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File Number: SSD 7610  
Our Ref: R/2016/15/A

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Dear David,

### Development Application for the Inner Sydney High School (SSD 7610)

I refer to the letter dated 19 June 2017 which invites the City of Sydney ("the City") to comment on the State Significant Development (SSD) application.

The continued use of the complex as a school and reuse of the heritage buildings for education purposes is considered to be a positive outcome for Sydney. However, the City has reviewed the development application and has **strong concerns with the application** in its current form. An assessment of the proposal is included within **Attachment A** to this letter, which recommends a number of modifications and additional information requirements to be provided to enable a full assessment and support of the proposal.

In its current form, the proposal is considered to have impacts on the heritage items contained within the site, which is contrary to the objectives of Clause 5.10 of the Sydney Local Environment Plan 2012 (SLEP 2012), which are required to be considered pursuant to Clause 5.12 of the SLEP 2012. Clause 5.10 requires the consideration of the following objectives:

- (a) to conserve the environmental heritage of the City of Sydney,
- (b) to conserve the heritage significance of heritage items and heritage conservation areas, including associated fabric, settings and views,
- (c) to conserve archaeological sites,
- (d) to conserve Aboriginal objects and Aboriginal places of heritage significance.

Clause 5.10 (4) requires that *'the consent authority must, before granting consent under this clause in respect of a heritage item or heritage conservation area, consider the effect of the proposed development on the heritage significance of the item or area concerned.'*

The other significant concern, is that the proposed development of a 13 storey structure, will be built across two flood paths and will not comply with the City's

“Interim Floodplain Management Policy”. The building is proposed to have a floor level and the basement below the required FPL. In addition, it is proposed to divert the overland flow path to the park, which may create an unsafe flood hazard within the park if not managed properly.

There are also significant concerns regarding view loss from neighbouring buildings, which have not been sufficiently considered within the application, particularly from the apartments on Chalmers Street, with not only their park views lost, but also their district views. The applicant has attempted to address the view loss tests contained within the *Tenacity Consulting v Warringah Council [2004] NSWLEC 140* Land and Environment Court judgement; however, this is not considered to be sufficient to justify the nature and extent of the view loss involved.

In addition to the above, there are a number of other key issues that are required to be addressed and or clarified, including:

- Insufficient details regarding the design, including materials;
- Adequate fire egress from the tower building for students and staff;
- Natural ventilation and noise requirements;
- Wind impacts;
- Internal servicing of the site (lifts);
- Weather protection;
- Impacts and clarification of the proposed shadow on the surrounding area;
- Interface between the private school and the public park;
- Park usage;
- Traffic impacts;
- Bicycle usage and parking;
- Parking and servicing and loading of the site; and
- ESD requirements.

Notwithstanding the above, the application significantly exceeds the height and FSR development standards for the site as detailed in the SLEP 2012 and that, although it is able to do so by virtue of cl 5.12, this is all the more reason that the proposal should ensure that its impacts in relation to heritage, view loss, traffic, ESD, amenity and impact on the park are above and beyond what the controls might require.

Should you wish to speak with a Council officer about the above, please contact Michael Soo, Area Planning Manager – Major Projects, on 9265 9333 or at [msoo@cityofsydney.nsw.gov.au](mailto:msoo@cityofsydney.nsw.gov.au) or Graham Jahn, Director City Planning on 9265 9945 or at [gjahn@cityofsydney.nsw.gov.au](mailto:gjahn@cityofsydney.nsw.gov.au).

Yours sincerely,



**Graham Jahn AM**  
**Director**  
 City Planning | Development | Transport

## ATTACHMENT A

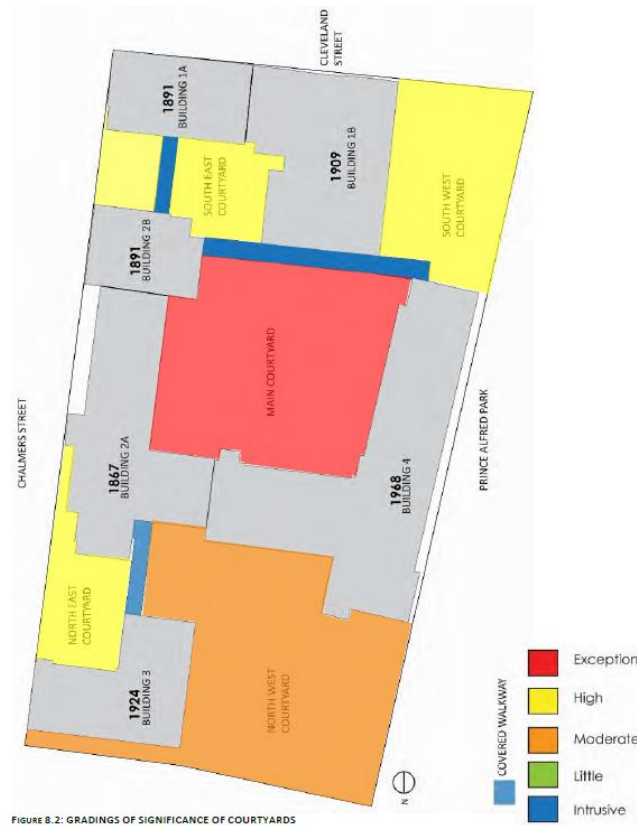
### Heritage

#### Heritage fabric and significance

The SLEP heritage listing of the site comprises “former Cleveland Street Public School buildings including interiors, grounds and fence plinth”. The heritage inventory of the item states the significance of the complex: *‘The former Cleveland Street Public School is aesthetically significant as a group of educational buildings which provide physical evidence of the importance the government of the time placed on public education. The earlier buildings form a picturesque example of a Victorian Free Gothic school complex which retains much of its original character externally. It is historically significant as the first of the ‘palace’ schools designed by G A Mansfield which were later to give rise to criticism. The school is socially significant through its long association with education in the area, where it has served for many decades as a centre of public education and culture.’*

The Conservation Management Plan (CMP) by OCP has a detailed investigation on the history and existing fabric of the school. The significant components are identified on the following diagrams:





The significance assessment and conservation policies by the CMP are considered appropriate and supportable.

#### Addition of a new high-rise building

A high-rise building will replace the 1968 building (Building 4), which is identified of low significance. Due to its scale and height, the building has potential to impact on the retained school buildings, on the settings of the park and adjacent conservation areas.

#### Impact on the park

The school has two sides facing Prince Alfred Park and the park is a significant setting of the school. Historically the school used the park for its activities and acquired part of the park land for its expansion.

The form and scale of the existing school buildings are complementary to the history and character of the park. It is one of the three historic building groups located at the three corners of the triangle-shaped park. The other two establishments are the Greek Orthodox Church at 242 Cleveland St and the Railway Institute at the south-western and northern corners of the park respectively. The classic forms of those buildings and their 2-3 storey scale blend very well with the landscaping of the park and form significant settings of the park. However, the visual links between the three complexes appears to be weak due to the large separation distances and large trees in the park. The new building will be obviously visible from the eastern side of the Orthodox Church. The trees between the school and church will mitigate the new building's visual prominence.

The proposed erection of the 14 storey building in the school will impact on the setting of the park. The visual impact is caused by both the height and bulk. The new building will be the only high rise adjoining the park. From most vantage points

in the park, the tall building will appear on top of the surrounding trees. While, the building is not conspicuous from the northern section of the park, it is highly visible from the southern part, in particular the land on the southern side of the swimming pool. The visual dominance of the new building becomes apparent on the south-east corner of the park, south of the pool and east of mature trees running along north-south, as shown below. The visual impact on the “thoroughfare” of the park, the main path running north-south along the sport courts, appears acceptable, although this is reliant on the ongoing existence of the mature trees in the park.



**Major visual impact: red line area—the park area where major impact may be perceived; Blue line—affected streetscape**

It appears that the park’s Masterplan and Heritage Inventory do not make specific recommendations of redevelopment constraints on the adjacent sites. The considerations on the protection of the settings of the park (i.e. neighbouring sites) seem to be rather confined and have to rely on other planning controls.

SHI for the park states that: *‘The relationship of the park with surrounding streets, the main vistas to the city skyline should not be altered.’*

*‘Its continuing existence shows a longstanding awareness in the community of the need to set aside designated green areas that remain undeveloped. It is the site of Sydney’s first agricultural show and Inter-colonial Exhibition, in important link with growing national pride in the technological and agricultural achievements of the colony. Continuity of use and layout of the gardens - the alignments of paths and planted areas have remained remarkably consistent over time and thus the layout of the park has remained unchanged since its inception’.*

*‘Cultural significance is high, this significance is mainly associative’.*

A slender and simpler form of the tower, along with a decrease of the storeys at the podium, would reduce its visual impact to the setting of the park. While the

proposed variations of external finishes on the tower and podium help in breaking up their scale, they also create complexity in appearance and a possible visual clutter. The complex form of the building overall may be considered to have certain detracting from the landscaping setting in the vicinity and the simple and solid built environment at the distance.

#### Impact on the retained school buildings

It appears unavoidable that the desired visual curtilage of the heritage buildings have to be intruded. However, it is considered that some aspects of the impact could be reduced and significant vistas largely maintained by the design.

No visual analyses are tabled in the application to demonstrate the visual impact of the new building on the retained heritage buildings of the school. Important views that should be tested, include the views from the opposite footpath of Chalmers Street and from the courtyards of the school. A preliminary assessment finds that both the tower and upper storeys of the podium of the new building will appear on the backdrop of the heritage buildings' roofscape when one stands on the eastern side of Chalmers St looking west. The significant feature of the school, the spire of the 1867 building (Building 2A) is affected in views. The new building will also overwhelmingly appear on the western side of the north-east courtyard (Figure 1).

An ease of impact on the roofscape of the heritage buildings should be considered after the visual analyses.

The Main Courtyard is identified as being of **exceptional significance**. This courtyard has the significant views towards Building 1 and Building 2. It is the most significant space defining the historic school campus. Retention of the courtyard and its views towards Building 1 and 2 appear to be endeavoured by the design, where a three storey tall void area (grid 1-3 and grid c-d) is created at the lower levels of the south-east corner of the new building. However, part of the northern façade of Building 1B is obscured. This could be avoided if a minor change to the design is made.

The new building has relatively high bulk when compared to the heritage buildings in the campus. The site is too small to incorporate such a large building. The dramatic change of building scale and mass generally requires a large separation from the existing small scale buildings. The proximity of the new building to heritage buildings is considered the main contributor to its imposing impact. Though this proximity seems unavoidable, certain design measures could be adopted to lessen the impact should the present bulk and scale of the proposal be maintained.

The new building abuts the three existing buildings directly. The links needed between the new buildings and those buildings involve certain demolitions and alterations to their western or northern facades. The proposed connections of the new building and heritage buildings are not duly respectful to the heritage building and some improvements may be made to better the relationship of the new building and the heritage buildings.

For instance, an increase of the gaps between the old and new and weakening the joints or links between the buildings will considerably reduce the new building's direct impact on the three heritage buildings. The larger gap and reduced links will be able to expose the heritage facades which are otherwise obscured, and maintain the intact forms and appearance of the heritage buildings from the western courtyards.

### Impact on adjacent heritage items and conservation areas

The new building has large setbacks from Chalmers Street and Cleveland Street. The wide streets and mature trees along Cleveland Street mitigate its impact on the buildings on the southern side of Cleveland Street. Similarly the buildings on the eastern side of Chalmers Street are separated by the street and the retained school buildings. The impact of the building on the two streets appears not direct or conspicuous (except to the retained school buildings). The new building is considered to have an acceptable impact on the two adjacent conservation areas and on the adjacent heritage items on the southern side of Cleveland Street and eastern side of Chalmers Street.

### Reuse and alteration to existing heritage school buildings/grounds

The proposal also involves removal of the bridge walkways linking the buildings. Those links were made at later dates and are considered detracting to the significance of the historic school. The construction of the new building provide an opportunity to overhaul and reorganise the circulation of the campus.

A new entry will be made on Chalmers Street between Building 3 and 2. The new entry will affect the North-eastern Courtyard which is identified of high significance by the CMP. Some rooms are proposed under the new entry, walk-way and planters. The south-facing windows at the lower-ground level are affected. The main entry on Chalmers Street is supported, as it follows the original design concept of the school and is consistent with council's DCP Local Character Statement.

However, the lower level rooms are considered to have adverse impact on the intactness of the courtyard and integrity of Building C. The entry and walkway should be constructed in a reversible manner and the courtyard be largely retained.

The openings left by the removal of the bridge walkways are proposed to be retained and glazed. This is not supported. As the heritage buildings are highly intact except those later interventions and the facade containing those openings are highly visible from the streets, the original openings and joinery should be reinstated.

Existing palisade fence on the southern boundary is not highlighted in the plans and HIS report. The fence is the remnant of the old fence of Prince Alfred Park. It is to be retained and incorporated in the design.

### Archaeological potential

Both the Aboriginal archaeology and European archaeology are assessed. The first assessment confirms the site (as well as the Prince Alfred Park) has the potential to contain Aboriginal objects and consultation with the Aboriginal community and an archaeological testing is recommended. The latter one assesses the site may contain the foundations of the 1855 school and parsonage buildings and a c1865 brick oviform drain and early creek line. It concludes the remains will have local heritage significance. The footings of the 1855 buildings are barely affected by the current proposal. Only an archaeological monitoring is recommended. It is understood that the two reports will be reviewed and commented by NSW Heritage Office.

The 1860s oviform drain contained within the site and the park is considered by the archaeological assessment report. It regards the drain as a work rather than a relic. No action is considered to the proposed removal of the oviform drain.

The oviform drain is not listed by Sydney Water, but it is understood that the drain is owned and managed by Sydney Water. It is understood that the oviform needs to be demolished due to the proposed new building's basement playground. The demolition may affect the use of the drain (stormwater line).

It is considered that the oviform drain has considerable significance as the evidence of the early creek flowing through the park and the landscape change during the history. Unlike the footings of the 1855 buildings, the existence of the drain is likely certain. However, the significance of the drain is a matter for the consideration of the NSW Heritage Branch and Sydney Water. It is noted the drain is not shown on the site survey plan. Nor is the details of the brick oviform.

### Heritage Recommendations

It is considered that some aspects of the design may be improved to minimise the impact on the retained heritage buildings.

- Consideration should be given to reducing the new building's visual impact on the setting of the park by simplifying the building form and material palette of the tower section;
- Visual analyses should be conducted to understand the visual impact of the new building on the retained heritage buildings. The key vantage points need to be tested including on the opposite Chalmers Street footpath and opposite of the northeast courtyards. The new building's impact on the roofscape and the spire of Building 2 is to be further assessed. In addition, there should be a view analysis of the modified Main Courtyard (in particularly the views from courtyard to Building 2 and 1). The findings of these analyses should be considered to guide for revising or refining the new building design;
- The gaps between the new building and heritage buildings should be increased so that the independence and architectural integrity of the heritage buildings are respected. It is estimated that the gap should be increased to no less than 3m. It is advised that the eastern edge of the Ground Floor and First Floor is to be set back and to match the edge of the Lower Ground Floor. In addition, the widths of the links between the new building and the three heritage buildings are to be reduced (to approximately no more than 2.5m). These measures will enable the corners of the heritage buildings to be fully exposed and the changes/interventions to the northern façade of Building 1B and western façade of Building 3 minimised;
- The main entry and path from Chalmers Street should be redesigned in a bridge form. The courtyard area under the bridge is retained as an open space, so that the impact and intervention to the northeast courtyard and Building 3 is minimised;
- The exteriors of Building 1, 2 and 3 should be fully restored to reinstate their original appearance. The openings left by the removal of the walkway bridges and other blocked or modified openings are to be reinstated to the original state;
- The palisade fence and stone plinth/pillars on the west side of the south-west courtyard should be retained and incorporated in the design. They are the remnant of the old fence of Prince Alfred Park;

- The curvilinear form at Ground and First Floors are considered to mitigate the new building's impact on the heritage buildings. It may be appropriate that this design language is extended to level 2-5, in particular the four corners. The curved corners probably will soften the new building's impact to the roofs of the heritage buildings.

## **Urban Design and Design Excellence**

### **Overshadowing**

- There is a discrepancy in the material provided in relation to the shadows cast by the proposal. The *Shadow Impact Analysis* drawing on page 18 of the Architectural Design Statement (ADS) does not match the shadows shown on page 19. The City has had to assume that the analysis diagram would show 21 June.
- The following is the City's analysis of both diagrams shown on pages 18 and 19, which are of interest:
  - o The proposal creates a minor shadow to Prince Alfred Park between 9-11am.
  - o Larger properties located to the east of the site which have west facing openings will be impacted by the proposal. These properties rely on solar access from 1-3pm (we have discounted the midday sun angle as it is too oblique to the facade to be of any substantial effect.) These properties include:
    - 204-214 Chalmers Street (impacts to 12 apartments facing west onto Chalmers Street and communal roof terrace)
    - 188 Chalmers Street (potential impacts to those apartments located to the south of the Chalmers Street facade at 3pm).
- The plan view shadow diagrams do not provide sufficient detail to quantify the impact to 204-214 and 188 Chalmers Street.
- In consideration of the above, clarification should be provided as to which diagram is accurate for 21 June and this information placed on public exhibition for comment.
- In addition, the application includes the summary statement on page 18 about overshadowing impacts: *All properties affected by the overshadowing received at a minimum 4 hours of sunlight during the core hours of 9am -3pm.* This statement is not supported by detailed information for individual properties demonstrating compliance with the DCP controls.
- To complete the assessment, additional material, in the form of detail views from the sun should be provided for the west facing apartments in both 204-214 and 188 Chalmers Street. Each apartment must be counted individually and the analysis should provide both existing and proposed hours of solar access to living room windows, private and communal open space.

### **Bulk and Scale and View Loss**

The impact of the bulk is greatest where views across the school to the park and district from 184, 188 and 204-214 Chalmers Street are lost, which is of concern.

The applicant has attempted to address the view loss tests contained within the *Tenacity Consulting v Warringah Council [2004] NSWLEC 140* Land and

Environment Court judgement which requires assessment against the various principles, including:

- *What views will be affected?*
- *Where views are obtained?*
- *Extent of the impact?*
- *Reasonableness of the impact?*

However, while they have identified that there will be view loss of the park, which is considered to be significant from the above properties, they have not stated that there will also be district view loss.

The significant height of the tower, which is contrary to the Sydney LEP 2012 controls, directly relate to this significant view loss.

Further consideration and testing is required to be provided for further assessment and to understand whether this loss is reasonable. This should include obtaining access to the impacted properties to undertake a full view loss analysis.

#### Materiality and Facades

- A physical detail materials samples board is required. In addition, detail part elevations may be required to clearly communicate the design intent.
- In general, the Facade Types Legend on the elevations and the detailed submission on pages 41-48 of the ADS does not provide adequate information to clearly communicate the proposed materials, finishes and colours for all components of the facade, as follows:
  - FT02: Additional consideration should be given to reducing solar gain to the east and west elevations of the stairwell facade, currently proposed to be fully glazed with high performance glazing and no external sun control devices.
  - FT03b: The material submitted is extensive, but does not specify a colour or finish to the perforated aluminium shading screens. Reflectivity is a consideration for these large areas of the facade.
  - FT04a: A brick selection is required. No detail is provided on the finish or colour of the aluminium glazing framing or the aluminium blades.
  - FT05: No detail is provided on the finish or colour to the spandrel strips, off-form concrete, and aluminium framing. Further detail should be provided to confirm that the aluminium extrusion proposed is capable of being curved to the extent shown in the proposal within the limitations of the project budget. If this is not capable of being achieved, a suitable alternative should be provided prior to completion of the assessment to avoid an inferior substitution at later stages. A segmented blade would not achieve the 'organic' design intent for the lower levels of the buildings.
- As this part of the building forms the interface with the park, confirmation should be provided that the facade system proposed is capable of providing a highly durable and robust surface given its exposure to the public domain. It is preferable to resolve any anticipated issues now, to ensure that retrospective ad hoc treatments to mitigate security, visibility, or durability issues are not required.
- Section markers should be added to the general arrangement plans.

### Natural Ventilation

- Part 13 of ADS notes that natural ventilation cannot be provided to teaching spaces in order to meet the Department of Education's 35dB internal noise criteria. The city has accessed the Department's *Educational Facilities Standards and Guidelines* document, which confirms this requirement for various types of educational spaces, but also lists natural ventilation as a mandatory requirement to **all** classrooms. Refer to **Attachment B** for an excerpt from Section *DG05 Air Movement* below:
- Reference to natural ventilation in schools is also specified in the draft Education SEPP 2017 (Schedule 4) and NSW Government Architect's Draft Better Schools Design Guide (Principle 4 Health and Safety and Principle 5 Amenity).
- Please note that the Sustainability Report at Appendix S states that the mechanical ventilation system will target a 50% increase in outdoor air intake above the AS minimum requirement. This does not equate to natural ventilation.

### Wind Impacts

- The CPP Wind Report states that it is 'opinion based', and therefore is not based on wind tunnel testing for the subject proposal, and instead refers to results of wind tunnel testing at nearby sites.
- The report makes a number of observations about potential wind impacts, including:
  - o (page 9) the development will result in '*slightly stronger wind conditions in Prince Alfred Park*' with winds from the south;
  - o (page 9) winds from the west result in downwash on the wide face of the tower and that the open levels of the building (possibly level 5 games terrace) will act to 'vent the flow through the building'. This raises concerns about the amenity of these spaces and their ability to provide useful outdoor space for the school. The report notes *that 'the area close to the ground floor colonnade to the south of the tower is likely to experience relatively high wind speeds, as it is unprotected from downwash effects'*.
- Therefore, while the Report concludes that the effects are minor, the above excerpts appear to indicate that currently there is no certainty that the wind impacts have been satisfactorily quantified in order to understand whether any amelioration is required. A revised Wind Report, which is based on wind tunnel testing for the subject site and proposal, should be submitted and made publically available for comment. The Wind Report should clearly quantify the expected wind conditions at multiple locations on all open terrace levels and external spaces of the school.

### Lifts

- Refer to parts 9 and 10 of ADS (pages 39 and 40). This part of the report raises concerns about the ability of the proposal to cater adequately to the expected population of students and staff using the tower component of the school. The proposal provides three lifts for access to the tower component of the proposal.
- The report notes that lift management strategies will be required to support the movements of up to 500 people at class change time and makes recommendations for the future principal to consider four period days or a mixture of longer and shorter periods to facilitate efficient vertical movement. Other suggested means of coping include restricting the use of the lift to upper levels only and restricting access to the lift for lower levels. This raises concerns about access for those with mobility issues.

- It is therefore recommended that an additional test case should be provided which demonstrates the impact on waiting time when at least one lift is also serving all levels to provide equity of access.

### Egress

- The BCA Report lists the following required exit widths for an estimated population of 1,200 students and 100 staff:
  - o 1200 people = 10.5m
  - o 1280 = 11m
  - o 1300 = 11m
- The main exit points off the site are in the order of 3.6m to 4m. The BCA Report notes that *'any shortfalls of egress width will be reviewed by [the Fire Engineer] to assess against the performance provisions of the BCA'*.
- The application lacks sufficient detail on the capability of the proposal to facilitate egress to open spaces in the event of an emergency. Although this is a BCA / certifier issue, it is important at this application stage to confirm feasibility of the proposed design as any shortfall may have significant impacts on the design.
- The eastern fire stairs from the tower terminate at ground floor into a covered space; this is not appear to be deemed to satisfy. The direction of swing is also incorrect.
- It should be requested that a diagram be provided which shows how the school population is evacuated in an emergency, showing BCA compliance for egress widths and exit travel distances, and any engineered solution being relied upon to achieve compliance.

### Weather Protection

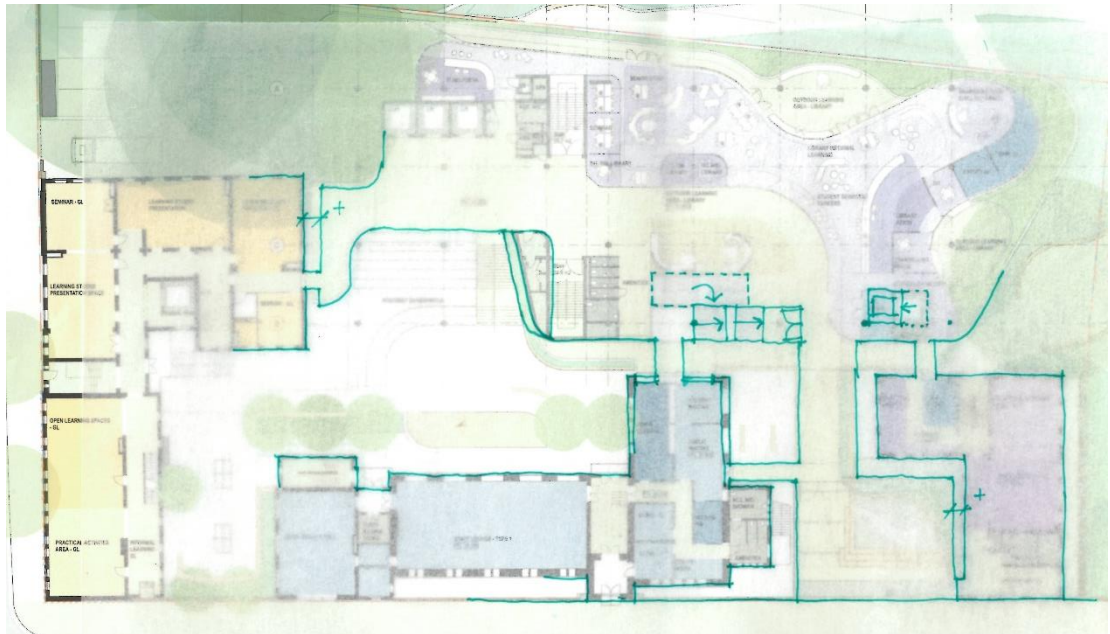
- The school's café and eating area is at Level 1. The space is almost fully covered by the level above, though is not enclosed at the sides. The elevations appear to show a partial glazed screen at the perimeter, though detail is not provided to describe the height, extent or to confirm adequacy.
- Therefore, additional information should be provided to confirm the amenity of the level 1 terrace in adverse weather. There does not appear to be an alternative internal area which provides adequate space for any proportion of students at lunch time.

### Courtyards and interface with Heritage Buildings

- Courtyards are a feature of the existing campus and the proposal appropriately integrates existing courtyards with new external interventions, such as the amphitheatre adjacent to Building 2 and the new raised entry courtyard between Building 2 and 3. The creation of publicly accessible space within the boundaries of the site at the new raised entry courtyard is supported.
- The following architectural observations are made on the relationship between new and existing buildings:
  - o The eastern alignment of the new building is appropriately setback from the west facade of Buildings 2 and 3 (approximately 3.6m) to allow a clear reading of the existing buildings. The alignment also references the east facade of part of Building 1. This alignment is continued at lower ground level; however, the clear separation is lessened at ground level and level 1.

At ground level, the separation is approximately 400mm. At level 1, the separation is marginally increased at approximately 800mm.

- While this creates a degree of weather protection to the circulation path below, it also removes a clear reading of the original three dimensional form of the original buildings, and creates an inaccessible void where cleaning and maintenance would be difficult or impossible. It would be preferable to provide greater separation between the existing buildings and any parallel constructions such as the walkways. Where partial weather protection is required, a discrete, light-weight glazed awning cantilevered from the new building would be acceptable, as long as at least 600mm separation is maintained for safe maintenance access from the heritage buildings. Connections between the new building and adjacent buildings should be discrete bridges as opposed to continuous walkways.
- The lift connecting lower levels adjacent to Building 3 may need to be relocated. Refer to following sketch showing preferred separation at ground level:



### **Public Domain**

- The site falls from approximately 31m AHD at the intersection of Cleveland Street and Chalmers Street to R.L 27m AHD at its north western edge with the Park.
- The existing public domain consists of concrete footways to the Chalmers Street frontage and asphalt footways to the Cleveland Street frontage. Pedestrian crossings are non-compliant with the City's current standards and pit lids are of an older style.
- The school will generate a much higher volume of pedestrian traffic requiring the public domain to be upgraded should the proposal proceed.

### **Civil Engineering**

- The proposed development will see a 13 storey structure built across the two flood paths as indicated in the figure below. Key issues created by the proposal that do not comply with the City's "Interim Floodplain Management Policy" are:

- Flood Planning Levels – the proposed new building has a floor level below the required FPL (1%AEP + 500mm). The proposed new building has a lower floor level of 27.38m AHD. The required FPL would be approximately 29m AHD (however needs to be accurately determined.) This would require raising of the proposed structure by approximately 1.6m.
- Proposed basement – has entry level of approx. 27.3m AHD and is also well below the required FPL. This would allow flood water to enter the basement area unimpeded until the basement was filled with water. This would create an unacceptable hazard and risk to any person trapped within the basement.
- The proposed basement level conflicts with the existing culvert and would require demolition and reconstruction of the Sydney Water Trunk drainage culvert. The proposed demolition is noted on the civil drawings. This culvert may have significant Heritage value given its age and construction type and although it is not part of the City of Sydney infrastructure it is proposed to divert it into Prince Alfred Park.
- It is also proposed to divert the overland flow path that currently enters the site from Chalmers Street to the Park. This may create an unsafe flood hazard within the park and no details of how this can be achieved or the impact of doing so have been provided.



Figure 2 –Flood depth and level contours for 1% AEP flooding event

## Flooding

- The site is affected by flooding from runoff from the Blackwattle Bay storm water catchment and Council's Blackwattle Bay Flood Study (2014) indicates that water levels through the site can reach depths of up to 1.9m (1%AEP) and 2.30m (PMF).

The Figure above is an extract from the study indicating the two major flow paths through the site with the overlay of the proposed building hatched in red.

- The Civil Stormwater and Flood Report by Northrop contains the following comment regarding flooding along Chalmers Street:
  - o *'The existing overland flow path from Chalmers Street is not safe to enter the school. To this end, it is proposed to divert the flow path on Chalmers Street to the north-eastern corner of the site and direct the flow through the adjoining parklands. This 'flow path diversion' will be achieved by the levels being established for the new school entry on Chalmers Street. Any concern for displacement of flood waters (due to altering the level for the point of overflow for overland flow from Chalmers Street) could be addressed by reviewing the inlet and pipe capacity of the potential trunk drain pipe diversion (refer to Appendix G for pipe diversion plans).'*
- The proposal does not detail how the displacement should be handled nor does it consider the impact upon Prince Alfred Park, including risks to users or the park itself.
- Concern is raised that the northern side of the school adjoining Prince Alfred Park is at increased risk of inundation from diverted overland flow as well as the effects of increased flow upon the park.

#### Prince Alfred Park

- The proposal includes changes to pathways within the adjacent Prince Alfred Park that involve changing the direction and adding new pathways and removal of existing trees and adding some mounding as well as retaining walls to divert stormwater along the perimeter.
- These changes could impact users of the park. Of these changes, one notable example is that the new pathway would create a dead-end path within the park when the school is closed.
- There are some changes to levels and existing trees that will require approval from and working with the City. The changes to levels affect the movement of water away from the school and propose to excavate around the base of the trees.

The following is therefore considered imperative to be addressed:

- Prepare a detailed Flood Report that examines the impact of the proposed development upon the park space including pedestrian use of pathways.
- Prepare proposals to minimise the effects of overland flow through Prince Alfred Park including upgrades to stormwater infrastructure in Chalmers Street and within the park, and armouring of park spaces directly impacted by the diverted flow.
- Consider alternate methods of protecting the development from overland flow, particularly on the northern and western frontages that does not make use of retaining walls.
- Provide an amended design that more clearly defines the use of public land for public purposes and takes any private uses into the site boundary.
- Consider potential conflicts of public uses of space near entrances.

#### Landscaping

The internal works are acceptable in principle, upgrading existing spaces and providing outdoor play and learning areas for the increased amount of students. The detailed resolution of these spaces will be critical, for example ensuring adequate

soil depth is provided for the intended planting, and that planters to building edges do not compromise BCA compliance.

The two most significant landscape issues lie with the interface between the school and Prince Alfred Park and the intensification of use of the park itself. Both of these issues are in effect 'cross jurisdictional', being the concern of the project landscape design and Public Domain and Parks team within the City. While these have been discussed between the relevant parties, **the following issues remain:**

#### Park Interface

The proposal introduces two new pedestrian connections from the school to the adjacent park. Although the provision of access is supported in principle, the proposed layout results in two paths and planted buffers that extend well beyond the school boundary, effectively commandeering substantial sections of the park. The length and form of both paths is well beyond that required to give students access, and creates spaces that facilitate student use rather than welcoming the public. For example, the path leading from the northern boundary of the school widens out to create a gathering space around the existing tree on site, then narrows again before connecting to the park path network. This gathering space is positioned partly within the school and partly within the park, but the narrowing of the path signals to park users that this reads is a school space rather than a public space at present.

#### Park usage

Negotiations are required as part of the planning process to confirm any formal use agreements between the school and the City in terms of park facilities. The intensification of use that would result from the eventual 1,200 students would place significant pressure on the park facilities. Furthermore, it is unclear from the documentation provided whether the required 10sqm per student of open play space is provided on site, as per the Department of Education's *Educational Facilities Standards and Guidelines (Attachment C)*, or whether use of the park is required to supplement this. A trial arrangement may be appropriate to test assumptions although we understand the current thinking is that the student population will be a gradual build-up over the initial years.

Both of these issues are due to site constraints; however, they are also the result of the significant increase in student numbers in the long term, extent of building footprint and proposed design. Subsequently, it is recommended that the effective use of portions of the park contributes to the offset required for the intensification of park use and a separate maintenance arrangement should be proposed.

Details on pedestrian amenity and pedestrian upgrades need to be provided.

#### Transport Comments

The school will include an increase from 350 students to a proposed capacity of between 1,200 – 1,500 secondary students, approximately 70 – 90 staff and is expected to be open by 2020.

#### Traffic Generation

- A comprehensive Transport Study including a traffic report should be provided from a traffic professional addressing all of the travel and access arrangements to the site. It is noted that this should not just be limited to car volume generation but 'trips' to/from the site (all modes).

- Given the limitation for on-street parking, the City would like to see a proposal that aims for near zero student / staff arrival by car. The proponent's traffic report indicates 10% of students might arrive by private car. The City requests details as to how this development will reduce this towards zero. These will be both through 'hard' (physical design) and soft plans (education and Green Travel Plans).
- More specifically, the development should seek to encourage Sustainable Transport (and Active Transport) in a manner which aligns with the targets and objectives set out in Sustainable Sydney 2030, such as:
  - o Target 7 - By 2030, at least 10 per cent of City trips will be made by bicycle and 50 per cent by pedestrian movement.
  - o Objective 3.1 – Support and plan for enhanced access by public transport from the Sydney Region to the City of Sydney.
  - o Objective 3.3 – Reduce the impact of transport on public space in the City Centre and Activity Hubs.
  - o Objective 3.4 – Manage regional roads to support increased public transport use and reduce car traffic in City streets.
  - o Objective 4.1 - Develop a network of safe, linked pedestrian and cycle paths integrated with green spaces throughout both the City and Inner Sydney.
  - o Objective 4.2 - Give greater priority to cycle and pedestrian movements and amenity in the City Centre.
  - o Objective 4.3 – Promote green travel for major workplaces and venues in the city

Other strategies for which the proposal should align include:

- o Transport for NSW (TfNSW) Sydney City Centre Access Strategy (SCCAS).
- o City's Cycling Strategy and Action Plan 2007-2017
- o Draft Walking Strategy and Action Plan 2014-2030
- o Connecting Our City Transport Strategies and Actions (2012)

### Parking

- On-street parking in the form of a pick-up/drop-off zone may not be appropriate given the street function and available parking in the area. Other options such as pick-up and drop-off should be explored. The loss of loading zones to accommodate pick-up/drop-off is to be avoided given the limited loading options in the area.
- For any changes to kerb side parking arrangements (including any potential pick-up/drop-off zone), a separate submission seeking the City's approval must be made to the Local Pedestrian, Cycling and Traffic Calming Committee (LPCTCC). There is no guarantee kerb side parking will be changed, or that any change will remain in place for the duration of the development or use.
- For the limited parking to be provided on-site, the car park layout, car space dimensions, aisle width and driveway are to be in compliance with Australian Standards, the Sydney Development Control Plan 2012 (SDCP 2012) and designed to the City's satisfaction.

### Servicing and Loading

- All loading is to be undertaken on-site. It appears that the on-site car park accommodates a Medium Rigid Vehicle which would appear acceptable.
- Details of how parking for buses and coaches (i.e. required for excursions or sports days) will be accommodated, needs to be provided for assessment and comment.

### Bicycles / End of Trip Facilities

- The school is located on a major north-south bicycle corridor and future east-west corridor.
- Bicycle parking should be provided in accordance with the rates within SDCP 2012. In this regard, a rate of at least 1 space per 10 students and staff should be provided however given the need for modal shift, a rate closer to 1 space per 5 students and staff is more appropriate.
- A class 2 bicycle facility is appropriate for students and staff given the need to encourage modal shift towards Active Transport.
- The provision of high quality end of trip facilities should be provided. The City supports the provision of innovative bicycle parking solutions in new development. The City would welcome the proponent investigate opportunities to provide a breakthrough in first class visitor / public bicycle facilities. These are to include:
  - o Showers and lockers for students and staff. Refer to the DCP Section 3.11.3 (8).
  - o Additional services be provided such as air compressors for tyre inflation, filtered water, bicycle service rack and tool kit, communal bicycle tools, bicycle tune up and repair services, drying rack, complimentary towel services, ironing stations, hair dryers, vending machines, bicycle user group support etc.
  - o Wayfinding be considered in the design

### Green Travel Plan / Transport Access Guide

- A Green Travel Plan (and a Transport Access Guide) should be provided to demonstrate that the site will encourage modal shift away from car use and to the use of Sustainable Transport options (for staff, customers and residents) such as walking cycling and public transport. A Green Travel Plan will include (but is not limited to the following):
  - o providing mode share targets which promote sustainable travel behaviour,
  - o means of minimising travel demand by private car
  - o means of maximising the share of travel by other modes including public transport, cycling, walking, carpooling or car share.

In addressing the above, the applicant should review information on the City's website (<http://www.cityofsydney.nsw.gov.au/development/planning-controls/travel-plans>) and Councils DCP Section 7.6 and 7.7, regarding preparing Green Travel Plans.

- A Green Travel Plan is a 'live' document that needs to be closely monitored and reviewed throughout the first few years of implementation. The Green Travel Plan Coordinator responsibilities include:
  - Coordinating implementation efforts,
  - Conducting surveys or other data collection processes to measure progress;
  - Communicating the travel plan to stakeholders;
  - Coordinating events to promote awareness of the plan and associated invites;
  - Coordinating marking and promotional programs.

The steps outlined above should not be considered as a linear process, but rather an on-going cycle. Travel planning requires regular review and adjustment – a review may reveal the need to reconsider objectives or targets, or to add new actions to create greater incentives for the uptake of sustainable transport choices.

### **ESD**

The commitment to a GreenStar Rating for the school is positive; however, the rating can be achieved through various pathways that may or may not contribute significantly to the City of Sydney's Environmental Performance objectives. The City has set explicit targets for mains potable water and greenhouse emissions reduction for the LGA. The City seeks assurance that in achieving a 5 Star GreenStar rating the proponent will deliver a very energy and water smart building.

Regarding Energy and Carbon, the City notes a solid commitment to photovoltaics (50 kilowatt peak or greater), highly efficient lighting (targeting 5 watts per square meter) and attention to facade design to control heat-loads. Current text does not resolve this matter *"the use of solar, gas boost (or heat pump) hot water systems will be explored"*.

Regarding water efficiency and mains potable water demand, the City notes little commitment to harvest and reuse roof water for the most effective end-use – namely toilet flushing. Allocating a small rain tank for garden irrigation will deliver only very modest savings. Dual plumbing reticulation for toilet flushing is a reasonable expectation and through signage can convey powerfully to students and staff that a commitment has been made to conserve natural resources.

Regarding displays and interpretive signage, extensive experience shows that no matter how much is invested in signage at schools concerning solar energy systems, the reality is that staff and students have little time to absorb or use this information. Thus we recommend that over-investment in this aspect be avoided with effort/resources instead being allocated to practical water and energy saving measures, best practice waste separation services and avoiding the use of uncertified timber.

Timber selection, the City endorses the proposed direction in the ESD Report under section 3.3.4 Timber. Uncertified timber is to be avoided.

Finally No appendix B or C are provided in the report and therefore we cannot see which credits are proposed to achieve the 5 Star rating.

## ATTACHMENT B

### DG05 Air Movement

Air Movement through a space is a mandatory requirement to provide fresh air to areas so that they can be occupied by people for a prolonged time. In simple buildings this is achieved by the use of operable windows located on two opposite sides to enable natural cross ventilation.

Where natural cross ventilation can not be provided other forms of assisted ventilation will be required. The type of ventilation selected is to be determined based on a Whole of Life assessment of the individual situation.

Refer to DG / [COOLING/HEATING](#)

The building regulations and [AS 1668](#) provide direction on air movement and ventilation requirements.

The following sections provide information on the recommended ventilation forms.

ID	TITLE	COMPLIANCE LEVEL ?			
					CLOSE ALL —
05.01	NATURAL VENTILATION				MANDATORY —
<ul style="list-style-type: none"><li>■ Is required to all classrooms for comfort in summer and to maintain a healthy indoor environment.</li><li>■ Where cross ventilation may be restricted (ie where rooms are located on each side of a corridor, at least one whole wall of operable windows plus ceiling fans are required, to provide air movement.</li><li>■ Some windows need to be operable in driving rain and so must be protected with appropriately designed weather hoods, eaves overhang or other method of protection.</li></ul>					

## ATTACHMENT C

### 10.03 OPEN PLAY SPACE REQUIREMENTS



MANDATORY

Open play space must be provided for students to access during recess, lunch breaks and for outdoor learning. Open play space can be comprised of;

- Paved and grassed areas
- Rooftops and terraces
- Covered outdoor areas

The designated open play space must be easily monitored and managed by school staff.

Where a joint use agreement can be negotiated with a local council or land owner, the required play space can be located off-site, providing the facilities are;

- In close proximity to the school
- Easily accessible
- Safe and secure

The area per student must meet the requirements below.

New school on a greenfield site	10m2 per student (minimum)
New school on a brownfield site or New building/s on an existing school site or Major upgrade of existing school	<p>Designs must aim to achieve a minimum of 10m2 per student. Where this figure is not achievable the proposed m2 per student of the completed project must not be less than the existing m2 per student currently on the site.</p> <p>Where 10m2 per student is not achievable, and an agreement for joint use facilities with a local council or landowner is not in place, the designer must undertake a playspace audit of the site to demonstrate the possible open play space achievable, and seek endorsement from the technical stakeholder group.</p>