UTS Thomas Street Building

Construction Traffic Management Plan

16th December 2011

Prepared for

University of Technology, Sydney

Halcrow

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This report has been issued and amended as follows:

Rev	Description	Date	Prepared by	Approved by
0	Draft for client review	05/12/11	KY	KJH
1	Final Draft	07/12/11	KY	KJH
2	Final	16/12/11	KY	KJH

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Contents

1 Introduction

Halcrow has been commissioned by the University of Technology Sydney to prepare a Construction Traffic and Pedestrian Management Plan (CTMP). This CTMP considers the proposed construction works associated with the proposed Thomas Street Building which is located on the southern side of Thomas Street, east of Jones Street.

The Directors Generals Requirements (DGRs) for the University of Technology (UTS) Concept Plan were issued on 19th January 2010 reference MP 09_0213.

At Section 11, Excavation and Construction Management, it stated that:

- *An Excavation and Construction Management Plan is to include the following:*
  - *Demolition*
  - *Excavation work methods*
  - *Geotechnical report including any RailCorp and Sydney Metro requirements*
  - *Groundwater and water extraction*
  - *Noise and vibration – criteria to comply with and mitigation measures*
  - *Construction traffic management*
  - *Waste management*
  - *Construction hours*

This Construction Traffic and Pedestrian Management Plan (CTMP) has been prepared to address the DGR requiring a 'construction traffic management plan'. The report has been undertaken/checked by an engineer who holds the RTA Design/Amend Traffic Control Plans and Audit Traffic Control plans red and orange cards respectively.

The purpose of this CTMP is to provide a description of the proposed construction activities of the main works with regard to construction traffic and to identify the management measures necessary to mitigate potential construction traffic implications.

A previous CTMP prepared addressed the construction traffic management during bulk excavation works.

As such this report addresses the construction work only and it is assumed that the site is secured with fencing and is cleared and the bulk excavation works have been completed.

The on-site specific traffic management such as sign and device placement and selection of any traffic control plans would need to be undertaken by the building contractor. As such our report will not include specific traffic control plans.

2 Background and Surrounding Road Network

2.1 Background

The proposed 'Thomas Street Building' is a part of the approved UTS Concept Plan. The UTS Concept Plan guides planning for the land holdings within the 'Broadway Precinct' of the UTS City Campus including the Thomas Street Building.

The site location is shown in **Figure 1** (figures are shown in **Appendix A**).

2.2 Planned Local Traffic Changes

As part of the planning for the 'Frasers' Broadway site, it is planned to relocate the traffic signals at Broadway and Jones Street to Broadway and Balfour Street (east of Jones Street). The traffic signals would form the main access to the 'Frasers' site.

A right turn bay would be provided eastbound in Broadway at Balfour Street. The right turn bay for buses would be relocated from Jones Street to Wattle Street heading west on Broadway.

In February 2010, City of Sydney Council has approved the 'road closure' of Jones Street at Broadway. Jones Street would end in a cul de sac at Broadway and traffic would be able to enter / exit Jones Street at Thomas Street. The closure is conditioned as follows:

1. the closure would not proceed until Council's concerns over the widening of Broadway, which narrows the footpath is resolved;
2. the closure would only proceed once the right turn bay for buses and taxis is available to turn into Wattle Street together with adjustment to the median;
3. a bus stop is provided in Thomas Street; and
4. a Traffic Management Plan be submitted to RTA for its approval.

Until the Jones Street is permanently closed, the UTS would seek approval for restricting traffic entering and exiting Jones Street from Broadway to bus and taxis only. This application will be addressed at the City of Sydney Council's December Traffic Committee Meeting.

2.3 Site Location

The site is rectangular in shape and has street frontages to Thomas Street to the north and Jones Street to the west. Alumni Green is to the south and existing Building 4 is to the east of the site.

The subject site is currently vacant following the demolition of the former TAFE NSW Building T. The surrounding land use is predominately educational facilities.

Photographs of the surrounding road network are included in **Appendix B**.

2.4 Existing Conditions

2.4.1 Road Network

Roads in the vicinity of the site and their connections are described below.

Broadway is a State road which runs generally east to west. Broadway is an arterial road with four lanes in both directions. Broadway is suitable for heavy vehicle use.

Broadway is speed limited to 50 km/h. There are dedicated bus lanes on Broadway in both directions.

Wattle Street / Abercrombie Street is a four lane arterial road. Wattle Street runs one way to the north. Wattle Street has morning and afternoon clearways on its western side with 1 hour restricted parking at other times. The eastern side of Wattle Street has sections of No Parking on weekdays in between sections of No Stopping near intersections. Wattle Street is signposted for 60km/h and is suitable for heavy vehicle use. Wattle Street intersects Broadway at a signalised intersection.

Harris Street carries two-way traffic between Pyrmont and Broadway (except between Thomas Street and Broadway where it is one way southbound); Harris Street forms a one way pair with Wattle Street and is a major southern route in the area.

Jones Street is a local road running north to south. Jones Street has one travel lane in each direction and parking on both sides. The intersection of Jones Street and Broadway is signalised. A 40km/h speed limit applies in Jones Street.

Jones Street is pedestrianised further north between Thomas Street and Mary Ann Street. Vehicular access to the Broadway car park is via Jones Street. Jones Street carries some bus traffic.

Thomas Street is a local road running east to west which carries two-way local traffic. The intersection of Jones Street and Thomas Street is priority controlled. There is an existing car park/loading area access ramp, located east of the proposed Thomas Street Building.

2.5 Pedestrian and Cyclist Facilities

A footpath is located on all of the roads surrounding the site. Paths in the area provide continuous access between the subject site and the nearby transport facilities and Ultimo Pedestrian Network.

Signalised crossings are available at Wattle Street and Broadway as well as Harris Street and Broadway. The Ultimo pedestrian network connects Central Station to the UTS Campus through an extended tunnel from the Devonshire Street tunnel. The connection allows pedestrians to enter the UTS Campus without crossing Broadway or Harris Street.

Jones Street and Broadway are identified bicycle routes through the area.

2.6 Public Transport

The site is less than 500 metres from Central Railway Station. Central Railway Station serves the Sydney suburban and Country Link train networks. In addition, the Metro Light Rail and Monorail routes are in the vicinity of the campus.

STA buses operate numerous bus services near the site along Broadway, George Street, Jones Street, Thomas Street and Harris Street. Bus services connect the site to the CBD, Eastern and Western Suburbs, City Light Rail and Railway Stations.

There are bus stops are located on the main Broadway frontages to the site, and pedestrian signals provide access to bus stops on the opposite side of Broadway. There is also a bus stop on Jones Street.

It is considered that the site has a very good level of public transport accessibility and the modal split towards public transport is high.

2.7 Site Inspection

An inspection of the site and the surrounding road network was undertaken during both the morning and afternoon peak periods on a typical weekday.

The inspection indicated that:

- traffic flows along Wattle Street and Broadway are heavy;
- the intersection of Broadway and Wattle Street creates heavy bunches of traffic separated by long gaps in traffic flow along Wattle Street;
- the intersection of Thomas Street and Jones Street operates at good levels of service;
- there is a reasonable number of pedestrians walking along Broadway and Jones Street to / from local residential and educational facilities;
- the existing on-street parking is typically generated by the surrounding land uses with some spare restricted parking available in the vicinity of the subject site.

3 Overview of Works

The proposal sees the construction of the following:

- Construction of a new 11,295m^2 building over four storeys to accommodate research offices, laboratories, teaching space, faculty space and lecture theatre;
- Three basement levels, which will incorporate the existing service entry off Thomas Street to neighbouring Buildings 1 and 2; and
- Two passenger lifts and goods lift located on the eastern end of the Thomas Street Building which constitute the primary vertical access core. New openings are provided between Thomas Street Building and existing Building 4.

Car/ bicycle parking facilities will not be provided in the Thomas Street Building.

Plans of the proposed building are shown in **Appendix A**.

The construction works involves the following stages:

- Stage 1 Site Establishment
- Stage 2 Demolition
- Stage 3 Bulk Excavation
- Stage 4 Main Construction Works
- Stage 5 Restoration works

A separate CTMP was produced for Stages 1 to 3 including the demolition and bulk excavation. Demolition works have been completed.

This document has therefore been specifically produced to document the management of the construction traffic from the main construction and restoration works (stage 4 and 5, above). Stages 4 and 5 are estimated to occur across approximately 22 months.

4 Access, Loading /Unloading and Construction Vehicle Routes

4.1 Construction Vehicle Routes

General construction vehicle traffic will have origins / destinations throughout Sydney. The designated inbound and outbound truck routes for all construction vehicles are shown on **Figure 2**. The proposed routes aim to take the shortest distances to /from the arterial road network.

Most construction vehicles, including trucks would use the State Road Network. Closer to the site, vehicles would use Harris Street, Wattle Street or Broadway to link to Eastern Distributor, Cross City Tunnel, Western Distributor or Harbour Bridge.

All building contractors shall be notified of the truck routes and required to adhere to the nominated routes.

4.2 Access to the Site

It is proposed to allow construction vehicles to –

- enter via Thomas Street at the north-east corner of the site and exit via Jones Street at the south-west corner of the site; or
- enter and exit via Thomas Street.

For construction vehicles exiting the site via the Jones Street, only left turn out from Jones Street on to Thomas Street would be permitted.

Since the report for the UTS Concept Plan was prepared, the closure of Jones Street has been approved. Hence, for the purpose of this CTMP, it is anticipated that the construction vehicle access to Jones Street via Broadway will not be available.

Thomas Street provides an important link between Wattle Street and Harris Street with good connections to the arterial road network.

4.3 Deliveries / Waste Removal on the Site

4.3.1 Delivery of Cranes

Crane/s will require transport at the start and at completion of their use. A flat bed truck would be used to transport any cranes. It is anticipated that delivery would occur at night to minimise disruption to traffic and pedestrians which would require Council Approval. The delivery route for these vehicles would be one of the routes nominated on **Figure 2**.

A crane will be used to move larger items to stockpiles / skip at the rear of the property.

4.3.2 Construction

All trucks are required to enter and exit the site in a forward direction at Thomas Street or exit in a forward direction at Jones Street.

The maximum size of truck which would be able to enter via Thomas Street and exit via Jones Street is likely to be a 12.5m heavy rigid vehicle. The maximum size of truck which would be able to enter and turn around within the site to exit via Thomas Street is likely to be an 8.8m medium rigid vehicle. The swept paths showing the access by such trucks are shown in **Figures 3** and **4**.

Traffic controllers will be available on site to allow trucks to safely enter and exit the site.

It is the aim of the traffic controller to ensure that traffic would not queue along Thomas Street or Jones Street and that truck movements would occur quickly and safely.

It is proposed to load and unload from Thomas Street and transfer materials to and from the site. The traffic arrangements would be controlled by traffic controllers as well as the use of traffic signs and devices. The arrangements would only be in place during work hours when the loading / unloading zones are in use.

It is also anticipated that the loading / unloading zone in Thomas Street would be used by concrete trucks during large concrete pours other medium rigid trucks for the delivery / removal of materials. It is anticipated that large concrete pours would occur every few weeks for a day at a time.

4.4 Impact of Road Closure of Jones Street

As discussed in **Section 2.2**, City of Sydney Council has approved the 'road closure' of Jones Street at Broadway. Jones Street would end in a cul de sac at Broadway and traffic would be able to enter / exit Jones Street at Thomas Street. The precise details of the closure and timeframe for construction have not yet been finalised.

As the closure has not yet been finalised, UTS is currently in the process of seeking approval from City of Sydney Council's traffic committee to restrict traffic entering and exiting Jones Street from Broadway to bus and taxis only. This application will be addressed at the City of Sydney Council's December Traffic Committee Meeting.

Hence it is presumed that the construction vehicle access to Jones Street via Broadway will not be permitted.

5 Construction Impacts

5.1 Construction Traffic Generation and Impacts

Construction traffic generation would primarily be associated with the following construction activities:

- Delivery of materials for the scaffolding and hoarding by flat bed trucks;
- Minor earthworks;
- Removal of material from the site using heavy rigid trucks;
- Delivery of building materials using a mixture of small rigid to heavy rigid trucks; and
- Trade deliveries and services using vans and utilities.

The volume of construction traffic generated by the site would vary throughout the construction stages depending upon the particular activities undertaken on site at any one time.

5.1.1 Site Establishment

It is expected that the site would be secured with fencing and hoardings around the site. The site establishment works required prior to the main construction works would involve the installation of the site sheds and worker facilities.

Thomas Street access would be used for the delivery of workers facilities. Around 3 flatbed trucks during the day are expected to deliver these facilities to the site. This would take place over a short period.

During this phase of work, it is expected that the impact of delivery trucks would be minimal.

5.1.2 Main Construction Works

Work would occur on the main building structure and façade as well as finishes such as new services, fittings and fixtures, joinery, and floor finishes and the like. All works would be carried out within the site.

Any trucks associated with the construction works would need to load and unload materials and whilst this would take place wherever possible within the site, there will be occasions when such trucks would need to load /unload whilst parked on Thomas Street. This could include any large concrete pours within the site.

During peak construction activities such as concrete pours, there is unlikely to be more than 3-5 truck movements per hour or 20 truck movements per day. It is anticipated that large concrete pours would occur every few weeks for a day at a time.

Similar sites suggest that the average daily number of trucks is 1-2 truck movements per hour and no more than 10 truck movements per day. This volume of trucks would not have any significant impact on traffic movement in Thomas Street or Jones Street.

5.1.3 Restoration works

The restoration works include reinstatement of any footpaths. Other works include the removal of hoardings, boundary fencing and removal of the site sheds.

These works are external to the site and would require traffic control. Standard Traffic Control Plans can be used for the footpath and kerbside lane closures and pedestrian diversions.

RTA certified traffic controllers would be used to assist with pedestrian diversions. Signage and traffic devices for the kerbside lane closure would be undertaken in accordance with AS 1742.3 "Manual of uniform traffic control devices - Traffic control devices for works on roads and the RTA's Traffic Control at Worksites".

5.1.4 Summary of Traffic Generation

It should be noted that not all of the different types of vehicles would visit the site on the same day.

At the peak of activities, it is estimated that there would be a maximum of 3 - 5 trucks per hour visiting the site. At other times during the construction the peak number of construction vehicles including trucks and utilities, vans and cars is estimated as 15 vehicle movements per day.

The estimated traffic generation is considered very low when compared to the existing volume of traffic in the local area.

5.2 Pedestrian Access

Pedestrian crossing facilities are provided across Thomas Street, Jones Street, Harris Street and Broadway. The existing signalised pedestrian facilities would not be affected by the internal construction activities although it may be necessary to cross pedestrians to the north side of Thomas Street

Trucks will access the site by entering and exiting via Thomas Street or exiting via Jones Street. RTA accredited traffic controllers would continue to assist pedestrians and improve safety between trucks and pedestrians.

As traffic controllers would be available to control pedestrians during the construction period, the impact on pedestrians would be safe, low and acceptable.

5.3 Parking

<u>On Street Car Parking</u>

The parking adjacent to the site on both Thomas Street and Jones Street will be marked as Works Zone between the anticipated working hours of construction as per City of Sydney standard conditions.

This would reduce on-street parking capacity on Thomas Street by about seven car spaces and 20 motorcycle spaces. On street parking capacity on Jones Street would be reduced by six car spaces.

UTS would ensure that the number of existing motorcycle parking spaces is retained by re-allocating existing on street parking spaces on Thomas Street to motorcycle parking.

Workers Car Parking

The majority of construction staff would arrive by public transport. Applicable short-term parking and loading zone restrictions on nearby streets would avoid impacts on parking in the surrounding area. As such there is no expected impact from construction staff to car parking demands in the local area.

5.4 Public Transport

Public transport services would not be detoured during construction works. There are no planned alterations to bus stops through this work.

5.5 Emergency Vehicle Access

Access to neighbouring sites would not be affected by the works as the road and footpath frontage would be unaffected.

The fire exits and egresses for the nearby buildings (i.e. Buildings 2 and 4) would be kept unobstructed at all times.

Emergency protocols on the site would include a requirement for traffic controllers to assist with emergency access to and from the street.

Thus the impacts of emergency access would be adequately managed throughout the works as a result of the proposed construction activities.

6 Work and Driver Protocols

The following construction traffic management measures would be applied to all construction stages:

- Hours of Operation
  - Work to be undertaken during approved construction hours; and
  - Any work outside of the approved hours shall only occur in accordance with the Conditions of Consent which permit work outside hours given certain conditions and separate approval.

- Vehicle Access
  - Construction vehicles are to radio site office on approach to the site to ensure access to the site is available;
  - Drivers must not double park or park in the Thomas Street or Jones Street at any time;
  - Vehicles using Thomas Street or Jones Street must do so at low speed (no greater than 10km/hr);
  - Drivers must obey the instructions of qualified personnel at driveway accesses;
  - Use of the kerbside lane in Thomas Street or Jones Street must occur within the terms of the RTA road occupancy approval;
  - Use of the kerbside lane in Thomas Street or Jones Street must occur whilst traffic control is in place; and
  - Drivers are to be mindful of the pedestrians and bicycles when entering and exiting the site.

- Truck Routes
  - Drivers must adhere to the nominated truck routes;
  - Drivers must be mindful of pedestrian safety; and
  - Drivers should be aware of local speed limits.

- Loading and Unloading
  - The loading and unloading to be at the kerbside space in Thomas Street; and
  - Trucks must adhere to the access arrangements discussed in this CTMP.

- Pedestrian Access
  - Fire access for nearby buildings will be kept clear at all times;
  - Drivers must be mindful of the Buildings 2 and 4 fire egress routes, gates and fencing for pedestrians;
  - Pedestrian access along Harris Street and Broadway is to be maintained;
  - Pedestrian warning signs and lights will be installed at site accesses; and
  - Traffic controllers to be used to assist with pedestrians and bicycles as required.

- Traffic Control
  - Advisory road signage in accordance with AS 1742.3 Manual of uniform traffic control devices - Traffic control devices for works on roads and the RTA's Traffic Control at Worksites must be installed and maintained throughout the construction stages.

7 Conclusion

This CTMP has been prepared to document the proposed construction activities and associated construction traffic management measures necessary to facilitate the proposed construction works at the Thomas Street Building.

Based on the finding of this CTMP, it is concluded that:

- Construction vehicle movements to and from the site can be satisfactorily accommodated by the surrounding road network.
- Traffic controllers would be used to assist pedestrians during the works.
- A number of driver protocols would be established for drivers to ensure the safety for motorists, pedestrians and cyclists and amenity of residents.

In summary it is concluded that the proposed CTMP measures would adequately address potential implications associated with proposed construction activities.

Appendix A Figures

SITE LOCATION

UTS THOMAS STREET BUILDING

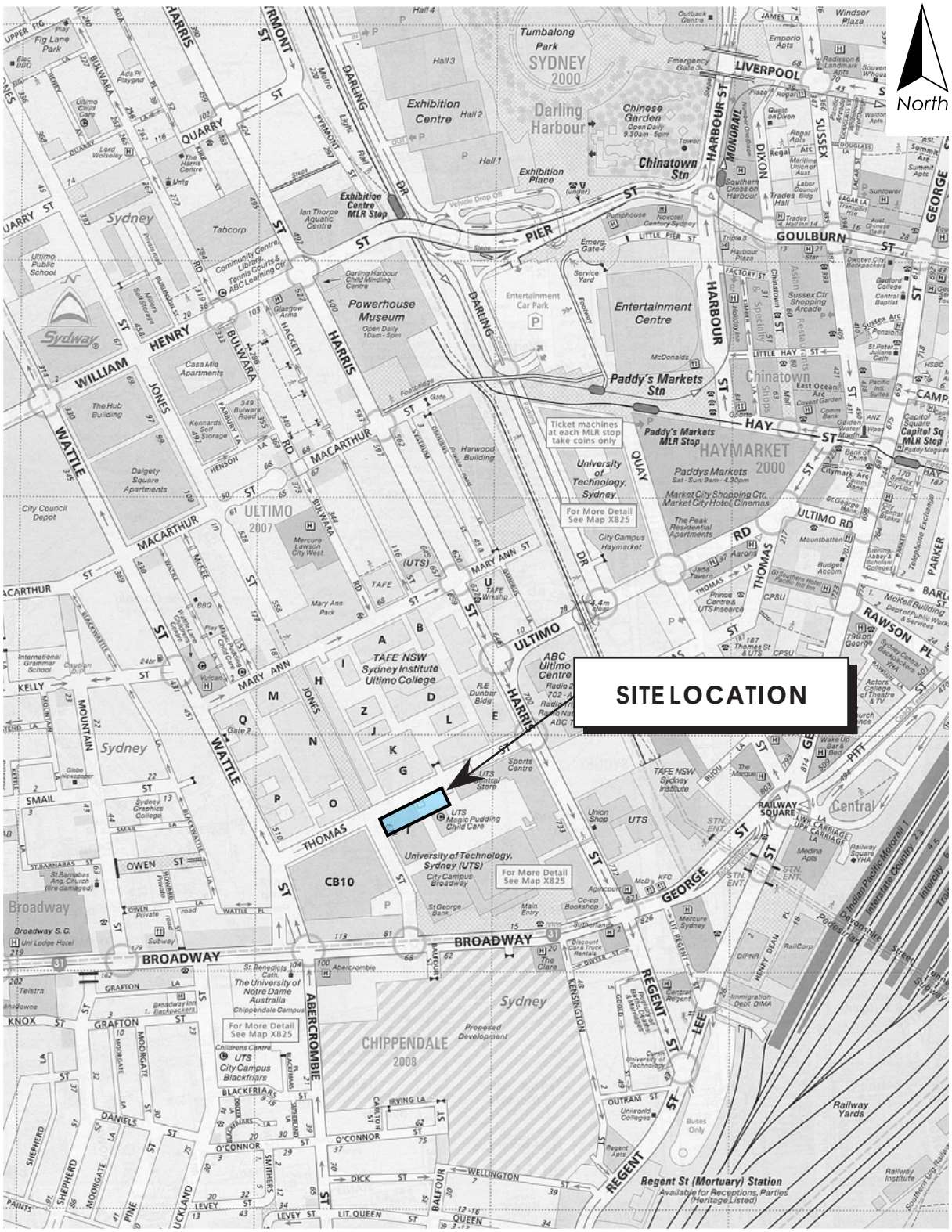

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Figure 1

Filename: JCATDEdi01.ai

Date: 25 November 2011

CONSTRUCTION VEHICLE ROUTES

UTS BROADWAY BUILDING

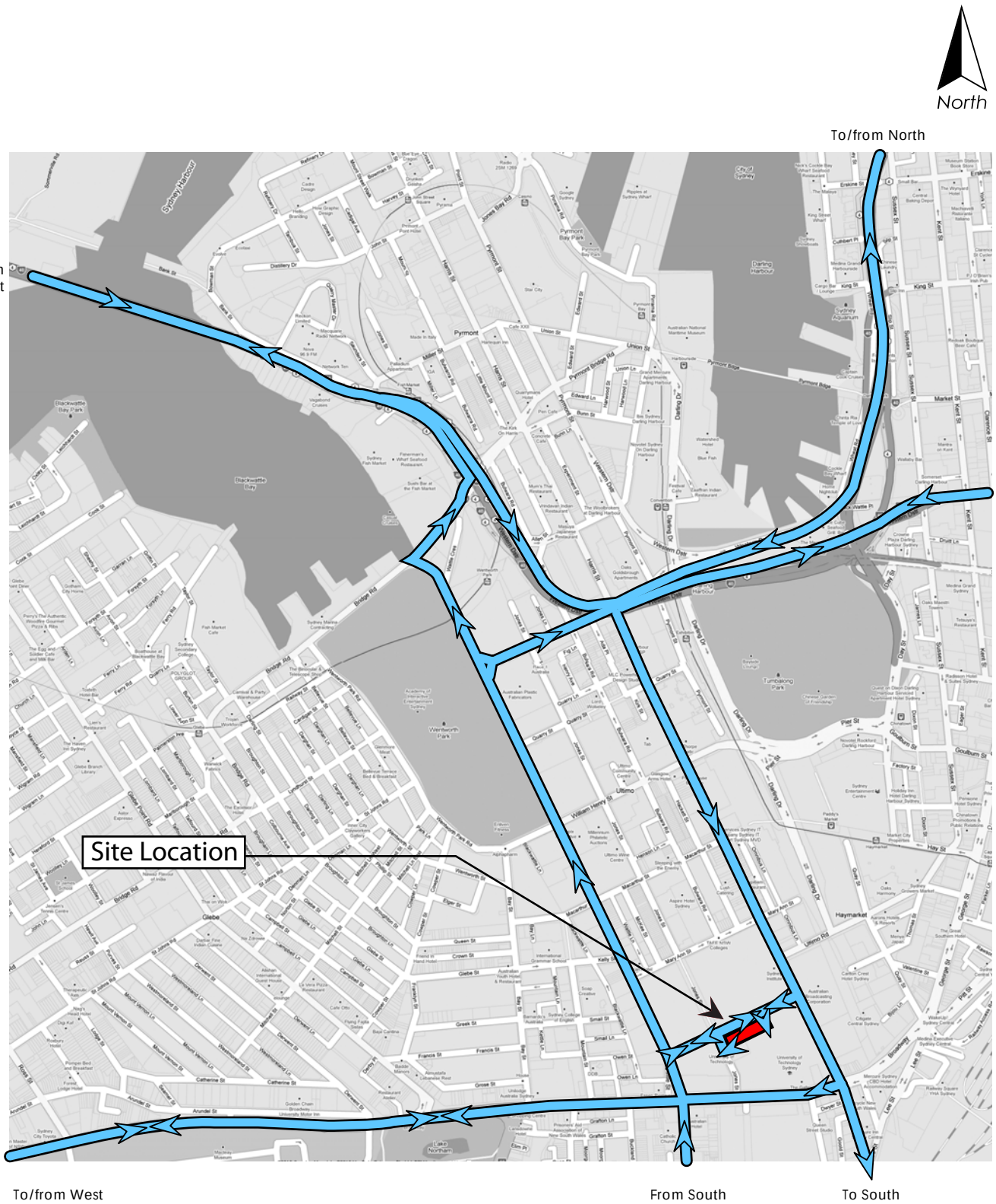

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Figure 2

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Date: 1 December 2011

12.5m HRV - ENTER VIA THOMAS STREET & EXIT VIA JONES STREET

UTS THOMAS STREET BUILDING

North

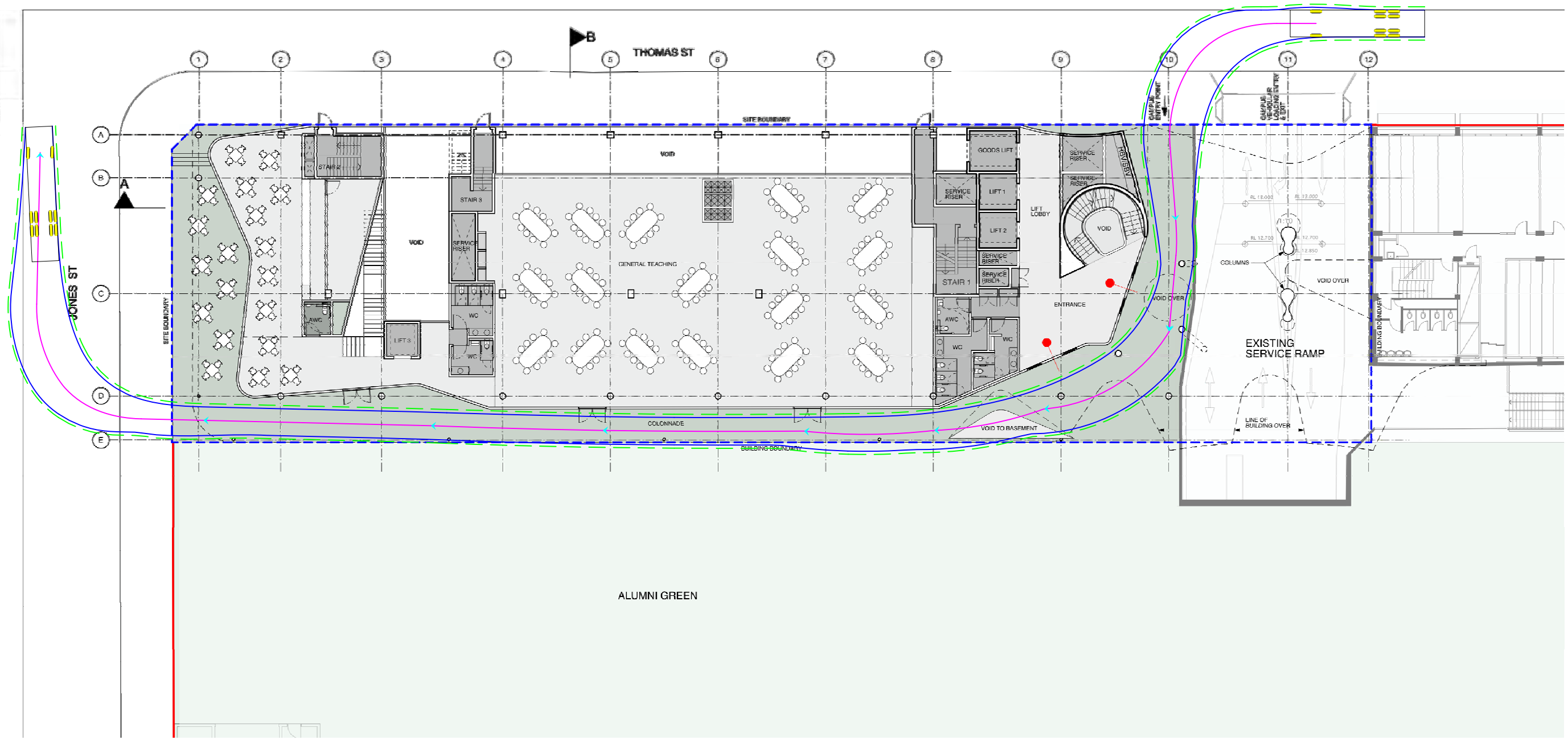

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Figure 3

Date: 16 December 2011