

## **St Catherine's School Waverley, Campus Master Plan & Detailed Design of Stage 1 - RPAC (SSD 6339)**

26 Albion Street, Waverley

### **SUBMISSIONS REPORT**

Submitted to NSW Planning and Environment

Prepared on behalf of St Catherine's School Waverley

25 June 2015 | 1330

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- H DA-250/1984 and DA-140/2011 (including the accompanying the Statement of Environmental Effects and Traffic and Parking Assessment for the later consent)

## 1.0 Introduction and summary

### 1.1 Background

An Environmental Impact Statement (EIS) has been prepared and exhibited between 2 October 2014 and 5 December 2014 for the following development at St Catherine's School Waverley located at 26 Albion Street, Waverley:

- PART 1 Conceptual approval for a Campus Master Plan that comprises demolition works, new buildings, alterations and additions, access arrangements, circulation and landscaping
- PART 2 Detailed design approval for Stage 1 of the Campus Master Plan comprising construction of the new Research, Performing Arts and Aquatic Centre (RPAC).

The main issues raised in the agency, group and individual submissions and key issues identified by NSW Planning & Environment (NSW P&E) (by letter dated 19 December 2014) were:

- Traffic and parking impacts from the proposed intensification of uses on the site
- Transport management and measures to reduce use of private cars
- Campus population
- Environmental and residential amenity.

St Catherine's and its consultant team have reviewed the submissions and the NSW P&E letter in accordance with cl. 85A(2) of the *Environmental Planning & Assessment Regulation 2000*.

### 1.2 Summary of amendments and findings

This Submissions Report includes a detailed summary of submissions received and the issues raised and sets out a number of mitigation measures proposed to address the concerns. Key amendments proposed to mitigate the issues raised comprise:

#### 1. Behavioural and travel strategies

Introduce of a range of behavioural and travel strategies to reduce private car usage associated with both students and staff including the following:

- (a) For students: Carpooling, promoted public transport and a minibus service
- (b) For staff: Carpooling, subsidised public transport, active transport and encouraging cycling.

#### 2. Operational changes

Introduce a range of operational changes including:

- (a) Amendment of the St Catherine's School – Indicative Usage Profile (June 2015 - Rev 12) including deletion of all additional external events in the Performing Arts Auditorium and scheduling to avoid overlapping of large performing arts events and peak Aquatic Centre activities. St Catherine's has reluctantly agreed to delete external use of the Performing Arts Auditorium in response to feedback received during exhibition of the application and subsequent consultations with the NSW P&E, to reduce traffic generation and demand for on-street parking
- (b) Timetabling of Aquatic Centre usage as follows:
  - (i) Before School activities are to be offered to St. Catherine's School girls only to assist with distribution of arrival times
  - (ii) Learn to swim lessons are to be scheduled between 9.30am and 2.00pm to avoid school and commuter peaks and to coincide with the period of low resident demand for on-street parking

- (iii) First activity within the Aquatic Centre following completion of a typical School day is to be offered to St. Catherine's School girls only to distribute afternoon pick up times
- (c) Introduction of staggered finish times for students in different school years to achieve operational efficiency (pick-up time for Years 5-6 is to occur from 3.00pm to 3.15pm)
- (d) A commitment to prepare an Operational Transport Management Plan which would address travel strategies, monitoring and reporting and operational traffic management
- (e) Promote before and after school activities to reduce school peaks
- (f) A shuttle bus service for attendants to events in the Performing Arts Auditorium, as mentioned in the EIS, is no longer proposed.

Arup's assessment shows that the number of cars generated by the Campus Master Plan with implementation of these behavioural and travel strategies is significantly less than existing as summarised below:

- A reduction of 139 cars in the morning school/commuter peak (7.30-8.30am)
- A reduction of 88 cars in the school peak (2.30-3.30pm)
- A reduction of 69 cars in the commuter peak (5.00-6.00pm)
- A reduction of 54 staff cars using on-street car parking.

This compares very favourably with the original proposal which would have increased traffic generated by the site.

### 3. Other additional information

Additional shadow studies, a revised Acoustic Report and additional mitigation measures in relation to transport, traffic and transport management, events, hours of operation and management and light spill are also proposed.

#### 1.3 Additional and amended information

This Submissions Report should be read in conjunction with the EIS dated 23 September 2014 and will form part of the SSD approval. It is accompanied by the following information:

- **Appendix A** NSW P&E letter to St Catherine's School (19 December 2014)
- **Appendix B** Submissions Tables, by Robinson Urban Planning Pty Ltd
- **Appendix C** St. Catherine's School Travel Strategies - Transport Report, by Arup (15 June 2015)
- **Appendix D** Amended St Catherine's School – Indicative Usage Profile (June 2015 - Rev 12)
- **Appendix E** Albion Street Pick-up/Drop-off plan, by Mayoh Architects (P.100.P1)
- **Appendix F** Additional Shadow Diagrams, by Mayoh Architects (A.MP.707.1A and A.MP.707B)
- **Appendix G** St Catherine's School Campus Master Plan & Stage 1 - Construction & Operational Noise Report, by Wilkinson Murray Pty Limited (Report No. 14066 Version C dated April 2014)
- **Appendix H** DA-250/1984 and DA-140/2011 (including the accompanying the Statement of Environmental Effects (**SEE**) and Traffic and Parking Assessment for the later consent)

## 2.0 Submissions

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This section summarises the total number and nature of submissions received in response to exhibition of the EIS (between 2 October 2014 and 5 December 2014).

### 2.1 Number of submissions

A total of 221 submissions were received by NSW P&E in response to exhibition of the EIS (excluding duplicates) comprising:

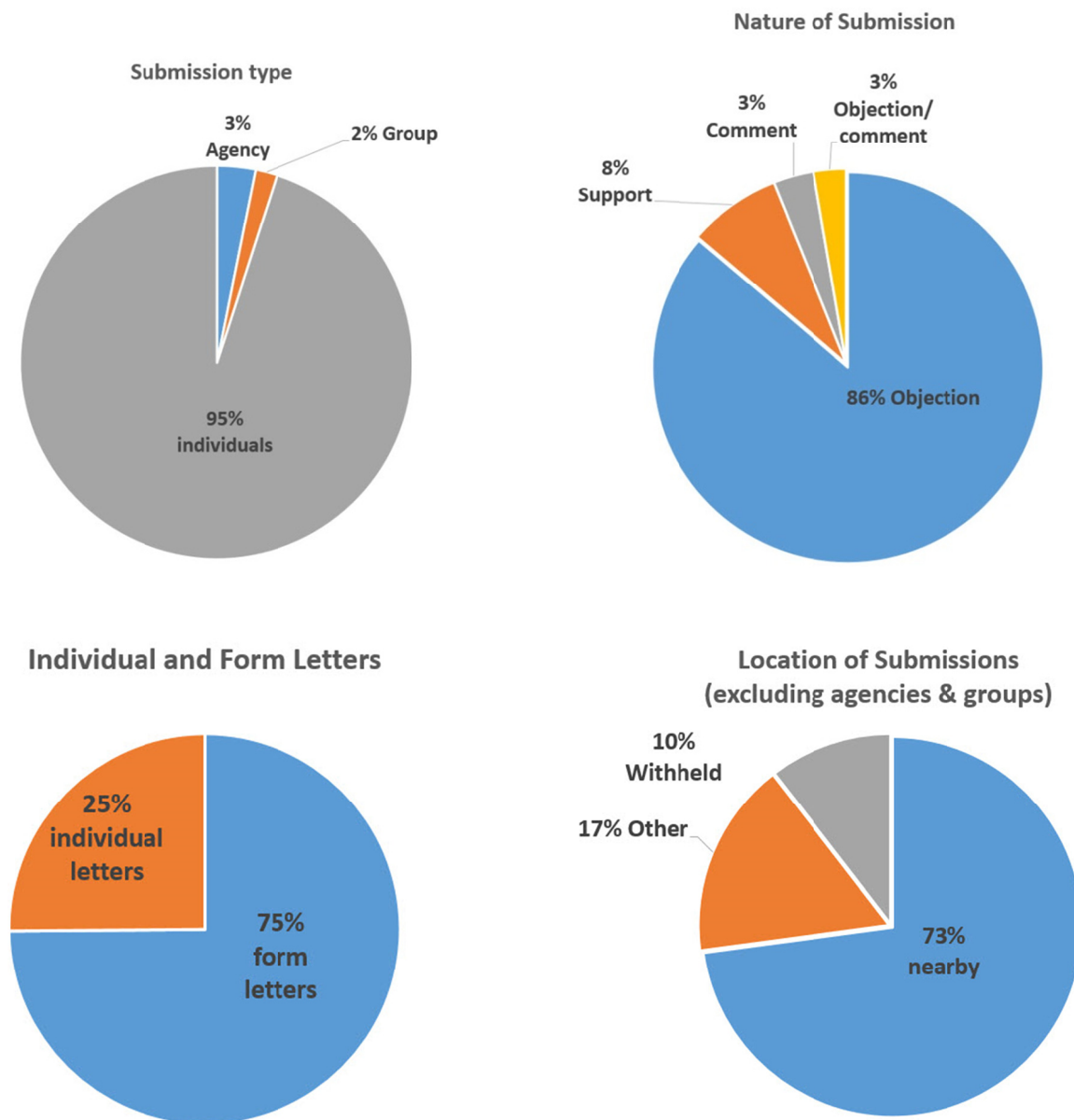
- Seven agency submissions from:
  - Office of Environment
  - Waverley Council
  - Randwick Council (three letters, counted as one submission)
  - Roads and Maritime Services (RMS)
  - Transport for NSW
  - Waverley Traffic Committee
  - NSW Police Force
- Four precinct/group submissions from:
  - Charing Cross Village
  - Bronte Beach Precinct Committee
  - Bondi Junction Precinct
  - Proprietors of SP 52887, 313 Bronte Road
- 218 resident and business community submissions representing 210 properties (eight authors/households made more than one submission)

### 2.2 Nature of submissions

Based upon the Submission Tables at **Appendix B**, the submissions received are summarised in **Table 1**, with the relevant statistics illustrated on the charts at **Figure 1**.

**Table 1 – Submission data**

|  | Number of submissions | %   |
|--|-----------------------|-----|
| • Type of submission (excluding repeats):                          |                       |     |
| – Agency   | 7                     | 3%  |
| – Group  | 4                     | 2%  |
| – Individual (objection & support)                                 | 210                   | 95% |
| – Total submissions  | 221                   |     |
| • Nature of all submissions (excluding repeats):                   |                       |     |
| – Objection  | 191                   | 86% |
| – Support  | 17                    | 8%  |
| – Comment  | 7                     | 3%  |
| – Objection /comment   | 6                     | 3%  |
| – Total submissions  | 221                   |     |
| • Type of objections - Individual or form objection                |                       |     |
| – Form letter objection 1  | 137                   |     |
| – Form letter objection 2  | 6                     |     |
| – Total form letter  | 143                   | 75% |
| – Individual objections  | 48                    | 25% |
| – Total objections   | 191                   |     |
| • Location of individual submissions (excluding repeats):          |                       |     |
| – Bronte, Charing Cross, Clovelly, Randwick, Queens Park, Waverley | 153                   | 73% |
| – Other areas  | 35                    | 17% |
| – Withheld   | 22                    | 10% |
| – Total individual (objection & support)                           | 210                   |     |



**Figure 1** – Charts illustrating submission type, nature, individual/form letters and location of submissions

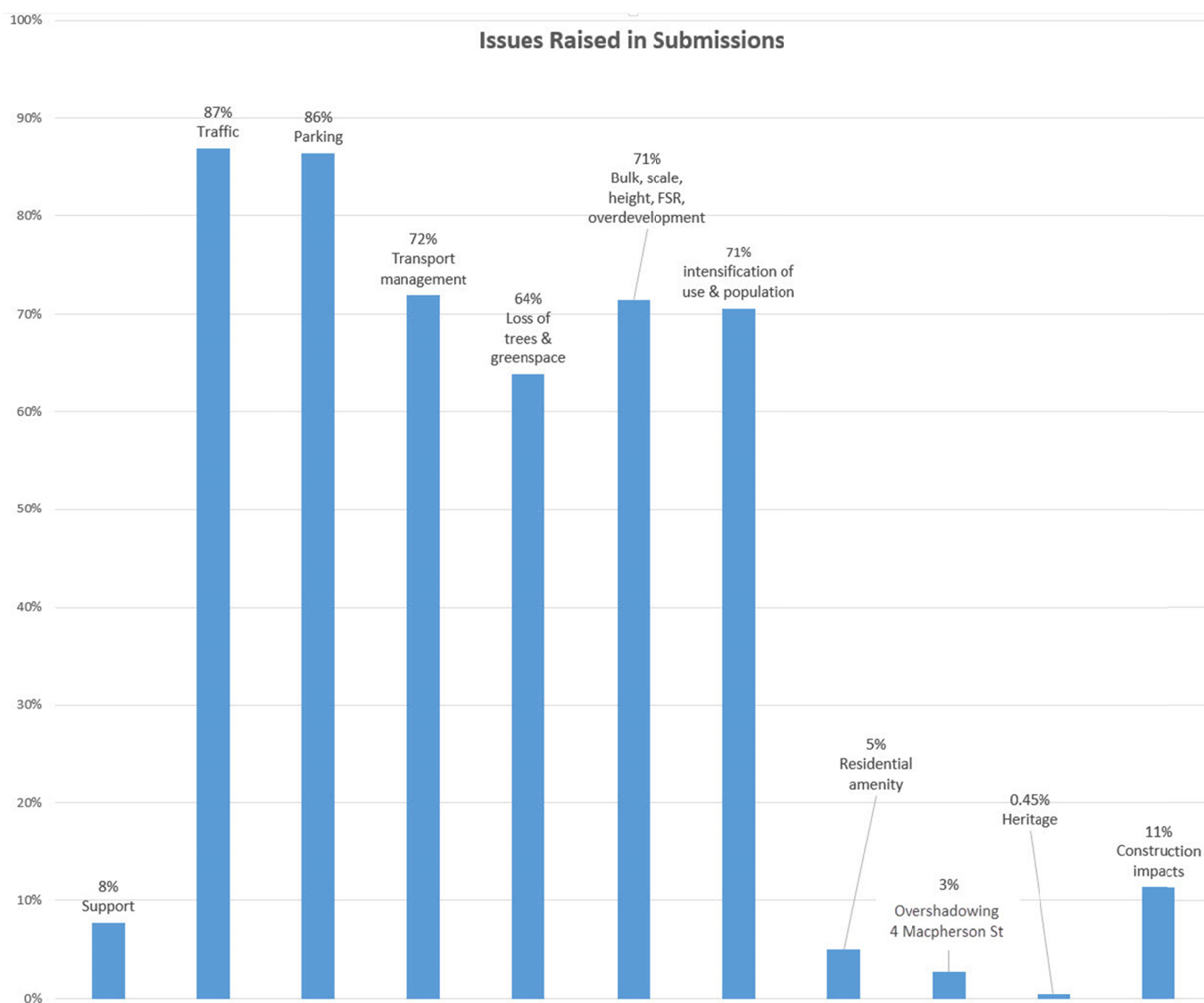


### 2.3 Issues raised in submissions

Issues raised in the submissions are summarised below in **Table 2** and illustrated on the chart at **Figure 2**. Detailed summaries of the issues raised are included in the Submissions Tables at **Appendix B**.

**Table 2 – Issues raised in submissions**

| Issues  | Raised in % of submissions |
|---|----------------------------|
| Support   | 8%                         |
| Traffic   | 87%                        |
| Increase on-site parking and provide on-site pick-up/drop-off facility                        | 86%                        |
| Transport management  | 72%                        |
| Loss of trees and greenspace  | 64%                        |
| Bulk, scale, height, FSR, overdevelopment   | 71%                        |
| Intensification of use and population   | 71%                        |
| Residential amenity (noise, light spill, views, privacy, waste collection in Leichhardt Lane) | 5%                         |
| Overshadowing of 4 Macpherson Street  | 3%                         |
| Heritage  | 0.45%                      |
| Construction impacts  | 11%                        |



**Figure 2 – Issues raised in submissions**

### 3.0 Key Issues and Proponent's Response

#### 3.1 Traffic, parking and transport management

##### NSW P&E key issue:

- The Department is concerned with the traffic and on-street parking impacts to the local road network as a result of the additional private vehicle trips in association with the proposed intensification of the use of the site. In this regard further consideration should be given to measures to mitigate these impacts, which should include:*
  - Additional mitigation measures to maintain existing levels of service at the nearby intersections (Macpherson Street/Albion Street and Macpherson Street/Leichhardt Street);*
  - Provision of an on-site drop off and pick-up zone;*
  - Provision of on-site parking to cater for the use of the proposed facilities not associated with enrolled students of the school (i.e. the use of the auditorium for non-school related events of up to 500 patrons and the learn to swim programs);*
  - The hours of operation of the proposed pool facilities for activities not associated with enrolled students of the school.*
- Identify at which stage of the campus expansion the traffic generated by the development would result in a change of Level of Service for each of the Macpherson Street/Albion Street and Macpherson Street/Leichhardt Street intersections (i.e. identify how many additional students in combination with operation of the new facilities can be supported before the performance of the intersections would deteriorate).*
- Provide further details of travel demand management measures that will be implemented to promote a modal shift away from private vehicle.*
- Provide further details regarding the operation of proposed shuttle bus services for events and the feasibility of such services for each type of event, including the number of services, pick-up times, the capacity of the service, drop-off zone and the likely usage for each type of event.*
- Provide the complete results from the St Catherine's School Travel Surveys the Traffic and Transport Assessment*

##### 3.1.1 Transport strategies to reduce private car usage

To address this key issue, Arup has prepared a report titled *St. Catherine's School Travel Strategies - Transport Report* (15 June 2015) (**Appendix C**). The report explains that St Catherine's intends to make the following changes to the proposal to address issues raised in submissions:

##### 1. Behavioural and travel strategies

Introduce a range of behavioural and travel strategies to reduce private car usage associated with both students and staff including the following:

- For students: Carpooling, promoted public transport and a minibus service for students
- For staff: Carpooling, subsidised public transport, active transport and encouraging cycling.

##### 2. Operational changes

Introduce a range of operational changes including:

- Amendment of the St Catherine's School – Indicative Usage Profile (June 2015 - Rev 12) (**Appendix D**) including deletion of all additional external events in the Performing Arts

- Auditorium and scheduling to avoid overlapping of large performing arts events and peak Aquatic Centre activities. St Catherine's has reluctantly agreed to delete external use of the Performing Arts Auditorium in response to feedback received during exhibition of the application and subsequent consultations with the NSW P&E, to reduce traffic generation and demand for on-street parking
- (b) Timetabling of Aquatic Centre usage as follows:
- (i) Before School activities are to be offered to St. Catherine's School girls only to assist with distribution of arrival times
  - (ii) Learn to swim lessons are to be scheduled between 9.30am and 2.00pm to avoid school and commuter peaks and to coincide with the period of low resident demand for on-street parking
  - (iii) First activity within the Aquatic Centre following completion of a typical School day is to be offered to St. Catherine's School girls only to distribute afternoon pick up times
- (c) Introduction of staggered finish times for students in different school years to achieve operational efficiency (pick-up time for Years 5-6 is to occur from 3.00pm to 3.15pm)
- (d) A commitment to prepare an Operational Transport Management Plan which would address travel strategies, monitoring and reporting and operational traffic management
- (e) Promote before and after school activities to reduce school peaks
- (f) A shuttle bus service for attendants to events in the Performing Arts Auditorium, as mentioned in the EIS, is no longer proposed.

Assuming a realistic and conservative take up of the behavioural and travel strategies, Arup estimate that private car usage associated with both staff and students on the site will reduce at completion of the campus master plan in 2029 when compared with existing conditions. **Table 3** (which is based on the findings of Arup) summarises the car trips associated with the school, with the relevant peak hours and shows that the number of cars generated by the Campus Master Plan is significantly less than existing as summarised below:

- A reduction of 139 cars in the morning school/commuter peak (7.30-8.30am)
- A reduction of 88 cars in the school peak (2.30-3.30pm)
- A reduction of 69 cars in the commuter peak (5.00-6.00pm)
- A reduction of 54 staff cars using on-street car parking.

As these figure show, the number of cars generated with the proposed school population and updated usage profile scenario is significantly less than the existing school population and existing usage profile scenario when all initiatives are implemented. The net outcome would result in a net decrease of cars generated by the School during weekday peak hours in comparison to the existing situation. This compares favourably with the original development application, which sought to increase the number of trips by 172 cars during the AM peak hour and by 150 cars in the school PM peak hour. Given Arup's findings, the Campus Master Plan would not result in a reduction in the Level of Service for nominated Macpherson Street/Albion Street and Macpherson Street/Leichhardt Street intersections.

More details on each of the transport initiatives follows, with **Table 4** summarising the projected reduction in private car usage. It includes the findings of a survey of students and staff recently carried out as part of this Submissions Report assessing their willingness to take up the proposed behavioural and travel strategies.

**Table 3 – Car trips generated by the School during weekdays**

| Scenario  | AM peak hour<br>(7:30-8:30am) | PM school peak<br>(2:30-3:30pm) | PM commuter peak<br>(5:00-6:00pm) |
|---|-------------------------------|---------------------------------|-----------------------------------|
| 1. Existing school population and existing usage profile  | 648                           | 403                             | 150                               |
| 2. Proposed school population (with no initiatives) and existing usage profile                  | 776                           | 486                             | 158                               |
| 3. Proposed school population (with all initiatives) and existing usage profile                 | 591                           | 344                             | 115                               |
| 4. Proposed school population (with all initiatives) and updated RPAC usage profile             | 509                           | 315                             | 81                                |
| <b>Reduction in cars - Existing (point 1) less proposed with transport strategies (point 4)</b> | <b>-139</b>                   | <b>-88</b>                      | <b>-69</b>                        |

**Table 4 – Potential reduction in car trips assumed by Arup compared with survey results (at Completion of the Campus Master Plan with transport strategies)**

| Initiative                                | Arup assumed reduction in cars at completion of the Campus Master Plan (2029) with transport strategies | Number of students/staff willing to take up alternate transport strategies (based on survey results) |                 |
|---|---|--|-----------------|
| <b>1. Students</b>                        |   | <i>Pick up</i>   | <i>Drop-off</i> |
| (a) Mini Buses                            | -42   | -261   | -212            |
| (b) Carpooling                            | -50   | -419   | -329            |
| (c) Promote Public Transport              | -50   |  |                 |
| Student total reduction                   | <b>-142</b>   |  |                 |
| <b>2. Staff</b>                           |   | <i>Cars</i>  |                 |
| (a) Subsidised Public Transport           | -23   | -41  |                 |
| (b) Active Transport/Bike/Scooter         | -11   | -28  |                 |
| (c) Carpooling                            | -9  | -85  |                 |
| Staff total reduction                     | <b>-43</b>  |  |                 |
| <b>Total students and staff reduction</b> | <b>-185</b>   |  |                 |

### Students - Mini Buses

St Catherine's currently has three mini buses, two of which are 25 seat capacity and one which is 12 seat capacity. Currently, the school runs one bus which services between 6-19 students on any given day. The travel survey has assumed a total of 7-8 children using the service.

Given the high reliance on private vehicle usage by students, Arup have identified an opportunity to significantly reduce cars on the road network by providing two additional bus services/routes specifically for local students. Based on a capacity of 25 seats per bus and 75% occupancy rate, this may result in a net **reduction of 42 cars** during both the AM and PM peak hours.

Data may be extracted from the recent survey to determine the highest density locations of each suburb to assist in planning appropriate mini bus routes for students.

### Students - Carpooling

St Catherine's intends to set up a system where real-time carpool information from participants can be displayed or changed. Schedules can be managed through a cloud, google maps or various smartphone applications. With consistent promotion of this travel mode and incentives, students and parents will become aware of the benefits and convenience.

An implementation strategy would need to be considered so that student privacy is protected. It is assumed that such an initiative would likely operate through parents on a carpooling forum. This initiative would operate under management of the school by encouraging parents to be proactive in offering carpooling services. This can be promoted in school newsletters, parent teacher meetings and by educating students on the benefits of this initiative. As an incentive for parents, car pool stickers can be given out, giving these shared cars prioritised and designated drop off locations.

Arup have identified an opportunity to significantly reduce cars on the road network by carpooling. Based on a student mode shift of 5% from private vehicle mode to carpool, this may result in a net **reduction of 50 cars** during both the AM and PM peak hours.

A range of free apps are currently available online to assist with the implementation of this initiative. Arup have reviewed two examples (Carpool – School Edition and Pool My Ride). St Catherine's will investigate which app best aligns with its Child Protection Policies before promoting this initiative.

### Students - Promote Public Transport

Currently students have to pay for public transport if they live within a certain distance of the school. This varies between year groups and costs up to \$52 a term if they live within the distances as follows:

- A primary student (Years 3-6) who lives more than 1.6km (radial distance) from school, or 2.3km or more by the most direct practical walking route
- A secondary student (Year 7-12) who lives more than 2km (radial distance) from school, or 2.9km or more by the most direct practical walking route.

An infant student (K, Year 1 and Year 2) older than 4 years and 6 months who lives any distance between home and school does not need to pay for public transport passes.

St Catherine's currently coordinates the process of having bus passes arranged for students (about 500 passes issued). The School will continue to do this and raise awareness of this as an offering, to encourage greater use of public transport.

Arup have identified an opportunity to reduce the number of cars on the road network by reinforcing the benefits of utilising public transport to the School population. Based on a

student mode shift of 5% from private vehicle, this may result in a net **reduction of 50 cars** during both the AM and the PM peak hours.

#### **Staff - Subsidised Public Transport**

St Catherine's would subsidise the cost of public transport (in part or in full) utilised by Staff during their travel to and from School on business days. Interested participants would register prior to commencement of each calendar year.

It has been assumed that 10% of all staff (part-time and full-time) may take up an offer such as this. This would lead to a **reduction of 23 cars** during both the AM and PM peak hours.

#### **Staff - Active Transport/ Bike/ Scooter**

Active transport for staff through cycling and walking is to be promoted. Provision of adequate end of trip shower and locker facilities was considered during the development of the concept design for the Master Plan. Bike loan or subsidised bicycle schemes could also provide staff with an incentive to adopt active transport.

Staff should also be encouraged to ride scooters or motorcycles to work. Parking spaces should be provided to provide an incentive for users.

It has been assumed that a mode shift of 5% may occur with improved facilities and promotion. This would result in a mode shift **reduction of 11 cars** (including both part-time and full-time staff) during both the AM and PM peak hours.

#### **Staff - Carpooling**

Staff are to be encouraged to participate in carpooling. Possible ways to encourage carpooling may include staff registering their interest in carpooling by indicating where they live and matching their shift times with colleagues. Incentives in terms of priority parking on the campus will be considered for carpool users.

Under this scheme, the School would set up a system where real-time carpool information from participants can be displayed or changed. Schedules can be managed through a cloud, google maps or various smartphone applications (as with the student carpooling proposal).

It has been assumed that a mode shift of 5% may occur with improved promotion and management. This would result in a mode shift **reduction of 9 cars** (for full-time staff only as part-time staff would have various start and finish times) during both the AM and PM peak hours.

#### **Potential Mode Shifts**

As part of Arup's recent work, a survey was completed to assess staff and student interest in taking up the transport strategies described above. The survey showed that the school community is very willing to take up alternate modes of transport.

**Table 4** sets out Arup's estimate of potential car trip reductions from the transport strategies and compares this with the survey findings. The comparison shows that the mode shift assumptions relied upon by Arup are realistic and in fact conservative. **Table 4** shows that the potential reduction in car trips at completion of the Campus Master Plan (2029) resulting from the transport strategies is as follows:

- Students – potential reduction of 142 trips
- Staff – potential reduction of 43 trips
- Total staff and student - potential reduction of 185.

### Operational Transport Management Plan

St Catherine's will develop an Operational Transport Management Plan that will cover a number of operational aspects at the school including:

- Travel strategies adopted and management requirements for each strategy
- Monitoring and reporting requirements for the travel strategies
- Operational traffic management plans for:
  - School pick-up / drop-off zones
  - School bus access
  - Use of the Aquatic Centre
  - Major events held within the Auditorium.

The Operational Transport Management Plan would define the roles and responsibilities of St Catherine's School, Waverley Council, parents and carers of students and the various government agencies. The scope of the Operational Transport Management Plan is set out in the Arup report (Chapter 8). It would be prepared prior to the issue of an Occupation Certificate for Stage 1 - RPAC.

### Traffic and transport summary

Arups's executive summary states that:

*A range of behavioural and travel strategies have been identified and considered to address the underlying issues associated with the proposal for new facilities within St. Catherine's School, Waverley.*

*The principle is that the strategies adopted will reduce the overall car travel mode for both staff and students associated with the increased School population and the additional School facilities to a level that results in an improvement to the surrounding road network. A summary of this report has found that:*

- *Both Leichhardt Street and Albion Street experience significant congestion. With the new Macpherson street upgrades and proposed drop-off and pick-up allocations, it is expected that 34-35% less traffic associated with drop-offs and pickups respectively would occur along Leichhardt Street. Similarly 8-29% less traffic would be expected on Albion Street during drop-off and pick-up respectively.*
- *The preferred travel alternatives for students have been identified as carpooling, promoted public transport and a minibus service. The estimated mode shift away from private vehicle users are approximately 142 less cars during the drop-off and pick-up periods. These are based on conservative targets (no reference made to survey data).*
- *The preferred travel alternatives for School staff have been identified as carpooling, subsidised public transport, active transport and encouraging cycling. The estimated mode shift away from private vehicle users are approximately 43 less car users, bringing car staff usage to a total of 115 cars, compared with 150 existing. These are based on conservative targets (no reference made to survey data).*
- *According to recent survey data, mode shift from students currently using private vehicles is favourable, with 42 per cent agreeable to School minibuses and 65 per cent agreeable to carpooling.*
- *According to recent survey data, carpooling is the most favourable form of mode shift for existing private vehicles users (staff) with 40 per cent agreeable to a carpool mode shift.*



- *A range of other travel measures have been considered by the School but found to be unfeasible due to risks imposed on student safety.*
- *A detailed campaign promoting and implementing the plan would be developed by the School.*
- *Surveys have been developed to gain an understanding of the likelihood of adopting the proposed travel strategies. One survey was directed at both students (years 5-12) and parents (children in years K-4), while another was directed at staff of the School.*
- *The School will exercise management strategies to avoid overlap when it is expected that the new Auditorium will be operating at capacity. This means the aquatic centre would not operate during these large events.*
- *During the occurrence of a maximum capacity event (up to 7 times in a year) in the new Auditorium, the surrounding network would have to accommodate an additional 80 car trips. With car parking available within the School for events, approximately 85 cars may park on-street – an additional 5 cars compared to existing maximum capacity events conducted within the DJSC. With reference to the 2014 parking surveys carried out by Arup, it is considered that there will be sufficient supply of parking to cater for events and residents in surrounding streets.*
- *The new Aquatic Centre's timetable is arranged such that most of the external lessons occur outside of peak hours. The new timetable shifts the timeframes of existing activities to occur before morning peak hours (St. Catherine's School students only), hence likely reducing the traffic congestion in the network. The Aquatic Centre is estimated to reduce private vehicle morning peak drop-offs by an additional 82 cars, afternoon pick-ups by 29 cars and commuter peak car trips by 34 cars. 60 additional car trips are expected during the weekend peak.*
- *By adopting a range of strategies and travel alternatives, private car usage can be reduced during morning and afternoon school peak periods. Parking provision would be lower in demand from staff and congestion would be reduced in the surrounding networks.*
- *The number of cars generated with the proposed School population and updated usage profile scenario is significantly less than the existing School population and existing usage profile scenario when all initiatives are implemented. The net outcome would result in a net decrease of cars generated by the School during weekday peak hours in comparison to the existing situation.*
- *As the School has proposed a number of initiatives to reduce car use, this will reduce dependence on surrounding intersections. The result will be an improvement of the overall network performance and less congestion on streets around the School. Level of service of surrounding intersections will generally improve relative to the existing situation.*
- *Approximately 150 car trips are assumed to be currently generated by staff travelling to and from school, which include 56 parked on-site and up to 94 staff cars parked on surrounding streets. With the proposed initiatives and a net increase of 19 parking spaces proposed at completion of the campus Master Plan, this will result in 115 car trips generated by staff, which therefore include 75 parked on site and 40 cars parked on surrounding streets. This results in a net decrease in car parking demand of 54 cars on surrounding streets compared to the existing situation.*
- *A range of collaborative initiatives have been investigated. Drop-off and pick-up locations are proposed to be altered, along with an upgrade on Macpherson Street, addressing*

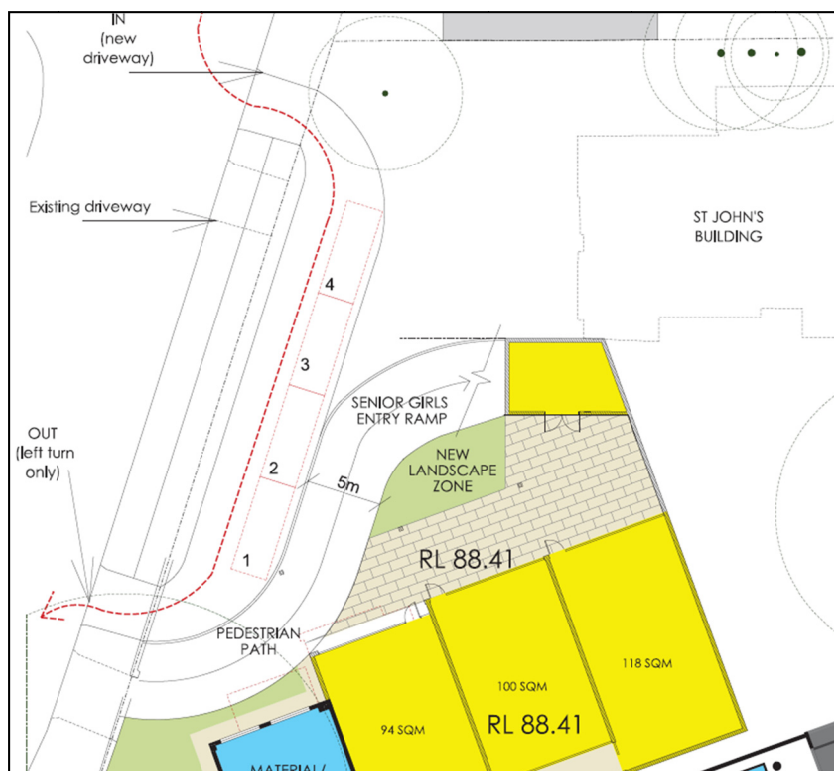
*congestion and safety issues. Alternative travel methods will also be introduced and have been seen as highly favourable from recent survey data from students, parents and staff. The Performing Arts Auditorium will host evening events (6pm onwards) with full capacity attendance up to seven times per year (two events occur biennially) and are not likely to affect on-street parking adversely. A new usage profile for the Aquatic centre encourages students to attend school earlier or stay back at school, improving traffic during peak hours from pick-up and drop-offs. Based on all the initiatives, conservative calculations (survey results show a much higher desire for mode shift as compared to calculations) show an overall reduction in private vehicle usage from the master plan and campus growth, compared to the existing situation. The master plan would ultimately improve the peak hour congestion issues around the School during normal school days.*

### 3.1.2 On-site drop-off and pick-up facility

The ability to provide an off-street pick-up/drop-off facility has been investigated by Mayoh Architects (**Appendix E**). The only possible on-site option was found to be from the gates along Albion Street, as shown on the plan at **Figure 3** and **Appendix E**. Arup has reviewed this off-street pick-up/drop-off facility design and found that:

- Only four bays could be provided
- The constrained nature of the site does not lend itself to any other feasible alternative without significantly impacting on existing built forms
- There is insufficient length within each bay (6.4m) for vehicles to drive forwards in, so independent operation would be hindered (only reverse manoeuvres would be physically possible for bays 1-3)
- Due to limited capacity, a carline would be required with potential queues onto Albion Street and over the pedestrian footpath since queue lengths would not be accommodated within the site
- The vehicles would be required to cross the pedestrian footpath twice to access and exit the site, introducing conflicts with pedestrians on Albion Street, which would include a number of students
- There would be high demand for vehicles from Albion Street (south), which would likely conflict with vehicles from Albion Street (north). This would be difficult to manage and as such, queues are likely to develop for vehicles attempting to turn right into the site.

Given this assessment, Arup and Mayoh Architects concluded that the provision of an off-street pick-up/drop-off facility was not feasible or desirable on the St Catherine's School site.



**Figure 3** – Mayoh Architect's study of on-site pick-up/drop-off facility on Albion Street

### 3.1.3 Provision of on-site parking

#### Staff parking demand

As summarised in **Table 5**:

- At completion of the proposed Campus Master Plan, an additional 19 parking spaces are proposed, bringing the total campus parking to 75 on-site car spaces at completion of the Master Plan
- Existing parking demand associated with staff is approximately 150 cars of which the school currently provides 56 on-site spaces, leaving 94 staff cars parking on surrounding streets
- With the proposed transport strategies, car usage by staff is expected to drop by approximately 35 cars to 115 cars in 2029. On-site parking is to be provided for 75 staff, leaving 40 staff cars parked on the surrounding streets (a reduction of 50 cars when compared with the existing situation).

Given this reduced demand for on-street parking at completion of the Campus Master Plan, Arup concludes that there is no anticipated requirement to provide further on-site parking for staff.

**Table 5 – Existing and proposed staff parking demand**

|  | Staff | Onsite parking | Parking on surrounding streets | Total staff cars |
|--|-------|----------------|--------------------------------|------------------|
| Existing   | 202   | 56             | 94                             | 150              |
| At completion of campus master plan (with transport initiatives) | 212   | 75             | 40                             | 115              |
| Net change   | +10   | +19            | -54 <sup>1</sup>               | -35              |

#### Performing Arts Centre and Aquatic Centre

To address concerns raised in submissions, and as noted above, an amended Indicative Usage Profile for the RPAC/Stage 1 has been prepared (**Appendix D**) including deletion of all external events and scheduling to avoid overlapping of large performing arts events and peak Aquatic Centre activities. St Catherine's has reluctantly deleted external use of the Performing Arts Auditorium to reduce traffic generation and demand for on-street parking.

During large events, on-site car parking for 75 cars may be available and managed under a school generated operational management plan, leaving a total of approximately 85 cars parking on-street, which is an extra 5 cars compared to the existing situation.

Given this is predominately a residential area with parking demand mostly generated by residents, two 2014 parking surveys were carried out by Arup between 7.30pm and 8.00pm (when it is assumed that the majority of residents will have returned home for the night). At this time, it was found that there were more than 200 spaces available on surrounding streets. This would indicate that cars parking for large events commencing earlier in the evening (between 5.30pm-7.00pm) will not likely impact the availability of parking for surrounding residents. Given that the total demand for on-street parking at the events is in the order of 85 cars, there

<sup>1</sup> The future reduction in the number of cars parking on surrounding streets takes into account the reduced number of staff cars resulting from the Transport Strategies (see **Table 4**), the proposed staff increase and the provision of 19 additional on-site parking spaces.

would be sufficient parking supply for both the events and residents returning home for the evening.

To improve safety, a restricted left-in/left-out for the RPAC car park entry is to be considered in the Operational Transport Management Plan.

On weekdays, morning learn to swim classes in the Aquatic Centre which involve external attendees are to be scheduled to start at 9.30am, after the morning school/commuter peak hour (7-9am) and finish by 2.00pm (before the school pm peak). As well as reducing traffic, this period avoids peak resident demand for on-street car parking.

### 3.2 Environmental and residential amenity

#### NSW P&E key issue

6. *Provide elevational shadow diagrams clearly illustrating the existing and proposed level of solar access to north facing properties of 4 Macpherson Street at 30 minute intervals between 9 am and 3 pm during mid-winter*
7. *Review the project specific noise operational criteria established for Leichhardt Lane residences as the amenity criterion has been adopted which is higher than the amenity criterion*

#### 3.2.1 Shadow diagrams

Mayoh Architects have prepared shadow diagrams clearly illustrating the existing and proposed level of solar access to north facing properties of 4 Macpherson Street at 30 minute intervals between 9 am and 3 pm during mid-winter (see **Appendix F**). The diagrams confirm the solar access and overshadowing assessment given at Section 6.4 of the EIS.

#### 3.2.2 Noise

Wilkinson Murray has prepared a revised Acoustic Report (see **Appendix G**). Table 6-2 has been amended to refer to the correct noise criterion.

### 3.3 Campus population

#### NSW P&E key issue

#### 8. *Provide clarification regarding total number of students currently allowed on campus, having regard to previous development consents*

Robinson Urban Planning Pty Ltd completed a comprehensive search of Waverley Council files for the St Catherine's Waverley site. **Table 6** sets out a chronology of the relevant approvals found that addressed campus population. The research shows that the number of students presently allowed on the campus is specified in the following consents:

- DA-250/1984 which includes condition 7 that specifies that the maximum number of students is 850 (250 primary school and 600 secondary school students) with a maximum of 85 staff, including ancillary staff
- DA-140/2011<sup>2</sup> which refers to a Statement of Environmental Effects (SEE) by JBA Planning (March 2011) and a Traffic Report by Parking & Traffic Consultants (18 March 2011) specifying a student population of 930. Despite its reference to the SEE and Traffic Report, the consent also includes Condition 5 which states that there is to be no change to student or staff population.

A copy of the consent for DA-250/1984 and DA-140/2011 (including the accompanying the SEE and Traffic and Parking Assessment for the 2011 consent) are included in **Appendix H**.

Since consent was granted to DA-250/1984 on 4 February 1984, the site area of St Catherine's has been extended to include the following three properties which have a combined area of approximately 1,900m<sup>2</sup> which equates to 9% of the total site area of 22,290m<sup>2</sup>:

- 317 Bronte Road which was purchased in 1994
- 325 Bronte Road which was purchased in 1998
- 319A Bronte Road which was purchased in 2002.

These properties, which have a combined area of approximately 1,900m<sup>2</sup> (9% of the total site area of 22,290m<sup>2</sup>), are not covered by the 850 student population cap set by DA-250/1984.

Notwithstanding the apparent ambiguity regarding the total number of students currently allowed on the campus, application is made as part of the Campus Master Plan to gradually increase the population of St Catherine's to 1,200 students by the year 2029 comprising:

- 450 junior school students
- 750 senior school students.

**Table 7** clarifies the distribution of the projected total population in the Junior and Senior Schools and by class year (showing a minor variation from the EIS estimates).

<sup>2</sup> The Statement of Environmental Effects (SEE) accompanying DA-140/2011 (prepared by JBA Planning and dated March 2011) notes that St Catherine's Waverley has a population of 930 students. This population is also stated at Appendix M of the SEE which comprises a Traffic and Parking Assessment (prepared by Parking & Traffic Consultants and dated 18 March 2011). Condition 1(b) of the consent for DA-140/2011 states that the development must be in accordance with the SEE.

**Table 6 – Chronology of consents that address St Catherine's School campus population**

| Reference   | Development   | Date of determination | Consent Authority | Population  |  |
|-------------|---|-----------------------|-------------------|---|--|
|             |   |                       |                   | Population  | Source   |
| DA-250/1984 | To erect a new school building and refurbish existing buildings           | 4 February 1985       | Waverley Council  | Maximum of 850 students (250 primary school and 600 secondary school) with a maximum of 85 staff, including ancillary staff | Notice of Approval Condition 7 & SEE by John C. H Lawes (27 November 1984)   |
| L-449/1999  | New gymnasium – works only  | 5 February 2000       | Waverley Council  | No change to student population   | SEE by Alexander Tzannes associated (May 1999) & Traffic Report by Maunsell (28 May 1999)  |
| DA-140/2011 | Refurbish administration offices and construction of a 3 storey arts wing | 7 September 2011      | Waverley Council  | 930 students  | Condition 2(b) requires the development to be in accordance with: <ul style="list-style-type: none"> <li>• SEE by JBA Planning (March 2011) which refers to 930 students</li> <li>• Traffic and Parking Assessment by Parking &amp; Traffic Consultants (18 March 2011) which refers to 930 students.</li> </ul> |
|             |   |                       |                   | No change to student or staff population  | Condition 5  |

**Table 7 – Proposed student population**

|                                 | Students per class | Streams per year | No. of years | No. of students | EIS | Variance |
|---------------------------------|--------------------|------------------|--------------|-----------------|-----|----------|
| <b>Junior School Population</b> |                    |                  |              |                 |     |          |
| K – year 4                      | 25                 | 2                | 5            | 250             |     |          |
| Year 5 – 6                      | 25                 | 4                | 2            | 200             |     |          |
| Junior school total             |                    |                  |              | 450             | 456 | -6       |
| <b>Senior School Population</b> |                    |                  |              |                 |     |          |
| Year 7 – 11                     | 25                 | 5                | 5            | 625             |     |          |
| Year 12                         | 25                 | 5                | 1            | 125             |     |          |
| Senior school total             |                    |                  |              | 750             | 744 | +6       |
| <b>Total student population</b> |                    |                  |              | <b>1,200</b>    |     |          |



## 4.0 Other issues

As noted above, the tables at **Appendix B** summarise and respond to issues raised in the submissions. The following points provide a summary response to the issues raised:

### 4.1 Traffic, parking and transport management

- **Reduced traffic:** With the proposed transport strategies and amended usage profile described in Section 3.0, the number of private cars generated at completion of the Campus Master Plan (2029) is significantly less than existing reducing traffic generation, as summarised below:
  - A reduction of 139 cars in the morning school/commuter peak (7.30-8.30am)
  - A reduction of 88 cars in the school peak (2.30-3.30pm)
  - A reduction of 69 cars in the commuter peak (5.00-6.00pm).
- **Reduced demand for on-street car parking:** 94 existing staff cars rely on on-street parking. With the proposed transport strategies and amended usage profile, the number of staff cars parking on local streets will reduce to 40 cars at completion of Campus Master Plan (a reduction of 54 cars). Given this reduction, Arup conclude that the proposal to provide 19 additional onsite car parking spaces is adequate.
- **Use of Performing Arts Auditorium:** An amended usage profile has been prepared which deletes external use of the Performing Arts Auditorium to reduce traffic generation and demand for on-street parking. St Catherine's made this amendment to address community, Council and agency concerns; but did so reluctantly as the school would welcome wider community use of the facilities on its campus. The new profile also schedules events to avoid overlaps with peak Aquatic Centre use. 75 on-site spaces will be made available to school event attendants to accommodate parking demand when the new Auditorium is scheduled to operate at capacity.
- **Aquatic Centre:** External weekday use will be scheduled for 9.30am to 2.00pm, to avoid traffic peaks and when there is less resident demand for parking. On-site car parking beneath the existing DJSC and proposed RPAC/Stage 1 is to be made available for Aquatic Centre use on the weekend.
- **Operational Traffic Management Plan:** A detailed Operational Traffic Management Plan will be prepared as detailed at Section 3.1.1 above.
- **Level of service:** Arup advises that the Campus Master Plan would not result in a reduction in the Level of Service at the Macpherson/Albion Street and Macpherson/Leichhardt Street intersections.
- **On-site drop-off/pick-up facility:** Mayoh Architects and Arup investigated the provision of an on-site drop-off/pick-up facility and concluded that it was not feasible or desirable (see Section 3.1.2 above).
- **Cumulative impacts:** With the proposed transport strategies and amended usage profile described above in Section 3.0, the number of private cars generated at completion of the Campus Master Plan (in 2029) is significantly less than existing, reducing traffic generation and on-street parking demand. Given this, the school need not address cumulative impacts.

### 4.2 Tree removal and green space

Waverley Council in its submission requested retention of Tree 1, a Moreton Bay Fig that occupies part of the RPAC/Stage 1 building footprint and which is proposed to be removed. This request is not reasonable as consent to remove this tree has already been granted when



Waverley Council approved DA-250/1984 which included Stage 2 of the Dame Joan Sutherland Centre (DJSC).

In any event, the Campus Master Plan has been designed to enable retention of trees recommended for retention in the Arboricultural Assessment Report (EIS, Appendix E).

The EIS also notes that the Campus Master Plan results in a small reduction in deep soil landscaping (-2%/-421m<sup>2</sup>) and retains the area of playground (27% existing and 27.5% proposed (see EIS, Table 5 on p. 35).

#### 4.3 Bulk, scale, height and overdevelopment

The built form and urban design of the RPAC are addressed in the EIS, Section 4.2, p. 41.

The proposed height and FSR non-compliances are addressed in the cl. 4.6 written requests in the EIS, Appendix T.

#### 4.4 Intensification of use and population

- Existing approved population: Section 3.3 considers existing consents and notes that two consents address population. The proposed transport strategies and amended usage profile will ensure that the number of private cars generated at completion of the Campus Master Plan (in 2029) is significantly less than existing reducing traffic generation and on-street parking demand.
- Proposed population: The Demographic Assessment by Urbis (EIS, Appendix U) shows that additional school places are required to meet the projected growth in school aged children in the catchment to 2031 (an average of 167 students for each existing school or 16.6 new primary schools and 5.5 new high schools). The proposed gradual increase in students at St Catherine's (to 1,200 students in 2029) will accommodate some of this demand.
- Use of Performing Arts Auditorium and Aquatic Centre: See Section 3.1 above.

#### 4.5 Residential amenity and overshadowing of 4 Macpherson Street

The EIS includes a detailed assessment of residential impacts including solar access/overshadowing, views/outlook, privacy, noise and light spill (EIS sections 6.4, 6.5, 6.6 & 6.9). Additionally, this Submissions Report proposes a further mitigation measure that introduces a 9.30pm curfew for the use and lighting of the outdoor terrace to the RPAC to protect residential amenity at night (see **Table 8**).

Additional shadow diagrams have been prepared confirming the EIS finding that the proposal satisfies the Waverley DCP 2012 solar access control as north facing windows and balconies in the apartment building at 4 Macpherson Street will receive more than 5 hours of solar access between 9.00am and 3.00pm on June 21, well in excess of the 3 hour requirement set by the DCP and consistent with the SEPP 65/Residential Flat Design Code rule of thumb for solar access.

#### 4.6 Construction

Construction work will be carried out in accordance with the:

- Construction Management Plan, by ADCO (EIS, Appendix G)
- Construction Traffic Management Plan, by Arup (EIS, Appendix I) (Note, busing workers in from Bondi Junction is not proposed or realistic)
- Construction and Operational Noise Report, by Wilkinson Murray (EIS, Appendix K).

## 5.0 Final mitigation measures

The collective measures required to mitigate the impacts associated with the proposal are detailed in **Table 8** below. The measures include those stated in the EIS with new measures proposed to respond to issues raised in submissions (new measures not shown in the EIS are highlighted in red).

**Table 8 – Final mitigation measures**

| Mitigation measures  |
|--|
| <b>Residential amenity</b>   |
| <p><b>Privacy</b></p> <ul style="list-style-type: none"> <li>Buildings (existing and proposed) are internally orientated to the central green space used for sport and play and/or are orientated to the surrounding streets</li> <li>The eastern elevation of the Aquatic Centre incorporates fixed windows with obscure glazing that are located a level below any residential unit floor level</li> <li>The eastern elevation of the proposed Auditorium and Multi-Purpose Hall (which coincides with the adjoining apartments); does not incorporate any clear/open-able windows or doors</li> <li>Proposed entries and break out terraces are centrally located between the proposed RPAC and existing DJSC</li> <li>The eastern side setback area will be out of bounds for students and access will be available for maintenance only.</li> </ul> |
| <p><b>Light spill</b></p> <ul style="list-style-type: none"> <li>Automatic block out blinds will be installed to the Aquatic Centre windows in the east elevation (facing bedrooms at 4 Macpherson Street) to curtail light nuisance for the adjoining residents</li> <li>Use and lighting of the RPAC outdoor terrace is to cease at 9.30pm.</li> </ul>   |
| <p><b>Views/outlook</b></p> <ul style="list-style-type: none"> <li>RPAC is setback 4m to the eastern side boundary (at the ground level), stepping to 5.295m and 8.2m to the fly tower</li> <li>Vertical screen planting is proposed to the eastern elevation of the proposed RPAC, planted with a vigorous climber such as Solandra Maxima and cascading plants such as Carpbrotus</li> <li>Palm planting to eastern side boundary is proposed with a lush textured understorey planting and a green wall to the upper level of RPAC. The level of the new planting will maximise the amenity offered to 4 Macpherson Street so that the setback area presents as an extension of their property.</li> </ul>  |
| <p><b>Noise and vibration</b></p> <ul style="list-style-type: none"> <li>Implement the recommendations set out in the Construction &amp; Operational Noise Report, by Wilkinson Murray Pty Limited (Report No. 14066 Version C April 2014, Submissions Report, <b>Appendix G</b>). Recommendations include: <ul style="list-style-type: none"> <li>Preparation of a Site Construction Environmental Management Plan to manage noise and vibration from construction activities</li> <li>Design of the proposed Stage 1 – RPAC to meet the most stringent site specific noise criteria during the proposed hours of operation.</li> </ul> </li> </ul>   |
| <b>Landscaping and tree removal/replacement/protection</b>   |
| <ul style="list-style-type: none"> <li>Implement the Landscape Master Plan by SILK Consulting Landscape Architects at each stage of the Campus Master Plan (EIS, <b>Appendix F</b>)</li> <li>Implement the Stage 1 - Landscape Plan by SILK Consulting Landscape Architects as part of the Stage 1 works (EIS, <b>Appendix F</b>)</li> <li>Replace the four Macpherson Street trees (T22-25) to be removed to enable safe construction of proposed Stage 1 -</li> </ul>  |

### Mitigation measures

RPAC with similar species

- Implement the tree protection measures set out in the Arboricultural Assessment Report, by TALC (6 August 2014) (**Appendix E** to the EIS).

### Traffic, parking and accessibility

- On-site events are to be timetabled to minimise overlapping of activities **and peak Aquatic Centre usage**
- ~~Existing parking under the DJSC and the proposed parking under the RPAC Building (47 spaces in total) will be made available for visitor use in the evenings and at weekends for major events~~
- At completion of the Campus Master Plan, on-site parking will be increased from 56 to 75 spaces (+ 19 spaces)
- 15 bicycling parking spaces are to be provided as part of the Campus Master Plan
- Service vehicles will continue to access the site off Albion Street (service and construction vehicles will not use Leichhardt Lane)
- Implement the recommended transport actions in relation to the following (as set out in the Traffic and Transport Assessment by Arup (18 August 2014) (EIS, **Appendix I**)):
  - Rationalisation of the “No Parking” signposting
  - Macpherson Street Drop-off /pick-up school zone
  - Leichhardt Street Drop-off /pick-up school zone
  - Management of school zones
  - Junior student registration scheme
  - New parking under the RPAC Building
  - Work Place Travel Plan
- On-site car parking (up to 75 spaces) is to be made available for attendants at events in the Performing Arts Auditorium when the Auditorium is operating at capacity
- On-site car parking (up to 47 spaces) is to be made available for Aquatic Centre use on the weekend.

### Transport

Implement the recommendations in the report titled *St. Catherine's School Travel Strategies - Transport Report* (15 June 215) (Submissions Report, **Appendix C**) including the following behavioural and travel strategies to reduce student and staff generated private car usage:

- For students: Carpooling, promoted public transport and a minibus service for students
- For staff: Carpooling, subsidised public transport, active transport and encouraging cycling.

### Traffic and Transport Management

- Prepare an Operational Transport Management Plan in accordance with the report titled *St. Catherine's School Travel Strategies - Transport Report* (15 June 215) (Submissions Report, **Appendix C**) which would address travel strategies, monitoring and reporting and operational traffic management. The Operational Transport Management Plan is to be prepared prior to the issue of an Occupational Certification for Stage 1 – RPAC.
- Restricting car park entry/exit to the RPAC driveway on Macpherson Street to left-in and left out is to be considered in the Operational Transport Management Plan.

### Events, hours of operation and management

- New and existing events on the site will be finished by 9.30pm (except for the annual boarders dance with finishes as 10.00pm – existing and proposed)
- ~~External~~ Events and activities will comply with the Plan of Management included in the EIS (Appendix X to the EIS)

### Mitigation measures

- The Aquatic Centre will operate between the following hours:
  - Weekdays: 6.00am to 8.00pm
  - Weekends: 8.00am to 6.00pm
- The Aquatic Centre, including learn to swim classes, will be fully operated and management by St Catherine's School.
- Events on the site are to be generally in accordance with the *St Catherine's School – Indicative Usage Profile for the RPAC/Stage 1* (June 2015 - Rev 12 included in Submissions Report, **Appendix D**)
- There is to be no external usage of the Performing Arts Auditorium
- Timetabling of Aquatic Centre usage as follows:
  - Before School activities are to be offered to St. Catherine's School girls only to assist with distribution of arrival times
  - Learn to swim lessons are to be scheduled between 9.30am and 2.00pm to avoid school and commuter peaks and to coincide with the period of low resident demand for on-street parking
  - First activity within the Aquatic Centre following completion of a typical School day is to be offered to St. Catherine's School girls only to distribute afternoon pick up times
- Staggered finish times are to be introduced for students in different school years to achieve operational efficiency (pick-up time for Years 5-6 is to occur from 3.00pm to 3.15pm)
- A shuttle bus service for attendants to events in the Performing Arts Auditorium, as mentioned in the EIS, is no longer proposed.

### ESD

- Implement ESD initiatives, selected from those listed in the ESD Report by Cundall (EIS, **Appendix J**), to achieve equivalent to a minimum four star Green Star rating.

### Social and economic

- To meet the projected demand for additional school places in the catchment, the Campus Master Plan provides the potential for up to:
  - 230 additional students to be introduced progressively over a 15 year period (ie. total 1,200)
  - 10 additional employees (approximately).
- Supporting the continued successful operation of Australia's oldest independent school for girls
- Improving educational facilities for existing and future St Catherine's School students and staff
- Providing opportunities for use of the RPAC by members of the extended school community (including other schools in the catchment)
- Ongoing employment within the school (+ 10 jobs) plus construction jobs (94 construction jobs for Stage 1 RPAC) and expenditure.

### Heritage and archaeology

- Implement the recommendations of the Statement of Heritage Impact, by NBRS + Partners (EIS, **Appendix D**) including archival recording of buildings on the site to be demolished
- Implement the recommendations of the Aboriginal and Historical Archaeological Assessment, Statement of Heritage Impact by Austral Archaeology (EIS, **Appendix L**) including the requirement to cease work in the unlikely event that historical archaeological relics or Aboriginal archaeological material or deposits are encountered.

### BCA and accessibility

- Implement the recommendations of the BCA Compliance Report by AE&D (EIS, **Appendix W**)

#### Mitigation measures

- Implement the recommendations of the two Accessibility Reports by Access Australia (in relation to existing conditions, the Campus Master Plan and Stage 1 RPAC) (EIS, **Appendix V**)
- Install new lifts are proposed, including three in the RPAC and one in the JBH site new build, to facilitate accessibility throughout the site.

#### Geotechnical considerations (including protection of adjoining buildings)

- Implement the recommendations of the Geotechnical Investigation has been prepared by JK Geotechnics (**Appendix P** of the EIS) to prevent any damage or destabilisation of buildings on and near the site during demolition, excavation and construction of Stage 1 – RPAC
- Recommendations include the preparation of detailed dilapidation reports on the neighbouring building and structures to the east (4 Macpherson Street) and the adjoining school buildings prior to the commencement of any demolition or excavation for the RPAC.

#### CPTED

- CPTED measures will be adopted in accordance with **Table 11** of the EIS.

#### Stormwater, sediment and erosion control

- Implement the Civil Engineering Report and Plans by Henry & Hymas a that form part of Stage 1 – RPAC (EIS, **Appendix M**) including OSD and a rainwater tanks sized to comply with Waverley Council's 'Water Management Technical Guidelines' (Dec 2007).

#### Services

- Modify or extend existing utilities to the site as recommended by Woods & Grieve (Electrical and Hydraulic Services Brief (**Appendix N** of the EIS)) and Henry & Hymas (Civil Engineering Report and Plans (EIS, **Appendix M**)).

#### Waste

- Implement the recommendations of the Operational Waste Management Plan by Waste Audit (EIS, **Appendix O**) including waste management practices to maximise recycling initiatives and ensure the effective management of waste.

#### Construction management

To minimise the adverse impacts of construction, work will be carried out in accordance with the:

- Construction Management Plan, by ADCO (EIS, **Appendix G**)
- Construction Traffic Management Plan, by Arup (EIS, **Appendix I**)
- Construction and Operational Noise Report, by Wilkinson Murray (EIS, **Appendix K**).



## Appendix A

NSW P&E letter to St Catherine's School (19 December 2014)





## Appendix B

Submissions Tables, by Robinson Urban Planning Pty Ltd



## Appendix C

St. Catherine's School Travel Strategies - Transport Report, by Arup (15 June 2015)



## Appendix D

Amended St Catherine's School – Indicative Usage Profile (June 2015 - Rev 12)



## Appendix E

Albion Street Pick-up/Drop-off plan, by Mayoh Architects (P.100.P1)





## Appendix F

Additional shadow diagrams, by Mayoh Architects (A.MP.707.1A and A.MP.707B)



## Appendix G

St Catherine's School Campus Master Plan & Stage 1 - Construction & Operational  
Noise Report by Wilkinson Murray Pty Limited (Report No. 14066 Version C dated  
April 2014)



## Appendix H

DA-250/1984 and DA-140/2011 (including the accompanying the Statement of Environmental Effects and Traffic and Parking Assessment for the later consent)

