



Inner Sydney high school
Response to Submissions - Architecture
NSW Department of Education

fjmt

fjmt studio architecture interiors urban landscape community
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Project Management	Roots Partnership
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Acoustic	Acoustic Studio
Arborist	The Ents Tree Consultancy
Civil	Northrop Engineering
Code Compliance	Group DLA
Environmental Site Assessment	Alliance Geotech
ESD	Northrop Engineering
Facade	Northrop Engineering
Fire Engineering	De Fire
Geotechnical Investigation	Alliance Geotech
Hazardous Materials Risk Assessment	GreenCap NAA
Heritage	Weir Phillips
Interior Architecture	FJMT
Landscape Architecture	FJMT
Planning	Urbis
Quantity Surveyor	Slattery
Services	Wood and Grieve Engineers
Structural	Northrop Engineering
Surveyor	Hill and Blume
Vertical Transportation	Northrop Engineering
Traffic	Positive Traffic
Waste	Arup
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1.0	Introduction	3
2.0	Summary of Changes	4
3.0	Response to Submissions	8

1.0 Introduction

Introduction

Following the receipt of the Submissions from the Agencies and the Community, a number of improvements to the design of the new Inner Sydney high school have been proposed. These are both the result of a direct response to the submissions and also continued design development.

These improvements have been outlined as follows and have been noted on the attached Architectural Drawings. The improvements have taken into consideration comments with regards to the interface with and the response to the heritage fabric, the overall massing, bulk and scale, student and staff amenity, and the interface with the public domain.

An updated set of plans have been provided along with elevations and 3D Renders. All changes have been identified on the attached summary and on the drawings.

Design Development

Bulk and Scale, Massing

The One of the main concerns raised in the RTS was the relationship of the built form to both the heritage buildings and the park. In response to this, three major moves have been implemented:

- the landscaped terraces have been refined to provide a more integrated response to the park. The terraces have been redefined as ribbons which will weave up through the new fabric connecting each level through either terrace balustrades, stair balustrades or through the interior finishes;
- one level has been removed from the “Studio” and the learning spaces have been transferred to the Tower, the Studio has been reduced in length by approximately 2.5m. This has removed approximately 600m² of area which has been achieved through a more efficient approach to planning;
- the twist to the 2 tower forms has been removed resulting in a slimmer tower when viewed from the north and the south. The floor plate of the tower has been marginally increased by approximately 2m to the north. Refer Diagram A.2 and attached Elevations and revised 3D Visualisation.

Materiality

The facade has been developed to provide a quieter response to both the Landscaped Terraces and the Studio.

- The materiality of the Landscaped terraces has been revised to either a neutral pigmented off form or pre cast concrete with a simplification of the geometry to align more with the existing geometries of the park. To address issues of maintenance, buildability and climbability the balustrades have been developed as dynamic, angled forms, responding to the angled forms in the surrounding landscape, with a subtle curve at each junction.
- The Studio facade has been developed to provide a quieter response to act as a backdrop to the heritage facades. A neutral, darker colour is proposed to the masonry which will be a panelled terracotta, porcelain or ceramic material. Following a review by the Design Integrity Panel it is proposed that prototype panels will be reviewed in situ prior to the final colour selection.

Functionality

Following continued development of the Educational Model and engagement with the stakeholders, the layouts of each level have been reviewed to provide the best functional layout which will meet the needs of the “future focussed” learning model. The tower floor plate has been marginally enlarged to provide an additional open learning area and two additional Science Laboratories have been located on the “verandah”. Each typical tower level will now accommodate 180 students with an inter connecting stair between 2 levels in each tower block.

2.0 Summary of Changes

Building height	In order to increase the amenity of the roof top outdoor learning/recreation area, which was previously located to the south of the site, it is proposed to located this area to the north - on top of the current “verandah”. Following detailed stakeholder consultation, in order to address safety in design requirements, the preference from the Department of Education is that the roof top area is protected. By locating this area to the north we can utilise the volume of the verandah to provide this protection, without impacting materially on the overall form of the bulding. Due to the relocation of plant elements and following review from the Design Integrity Panel, in order to maintain a consistent profile with the initial SSD scheme, the overall height of the new building has increased by 1.5m. This is still within the overall height limit set by the SERs of RL 92.00.
Bulk and scale	<div>In response to comments regarding bulk and scale, three improvements have been implemented:</div> <ul style="list-style-type: none">the landscaped terraces have been refined to provide a more integrated response to the park;one level has been removed from the “Studio” and the learning spaces have been transferred to the Tower, the Studio has been reduced in length by approximately 2.5m. This has removed approximately 600m2 of area which has been achieved through a more efficient approach to planning;the twist to the 2 tower forms has been removed resulting in a slimmer tower when viewed from the north and the south. The floor plate of the tower has been marginally increased by approximately 2m to the north.
Building envelope	<div>The building envelope has been developed to not only incorporate more detail requirements but to also oi response to the submissions to provide a quieter response to both the Landscaped Terraces and the Studio.</div> <ul style="list-style-type: none">The materiality of the Landscaped terraces has been revised to either a neutral pigmented off form or pre cast concrete with a simplification of the geometry to align more with the existing geometries of the park. TheThe Studio facade has been developed to provide a quieter response to act as a backdrop to the heritage facades. A neutral, darker colour is proposed to the masonry which will be a panellised terracotta, porcelain or ceramic material. Following a review by the Design Integrity Panel it is proposed that prototype panels will be reviewed in situ prior to the final colour selection.
Podium Form	The form of the landscaped terraces has been revised to respond more directly to the language of the adjacent swimming pool and to address Safety in Design and buildability concerns. The terraces are now expressed at two ribbon like forms which weave through out the podium levels connecting the park with the upper levels of the Studio.
Basement	<div>Rationalisation of building structure resulting in improved planning efficiencies and reduction in building footprint.</div> <div>Structural grid realigned to provide clear spans over the Movement Complex</div> <div>Access / Egress stair reviewed, provision of a clearer circulation strategy to meet code and assist way finding.</div> <div>Population to Movement Complex maintained at at 800pax.</div>
Level LG	<div>Design Development of Podium Form and the relationship of ground plane and park</div> <div>Revised stair configuration providing a clearer access/egress circulation strategy to meet code requirements and improve wayfinding.</div> <div>Realignment and separation of eastern infill to provide additional clearances from heritage fabric and increased amenity to both heritage buildings and the new learning space.</div> <div>Development of carpark design in response to flood mitigation.</div> <div>Provision of new amenities to the Lower Group internal recreation courts.</div>
Level G	<div>Design Development of Podium Form and the relationship of ground plane and park</div> <div>Revised stair configuration providing a clearer access/egress circulation strategy to meet code requirements and improve wayfinding.</div> <div>Realignment and separation of entry forecourt and bridge to provide additional clearances from heritage fabric, a broader entry at the access gates and improved wayfinding.</div>

Building height	In order to increase the amenity of the roof top outdoor learning/recreation area, which was previously located to the south of the site, it is proposed to located this area to the north - on top of the current “verandah”. Following detailed stakeholder consultation, in order to address safety in design requirements, the preference from the Department of Education is that the roof top area is protected. By locating this area to the north we can utilise the volume of the verandah to provide this protection, without impacting materially on the overall form of the bulding. Due to the relocation of plant elements and following review from the Design Integrity Panel, in order to maintain a consistent profile with the initial SSD scheme, the overall height of the new building has increased by 1.5m. This is still within the overall height limit set by the SERs of RL 92.00.
Bulk and scale	<div>In response to comments regarding bulk and scale, three improvements have been implemented:</div> <ul style="list-style-type: none">the landscaped terraces have been refined to provide a more integrated response to the park;one level has been removed from the “Studio” and the learning spaces have been transferred to the Tower, the Studio has been reduced in length by approximately 2.5m. This has removed approximately 600m2 of area which has been achieved through a more efficient approach to planning;the twist to the 2 tower forms has been removed resulting in a slimmer tower when viewed from the north and the south. The floor plate of the tower has been marginally increased by approximately 2m to the north.
Building envelope	<div>The building envelope has been developed to not only incorporate more detail requirements but to also oi response to the submissions to provide a quieter response to both the Landscaped Terraces and the Studio.</div> <ul style="list-style-type: none">The materiality of the Landscaped terraces has been revised to either a neutral pigmented off form or pre cast concrete with a simplification of the geometry to align more with the existing geometries of the park. TheThe Studio facade has been developed to provide a quieter response to act as a backdrop to the heritage facades. A neutral, darker colour is proposed to the masonry which will be a panellised terracotta, porcelain or ceramic material. Following a review by the Design Integrity Panel it is proposed that prototype panels will be reviewed in situ prior to the final colour selection.
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Basement	<div>Rationalisation of building structure resulting in improved planning efficiencies and reduction in building footprint.</div> <div>Structural grid realigned to provide clear spans over the Movement Complex</div> <div>Access / Egress stair reviewed, provision of a clearer circulation strategy to meet code and assist way finding.</div> <div>Population to Movement Complex maintained at at 800pax.</div>
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Level G	<div>Design Development of Podium Form and the relationship of ground plane and park</div> <div>Revised stair configuration providing a clearer access/egress circulation strategy to meet code requirements and improve wayfinding.</div> <div>Realignment and separation of entry forecourt and bridge to provide additional clearances from heritage fabric, a broader entry at the access gates and improved wayfinding.</div>

Diagram 1 Massing clarifications



Diagram 2a View from Prince Alfred Park



Diagram 2b View from Chalmers Street



Diagram 2b

3.0 Response to Submissions

	A: 220661_City of Sydney Submission_2017Aug17_1223	
1	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.	Refer Item 2 and Summary Statement
2	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. 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: <i>'The relationship of the park with surrounding streets, the main vistas to the city skyline should not be altered.'</i> <i>'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'.</i> <i>'Cultural significance is high, this significance is mainly associative'.</i> 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.	<p>In response, three major moves have been implemented:</p> <ul style="list-style-type: none">the landscaped terraces have been refined to provide a more integrated response to the park;one level has been removed from the "Studio" and the learning spaces have been transferred to the Tower, the Studio has been reduced in length by approximately 2.5m. This has removed approximately 600m2 of area which has been achieved through a more efficient approach to planning;the twist to the 2 tower forms has been removed resulting in a slimmer tower when viewed from the north and the south. The floor plate of the tower has been marginally increased by approximately 2m to the north. Refer Diagram A.2 and attached Elevations and revised 3D Visualisation. <p>In addition, the facade has been developed to provide a quieter response to both the Landscaped Terraces and the Studio.</p> <ul style="list-style-type: none">The materiality of the Landscaped terraces has been revised to either a neutral pigmented off form or pre cast concrete with a simplification of the geometry to align more with the existing geometries of the park. TheThe Studio facade has been developed to provide a quieter response to act as a backdrop to the heritage facades. A neutral, darker colour is proposed to the masonry which will be a panellised terracotta, porcelain or ceramic material. Following a review by the Design Integrity Panel it is proposed that prototype panels will be reviewed in situ prior to the final colour selection. <p>Refer Diagram 2a and 2b (Perspective views)</p> <p>A number of updated views have been provided to demonstrate the relationship of the new form with the park.</p> <p>Refer Diagram 2c (Perspective views from Prince Alfred Park)</p>
3	Reuse and alteration to existing heritage school buildings/grounds	
3a	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.	<p>The design of the new entrance forecourt has been revised to provide a greater separation between Buildings 2 and 3. The forecourt geometry is realigned to response to the geometry of the new landscaped terraces providing a clear delineation between the old and the new. The levels to the forecourt have also been simplified and widened to cater for the student numbers. The educational model for the project is based on a staggered start, which reduces the number of students entering and exiting the campus.</p> <p>The learning spaces located under the forecourt within the existing courtyard have been reduced in scale to provide an improved amenity with increased access to daylight.</p> <p>Refer Ground Level Layout Plan 2003 and Lower Ground Level Layout Plan 2002</p>

	A: 220661_City of Sydney Submission_2017Aug17_1223	
3b	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.	The openings left after the removal of the walkway will be expressed as new insertions into the existing fabric. As this site has always been a school, it is important that the layering of the site is understood. The design response will be a similar approach to the new openings developed by fjmt for the Mint on Macquarie Street for Sydney Living Museums. Refer Image 3b
3c	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.	The existing palisade fence on the southern boundary will be retained. A new 500mm high flood mitigation wall will be located to the inside face of the fence plinth.
4	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.	As identified in the ACHAR (Issue D 07/05/17 and Appendix F 07/05/17) as prepared by Comber. As identified in the Recommendations, archaeological testing will be required. The recommendations of the report (Section 10, Page 41) will be followed. As identified in the Archaeological Assessment Report, July 2016, as prepared by Casey Lowe, archaeological monitoring will be required during the excavation of the site with a particular focus on the areas of moderate significance. The recommendations of the report (Page 30) will be followed.
5	Heritage Recommendations	Refer updated HIS from Weir Phillips
	It is considered that some aspects of the design may be improved to minimise the impact on the retained heritage buildings.	
5a	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;	Refer Item 2 response.
5b	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.	
5c	The new building's impact on the roofscape and the spire of Building 2 is to be further assessed.	Refer Chalmers Street Elevation - East Elevation 3004
5d	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;	Refer Diagram 5d
	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 separation between the new building and Buildings 2 and 3 has been increased to provide distance of approximately 3m and a simplified and clearer response to the interface has been developed. The eastern edge of Ground and Level 1 generally align however the Lower Ground setback has been retained to provide an element of weather protection. The links to the Heritage Buildings 2 and 3 have also been further refined and simplified to reduce the complexity of levels at this interface. <ul style="list-style-type: none">Building 2: The western connection aligns with the removal of the 1969 Building 4. The corners which currently exist have been retained, however all other fabric has been previously demolished with the construction of Building 4.Building 3: This western opening has been minimised to a simple bridge. Refer Ground Level Layout Plan 2003 and Lower Ground Level Layout Plan 2002
5e	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;	Refer Item 3a
5f	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;	Refer Item 3b. It should be noted that this approach was discussed with the City of Sydney Heritage Representatives on 15/09/17 and this approach was supported in principle.
5g	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;	It is confirmed that these are retained.

	A: 220661_City of Sydney Submission_2017Aug17_1223	
5h	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.	The design response to the landscape terraces has been modified to address concerns of bulk and scale, safety, climb ability and build ability. The revised response is developed as a series of landscaped terraces with "ribbon like" balustrades. The geometry of these balustrades respond to the geometry of the adjacent pool and are subtly curved at each change of direction to provide a contrast of expression to the solid forms of the heritage fabric. These ribbons will weave up through the landscaped terraces in the form of the connecting stair balustrades. Refer Diagram 5h.
6	Urban Design and Design Excellence Overshadowing	
	There is a discrepancy in the material provided in relation to the shadows cast by the proposal. The <i>Shadow Impact Analysis</i> 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.	Refer to the updated Overshadowing Diagrams which have been recast indicating the SSD Proposal, the revised RTS Proposal, Current and Context.
	The following is the City's analysis of both diagrams shown on pages 18 and 19, which are of interest:	Note
	The proposal creates a minor shadow to Prince Alfred Park between 9-11am.	With the new proposal there are generally improvements.
	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).	Please find attached solar access diagrams which provide an analysis of the proposals impact on the facades of the existing residential buildings. The updated proposal has minimised the impact through the lowering of the Studio.
	The plan view shadow diagrams do not provide sufficient detail to quantify the impact to 204-214 and 188 Chalmers Street.	Please find attached solar access diagrams which provide an analysis of the proposals impact on the facades of the existing residential buildings. The updated proposal has minimised the impact through the lowering of the Studio.
	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.	Refer to the updated Overshadowing Diagrams which have been recast indicating the SSD Proposal, the revised RTS Proposal, Current and Context.
	In addition, the application includes the summary statement on page 18 about overshadowing impacts: <i>All properties affected by the overshadowing received at a minimum 4 hours of sunlight during the core hours of 9am -3pm.</i> This statement is not supported by detailed information for individual properties demonstrating compliance with the DCP controls.	Refer Elevational Solar Access Diagrams for 204-214 and 188 Chalmers Street. This statement has been revised.
	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.	
7	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 <i>Tenacity Consulting v Warringah Council [2004] NSWLEC 140</i> Land and 10 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.	Refer updated View Loss Analysis as prepared by Urbis
8	Materiality and Facades	

	A: 220661_City of Sydney Submission_2017Aug17_1223	
8a	A physical detail materials samples board is required. In addition, detail part elevations may be required to clearly communicate the design intent.	Refer updated Elevations
8b	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:	Refer updated Elevations
8c	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.	The glazing will be high performance glazing with a dark interlayer to form a shadow.
1w 1	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.	The finish for the perforated aluminium sheets will be a white PVF3 finish. Refer attached sample board.
8e	FT04a: A brick selection is required. No detail is provided on the finish or colour of the aluminium glazing framing or the aluminium blades.	The Studio facade has been further developed to provide a quieter response to act as a backdrop to the heritage facades. A neutral, darker colour is proposed to the masonry which will be a panellised terracotta, porcelain or ceramic material. Following a review by the Design Integrity Panel, it is proposed that prototype panels will be reviewed in situ prior to the final colour selection. The aluminium framing will be a dark bronze colour. Refer updated elevations for further detail. Refer Elevations
8e	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.	The design response to the landscape terraces has been modified to address concerns of bulk and scale, safety, climb ability and build ability. The revised response is developed as a series of landscaped terraces with "ribbon like" balustrades. The geometry of these balustrades respond to the geometry of the adjacent pool and are subtly curved at each change of direction to provide a contrast of expression to the solid forms of the heritage fabric. The proposed material will be either a light grey pigmented off form concrete or precast with either a terracotta/tiled cap or a polished precast cab dependant upon the final selection of material. Refer Diagram 8e
8f	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.	Refer Item 8e. The modified design response has taken into consideration the materials proximity to the public domain. The detail of the terraces has been revised to remove all climbable surfaces. The lower portion of the facade will be painted rendered masonry with anti graffiti treatment and the opportunity for building signage and interpretation. Refer Elevations 3001 - 3004
	Section markers should be added to the general arrangement plans.	Noted - these have been provided.
9	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 <i>Educational Facilities Standards and Guidelines</i> 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 <i>DG05 Air Movement</i> 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 <i>natural</i> ventilation.	Due to the site location, the acoustic constraints of the site remove the possibility for natural ventilation. In order to meet the required acoustic amenity for the learning spaces the new campus will be fully air conditioned. An economy cycle mode is proposed for the new building to provide a more sustainable response when conditions are within an acceptable range. This departure from the Department's <i>Educational Facilities Standards and Guidelines</i> has been accepted as a Departure. Refer supporting correspondence from Northrop ESD.
10	Wind Impacts	

	A: 220661_City of Sydney Submission_2017Aug17_1223	
	<p>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.</p> <p>- The report makes a number of observations about potential wind impacts, including:</p> <p>- (page 9) the development will result in <i>'slightly stronger wind conditions in Prince Alfred Park'</i> with winds from the south;</p> <p>- (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 <i>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'</i>.</p> <p>- 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.</p>	<p>Refer supporting correspondence from CCP Wind.</p>
11	Lifts	
	<p>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.</p> <p>- 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.</p>	<p>Detailed review of the potential timetable options is ongoing and it is envisaged that a future focussed approach to timetabling will be used. This will not be finally determined until the Principal is engaged with the project and the DoE are undertaking continued consultation with educational leaders and New Learning Environments to investigate the relationship between the timetable and the "future focussed" model. Following additional stakeholder consultation, it has been determined that 2 additional Science Labs should be provided in the tower levels and that the floor plate in redesigned to accommodate an additional open learning space. This has been possible through the removal of the "twist" to the tower and a rationalisation of the structural grid. The intention is that the majority of students can remain with in a limited number of levels for the majority of their day. Each 'general and specialist" learning hub includes a Maker Space and as outlined above, in the tower levels a Science Lab. This revision to the tower levels has improved the requirement to limit circulation up and down the tower.</p> <p>The DoE have confirmed that approximately 1% of students at any one time (12 pax) will require lift access therefore this is not envisaged to impact the current lifting advice.</p> <p>Refer attached correspondence from Northrop 20/09/17.</p>
	<p>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.</p>	<p>The project team will continue to test the relationship between the Education Model and the timetable. The brief requirement is that the waiting times will be commensurate with the travel times of a horizontal campus.</p>
12	Egress	
12a	<p>The BCA Report lists the following required exit widths for an estimated population of 1,200 students and 100 staff:</p> <p>-1200 people = 10.5m</p> <p>-1280 = 11m</p> <p>-1300 = 11m</p>	<p>The fire egress strategy for the site has been reassessed and the fire/access stairs simplified to provide a clearer response to egress and way finding. The population to the Basement has been limited to 800 pax and the egress widths have been sized accordingly. The proposal to facilitate egress to open spaces in the event of an emergency has been redesign to provide 9m of egress width at Lower Ground and 4m of egress width at Ground.</p>
12b	<p>The main exit points off the site are in the order of 3.6m to 4m. The BCA Report notes that <i>'any shortfalls of egress width will be reviewed by [the Fire Engineer] to assess against the performance provisions of the BCA'</i>.</p>	<p>The main egress from the site have been increased to 9m at Lower Ground and 4m at Ground.</p>
12c	<p>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.</p>	<p>Refer Item 12a</p>
1w 5	<p>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.</p>	<p>This area has been redesigned</p> <p>Refer Lower Ground Level Layout Plan 2002</p>

	A: 220661_City of Sydney Submission_2017Aug17_1223	
12e	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.	Refer Diagram 12e
13	Weather Protection	
13a	<p>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.</p> <p>- 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.</p>	The brief requirement for Covered Outdoor Area which can be used for Canteen seating in the ESFG is 200m2. The Level 1 terrace is substantially over the requirement. In times of inclement weather, alternative areas of the campus will also be available for recreation. These will include the Movement Studio, the Level 4 terrace and the open area in front of the Library on Ground Level which is directly connected to Level 1. This Ground Level area has been substantially opened up in order to provide additional area for recreation and movement when required.
14	Courtyards and interface with Heritage Buildings	
	<p>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.</p> <p>- The following architectural observations are made on the relationship between new and existing buildings:</p> <p>-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.</p> <p>At ground level, the separation is approximately 400mm. At level 1, the separation is marginally increased at approximately 800mm.</p>	<p>Refer Item 5d which outlines the proposed revision to the eastern set out of the new building.</p> <p>Refer Ground Level Plan 2003 and Lower Ground Level Layout Plan 2002</p>
	<p>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.</p>	
	<p>The lift connecting lower levels adjacent to Building 3 may need to be relocated. Refer to following sketch showing preferred separation at ground level:</p>	<p>The lift has been relocated.</p> <p>Refer Ground Level Plan 2003 and Lower Ground Level Layout Plan 2002</p>
15	Public Domain	
	<p>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.</p> <p>- 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.</p> <p>- The school will generate a much higher volume of pedestrian traffic requiring the public domain to be upgraded should the proposal proceed.</p>	
16	Civil Engineering	
	<p>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:</p>	

	A: 220661_City of Sydney Submission_2017Aug17_1223	
16a	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.	The design has been adjusted to provide a whole-of site flood mitigation strategy. This includes increasing the levels at the carpark entry and new flood protection walls to the Cleavland St carpark and the Chalmers Street entry - the level changes and wall heights were designed to meet the Cit of Sydney's requirements and provide 500mm freeboard above the 1:100 yr flood event. The internal building entries and their interface with the school courtyards are subject to typical stormwater drainage design by the Civil Engineering team to prevent nuisance flooding. (We have met with the City of Sydney and they have supported this approach)
16b	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.	Refer above - the site is designed to prevent flood entry into the basement and the buildings. Hazard management plans for a number of natural events will be part of the Department of Education's Administrative team and could include directional signage and 'shelter in place' strategies depending on the event.
	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.	Refer Item 4
	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.	(this is part of further flood studies to be undertaken). The design of the new school has mitigated an existing flood risk for the whole school site which is a significant outcome in achieving school safety.
17	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).	Refer 16a above
	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: <i>-'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).'</i> - 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.	Refer 16b above
18	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:	The entry to the school well be well lit and the planting design aims to maintain views across lawn or low garden plantings such that the entry is open to passive surveillance and not create a secluded dead end (if that is the concern) Approval from the City will be required regarding tree protection - the project arbosrist is providing advice and input to the design which takes into account levels around existing trees to be maintained. EG. Where new pathways cross through the root zones of tree to be retained, a suspended footway structure has been explored - the intent is to minimise changes to soil levels and allow for stormwater movement away from the school. Excavation aroudn the base of the trees is not proposed. Where boundary walls are proposed to mitigate flood impacts, a pier and beam footing detail if required to meet tohe project arborist's advice for tree protection.
	Prepare a detailed Flood Report that examines the impact of the proposed development upon the park space including pedestrian use of pathways.	Refer 16b above
	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.	Refer 16b above

	A: 220661_City of Sydney Submission_2017Aug17_1223	
	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.	The only remaining option to reduce flooding around the school (aside from the current proposal) is to make catchment wide changes to the City's infrastructure and stomwater network capacity - this is not within the scope of this project.
	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.	
19	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.	Following continued design development the planters have been removed from the edges of the landscape terraces. All planters are a minimum of 600mm in depth to provide an planting adequate zone.
	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:	
19a	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.	Refer to 8001 Lower Ground Landscape Plan
19b	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 <i>Educational Facilities Standards and Guidelines (Attachment C)</i> , 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.	

Diagram 2c Distant views from Prince Alfred Park

The proposal should include a visual impact assessment from key view points within the adjoining public open space

Prince Alfred Park

A number of views have been reviewed from major pathway junctions in Prince Alfred Park.

The topography of the park gently slopes up towards the new campus, which enables the dynamic forms to create a visual point of interest at the end of the vista.

The scale of the tower form sits against a foreground of the substantial avenue of trees to the south of the park

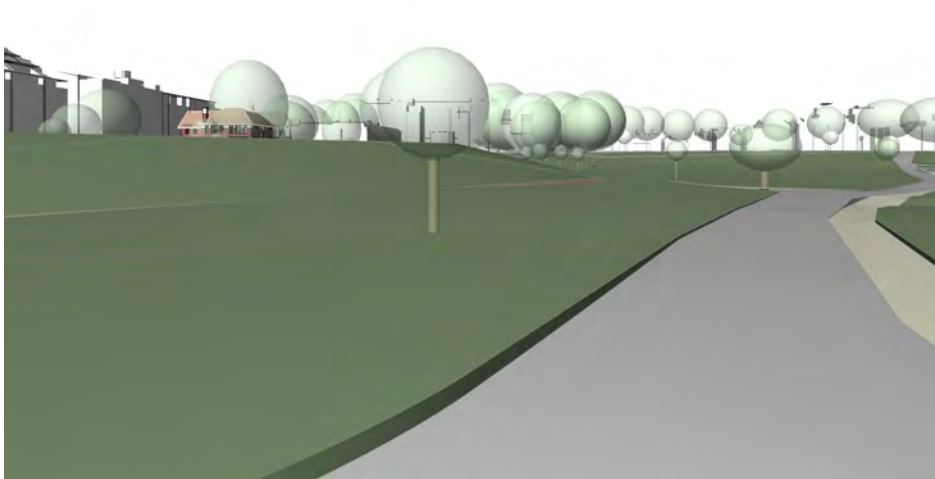


Key plan

EXISTING

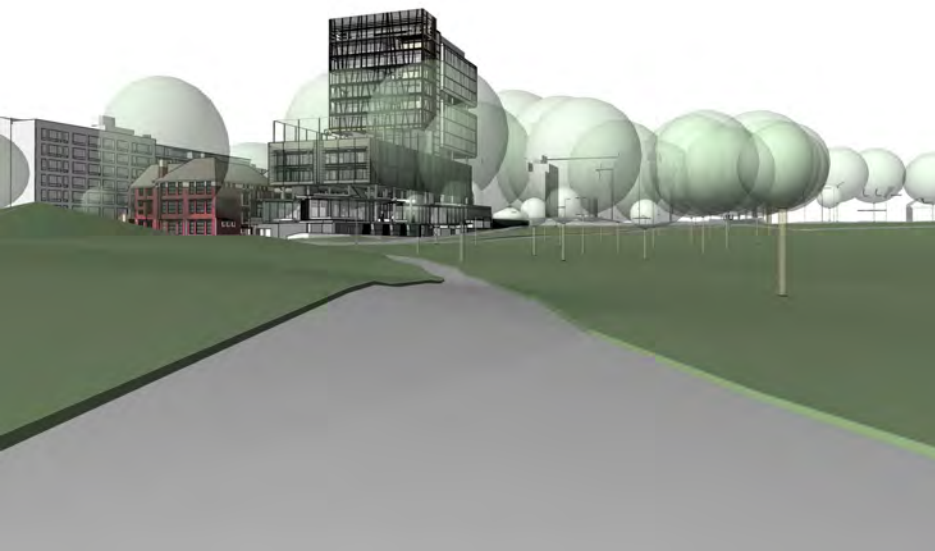


V1

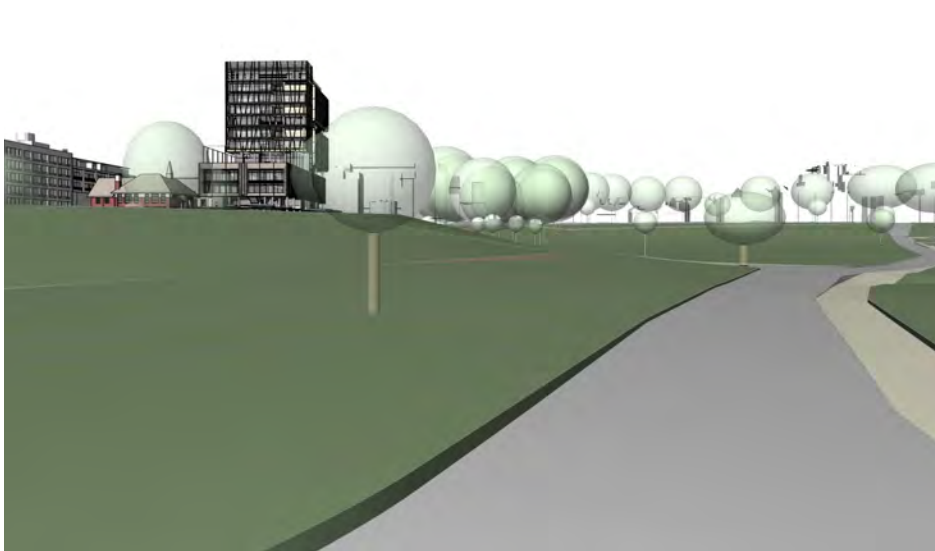


V2

PROPOSED



V1



V2

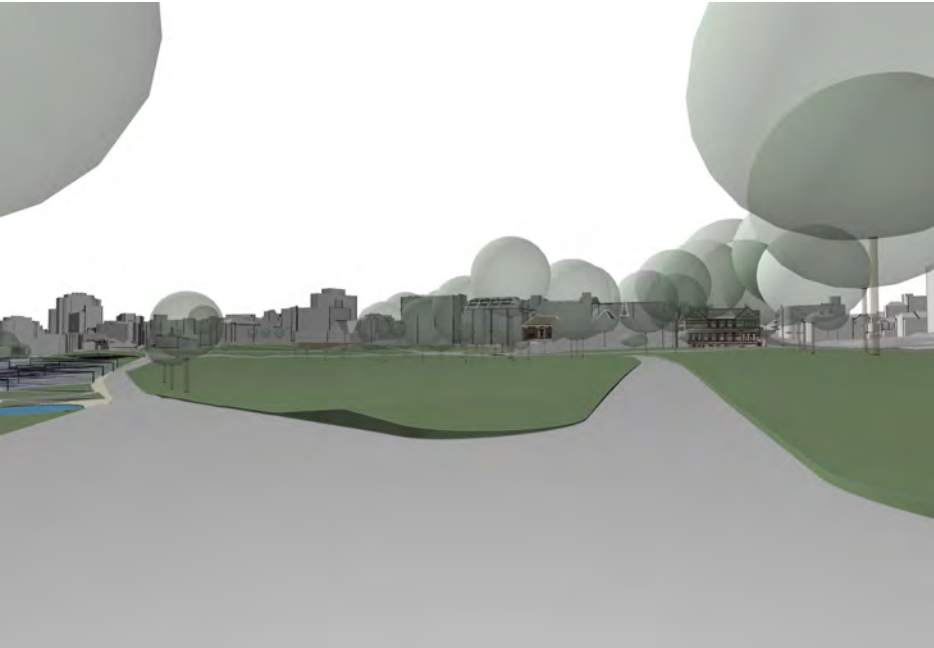
Prince Alfred Park

The impact of the new campus forms as viewed from the south/west corner of the park, a major accessway from Cleveland Street, is appropriately scaled in relation to the large fig trees and the scale of the warehouse buildings along Chalmers Street.



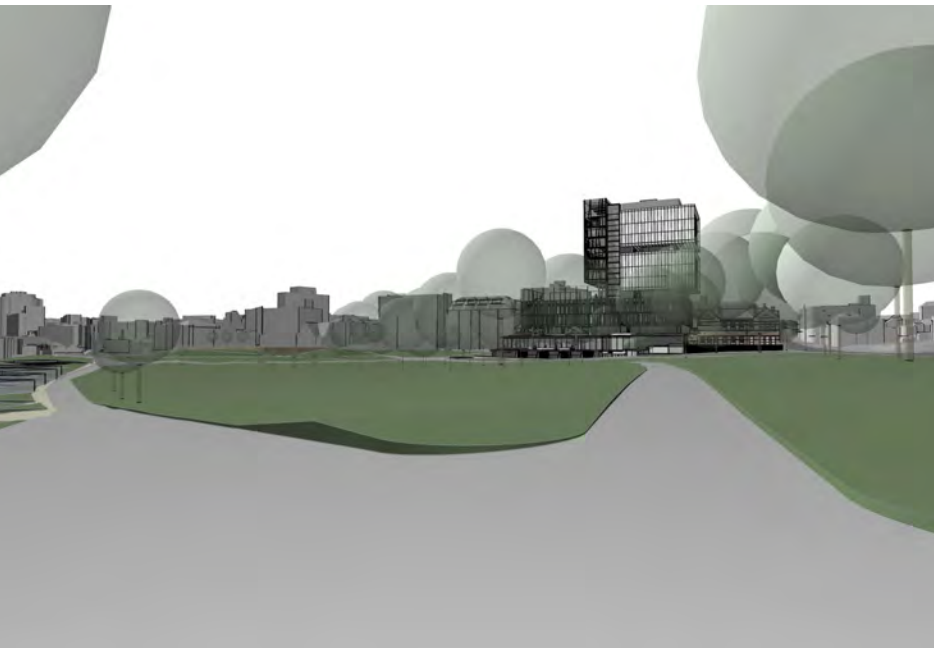
Key plan

EXISTING



V3

PROPOSED

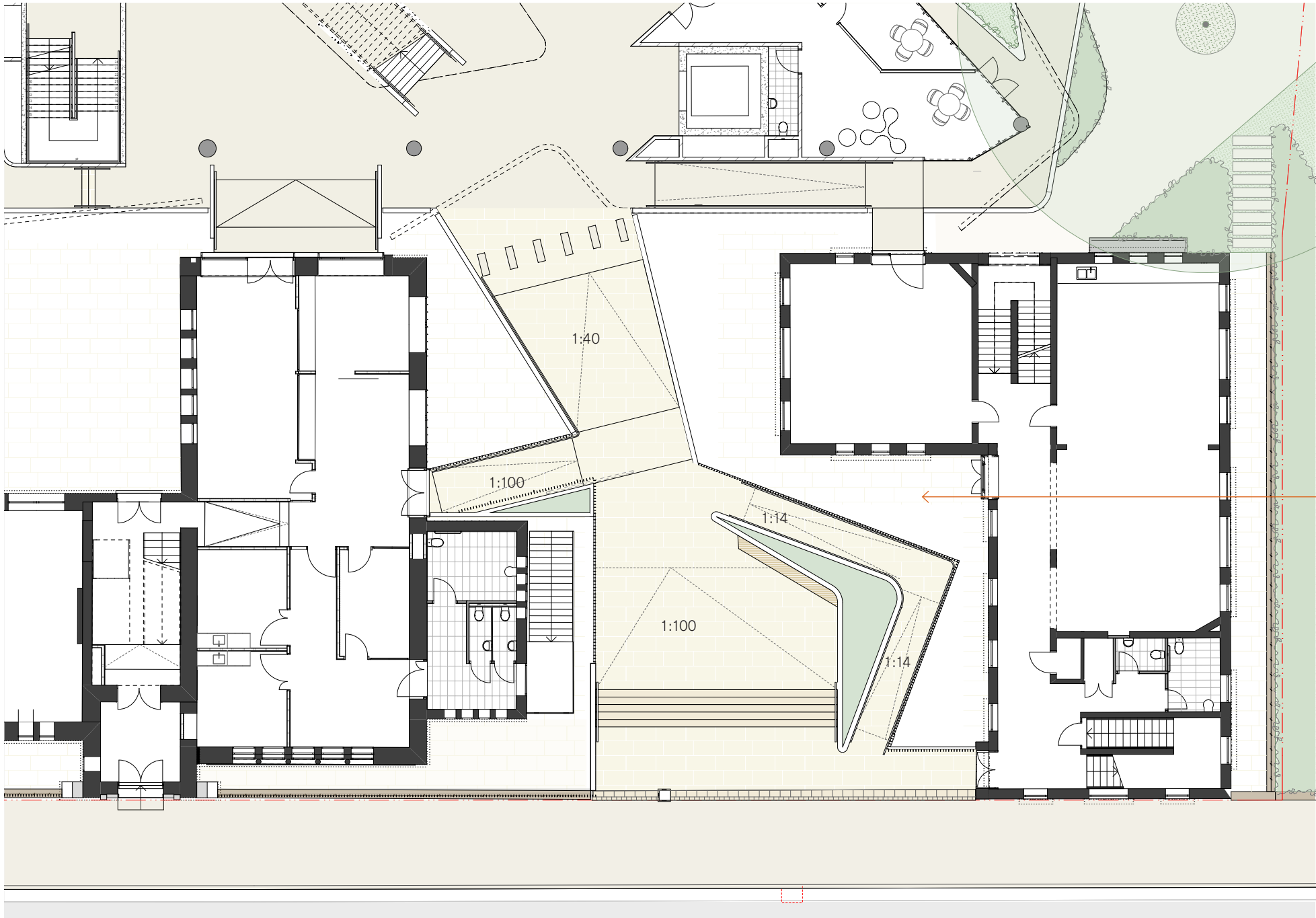


V3

Diagram 3a i View from Chalmers Street of new Forecourt Entrance



Diagram 3a ii New Forecourt Entrance

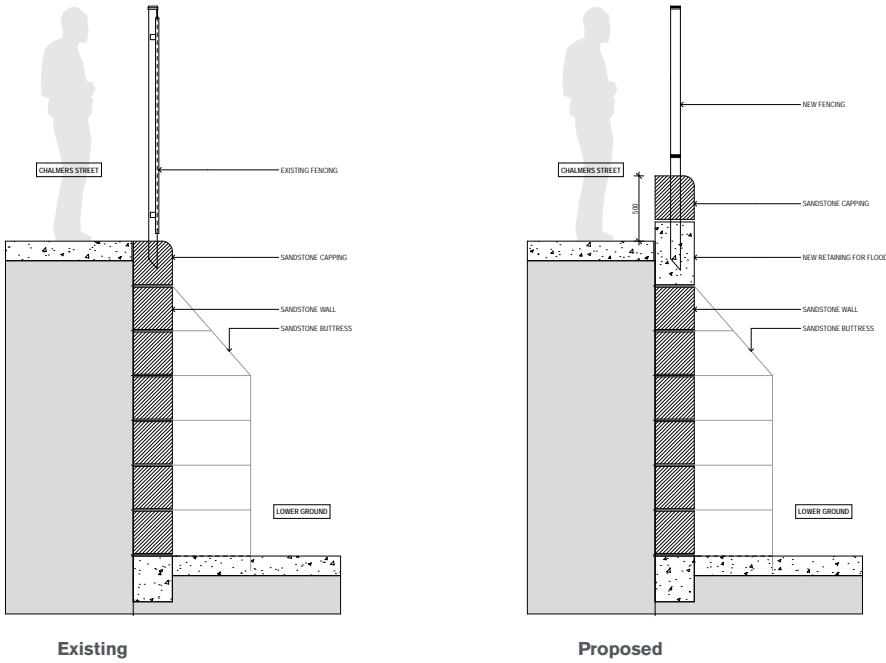


Void to Lower Ground below

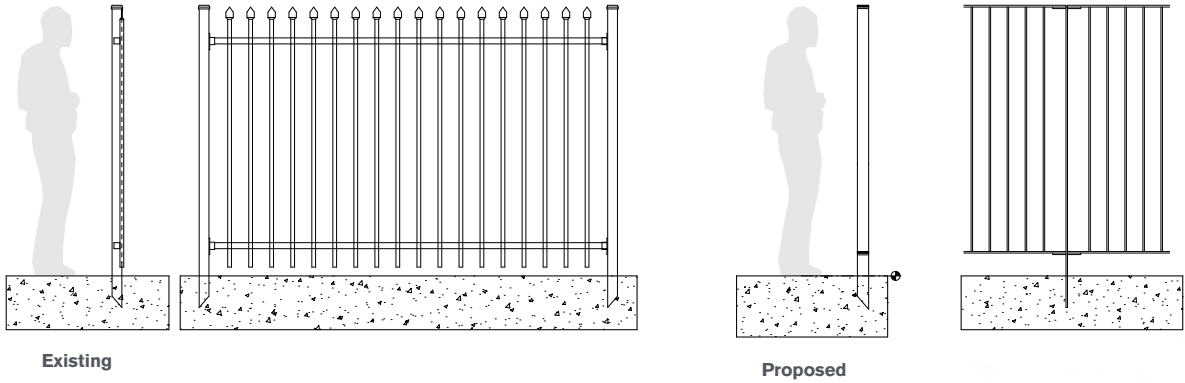
Diagram 3a ii View from Chalmers Street of new Forecourt Entrance



Existing condition



New boundary fence with flood mitigation wall. Existing sandstone plinth maintained.



New fence to forecourt boundary

Diagram 3b New openings to heritage facades



Building 01 North Elevatoon indicating new treatment to existing openings (where bridges are removed)



Precedent Image The Mint



Precedent Image The Mint

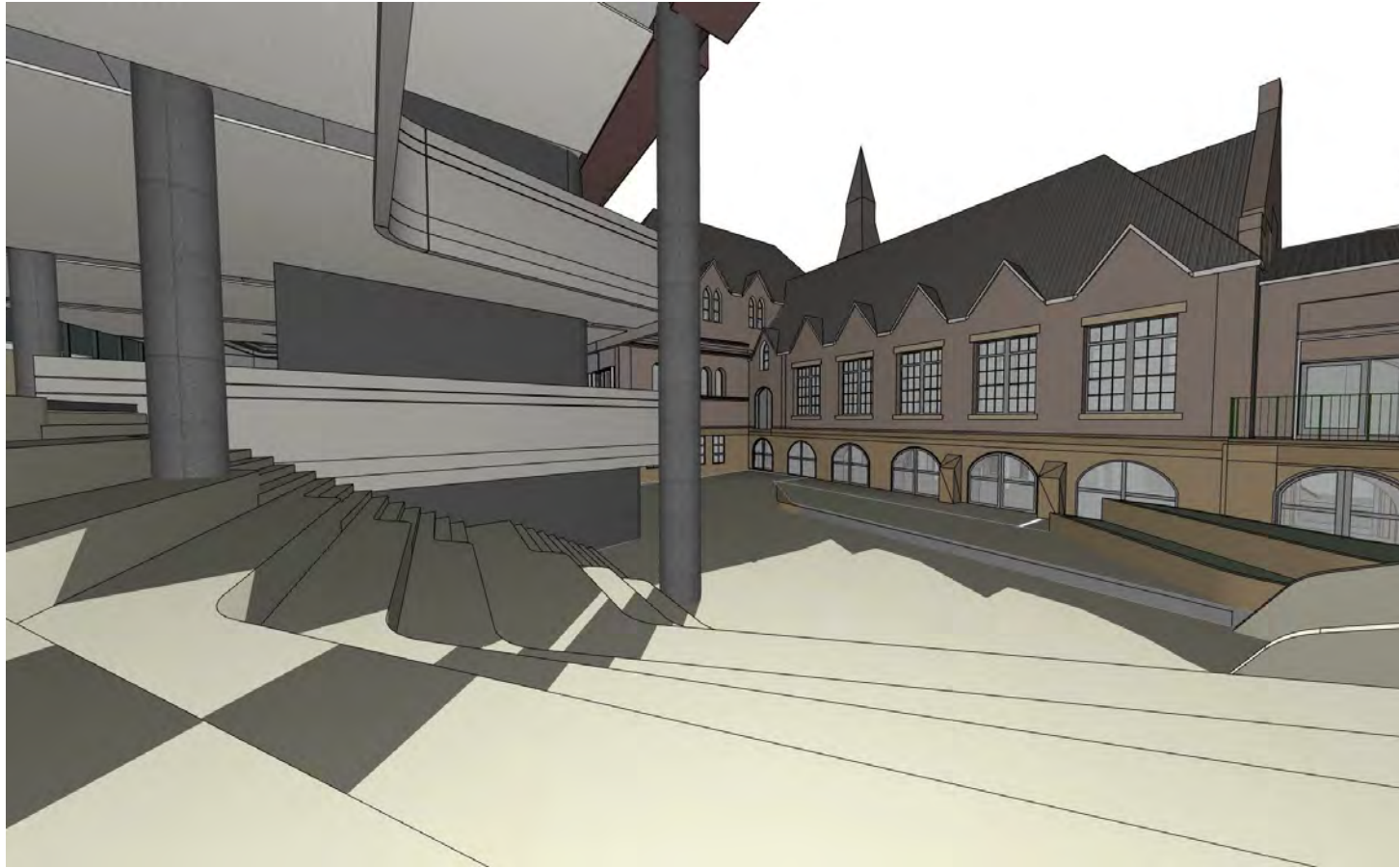
Diagram 5d Views of heritage roof scapes from the internal courtyard



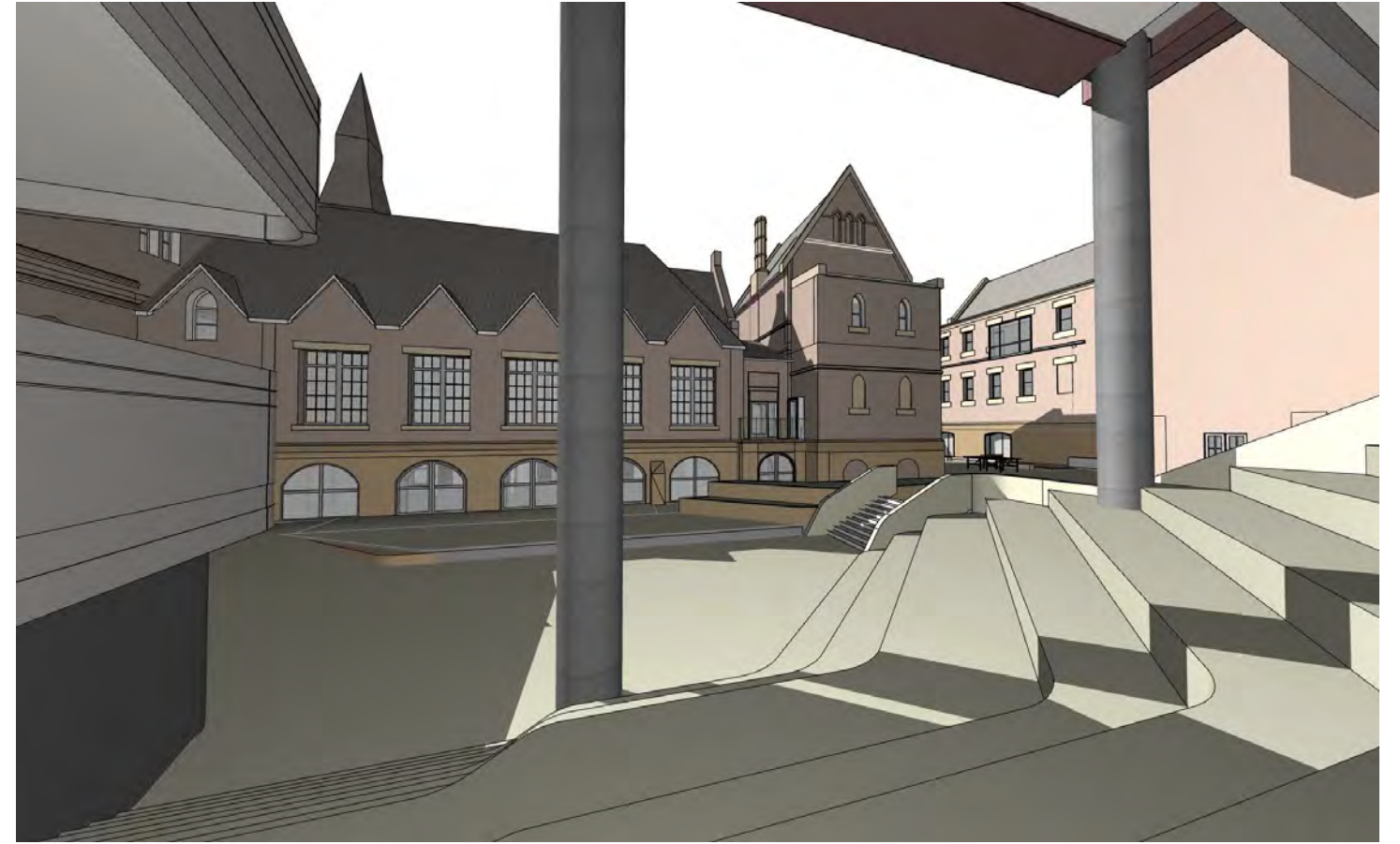
View from Ground Level terrace at the upper level of the new seating stairs looking north/east.



View from Ground Level terrace at the upper level of the new seating stairs looking south/east.



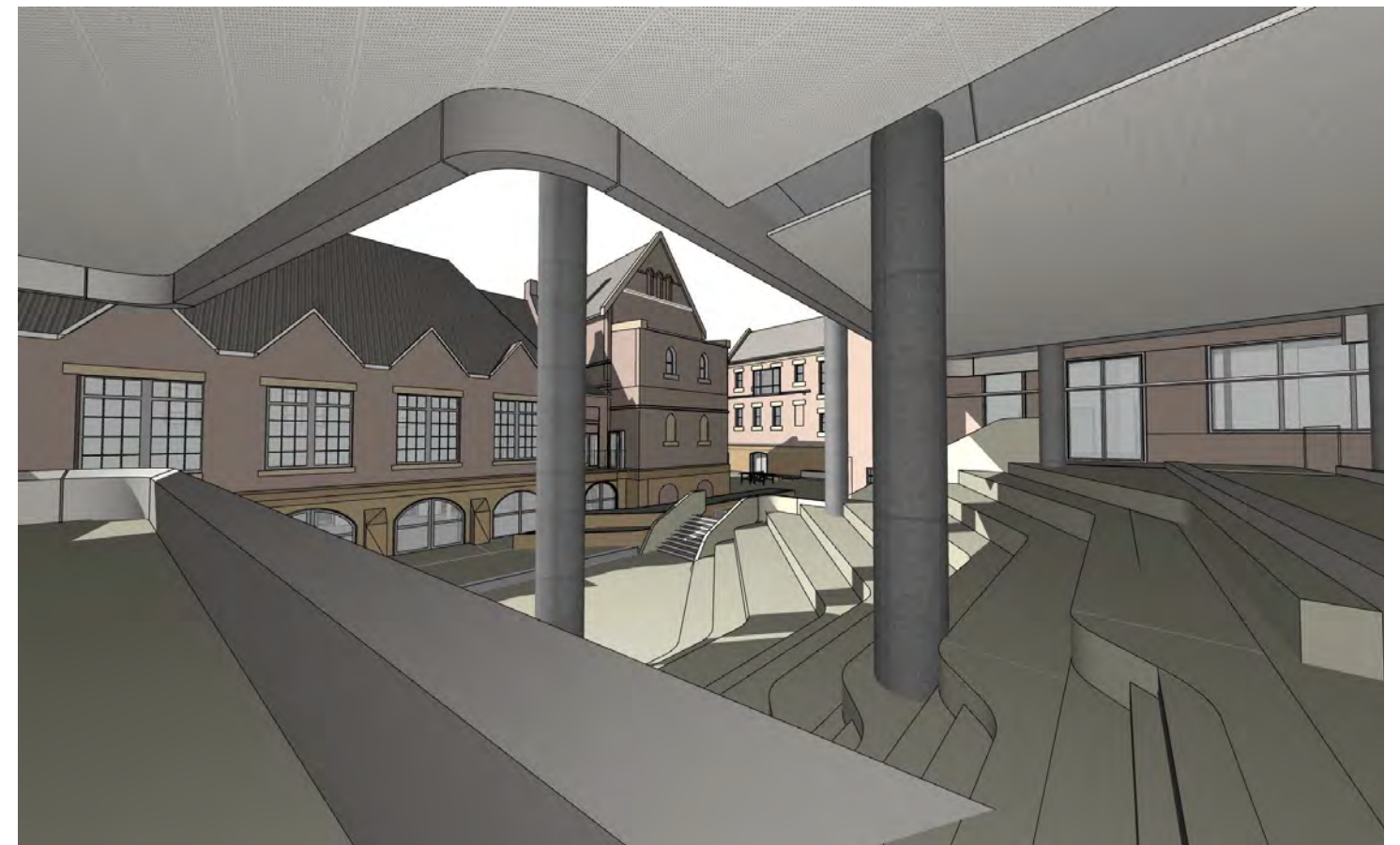
View from Ground Level terrace at the upper level of the new seating stairs looking north/east.



View from Ground Level terrace at the upper level of the new seating stairs looking south/east.



View from Ground Level terrace at the upper level of the new seating stairs looking north/east.

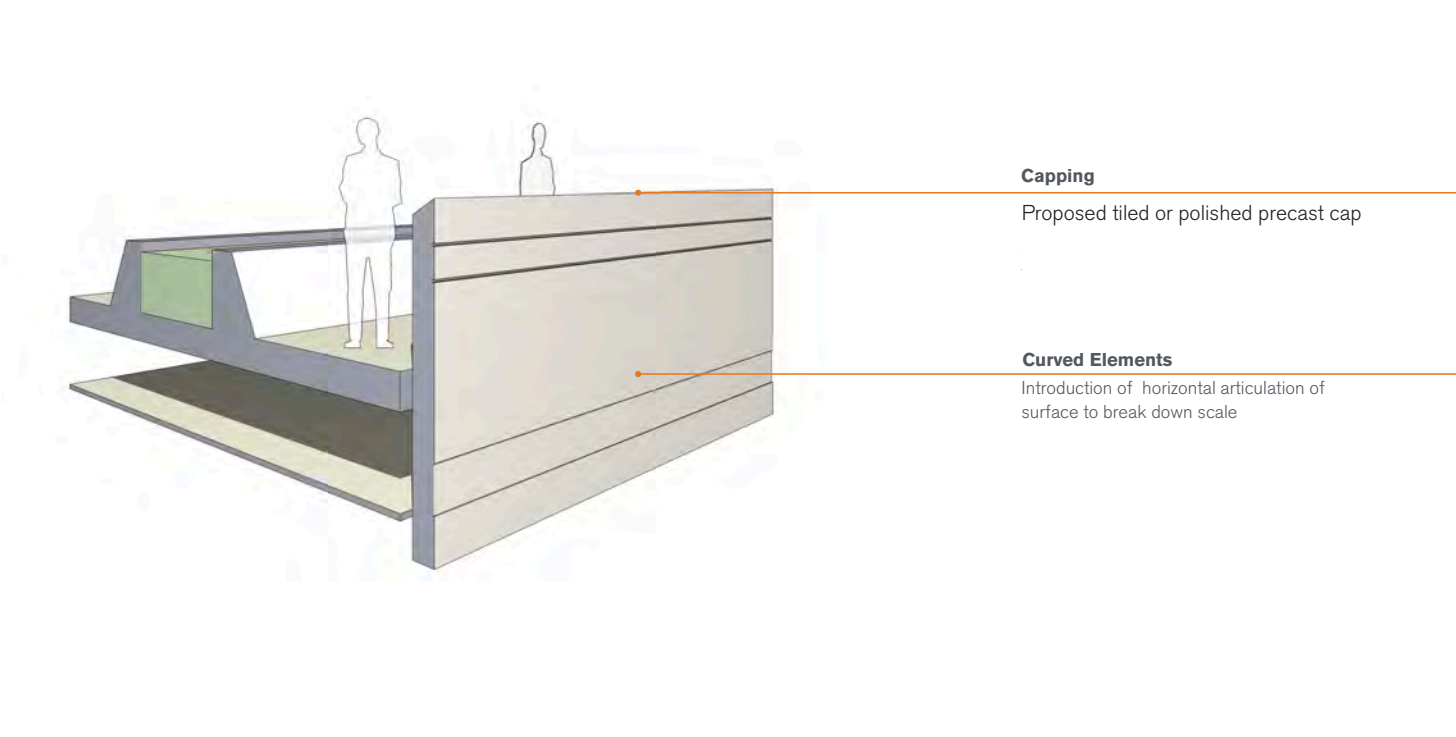


View from Ground Level terrace at the upper level of the new seating stairs looking south/east.

Diagram 5h Views of new “ribbon” balustrade



View of curved 'ribbon' balustrades from Level 01 looking towards main entrance

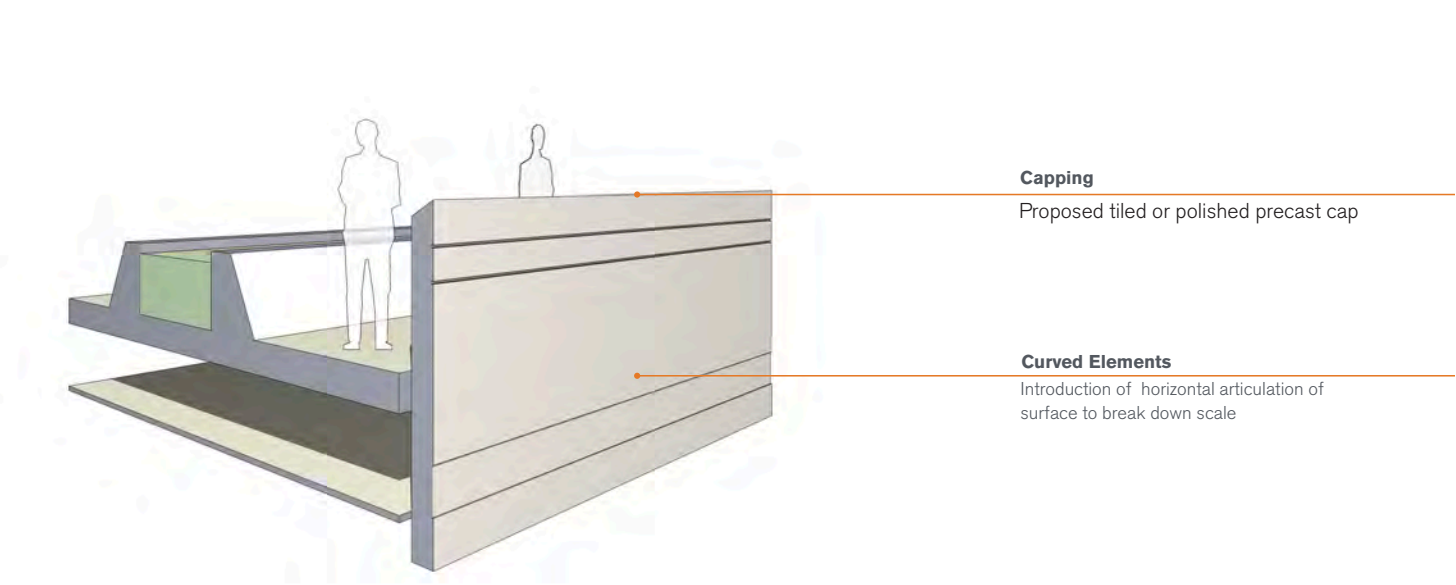


Ribbon balustrade detail indicating relocated planter to address maintenace and to provide a better integration of planting into learning areas



View of curved 'ribbon' balustrades from Ground Level looking towards the Library

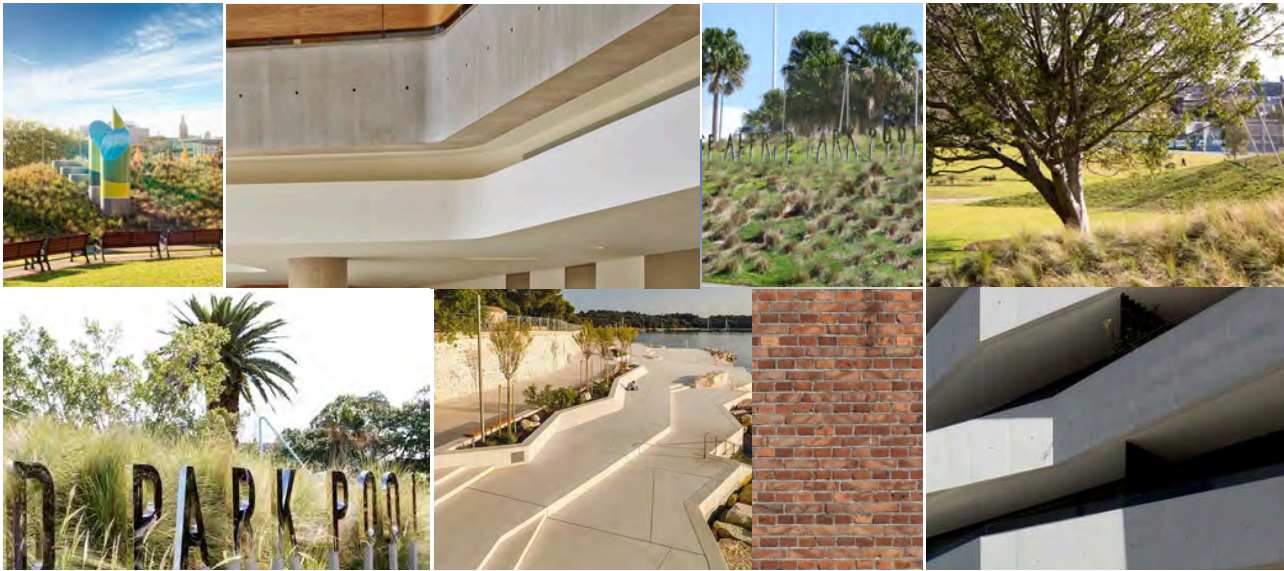
Diagram 8e Landscaped terraces facade type



Ribbon balustrade detail indicating relocated planter to address maintenace and to provide a better integration of planting into learning areas



Prince Alfred Park materials and finishes



Prince Alfred Park materials and finishes
Introduction of a neutral masonary ribbon to the landscaped terraces

Diagram 12e Basement and Tower Egress Strategy Diagram

Basement Egress:

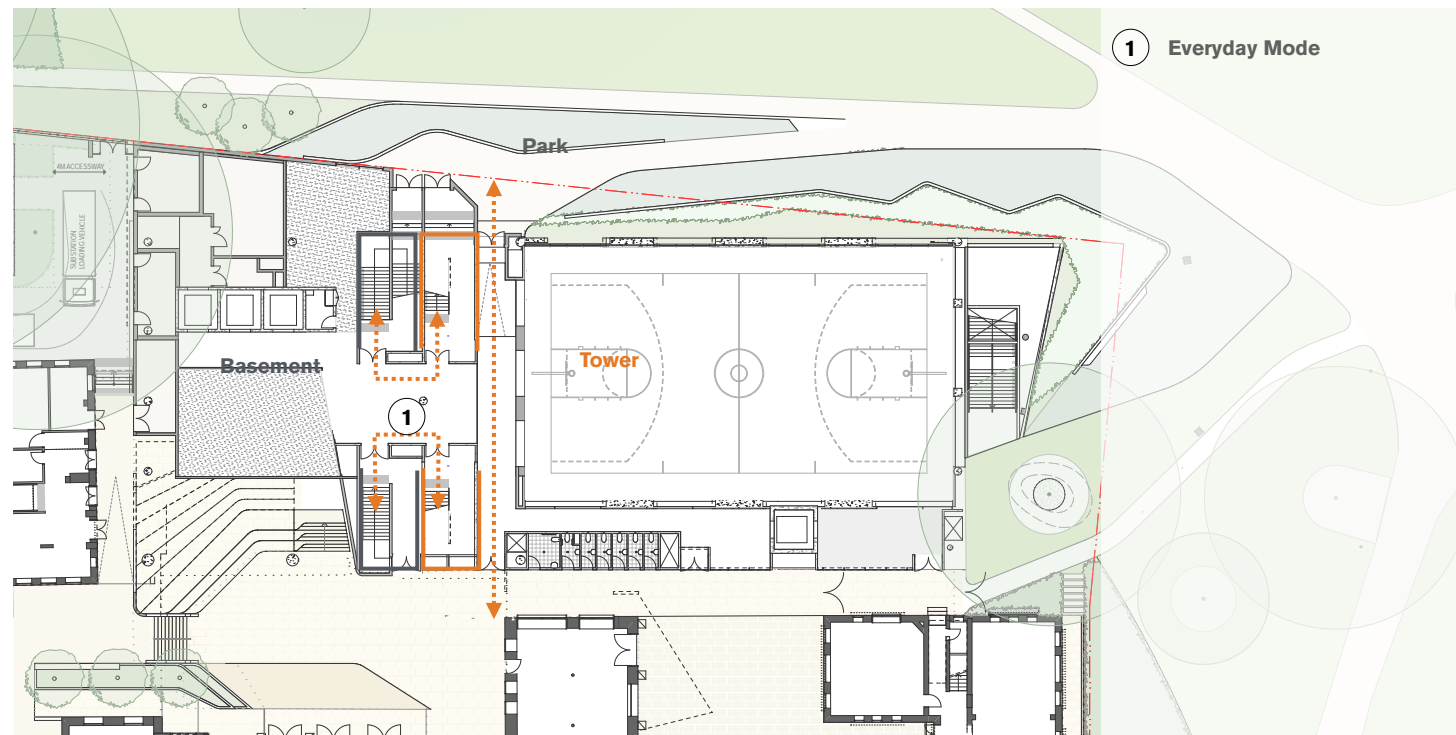
2 x 2000mm (4000mm) + 1 x 3500mm (1 x 3500mm)
egress from basemen
= 860pax

ie: 200pax for first 2m of egress and then 60pax for every 500mm thereafter

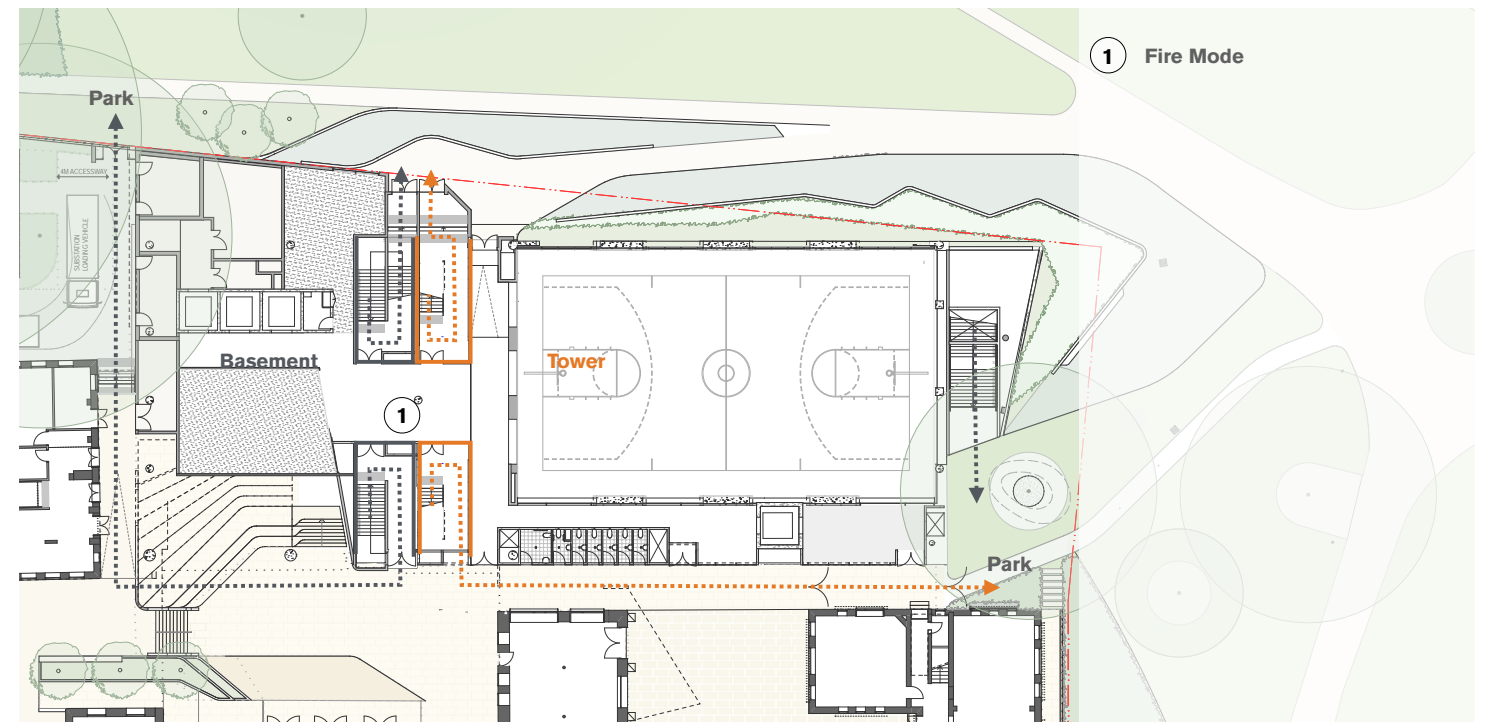
$$2000\text{mm} = 200\text{pax}$$
$$7500\text{mm} - 2000\text{mm} = 5500\text{mm}$$
$$500\text{mm}/500 = 13 \times 60 = 660\text{pax}$$

Tower Egress

2 x 1640mm (3000mm) egress from tower stairs



Lower Ground Level Everyday Access: Tower/Basement



Lower Ground Level Fire Egress Access: Tower/Basement

Diagram 13a Canteen seating zones

