Your ref
Our ref 222991-01
File ref

ARUP

Level 10 201 Kent Street
PO Box 76 Millers Point
Sydney 2000
Australia

**t** +61 2 9320 9320
**d** +61 2 9320 9647
**f** +61 2 9320 9321

eoin.cunningham@arup.com
www.arup.com

Cris Johansen
The University of Sydney
Services Building G12
22 Codrington Street
Darlington
NSW 2008

11 July 2012

Dear Cris,

Proposed Abercrombie Precinct Redevelopment - Response to Comments from Planning NSW

Arup has been commissioned by The University of Sydney to provide comment on the response to the Preferred Project Report from the Department of Planning & Infrastructure NSW on 14 June 2012 for the application for the proposed Abercrombie Precinct Redevelopment.

## Background

The development proposal consists of the redevelopment of the site facing Codrington Street and Abercrombie Street in Darlington. The development consists of a business school located on Abercrombie Street in Darlington. The proposed development is a six storey building of approximately 27,518m² gross floor areas (GFA), and approximately 6,850 m² GFA for student accommodation and a two level underground car park.

The development is estimated to generate a maximum 134 vehicle trips during the weekday AM peak hour. By comparison an analysis of the North Eveleigh Development to the south of Abercrombie Street carried out in Parsons Brinkerhoff Traffic and Transport Impact Assessment estimated that the North Eveleigh development would generate approximately 960 vehicles during the peak hour (based on 60% of 1,601, the peak 2 hours of traffic generated from the site). 90% of the traffic generated from the North Eveleigh development is considered to travel along Abercrombie Street in the AM peak. This corresponds to 864 vehicles travelling along Abercrombie Street associated with the North Eveleigh site, over six times the traffic expected from the Abercrombie Precinct development. The traffic generated from the North Eveleigh site considerably outweighs any traffic generated from the proposed development from the Abercrombie Precinct.

The original development proposal submitted in 2010 has been reworked in the current application to prioritise visible green space, pedestrian connectivity through the site and the retention of significant features such as the Sydney Blue Gum tree and Joinery

workshop facade. Potential access locations were reviewed to ensure the most appropriate location was developed in terms of safety, accessibility and way finding. A range of locations were considered and a synopsis of the findings for each vehicle access area considered is summarised below;

- **Option 1: The provision of the proposed access driveway off Codrington Street at Rose Street**:


Rose Street adjoins Codrington Street to the south of Darlington Lane and is the major underground electrical services corridor for the Darlington campus. The Codrington Street side of the proposed development is the pedestrian spine, linking the area to public transport routes on City Road, eastern avenue on the Camperdown campus and potential future development of the wider campus and North Eveleigh.

As identified in the University of Sydney Campus 2020 masterplan, it is proposed that Butlin Avenue (the northern section of Codrington Street) be redesigned as an open plaza with pedestrian priority. It is also suggested that Codrington Street could potentially become an extension of this plaza and the Eastern Avenue spine.

In accordance with this longer term vision, the development has located its ceremonial 'front door' on Codrington Street which is also the primary focus for pedestrian and cyclist activity and access. The access is focused as a social area for pedestrians as well as emphasising the focus on pedestrian connectivity for the development and for the campus as a whole. The provision of a roadway through this area would conflict with the nature of the area.

- **Option 2: Driveway off Codrington Street at Boundary Lane:**


- Similar issues arise from providing a vehicle access off Boundary Lane as with Rose Street. (Repeat issues in Option 2)
- Close proximity of pedestrian crossing and intersection
- Protected Gum tree at access is likely to require removal

Boundary Lane adjoins Codrington Street to the north of Abercrombie Street. Similar issues arise from providing a vehicle access off Boundary Lane as with Rose Street.

Concerns have been raised in a previous development application with respect to providing a vehicle access adjacent in close proximity to the pedestrian crossing at the corner of Abercrombie and Codrington Streets. The safety of this intersection is of concern to the community, University and City of Sydney. The City of Sydney is proposing to install pedestrian safety treatments such as raised pedestrian crossings and pedestrian islands as part of the existing roundabout at this intersection. This is proposed to reduce traffic speeds and improve visibility for pedestrians using the existing crossings.

It is therefore considered that the addition of a driveway entry in such close proximity to the Codrington and Abercrombie roundabout intersection would likely result in increased pedestrian and vehicular conflicts within close proximity.

In addition to this issue, there is a protected gum tree which would potentially require removal if vehicular access was provided on Boundary Lane.

- **Option 3: Driveway off Darlington Lane:**


- Darlington Lane is narrow
- Darlington Public School uses Darlington Lane to access the sports and aquatic centre.
- Requires a long ramp removing parts of the building
- Requires removal of the pedestrian route through the site
- Potential future childcare centre would conflict with the access

Darlington Lane is a narrow carriageway just over 4 metres wide, and therefore unsuited to two-way traffic. Oncoming vehicles are currently required to give way to each other and pedestrians who may use this carriageway.

Darlington public school currently uses Darlington Lane as a pedestrian route to the sports and aquatic centre nearby. As there are no footpaths along Darlington Lane, an increase in vehicles on Darlington Lane would not be considered ideal on safety grounds.

In addition to this, turns to and from the narrow carriageway are significantly constrained especially for loading bay vehicle access. Darlington Lane is elevated considerably above the southern side of the site. As a result, the provision of an access from this height to an underground car park or loading area is significantly constrained and would require very steep ramps for vehicles to exit the site. This may result in vehicles ramping out at higher speeds onto Darlington Lane. It would also result in the prevention of direct access by the School to the aquatic centre.

The location of the vehicle access on Darlington Lane would require the removal of public space, deletion of a pedestrian route through the west of the site requested by the community and the removal of several trees currently located on the boundary of the site and Darlington Public School. The removal of these amenities reduces the pedestrian focus of the development and adversely impacts upon the Darlington Public School.

As part of a separate application the University is exploring the option of relocating the child care centre with its site frontage on Darlington Lane. The area in front of the childcare centre on Darlington Lane is to be proposed as a set-down/ drop-off area for both functions and an increase in vehicle numbers localised in this area may conflict with the potential usage of the childcare centre.

- **Option 4: Driveway off Abercrombie Street, southwest corner of subject site block:**


- Adjacent to Darlington public school.
- Requires removal of the pedestrian route through the site

This driveway is located adjacent to Darlington public school. A previous application for the development resulted in the rejection of this option due to objections to the provision of an access adjacent to the school and nearby pedestrian crossing.

The provision of a public space and pathways within the site adds alternate pedestrian routes removed from vehicle conflicts. The routes are proposed from Darlington Lane to Abercrombie Street and from Codrington Street to Abercrombie Street adding to the safety and amenity for students and generally for the area. The location of the access would require the removal of this public space including several trees. The removal of these amenities reduces the pedestrian focus of the development.

- **Option 5: Multiple driveways:**

  There is no need for more than one driveway to serve the modest number of cars predicted to use the car park. One driveway per 500 car bays is generally considered sufficient. Multiple driveways would only increase the number of conflict points with pedestrians and cyclists.

- **Option 6: Driveway off Abercrombie Street, mid frontage subject site block:**


- Darlington Lane is narrow
- Darlington Public School uses Darlington Lane to access the sports and aquatic centre.
- Requires a long ramp removing parts of the building
- Requires removal of the pedestrian route through the site
- Potential future childcare centre would conflict with the access
- Requires removal of tree line on western boundary

The provision of an access mid-block on Abercrombie Street positions the access further from Darlington public school while maintaining distance from nearby intersections. The location for the access allows for the pedestrian focus of the development to be maintained.

It is appropriate for a development of this size to have vehicle access provided onto a major local road such as Abercrombie Street. Major local roads represent provision for a higher capacity for traffic volumes. While increases in traffic will not be approached as a result of this development the additional access will result in proportionally negligible changes in existing traffic flows compared to an access located on a classified local road such as Codrington Street or Darlington Lane.

As part of the development proposals, a pedestrian route is located through the site where Boundary Lane is currently located leading directly to Darlington Public School. This allows for an alternate pedestrian route removed from any vehicle conflicts running parallel to Abercrombie Street.

For these reasons, providing a vehicle access at this location is considered the most feasible option given the pedestrian, cyclist and vehicle accessibility to the site and surrounding area.

# Comments from Planning NSW

The comments from Planning NSW were issued on 14 June 2012. These comments are outlined and responded to below;

**Comment 1:**

*"The submitted EA details that a total student population of approximately 7,000 students. However, the revised Traffic Impact Assessment submitted with the PPR proposes a total student population of approximately 4,500. In this regard, clarification is required in relation to the existing student population and proposed future student population of the Abercrombie Precinct."*

**Response to Comment 1:**

The development has the potential capacity for 5,118 student and staff members on site across the Business School and Student Accommodation. There are currently a total of 804 staff and students based on site. This leaves a maximum increase in population of 4,314 as a result of the proposed development. The proposed development increases the capacity for existing Camperdown campus students to access this new facility in the Darlington campus.

**Comment 2:**

*"The submitted Traffic Impact Assessment notes that existing on-street parking is utilised by staff and students alike. An additional student/staff population will place increased pressure on existing on-street car parking available surrounding the development site. In this regard, clarification is sought as to the proposed end users of the proposed basement car park and its availability and associated access arrangements, i.e. paid / free parking."*

**Response to Comment 2:**

Access to the underground car park is restricted to vehicles with permits and visitors who pay to use the car park.

Parking permits are available to post graduates and staff only whilst paid-for-ticket parking is available to all community members. The University of Sydney encourages sustainable travel by not provide parking to undergraduates and encouraging them to use public transport. Information is provided to new students regarding access routes to buses and Redfern train station. A free shuttle bus for staff and students is provided by the University of Sydney stopping on Codrington Street and providing convenient access to the train station.

Parking in the surrounding area of the university campus is generally restricted to two hour parking for non-residents. Paid parking is also available for students and the community within the Shepherd Street car park. Paid parking will be available in the building on the weekends and it is expected this will alleviate some of the congestion created by the North Eveleigh markets on the weekends.

**Comment 3:**

*"Concerns have been raised in relation to the accuracy of the traffic data presented in the Parking and Traffic Studies prepared by Parsons Brinkerhoff for the approved North Eveleigh Concept Plan and its application in assessing the traffic impact associated with the proposed Abercrombie Precinct Redevelopment. In this respect, the department requests that the existing traffic report by ARUP be reviewed and updated as necessary, having regard to the departments' independent Traffic and Transport Review of the North Eveleigh Concept Plan, prepared by Sinclair Knight Merz (SKM), dated November 2008."*

**Response to Comment 3:**

The Parsons Brinkerhoff analysis issued a response to the November 2008 SKM review of the North Eveleigh Development. In the response it is outlined that the trip generation rates used are as set out in the "*RTA Guide to Traffic Generating Developments*" for high density development and medium density development where appropriate.
Arup undertook an independent transport review for the North Eveleigh Site on behalf of the Sydney Metropolitan Development Authority. The review included trip generation surveys undertaken in April 2012 at high density residential developments (total 580 units) in Erskineville. The site had good access to public transport. The surveys indicated a peak hour traffic generation rate of 0.15 / 0.18 cars per dwelling in the AM and PM peak hours respectively. This is lower than the rate (0.24 car trips/dwelling) adopted in the Concept Plan traffic report and that recommended in the 'RTA Guide to Traffic Generating Developments'. This indicates that the traffic volumes predicted from the North Eveleigh Site are likely to be appropriate given comparisons to similar surveyed sites

**Comment 4:**

*"Significant safety concerns from local residents and public school community have been raised in relation to the proposed location of the vehicular basement access on Abercrombie Street, preferring the car park access be relocated to Codrington Street or Darlington Lane. Further design opportunities should be explored to ensure pedestrian safety is maintained."*

**Response to Comment 4:**

As outlined in the discussion on the background assessment, careful consideration was given to the location of the vehicle access. The provision of the vehicle access on Abercrombie Street is considered to be the most appropriate, given its distance to all other intersections and the allowance for pedestrian focus through and around the site.
As with any access, the increase in potential conflicts leads to an increase in risk. The following measures were considered in the design of the intersection in order to manage the risk at the access between pedestrians and vehicles:

- The use of a boom gate was considered to manage vehicles entering and exiting the development. Concerns were raised that drivers would be more likely to perceive right of way once the boom gate was lifted, thereby reducing the focus on potentially crossing pedestrians. As a result, it is proposed not to manage the access with a vehicle boom gate
- Appropriate pedestrian visibility splays will be provided to ensure that the vehicles exiting the development will have adequate sightlines for oncoming pedestrians
- Appropriate "GIVE WAY TO PEDESTRIANS" signage will be provided on egress to the development indicating that pedestrians on the footpath have right of way
- A shallow grade for egress of 1 in 8 will be provided encouraging slow egress from the development as steeper slopes tend to encourage acceleration
- A variable message board will be provided indicating the number of vehicle spaces available within the car park to prevent vehicles entering and exiting the development unnecessarily
- A driveway footpath will be provided at the access indicating to vehicles that the pedestrians on the footpath have right of way as with other vehicle accesses which are located in the area such as Maundelbaum House and
- The driveway footpath will be discoloured from the standard footpath highlighting the change to more vulnerable pedestrians, a feature used at the adjacent Maundelbaum House.
- The driveway is a typical driveway access, which users will find familiar and is similar to other driveways which are located in the area such as Maundelbaum House or the residential driveway access opposite Darlington Public Schools main access on Golden Grove Street. Given that this form of access is typical for the area it is unlikely to pose any higher risk level from the layout.

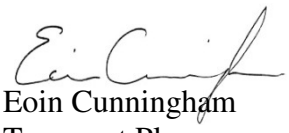
In addition to these measures a vehicle egress alarm can be used upon request to warn pedestrians and vehicle users of the potential conflict. The alarm would be set to operate in line with the operation times for the adjacent primary school.

## Conclusions

The responses detailed above outline some of the traffic issues and assessment processes which were considered in development of a design for the Abercrombie Precinct Redevelopment and responds to the comments raised by Planning and Infrastructure NSW.

The development is considered to have a negligible effect on the surrounding area in terms of traffic and transport. Risk reduction techniques have been employed to minimise potential hazards generated from the site in terms of traffic and road safety. Should you have any queries or comments in relation to these measures, please do not hesitate to contact me.

Yours sincerely



Eoin Cunningham
Transport Planner