

Gordon Wilson Flats

320 The Terrace, Wellington

DEMOLITION MANAGEMENT PLAN



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1.0 Purpose of DMP

The Demolition Management Plan (DMP) outlines the typical de-construction process proposed for this site, including:

- Brief details of demolition methodology
- Expected construction programme durations
- The proposed environmental effects and safety measures
- The project communication plan
- Procedures to be followed if complaints are received

The information contained within this DMP relates to the proposal to demolish an earthquake [Prone] risk building deemed uneconomic to repair and unsafe to be left standing by its new owners VUW.

2.0 Legislative changes to be considered

The application for a Building Consent to carry out the demolition of a major structure on this site coincides with the significant legislative changes to Health & Safety in the Workplace being introduced including:

- **Health & Safety Reform Bill (expected to be enacted during last quarter 2015)**
 - Which revises the H&S in Employment Act 1992
 - As amended by the H&S in Employment Amendment Act 2002
- **Health & Safety at Work (General Risk and Workplace Management) Regulations 2015**
 - Which further the requirements of the H&S in Employment Regulations 1995
- **Health & Safety at Work (Asbestos) Regulations 2015**
 - Which supersede the H&S in Employment (Asbestos) Regulations 1998
 - And; their predecessor the Asbestos Regulations 1983

This DMP assumes that all duties and requirements arising out of the changing Health & Safety at Work legal environment will impact on this project and therefore except for transitional caveats this DMP will reflect compliance with the impending legislation and Regulations expected to be in force at the time of commencement of the works.

3.0 The Site

Location

Gordon Wilson Flats was opened in August 1957. They are located at 320 The Terrace, Wellington. They lie to the south end of The Terrace in close proximity to the intersection with Ghuznee Street.

During peak travel periods The Terrace carries high volumes of commuter traffic which feed both the major commercial institutions based on The Terrace and government sector premises located further north on The Terrace and in the parliamentary precinct which borders the Bowen Street / Terrace intersection.

The Terrace is also a major feed route to the VUW at Kelburn and at peak hours carries a high volume of both vehicular and pedestrian traffic.

The Kelburn campus of VUW sits directly above the site but at present has no direct access down to The Terrace for pedestrian (student) access.

The Terrace has a number of important through routes converging on it including traffic from the suburb of Karori, north/south feeds to the adjacent State Highway 1 and traffic accessing the area from the southern and eastern suburbs. The Ghuznee / Terrace intersection needs at all times for traffic during peak times to keep flowing.

Existing Buildings

Gordon Wilson Flats is under the ownership of Victoria University and an adjacent building McLean Flats is under the ownership of Housing New Zealand. In recent times both structures have been deemed unsafe to occupy and stand vacant.



This DMP addresses Gordon Wilson Flats only. [McLean Flats, at 320A The Terrace remains under the ownership of Housing New Zealand and is noted to be the adjacent structure in terms of this DMP]

Gordon Wilson flats was opened in 1957 to an original design by the then Ministry of Works. Foundations include extensive bored piling.

The structure comprises of an 11 storey insitu reinforced concrete structure which relies on a primary lateral resisting system of concrete shear walls in both the longitudinal and transverse direction.

A design feature of the apartment design is that each apartment is of double storey height with a suspended timber floor separating the two levels.

The façade consists of insitu concrete columns with timber and glazed panels between the columns and slab/wall edges. To the rear of the building are walkways for access to the apartments and a reinforced concrete stair structure.

The condition of the façade is very poor and currently a hazard due to severe corrosion of reinforcing in slab edges and columns leading to spalled concrete which can break off into pieces and create a hazard by falling from height.

The site and building has been locked off [isolated the hazard] and warning signage and barriers to entry erected which effectively create safe zones to keep people from harm

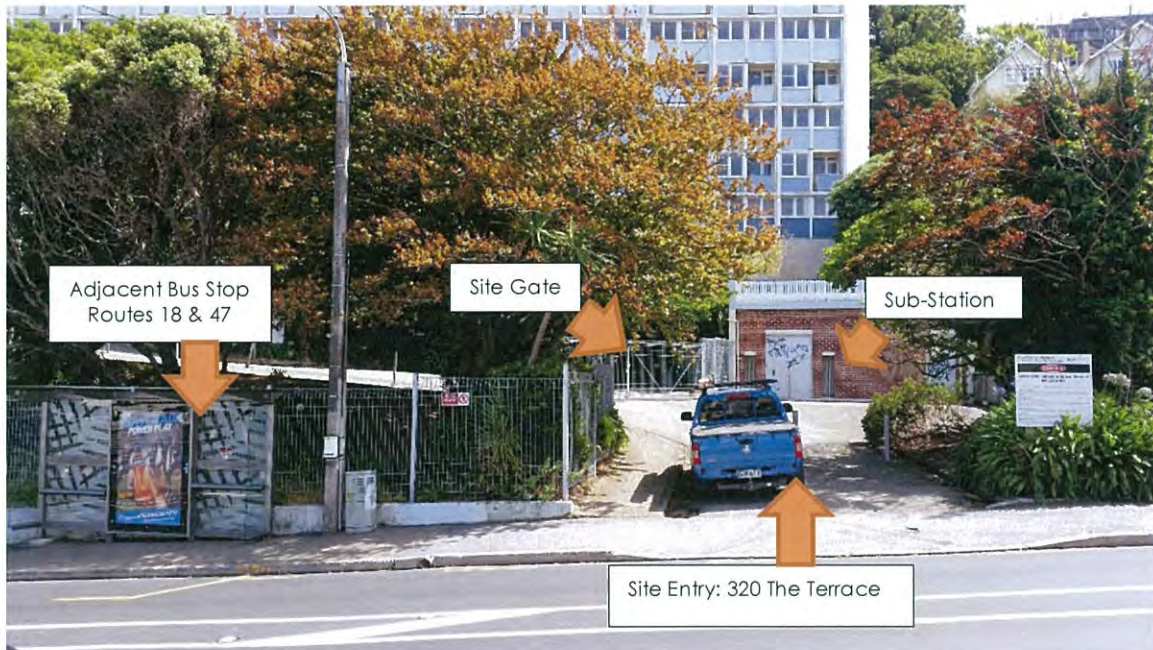
The McLean Flats site and building will be protected by appropriate systems once the demolition is let.

Sub-station

An electrical sub-station is housed towards the Terrace frontage adjacent to the site entry. This structure will be protected and kept operational during the proposed demolition work.

24/7 access will be maintained to the sub-station.

Note: Site Entry from The Terrace showing sub-station position on site.



Bus Stop (Routes 18 & 47)

Immediately outside the site entrance is a bus stop which is a pick up point for two bus routes; Route 47 along The Terrace travelling to Victoria University's Kelburn Campus and on to Khandallah and Route 18 north along The Terrace to Bowen Street and the Pipitea Campus.

As all truck movements will be supervised in and out of the site by a dedicated Safety Traffic Management Supervisor (STMS) there will be no requirement to relocate the bus stop.

Pedestrian Footpath

Minor inconvenience during controlled truck entry and exit manoeuvres may be experienced.

The safety of the public is paramount and a STMS will control all vehicle movements on and off of the site.

All vehicles will enter and leave the site forward facing

There are no footpath closure requirements envisaged.

Affected Neighbours

No. 300 A/B The Terrace

A timber framed weatherboard cottage is located immediately adjacent to the site entry. This property may potentially suffer noise, dust and traffic nuisance and this DMP addresses the mitigation measures to be implemented and negotiated with the property owner prior to commencement of deconstruction work.



4.0 Proposed Project

Demolition of Gordon Wilson Flats

The project is to demolish an 11 storey insitu reinforced concrete structure with a one storey lightweight laundry above.

The structure is of reinforced concrete construction with an insitu reinforced concrete suspended floor. Each apartment is two storeys with intermediate timber floors separating the two levels of each apartment.

The building sits on reinforced concrete piling and reinforced concrete foundation structures.

At this stage the pile foundations will be left in the ground but the ground slab and any foundation beams or pads will be broken out and removed from site.

The intent of the project is to remove the superstructure and create a tidy graded platform as an interim measure prior to VUW proposing any new use for the site.

The existing sealed driveway access will be maintained as it serves both the building to be demolished under this DMP and a separate building McLean Flats (owned by Housing New Zealand).

Some localised concrete slab hardstanding's may be left 'as is' until future proposals for the site are confirmed as the proposal is to immediately follow up the demolition with implementation of the landscaping plan prepared by Wright & Associates Ltd

There are no new construction works envisaged in this application.

5.0 Deconstruction: Planning and Sequence

Planning Activities			
	Descriptor	Context	Status
Health & Safety			
1	<p>The H&S Strategy for this project will be developed by the Clients Representative to ensure compliance with the Safety of Work legislation and applicable Regulations.</p> <p>The contractor will be required to produce a Site Specific Safety Management Plan which will be reviewed and approved by the Client's Representative.</p>	<p>Recognises the Principals obligations and responsibilities in relation to safe working.</p> <p>Refer Safety in Design below</p>	
Project Management			
1	A site survey to establish and mark the location of existing site services will be undertaken and termination requirements identified.	The purpose is to identify all underground and above ground services to assess the impact on infrastructure and neighbours.	
2	A desk top review of the building structure has been undertaken to assess the structural system of the building. [Beco report]	Refer Safety in Design below.	
3	A building survey will be undertaken by the demolition contractor to assess the salvageable scope of the existing materials.	Recyclable material salvage has an impact on demolition costs (credits) and on time (more time required if extensive salvage).	
4	A plant and equipment and manpower schedule will be drawn up together with an assessment of tip truck requirements.	Sourcing equipment and men suitable for demolition of this building.	
5	Identification and confirmation of tip sites for clean rubble and potentially asbestos contaminated rubble.	Impact on cost and truck turnaround times.	
6	Notification to Work Safe of proposed demolition and asbestos removal work.	Asbestos Removal and Demolition are Notifiable work.	
7	Communication Strategy with affected parties developed and implemented.	A project management priority.	
8	De-construction Plan written up and agreed.	Refer Safety in Design below.	
9	Building Consent obtained.	Mandatory requirement	
10	Instruction / Approvals to proceed.	From client (who may have conditions or negotiations still underway)	

Safety in Design (SID)			
	Descriptor	Context	
1	<p>Safety in Design looks at every stage of the building life cycle and under the incoming changes to work place safety all projects / developments will be required to examine 'safety' at key points in the life cycle:</p> <ul style="list-style-type: none"> o Safety in relation to site selection o Safety in relation to constructing the building o Safety in relation to occupancy and occupants o Safety in relation to maintenance requirements o Safety in relation to future adaption or extension o Safety in relation to deconstruction 	<p>This project is an end of life deconstruction.</p> <p>It requires the demolition of a multi-level structure which must occur adjacent to another multi-level structure which is to remain and needs protecting.</p> <p>Other adjacent structures include an electricity sub-station that requires 24/7 access and a cottage (300 The Terrace) that serves as a residence and requires special consideration in respect of those living at the address or visiting the address.</p>	
2	<p>The building to be demolished will be removing structural elements and engineering advice around the safe sequence is considered a SID pre-requisite.</p>	<p>The importance of an engineered de-construct process is that it ensures spontaneous collapse of a weakened structure does not occur and that 'safety of persons and property' became the number one consideration during demolition work.</p>	
3	<p>Live Services presenting hazards</p>	<p>The purpose of the site survey is to identify the existing live services and arrange to cap, divert or protect any that are to remain live.</p>	
4	<p>Hazardous Waste.</p>	<p>Covered under Section 6</p>	
5	<p>Environmental mitigation measures</p>	<p>Discussed under Section 8.</p>	

Sequence (Methodology)			
	Descriptor	Context	
1	<p>Site Services disconnected or terminated</p>	<p>Method description</p>	
2	<p>Asbestos Survey undertaken (See Section 6 below)</p>	<p>Method description</p>	
3	<p>Fencing / Hoardings erected</p>	<p>Method description</p>	
4	<p>Asbestos Removed (See Section 6 below)</p>	<p>Method description</p>	
5	<p>Prepare Load Out Zone (adjacent to site gate)</p>	<p>Method description</p>	
6	<p>Salvage Crew removes timbers, fixtures and fittings</p>	<p>Method description</p>	
7	<p>Roof Coverings, Framing and Timber demolished</p>	<p>Method description</p>	

8	Cut roof framing structures into sections for removal by mobile crane	Method description	
9	Working to a pre agreed sequence with a structural engineer remove sections of the walls and floors using a 34t high-reach demolition excavator with a hydraulic cutter / crusher	Method description	
10	Progressively work from the north to the south demolishing walls and floors in a sequence that prevents unplanned structural collapse	Method description	
11	Demolition rubble will be pushed to the load out zone and loaded onto tipper trucks using a 22t excavator.	Method description	
12	The high-reach will bring the structure down to L4	Method description	
13	L4 and below will be demolished using a 22/23t excavator fitted with a hydraulic crusher and/or hydraulic breaker	Method description	
14	Demolition rubble is progressively loaded out until completion	Method description	
15	The Ground Slab is removed using the 22t excavator with a hydraulic breaker attachment	Method description	
16	The foundation beams / caps / thickenings are demolished using the same equipment	Method description	
17	Load out complete	Method description	
18	Site grading and imported fill shaped to a platform ready for surfacing.	Method description	

Note:

Changes to the above:

The deconstruction, planning and sequence are the expected processes to be followed. At the time of writing this DMP a contractor has not been appointed to carry out the works. It is envisaged that a Building Consent will be sought prior to procuring the demolition services.

At the time of contractor appointment it will be the responsibility of the contractor to confirm this DMP or provide an alternative version that meets the requirements of the Building Consent and any conditions thereof.

The methods and statements described within this document reflect good industry practice and are typical of demolition projects of this nature.

Other Factors

The site has a major advantage over similar inner city sites in that it is self-contained, with good sealed access and is sufficiently distanced from adjacent neighbours in respect of the noisy and dusty demolition activity.

The most affected neighbour is the boundary neighbour at 300 The Terrace. Most of the effects relate to frequent vehicle / truck movements throughout non-peak hours of the day.

Equipment

34t High Reach Excavator

Proposed for demolition above L4



Using Hydraulic Breaker / Crushing Jaws

22/23t Excavator

Proposed for demolition of L4 down and for Load Out as below.



Note:

The truck size is limited by the forward facing turning circle onto and exiting the site.

Double trailer units will only be used if they are able to turn into the site within the road width. The potential for a log jam in the traffic system will be minimised by scheduling heavy vehicles outside of peak times.

All vehicles will be required to enter and leave the site in a forward facing direction.

Traffic Safety Management Strategies are based on full time Safety Traffic Management Supervisor (STMS) marshalling.

6.0 Safety Measures

Existing Hazards (Removal of Asbestos)			
	Description of Activity	Context	Status
1	Undertake a full hazard assessment survey of the building including sample testing for asbestos.	Asbestos particles / dust are hazardous to health and are to be removed prior to general demolition.	
2	Procure Work Safe Registered Asbestos Removal Specialist	Only a certified / licensed operator is permitted to remove asbestos materials except flat sheet materials that have not become friable.	
3	Develop an Asbestos Removal Plan (ARP)	A requirement under the new Asbestos Regulations 2015	
4	Inform WorkSafe of Notifiable Work and lodge ARP	Notifiable work	
5	Confirm Training and Competency and Certificates / Licences of Asbestos Removal Personnel	Only certificated workers may work in the asbestos removal zone.	
6	Set-up and seal asbestos removal decontamination units	Mandatory practice	
7	Set-up and seal asbestos removal zones (internal)	Mandatory practice	
8	Remove asbestos by approved methods	In accordance with NZ Guidelines for the Management and Removal of Asbestos 2011	
9	Clear Air Testing	Mandatory practice	
10	Dis-establish protective barriers and personnel safety booths	Self-explanatory	
11	Hazardous Materials at the Tip Site	<p>Asbestos removal materials will be disposed of in an approved manner including sealed bags.</p> <p>All hazardous material contained in rubble will be transported to an approved tip (potentially WCC Happy Valley Landfill) in covered trucks.</p>	
12	Move onto exterior flat sheeting to be removed in accordance with open air asbestos removal practices	The removal of non-friable flat-sheet asbestos containing material is a simpler process that requires work zones to be free from any non-removal personnel. Dust mask PPE is required. Removal waste is to be bagged and sealed for disposal at an approved tip / site	
13	Asbestos Assessor – 'all clear'	An independent verification that no asbestos remains	
14	Hand over to Demolition team	Self-explanatory	

General Safety Measures			
	Description of Activity	Context	
1	Site Specific Safety Management Plan (SSSMP)	The SSSMP details the hazards presented by the works and in particular highlights how the hazard will be managed either through Elimination, Isolation or Mitigation processes / actions.	
2	Traffic Management Plan (TMP)	The TMP details the site specific controls to be introduced in relation to vehicle movements in and out of the site, control of entry and exit movements and protection measure designed to keep the public safe from harm.	
3	Site Barriers / Fences	<p>The site currently has a lockable site entry gate and pallsade type fence securing the road frontage and existing boundary fencing to neighbouring properties.</p> <p>Localised construction fencing or hoardings will be erected as required to suit the contractors operations.</p>	
4	Personal Protective Equipment (PPE)	<p>PPE will be required to be worn at all times.</p> <p>All personnel will wear as a minimum:</p> <ul style="list-style-type: none"> o Hard Hat o Hi-Viz Vests o Safety Boots 	
6	Evidence of Training and Competency records will form part of the SSSMP	<p>Experienced and competent persannel are required to undertake work on this site.</p> <p>Where non-experienced staffs are employed they will work under the supervision of a competent Foreman who will be responsible for their safety and awareness of potentially hazardous work.</p>	
7	MSDS Sheets will be held on site	Pre-requisite for SSSMP	
8	Fuel Storage	Safe bunded storage facilities	

7.0 Timeframes

The project is determined by three key activities:

1. Planning:

Programme Allowance - 4 weeks

The planning phase scopes the task, determines the resources and external inputs required and allows for consultation over safe method of working including structural engineering considerations.

2. Removing Existing Hazards:

Programme Allowance - 17 weeks

The existing building must be surveyed and scoped in relation to the removal of any existing hazards and an approved control plan implemented to remove any hazardous substances that may pose a health risk to site workers and the public.

The above time estimate assumes asbestos will be found in vinyl, fire rating materials in ducts and flat sheet form all typical of buildings of this era.

The period may reduce or extend subject to the findings of the asbestos survey.

3. Deconstruction Works:

Programme Allowance - 19 weeks

Once the building is free of hazardous materials physical demolition commences.

The erection of protection screening to McLean Flats and the sub-station and along the boundary of 300 The Terrace will have occurred during (2) above.



West Elevation showing clearance between the structure to be demolished and the steep bank to the rear of the site

West Elevation showing external stair structure to the north of the building

8.0 Environmental Effects

Dust

Dust will be controlled using a proprietary dust spray unit that continuously sprays a fine mist into the airspace immediately above the rubble and into the demolition work face.



The 'Dust Fighter' provides highly effective dust control and was used successfully recently further up the Terrace on the Mayfair House Annex demolition.

Additional sprinklers and hoses will be utilised at local work faces as required. This will include the hose down of trucks leaving the site to control dust during transport to the tip which is located 6km away at Happy Valley.

Noise [Refer to Appendix 3: Demolition Noise Management Plan]

Noise will be controlled by restricting noisy work to the following:

Working Hours Quiet set up will start at 6.30am	Day	Machinery Hours Hours of Work	Truck Movement Hours
		Monday	7.30am – 6pm
	Tuesday	7.30am – 6pm	7.30am – 5pm
	Wednesday	7.30am – 6pm	7.30am – 5pm
	Thursday	7.30am – 6pm	7.30am – 5pm
	Friday	7.30am – 6pm	7.30am – 5pm
	Saturday	7.30am – 6pm	7.30am – 5pm
	Sunday*	No Work Permitted	No Work Permitted
	Public Holidays*	No Work Permitted	No Work Permitted

* Dispensation Required for Work on these Days

Other noise mitigation measures will include requiring all activity to comply with Appendix C NZS6803P:1999 – Acoustics: Construction Noise.

Acoustic Screens and Sheds

These will be used where pneumatic breakers are used immediately adjacent to any residences (refer Appendix 3 for screen details as per NZS6803P:1999)

Tip Truck Traffic

The load out transportation will be well maintained trucks that operate within legal limits for exhaust emissions and comply with all requirements related to heavy transport. **To avoid evening peak hour congestion Tip Trucks will not arrive or depart the site after 5pm.**

No heavy revving caused by low gear steep incline movements is envisaged. The site has a sealed access road which permits clean wheel travel and eradicates silt issues normally expected of construction sites.

Noise Mitigation Measures [Refer Appendix 3: Demolition Noise Management Plan]

Typical Noise Levels (Demolition Equipment)			
Compressors	82dB	Mitigation Measure: <ul style="list-style-type: none"> Acoustically dampen metal casing (silencer) Use electric powered compressor 	72dB 62dB
Pneumatic Concrete Breaker	102dB	Mitigation Measure: <ul style="list-style-type: none"> Fit suitably designed muffler or sound reduction equipment Use hydraulic or electric tools 	87dB 82dB
Excavator	72-92dB	Mitigation Measure: <ul style="list-style-type: none"> Fit exhaust sound reduction equipment 	67-87dB
Truck	72-92dB	Mitigation Measure: <ul style="list-style-type: none"> Fit exhaust sound reduction equipment 	67-87dB

Note: The major mitigation measure to reduce the effects of noise is the use machinery such as the long-reach excavator with hydraulic crusher jaws giving an estimated reduction of overall potential noise nuisance by a minimum of 10dB.

During weekday traffic the noise level of a busy street is approximately 80dB. Decibel thresholds reduce incrementally with distance from noise source.

Demolition noise is expected to fall within the tolerance thresholds outlined in the NZS6803P Standard. It is possible as outlined in the table above to significantly mitigate noise nuisance by fitting equipment with noise mitigation equipment. There will however be short periods over a 2-3 week duration where noise (at the north and south boundary) may exceed the desired limit of 75dBA and this is further described in Appendix 3.

Site Flood Lighting

There is no plan to work the site outside of daylight hours and consequently no flood-lighting is envisaged.

Stormwater Control

There will be little disturbance of natural ground during the demolition except for grading and imported topsoil to cover the ground exposed by the removal of sealed surfaces and the existing ground slab.

The stormwater laterals will be plugged to prevent silt running into the stormwater drains and during open ground earthworks silt bunds will be placed around storm grates and grilles to prevent silt entering the storm drain system.

A wheel wash facility is envisaged where work is undertaken during winter and regular hose downs on site of vehicle wheels and the sealed driveway at the site entry/exit will provide good control of silt runoff onto The Terrace.

9.0 Interfaces with the public

The site is located to the south of the major pedestrian routes to and from VUW and the CBD. The foot traffic is light at peak times and remains that way during the day.

Vehicular traffic is however very heavy at peak times and truck movements will be restricted to avoid peak times.

The site is significantly lacked with its only entry / exit direct onto The Terrace. The demolition work is not expected to impact greatly on pedestrians or the general public in vehicles outside of peak hour traffic.

Traffic Management

All vehicle movements will be marshalled and supervised by a dedicated Safety Traffic Management Supervisor. This person will ensure safe stopping of traffic to permit trucks moving onto and off the site and in addition will be responsible for ensuring dampened loads for dust control and covered trays to prevent loose debris falling from the truck.

Pedestrian Management

This will mostly be achieved by signage and observation by the STMS.

10.0 Communication Plan

Information for Neighbours

Prior to the commencement of work The Clients Project Manager will circulate an information pack relating to the work.

This will include:

- o A description of the work
- o An hours of work statement
- o A programme outlining the sequence of events
- o A sketch showing traffic control measures
- o A contact email and phone number of the Clients PM should further contact be required
- o A complaints procedure in the event of an incident or issue

It is envisaged that the site foreman (and 24/7 contact details) will be displayed on the site noticeboard.

11.0 Complaints Procedure

A process involving the client's project manager, the demolition contractors on-site foreman, and Victoria University's property management team will be implemented as follows:

1. All complaints will be directed in the first instance to a designated person.
2. This person will be the demolition contractor's site manager.
3. This person will have responsibility to ensure that the complaints procedure process is enacted.
4. The site will have prominently displayed alongside the works a signboard with the 24 hour contact number of the demolition contractors on site manager.
5. The contractor will maintain on site a complaint register and log of actions taken.
6. The register will include:
 - A Standard Complaints Procedure Pro forma
 - Date of Complaint Log
 - Complainant Names Log
 - Site managers (Receipt) Log
 - Actions taken Log
 - Report back Log (to Complainant)
 - Close Out Log
7. The management of 'complaints' during the delivery phase will receive high level attention from the Victoria University Property Management Team and the Clients Project Manager.
8. Ensuring that complaints received are noted, acted upon and closed out will be a KPI adjudging the successful completion of these works.

Complaints Log Sheet		
Descriptor	Information	Notes
Date of Complaint		
Complainants Name		
Detail of Complaint		
Site Manger Investigation		
Actions Taken / Implemented		
Reported Back to Complainant		
Close Out Date		

12.0 APPENDICES:

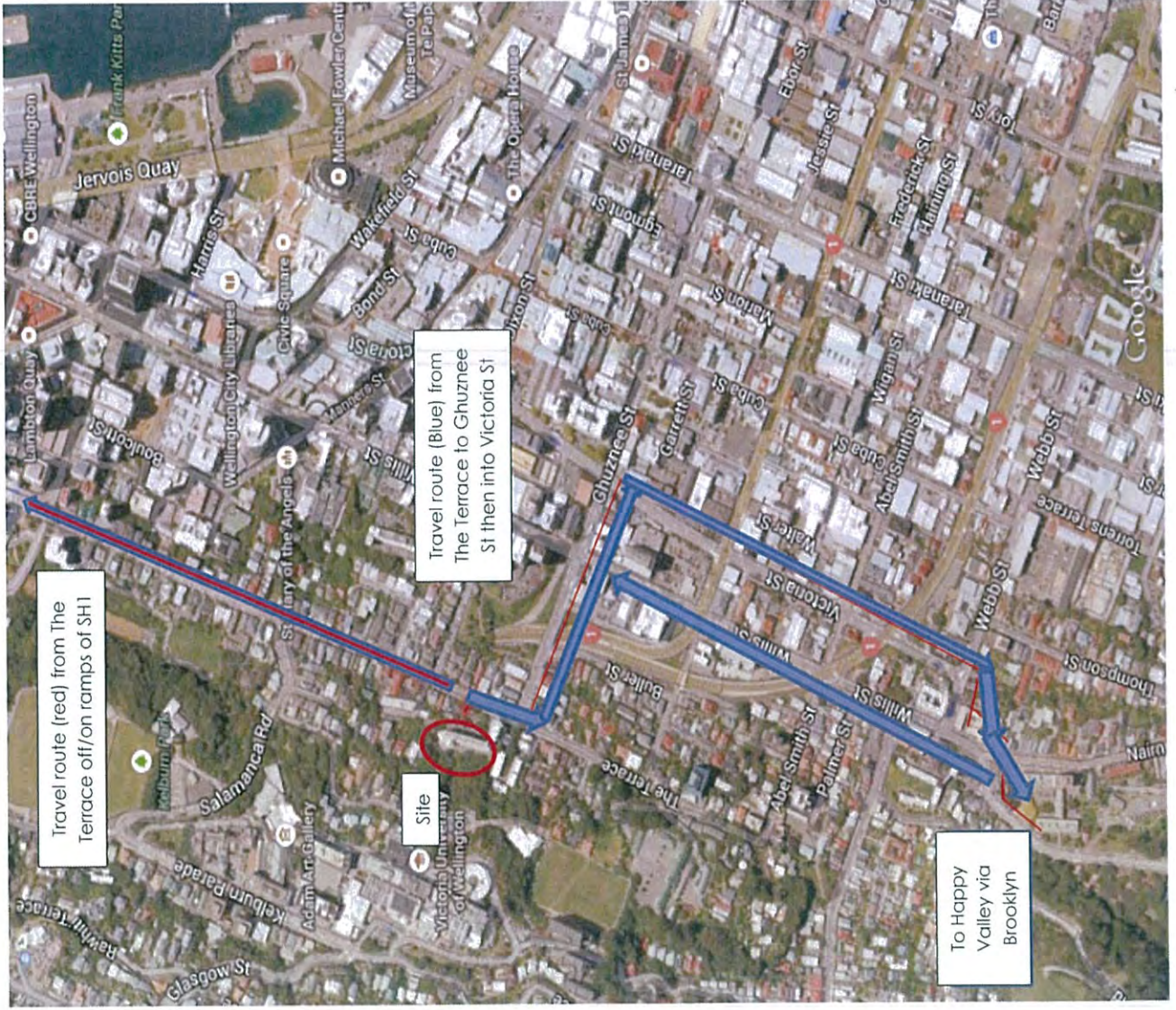
1. Site Location & Traffic Management Plan
2. Temporary Protection Measures to McLean Flats
3. Demolition Noise Management Plan

APPENDIX 1

Site Location & Traffic Management Plan



Site Location Plan
Gordon Wilson Flats
314 The Terrace
WELLINGTON



TRAFFIC MANAGEMENT PLAN

Traffic Routes:

1. The site traffic will consist of:
 - o Bringing heavy machinery to site
 - o Removing demolition rubble
 - o Importing fill
 - o Light ute work vehicles

2. The primary traffic route will be between the site and private landfill operations in Happy Valley.

All demolished materials carted from site are expected to be deposited at southern landfill sites.

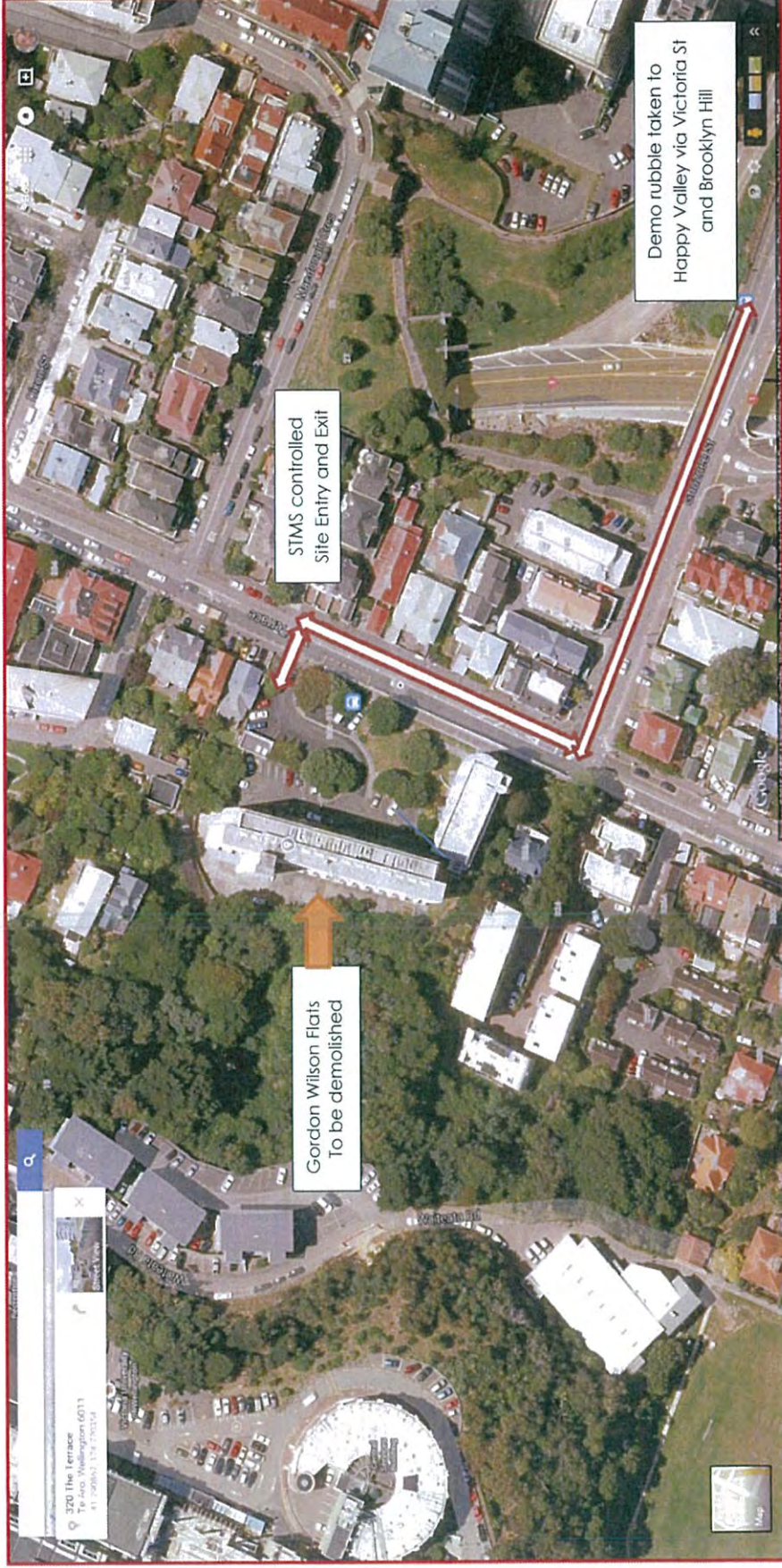
3. If asbestos is discovered the disposal site will be WCC Landfill at Happy Valley.

4. Low Loader deliveries for Demolition machines will potentially arrive by two route:
 - o From the south via Brooklyn Hill, Willis St and Ghuznee turning into The Terrace
 - o From the north via The Terrace off-ramp on SH1 travelling south down The Terrace to the site.

5. **No heavy traffic will be permitted to travel to or from the site in peak periods.**

Routes

BLUE	Routes to/from the Southern Landfills
RED	Routes to/from The Terrace SH1 entry/exits



Site Location Plan/Traffic Management Plan

Aerial view of site showing the building to be demolished (within white line boundary) and position of STMS control of vehicle movements entering and exiting the site.

The majority of site traffic will be to and from private and public landfill sites at Happy Valley.

APPENDIX 2

Temporary Protection Measures to McLean Flats



The High-Reach excavators have transformed the way in which demolition of structures is undertaken today. They provide a safe, relatively quiet (reduces overall site noise levels by up to 10dB) and effective means of minimising the effects of demolition especially to neighbouring properties.

APPENDIX 3

Démolition Noise Management Plan

Demolition Noise Management Plan [DNMP]

<p>Purpose</p>	<p>This demolition noise management plan [DNMP] outlines the measures that will be taken to mitigate noise nuisance that arises from the work and impacts on other parties.</p> <p>This DNMP outlines the deconstruction process envisaged for this project and the effects of that process on close neighbours and the environment in general.</p> <p>The methodology referred to in the plan has been developed over recent years to mitigate the high noise impacts usually associated with demolition sites.</p> <p>The WCC guide 'Construction Noise and the way it is measured' states that 'the typical noise limit will be 75dBA during standard construction hours.'</p> <p>The demolition methodology proposed for this project is expected to comply with that limit albeit that a for short period the most immediate neighbours may experience a slight increase in that level due to the close proximity of the properties concerned.</p>
<p>Applicable NZ Standard</p>	<p>The New Zealand Standard for Acoustics-Construction Noise NZS6803:1999 sets out the procedures for the measurement and assessment of noise for existing and proposed construction work, including maintenance and demolition work.</p> <p>The Standard recommends noise limits for construction noise and provides guidance concerning methods of predicting and managing construction noise [the Standard should be read in conjunction with NZS6801:1999 Acoustics-Measurement of environmental sound]</p>
<p>Demolition Methodology</p>	<p>The Gordon Wilson building will be demolished in sections commencing with a vertical slot cut top to bottom (engineered design) using a 34 tonne high reach excavator with hydraulic crusher jaws and cleared using 22/23 tonne excavators.</p> <p>The slot will be cut through the southern 1/3rd of the building. The southern flank will be pulled into the clearing created by the cut slot and rubble cleared from site. The 34 tonne high reach progressively pulls the building into the vacated footprint moving south to north.</p> <p>The north flank and stair tower are the structures where most care is needed both in terms of erecting protective screens on the boundary and using noise mitigation techniques. The high reach excavator noise is expected to be tolerable and within the 75dBA limit at the property boundary.</p> <p>Depending on the stubbornness of the structure being demolished and in particular the stair tower there may be periods where the 75 dBA limit will be exceeded for short duration periods.</p> <p>Affected neighbours will be notified of the intended work that will exceed 75dBA prior to such work commencing. Site activity will be planned in advance to ensure that communication and notification protocols are implemented before the event.</p> <p>Once the structure is down rubble will be removed or moved to the centre of the site (if the rubble requires further breaking) and of sufficient distance to mitigate the impact of mechanical nibblers used to break large pieces of rubble to truckable size.</p>

<p>Noisiest Work</p>	<p>The work requires the use of the following equipment:</p> <ul style="list-style-type: none"> • Moving trucks (external noise) • 22/23 tonne excavators (external noise) • 34 tonne excavator (external noise) • Nibbler/Rock Breaker attachments (external noise) • Compressed air breakers (internal noise) • Chainsaws (internal noise)
<p>Neighbouring Inhabited Properties</p>	<p>324 The Terrace 18.50m building to building 16.25m to boundary</p> <p>2 Maurice Terrace (elevated section) 21.00m building to building 11.80m to boundary</p> <p>300 The Terrace 23.80 building to building 4.70m to boundary</p>
<p>Noise Mitigation Measures</p>	<p>The use of rock breakers is known to be the source of most noise complaints and the intention is to minimise the effect by undertaking most breakout through hydraulic jaws/crusher including uplifting the ground slab.</p> <p>The nibbler attachments will only be used where stubborn concrete needs to be weakened before breaking into truckable sizes.</p> <p>Truck engines will not be left idling when not in use.</p> <p>All mechanical plant and transport will be fitted with approved muffler devices and all plant and equipment will be well maintained and working in accordance with the manufacturer's specifications.</p> <p>Noise mitigation screening methods as outlined in NZS6803:1999 will be employed around compressed air breaker activities.</p> <p>The use of distance will be a managed mitigation method and heavy noise related to breakers will be reduced by moving rubble away from boundary areas to at least 30m distance before further breaking is permitted (within a sound screen enclosure).</p>
<p>Working Hours</p>	<p>Monday to Friday 6.30am – 7.30am: Quiet set-up. 7.30am – 6.00pm: Normal work activity</p> <p>Saturday 7.30am – 6.00pm</p> <p>No work permitted Sundays or Public Holidays</p>
<p>Site Supervision</p>	<p>The site will be supervised at all times by a competent site supervisor trained and experienced in demolition site management.</p> <p>At all times the site during working hours will have present the site supervisor or a delegated stand-in site supervisor competent to deal with project site issues.</p>

Site Operatives Training	<p>Training and proof of competency records will be held on site for all machine operators.</p> <p>All other site operatives will be required to hold a Site Safe Passport or alternative Safety Training evidence (may be in-house training record).</p>
Complaints Procedure	<p>Please refer to p.17 of this DMP</p>
Communication with Neighbours	<p>The Principal will consult with affected neighbours prior to the award of the demolition contract.</p> <p>The concerns roised will be a feature of the Principals 'induction process' ta be held with the successful demolition contractor.</p> <p>Notification of Proposed Works will be provided to affected neighbours in the format suggested by the WCC 'Notification of Proposed Works' pro forma.</p> <p>Neighbours on the adjacent boundary will be consulted with in respect of protection measures proposed at the boundary.</p> <p>During the demolition of the south and north flank walls each affected neighbour will be visited prior to work commencing to discuss any H&S or nuisance concerns.</p>
Site Contact Details	<p>The site will have a Hozard Board and Site Signboard erected at the gate on The Terrace.</p> <p>The Signboard will contain conctact details for the site manager and the Principal's agent.</p>

END