		Client Reference:	1001014	
		Submitted By:	Louise Murphy	

Sample Type: Soil

Sample Name	Lab Number	As Received Weight	Dry Weight	<2mm Subsample Weight	Asbestos Presence / Absence	Description of Asbestos Form
BH3 0.4-0.6	1679341.1	198.1	180.4	60.0	Chrysotile (White Asbestos) detected.	Loose Fibres
BH3 0.8-1.1	1679341.2	248.6	234.8	61.1	Asbestos NOT detected.	-
BH1 0.5-0.7m	1679341.3	155.2	142.7	26.8	Asbestos NOT detected.	-
BH4 0.5-0.7m	1679341.4	88.4	78.8	32.8	Chrysotile (White Asbestos) detected.	ACM Debris and Loose Fibres
BH5 0.3-0.5	1679341.7	128.1	111.8	43.6	Chrysotile (White Asbestos) detected.	Loose Fibres
BH5 0.6-0.8	1679341.8	148.1	131.2	43.5	Asbestos NOT detected.	-
BH5 1.5-1.7	1679341.9	159.4	145.4	55.5	Asbestos NOT detected.	-
BH2 0.5-0.7m	1679341.12	165.9	156.8	24.5	Asbestos NOT detected.	-
BH6 0.8-0.9	1679341.13	126.2	113.3	32.3	Chrysotile (White Asbestos) detected.	Loose Fibres

SUMMARY OF METHODS

The following table(s) gives a brief description of the methods used to conduct the analyses for this job. The detection limits given below are those attainable in a relatively clean matrix. Detection limits may be higher for individual samples should insufficient sample be available, or if the matrix requires that dilutions be performed during analysis.

Sample Type: Soil

Test	Method Description	Default Detection Limit	Sample No
Asbestos in Soil			
As Received Weight	Measurement on analytical balance. Analysed at Hill Laboratories - Asbestos; 101c Waterloo Road, Christchurch.	0.1 g	1-4, 7-9, 12-13
Dry Weight	Sample dried at 100 to 105°C, measurement on balance. Analysed at Hill Laboratories - Asbestos; 101c Waterloo Road, Christchurch.	0.1 g	1-4, 7-9, 12-13
<2mm Subsample Weight	Sample ashed at 400°C, weight of <2mm sample fraction taken for asbestos identification. Analysed at Hill Laboratories - Asbestos; 101c Waterloo Road, Christchurch.	0.1 g ashed wt	1-4, 7-9, 12-13
Asbestos Presence / Absence	Examination using Low Powered Stereomicroscopy followed by 'Polarised Light Microscopy' including 'Dispersion Staining Techniques'. Analysed at Hill Laboratories - Asbestos; 101c Waterloo Road, Christchurch. AS 4964 (2004) - Method for the Qualitative Identification of Asbestos in Bulk Samples.	-	1-4, 7-9, 12-13
Description of Asbestos Form	Description of asbestos form and/or shape if present.	-	1-4, 7-9, 12-13

These samples were collected by yourselves (or your agent) and analysed as received at the laboratory.

Samples are held at the laboratory after reporting for a length of time depending on the preservation used and the stability of the analytes being tested. Once the storage period is completed the samples are discarded unless otherwise advised by the client.

Rhodri Williams BSc (Hons)
Asbestos Section Manager

Appendix E: Historical Review Information

- Certificates of title
- Historic aerial photographs
- Client provided information
- Property files
- Alexander Turnbell library

COMPUTER FREEHOLD REGISTER
UNDER LAND TRANSFER ACT 1952

Historical Search Copy

R.W. Muir
Registrar-General
of Land

Identifier **WN3/224**
Land Registration District **Wellington**
Date Issued 01 January 1870

Cancelled

Interests

Refer to paper image for prior memorials.

9281348.1 Certificate under Section 43(1)(d) Government Roading Powers Act 1989 certifying that Section 1 SO 457659 has been laid out and constructed as road - 4.1.2013 at 7:00 am

CANCELLED

Register Book Vol 3 fo 224

Victoria by the Grace of God of the United Kingdom of Great Britain and Ireland Queen

To all to whom these presents shall come Greeting

Know Ye that for good considerations us thereunto moving We for us our heirs and successors do hereby grant unto The Mayor Councillors and Citizens of the City of Wellington All that parcel of land in the province of Wellington in our Colony of New Zealand containing by admeasurement seventy (70) acres more or less situate in the Harbor of Port Nicholson and being the Reserve marked K on the plan of the City of Wellington bounded towards the North-east by land reclaimed in a Crown Grant to His Honor the Superintendent of Wellington dated June fourth eighteen hundred and sixty two one hundred and sixty (160) links and by other parts of the said harbor of Port Nicholson one thousand two hundred (1200) links one thousand two hundred and two (1202) links one thousand two hundred and two (1202) links and one thousand two hundred and two (1202) links towards the East by other part of said harbor nine hundred and seven (907) links towards the South-east by Clyde Quay nine hundred and forty one (941) links and by sections No. 222, 223, 224 and 225 eight hundred and sixteen (816) links towards the South-west by sections No. 218, 219, 220 and 221 eight hundred (800) links by sections No. 212, 213, 214, 215, 216 and 217 and by Reserve No. 9 one thousand four hundred and thirty five (1435) links by sections No. 208, 209, 210 and 211 eight hundred and fifty four (854) links and by sections No. 205, 206 and 207 five hundred and fifty (550) links and towards the North-west by land reclaimed by Sir George Grey six hundred and thirty six (636) links by said land granted to His Honor the Superintendent of Wellington one thousand eight hundred and seventy three (1873) links and by other part of the said harbor five hundred and thirty two (532) links (or thereabouts) as delineated on the plan drawn in the margin hereof (excepting always the piece of land one rood and fifty two links more or less already resumed and herein colored green) with all the rights and appurtenances thereto belonging To hold unto the said Mayor Councillors and Citizens of the City of Wellington All that for recreation and purposes of public utility In testimony whereof we have caused this our Grant to be sealed with the seal of our Colony of New Zealand.

Witness our trusty and well-beloved Sir James Fergusson Baronet a Knight of the most Honorable Privy Council Governor and Commander over the Colony of New Zealand at Wellington this [illegible] day of June in the [illegible] year of our reign and in the year of our Lord one thousand eight hundred and seventy four

No 33344
Reg. No. 19

By Command of His Excellency the Governor in Council

Registrar General of Lands

CONTINUED on Pages 2 To 18

3/224(13) 3/224

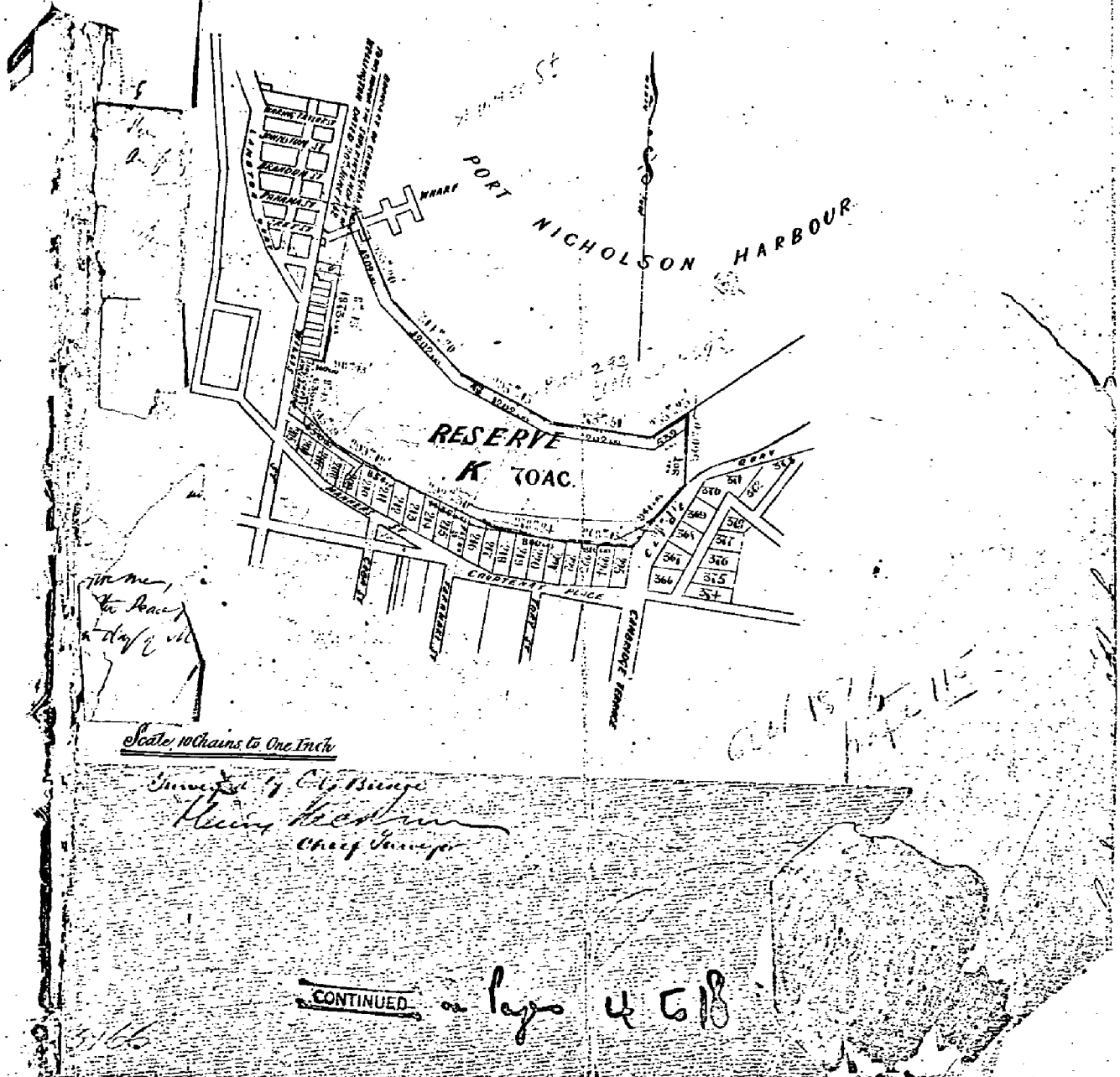
NEW ZEALAND.

(C)

Register-Book,

Grant No. 3366.

Under The Public Reserves Act 1854.



Surveyed by C. G. Bunge
Henry Kerr
Chief Surveyor

CONTINUED - Page 4618

224.

3/224 (Pw)

Dated 24th Jan. 1874.

70 A. 0 R. 0 P.

Registration District of Wellington.

Grant

to

The Mayor, Councillors and Citizens of Wellington

Entered in Reg. No. 2. Folio 112.

Jos. Tolcstewart
Commissioner of Crown Lands

CONTINUED on page 3 To B

Mortgage No 6473 Produced 6th March 1885 at 3.24 pm The Mayor Councillors and Citizens of the City of Wellington to Charles Christie Graham and Joseph Elliott Page as Commissioners of part of above Land

DLR

Transfer of Mortgage No 6473 Produced 9th March 1885 at 3 pm Charles Christie Graham and Joseph Elliott Page to Thomas Paduc Hatton and Joseph Elliott Page

DLR

Transfer No 12095 produced 2nd October 1886 at 11.55 am The Mayor Councillors and Citizens of the City of Wellington to Joseph Isaac Clarke part of Lot 22 plan 331.

Fresh C of T issued Vol 43 fol 91

DLR

Transfer No 12193 produced 9th December 1886 at 2.30 pm the above named Corporation to Edward Pierce of part Lot 28 plan 331.

Fresh C of T issued Vol 43 fol 152

DLR

Transfer No 12254 produced 22nd December 1886 at 2.55 pm The Mayor Councillors and Citizens of Wellington to Patrick Cunningham Buckley part Lot 31 plan 331.

Fresh C of T issued Vol 43 fol 200

DLR

Transfer No 12256 produced 22nd December 1886 at 2.55 pm The Mayor Councillors and Citizens of Wellington to Archibald Paisley part Lot 32 plan 331

Fresh C of T issued Vol 43 fol 202

DLR

Transfer No 12286 produced 6th January 1887 at 11.35 am The Mayor Councillors and Citizens of the City of Wellington to The Governors of the Wellington College Lots 21. 23 and 24 plan 331.

Fresh C of T issued Vol 43 fol 234

DLR

Transfer No 12339 produced 24th January 1887 at 10.10 am The Mayor Councillors and Citizens of Wellington to George Edmonds Colhurst Frederick Augustus Knell and Walter Woods Johnston Lot 30 plan 331.

Fresh C of T issued Vol 44 fol 12

DLR

Transfer No 12450 produced 2nd March 1887 at 11.5 pm the above named Corporation to Christopher Hewitt Isaac Kenrick Fitt and Charles John Cooper Lot 25 plan No 331.

Fresh C of T issued Vol 44 fol 106

DLR

Transfer No 13139 produced 20th October 1887 at 10 am The Mayor Councillors and Citizens of the City of Wellington to Thomas George Macarthy of part above land

Fresh C of T issued Vol 45 fol 285

DLR

Transfer No 13216 produced 9th December 1887 at 12 noon The Mayor Councillors and Citizens of the City of Wellington to Sarah Anna Rhodes John Hutchens Charles Johnson Flavazzo and George Hampden Colhurst of part above land

DLR

Discharge of Mortgage No 6473 produced 25th March 1888 at 12.10 pm.

DLR

Mortgage No 8964 produced 25th March 1888 at 12.10 pm The Mayor Councillors and Burgesses of Wellington to Joseph Follett Page and Thomas Hewitt Hamilton

DLR

CONTINUED on Page 5

3.224

Transfer No 13915 produced 25th June 1888 at 10.5 am the Mayor Councillors and Citizens of the City of Wellington to the Wellington Gas Company Limited Lot 23 deposit plan 394.

Fresh C of T issued Vol [illegible] fol [illegible]

Wm Hall Deputy Registrar

Transfer No 14221 produced 24th September 1888 at 2.45 pm The Mayor Councillors and Citizens of the City of Wellington to Samuel Lee Charles Stanley Lee and John Robert Lee of Lot 35 Plan 394

Fresh C of T issued Vol [illegible] fol [illegible]

Wm Hall Deputy Registrar

Transfer No 14444 produced 5th December 1888 at 12.45 pm The Corporation of the City of Wellington to The Governors of the Wellington College and Girls High School of part of Lot 29 plan 331

Fresh C of T issued Vol 49 fol 133

DLR

Transfer No 14870 produced 1st May 1889 at 11.40 am The above named Corporation to Hamilton Gilmer of Lot 27 and part of Lot 28 plan 331.

Fresh C of T issued Vol 51 fol 29

DLR

Transfer No 14944 produced 1st June 1889 at 10.45 pm The within named Corporation to Williams of Lot 38 and part of Lot 39 Plan 394

Fresh C of T issued Vol 51 fol 31

DLR

Transfer 15153 produced 18th July 1889 at 1.50 pm The Mayor Councillors and Citizens of the City of Wellington to James Stewart Charles Stewart and James Hutchen of Lots 41 and 42 plan 394

Fresh C of T issued Vol 52 fol 14

Transfer 15154 produced 18th July 1889 at 1.50 pm The above named Corporation to Charles Seagar of part of within Land

Fresh C of T issued Vol 52 fol 15

Transfer 15673 produced 19th November 1889 at 12.30 pm The within named Corporation to Emma Rosetta Hutchens of part of lot 46 plan 394

Fresh C of T issued Vol 53 fol 169

Transfer 15686 produced 25th November 1889 at 10.30 am The within named Corporation to Thomas Donald Sinclair and Robert Archibald of part lot 36 plan 394

Fresh C of T issued Vol 53 fol 187

Transfer 15740 produced 9th December 1889 at 10 am The within named Corporation to Emma Rosetta Hutchens of part of lot 46 plan 394

Fresh C of T issued Vol 53 fol 230

Transfer 15788 produced 18th December 1889 at 11.20 am The within named Corporation to Alexander Sample of part of lot 46 plan 394

Fresh C of T issued Vol [illegible] fol [illegible]

Transfer 16014 produced 26th February 1890 at 10.45 am The within named Corporation to Hugh Beauchamp Halswell of lot 40 plan 394

Fresh C of T issued Vol [illegible] fol [illegible]

Transfer 16305 produced 12th May 1890 at 3 pm. The within named Corporation to William Freeman of part lot 36 plan 394

Fresh C of T issued Vol [illegible] fol [illegible]

NEW ZEALAND. 3/224 (Ps)

(C)

[CERTIFICATE OF TITLE.]

Register Book, Continued Vol. 3 Folio. 224

Lease No. 1421 produced 7th June 1890 at 10.30 a.m. The within named Corporation to John Ross and Robert Glendinning of Lot 1 plan 172. Terms 21 years from 18th February 1890.

Transfer 16527 produced 1st July 1890 at 12.30 p.m. The within named Corporation to James Hanson of part Lot 36 plan 594. Issued Vol. 66 fol. 92.

Transfer No. 16735 [illegible] from The within named Corporation to Thomas Macarthy of part Lot 54 plan 594. Issued Vol. 66 fol. 270.

Transfer No. 16842 Produced 4th September 1890 at 11 a.m. The within named Corporation to Alexander Sample of part of Lot 4 Block 3 plan 594. Issued Vol. 66 fol. 338.

Certificate of Title is cancelled as to the land described in the second schedule to the Wellington Reclamation and Exchange Act 1890 and Certificate of Title issued Vol. 367 fol. 143.

Transfer [illegible] Produced [illegible] at 2 p.m. The above named Corporation to [illegible] Issued 11 plan [illegible] Terms 21 years from 7th January 1891.

Transfer 17015 Produced 23rd May 1891 at 11.15 a.m. The above named Corporation to Mayors Councillors and Citizens of the City of Wellington in Trust for Henry and Robert Young of part of Lot 54 plan 594. Issued Vol. 59 fol. 42.

Transfer 18144 Produced 4 July 1891 at 11.10 a.m. Mayor Councillors and Citizens of the City of Wellington in Trust of Right of way over part of Section 224 as depicted plan 594.

Mortgage 12756 Produced 24 [illegible] 91 at 11.45 a.m. Manton and [illegible] Lewis to Hotel Arms of Lease 1625. DISCHARGED

Lease 1732 Produced 16 October 1891 at 3 P.M. The within named Corporation to Border Hall Section Lot 9 Plan 565 Term 21 years from 15th October 1890.

Lease 1796 produced 25th March 1892 at 2.35 p.m. The within Corporation to John Ross and Robert Glendinning of Lot 7 Block II plan 540. Term 21 years from 18th May 1891.

Lease 1818 produced 2nd May 1892 at 3 p.m. The within Corporation to John Guthrie Wood Aitken, William Allen Callis, Arthur Holy, Sidney George Martin Thomas McKenzie and James Petherick of Sec 9 Blocks 5 plan 42 years from 1st January 1892.

Transfer 19624 produced 10th May 1892 at 3 p.m. The within Corporation to William Spicer of Lots 44 and 45 plan 394.

Lease 1976 The within Corporation to The Trustees of Wellington Working Mens Club and Literary Institute of Sec 3 plan 672 Term 21 years from 1st September 1892 - 1913.

Mortgage 14811 Produced 18th October 1892 at 11.30 a.m. The Trustees of Wellington Working Mens Club and Literary Institute to Bridge Completion of Lease 1976. DISCHARGED

Mortgage 14869 Produced 17th January 1893 at 3 p.m. The Trustees of the Wellington Working Mens Club and Literary Institute to The National Bank of New Zealand Limited of Lease No. 1970. DISCHARGED

Lease 2049 Produced 15th March 1893 at 11.30 a.m. The within Corporation to Shortland and Company Limited of Sec 9 plan 594 The Term 21 years from 23rd February 1893.

Discharge of Mortgage 14869 Produced 23rd March 1893 at 3 p.m.

Lease 2047 Produced 14th March 1893 at 12.30 p.m. The within Corporation to The Wellington Harbour Boards of part of the Basin Terms 31 years from 8th October 1892. Rental £1 13s 10d.

Mortgage 15795 Produced 11th April 1893 at 1 p.m. The Trustees of the Wellington Working Mens Club and Literary Institute to John Duthie and Andrew Young of Lease 1970. DISCHARGED

Mortgage 15414 Produced 3rd May 1893 at 2.30 p.m. Shortland and Company Limited to The Colonial Mutual Life Assurance Society Limited of Lease 2049. DISCHARGED

Lease 2159 Produced 2nd August 1893 at 11.20 a.m. The within Corporation to William Arthur Bruce Fergo Bruce and Alexander Mac Neil of Lots 5, 6 and 8 plan 594 The Term 21 years from 15th May 1893.

Discharge of Lease 1796 Produced 17th August 1893 at 12.10 p.m.

Transfer of Lease 1796 Produced 17th August 1893 at 12.10 p.m. David Ross Executor to John Manton named.

Mortgage 15836 Produced 17th August 1893 at [illegible] The Manton to Queen Street [illegible] DISCHARGED

CONTINUED

224.

Lease 2191 Produced to Mr Eglinton 1893 at 12.52 pm
Statutory Corporation to Frederick Townsend
and James Paul of Lot 11 Block III plan 6740
and Lot 6 Block III plan 340. Term 21 years
from 1st August 1893. Right of renewal.

X. Caveat 893 by The Bank of Australasia (expired)
Lease 2191 Produced to Mr Eglinton 1893 at 12.52 pm

Mortgage 11484 Produced 16th January 1894 at
2.45 pm from Ethel Lane and Company Limited to
The Colonial Mutual Life Assurance Society Limited
of Lease 2191

DISCHARGED

Lease 2318 Produced 29th March 1894 at 3 pm
the above Corporation to the New Zealand Electrical
Syndicate Limited of Lots 11 and 13 Block III plan 6740
Lots 17 and 19 Block III plan 6740. Term 21 years
from 21st January 1893

Transfer of Lease 2191 Produced 31st March 1894 at
10.20 am Alice Maitland to David Ross
Lessee of Wellington Merchant.

Lease 2327 Produced 31st March 1894 at 11 am
the above Corporation to Stephen de Balle Brandon
Frances Mary Dillon Bell and Edward Turner of
Lot 3 plan 6740. Term 21 years from 9th June 1857

Proclamation No 1140 taking land for the Wellington
Extension Railway Produced 7th May 1894 at 10 am

Lease 2392 Produced 7th August 1894 at 12.25 pm
the above Corporation to Frederick William Hay Little
Edward Bolton Bristow Frederick Townsend
and James Paul of Lots 11 and 13 Block III
plan 6740. Term 21 years from 1st May 1894

Mortgage 17511 Produced 7th August 1894 at 12.
5 pm from Frederick William Hay Little Edward
Bolton Bristow Frederick Townsend and
James Paul to The Australasian Mutual
Building and Investment Society of Lease 2392

DISCHARGED

Lease 2445 Produced 15th October 1894 at 2.30 pm
the above Corporation to George Frederick Colin
Campbell of part above land. Term 13 years
and 9 months from 1st September 1894

Lease 2430 Produced 17th October 1894 at 2. 45 pm
the within Corporation to Frederick Charles
Braithwaite of Lot 3 Block III plan 6740 Term 21
years from 1st October 1894

Lease 2551 Produced 7th May 1895 at 11.15 am the
within Corporation to C. C. Wells & Co Limited of
Lots 1. 2. 3. 4 Block III plan 505 Term 21 years
from 1st May 1895

Lease 2553 Produced 8th May 1895 at 11. 10 am the within
Corporation to William Henry Green of Lot 4 Block III plan
340 Term 21 years from 1st May 1895

CONTINUED

Lease 2556 Produced 11th May 1895 at 11. 10 am the within
Corporation to Daniel William Nolan Solicitor and
Robert Abercrombie Reitano of Lot 7 Block III plan 340
Term 21 years from 1st May 1895

Lease 2555 Produced 13th May 1895 at 11 30 am the within
Corporation to Sandie Hallenstein of Lot 8 plan 340
Term 21 years from 13th May 1895

Lease 2000 Produced 16th June 1895 at 11 25 pm the within
Corporation to Hughstown Timber & Coal Company
Limited of Lot 2 plan 505 Term 21 years from
13th June 1895

Lease 2119 Produced 22nd July 1895 at 12. 30 pm the within Corporation
to John Fairbairn Wright Miller of Lot 5 plan 505 Term 21 years
from 1st June 1895.

DISCHARGED

Mortgage 19017 Produced 11th March 1896 at 10.
2 pm from Hughstown Timber & Coal
Company Limited of Lease 2555

Mortgage 19018 Produced 11th March 1896 at 10.
2. 05 pm from W. C. Wells and Company Limited & the
Bank of Australasia Limited of Lease 2551

X. Caveat 1444 by Sandie Hallenstein Limited 2556 (
Lease 2556 Produced 11th March 1896 at 10. 20 am Suffolk

Mortgage 1976 Produced 11th March 1896 at 10.
2 pm from Frederick William Hay Little to The
Permanent Building and Investment Society of Lease

DISCHARGED

Lease 2686 Produced 2nd November 1896 at 12. 10 pm the
within Corporation to The Wellington Wire Cloth Manufacturing
Company Limited of Lot 11 Block 3 plan 5110 Term 21 years
from 15th September 1896

Mortgage 19911 Produced 5th October 1897 at 3 pm from
David Miller Mary Ann Miller Robert Miller
Richard Miller and Arthur Miller to The Wellington Building
Investment Company Limited of Lease 2556

DISCHARGED

Lease 2724 Produced 23rd March 1898 at 2 pm from
William Henry Green to Archibald Clark and
Matthew Anderson Clark of part land in Lease 2556
Term 6 years from 1st January 1896

Mortgage 21128 Produced 26th November 1898 at 10 pm
from Hughstown Timber & Coal Company Limited of Lease 2555

DISCHARGED

Lease 2740 Produced 12th December 1898 at 3 pm
Frederick Townsend and James Paul to Alfred Gilbert
Lane of Lot 6 Block III plan 340 (part of Lease in Lease
2191. Term 5 years from 25th November 1898 Right of
renewal and purchase

X. Caveat 1491 by William Henry Green Produced 12th January 1899 at
11. 30 am (affects Lease 2455)

WITHDRAWN.

X. Caveat 1511 by Charles Braithwaite Produced 13th January 1899 at
11. 40 am (affects Lease 2430)

NEW ZEALAND. 3/224(17)

(C)

[CERTIFICATE OF TITLE.]

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Lease 2761 Sheet 23rd January 1896 at 10 a.m. The Wellington Corporation to George Winder of part Lots 1 and 5 plan 585 21 yrs from 1/10/96 M. Mc Cathan

Lease 2782 Sheet 8th February 1896 at 2 p.m. The Wellington Corporation to The Telegraph Electric Manufacturing Company Limited of Lot 12 Block III plan 585 M. Mc Cathan

Mortgage 21247 produced 29th May 1896 at 2 p.m. George Winder to The Wellington Trust Loan and Investment Company Limited of Lease 2761 M. Mc Cathan D.L.R.

DISCHARGED

Lease 2875 Produced 27th May 1896 at 11 a.m. The Wellington Corporation to Judah Myers, Solomon Hyam Myers, John Myers and Philip Myers of Lot 5 pt and part 3 and 4 plan 585 21 yrs from 1-6 M. Mc Cathan

Transfer of Lease 1732 produced 6th June 1896 at 11.55 a.m. Bendix Hallenstein to Kempthorne Prosser and Company's New Zealand Drug Company Limited M. Mc Cathan D.L.R.

Grant of Easement produced 8th June 1896 at 3 p.m. Bendix Hallenstein to Kempthorne Prosser and Company's New Zealand Drug Company Limited over part Land in Lease 2588 and Kempthorne Prosser and Company's New Zealand Drug Company Limited to Bendix Hallenstein over part Land in Lease 1732 & 2588 M. Mc Cathan

Lease 2961 Produced 18th August 1896 at 11.55 a.m. The Wellington Corporation to George Winder of part Lot 4 plan 585 M. Mc Cathan 21 yrs from

Mortgage 22061 produced 12th September 1896 at 11.55 a.m. George Winder to The Wellington Trust Loan and Investment Company Limited of Leases 2764 2961 M. Mc Cathan D.L.R.

Lease No. 2996 produced 1st October 1896 at 11.10 a.m. The Wellington Corporation to Judah Myers, Solomon Hyam Myers, John Myers and Philip Myers of parts of Lots 2A and 3A plan 585 M. Mc Cathan D.L.R.

Transfer of Lease 2819 produced 5th March 1897 at 2 p.m. John Ingersoll Wright Mills to E. W. Mills & Company Limited M. Mc Cathan D.L.R.

Grant of Easement produced 5th March 1897 at 2 p.m. Kempthorne Prosser and Company's New Zealand Drug Company Limited to E. W. Mills & Company Limited over part land in Lease 2600 and E. W. Mills & Company Limited to Kempthorne Prosser and Company's New Zealand Drug Company Limited over part land in Lease 2819. M. Mc Cathan D.L.R.

CONTINUED on Pages 8 & 10

Mortgage 23436 produced 20th May 1897 at 10.15 a.m. E. W. Mills and Company Limited to The Bank of New South Wales of Lease 2819 H. Stewart D.L.R.

Lease 3211 Sheet 8th July 1897 at 2.25 p.m. The Wellington Corporation to Charles Ogden of Lot 4 Block III plan 585 21 yrs from 1/10/97 H. Stewart D.L.R.

Lease 3215 Sheet 8th July 1897 at 2.33 p.m. The Wellington Corporation to Peter Nisbet Solomon of Lot 3 Block IV plan 585 21 yrs from 1/10/97 H. Stewart D.L.R.

Mortgage 24133 produced 25th August 1897 at 2 p.m. Judah Myers Solomon Hyam Myers John Myers and Philip Myers to Alexander Myers and Coleman Cantor of Leases 2875 and 2996 H. Stewart D.L.R.

DISCHARGED

DISCHARG

Mortgage 24182 produced 2nd September 1897 at 10 a.m. John Alfred Lundeson to The Wellington Building and Investment Company Limited of Lease 3215 H. Stewart D.L.R.

DISCHARGED

Transfer 29322 Produced 25th August 1897 at 3 p.m. The Wellington Corporation to Mary Ellen Miller of part Lot 4 & 5 plan 585 21 yrs from 1/10/97 H. Stewart D.L.R. C/T 88/271

Transfer 29223 Produced 25th August 1897 at 3 p.m. Mary Ellen Miller to Emily Mary Alexander H. Stewart D.L.R. C/T 88/271

Lease 3296 Produced 30th August 1897 at 11.15 a.m. The Wellington Corporation to The Wellington Building and Investment Company Limited of Lot 3 Block III plan 585 21 yrs from 1/10/97 H. Stewart D.L.R.

Lease 3297 Produced 30th August 1897 at 11.15 a.m. The Wellington Corporation to The Wellington Building and Investment Company Limited of Lot 2 Block III plan 585 21 yrs from 1/10/97 H. Stewart D.L.R.

Lease 3313 Produced 4th September 1897 at 2.45 p.m. The Wellington Corporation to Moses Davis Nathan of Lot 2 Block IV plan 585 21 yrs from 1/10/97 H. Stewart D.L.R.

Grant of Easement produced 1897 at 3 p.m. E. W. Mills & Bendix Hallenstein Lease 2819

2214.

Transfer 29549 (Grant of Right of Way over part Land in Lease 3214) produced 14th October 1897 at 10.15 am Charles Cathie to The Wellington Building and Investment Company Limited (as appurtenant to &c. Land in Lease 3214) W. Stuart & S.L.R.

Transfer 29550 (Grant of Right of Way over part Land in Lease 3296) produced 14th October 1897 at 10.15 am The Wellington Building and Investment Company Limited to Charles Cathie (as appurtenant to the Land in Lease 3214) W. Stuart & S.L.R.

Mortgage 24587 produced 4th November 1897 at 2.30 pm George Wieder to The National Bank of New Zealand Limited of Leases 2764 and 2961 W. Stuart & S.L.R.

Lease 3401 Produced 11th October 1897 at 3 pm The Wellington Corporation to Robert Fergus Smith of Lot 8 Block V plan 540 W. Stuart & S.L.R. 21 yrs from 31/9/97.

DISCHARGED Mortgage 25628 produced 10th May 1897 at 12.15 pm DISCHARGED 24/11/98 The Metropolitan Permanent Building and Investment Society of Lease 3214 and Transfer 29550 W. Stuart & S.L.R.

Mortgage 25525 produced 17th June 1897 at 11.45 am Robert Fergus Smith to James McKerrow of Lease 3401 W. Stuart & S.L.R.

DISCHARGED Mortgage 25941 produced 22nd June 1898 at 11 am DISCHARGED 24/11/98 The Metropolitan Permanent Building and Investment Society of Lease 3214 and Transfer 29550 W. Stuart & S.L.R.

Lease 3613 Produced 25th July 1898 at 11.45 am The within Corporation to Bendix Wallenstein of Lot 11 x SURRENDERED 17.11.99. 21 yrs W. Stuart & S.L.R. 6-4-98

Lease 3614 Produced 25th July 1898 at 11.45 am The within Corporation to Bendix Wallenstein of Lot 13 x SURRENDERED Plan 540 17.11.99. 21 yrs from W. Stuart & S.L.R.

Lease 3615 Produced 25th July 1898 at 11.45 am The within Corporation to Bendix Wallenstein of Lot 16 Plan 540 & 21 yrs from 6.4.98 W. Stuart & S.L.R.

Lease 3613 produced 27th August 1895 at 11 am the within Corporation to Andrew Given of Lot 21 Block 2 plan 540 Term 21 years from 15th April 1896 W. Stuart & S.L.R.

Lease 3614 produced 27th August 1895 at 11 am the within Corporation to Evans Allan Roller Flour and Oatmeal Milling Company Limited of Lot 11 Plan 585 Term 21 years from 1st March 1895 W. Stuart & S.L.R.

Lease 3615 produced 27th August 1895 at 11 am the within Corporation to Evans Allan Roller Flour and Oatmeal Milling Company Limited of Lot 17 Block 2 plan 540 Term 21 years from 1st March 1895 W. Stuart & S.L.R.

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Lease 3672 (Grant of Right of Way over Lease 3600) produced 20th September 1898 at 2.52 pm Reuben Hallenstein to The Wellington Woollen Manufacturing Company Limited for the term created by Lease 3600 W. Stuart & S.L.R.

Transfer 31926 Produced 22nd September 1898 at 3 pm The within Corporation to William Duck and John Campbell as part Sec 46 45. Sec. Plan 3944 with right of way (and Rental) over other part Sec 46. W. Stuart & S.L.R. Cap 2 Vol 95 f 135

Mortgage 27038 produced 25th November 1898 at 2.30 pm DISCHARGED 24/11/98 The Fergus Smith & The National Bank of New Zealand Limited of Lease 3401 W. Stuart & S.L.R.

X Caveat 1371 by Wellington Building and Investment Company Limited produced 23rd Decr 1898 at 11 am WITHDRAWN (2585) W. Stuart & S.L.R.

Lease 3754 Produced 30th January 1899 at 10 am The within Corporation to Thomas Eaton Tutchell William Hinton and William Lee Palmer of Lot 21 Block III plan 540 W. Stuart & S.L.R. 21 yrs from 1 98

Mortgage 27367 produced 31st January 1899 at 2.30 pm DISCHARGED 24/11/98 Fergus McLaren Turnbull William Robert and William Lee Palmer to The Metropolitan Permanent Building and Investment Society of Lease 3784. W. Stuart & S.L.R.

Lien 70 under the Contractors and Workmens Liens Act 1892 produced 6th February 1899 at 13.38 DISCHARGED 1899 W. Stuart & S.L.R. affects Lot 5 plan Block V plan 540 W. Whitmore & S.L.R.

Lease 3798 produced 21st February 1899 at 11.30 am The within Corporation to Clary and Company Limited of Lot 15 19 Block III Plan 540 W. Stuart & S.L.R.

Lease 3803 Produced 28th February 1899 at 2.25 pm The within Corporation to Peter McArdle of Lot 6 Block V plan 951 Term 21 years from 5th April 1898 W. Stuart & S.L.R.

Mortgage 27601 produced 10th March 1899 at 3 pm DISCHARGED Peter McArdle to James McKerrow of Lease 3803 W. Whitmore & S.L.R.

Lease 3811 produced 13th March 1899 at 2.3 pm The within Corporation to Thomas Grant Ritchie of Lot 5 Block 5 Plan 951 Term 21 years from 1st October 1895 W. Whitmore & S.L.R.

Mortgage 27634 produced 14th March 1899 at 2.26 pm Thomas Grant Ritchie to Thomas McKerrow of Lease 3811 W. Whitmore & S.L.R.

Mortgage 27664 produced 21st March 1899 at 11.5 am Thomas Grant Ritchie & John Paterson and James Henry Martin of Lease 3811 W. Whitmore & S.L.R.

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(C)

[CERTIFICATE OF TITLE.]

Register Book,

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Proclamation No 153 of 15th April 1892 for the taking part of a Road Line for the diversion of State Highways and Railways and Harbours by sale for Non-payment of Rates and for the Vesting in Harbour Boards and Corporations &c. Examined &c. 3/4/1895 C/T 101/220 W. Stuart D.S.R.

Mortgage 28470 produced 7th July 1899 at 11 a.m. ~~DISCHARGED~~ Charles Bradford (with consent of Caleb) to Thomas Stanley Bradford of Lease 2450 W. Wilson A.D.L.

Lease 3954 of Section 17 July 1899 at 3 p.m. the Waitemata Corporation to the Metropolitan Electrical Syndicate Limited of part Lot 1 Parish of Alberton Block III Waitemata Land District Term 21 years from 21st January 1893 W. Stuart D.S.R.

Lease 3955 Produced 17th July 1899 at 3 p.m. the Waitemata Corporation to the Metropolitan Electrical Syndicate Limited of Lot 119 part Lot 15 Block III Waitemata Land District Term 21 years from 21st September 1897 W. Stuart D.S.R.

Transfer (No 33770A) of Lease 3445 (Grant of easement over part Land Herein) produced 5th August 1899 at 11.5 a.m. Wood Brothers Limited to Bendix Hallenstein W. Wilson A.D.L.

Transfer (No 33770A) of Lease 3445 (Grant of easement over part Land Herein) produced 5th August 1899 at 11.5 a.m. Bendix Hallenstein to Wood Brothers Limited W. Wilson A.D.L.

Transfer (No 33847A) of Lease 3445 (Grant of easement over part Land Herein) produced 12th August 1899 at 11.15 a.m. Wood Brothers Limited to Barry and Company Limited W. Wilson A.D.L.

Transfer (No 33847A) of Lease 3445 (Grant of easement over part Land Herein) produced 12th August 1899 at 11.15 a.m. Barry and Company Limited to Wood Brothers Limited W. Wilson A.D.L.

Transfer of Leases 3603, 3604 produced 11th August 1899 at 2.58 p.m. Bendix Hallenstein to David Edward Thomson W. Wilson A.D.L.

Transfer (33850) of Lease 2740 produced 14th August 1899 at 11.16 a.m. Alfred Gibbon Dane to William Haigh of one equal undivided share in Land therein W. Stuart D.S.R.

Transfer (33903A) of Lease 3603 (Grant of Easement over part Land Herein) produced 22nd August 1899 at 11.45 a.m. David Edward Thomson to Bendix Hallenstein W. Stuart D.S.R.

Transfer (33903A) of Lease 3445 (Grant of Easement over part Land Herein) produced 22nd August 1899 at 11.45 a.m. Bendix Hallenstein to David Edward Thomson W. Stuart D.S.R.

Lease 3990 produced 23rd August 1899 at 11.12 a.m. Thomas Grant Ritchie to John Boxter and William Henry MacLaren Thomson as Executors and Trustees of part land in Lease 3511 Term 3 years from 1st August 1899 W. Stuart D.S.R.

Transfer 34090 of Lease 3603 (Grant of Easement over part land Herein) produced 6th September 1899 at 2.42 p.m. Bendix Hallenstein to Barry and Company Limited W. Stuart D.S.R.

Transfer 34091 of Lease 3603 (Grant of Easement over part land Herein) produced 6th September 1899 at 2.45 p.m. Barry and Company Limited to Bendix Hallenstein W. Stuart D.S.R.

Transfer (34131) of Lease 3443 (Grant of Easement over part Land Herein) produced 3rd October 1899 at 2.32 p.m. Andrew Gibbon Dane to Wood Brothers Limited W. Stuart D.S.R.

Transfer (34132) of Lease 3445 (Grant of Easement over part Land Herein) produced 3rd October 1899 at 2.32 p.m. Wood Brothers Limited to Andrew Gibbon Dane W. Stuart D.S.R.

Transfer (34567) of Lease 2740 produced 16th November 1899 at 10.25 a.m. Alfred Gibbon Dane to Hoyte Hope Allcroft of undivided half share W. Wilson A.D.L.

Mortgage 29458 produced 21st November 1899 at 1 p.m. Thomas Grant Ritchie to John Paterson and James Barry all as in Lease 3511 W. Stuart D.S.R.

Mortgage 29455 produced 21st November 1899 at 1.5 p.m. Thomas Grant Ritchie to Fredrick Grant Ritchie of Lease 3511 W. Stuart D.S.R.

Transfer (34595) of Lease 2392 (Grant of Easement Party Wall over part Land Herein) produced 24th November 1899 at 2.55 p.m. Frederick William Haylittle and others to David Edward Thomson Haylittle and others to Bendix Hallenstein W. Wilson A.D.L.

Transfer (34595) of Lease 3603 (Grant of Easement Party Wall over part Land Herein) produced 24th November 1899 at 2.56 p.m. David Edward Thomson to Frederick William Haylittle, Edward Bolton Bruton, Frederick Drummond and James Paul W. Wilson A.D.L.

Transfer (35046) of Lease 2392 (Grant of Easement party wall over part land therein) produced 19th February 1900 at 2.05 p.m. Frederick William Haylittle and others to Bendix Hallenstein W. Wilson A.D.L.

Transfer (35046) of Lease 3605 (Grant of Easement party wall over part land therein) Bendix Hallenstein to Frederick William Haylittle Edward Bolton Bruton Frederic Drummond and [illegible] W. Wilson A.D.L.

CONTINUED on Page 2

22[illegible]

Transfers of Leases Nos 1421 and 1796 produced 12th March 1900 at 11.50 a.m. John Ross and Robert Glendinning to Ross and Glendinning Limited

W.J. Kilgour A.R.R.

Xn Caveat No 1509 by Frederick William Hustwitte and Edward Bolton Proctor produced 15th March 1900 at 11 a.m. (affects Lease 2392) W.J. Kilgour A.R.R.

Xn Caveat No 1510 by Frederic Townsend and James Paul produced 15th March 1900 at 11 a.m. (affects Lease 2392) W.J. Kilgour A.R.R.

Transfer of Lease 3311 produced 19th March 1900 at 2.40 p.m. James Mc Kerrow to Atlantic & Pacific Investment Company Limited W.J. Kilgour A.R.R.

Transfer of Lease 3313 produced 19th March 1900 at 2.30 p.m. James Paul Anderson to Walter Small bone W.J. Kilgour A.R.R.

DISCHARGED Mortgage 3296 produced 19th March 1900 at 2.30 p.m. Walter Smallbone to Thomas Smith Rotherham of Lease 3313 W.J. Kilgour A.R.R.

Grant of Easement Party Wall (Transfer 35431 produced 7th April 1900 at 11.30 a.m.) John Alfred Tamondson to Walter Smallbone over part land in Lease 3315 (appurtenant to Lease 3313) W.J. Kilgour A.R.R.

Lease 4282 produced 15th May 1900 at 11.10 a.m. The within Corporation to James Stephen Keith and John Hutcheson of lot 21 Block III plan 540 as tenants in common W. Smart D.L.R.

Transfer (35707) of Lease 3103 (Grant of Easement Party Wall over part land therein) David Edward Keenan to Lacy and Company Limited produced 17th May 1900 at 11.50 a.m. W.J. Kilgour A.R.R.

Transfer (35707) of Lease 3798 (Grant of Easement Party Wall over part land therein) produced 17th May 1900 at 11.50 a.m. Lacy and Company Limited to David Edward Keenan W.J. Kilgour A.R.R.

Grant of Easement Party Wall (Transfer 35811 produced 31st May 1900 at 2.21 p.m.) Andrew Gunn to Lacy and Company Limited over part land in Lease 3143 W.J. Kilgour A.R.R.

Grant of Easement Party Wall (Transfer 35816 produced 31st May 1900 at 2.21 p.m.) Lacy and Company Limited to Andrew Gunn over part land in Lease 3795 W.J. Kilgour A.R.R.

DISCHARGED Mortgage 36514 produced 11th June 1900 at [illegible] to The Wellington Building and Investment Company Limited of Lease 3643 W.J. Kilgour A.R.R.

CT 249/249 Subst for Block I Reserve K.S.
249/250 " Block II " "
176/179 " Block III " "
179/180 " Block IV (etc) "
For continuation of Memorials See folio 1 at end of this Volume
Block V " CT 269/82 " for Block X

Grant of Right of Way (Lease 4329 produced 19th June 1900 at 2.50 p.m. The Wellington Building and Investment Company Limited to Herbert Thompson and Arthur James Bremner) over part land in Memo 29549 Term 6 years from 5th April 1900

W. Smart D.L.R.

Lease 4329 produced 19th June 1900 at 2.50 p.m. The Wellington Building and Investment Company Limited to Herbert Thompson and Arthur James Bremner of part land in Lease 3296 Term 6 years from 5th April 1900 and Right of Way

W. Smart D.L.R.

Grant of Right of Way (Lease 4338 produced 20th June 1900 at 2.42 p.m. The Wellington Building and Investment Company Limited to Archibald Clark and Peter Lindsay) over land in Memo 29544 Term 6 years from 5th April 1900

W. Smart D.L.R.

Lease 4338 produced 20th June 1900 at 2.42 p.m. The Wellington Building and Investment Company Limited to Archibald Clark and Peter Lindsay of part land in Lease 3296 Term 6 years from 5th April 1900 and Right of Way

W. Smart D.L.R.

DISCHARGED Mortgage 3[illegible] produced 11th July 1900 at [illegible] Limited to Joseph Jamieson of Lease 3[illegible] Memo 335[illegible] 2[illegible] 25[illegible] 35516

W.J. Kilgour A.R.R.

Grant of Easement Party Wall (Transfer 36451 produced 8th August 1900 at 11.10 a.m.) James Mc Laren Dunbull William Edward Clifford Heckson and William Le Palmer to James Stephen Keith and John Hutcheson over part land in Lease 3798 (appurtenant to Lease 4282)

W. Smart D.L.R.

Mortgage 31850 produced 8th August 1900 DISCHARGED Executors of James Stephen Keith and John Hutcheson to The Metropolitan Permanent Building and Investment Society of Lease 4282 and Transfer (or Grant of Easement) No 36451 DISCHARGED

W. Smart D.L.R.

Lease 4460 produced 20th October 1900 at 11.5 a.m. Frederic Townsend and James Paul to Ella Horne Hartridge and Company Limited of part lot 1 Block III plan 492 (part land in Lease 2191) Term 6 years from 12th day May 1900 W. Smart D.L.R.

X Caveat 1551 by Joseph Edward Lilley and Revell WITHDRAWN 22nd November 1900 at 11.32 (affects 3654 - 3658 3958. 3955) W.J. Kilgour A.R.R.

Mortgage 33238 produced 26th November 1900 at 3.30 p.m. The Wellington Building and Investment Company Limited to [illegible] of Lease 3[illegible] DISCHARGED

W.J. Kilgour A.R.R.

X Caveat 1552 by Francis Charles Woodforde produced 28th November 1900 at 2.35 p.m. (affects Lease 3385)

W.J. Kilgour A.R.R.

Lease 4551 produced 1st January 1901 at 2.5 p.m. William Henry Glen (with Consent of Executor) to Alfred Ernest Rimmel of part land in Lease 2655 Term 5 years from 1st January 1901

W.J. Kilgour A.R.R.

CONTINUED on Page 11 G.B.

Transfer of Lease 2044 produced 21st February 1901 at 2.50 pm Shortland and Company Limited to Shortland and Company Limited
W. J. Kilgour ALR

Lease 4452 produced 2nd May 1901 at 3 pm Frederick Beaumont and James Hall to Nicholas Hope Morgan of Lot 1 Block III plan 540 (part land in Lease 2191) Term 5 years from 21st November 1900
W. J. Kilgour ALR

Lease 4658 produced 9th May 1901 at [illegible] the within perpetuation to Alfred [illegible] of Lot 37 Inland Lot 36 Reserve [illegible] 8 years from [illegible]
[illegible]

Lease 4671 produced 17th [illegible] at 12.10 pm the within co[illegible] to New Zealand Consolidated [illegible] Limited of Lot 15 Block I [illegible] Term 21 years from 11th April [illegible]
[illegible]

Transfer of Lease [illegible] produced 15th May 1901 at 11.45 a.m. Lease [illegible] Value to Robert Macintyre Price [illegible] John Bonyon Lucas of his interest as [illegible] common in the shares
[illegible]

Lease 4692 produced [illegible] May 1901 at 12.20 pm Charles Dyer and [illegible] gee to Allan Canadeum and Robert Addison [illegible] land in Lease 4448 Term 3 years from [illegible] 1901
[illegible]

Lease 4699 produced 17th June 1901 at 10.15 am the within perpetuation to Robert Fergus Smith [illegible] Block I plan 951 Term 21 years from 8th July 1900
[illegible]

Lease 4716 produced [illegible] July 1901 at 11.25 a.m. the Wellington Building and Investment Company Limited to Charles [illegible] of part land in Lease 3297 with right of way over other part and over part land in Lease [illegible] and also land in Transfer 29549. Term [illegible] from 1st day of May 1901 [illegible] and right of way to and from the [illegible] as shown on the plan thereon
W. J. Kilgour ALR

Lease 4738 produced [illegible] August 1901 at 3 pm Walter Hope to Philip Benjamin Wallis of Lease [illegible] Term [illegible] from 5th day of March 1901
[illegible]

Lease 4805 produced [illegible] the within [illegible] at George [illegible] plan 5740 [illegible]

[illegible] September 1901 at 10.15 a.m. Bruce Hawken Jackson of Lot 22 Block III [illegible] 16th July 1901
W. J. Kilgour ALR

Lease 4806 [illegible] the within [illegible] Paterson and [illegible] plan 5740 [illegible]

[illegible] September 1901 at 10.15 a.m. Alexander Stronach [illegible] of Lot 23 Block III [illegible] 16th July 1901
W. J. Kilgour ALR

X Caveat 16 [illegible] Withdrawn [illegible] (affects Lease [illegible]

(Caveats dated 3rd September 1901 and now 754 and 3955)
W. J. Kilgour ALR

DISCHARGED

Mortgage 34452 produced 20th [illegible] at 11.45 am from George Henry Jackson and [illegible] Wellington Building and Investment Company Limited of Lease 4805
W. J. Kilgour ALR

DISCHARGED

Mortgage 35655 produced 5th November 1901 at 3.55 pm from Alexander Stronach [illegible] Metropolitan Permanent Building and Investment Society of Lease 4806
W. J. Kilgour ALR

Transfer of Lease 4452 produced 4th November 1901 at 2.33 pm Walter Hope morgan to Philip Benjamin Wallis
W. J. Kilgour ALR

Lease 4571 produced 1st November 1901 at 3 pm Andrew Gunn with consent of Mortgagee to Edward Preston Jackson Upham and Charlotte Ernest Henry Upham of part land in Lease 3648 Term 5 years from 1st October 1901
W. J. Kilgour ALR

Transfer of Lease 4658 produced 5th February 1902 at 2.35 pm Alfred Falkner to James Reid
W. J. Kilgour ALR

DISCHARGED

Mortgage 36023 produced 15th March 1902 at 11 am Edward Bartlett to Metropolitan Permanent Building and Investment Society of Lease 3224
W. J. Kilgour ALR

Lease 5019 produced 22nd April 1902 at 11.15 am Ulva Brokers Limited to Frank Horace Broderick and William Henry Hining of part land in Lease 3645 Term 7 years from 1st August 1899
W. J. Kilgour ALR

Grant of Easement - Party Wall (Transfer 414644 produced 30th April 1902 at 10.5 am) James Hawken Jackson and George Henry Jackson to Alexander Stronach Paterson and George Shirtcliffe over part land in Lease 4805 (appurtenant to Lease 4806)
W. J. Kilgour ALR

Grant of Easement - Party Wall (Transfer 414644 produced 30th April 1902 at 10.5 am) Alexander Stronach Paterson and George Shirtcliffe to James Hawken Jackson and George Henry Jackson over part land in Lease 4806 (appurtenant to Lease 4805)
W. J. Kilgour ALR

Transfer of Lease 4805 produced 2nd May 1902 at 2.50 pm George James Hawken Jackson to Walter James Petherick and George Henry Jackson of his interest as tenants in common in equal shares
W. J. Kilgour ALR

DISCHARGED

Mortgage 36408 produced 2nd May 1902 at 2.50 pm George Henry Jackson and Walter James Petherick to James Hawken Jackson of Lease 4805
W. J. Kilgour ALR

Lease 5053 produced 12th May 1902 at 11 am The New Zealand Consolidated Dental Company Limited (with consent of Mortgagee in Lease 4671) to Miller Kilson and Company Limited of part land, with right of way over other part Term 14 years from 1st February 1902
W. J. Kilgour ALR

Lease 5054 produced 12th May 1902 at 11 am The New Zealand Consolidated Dental Company Limited (with consent of Mortgagee) to Nelson Moate and Company Limited of part land in Lease 4671 with right of way over other part Term 2 years from 18th March 1902
W. J. Kilgour ALR

Lease 5055 produced 12th May 1902 at 11 am The New Zealand Consolidated Dental Company Limited (with consent of Mortgagee) to Josiah Dawson of part land in Lease 4671 with right of way over other part Term 10 years from 1st May 1902.
W. J. Kilgour

SURRENDERED

CONTINUED on Pages 12 to 18

Transfer of Lease 3643 produced 6th June 1902 at 12.15 pm Andrew Given to James Cook also of sub easements in 4422 and 5816. W. Kilgour ALR

Lease 5076 produced 29th May 1902 at 2.30 pm The Wellington Building and Investment Company Limited to Arthur John George of part land in Lease 3297 together with Right of way over part land in Leases 3296 and 3297 and over the land in Transfer 29549 Term - Balance of term of 21 years created by Leases 3214, 3296 and 3297, from 1st February 1901. W. Kilgour ALR

DISCHARGED Mortgage 36868 produced 24th June 1902 at 11.20 am DISCHARGED George to The Wellington Building and Investment Company Limited of Lease 5076 W. Kilgour ALR

Transfer of Lease 1640 produced 6th August 1902 at 10.35 am David Ross Lewers to Ross and Glendining Limited W. Kilgour ALR

Lease 5167 produced 6th August 1902 at 3.20 pm The within Corporation to James Cook of lot 24 Block III plan 540 Term 21 years from 1st March 1901. W. Kilgour ALR

Grant of Easement - Party Wall - (Transfer 43084 produced 13th October 1902 at noon) Alexander Stronach Paterson and George Shirtcliffe to James Cook over part land in Lease 4806 (appurtenant to Lease 5167) W. Kilgour ALR

Grant of Easement - Party Wall - (Transfer 43084 produced 13th October 1902 at noon) James Cook to Alexander Stronach Paterson and George Shirtcliffe over part land in Lease 5167 (appurtenant to Lease 4806) W. Kilgour ALR

DISCHARGED Transmission 3935 Notice of death on the 17th September 1895 of Andrew Young produced 15th November 1902 at 10.45 am (affects Mortgage 15195) DISCHARGED W. Kilgour ALR

Transfer of Lease 5167 produced 21st November 1902 at noon James Cook to Charles Palliser W. Kilgour ALR

Lease 5329 produced 23rd December 1902 at 11 am David Edward Theomin to Lacey and Company Limited of part land in Lease 3603. Term 11½ years from 17th November 1902 W. Kilgour ALR

Lease 5373 produced 17th February 1903 at 12.10 pm The within Corporation to The New Zealand Electrical Syndicate Limited of Pt 12 and part lot 13 Block 3 plan 540 Term 21 years from 1st October 1902. W. Smart ALR

Transmission 4263 Probate of will of John Alfred Edmondson who died on the 10th October 1902 granted to Clifton Henry Dickenson, William Allan and Prudential Elizabeth Edmondson - produced 4th March 1903 (affects Lease 3215) W. Kilgour ALR

Proclamation 293 produced 3rd April 1903 at 10 am taking lot 6 Block V plan 951 for Electric Tramway purposes and vesting same in the Wellington City Corporation (affects 12516)

Transfer of Lease 3811 produced 6th May 1903 at noon Mary Ellen Derby to Martin Kennedy W. Smart ALR

Grant of Easement - Party Wall - (Transfer 45219 produced 28th May 1903 at 12.40 pm) Clifton Henry Dickenson and others to George Wynder over part land in Lease 3215 (as appurtenant to Lease 2516) W. Smart ALR

Mortgage 40112 produced 15th June 1903 at 2.40 pm Robert Macintyre Virtue and John Burnett Virtue (with consent of Lessor) to The Wellington Building and Investment Company Limited of Lease 2556 DISCHARGED DISCHARGED

Mortgage 40324 produced 4th July 1903 at 11 am The Trustees of the Wellington Working Men's Club and Institute to The Colonial Mutual Life Assurance Society Limited of Lease 1970. DISCHARGED DISCHARGED

Lease 5531 produced 18th July 1903 at 11 am Martin Kennedy to The Proprietary Limited Term 7 years from 1st May 1903 of Lease 3811 W. Smart ALR

Cancelled as to part of Nos. K [illegible] issued by the W[illegible] Land Board Vol. 136 folio 96 [illegible] 1898 [illegible]

Lease 5550 produced 29th July 1903 at 2.55 pm Evans Atlas Roller Flour and Oatmeal Milling Company Limited to The Melaback Light Company of Australasia Limited of Lease 3644 Term 5 years from 28th April 1903 W. Kilgour ALR

DISCHARGED Mortgage 40112 produced 15th June 1903 at 2.40 pm Robert Macintyre Virtue and John Burnett Virtue (with consent of Lessor) to The Wellington Building and Investment Company Limited of Lease 2556 DISCHARGED W. Kilgour ALR

DISCHARGED Mortgage 41133 produced 5th October 1903 at 3 pm George Henry Jackson and Walter James Petherick to The National Bank of New Zealand Limited of Lease 4805. DISCHARGED W. Kilgour ALR

Transmission 4261. The Syndicate named in Leases Nos 2305, 3954 and 3953 and 5373 is now known as The City of Wellington Electric Light and Power Company Limited Evidence of Change of name produced 30th October 1903 at 2.32 pm. W. Kilgour ALR

Mortgage 41820 produced 4th November 1903 at 10.20 am James Stephen Keith and John Hutcheson to The Bank of New Zealand Limited of Lease 4282 and Transfer or Grant of Easement 36451 DISCHARGED W. Smart ALR

No C issued for part Vol 129 folio 117 see W.L.R. 1903/44 — 153 — 1903/191.

Grant of Easement - Party Wall - Transfer 47786 produced 23rd December 1903 at 3 pm Martin Kennedy to Robert Fergus Smith over lot 5 Block V plan 951 (appurtenant to Lease 4699) affects Lease 3811 W. Kilgour ALR

Transmission 4306 Probate of will of Rotherham who died 11th September 1903 William Thelop produced 18th December 1903 (affects M 30296) Thomas Forth DISCHARGED granted to Thomas 1903 at 11 am W. Kilgour ALR

CONTINUED on page 13 Folio

(2.) 3/224(Pt3) 3-224.

DISCHARGED Mortgage 42452 produced 20th January 1904 at 2.45 pm Sharland and Company Limited to Martin Kennedy, William Charles Bridgeman and Robert Joseph Collins of Lease 2049 DISCHARGED

Transfer of Lease 5187 produced 11th March 1904 at 11 am Charles Ruffner to Alexander Stronach Robinson and George Shuttliffe

Lease 6316 produced 23rd March 1904 at 2.55 pm Benedict Hallenstein to Walter Lindley Meek. Term as to part from 8th April 1903 plan 215 plan and as to the whole from 1st March 1904 and as to the whole from 8th March 1904 of Lease 2585.

Lease 5847 produced 22nd April 1904 at 11 25 am The Wellington Building and Investment Company Limited to Archibald Clark and Sons Limited of part within land together with a Right of way Term 7 years from 1st April 1905.

Lease 5872 produced 23rd May 1904 at 2 35 pm The New Zealand Consolidated Rental Company Limited (with consent of Mortgagee) to Nelson Meats and Company Limited of part of the land in Lease 4671 with the Right of way over other part Term 5 years from 18th March 1904.

Lot 22 Block III plan 540 is subject to the conditions as to Right of way imposed by the Wellington City Council as set out on Instrument deposited in the Land Transfer Office 22nd June 1904 as L 160

Lease 5903 (Grant of Right of way) produced 22nd June 1904 at 12.20 pm George Henry Jackson and Miller James Pethuick to James Stephen Keith, John Hutcheson and Thomas Wilson of part plant in Lease 4505 (appurtenant to Lease 4252)

Memorial of Lease 4505 produced 22nd June 1904 at 12.20 pm Miller James Pethuick to George Henry Jackson.

Transmission 4470 Exemplification of Probate of Will of Coleman Cantor who died 26th August 1903 granted to Alexander Myers, produced 1st July 1904 at 3 pm (affects Mortgage 24133)

Discharge of Mortgage 24133 as to the interest of Coleman Cantor (Deceased) produced 1st July 1904 at 3 pm

Proclamation 346 produced 2nd July 1904 at 10 am taking part within land for Electric Tramway purposes C of T 137/290.

Grant of Easement - Party Wall - Transfer 5197 31 produced 18th October 1904 at 11.35 am Sharland and Company Limited to Ross and Glendining Limited over part of the land in Lease 2049 (as appurtenant to Lease 1796)

Lease 6521 produced 2nd June 1905 at 11 am Alexander Stronach Robinson and George Shuttliffe to The Gilbert Machinery Company Limited Term 6 years from 30th April 1906 of Lease 4506.

X Caveat 2286 by The Wellington Building and Investment Company Limited produced 12th June 1905 at 9 am (affects Lease 604) WITHDRAWN

Transfer of Lease 4699 produced 15th July 1905 at 2.30 pm Robert Angus Smith to Smith and Smith Limited.

Lease 6496 produced 22nd September 1905 at 11.15 am the within Corporation to Frederic Townsend and James Paul of Lot 1 Block III plan 472 Term 9 years from 1st August 1905 Subject to Lease 4460

Lease 6497 produced 22nd September 1905 at 2.15 pm the within Corporation to Philip Benjamin Watts of Lot 6 Block III plan 540. Term 9 years from 1st August 1905

Mortgage 19461 produced 22nd September 1905 at DISCHARGED Philip Benjamin Watts to Sarah Jane Walker of Lease 6497 DISCHARGED

Lease 6552 produced 6 November 1905 at 2.50 pm The New Zealand Consolidated Rental Company Limited to Harry Theodore Brittain - part land in Lease 4671 - Term 5 years from 21 August 1905

Lease 6577 produced 23 November 1905 at 12.5 pm the within Corporation to The Treasurer of the Wellington Technical Corporation Trustees - Lots 7, 9 and 11 of Block III plan 540 Term 63 years from 1 April 1904.

Transfer of Lease 5815 produced 11 January 1906 at 2.30 pm Walter Lindley Meek to Stowe Meek and Company Limited

Lease 6691 produced 23 March 1906 at 11.20 am the within Corporation to Ernest Lancelot Dillon Bell - part within land Term 3 years and 9 months from 1 September 1904

Lease 6761 produced 25 May 1906 at 12.40 pm Frederic Townsend and James Paul to Walter Harbridge and Company Limited of part within land Term 6 years from 1st April 1906 (of Lease 6496).

Transmission 5195 The Miller Wilson and Company Limited is now known as Wilson Thompson and Company (Limited) Evidence of change of name produced 22 June 1906 at 12.30 pm affects Lease 5053

Transfer of Lease 5053 produced 22 June 1906 at 12.30 pm Wilson Thompson and Company (Limited) to Robert Malcolm Limited.

Mortgage 53851 produced 23 July 1906 at 10.30 am Walter DISCHARGED Lease 5 DISCHARGED Thomas William Bishop of Lease 3313

Mortgage 53852 produced 23 July 1906 at 10.30 am Walter DISCHARGED Lease 5 DISCHARGED Mary Grace of Lease 3313

Transfer (57817) of Lease 5903 produced 31st May 1906 at 11 am James Stephen Keith to John Hutcheson and Thomas Wilson as Tenants in Common

Transfer (57819) of Lease 4282 produced 31st May 1906 at 11 am James Stephen Keith to John Hutcheson and Thomas Wilson as Tenants in Common

Transfer (57819) of Lease 3645 produced 31st May 1906 at 11 am James Stephen Keith to John Hutcheson and Thomas Wilson as Tenants in Common

X Caveat 2580 by John Keogh Bethune and another produced 4th October 1906 at 11.55 am (affects Lease 3313)

CONTINUED on Pages 14 To 15

Transmission 5321 Probate of Will of Frederick Charles Brailsford who died 25th June 1904 granted to Clifton Henry Dickerson and Alfred Wilson Brailsford and Mary Lilian Brailsford produced 16th October 1906 at 3 pm With consent of executor affects Lease 2450) W Wilgus ASR

Transmission 5349 Probate of Will of Bendix Hallenstein who died 6th January 1905 granted to Willi Zelo and Isidore Samuel de Beer produced 6th November 1906 at 2.40 pm (affects Lease 2088 and 3605) T. Paul A.R.K

Transfer of Lease 2450 produced 16th October 1906 at 3 pm Clifton Henry Dickerson Alfred Wilson Brailsford and Mary Lilian Brailsford (with consent of executor) to Alfred Walton Brailsford. W Wilgus ASR

Mortgage 55697 produced 3rd December 1906 at 10 am Henry and Company Limited to Joseph Jameson (of Grants of Easements 33711, 33716, 34090 and 33787 and Lease 3782) T. Paul A.R.K DISCHARGED

Transfer of Lease 3645 produced 4th April 1907 at 2.17 pm Wood Brothers Limited to Frank Solan Brodrick and William Alfred Mowlray for Grants in Common in equal shares. W Wilgus ASR

N.C issued under The Wellington Harbour Board and Corporation Empowering Act 1898" (Vol 161 Fol 181) for part

WITHDRAWN

WITHDRAWN

Transfer of Lease 3313 and Easement 35431 produced 22nd May 1907 at 2.30 pm Walter Smallbone to Henry James Guthrie, George William Bowron, John Hugh Bethune and James Templeton Gilmour W Wilgus ASR

Mortgage 58128 produced 22nd May 1907 at 2.30 pm Henry James Guthrie and others to Walter Smallbone and Grace Smallbone Grace and Co. Limited (of Lease 3313) W Wilgus ASR DISCHARGED

Mortgage 58129 produced 22nd May 1907 at 2.30 pm Henry James Guthrie and others to Walter Smallbone and Grace Smallbone Grace and Co. Limited (of Lease 3313) W Wilgus ASR DISCHARGED

Mortgage 58130 produced 22nd May 1907 at 2.30 pm Smallbone Grace and Co. Limited and Walter Smallbone to Thomas William Bishop (of Mortgage 58128) W Wilgus ASR DISCHARGED

Mortgage 58131 produced 22nd May 1907 at 2.30 pm Smallbone Grace and Co. Limited and Walter Smallbone to Agnes Mary Grace (of Mortgage 58129) W Wilgus ASR DISCHARGED

Mortgage 58132 produced 22nd May 1907 at 2.30 pm Henry James Guthrie and others to Hugh Kerr Gilmour (of Lease 3313 and Easement 35431) W Wilgus ASR DISCHARGED

Transfer of Lease 2588 produced 4th June 1907 at 10 am Willi Zelo and Isidore Samuel de Beer to Stone, Meek and Company Limited M Mulholland D.R.R

Mortgage 58279 produced 4th June 1907 at 10 am Stone Meek and Company Limited to Willi Zelo and Isidore Samuel de Beer (of Lease 2588) M Mulholland D.R.R DISCHARGED

Transmission 5349 Probate of Will of Bendix Hallenstein who died 6th January 1905 granted to Willi Zelo and Isidore Samuel de Beer produced 22nd July 1907 at 10 am (Affects Grant of Easement dated 2588) W Wilgus ASR

Transfer of Lease 2588 produced 25th July 1907 at 10.25 am Isidore Samuel de Beer to Stone Meek and Company Limited W Wilgus ASR

Mortgage 58279A produced 25th July 1907 at 10.25 am Stone Meek and Company Limited to Willi Zelo and Isidore Samuel de Beer. (of Grant of Easement dated 2588) W Wilgus ASR DISCHARGED

Transmission 5340 The Wellington Building and Company Limited now known as The Wellington Investment Trustee and Agency Company Limited produced 31st August 1907 at 11.50 am (Affects Mortgage 24152) M Mulholland D.R.R DISCHARGED

Transfer of Lease 3213 produced 31st August 1907 at 11.50 am Clifton Henry Dickerson and others to the said Clifton Henry Dickerson M Mulholland D.R.R

Mortgage 59299 produced 31st August 1907 at 11.50 am Clifton Henry Dickerson to The Australasian Mutual Life Association Limited (of Lease 3213) M Mulholland D.R.R DISCHARGED

Caveat 2925 by The Wellington Investments Trustee and Agency Company Limited produced 23rd August 1907 at 11.15 am. (affects part lot 2 Block III part of land in Lease 5076) M Mulholland D.R.R WITHDRAWN

Transfer of Lease 3784 produced 23rd August 1907 at 12 pm William Lee Palmer to Frederick John Gooder of his interest M Mulholland D.R.R

Mortgage 59701 produced 23rd August 1907 at 2.45 pm William Lee Palmer and Frederick John Gooder to The Metropolitan Permanent Building and Investment Society (of Lease 3784) M Mulholland D.R.R DISCHARGED

Lease 7464 produced 28th September 1907 at 2.55 pm Philip Benjamin Watts to His Majesty the King. Term 7 years from 1st June 1907. (part Lease 6497) M Mulholland D.R.R

Lease 7508 produced 28th October 1907 at 2.55 pm Alfred Walton Brailsford (with consent of Executor) to The Central Agency Limited Term 5 years and 6 months from 1st July 1906 (of Lease 2450) W Wilgus ASR

CONTINUED on Pgs 16 & 16, 17 & 18.

3.) 3/224 (P15) 3-224

Transfer of Lease 6497 produced 9th October 1907 at 2.15 pm Philip Benjamin Wells to Walter Pope Monckton and the said Philip Benjamin Wells as Tenants in Common. Lease 7678 produced 18th March 1908 at 11 a.m. Lacey and Company Limited to Collins and Company Proprietary Limited for 5 years 6 months from 1st February 1907 affects Lease 3795 and other rights affects Lease 3795 [illegible] M'Kilgour A&H

Lease 7700 produced 3rd April 1908 at 2.55 pm. William Henry Green to Alfred Ernest Kennett of part Land in Lease 2555. Term - 5 years from 1st January 1908 - Excavator consenting - Mutlatham D&R

Transfer of Lease 7700 produced 15th April 1908 at 3 pm. Alfred Ernest Kennett to Richard Morris Griffiths. Mutlatham D&R

DISCHARGED Mortgage 63793 produced 29th April 1908 at 11.30 am Charles Walthie to The Bank of New South Wales of Lease 32111 M'Kilgour A&H

Lease 7713 produced 13th April 1908 at 2.50 pm Lacey and Company Limited to John Kerr of Wellington Carrier and Forwarding Agent of the Ground Floor with other rights affects Lease 3795 Transfer of Lease from D.S. 50701 dated 30th March 1908 D.P. 2034 M'Kilgour A&H

DISCHARGED
D.S. 50701
" 27367
M 72316
D.M. 63793
T. 77213
M 77295
L 89777
M 59299
L 9076
L. 9181
L 9211
L 9238

Lease 7752 produced 14th May 1908 at 2.5 pm Bendix Hallenstein to William John Thompson, Robert Charles Renner and Herbert Joseph Thompson Term 14 years from 16th December 1899 (of Lease 3605) Mutlatham D&R

Transfer of Lease 7752 produced 14th May 1908 at 2 pm William John Thompson, Robert Charles Renner and Herbert Joseph Thompson to The City of Wellington for Electric Light and Power Company Limited Mutlatham D&R

Transmission 6148 produced 19th May 1908 at 12.15 pm vesting ~~the Lease~~ Leases 2308, 3954, 3955 and 5393 in The Mayor Councillors and Citizens of the City of Wellington. Mutlatham D&R

DISCHARGED Mortgage 65567 produced 14th August 1908 at 2.50 pm Alfred Walton Brailsford to Alice Jane Brailsford (Executrix consenting) (Term 24 58 22 Fee Simple) M'Kilgour A&H

Transmission 6280 Probate of the Will of James Cook who died 15th August 1906 granted to John Cook produced 17th August 1908 at 2.30 pm affects Grant of Easement The 540 22), 35816 and Lease 2643) Mutlatham D&R

Mortgage 66832 produced 16th October 1908 at 11.55 am George Winder to Mary Strachan - of leases 2764 and 2961 Mutlatham D&R

DISCHARGED Mortgage 66937 produced 20th October 1908 at 2.35 pm renewing [illegible] currency of Mortgage 40328 of Lease 1970 Mutlatham D&R

Lease 3015 produced 23 October 1908 at 1 pm to within Corporation to Alexander Stronach Paterson and George Smitheliff of part Lot 19 Block III plan 540. Term - 14 years from 1 March 1908. M'Kilgour A&H

CONTINUED on Page 16.17 & 18

Lease 8044 produced 12th November 1908 at 11.35 am Martin Kennedy to Gordon and Gotch Proprietary Limited - Term 7 years from 1st May 1910 affects Lease 3811 M'Kilgour A&H

Transfer of Leases 2075 and 4996 produced 6th May 1909 at 2.50 pm Judah Myers to Solomon Hyams Myers John Myers and Philip Myers M'Kilgour A&H

Lease 2650 by Judah Myers produced 6th May 1909 at 2.51 pm - affects Leases 2075 and 4996 M'Kilgour A&H

Lease 8121 produced 4th August 1909 at 11.50 am The New Zealand Consolidated Dental Company Limited to Jacques Ernest Schloss of part Lease 1871 with right of way over other part and use of lift M'Kilgour A&H

Mortgage 72316 produced 6th October 1909 at 11 am James Allen Tunbridge William Beckett and Frederick John Gordon Beckett to The Prudential Assurance Company of New Zealand Limited over Government Buildings and Shops Section 1 Block IV Town of Wellington (affects Lease 3754) M'Kilgour A&H

DISCHARGED

Transfer 77213 produced 2nd September 1910 at 2.35 pm. Sarah Sowana Thornton to Jacob Blakeney of Lease 3605 and 3604 and Easements acquired under Transfers 33903 34595 and 35707 M'Kilgour A&H

Mortgage 77295 produced 2nd September 1910 at 2.35 pm. Sarah Sowana Thornton to Jacob Blakeney - affects Lease 3605 and 3604 and Transfers 33903 and 35707 and 34595 M'Kilgour A&H

DISCHARGED

Lease 89777 produced 13th September 1910 at 2 pm. The Mayor Councillors and Citizens of the City of Wellington to Howard Erwin Reid and Walter Edward Reid of Rooms 18 & 20 on ground floor of Building erected on within land with right of passage over part. Term 4 years 5 months and 16 days from 1st May 1909. (affects Lease 7752) Edwin Bain

Lease 9076 produced 1 November 1910 at 12.10 pm. The New Zealand Consolidated Dental Company Limited to Australian Kodak Limited - of part with right of way over other part and use of lift - Term 3 years from 1st July 1909 - with right of renewal - Entered 28 February 1911 - affects Lease 4671. J.D. Burke A&H

Lease 9181 produced 1 February 1911 at 12.30 pm Clifton Abenoy Dickerson to Francis Joseph Miller William Augustus Midlane and Harold Hector Abenoy Phoan Term 5 years from 19 January 1911 - of part Lease 3215. J.D. Burke A&H

Lease 9211 produced 17th January 1911 at 4 pm Alexander Stronach Paterson and George Smitheliff to Henry Cruickshank Anderson and William Henry Rice of part ground floor and part first floor of Building on land herein together right of way and other rights - Term 7 years from 1st December 1910 - affects Lease 1580 Edwin Bain

Lease 9238 produced 6th March 1911 at 3:25 pm. the within Corporation to Tom and Glenchinning Limited - of Lot 1 Block 2 D.P. 472. Term 14 years from 18th February 1911 - with right of renewal. A Duke Mgr

DISCHARGED

Mortgage 81654 produced 13th June 1911 at 11.30 a.m. Philip Benjamin Watts to Thomas Hoult - affects

DISCHARGED

A Duke Mgr

Substituted C.T. for Sec 1. 3. 4. Plan 2428 issued Vol. 173 Folio 7.

Sub-divided Lot 2 for Lots 2 and 3 Town & Plan 2428 issued Vols. 193, 194, 195.

Lease 9638 produced 9th January 1912 at 1.50 pm the within Corporation to Neuphorus Rosser and Cuttings New Zealand Drug Company Limited of Lot 9 plan 505. Term 14 years from 1st December 1911 with provision for renewal. A Duke Mgr

Lease 9645 produced 23rd February 1912 at 12.50 p.m. the within Corporation to Pleasant Glenchinning Limited of Lot 2 Block II plan 472. Term 14 years from 27th January 1912 - renewable. A Duke Mgr

Sub-divided into Lots 1 to 4 inclusive & issued Vol. 207 Fol. 176

Transfer 86200 produced 15th July 1912 at 12:10 p.m. Thomas William Tisdall to Frederick Ewington Moore, William Luther Moore and Robert Nicholl. affects Mortgage 58132. A Norman ALR

Transfer 86201 produced 15th July 1912 at 12:10 p.m. John Hough Bellamy and James Templeton - known as the within named Henry James Guthrie and George William Bowron. Affects Lease 3313 and Easement 85431. A Norman ALR

Mortgage 87556 produced 15th July 1912 at 12:10 p.m. Henry James Guthrie and George William Bowron to Frederick Ewington Moore. Affects Lease 3313 and Easement 85431. A Norman ALR

Transfer 86202 produced 15th July 1912 at 12:10 p.m. Frederick Ewington Moore to David and Andrew Aitken and Margaret Aitken as tenants in common in equal shares. Affects Mortgage 87568. A Norman ALR

Mortgage 87557 produced 15th July 1912 at 12:10 p.m. Henry James Guthrie and George William Bowron to Mary Grace Affects Lease 3313 and Easement 85431. A Norman ALR

Mortgage 87558 produced 15th July 1912 at 12:10 p.m. Henry James Guthrie and George William Bowron to Hough Henry Bellamore. Affects Lease 3313 and Easement 85431. A Norman ALR

Lease 10057 produced 18th October 1912 at 11 a.m. Shaw and Company Limited to the Bowron Empire Trading Company Limited - term from 1st October 1912 till 1st February 1914 Affects Lease 6120 45. A Norman ALR

Transfer 87864 produced 22nd November 1912 at 10:40 a.m. Philip Benjamin Watts and Wallis Hope Norrah to Frederick Charles Saplin and Thomas Wilson affects Mortgage Lease 6497. A Norman ALR

Lease 10119 produced 4th December 1912 at 3:40 p.m. Frank Horace Broderick and William Alfred Mowbray to Collins Henry and Company Limited of ground floor of building with use of outbuilding, cartshouse and yard Term 3 years from 8th August 1912. (Affects Town 345). A Norman ALR

Transfer 88797 produced 12th February 1913 at 3:50 p.m. John Hutchesson to Thomas Wilson since deceased of one third of the interest of the said John Hutchesson of Lease 4282. A Duke Mgr

Mortgage 90282 produced 12th February 1913 at 3:50 p.m. John Hutchesson and Thomas Wilson to Gabriel Joseph Griffin of Lease 4282. A Duke Mgr

DISCHARGED

DISCHARGED

Transfer 87814 produced 18th March 1913 at 3.10 p.m. the within named Corporation to His Majesty the King of part of Reserve A. A Norman ALR

Transmission 90340 to William Russell Grace John Cairn Duncan and Frederick George Aldridge entered 22nd July 1913 at 11 a.m. affects Mortgage 87857. A Norman ALR

Lease 10477 produced 26th August 1913 at 3:50 p.m. the within named Corporation to The Trustees of the Wellington Working Mens Club and Literary Institute of Section 15 Block III plan 472. Term 14 years from 1st September 1913. A Duke Mgr

Transfer 92833 produced 16th December 1913 at 11 am William Alfred Mowbray to Frank Horace Broderick above named - of his interest. Affects Lease 3645. A Norman ALR

Mortgage 95082 produced 24th February 1914 at 10.15 am. Frank Horace Broderick to The National Bank of New Zealand Limited of Lease 3645. A Norman ALR

Lease 11002 produced 15th August 1914 at 10.40 am the within named corporation to Frederic Townsend and James Paul of Lot 1 Block III plan 472. Term 14 years from 1st August 1914. A Duke Mgr

Lease 11015 produced 28th August 1914 at 2.30 p.m. the within named corporation to Thomas Wilson and Frederick Charles Saplin of Lot 6 Block III plan 540. Term 14 years from 1st August 1914. A Duke Mgr

Lease 11084 produced 17th October 1914 at 10 a.m. the within named corporation to William Arthur Briscoe, George Briscoe and Alexander MacNeil of Lots 5 and 6 Block II, and Lot 8 Block II plan 540. Term 14 years from 15th May 1914. A Norman ALR

CONTINUED on page 17 + 18

11 3/224 (P.17) 3-2214

Lease 11113 produced 13 November 1914 at 2.45 pm Frederic Townsend and James Paul to Hugh Wright. Arthur Godley East Dixon and Thomas William Hill (as tenants in common in equal shares) of part reserving rights over part thereof. Term 7 years from 1st August 1914 — affects Lease 11002. J.K. Burke Solr

Mortgage 99943 produced 21 December 1914 at 3 pm. Andrew Aitken and Margaret Aitken to James Dick. Affects Mortgage 87556.

A.R. Forman auth

Lease 11177 produced 12th January 1915 at 3 p.m. Frederic Townsend and James Paul to Waitakere Township Co. Ltd. Hawkridge and Company of part of Lot 1 Block III plan 472 Term 5 years from 1st August 1914. (affects Lease 11002).

A.R. Forman auth

Lease 11243 produced 27th February 1915 at 10.40 a.m. the within named Corporation to Ross and Glendinning Limited of Lot 7 Block II plan 540.

Term 14 years from 18th May 1912.

J.H. Burke Solr

L 11270 / L 3798 / BLM 90282 / T 99524 / M 90282 / L C01499 / T 101309 / L 11015 / Ed M 7729 / L 11638 / DM 32652 / M. 90282 / D.M. 7238 / M 105937 / (L 3764) / N C 01455 / T 106995 / (L 3764) 4282

Transfer 10217 (See Below)

T. 98108 (See head of next column)

L. 11267 - (See Below)

Lease 11270 produced 25th March 1915 at 2.05 pm Lacey and Company Limited to Leo Blake of part of building on land in Lease 3798 with right of way. Term 7 years from 1st October 1913.

J.K. Burke Solr

Reduction of Mortgage 90282 to £10,000 produced 5th August 1915 at 12.35 p.m. Affects Lease (L 3764) 4282

DISCHARGED

A.R. Forman auth

DM 32652 / T 109224 / M 109282 / (L 4282)

Transfer 99824 of Mortgage 90282 to Patrick Joseph Griffin to Thomas Wilson.

Endorsed 5th August 1915 at 12.20 pm.

A.R. Forman auth

L 12479 / T 1105 / A 1495 / (M 87556) over

Transfer 101309 of L 11015 produced 13 November 1915 at 12.20 pm. Frederick Charles Sapher to the within named Thomas Wilson of Wellington Ship Chandler - of his interest.

J.K. Burke Solr

DISCHARGED

Extension of Term and Increase in Rate of Interest of Mortgage 77298 produced 12 November 1915 at 2.50 p.m. Affects Easements (Transfers) 33903, 34595, 35707 and Leases 3604 & 3609.

J.K. Burke Solr

Transmission 10217 to Martin Kennedy and Robert Joseph Collins - Entered 24 March 1915 at 2.30 pm. Affects mortgage 42482

J.K. Burke Solr

Lease 11267 produced 24 March 1915 at 2.30 pm the within-named Corporation to Sharland and Company Limited - of Lot 9 plan 5324 - Term 14 years from 23 February 1914.

J.K. Burke Solr

CONTINUED on Page 18

Grant of Easement - Party Wall) Transf 99108 produced 24 March 1915 at 2.30 pm Sharland and Company Limited to Ross and Glendinning Limited - over part of land in Lease 11267 (Appurtenant to Lease 11243

J.K. Burke Solr

Lease 11268 produced 24 March 1915 at 2.30 pm. Sharland and Company Limited to The British Empire Trading Company Limited - Term from 1 February 1914 to 1 October 1919 - Affects Lease 11267 With Right of Purchase

DISCHARGED

J.K. Burke Solr

Mortgage 99664 produced 24 March 1915 at 2.30 pm - Sharland and Company Limited to Martin Kennedy and Robert Joseph Collins and Maurice Clifford Lewis - Affects Lease 11267

DISCHARGED

J.K. Burke Solr

Lease 11638 produced 7th December 1915 at 11.30 a.m. the within named corporation to Frederick William Hayhittle, Edward Bolton Bristowe, Frederic Townsend and James Paul of Lots 10 and 15 Block II plan 540. Term 14 years from 1st June 1915.

A.R. Forman auth

Mortgage 105937 produced 14th September 1915 at 3 pm James Chalmers Turnbull William Skelton and Frederick John Corder to the Metropolitan Permanent Building and Investment Society. Affects Lease 3798.

J.K. Burke Solr

A.R.

Q.T. 243/120 Substituted for Lot 35, 213 of plan 3944.

Transfer 106995 of Lease 3764 produced 13th February 1917 at 2.40 pm James Chalmers Turnbull William (Edward alias) Skelton and Frederick John Corder to Turnbull Skelton and Corder Limited.

A.R. Forman auth

Transfer 109224 of Lease 4282 produced 1st August 1917 at 10 am George Henry Jackson to Skelton Wilson and Company Limited.

J.K. Burke Solr

Mortgage 109282 produced 1st August 1917 at 10 am Skelton Wilson and Company Limited to George Henry Jackson. Affects Lease 4282.

S.O.A.

J.K. Burke Solr

Transfer 109224 of Lease 4282 produced 1st August 1917 at 11 am John Skelton and Thomas Wilson to Skelton Wilson and Company Limited.

J.K. Burke Solr

C/T 249/249 Substituted for Block I Reserve K
249/250 Block II " VII "

3/224 (GN) 3/224

X3530 Lien under the Wages Protection and Poultry Act, 1908, produced 26th Aug 1924 at 3 pm

DISCHARGED

Cancelled as to Lots 1 to 33 plan 9886 & Lot 1 plan 418 folio 119 (Wellington Registry)

M.C.O. 8683

THIS REPRODUCTION (ON A REDUCED SCALE) CERTIFIED TO BE A TRUE COPY OF THE ORIGINAL REGISTER FOR THE PURPOSES OF SECTION 215A LAND TRANSFER ACT 1952.

D.L.R.

No. 337538.1 Certificate pursuant to Section 110(d) Public Works Act 1928 declaring part of the within land (3630 m2 marked "A" on S.O. 30723) to be a public street - 18.9.1979 at 9.32 a.m.

A.L.R.

762916.1 Gazette Notice acquiring ~~the~~ parts (4804m^2) and (955m^2) for harbour works and shall vest in The Wellington Harbour Board on the 23rd day of January 1986 - 20.2.1986 at 11.50 a.m.

A.L.R.

NOTE.

ALL WORKING PAPERS Re-balance held in Team 3 letter File

1/15/6/3 - 9/3/83

17/4/84

-OVER-

Part of the land comprised in the within Certificate of Title taken for street purposes by Gazette Notice 762916.1 dated 20th February 1986 at 11.50 a.m.

3/224

~~833712.1 Certificate pursuant to Section 121(1)(d) Public Works Act 1981 declaring parts herein (marked A and B on S.O. 34477) as legal road - 17.2.1987 at 1.31 p.m~~

~~A.L.R~~

833712.1 Plan of road pursuant to section 121(1)(d) whereby part herein are now legal road - 17.2.1987 at 1.31 p.m

ALR

~~944948.5 Transfer to Lambton Harbour Overview Limited at Wellington - 1.9.1988 at 2.58 p.m.~~ cancel in error

A.L.R.

B.033933.1 Plan of Road pursuant to Section 121(1)(d) whereby part herein marked "A" on S.O. Plan 36002 is now legal road - 26.9.1989 at 10.15 a.m.

A.L.R.

COMPUTER FREEHOLD REGISTER UNDER LAND TRANSFER ACT 1952

Historical Search Copy

R.W. Muir
Registrar-General
of Land

Identifier	**WN269/81**
Land Registration District	**Wellington**
Date Issued	01 July 1920

Prior References
WN3/224

Estate	Fee Simple
Area	6692 square metres more or less
Legal Description	Lot 1-5, 8-15 Deposited Plan 951 and Part Lot 7 Deposited Plan 951
Purpose	Public utility

Original Proprietors
Wellington City Council

Interests

13205 CAVEAT BY MINISTER OF PUBLIC WORKS - 24.4.1942 at 3:00 pm (AFFECTS LOTS 9, 10, 11 AND 12 DP 951)

8384042.2 Departmental Dealing converting the within title into Landonline - 22.12.2009 at 1:31 pm

10275837.1 CERTIFICATE PURSUANT TO SECTION 77 BUILDING ACT 2004 THAT THIS COMPUTER REGISTER IS SUBJECT TO THE CONDITION IMPOSED UNDER SECTION 75(2) (ALSO AFFECTS WN18D/503) - 3.12.2015 at 2:35 pm (affects Lots 1 - 5 DP 951, Part Lot 7 DP 951 and Lot 8 DP 951)

10349208.1 Lapse of Caveat 13205 pursuant to Section 145A Land Transfer Act 1952 - Produced 26.2.2016 at 4:23 pm and entered 23.3.2016 at 7:00 am

[Land and Deeds—4.

[Form B.

REGISTER

NEW ZEALAND.

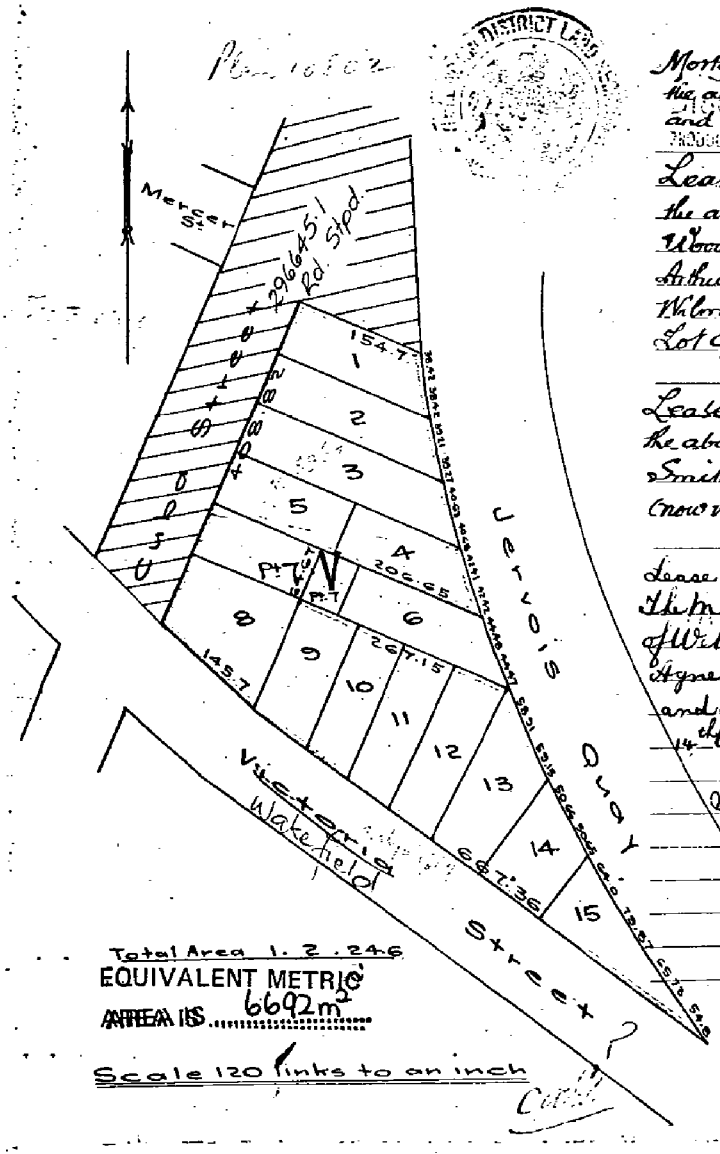
Reference: Vol. 3, Folio 224. Transfer Part Substituted. Application No. Order for N/C No. 4499.

Register-book, Vol. 269, folio 81.

CERTIFICATE OF TITLE UNDER LAND TRANSFER ACT.

This Certificate, dated the first day of July, one thousand nine hundred and twenty, under the hand and seal of the District Land Registrar of the Land Registration District of Wellington Witnesseth that The Mayor Councillors and Citizens of the City of Wellington are seised of an estate in fee simple for purposes of public utility

~~is seised of an estate in fee simple~~ (subject to such reservations, restrictions, encumbrances, liens, and interests as are notified by memorial under written or endorsed hereon, subject also to any existing right of the Crown to take and lay off roads under the provisions of any Act of the General Assembly of New Zealand) in the land hereinafter described, as the same is delineated by the plan hereon bordered red, be the several admeasurements a little more or less, that is to say: All that parcel of land containing one acre two roods twenty four and six tenth perches more or less situate in the City of Wellington being part of the reclaimed land known as Reserve K and comprising Lots 1 to 5 and 8 to 15 inclusive and part of Lot 7 of Block V on deposited plan No 951.



Total Area 1.2.246

EQUIVALENT METRIC AREA IS 6692m²

Scale 120 links to an inch

DISTRICT LAND REGISTRAR

See endorsements

District Land Registrar.

Mortgage 8964 produced 23rd March 1898 at 12.10 p.m. the above named corporation to Joseph Ellett Page and Thomas Frederic Martin of part. DISCHARGED

See endorsements D.L.R.

Lease 10616 produced 2nd May 1892 at 3 p.m. the above named Corporation to John Guthrie Wood Aitken, William Allan, Charles Callis, Arthur Hoby, Sidney George Martin, Thomas Wilmot McKenzie and James Petherick of Lot 9 Term 42 years from 1st January 1892.

See endorsements D.L.R.

Lease 14699 produced 17th June 1901 at 10.15 a.m. the above named Corporation to Robert Fergus Smith of Lot 7. Term 21 years from 27th July 1900. Now vested in Smith and Smith Limited.

See endorsements D.L.R.

Lease 15998 produced 15th February 1921 at 12 noon The Mayor Councillors and Citizens of the City of Wellington to Anastatio Christina Kennedy Agnes Ann Kennedy, Charles Perrin Sherratt and Albert Arthur Corrigan for 999 years from 14th October 1919 of Lots W.M. Vaire A.Z.R.

Transmission 14723 to The Wellington City Improvements Loan Sinking Fund Commissioners entered 12th April 1921 at 2 p.m. off Mortgage 5964 DISCHARGED

A.Z.R.

CONTINUED

REGIST[illegible]

Declaration lodged as to loss of original of this certificate of title and Provisional certificate of title issued this 21st day of August 1922
[illegible]
District Land Reg.

Lease 14762 of Lot 8 produced 31st August 1922 at 3 p.m. The Mayor Councillors and Citizens of the City of Wellington to Smith and Smith Limited term 21 years from 3rd September 1918.
W. M. Hamel A.L.R.

Lease 15588 of part Lot 7 produced 26th January 1921 at 11.5 a.m. The Mayor Councillors and Citizens of the City of Wellington to Smith & Smith Limited term 21 years from 27th July 1921.
W. M. Hamel A.L.R.

Mortgage 18654 of Leases 14762 and 15588 Smith and Smith Limited to The National Bank of New Zealand Limited produced 8th May 1928 at 10.20 a.m.
[illegible] A.L.R.

The outstanding duplicate of this certificate having been found the above mentioned Provisional Certificate of Title is now cancelled. Entered 13th March 1929 at 10 a.m.
W. M. Hamel A.L.R.

Transmission 22763 of Lease 13998 to Anastatia Christina Kennedy Agnes Ann Kennedy and Albert Arthur Corrigan as Executors Entered 6th May 1929 at 10.30 a.m.
H. C. Allen A.L.R.

Transfer 20935 of Lease 13998 the registered lessees to Anastatia Christina Kennedy, Albert Arthur Corrigan, David William Madden and William Perry produced 4th March 1930 at 10.20 a.m.
H. C. Wood H.R.

Transfer 211333 of Lease 13998 the registered lessees to Melville John Trenbirth and William Madden Albert Arthur Corrigan and William Perry produced 5th March 1931 at 10.20 a.m.
H. C. Wood.

Transmission 258140 of Lease 13998 to David William Madden, Albert Arthur Corrigan and William Perry as Survivors Entered 13th June 1932 at 11.40 a.m.
H. C. Wood A.L.R.

Transfer 220496 of Lease 13998 David William Madden, Albert Arthur Corrigan and William Perry to David William Madden, Albert Arthur Corrigan, William Perry and George Edmond Cooper produced 16th February 1934 at 2.56 p.m.
H. C. Wood A.L.R.

Lease 22640 of Lot 4 plan 10802 The Mayor Councillors and Citizens of the City of Wellington to Smith and Smith Limited term 21 years from 3rd September 1939 produced 16th May 1941 at 11.18 a.m.
H. C. Wood A.L.R.

Mortgage 251816 of Lease 22640 Smith and Smith Limited to The National Bank of New Zealand Limited produced 23rd May 1941 at 3 p.m.
H. C. Wood A.L.R.

DISCHARGED

Lease 13205 [illegible] 9, 10, 11, 12, Blk V DP 951 by the minister of Public Works produced 29th April 1942 at 3 p.m.
H. C. Wood A.L.R.

Lease 23332 of Lot 2 plan 10802 The Mayor Councillors and Citizens of the City of Wellington to David William Madden, Albert Arthur Corrigan, William Perry and George Edmond Cooper term 21 years computed from 4th October 1940 produced 3rd November 1943 at 11.20 a.m.
H. C. Wood A.L.R.

Lease 23550 of Lots 3 and 4 plan 10802 The Mayor Councillors and Citizens of the City of Wellington to Smith & Smith Limited term 21 years computed from 27th July 1942 produced 18th August 1944 at 12.30 p.m.
H. C. Wood A.L.R.

Mortgage 263878 of Lease 23550 Smith Limited to The National Bank of New Zealand Limited produced 9th May 1945 at 2.30 p.m.
H. C. Wood A.L.R.

DISCHARGED

Transmission 47963 of Lease 23332 to William Perry and Percy Ormond Cooper as survivors entered 6.10.47 at 11.53.
[illegible] A.L.R.

Lease 24848 of Lots 3 and 4 Plan 10802 The Mayor Councillors and Citizens of the City of Wellington to Smith and Smith Limited Term 15 years from 27th July 1948. Produced 13th May 1949 at 12.20 p.m.
[illegible] A.L.R.

THIS REPRODUCTION IS CERTIFIED TO BE A TRUE COPY OF THE ORIGINAL REGISTER FOR THE PURPOSES OF SECTION 215A LAND TRANSFER ACT 1952
[illegible]
D.L.R.

No. 337538.1 Certificate pursuant to Section 110(d) Public Works Act 1928 declaring part of the adjoining street (~~the second block hereon~~ Cuba Street) to be a public street - 18.9.1979 at 9.32 a.m.

A.L.R.

(OVER)

No. 296645.1 Notice whereby that portion of Cuba Street adjoining hereto (3630 m^2 hatched black hereon) has been stopped and is now known as Section 1325 Town of Wellington situated in Block VII Port Nicholson Survey District - 11.1.1980 at 10.35 a.m.

See C.T. 18D/503

A.L.R.

COMPUTER FREEHOLD REGISTER
UNDER LAND TRANSFER ACT 1952

Historical Search Copy

R.W. Muir
Registrar-General
of Land

Identifier	**WNC1/1333**
Land Registration District	**Wellington**
Date Issued	30 April 1964

Prior References
WN125/1

Estate	Fee Simple
Area	501 square metres more or less
Legal Description	Lot 6 Deposited Plan 951

Original Proprietors
The Wellington City Council

Interests

10489371.1 Departmental dealing to add a purpose of Electric Tramway Purposes - 5.7.2016 at 9:10 am

Reference:
Prior C/T. 125/1

Transfer No.
N/C. Order No.
Loose Leaf Conversion

Land and Deeds 69

REGISTER

No. CI / 1333

CERTIFICATE OF TITLE UNDER LAND TRANSFER ACT

This Certificate dated the 30th day of April one thousand nine hundred and sixty-four under the seal of the District Land Registrar of the Land Registration District of WELLINGTON

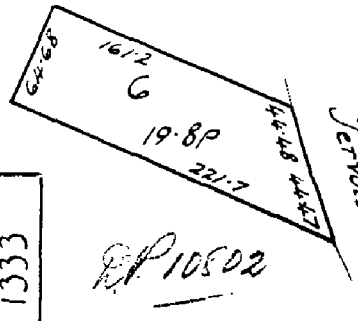
WITNESSETH that THE MAYOR COUNCILLORS and CITIZENS OF THE CITY OF WELLINGTON --

is seised of an estate in fee-simple (subject to such reservations, restrictions, encumbrances, liens, and interests as are notified by memorial underwritten or endorsed hereon) in the land hereinafter described, delineated with bold black lines on the plan hereon, be the several admeasurements a little more or less, that is to say: All that parcel of land containing 19.8 PERCHES more or less situate in the City of Wellington being part of Reserve K Town of Wellington and being also Lot 6 on Deposited Plan 951 —

DISTRICT LAND REGISTRAR WELLINGTON

Assistant Land Registrar

Duplicate held in Exam 4



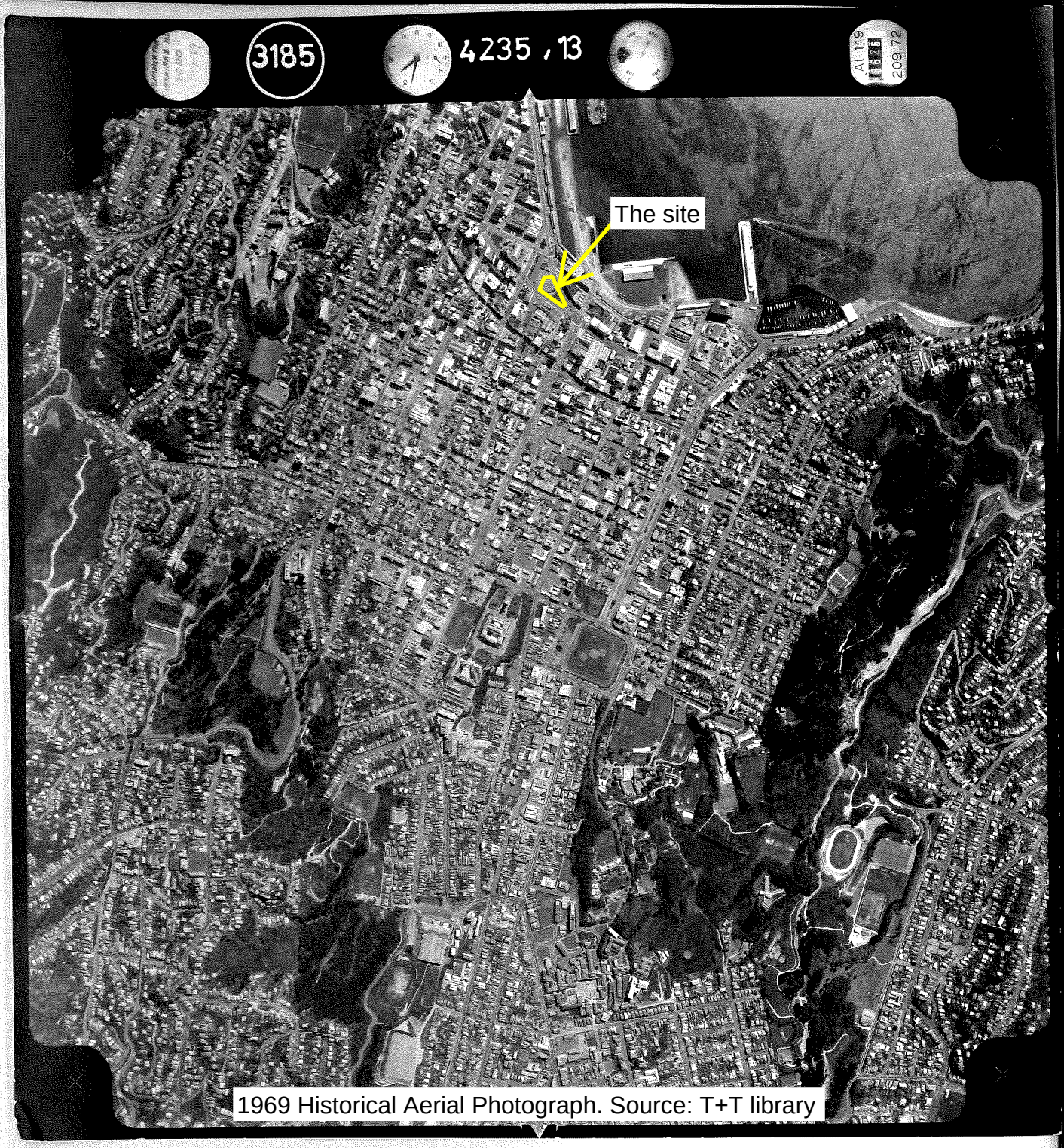
EP 10502

No. CI / 1333

Scale: 1 inch = 4 / chain

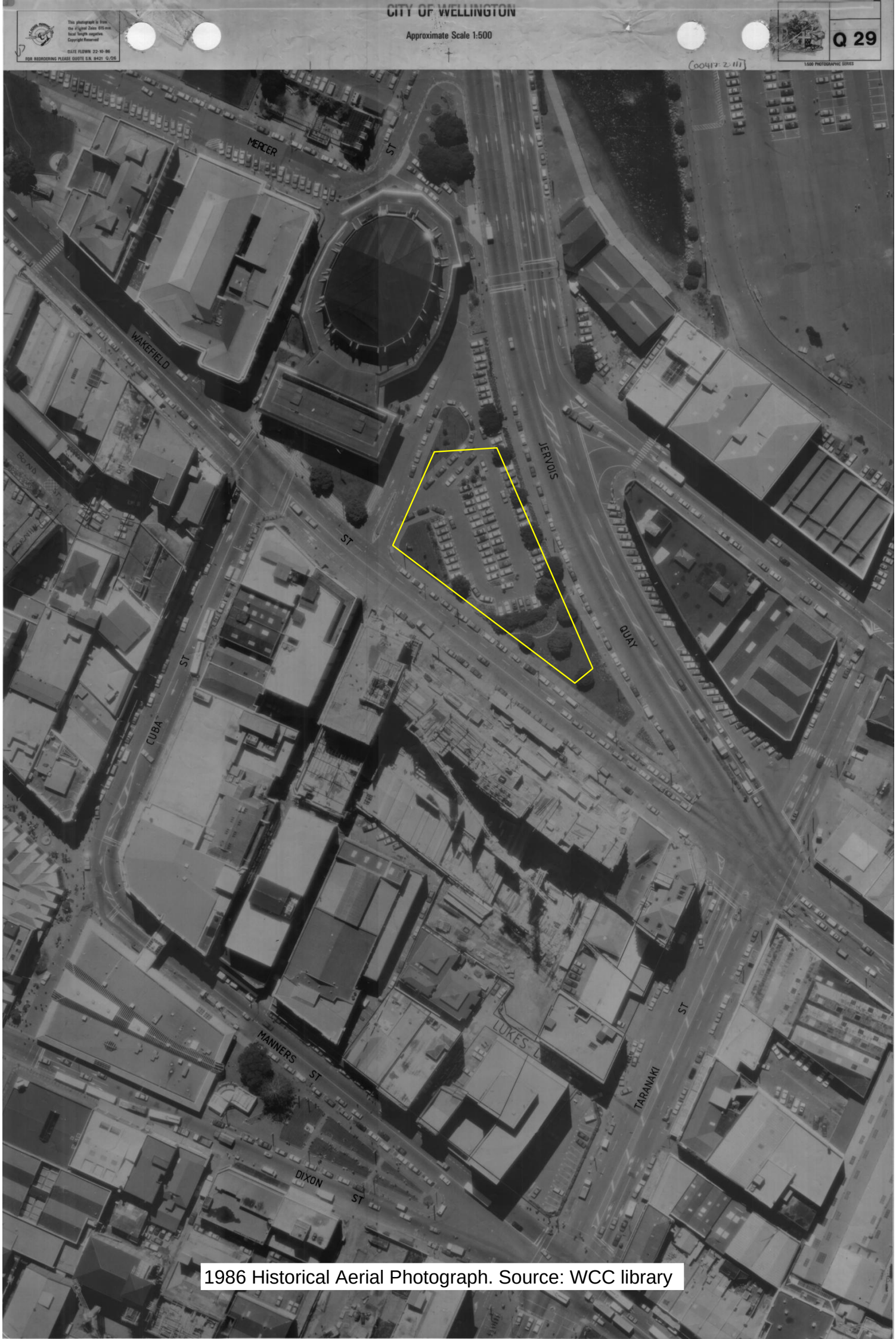
EQUIVALENT METRIC AREA IS 50.1 m²

50,000/1/63—64570 W



1969 Historical Aerial Photograph. Source: T+T library

1977 Historical Aerial Photograph. Source: WCC library



1986 Historical Aerial Photograph. Source: WCC library

1996 Historical Aerial Photograph. Source: WCC Webmap

T.N.69

SCALE – 40 FT. = 1 IN.

CUBA STREET

WELLINGTON CITY CORPORATION TRAMWAYS

TOWN HALL

VICTORIA QUAY

JERVOIS QUAY

Tramway Power House

Fire Brigade Station

Princess Nicol Mansion Apartments

Star Boating Club

Wellington Rowing Club

CABLE STREET

TARANAKI STREET EXTENSION

WELLINGTON HARBOUR BOARD RESERVE

TARANAKI ST. WHARF

STORE 'Y'

Offices

Weighbridge

TRUE NORTH

1 0.0.11A
2 0.0.7.5
3 0.0.16.8
4 0.0.6.4
5 0.0.1.4
6 0.0.8.7
7 0.0.1.1
8 0.0.22.5
9 0.0.5.0
10 0.0.20.2
11 0.0.7.6
12 0.0.15.0

T.N.69

LOCALITY PLAN

SCALE 10 IN. = 1 MILE

WELLINGTON TERRACE

UPPER WILLIS STREET

THORNDON ESPLANADE

ROLLESTON AVENUE

LAMBTON QUAY

WILLIS STREET

HUNTER STREET

WAKEFIELD STREET

HARRIS STREET

CUSTOMHOUSE QUAY

JERVOIS QUAY

WHARF STREET

BOULCOTT STREET

HOBSON STREET

PIPITEA STREET

MOLESWORTH STREET

BOWEN STREET

BUNNY STREET

BROUGHAM STREET

BOSTON ROAD

TASMAN STREET

MT COOK RESERVE

PIPITEA PA

BASIN RESERVE

CRICKET GROUND

PARK ROAD

SALAMANCA ROAD

KELBURN

KARORI

TOWN BELT

LAMBTON HARBOUR

RAILWAY WHARF

GLASGOW WHARF

CUSTOMHOUSE QUAY WHARF

STEAM LAUNCH WHARF

SUBMARINE CABLE

SUBMERGED ROCK

TRUE NORTH

View showing the site of the tramway power house on the corner of Jervois Quay and Wakefield Street, Wellington

Date: ca 1930

Ref: EP-2496-1/2-G

View showing men clearing debris from the site of the tramway power house on the corner of Jervois Quay and Wakefield Street after it had been demolished. Taken by an unidentified photographer, circa 1930.

From box containing EP-2461 to 2497

Note on back of file print reads: Site of tramway power house, corner of Jervois Quay and Wkefield Str. 1930 Demolition was well underway 19 Feb 1930 (EP). Here the site is in the last stages of being cleared. The site was beautified with a concrete edged lawn. At the time it was intended that this would eventually be the site for a new Central Library.

Quantity: 1 b&w original negative(s).

Physical Description: Glass plate negative

Access restrictions: Partly restricted - Please use surrogate in place of original

Wakefield Street and buildings on Jervois Quay, Wellington

Date: [ca 1930]

Ref: 1/1-024783-G

Wakefield Street (foreground), Wellington, with the premises of John Chambers and Son, and Inglis Bros and Co, on Jervois Quay. Photograph taken circa 1930 for the Wellington City Council, probably by F G Barker.

Source of descriptive information - Notes on file print

Quantity: 1 b&w original negative(s).

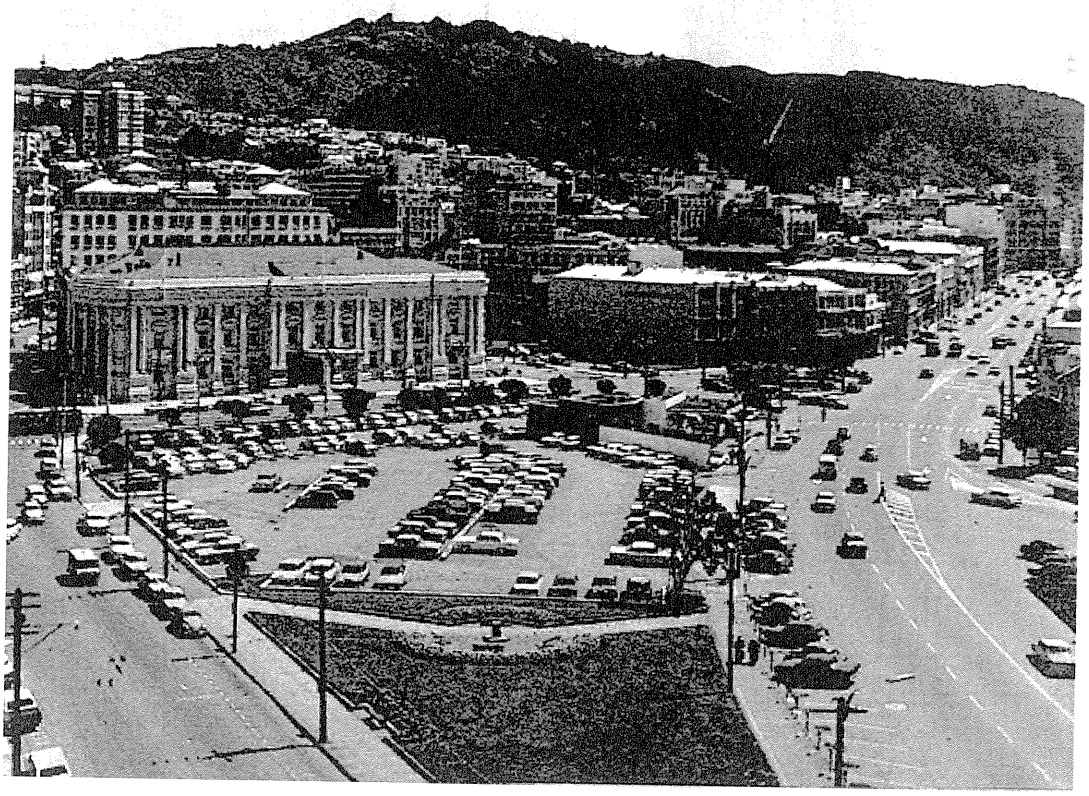
Physical Description: Dry plate glass negative

Access restrictions: Partly restricted - Please use surrogate in place of original

Part of: Wellington City Council :Negatives of Wellington taken for the Wellington City Council, chiefly by Frank Giles Barker

Format: 1 b&w original negative(s), Negatives, Dry plate glass negative, Orientation: Horizontal image

See original record



The newly cleared are in front of the Town Hall at the intersection of Wakefield Street and Jervois Quay.

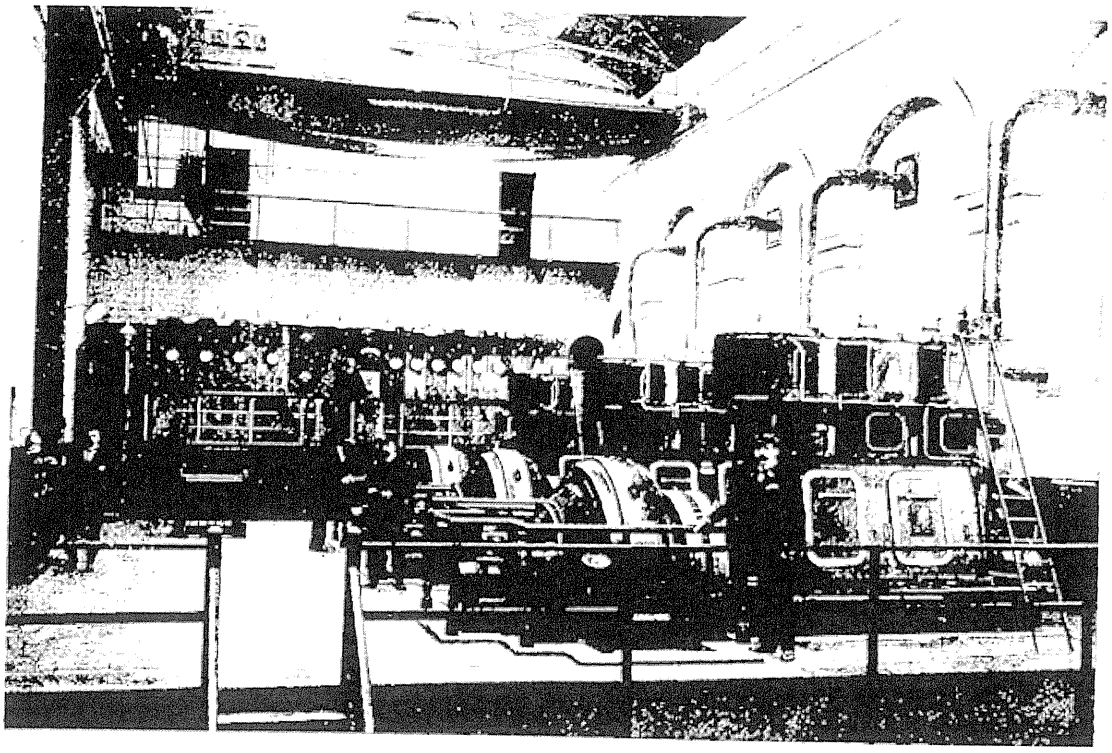
TRAMWAY POWER

SERIOUS EFFECT OF A LOW TIDE

To say that an exceptionally low tide in Wellington yesterday made it exceedingly difficult to run the tramcars at certain hours might be regarded by many as incredulous. Yet it is a fact. The tramway authorities had a very anxious day, and the public was considerably inconvenienced during the rush hours from 5.30 o'clock up to 8 o'clock. The supply of current was very meagre owing to the fact that sea-water could not be secured for the condensers. The water is conveyed to the power-house by means of a culvert which, it seems, has been put in too high to be effective when the tide drops below normal. Last evening the barometer was very high, and the tide unusually low. On top of that a strong southerly wind drew the water away from the culvert, and there was scarcely any available for the condensers. The position was much better to-day, although it was feared that stoppage might be necessary about half-past four.

The new boiler at the tramway power-house has been installed, and the fire has been started. It is expected that the boiler will be running on Thursday night, and inconsequence the position will be considerably relieved. On Good Friday no cars whatever will be run, and on Saturday there will be a limited service only. Advantage will be taken of this opportunity to overhaul all the boilers and machinery at the power-house.

Considerable progress has been made with the setting up of the new turbine at the power-house—a turbine of much greater power than any now in use. Unfortunately the pump intended to lift water for condensing purposes did not come to hand with the turbine, and this will occasion considerable delay. No word has yet been received of the shipping of the pump from England.



THE ENGINE ROOM OF THE WELLINGTON ELECTRIC TRAMWAYS POWER HOUSE.

Architect unknown :Site plan of the Cable Street area / K.B.C. 11/5/1942.

Date: 1942

Ref: Plans-2002-058-014-066

Site plan of the Cable Street area, showing a concrete culvert, and the relative positions of the Odlins building, Harbour Board building, John Chambers, Inglis Brothers, Magnus Motors.

Quantity: 1 plan(s).

Physical Description: Ink drawings on tracing paper, 375 x 520 mm.

Provenance: Deposited by Mr Rob Mitchell in 2002.

Access restrictions: Partly restricted - Curator required

Format: 1 plan(s), Plans, Ink drawings, Architectural drawings, Ink drawings on tracing paper, 375 x 520 r

See original record

< Catalogue 1 Sort: None

Search:

Title:

Creator:

Description:

Library Reference:

Date From:
YYYY

Date To:
YYYY

Level:
(any)

Language of Material:
(any)

Search

Includes Digital Content:

Only Born Digital Content:

Only Digitised Content:

Search Tips

Road grader doing prepatory work for the building o

Summary

Title: Road grader doing prepatory work for the building of

Reference: PAColl-5927-22

Date(s): [ca 21 February 1942]

Earliest
1942

Extent:

Quantity	*Type*
1	b&w original photographic print(s

Digital Content: Yes - View Digital Copy

Level: Item

Repository: Alexander Turnbull Library, Wellington, New Zealanc

Access and Use

Access Restriction: Partly restricted - Please use surrogate in place of or

Details

Scope and Contents: Road grader doing prepatory work for the building o

Physical Facet:

Type	*Details*
Orientation	Horizontal ir

Indexing Terms

Subjects: Graders (Earthmoving machinery)
Air raid shelters - New Zealand - Wellington Region

Places: Wakefield Street

Genre/Form: Photographs

Related Items

Parent Object: PAColl-5927. Evening Post original photographic pri newspaper (PA-Group-00287). [Item]

Title	Road grader doing prepatory work for the building of an air raid shelter, Wakefield Street, Wellington
System Reference	Tiaki : PAColl-5927-22

< Catalogue 1

Sort: None

Search:

Title:

Creator:

Description:

Library Reference:

Date From:
YYYY

Date To:
YYYY

Level:
(any)

Language of Material:
(any)

Search

Includes Digital Content:

Only Born Digital Content:

Only Digitised Content:

Search Tips

Constructing an air raid shelter.

Summary

Title: Constructing an air raid shelter.

Reference: PAColl-0783-2-0063

Date(s): 1942

Earliest	*Latest*
1942	1942

Extent:

Quantity	*Type*
1	b&w original photographic print(s)

Digital Content: Yes - View Digital Copy

Level: Piece

Repository: Alexander Turnbull Library, Wellington, New Zealanc

Access and Use

Access Restriction: Partly restricted - Please use surrogate in place of or

Details

Scope and Contents: Group of men putting up the walls of an air raid shelt

Indexing Terms

Subjects: Air raid shelters - New Zealand - Auckland Region
Men
World War, 1914-1918

Places: Auckland City

Genre/Form: Photographs

Related Items

Parent Object: PAColl-0783-2. Industrial war effort photographs. 19

Title Constructing an air raid shelter.
System Reference Tiaki : PAColl-0783-2-0063

TANGLE CONTINUES

SKATING, BUT NO GAMES

GOODS TO BE SHIFTED

After eight months of delay, confusion, and cross purposes over the provision of a skating rink and an indoor sports stadium for members of all the Services, it has been decided by a subcommittee of the Wellington Patriotic Committee, with the Mayor as chairman, not to proceed with the sports stadium and that skating is to be provided in the former Civic Rink (old tramway power-house) and not in the Glide Rink (known as Kenner's Building), as formerly decided by the Patriotic Committee.

For some time both buildings have been used by the Government as emergency stores for bulk foodstuffs built up when the Pacific threat was serious, and it has been the impossibility of getting these goods removed which has till now prevented the buildings being reopened to provide badly-needed active recreation.

Some months ago the American authorities offered to convert, equip, and manage the power-house building as a sports centre for the benefit of all the Services, American and New Zealand, and to hand the revenue to the Patriotic Committee. The American authorities, furthermore, provided transport for the greater part of the New Zealand-owned goods stored in the power-house, but for many weeks there has been no further movement. The American authorities have, because of delay and changed circumstances, now withdrawn their offer to equip

now withdrawn their offer to equip and operate the indoor sports centre.

PRIME MINISTER'S INSTRUCTION.

Following recent discussions, the Prime Minister (Mr. Fraser) gave definite instructions that the goods were to be removed from both buildings without more delay. The instruction has been carried out as regards the Glide Building, but 900 tons of foodstuffs remain in the old power-house.

Both buildings are in Wakefield Street, on opposite sides of the street. The Glide has a low stud, and as regards entertainment is suitable for skating and no other purpose. The power-house has a very high stud, and is the only existing building which can be adapted for sports purposes. The floor of the Glide would require some attention, and that and other brightening up would cost about £300. The power-house floor is in good order.

The decision of the sub-committee of the Patriotic Committee is that the 900 tons of goods still in the power-house building shall be shifted across the street into the Glide Building. While one consequence of that decision will be that skating may be provided a fortnight earlier, another consequence is that there will be no present possibility of providing a full-time indoor sports stadium, because the power-house is the one existing building capable for conversion for that purpose.

The cost of shifting the goods from one rink and restacking them in another across the street will be £400.

TANGLE CONTINUES

EVENING POST, VOLUME CXXXVI, ISSUE 39, 14 AUGUST 1943

Using This Item

I.E. 23rd Aug,1929

Dear Sir,-

In reply to your letter re demolition of the Brick Chimney Stack at the Old Tramway Power House, Jervis Quay, I have to inform you that the Council have accepted the tender of Messrs. White and Brook.

I am, however, to thank you for your tender, and return herewith your deposit cheque for £5. It will not be necessary for you to furnish a receipt to the City Corporation.

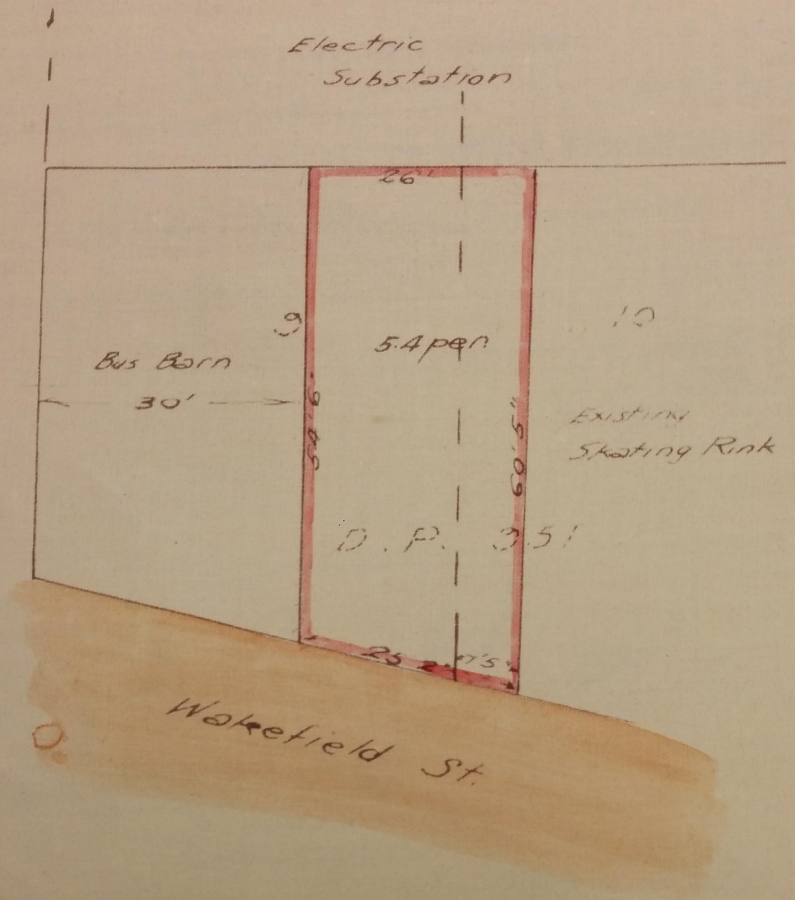
Yours faithfully,

Town Clerk.

Messrs. Hunter and Matteson, 13 Henry Street,
Mr. James Hargrave, 212 Rintoul Street

Note. Pencil alterations by T.A. Parsons 21/10/37

Plan showing [illegible]



Plan shewing portion of Old Boiler House: Wakefield St. - to be leased

Scale: 20ft to an Inch.

Town Hall,

JRL.ML Wellington, N.Z. 1st. December, 19

Memorandum for

The City Engineer,

Wellington.

Lease of Old Boiler House: Wakefield Street: Blundell Brothers Limited:

Herewith I forward plan of the area leased to Blundell Brothers. Would you please prepare three further copies of the plan similarly coloured as soon as possible and return all four copies to me.

John O'Shea

City Solicitor.

W/C 5/12/33

5/12/33

Plan herewith 6/12/33

Inspector: Mawson. 283

House No. 29 Lot Sec. D.P.

Homewood Cres. Road Street

Description: Dwelling 25/7H

Occupier:

Owner and Address:
Mr & Mrs King
29 Homewood Cres

Inspection Dates	
29-2-84	Mrs Stocker & Mr Barker 29 HOMEWOOD CRES. 843-393 Refuge onto section could be from main sewer drainage inspection have requested a dye test. Please contact the Barkers - 843-398.
29-2-84	A three (3) metre high bank on the Southern boundary of 29 Homewood Cres has a sprayed concrete covering which after some years has cracked and fallen away while the clay surface appeared damp in some places there was no sign of any constant water flow. The sewer main ~~from~~ travelled to the bank was water tested for 2-3 hrs There is no reason to suspect the sewer is contributing to the dampness on face of bank. Discussed findings with Mr Barker and no further involvement required. File

www.tonkintaylor.co.nz

Michael Fowler Centre Carpark Development Structural/Geotechnical Effects & Construction Methodology

Statement of Structural & Geotechnical Effects
Revised to accompany updated design information for RC

The purpose of this report is to identify likely structural hazards and effects relating to the proposed redevelopment of the Michael Fowler Centre Carpark (MFCC)site, and to identify appropriate mitigation, for the purpose of assisting with the Resource Consent application for the site.

The MFCC site has relatively high exposure to potential natural hazards including seismic shaking, liquefaction, lateral spreading, and flooding (arising from local inundation and/or foreseeable sea-level rise).

The structural, geotechnical and architectural design addresses and mitigates the natural hazards, noted above, with a high-performance structure intended to perform in excess of Building Code minimum requirements. In addition, the development will result in some remediation/disposal of existing in-ground (low-level) contamination. [Refer to Tonkin & Taylor *Ground Contamination Assessment* dated November 2016].

Geological profile of site

The site's geological profile (top to bottom) comprises:
- Reclamation Fill
- Marine Deposits
- Alluvium
- Bedrock (varies across the site, possibly between 50-80 metres depth).

The Reclamation Fill and Marine Deposits (below groundwater level) have a potential for widespread liquefaction resulting in lateral spreading towards the Whairepo Lagoon. The upper zones of the Alluvium have a potential for localised pockets of liquefaction but lateral spreading within the Alluvium is unlikely.

Proposed development

The proposed development involves removal of the existing, temporary ballet building and construction of an 9-level office building of irregular plan form. The new building structure will be base-isolated to provide seismic life-safety protection coupled with Low Damage Design, and protection of contents, in excess of Building Code expectations. Above the base isolators these structures will be predominantly

steel framed. The upper floors will be composite slabs [reinforced concrete on permanent steel formwork] supported on steel beams. Seismic resistance of the superstructure will be provided by a diagrid arrangement of steel bracing that will transmit the lateral loads down to the base-isolation level.

The ground floor slab level of the new building will be set approximately 1m above existing ground levels to mitigate potential local inundation and sea-level rise flooding hazards as recommended in the Aurecon *Civil Engineering Concept Design Report*. Note that the raised floor level also provides space for base-isolation bearings and reduces excavation volumes.

Bulk excavation will be carried out generally as shown on the attached drawings. The volume of excavation is expected to be approximately 3200m^3. Excavation will typically be shallow [approximately 1200mm deep], with localised deeper zones at pilecaps and beneath the liftpits [approximately 2.4m deep, maximum]. The proposed pile solution [bottom-driven steel-tube] results in minimal spoil for disposal. Excavated material will be treated/disposed as appropriate. Bulk excavation will be carried out prior to piling to form a site bund.

All construction phase run-off will be contained and treated on site as appropriate, refer to the LT McGuinness Draft Construction Management Plan [DCMP]. Typical bulk-excavation levels are expected to be above ground-water levels. Localised de-watering may be required to enable formation of lift pits and possibly some of the deeper foundation beams. Deeper, localised excavations will be retained with sheet piling as required and no significant lowering of the water-table is anticipated. Any de-watering effects are expected to be extremely localised.

Along the development's western side (facing the Michael Fowler Centre) and northern side (Jervois Quay) the excavation will typically be battered to meet existing ground levels, within the site boundaries. Along the southern side (Wakefield Street) a mixture of shallow, temporary, vertical cuts and temporary retaining will be required. This will include some areas of temporary encroachment along Wakefield Street, of approximately 300mm into road reserve, with steel sheet piling or steel soldiers and lagging. Any temporary retaining structures that extend beyond the site boundary will be removed to a minimum depth of 800mm below footpath level following completion of the permanent works.

Potentially, at three locations along the Wakefield Street boundary, localised and shallow, permanent encroachments may be necessary to facilitate base-isolation rattle space detailing. The need for this will be confirmed during design development.

Piling strategy

The building structure will likely be founded on driven piles founded in the dense Alluvium at a minimum depth of 12m, expected to range down to 20m below ground. Specialist geotechnical engineering input is being provided by Tonkin & Taylor.

Piles are likely to be bottom-driven steel tubes which are then filled with concrete. These piles will:

a) Transmit the vertical loads from the building, through the potentially liquefiable materials, down to competent founding.
b) Transmit the lateral (seismic) loads from the building into the surrounding supporting soils.
c) Resist the effects of potential liquefaction-induced lateral ground movement including ground lurch and lateral spreading.

Bottom-driven, steel-tube piles have been recently installed at the nearby Tākina (Wellington Convention Centre) site and Victoria Lane Apartments (161 Victoria Street) with the noise and vibration during installation successfully managed. The mitigation of the effects of the pile installation at the MFCC site, including noise and vibration, will be managed in a similar manner. Refer to Appendix A: *MFCC Driven Piling – Rationale & Mitigation,* and also to the Marshall Day Acoustic Assessment Report dated 10 February 2022. The great majority of the new piles will have a good separation from adjacent, occupied buildings.

Protection of existing infrastructure

Within the site are two existing items of public utility infrastructure:
1) A large, underground, sewage storage/detention tank, at the western end of the site; and
2) An old, buried, predominantly concrete, ovoid stormwater culvert running across the south-eastern corner of the site.

The proposed new building structure will be built over 50% of the tank plan area and over the culvert for a length of approximately 16m. Various inspections and assessments have been undertaken to better understand potential risks to the infrastructure.

The design intent for the proposed development is to:
a) Protect the infrastructure from damage during construction.
b) Protect the infrastructure from damage resulting from movement of the new MFCC building during a seismic event.
c) Ensure that permanent building loads transmitted to the infrastructure are minimal.
d) Make provision for future operations and maintenance of the infrastructure.

Refer to Appendix B: *Tank and Culvert – Protection and Access Protocols,* for further details.

Construction Methodology

The Michael Fowler Centre Carpark development permanent foundations will be constructed fully within the site. In-ground construction activities will include demolition, excavation, removal of existing foundations, piling, minor local de-watering and construction of the reinforced concrete 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 DCMP.

1. Additional proof-drilling 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. Pruning (by arborist) and protection of trees to be retained.
5. Designation/marking of 'light-traffic' zones over tank and culvert.
6. Removal/demolition of the existing structures on the site. Note this includes the temporary ballet building, the elevated pedestrian bridge across Wakefield Street and an existing sculpture.
7. Site-wide bulk-excavation generally as shown on the bulk excavation plans, attached. This is likely to expose remaining foundations from previously demolished structures on the site. The excavated/demolished material shall be treated if required and disposed to landfill/cleanfill as appropriate.
8. Driving and pouring piles with protection measures and noise/vibration monitoring/management as necessary. Refer also to Appendices A and B.
9. Additional localised excavation together with temporary shoring works, as required, to form the pilecaps and foundation beams. The excavated material shall be assessed, treated if required and disposed to landfill/cleanfill as appropriate.
10. Installation of underground services as required.
11. Construction of concrete tidy slabs under pilecaps and the sub-ground floor slab.
12. Construction of the pilecaps, liftpit, foundation beams and reinforced-concrete sub-ground floor slab.
13. Installation of the base-isolator bearings.
14. Construction of the superstructure.

APPENDIX A - MFCC Driven Piling – Rationale & Mitigation

It is proposed to found the new building on ~150 bottom-driven, steel-tube piles. This technology involves driving hollow steel tubes, typically 450mm or 600mm in diameter, through poor overlying material into dense, competent founding strata at depth. The pile-driving hammer, instead of hitting the top of the pile, runs up and down inside the tube and typically hits a gravel plug at the base of the tube/pile.

The decision to utilise a driven pile type, rather than a drilled/bored pile is based on a comparative pile study carried out by Tonkin & Taylor and Dunning Thornton Consultants and more generally on Recommendation Number 26 issued by the Canterbury Earthquakes Royal Commission (Volume 1) that states: *Because driven piles have significant advantages over other pile types for reducing settlements in earthquake-resistant design, building consent authorities should allow driven piles to be used in urban settings where practical.*

The structural advantages can be summarised as follows:

a) By displacing the surrounding soil as it is driven, it improves the soil around and more importantly below the pile.
b) As it is driven to a 'set' (a prescribed maximum penetration for each blow of the driving hammer) it is effectively self-proving.
c) The compaction of the ground through driving improves the overall bearing capacity of the pile. In particular, it improves the end bearing capacity, reduces the length of the pile and provides increased dependability (confidence) in variable soil such as the Alluvium. Additionally, they can be easily tested to verify their load carrying capacity compared to a bored pile.
d) As it is driven, rather than drilled, it does not create large volumes of spoil that has to be disposed of, as occurs with a bored pile. However, it is common to pre-drill a limited depth (typically 3m) to pitch the piles prior to driving. At contaminated sites, the much-reduced soil removal is a particular advantage.
e) The alternative drilled pile solution in these ground conditions is likely to involve a 1.2-1.8m diameter pile in the range of 35-45m deep (instead of 4-600mm diameter driven piles). The drilled option would require approximately 3 times the volume of concrete and the disposal of 50 cubic meters of spoil.
f) Compared to screw-piles in the given founding conditions, the driven pile provides significantly enhanced vertical capacity, lateral capacity, stiffness and dependability. Note that the uncertainty of a screw pile founding condition is the same as a bored pile. Additionally, it is likely that there will be difficulty in advancing screw piles to the required founding depths and consequently augering will be required which increases the volume of contaminated soils excavated.

We do note that, pending developed design, there may also be a need for some drilled piles. They also may be utilised for the contractor's temporary tower crane foundations.

The perceived disadvantages of driven piles are noise and vibration. Conventionally, driven piles are top driven, precast concrete. The driving (the hammer hitting the top of the pile) occurs above ground creating a high level of noise. For bottom-driven,

steel-tube piles the driving impact occurs below ground reducing the audible sound by approximately 10 dB.

In relation to ground-transmitted vibration, the difference between top-driven and bottom-driven piles is not significant. Human perception of ground vibration/acceleration is acute and people may perceive vibration despite it not being of a magnitude which would initiate structural damage. Previous trial piling works within the Te Aro Basin indicate that average vibrations can be limited to around 10-15mm/s when piling is carried out close to a building. According to the German Standard, DIN 4150-3, levels below 20mm/s should not damage a building to the extent which affects the serviceability of a building.

Recent experience of bottom-driven piling in the vicinity of the MFCC has shown that the effects of vibration can be effectively managed. Management protocols will include:

- Identification of surrounding buildings where occupants may feel the vibration.
- Early and ongoing communications with potentially affected occupants.
- Precondition photographic surveys of closely adjacent buildings.
- Attachment of 3-D survey targets to nearby buildings and structures.
- The driving of test piles at different locations around the site coupled with measurement of vibration magnitude in potentially affected surrounding buildings and infrastructure.
- Setting of vibration maximums, measured at neighbouring buildings, that would be prescribed to the piling contractor.
- Pre-augering through upper stiff gravels lavers, if required.
- During production piling, monitoring of vibration magnitude, in the surrounding buildings and infrastructure, on a real-time basis with pile driving energy inputs adjusted as required.
- Regular survey monitoring, of the targets, during production (and test) piling.

Projects where these piling protocols have been successfully implemented include:

- Tākina (Wellington Convention Centre)
- Victoria Lane Apartments

Both projects had close neighbours, both residential and commercial office.

Bottom-driven steel-tube piles were also successfully installed in the John Chambers Building and NZX, sites immediately to the north of the MFCC site.

APPENDIX B - MFCC Tank & Culvert - Protection and Access Protocols

These protocols are intended to establish the principles for protection and maintenance access for the sewage holding tank and the stormwater culvert that will be partially covered by the proposed MFCC development building. Prior to the commencement of construction the contractor shall prepare a detailed site management plan that incorporates these protocols. Refer also to the attached drawings.

Tank

- The new building shall be designed to span across the tank i.e. only minimal, permanent, vertical building loads shall be to be transmitted into the tank.
- A detailed seismic assessment of the tank has been carried out. Findings from the assessment are as follows:
    - The existing tank is generally compliant with current New Zealand loading and material codes, with allowance having been made for future sea-level rise and potential future seismic hazard changes.
    - The base of the tank is sufficiently socketed into the underlying alluviums, below potential liquefaction layers, to prevent more than minimal lateral displacement of the tank.
    - Unbalanced, seismically induced earth pressures may result in minor (50-100mm) settlements across or along the tank. This could result in a small tilt, in the order of 0.5 degrees maximum.
    - With the projected, minimal tank displacements, the proposed clearances to new building piles are satisfactory.
    - Potential flexural demands on the tank's walls and slabs, both out-of-plane and in-plane, are well within the existing tank's capacities.
    - It is apparent that the tank's original design allowed for worst-case buoyancy conditions i.e. ground water-table at ground level.
    - Removal of overburden above the eastern end of the tank (i.e. beneath the proposed new building) may reduce uplift/buoyancy factors-of-safety to nominally below minimum. Anchor piles or ballast could be used to restore the F.o.S. to appropriate levels.
- Based on this assessment, the partial covering of the tank will not pose significant risk to the future access, maintenance or strengthening of the tank.
- A nominal, minimum pile clearance of 500mm from tank (base slab edge) shall be maintained. This will limit lateral load transference between piles and tank during seismic shaking.
- Piles within 4m of tank shall be pre-augered to 1m below base of tank.
-
- Existing access point at western end of tank will be covered by the new building footprint. A new access point to be created at western edge of building plinth. This will lie outside of proposed driveway service access to the MFC.
- No heavy construction traffic shall be permitted to pass-over/operate above tank. (Service traffic will continue to drive over tank.)

- Vibration levels at the tank will be monitored during pile driving – refer to *APPENDIX A - MFCC Driven Piling – Rationale & Mitigation*. No vibration issues are anticipated in relation to the tank.
- Existing fill above tank will be excavated, within the area of the new building footprint, to enable easier access to roof of tank for future maintenance. As noted above, some additional resistance to buoyancy uplift, at the eastern end of the tank will be provided, either by way of vertical ground anchors or with the addition of ballast.
- A pre-construction condition/damage survey of the tank shall be carried out. *Note: This has already been completed, refer to Aurecon Civil Engineering Concept Design Report.*
- A post-construction condition/damage survey shall be carried out, following completion of the ground floor of the new building.

Culvert

- The new building structure shall be designed to span across the culvert i.e. only minimal, permanent, vertical building loads shall be to be transmitted into the culvert.
- Approximately 16m length of culvert will lie beneath the footprint of the new building.
- The extent/dimensions of the culvert shall be confirmed prior to the commencement of piling.
- Options to maintain performance of the culvert include:

a) Relining the culvert prior to construction of the new building.
b) Cantilevering the building across the culvert to enable replacement of to be carried out at some future date.

In either event, the following protocols will be followed:

- Piles within 4m of culvert centreline shall be pre-augered to 3m below the base of the culvert and shall have permanent casings, larger in diameter than the driven piles, from underside of pilecap to 1m below base of culvert. This will limit lateral load transference between piles and culvert during seismic shaking. Refer to preliminary piling plan, attached.
- A nominal, minimum clearance of 600mm from the face of culvert to the face of the permanent casing shall be maintained.
- Any new building sub-ground floor slab and foundations will be designed to span over the culvert without applying loads to culvert and will be separated with compressible material.
- No heavy construction activities or traffic (i.e. heavier than that permitted over the adjacent road-covered sections of culvert) shall be allowed above the culvert within the MFCC site.
- Vibration levels at the culvert shall be monitored during pile driving (with allowable levels pre-determined through programme of test-driving). Refer to *APPENDIX A - MFCC Driven Piling – Rationale & Mitigation*.
- A pre-construction condition/damage survey of the culvert shall be carried out. *Note: This has already been completed, refer to Aurecon Civil Engineering Concept Design Report.*

- A post-construction condition/damage survey of the culvert shall be carried out, following completion of ground floor of new building.

Attachments:

- 7952 Sketch S01-01 Pile Plan – Dated 11-8-2022
- 7952 S02-03 Tank and Culvert Cross Sections – Rev A

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