Construction Management Plan

Prepared by:

Laing O'Rourke Australia Construction Pty Ltd

Project :

100 Mount St (Development Application)

Client :

Laing O'Rourke Mount St Pty Ltd

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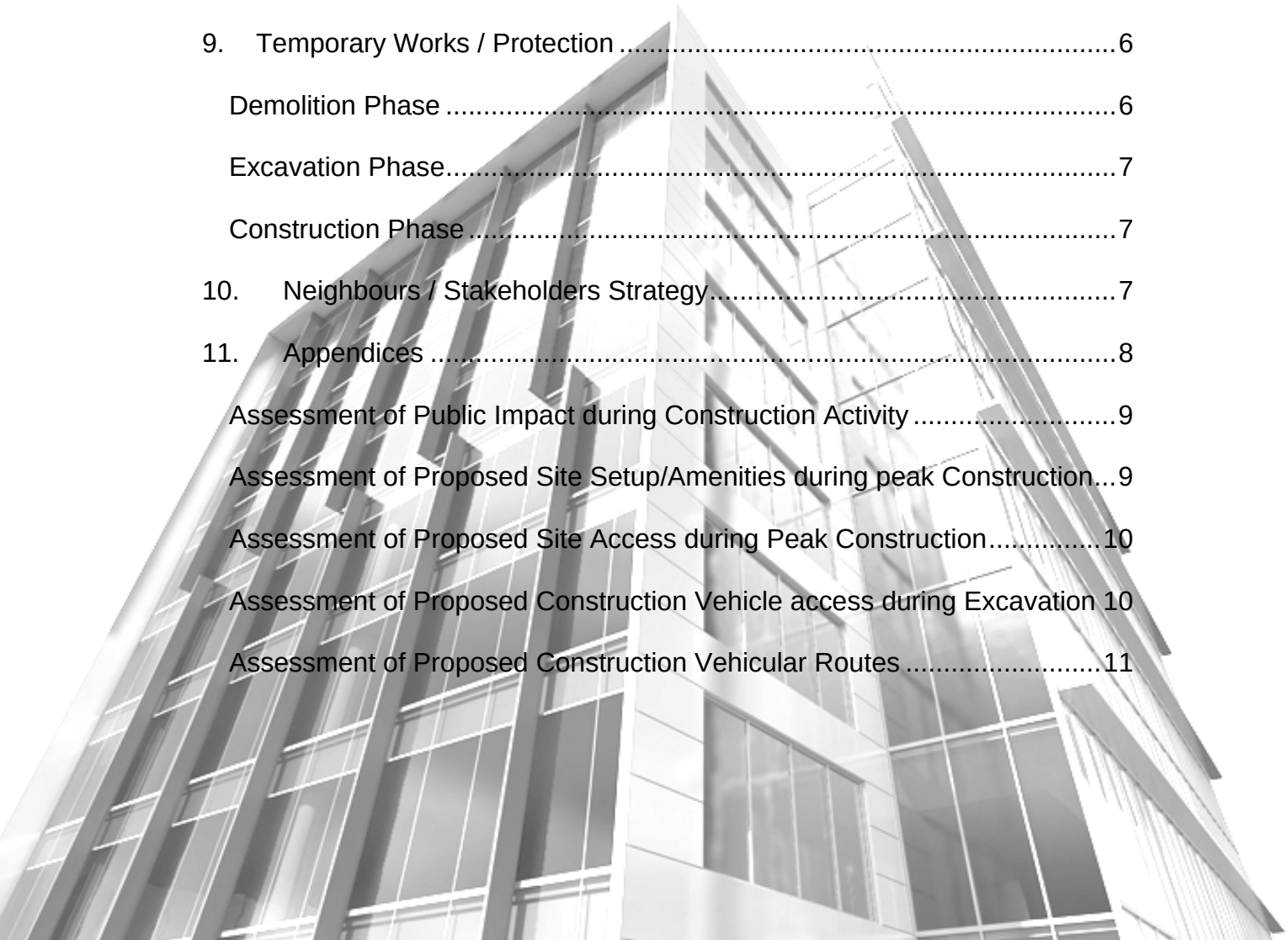


1. Purpose

The purpose of this Construction Management Plan is to provide supporting documentation to the Development Application describing the management of the Demolition of existing structures and Construction of the proposed Commercial Tower on the properties at 90 and 100 Mount Street, North Sydney. Details on possible measures used to address demolition, construction, materials handling, logistics and safety on the site are based on the design as at April 2009.

2. Site Establishment / Amenities Strategy

Proposed locations of the site amenities are shown in the appendix (SK006) for the various phases of the project. The location of site facilities during demolition works will be via a high level gantry over Spring Street. As site occupancy levels increase during the excavation and basement construction phase additional facilities will be sited on the gantry over Spring Street. As construction progresses above ground level, amenities will be sited on a public protection type gantry along Mount Street. Additional Gantries will be provided along Walker Street and adjacent Little Spring Street in order to provide public protection and site storage facilities. It is intended to site the main pedestrian site entrance on Mount Street due to the nature of vehicular movements along Walker and Spring Streets.
Further consideration to public access and safety will be given during the development of the detailed site management plan which will further develop the planned access and establishment of site amenities.

3. Site Access Strategy

The main site pedestrian access will be located along Mount Street as shown in the appendix (SK008 & SK009). Various issues were considered during the initial planning stages such as public access to the surrounding businesses, adjacent pub ALDI Store, public parking and outside eating areas.
Large vehicle movements around the site are constrained due to the narrow turning radius into spring Street and Little Spring Street. This in turn prohibits the use of Mount Street by Long Vehicles that would typically service a site of this nature. In consultation with the local authority it is proposed that restricted hours use of a long vehicle loading bay will be utilised along Walker Street and all other medium sized vehicles will be loaded and unloaded along Mount Street. Concrete vehicles will initially share the loading area along Mount Street however once construction permits concrete vehicles will be serviced via the building loading bay within the site footprint. Smaller vehicles will gain access via the basement ramp as construction progresses.

Vehicular movements from Mount Street will be via the controlled intersection with Walker Street. A view on the number of anticipated vehicular movements is also noted in the appendix (SK010).
A detailed project specific traffic management plan will be developed to address access to the site and minimise impact to the public during the design development process.

4. Security Strategy

Site security will be managed by physical means of separation and monitoring. Site personnel and visitors will gain access to the site via the main entrance off Mount Street where Laing O'Rourke will provide turnstiles or similar methods to ensure no unauthorised access is gained during the works or out of hours. As the site has exposure along 3 elevations it is anticipated that the security of materials and equipment will not be a significant issue and standard measures of site monitoring will be provided. Vehicular access to site will be limited and thus means of monitoring access to the basement levels will be carried out at Ground Level prior to entry. A detailed site management plan will be developed to ensure site security is established and maintained as necessary to prevent unauthorised access to the site during the design development process.

5. Working Hours

Working hours on the project will be in adherence to those imposed under the Project Conditions. It may however be required that out of hours works are undertaken in order to reduce disruption to the public during demolition and excavation works. In these cases the works will be coordinated with the local authorities and carried out with appropriate traffic and pedestrian management measures.

6. Site Controls

Hoarding & Signage

Hoarding arrangement, material and appearance will follow standard industry practise for North Sydney CBD building sites. Hoarding locations will be subject to approval by the relevant authorities and will comply with the current Australian Standards. Details of proposed hoarding staging layouts are shown in the appendix. Appropriate safety and identification signage, lighting and signalling will be erected on these hoardings.

Dust, Noise and Vibration Control Measures

Control of Dust, Noise and Vibration will be detailed in project specific *Construction Air Quality Plan* and separate *Noise and Vibration Management Plan,* which will be produced to meet the *Department of Environment and Conservation (DEC)* requirements, *Ministers Conditions of Approval (MCoA)*, Principals requirements and the relevant authority conditions. Dust will be

controlled as necessary to ensure the public and surrounding neighbours are exposed to the least possible impact during all phases of works. Recommendations received from the specialist acoustic consultant PKA Consulting in the form of the Environmental Noise Impact Report will be incorporated into the relevant project plans for the onsite management of construction borne noise.

Public Safety

Safety of the public will be treated with the utmost priority. Prevention of objects falling from heights will be a key consideration that will be addressed with safety management systems used by Laing O'Rourke in its daily management of similar sites. Works adjacent the neighbouring buildings will be addressed by establishing and reviewing of Safe work methods will be identified during the planning of the construction methodology and sequence so as to eliminate risk where possible and reduce risk to an acceptable level if elimination is not feasible. Identification of measures to mitigate potential impacts for pedestrians and cyclists during the construction stages have been addressed during the planning of access and logistics routes which have been identified in the appendix.

7. Material Handling / Logistics Strategy

In consultation with the local authority Laing O'Rourke would propose to provide loading zones as indicated in the appendix (SK009). Details of the logistics methodology during demolition, excavation and basement construction are also detailed in the appendix (SK010). It is proposed that two Comedil Electric Luffing Cranes or similar are used on this project. Subject to further analysis these cranes will provide the majority of the vertical transportation of materials with the balance to be transported by three Alimak Man and Materials hoists. Due to the proximity of the structure to the building boundary it will be necessary to make use of all available storage on the surrounding gantries. A just in time delivery approach for materials deliveries will be adopted whereby vehicles wait off site and are contacted via two way communications only once loading bay availability is established thus reducing any banking of vehicles and unnecessary impact on local area traffic conditions.

8. Construction Waste Strategy

A waste management and reuse sub-plan will be produced in accordance with the requirements of the MCoA. The sub-plans objective is to ensure construction activities are carried out in a manner that will minimise landfill and maximise waste material avoidance, reuse and recycling and meet relevant Authority requirements.
It is anticipated that the demolition of the existing structure at 90 and 100 Mount St will generate the quantities as detailed in the tables below which are to be managed under the guidelines as developed under the waste management plan.

Demolition Waste		
Type of Waste	*Quantity(m3)*	*Quantity (%)*
Concrete / Masonry	12,000 m3	89.8%
Metal	350 m3	2.6%
Timber	10 m3	0.07%
Landfill	1000 m3	7.49%

It is anticipated that during the construction phase of the works the following quantities of material will be generated.

Construction Waste		
Type of Waste	*Quantity*	*Quantity (%)*
Excavation	12,500 m^3	
Average Waste Produced *(during construction activities)*	*340 m^3 per month*	
Landfill	50 m^3 /mth	15%
Steel (Non-ferrous, Ferrous)	40 m^3 /mth	12%
Hard-core (concrete, Masonry)	180 m^3 /mth	53%
Soft-core (timber, plastic etc..)	68 m^3 /mth	20%

As design development progresses a waste management plan will be developed specifically for this project in order to efficiently address the re-use of material where possible, the reduction of packaging and transit protection materials and the general reduction of production wastage.

9. Temporary Works / Protection

Demolition Phase

LORAC has consulted with experienced demolition contractors in order to understand the methodology required to safely and efficiently remove the existing structure of which key issues are explained below.

- Demolition of the existing structure on the site will require establishment of a vehicular loading area within the site boundary. Demolition works will then progress via mechanical means enabling material to be removed for sorting off site.
- The site is exposed on 3 elevations and as such protection to ensure containment of debris and an appropriate level of protection to the public is maintained throughout demolition.

Excavation Phase

The current design requires multiple levels of basement excavation in sandstone. Works will require stockpiling and potentially the use of a temporary loading platform anchored along the excavation boundary. After further design development an Excavation Plan will be developed to further detail the most efficient strategy for removal of spoil from site.

Construction Phase

The current design concept is a multi storey reinforced concrete frame with a post tensioned slab system with lateral restraint provide by a central core. It is envisaged that a hydraulic formwork system will be used to ensure core construction efficiency. Industry construction systems used to ensure hazards are eliminated or reduced to managed levels will be utilised on the structure such as but not limited to edge protection screens, formwork hoists, and removable loading bays.

10. Neighbours / Stakeholders Strategy

The developers' expectation that 100 Mount Street leaves a positive legacy for neighbouring buildings and tenants and minimises disruption to vehicle and pedestrian traffic in North Sydney is collectively shared by Laing O'Rourke Australia Construction.

The team will manage the neighbours of 100 Mount Street and communicate key construction milestones in particular relation to potential disruption during demolition, excavation and construction.

The team understands the need for sensitive engagement and communication with neighbouring businesses. LORAC will communicate with neighbours and stakeholders prior to any significant works.

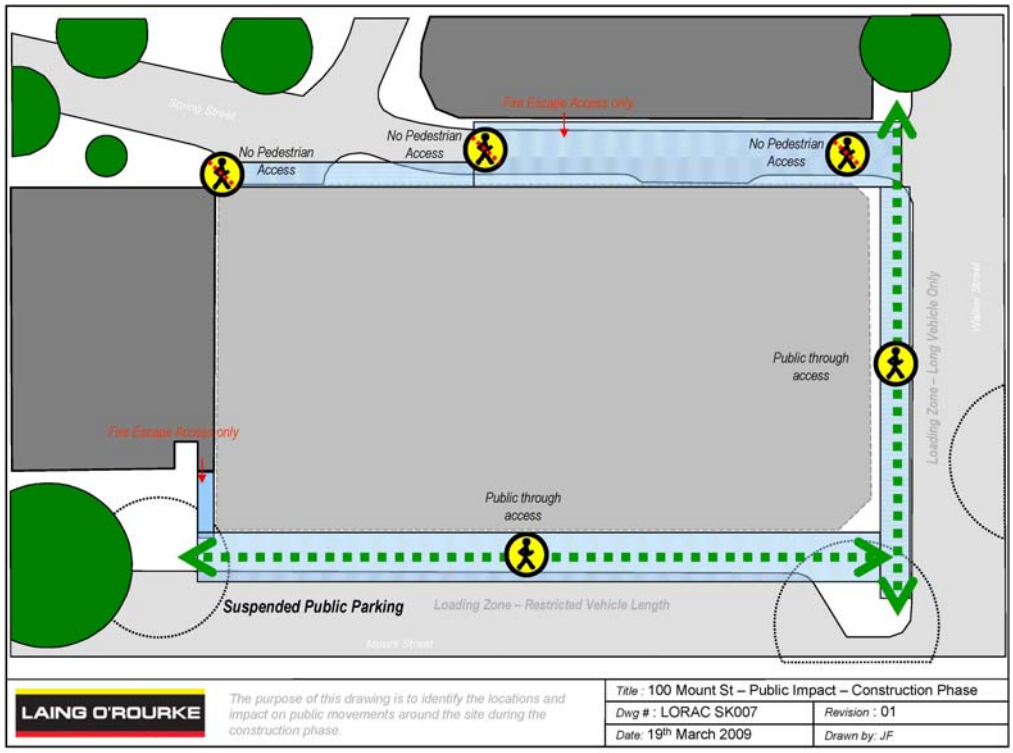
Maintaining good relationships with surrounding neighbours and stakeholders will be treated as a significant measure of LORAC's successful management of this project.

11. Appendices

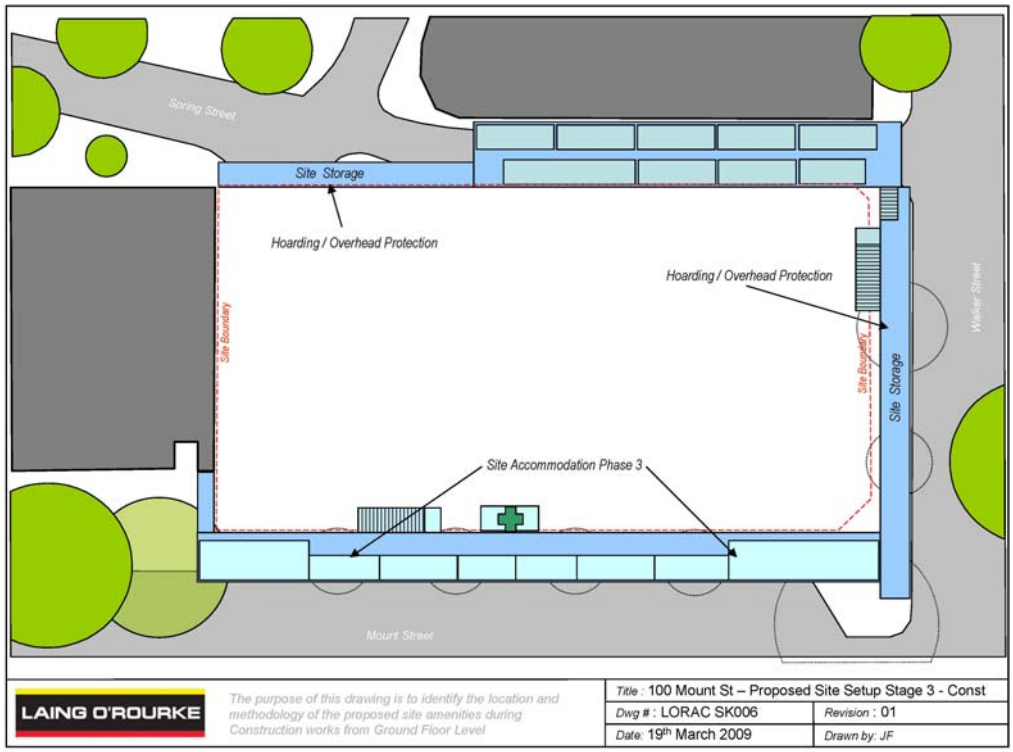
List of Proposed Major plant to be used during the demolition, excavation and construction of the project.

Equipment	Details	Use
Cranes 1 & 2	Comedil 340-24 HD23 Electric Luffing Crane (external) Comedil 340-24 HD23 Electric Luffing Crane (core mounted)	Materials Handling
Hoists 1 & 2	Alimak 28/32c twin car (external), Alimak 21/10 single car (core mounted)	Man & Materials Movement
Concrete Boom & Pump	Satellite Concrete Placing Boom (core mounted)	Concrete Placement
Excavators	Cat D10 Dozer 2x 30Ton Excavator 1x 20Ton Excavator	Demolition and Basement Excavation
Rock Drill	MAIT HR110	Basement Wall Retention Installation
Trucks, Wagons, Bogies	Typically 10ton capacity RTA highway registered heavy vehicle.	Demolition and Basement Excavation

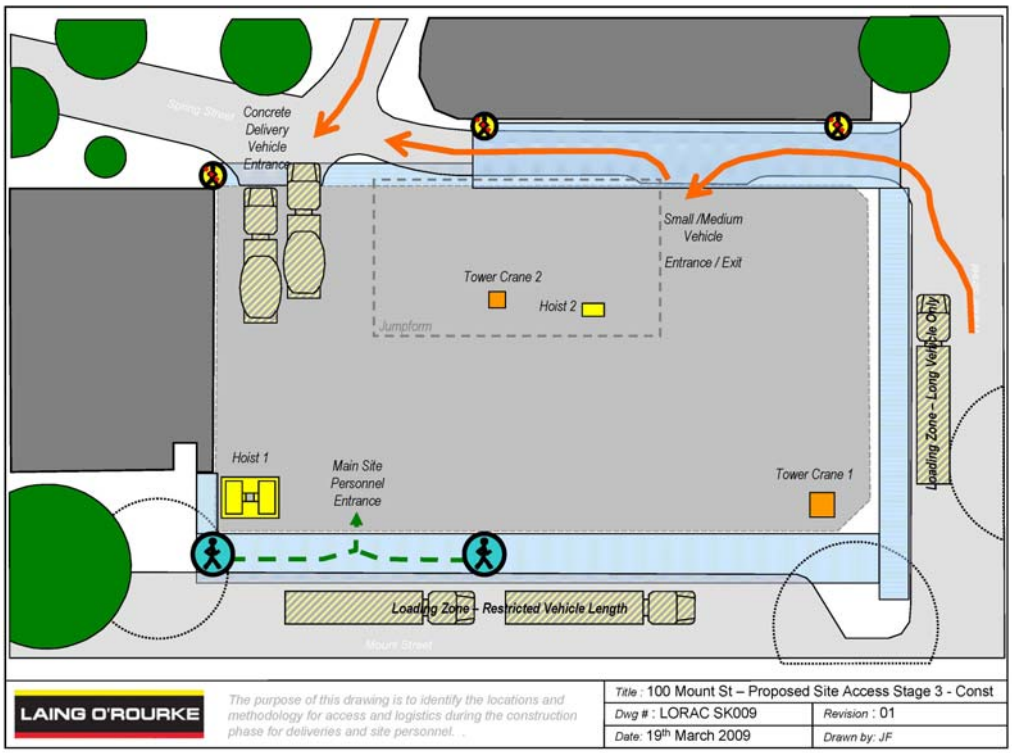
Assessment of Public Impact during Construction Activity



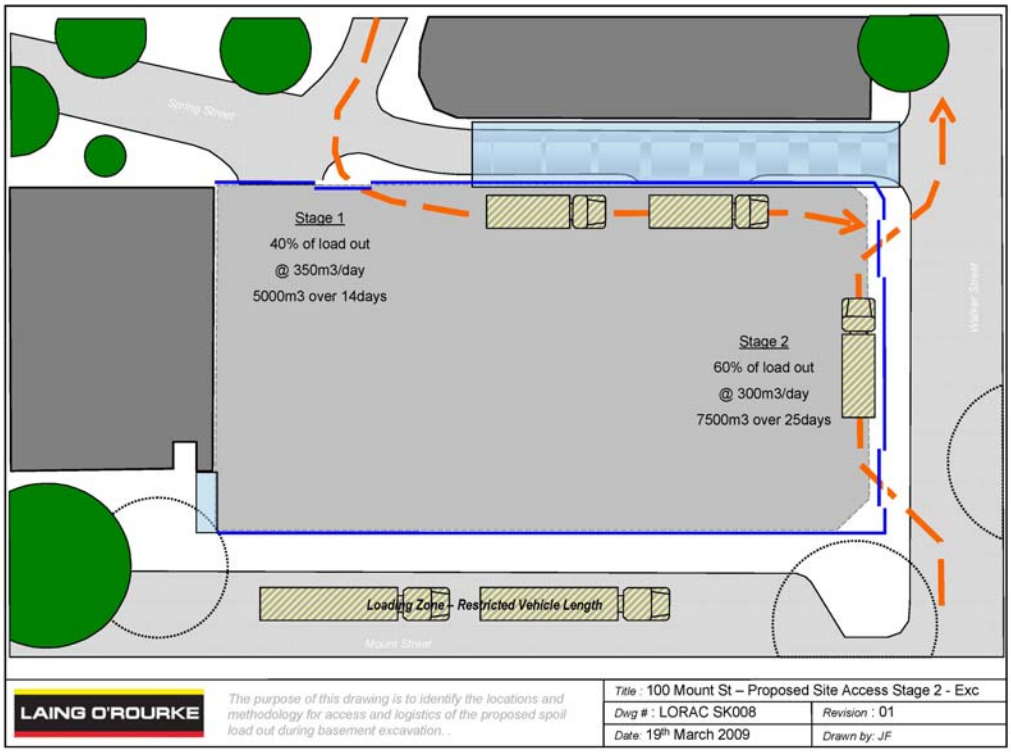
Assessment of Proposed Site Setup/Amenities during peak Construction



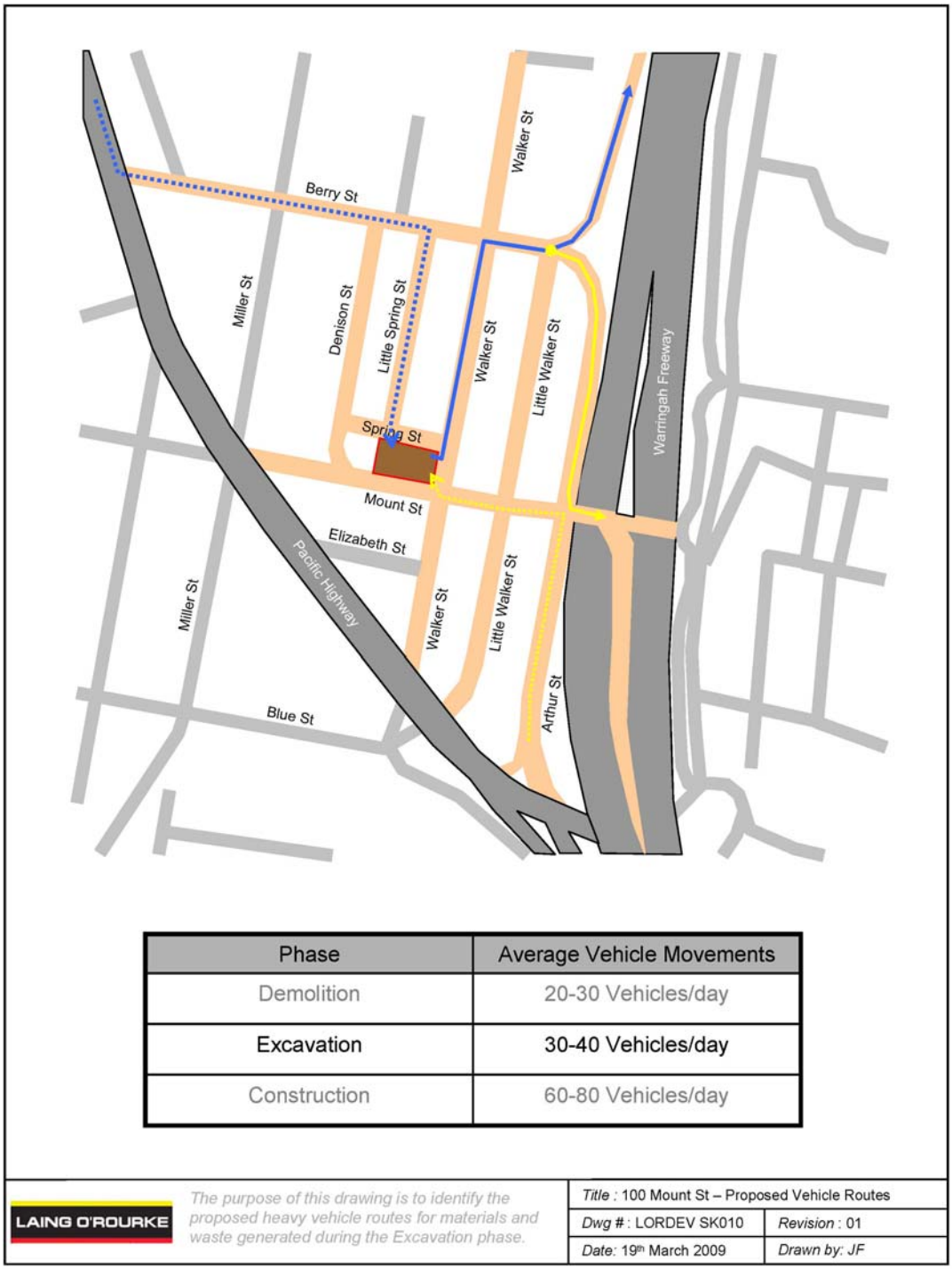
Assessment of Proposed Site Access during Peak Construction



Assessment of Proposed Construction Vehicle access during Excavation



Assessment of proposed Demolition & Excavation Phase Vehicle Routes



Phase	Average Vehicle Movements
Demolition	20-30 Vehicles/day
Excavation	30-40 Vehicles/day
Construction	60-80 Vehicles/day

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The purpose of this drawing is to identify the proposed heavy vehicle routes for materials and waste generated during the Excavation phase.

Title : 100 Mount St – Proposed Vehicle Routes	
Dwg # : LORDEV SK010	*Revision* : 01
Date: 19th March 2009	*Drawn by*: JF