

HEALTH INFRASTRUCTURE

TRANSPORT REPORT FOR
PROPOSED STUDENT
ACCOMMODATION,
QUEEN MARY BUILDING,
ROYAL PRINCE ALFRED
HOSPITAL

FEBRUARY 2011

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I. INTRODUCTION

I.1 Colston Budd Hunt and Kafes Pty Ltd has been commissioned by Health Infrastructure to prepare a report examining the transport implications of the proposed use of the Queen Mary Building at Royal Prince Alfred Hospital for student accommodation. The location of the Queen Mary Building is shown in Figure I.

I.2 The Queen Mary Building is currently unused. It was previously used as accommodation for nurses. It is proposed to refurbish the building for use as accommodation for some 766 students, plus associated facilities including a commercial and retail component to support the incoming population.

I.3 This report assesses the transport implications of the proposed development through the following chapters:

- Chapter 2 - describing the existing conditions; and
- Chapter 3 - assessing the implications of the proposed development.

2. EXISTING CONDITIONS

Site Location and Road Network

- 2.1 Royal Prince Alfred Hospital is located adjacent to Sydney University, on both sides of Missenden Road, at Camperdown. The Queen Mary Building is located on the north-eastern corner of the intersection of Church Street and Grose Street, on the western side of the hospital site. The site location is shown in Figure 1.
- 2.2 The Queen Mary Building is currently unused. It was previously used as accommodation for nurses. Vehicular access to the site is provided via two driveways from Grose Street and a driveway from Church Street. The Grose Street driveways provide access to loading docks for the building. The Church Street driveway provides access to one of the loading docks and on-site parking which provides for some 10 cars.
- 2.3 Parramatta Road is north of the site. It forms a major east-west route in Sydney's Road network, connecting the CBD with Parramatta to the west. To the south, Carillon Avenue and Salisbury Road form another east-west link, forming part of a route connecting City Road in the east with Camperdown and Petersham in the west. There are bus stops on both sides of Salisbury Road, close to Church Street, and a pedestrian crossing on the western side of Church Street.
- 2.4 East of the site, Missenden Road connects Parramatta Road in the north with City Road in the south. It generally provides one traffic lane and one parking lane in each direction, clear of intersections. There are bus stops on both sides of the
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road and a taxi zone on the eastern side of the road, close to the hospital. There is a pedestrian crossing just north of Grose Street.

- 2.5 Church Street is west of the site. It connects Parramatta Road in the north with King Street to the south. It provides one traffic lane in each direction, with a variable carriageway width which allows parking in certain sections. It has a three tonne load limit north of Carillon Avenue. Church Street is partially closed at Carillon Avenue, south of the site, with left turns into the southern part of Church Street permitted from Carillon Avenue.
- 2.6 Grose Street is a private road which forms part of the site and runs east from Church Street. It provides for two-way traffic with some on street parking (five spaces). Grose Street provides access to employee parking areas at the hospital, which are provided in multi-storey car parks. The intersection of Grose Street with Church Street is an unsignalised, priority-controlled intersection. Fowler Lane provides a fourth (western) approach to the intersection.
- 2.7 Grose Street is closed to vehicles adjacent to the site. Pedestrian and cycle access is provided through the closure. Further east, the eastern part of Grose Street connects to Missenden Road.

Traffic Flows

- 2.8 In order to gauge traffic conditions, counts were undertaken during weekday morning and afternoon peak periods at the intersection of Church Street with Grose Street and Fowler Lane. These counts found the following two-way peak hour traffic flows:
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- Church Street – some 100 to 190 vehicles per hour during the morning and afternoon peak periods;
- Grose Street – some 30 to 140 vehicles per hour during the morning and afternoon peak periods; and
- Fowler Lane - some 20 to 45 vehicles per hour during the morning and afternoon peak periods.

2.9 These traffic flows are shown in shown in Figures 2 and 3.

Intersection Operation

2.10 The capacity of the road network is largely determined by the capacity of its intersections to cater for peak period traffic flows. The intersection traffic flows shown in Figures 2 and 3 have been analysed using the SIDRA program.

2.11 SIDRA simulates the operations of intersections to provide a number of performance measures. The most useful measure provided is average delay per vehicle expressed in seconds per vehicle. Based on average delay per vehicle, SIDRA estimates the following levels of service (LOS):

- For traffic signals, the average delay per vehicle in seconds is calculated as delay/(all vehicles), for roundabouts the average delay per vehicle in seconds is selected for the movement with the highest average delay per vehicle, equivalent to the following LOS:

0 to 14	=	"A"	Good
15 to 28	=	"B"	Good with minimal delays and spare capacity
29 to 42	=	"C"	Satisfactory with spare capacity
43 to 56	=	"D"	Satisfactory but operating near capacity
57 to 70	=	"E"	At capacity and incidents will cause excessive delays. Roundabouts require other control mode.
>70	=	"F"	Unsatisfactory and requires additional capacity

- ☐ For give way and stop signs, the average delay per vehicle in seconds is selected from the movement with the highest average delay per vehicle, equivalent to following LOS:

0 to 14	=	"A"	Good
15 to 28	=	"B"	Acceptable delays and spare capacity
29 to 42	=	"C"	Satisfactory but accident study required
43 to 56	=	"D"	Near capacity and accident study required
57 to 70	=	"E"	At capacity and requires other control mode
>70	=	"F"	Unsatisfactory and requires other control mode

- 2.12 It should be noted that for roundabouts, give way and stop signs, in some circumstances, simply examining the highest individual average delay can be misleading. The size of the movement with the highest average delay per vehicle should also be taken into account. Thus, for example, an intersection where all movements are operating at a level of service A, except one which is at level of service E, may not necessarily define the intersection level of service as E if that movement is very small. That is, longer delays to a small number of vehicles may not justify upgrading an intersection unless a safety issue was also involved.

- 2.13 The SIDRA analysis found that the unsignalised intersection of Church Street with Grose Street and Fowler Lane is operating with average delays of less than 15 seconds per vehicle during the morning and afternoon peak periods. This represents level of service A/B, a good level of service.

Pedestrians

- 2.14 As previously discussed, there are pedestrian routes around the site, with all streets having footpaths on both sides. There are also pedestrian and cycle connections through the hospital and university sites, including along Grose Street, adjacent to the site. Pedestrian crossings on Salisbury Road and Missenden Road provide connections to bus stops on these streets, close to the site. Signalised intersections on Parramatta Road and Missenden Road provide signalized pedestrian crossings on the various approaches.

Public Transport

- 2.15 The site is within some 10 to 15 minutes' walking distance of Redfern and Newtown railway stations. Redfern is one of the key stations in the Sydney network.
- 2.16 The site is well served by buses which operate along Parramatta Road/Broadway, Missenden Road, City Road/King Street and Salisbury Road/Carillon Avenue. There are bus stops on Missenden Road and Salisbury Road adjacent to the university and hospital.
- 2.17 Sydney Buses operates numerous routes in the area, including:
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- routes 370, 413, 431, 433, 436, 438, 439, 440, 461, 470, 480 and 483 along Parramatta Road/Broadway;
- routes 352, 370, 422, 423, 426 and 428 along City Road/King Street. Metrobus M30, a high frequency service, also operates along this route, with a stop at the university; and
- route 412 along Salisbury Road, Carillon Avenue and Missenden Road.

2.18 The City of Sydney has a plan to implement cycleways on a number of roads in the vicinity of the hospital and university, including along Carillon Avenue and Missenden Road. There is also a number of locations at the hospital and university where parking for bicycles is provided.

2.19 As previously discussed, there is a taxi rank close to the site on Missenden Road. Overall, the site has excellent access to regular public transport services.

3. IMPLICATIONS OF PROPOSED DEVELOPMENT

3.1 It is proposed to refurbish the Queen Mary Building for use as accommodation for some 766 students, plus associated facilities including a commercial and retail component to support the incoming population.

3.2 This chapter assesses the implications of the proposed development through the following sections:

- ❑ public transport;
- ❑ parking provision;
- ❑ access, servicing and internal layout;
- ❑ traffic effects; and
- ❑ summary.

Public Transport

3.2 As previously discussed, the site has excellent access to rail services which operate through Redfern and Newtown stations. Numerous regular bus services operate along Parramatta Road, City Road, Missenden Road and Carillon Avenue. There are existing and proposed cycle routes in the area and provision for bicycle parking on the university and hospital sites.

3.3 The proposed student accommodation development will be close to existing good public transport services, and will therefore be readily accessible by public transport. To support accessibility by bicycles, secure bicycle parking is proposed to be provided in the refurbished building.

- 3.4 Providing services and facilities close to existing good public transport services is in accordance with government policy and the planning principles of:
- ❑ improving accessibility to employment by public transport;
 - ❑ improving the choice of transport and reducing dependence solely on cars for travel purposes;
 - ❑ moderating growth in the demand for travel and the distances travelled, especially by car; and
 - ❑ supporting the efficient and viable operation of public transport services.

Parking Provision

- 3.5 The City of Sydney's Development Control Plan No. 11 (Transport Guidelines for Development) does not include parking requirements for student accommodation. Similarly, the RTA's "Guide to Traffic Generating Developments" does not include parking requirements for student accommodation.
- 3.6 DCP 11 indicates that parking for commercial and retail uses should be provided at one space per 125m² and one space per 50m² respectively. With some 1,590m² commercial (including 90m² student administration) and 275m² retail proposed, the parking requirement is some 18 spaces.
- 3.7 The proposed parking provision is 30 spaces. The proposed provision therefore satisfies Council's requirements for the commercial and retail components, and

includes 12 spaces for students and visitors. This is appropriate given the site's good accessibility to public transport, as well as to other services and facilities.

Access, Servicing and Internal Layout

- 3.8 Vehicular access to the development is proposed to be retained from Church Street, to the on-site parking and loading area. The existing parking area from Church Street will be retained and reconfigured to provide parking spaces in accordance with current Australian Standards. 12 parking spaces will be provided in the reconfigured car park.
- 3.9 Additional on-street parking is proposed to be provided in Grose Street. As previously discussed, Grose Street forms part of the site. 18 spaces will be provided in Grose Street. The existing site driveways from Grose Street will be removed.
- 3.10 The existing service entrance at the western side of the building will be retained to serve the refurbished building. Service vehicles will park adjacent to the service entrance in the car park from Church Street.
- 3.11 Pedestrian access to the building will be provided from Grose Street, as at present. Bicycle parking for some 250 bicycles will be available in the basement, with secure access for students with bicycles.

Traffic Effects

- 3.12 Most residents in the proposed student accommodation will live on the campus, close to their place of study at the hospital or university, as well as other services and facilities.
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3.13 The traffic generation of the proposed development will therefore be low, likely to be some 15 to 20 vehicles per hour two-way during morning and afternoon peak hours.

3.14 Such a low traffic generation would not have noticeable effects on the operation of the surrounding road network.

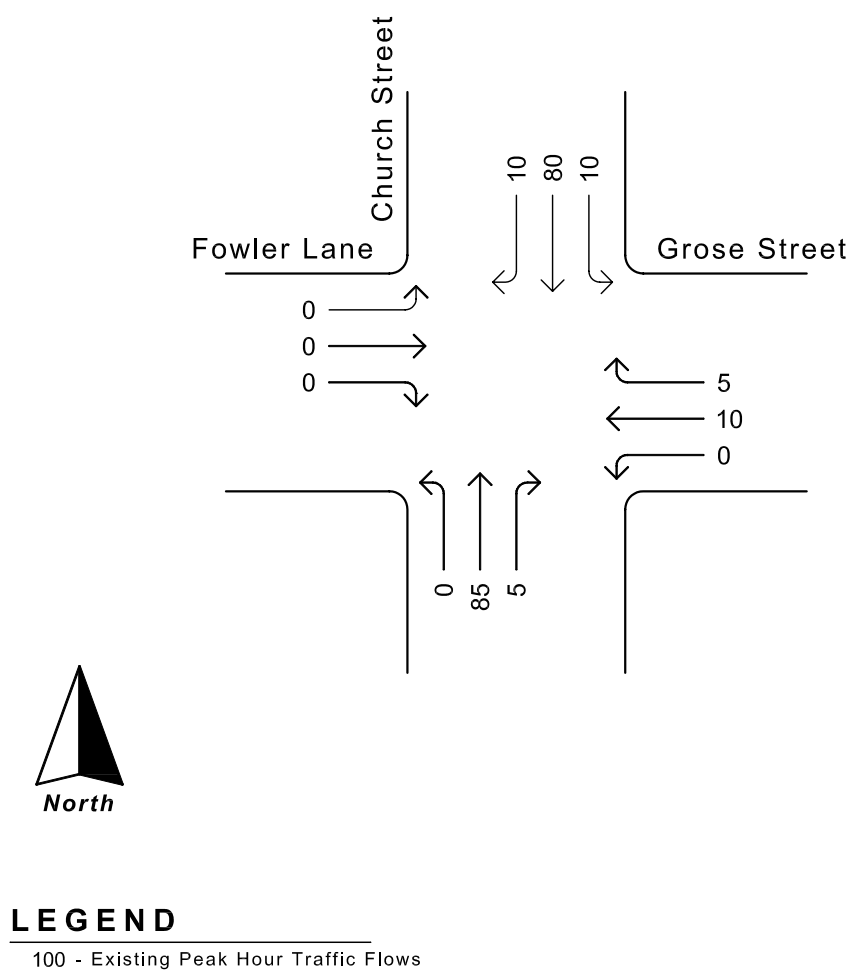
Summary

3.15 In summary, the main points relating to the transport implications of the proposed student accommodation development are:

- i) the proposed refurbishment of the Queen Mary Building will provide accommodation for some 766 students, plus associated facilities;
 - ii) the proposed development will have good access to public transport services in accordance with government policy to encourage travel by non-car modes;
 - iii) parking provision is considered appropriate;
 - iv) access, internal circulation and layout are considered appropriate;
 - v) the proposed development will have a very low traffic generation of some 15 to 20 vehicles during peak hours; and
 - vi) such a low traffic generation would not have noticeable effects on the operation of the surrounding road network.
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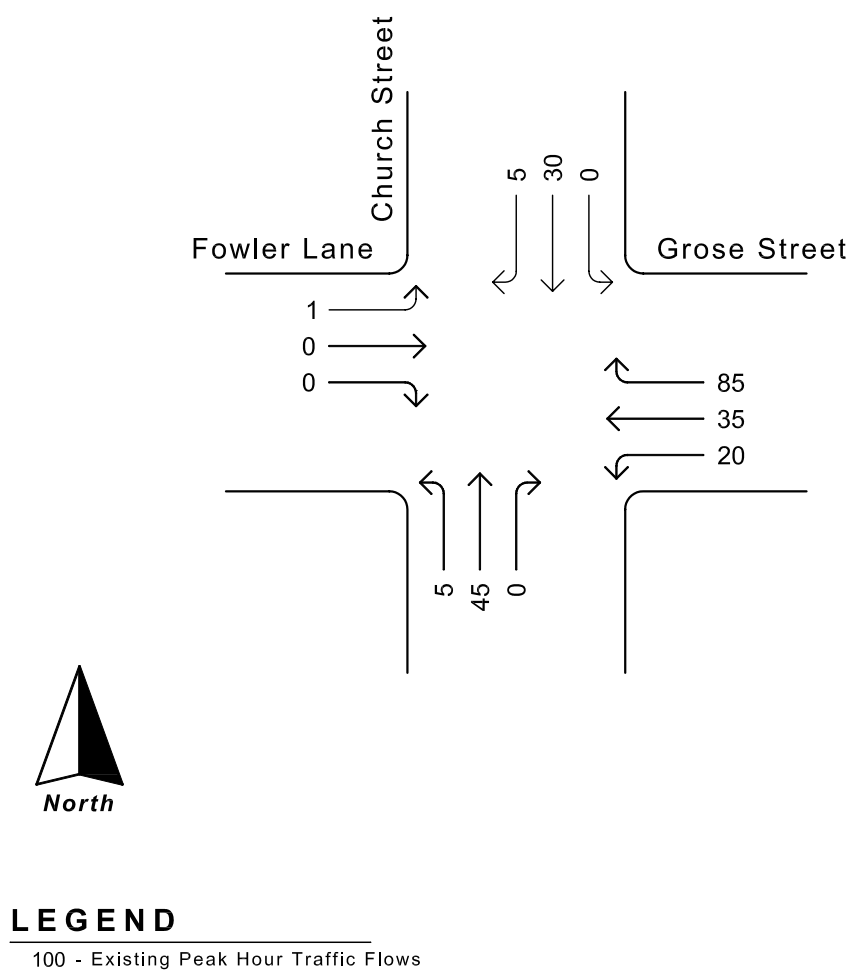


Location Plan



Existing morning peak
hour traffic flows

Figure 2



Existing afternoon peak
hour traffic flows

Figure 3