

## **Proposed Amendments to SSD 8388**

### **Architectural Design Statement**

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#### **1.0 BACKGROUND TO THE DESIGN CHANGES**

Detailed analysis of the proposed mechanical services design for this project has identified that architectural improvements and associated significant reductions in plant floor area requirements were possible with the adoption of a more centralised mechanical services design which maintained the level of floor by floor control & energy efficiency required by Macquarie University.

This centralised plant design does not require the previously proposed floor by floor plant rooms throughout Building 25WWB therefore allowing the currently approved floor area to be utilised to increase the number of Higher Degree Research student workspaces within the building. This is consistent with the Faculty of Arts stated objective to maximise research student and academic staff interaction throughout the new Arts Precinct.

The revised mechanical services centralised design provides an opportunity to invest to improve both the space utilisation efficiency and the functionality of the Arts Precinct, while maintaining the design excellence of the currently approved project. The resultant detailed changes form the basis of this proposed amendment to SSD 8388.

#### **2.0 DETAILED DESCRIPTION OF THE DESIGN CHANGES**

##### **2.1 Deletion of Floor by Floor Plant Rooms to Building 25WWB**

The 16 off plantrooms previously provided to the west end of the 25WWB tower – 2 per floor – to all levels Ground to Level 7 inclusive are deleted. These 16 plantrooms are replaced with a single, screened rooftop plant area that is of similar, but slightly larger, floor area and which is also slightly higher, located at the roof level directly above the previous location of these now deleted plantrooms. Vertical distribution ductwork is provided in part of the previous plant room area. This vertical ductwork is connected to the horizontal duct runs to the northern & southern facades, maintaining the distribution external to the usable floor zone of the tower, as currently approved.

Similarly, the Plant Rooms previously provided to the east end of the 25WWB tower – 2 per floor – to all levels from Level 4 to Level 7 inclusive are deleted. These 8 off plantrooms are replaced with a single screened

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rooftop plant area of similar, but slightly larger area & height, that is located at roof level, directly above the previous location of these now deleted plantrooms. Vertical distribution ductwork is provided in part of the previous plant room area. This vertical distribution ductwork is connected to the horizontal duct runs in the northern & southern facades, maintaining the currently approved design principle of mechanical services distribution external to the usable floor zone of the tower.

## **2.2 Replanning of now freed floor area to Building 25WWB**

The external plan form of the 25WWB tower is maintained unchanged but there is now approved internal floor area, which previously accommodated mechanical equipment, that can be utilized to allow the following design changes which is a more efficient usage of space:

### **2.2.1 Central Collaborative Hub:**

- The Communications Rooms previously located in the Central Collaborative Hub are relocated to the east and west ends of 25WWB on alternative floors to allow more casual use social space to be provided in the collaborative area on Levels 3 to 7 inclusive & a new meeting room to be provided to Level 1
- The extent of glazed area to the northern façade of the Collaborative Hub is correspondingly increased to improve natural light and outlook to the heart of social interaction in the building. The extent of new face brickwork to match the existing is reduced slightly but remains of sufficient scale to provide the desired legacy fabric reference.

### **2.2.2 The Western End of 25WWB**

- Ground Floor Level – an IT Store Room and a Teaching & Learning Store Room are added to improve the functionality of these academic staff service areas and reduce reliance on remote centralized storage
- Level 1 – A new Higher Degree research (HDR) student workroom with 6 off workstations is added to the northern side, to increase HDR student workspace numbers within the main tower, & windows are created in the west façade replacing the previous mechanical louvres to provide light and outlook for the HDR students. A Communications Room is relocated from the Central Collaborative Hub to the southern side
- Level 2 – New Higher Degree research (HDR) student workrooms each with 6 off workstations are added to the northern & southern sides, to increase HDR student workspace numbers within the main tower, &

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windows are created in the west façade replacing the previous mechanical louvres to provide light and outlook for the HDR students.

- Level 3 - A new Higher Degree research (HDR) student workroom with 6 off workstations is added to the northern side, to increase HDR student workspace numbers within the main tower, & windows are created in the west façade replacing the previous mechanical louvres to provide light and outlook for the HDR students. A Communications Room is relocated from the Central Collaborative Hub to the southern side
- Level 4 - New Higher Degree research (HDR) student workrooms each with 6 off workstations are added to the northern & southern sides, to increase HDR student workspace numbers within the main tower, & windows are created in the west façade replacing the previous mechanical louvres to provide light and outlook for the HDR students.
- Level 5 - New Higher Degree research (HDR) student workrooms each with 6 off workstations are added to the northern & southern sides, to increase HDR student workspace numbers within the main tower, & windows are created in the west façade replacing the previous mechanical louvres to provide light and outlook for the HDR students.
- Level 6 - A new Higher Degree research (HDR) student workroom with 6 off workstations is added to the northern side, to increase HDR student workspace numbers within the main tower, & windows are created in the west façade replacing the previous mechanical louvres to provide light and outlook for the HDR students. A Communications Room is relocated from the Central Collaborative Hub to the southern side
- Level 7 - New Higher Degree research (HDR) student workrooms each with 6 off workstations are added to the northern & southern sides, to increase HDR student workspace numbers within the main tower, & windows are created in the west façade replacing the previous mechanical louvres to provide light and outlook for the HDR students.

#### **2.2.3 The Eastern End of 25WWB**

- Level 4 – A new Higher Degree research (HDR) student workroom with 6 off workstations is added to the northern side, to increase HDR student workspace numbers within the main tower, & windows are created in the east façade replacing the previous mechanical louvres to provide light and outlook for the HDR students. A Communications Room is relocated from the Central Collaborative Hub to the southern side
- Level 5 – New Higher Degree research (HDR) student workrooms each with 6 off workstations are added to the northern & southern sides, to increase HDR student workspace numbers within the main tower, &

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windows are created in the east façade replacing the previous mechanical louvres to provide light and outlook for the HDR students.

- Level 6 - A new Higher Degree research (HDR) student workroom with 6 off workstations is added to the northern side, to increase HDR student workspace numbers within the main tower, & windows are created in the east façade replacing the previous mechanical louvres to provide light and outlook for the HDR students. A Communications Room is relocated from the Central Collaborative Hub to the southern side
- Level 7 – New social use Lounge areas are provided to both the northern & southern sides to improve the accommodation provided for visiting senior academics and Emeritus Professors who continue to generate vital research work for the Faculty of Arts. Windows are created in the east façade replacing the previous mechanical louvres to provide light and outlook for these Lounge areas. An associated internal redistribution of Executive Staff Office areas & the workstation and lounge areas for the Emeritus Professors and Senior Visiting Academics provides improved workstation accommodation and improved northern light and views to the open Emeritus Professors suite

## **2.3 Mechanical Plant Amendments to 25WWC & Roof Area of 25WWA**

### **2.3.1 Building 25WWC**

- The cooling towers located in the central zone of Building 25WWC at the Roof Terrace on, level 4, are to be relocated to the Plantroom located on the roof of the eastern wing of 25WWA, immediately to the east of the 25WWB tower – this is consistent with the centralized mechanical services design philosophy and is considerably more efficient for future servicing of these major elements which are now grouped with the other plant facilities on this level.
- The usable Roof Terraces of 25WWC is extended into the area previously occupied by the cooling towers to increase outdoor use educational and social space, and increase the range of activities that can be supported by this facility.
- The roof mounted plant areas located to the east and west ends of the 25WWC roof are also deleted. The consolidated plant design allows these to be provided in the previously allocated plant areas on the lower floors of 25WWC. The roof terrace areas are correspondingly expanded.
- Suitably scaled garden and outdoor equipment storerooms are now provided in part of the roof areas which have become available for

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other uses, following the removal of the plant rooms, to better support the function and maintenance of the roof terraces

- The ETFE roof is now able to be extended over the area previously allocated to the cooling towers and roof plant rooms. These areas are now a consolidated part of the overall usable Roof Terrace
- The external form of 25WWC is retained as currently approved, maintaining the strong character of the southern entry to this public facing building, along with the integration of the ETFE covered Roof Terrace and adjoining Atrium space

#### **2.3.2 Roof Plant to Building 25WWA eastern wing**

- The cooling towers previously located in the central roof zone of Building 25WWC are now relocated to the northern end of the roof mounted Plant Platform on the eastern wing of 25WWA immediately to the east of the 25WWB tower
- The equipment layout of the currently approved Plant Platform is refined in conjunction with the new centralized mechanical services design philosophy to minimize the area of the additional louvre enclosed Plant Platform area required to accommodate the relocated cooling towers and the new cooling tower area is provided with a louvred roof form to screen the towers from direct views from the 25WWB towers academic wings above so that the entire Roof Plant Platform is now roofed.

## **3.0 JUSTIFICATION OF THE DESIGN CHANGES**

### **3.1 Revised Mechanical Services Design**

The revised central plant based mechanical services re-design identified during the tender process has numerous benefits as follows:

- It is more efficient and at the same time has allowed the retention of the project scope and major architectural design elements without detrimental value management.
- It retains control systems that achieve a consistent standard of floor by floor and zone by zone control equal to that achieved by the more complex floor plant installation originally proposed.
- It provides for a reduction in the number of individual of plant items which improves future maintenance and serviceability.

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- All major services duct runs to the academic wings of 25WWB are retained in the twin wall façade to the north and the external clad services ducts to the south façade therefore maintaining the maximized ceiling heights consistent with the retention of major existing building fabric that is a basic design and sustainability principle.
- It reduces the extent of the currently approved building envelope that is occupied by mechanical services plant and therefore increases the usable floor area with no increase in the currently approved building envelope.
- The additional usable area allows additional functionality that is entirely consistent with the original design objectives.

#### **3.2 Utilisation of the Additional Usable Floor Areas:**

The additional usable floor areas within the currently approved envelope, that are now available as a result of the revised mechanical services installation, have been appropriately re-designed to add functionality in a manner that is consistent with the original design philosophy and augments the response to the Faculty of Arts brief for this project.

This improved outcome is realised with a modest additional investment, and without any adverse visual impact upon the building envelope.

The additional usable floor area has been redesigned to include the following uses in a manner consistent with the original design intent:

- Increased workspace numbers for HDR students – a total of 90 additional HDR student use workstations are added throughout 25WWB which will support increased academic staff and senior research student interaction and collaboration levels in all academic departments as these additional spaces are evenly distributed amongst the various academic department areas. It is noted that these additional workstations do not represent an increase in university population, and are instead alternate work points for a group of students already on campus working in ad-hoc locations.
- Improved Emeritus Professor & Visiting Senior Academic accommodation with improved workstation spaces and improved social interaction areas
- Additional social meeting space within, improved north light to and outlook from the Collaborative Hub that is the central element of the interactive academic environment that is the underlying design focus of the new building



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- Increased usable Roof Terrace area to support both active and passive outdoor use of the Roof Terrace facilities located on building 25WWC

The justification for the design changes and modest additional costs is that they provide significant improvements to the overall project's functionality, by adding additional usable area that is consistent in purpose with the original design intent, and is contained entirely within the currently approved envelope.

#### **4.0 DESIGN EXCELLENCE COMMENTARY & NSW GA COMMENTS**

##### **4.1 Maintenance of Design Excellence**

The detailed planning response is enhanced by the proposed design changes, with additional HDR student workspace numbers and improved outlook, light and social interaction space to the Collaborative Hub, that all contribute positively to the enhanced student and staff collaborative experience sought by the Faculty of Arts, which is a fundamental design principle of this project.

The increased scale of the usable Roof Terrace to 25WWC enhances the ability of this area to accommodate a range of settings for social interaction, quiet relaxation and active outdoor learning which are reflected in the revised landscape design prepared by Group GSA and forming a part of this application for an amendment to the current approval under s4.55.

Visually significant external changes to the building envelope are limited to the following:

###### **4.1.1 The northern elevation of 25WWB Collaborative Hub:**

There is an increase in the extent of the glazed component of the northern façade to the Central Collaborative Hub of the 25WWB tower and an associated decrease in the extent of solid masonry façade to match the existing 25WWA face brickwork.

The visual balance of the façade is not significantly impacted by this amendment and the legacy fabric reference of the face brick façade element to 25WWA remains successful and legible while the

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increased glazed area provides enhanced light, outlook and visual interconnectivity to the important collaborative spaces in the heart of the 25WWB tower.

We believe that the design excellence of the currently approved project is maintained.

#### **4.1.2 The east and west facades 'ends' to the 25WWB tower:**

Louvres that were serving the original floor by floor plant areas are deleted from the east and west masonry facades of the 25WWB tower and windows with integral shading devices are provided to add natural light and outlook for the new HDR student workstations and Emeritus Professor/Visiting Academic Lounges now located in these areas.

The opening proportions of the windows in these masonry façade elements has been carefully considered to balance the additional light required to enliven the workstation equipped spaces with the design intent of the solid matching masonry volume that provides a legacy fabric reference and visual relationship with 25WWA sought by the University's heritage consultants.

The new windows are of square proportion to read as openings punched into a solid masonry element and therefore deliberately differentiated from the currently approved continuous vertical strip form of the central windows to this element and the glazing forms throughout the project generally.

We believe that the design excellence of the project and specifically the face brick legacy to 25WWA continues to be achieved with the revised design which adds interest to the façade but retains the character of a solid masonry element, including the increased height of the masonry to these east & west 'ends' required to screen the roof mounted plant platforms that are a part of the revised mechanical services design concept.

#### **4.1.3 The new Roof mounted plant platforms to 25WWB:**

The location of central plant on the roof level of the 25WWB tower generally in the plan location of the previous floor by floor plant areas at the east and west ends of the academic wings involves only a modest increase of 1750mm in the height of the masonry



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facades, when compared to the currently approved design, with this slight increase in height remaining below the approved maximum building height.

The masonry height increase required to appropriately screen the now fully roof mounted plant of 1750mm, while visible as shown on the elevations now submitted, is not of a scale that amends the overall proportion or presentation of these facades, and does not adversely impact the design quality of the project.

The height increase has been minimised by adopting a screened open plant configuration with acoustically controlled equipment to meet the acoustic performance parameters identified in the acoustic report forming a part of the current approval.

The masonry walls are extended in their current plan form and the section of roof mounted plant area, that is between the screening masonry walls, is enclosed with louvre screen walls which will not be read as a part of the façade and which therefore maintains the current visual balance of the approved project.

We believe that these measures ensure the design excellence of the current approval is maintained.

#### **4.1.4 The larger roof mounted plant platform to 25WWA eastern wing:**

The relocation of the cooling towers to the roof mounted plant platform on the eastern wing of 25WWA slightly increases the plan size and height of this element of the currently approved design.

The impact of this increase has been controlled by a combination of the following measures:

- the cooling tower type to be installed has been varied to be a minimum height model. The visual impact, when viewed from the academic wings of 25WWB above, has been considered in detail, and addressed by introducing a screening louvre roof element that allows the free ventilation area required by the cooling towers, whilst masking views of the cooling towers and installed plant and equipment from above.

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The height of the roof-mounted enclosure proposed has increased by 1000mm from 4500mm on the currently approved project to 5500mm.

- the planning and design of the entire plantroom area has been reviewed to minimize the minor additional footprint & height that is now required to accommodate the relocated cooling towers with the north/south length of the Plantroom increasing by 4750mm to the north as shown on the revised drawings. Overall, there is a smaller plan area and height provided for the cooling tower enclosure, than that associated with the previous Building 25WWC roof top location.
- the plant platform is now fully roofed – part solid/part screening louvres – rather than part open as previously approved which provides better visual containment when viewed from higher level vantage points.
- the setback distance of the plant platform walls from the retained lower level masonry and expressed concrete facades of 25WWA has been maintained consistent with the currently approved project to the east.
- the western façade setback is maintained as existing to the area to the south of the 25WWB tower and this alignment is now continued to the north of the 25WWB tower as the setback to this area is reduced when compared to the currently approved project.
- the increase in the height and plan area of the roof mounted plant platform has therefore been minimised – the architectural response is to continue the currently approved approach by maintaining the setbacks to the primary eastern façade to treat the roof-mounted plant enclosure as a neutral functional later addition to rather than a part of the retained masonry legacy fabric below.
- We propose treating the higher wall planes by creating a setback solid base with an overhanging part open/part solid main upper wall volume of visually light vertical louvres with the external face of the louvres on the alignment of the currently approved setback from the lower masonry façade. The plant area will therefore clearly read as a separated component that is clearly not a part of the legacy fabric.
- In summary, the architectural treatment now proposed is a considered response so that overall impact is of no visual significance in the context of the overall presentation & balance of the project and is therefore considered reasonable on the balance of the overall design changes proposed when the modest

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additional capital cost, the advantages of the additional usable floor areas and the efficiencies involved are considered

On balance, we believe that the Design Excellence of the project has been maintained and is consistent with the currently approved project.

#### **4.2 Continuity of Design Response to Previous NSW GA Comments**

The design changes do not modify the manner in which the currently approved project responded to all comments issued by the NSW GA during the exhibition, post exhibition and drafting of the conditions of approval stages.

Specifically, the proposed design changes that are the subject of this application for a Section 96 amendment to the current approval, do not alter the following:

##### **4.2.1 Short to Medium Term Landscape & Urban Design to the Carpark/25WWC Interface:**

The proposed design changes do not impact this interface

##### **4.2.2 Long Term Landscape & Urban Design to the Carpark/25WWC Interface:**

The proposed design changes do not impact this interface

##### **4.2.3 Accessibility from the southern carpark to/from the southern entry of 25WWC:**

The proposed design changes do not impact the continued accessibility of the entire Arts Precinct project from the southern carpark via the southern entry of 25WWC

##### **4.2.4 Form, massing and articulation of the 25WWB/25WWC Atrium Spaces:**

The form, massing and articulation of the 25WWB/25WWC Atrium Spaces is not impacted by proposed design changes and remains as

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shown in the rendered images submitted in support of the proposal prior to the current approval

#### **4.2.5 External Materials and Finishes:**

There are no changes proposed to the external materials and finishes other than for the deletion of the previously approved louvres and inclusion in lieu of additional shaded windows in the east and west end facades of the 25WWB tower to provide light and outlook to the new HDR student workstations and Emeritus Professor/Visiting Academic Lounges now located in these areas, plus the minimal reduction in new face brickwork and increase in glazed wall area to the northern face of the Collaborative Hub of 25WWB.

The opening proportions of the windows in the east and west end facades, with their associated integral vertical and horizontal shading, has been carefully considered to balance the additional light required for these workstation equipped spaces with the design intent of the generally solid matching masonry which was a legacy fabric reference and visual relationship with 25WWA that was endorsed by the University's heritage consultants.

The new windows are of square proportion to read as openings punched into a solid masonry element and therefore deliberately differentiated from the currently approved continuous vertical strip form of the central windows to this element and the glazing forms throughout the project generally.

We believe that the original design intent of the face brick reference of the east and west ends of 25WWB continues to be achieved with the revised design which adds interest to the façade but retains the context clearly of a solid masonry element with openings consistent with the currently approved design.

The changed proportions of glazed façade to masonry façade in the northern elevation of the central Collaborative Hub to 25WWB do not weaken the legacy fabric reference and visual relationship of the masonry section with 25WWA and the additional light and outlook provided to the social and interactive heart of the building is a clear improvement.

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#### **4.2.6 Sustainability Benefits, Initiatives & Opportunities of the Atrium Space:**

The manner in which the Sustainability Benefits, Initiatives and Opportunities of the Atrium Space are addressed is not impacted by the proposed design amendments and remains consistent with the current approval.

#### **4.2.7 Equitable Access Strategy:**

The proposed design changes do not impact on and maintain the comprehensive response of the currently approved design to the issue of accessible and equitable access throughout the Arts Precinct Project including the use of ramps and vertical lifts only in all primary circulation routes with the three chair platform stair lifts only utilised in secondary routes to facilitate the maximum retention of existing building fabric which is a major sustainability outcome.

#### **4.2.8 Accessible Carparking access to 25WWC:**

The proposed design changes do not impact on and maintain the direct accessible carparking access to 25WWC and the accessible use parking spaces immediately adjacent the southern entry to 25WWC provided in the currently approved project

#### **4.2.9 25WWC southern perimeter/carpark interface:**

The proposed design changes have no impact on this aspect of the currently approved project.

#### **4.2.10 Atrium Space between 25WWB & 25WWC:**

The Atrium Space is not impacted by the currently proposed design changes – it remains an active use component of the Arts Precinct while also forming a significant covered but light filled and therefore welcoming & comfortable component of the campus public domain all as currently approved.

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4.2.11 Safety for the general public and users within the Atrium Space:

The proposed design changes do not amend the Atrium space in formal or functional terms and the level of activity, visual overlooking & visual interaction plus sightlines to ensure the security of users are not impacted by the design changes and therefore remain entirely consistent with the current approval.

**Ray Hudson**

**Budden Nangle Michael & Hudson Architects**