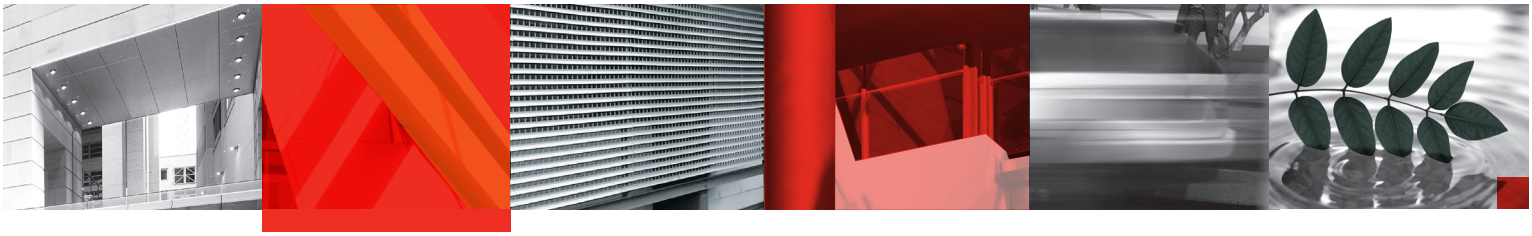
Preferred Project Report
Broadway Building



University of Technology Sydney
Project Application No. 09_0212

Submitted to the Department of Planning & Infrastructure
On Behalf of the University of Technology Sydney

October 2011 ▪ 10092

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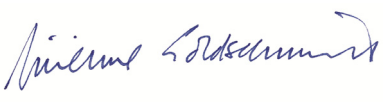
JBA Urban Planning Consultants Pty Ltd operates under a Quality Management System. This report has been prepared and reviewed in accordance with that system. If the report is not signed below, it is a preliminary draft.

This report has been prepared by: Vivienne Goldschmidt

Signature  Date 11/10/11

Contents

1.0 Introduction 1

2.0 Key Issues and Proponent's Response 3

3.0 Proposed Changes and Preferred Project 7

- 3.1 Weather Protection along Broadway 7
- 3.2 Safety and Security of the Screen 9
- 3.3 Arcade between Broadway Building and CB10 11
- 3.4 External Illumination and Lighting 13
- 3.5 Building Identification Signage 14
- 3.6 Multi-Media Screens 16
- 3.7 Screening of Roof Plant 17
- 3.8 Materials and Finishes 17
- 3.9 New Plans and Reports 19

4.0 Final Statement of Commitments 20

- 4.1 Ecologically Sustainable Development 20
- 4.2 Construction Management 20

Figures

1 Section of Colonnade along Broadway 8
2 Extent of covered walkway along Broadway 8
3 Anti-climb zone 10
4 Plan of Arcade 11
5 Landscaping to Arcade looking north 12
6 Landscaping to Arcade looking south 12
7 Image of screen and gills at night 13
8 Dimensions and front view of one letter through the screen 15
9 Building identification signage on Broadway and Wattle Street 15
10 Multi-media screens at corner of Broadway and Jones Street 17
11 Proposed external materials and finishes 18

Tables

1 Response to submissions 3
2 Summary of proposed lighting 14

Contents

Attachments

1 Architectural Drawings
Denton Corker Marshall

2 Building Elevations
Denton Corker Marshall

3 Details of Colonnade
Denton Corker Marshall

4 Consultation Report
KJA Pty Ltd

5 External Specialist Schematic Lighting Report
Electrolight

6 Crime Prevention Design Advice for UTS Broadway Building
Designing Out Crime Research Centre, University of Technology Sydney

7 Landscape Design Report
Taylor Brammer Landscape Architects

1.0 Introduction

An Environmental Assessment Report (EAR) for the Project Application for the Broadway Building at the University of Technology at Ultimo was publicly exhibited for a period of four weeks between 16 March 2011 and 15 April 2011. The Department of Planning and Infrastructure received five submissions in response to the exhibition. Four from government authorities and one from a member of the public commending the design.

The proponent, the University of Technology Sydney (UTS), has reviewed and considered the submissions and, in accordance with clause 75H(6) of the *Environmental Planning and Assessment Act 1979* (EP&A Act), has responded to the issues raised. This Preferred Project Report (PPR) sets out the proponent's response to the issues, details a number of revisions to the Project Application and includes the final Statement of Commitments.

This report should be read in conjunction with the Environmental Assessment Report (EAR) dated March 2011 and forms part of the Project Application.

Submissions

In total four submissions were received from public authorities as follows:

- Council of the City of Sydney;
- Department of Transport;
- State Transit; and
- Roads and Traffic Authority.

None of the agency submissions objected to the development of the Broadway Building. However, State Transit raised a number of concerns about bus operations on Jones Street; the RTA provided advisory comments in relation to road and pedestrian safety; and Transport NSW was seeking further measures to reduce private vehicle use and raised concerns about impacts of the development on any future underground transport corridor.

The submission from the Council of the City of Sydney contained detailed comment on elements of the design, in particular, in relation to landscaping of the proposed access way between the Broadway Building and Building 10; weather protection for pedestrians on Broadway; and the safety and passive surveillance of the space between the binary screen and the building facade .

UTS's response to all the issues raised is summarised in Section 2.

Changes to the Project Application

In response to issues raised in the submissions and as a result of further design development, the proponent has revised some elements of the design of the Broadway Building. These changes are consistent with, and do not depart from, the essential elements of the exhibited project and with the approved Concept Plan for Broadway Precinct of the UTS City Campus. They include the following:

- landscaping of the covered access way - the "Arcade" - between the Broadway Building and UTS Building 10;
- improving pedestrian amenity along Broadway;
- enhancing the safety and security of the screen; and
- illumination of the building.

The changes are described in Section 3 and shown on the revised architectural drawings prepared by Denton Corker Marshall (DCM) at **Attachments 1** and **2**. The plans and reports to be substituted as a consequence of the amendments are listed in Section 3.9.

Consultation with the Community

The proponent undertook in the EAR to provide a record of the consultation it carried out prior to, and during, the public exhibition, with the local community students and staff of UTS, and other relevant stakeholders. The report, prepared by KJA Pty Ltd, is appended at **Attachment 4.** In essence, there was a very low level of interest in the development - likely as a result of previous stakeholder engagement in relation to the UTS Concept Plan - and no objections were recorded or major concerns were raised.

Statement of Commitments

The draft Statement of Commitments has been revised to reflect the changes to the Concept Plan. The final Statement is in Section 4 of this PPR.

2.0 Key Issues and Proponent's Response

This section responds to the issues raised in the submissions. Further information in response to the submission made by the City of Sydney is provided in the following section.

Table 1 - Response to submissions

Issue	Response
City of Sydney	
Landscaping to the Arcade The Landscape Concept Plan provides insufficient detail with regard to the overall strategy and vision for the landscape architecture. The Landscape Concept Plan should be amended to include details demonstrating how the laneway could be designed to maximise opportunities discussed in the text of the Landscape Design Report. Photomontages and illustrated plans of amendments should be provided. Buildings should have adequate setbacks to allow for the natural development of tree canopies. Continuous trenches should be installed to maximise the soil volume available to the trees. Provision for drainage needs to be carefully considered. The use of advanced tree stock in all public areas is recommended.	See Section 3.3. It should be noted that in a meeting between the proponent and the City of Sydney (Graham Jahn and others on 16 June 2011) it was decided to rename the space between the Broadway Building and the adjacent Building 10 previously referred to as the Laneway. In order to emphasize the fact that the space is covered by a glass roof, it is now referred to as the 'Arcade'.
Safety of space between the screen and the building The binary screen may provide a concealment hazard, especially when the building side is not illuminated. Measures should be implemented to provide passive surveillance at night, such as the provision of lighting within corridors.	Lighting and other measures have been incorporated into the design to facilitate surveillance of the space behind the screen, see Sections 3.2 and 3.4.
Weather protection CoS recommended that the external screen be adjusted to provide some weather protection along Broadway in order to improve pedestrian amenity, and that any awning treatment comply with Council's requirements. Alternatively, an independent lightweight weather protection awning should be provided to the satisfaction of the City of Sydney Council.	The colonnade has been enlarged to provide better protection, see Section 3.1.
Street trees The proposal retains the five Council street trees located along Broadway which must be protected during all stages of development. New street trees shall be planted in accordance with the City's Street Tree Master Plan and shall be submitted to Council's Tree Management Unit for approval.	Noted. The existing London Plane trees will be protected throughout the construction project in accordance with Australian Standard 4970 Protection of Trees on Development Sites. An arborist has been retained by UTS to monitor the trees and provide any additional protection if required. All additional street tree planting will be in accordance with the City of Sydney's Street Tree Masterplan in force at the time of construction.

Issue	Response
City of Sydney	
Closure of Jones Street It is noted that UTS intends the permanent road closure of Jones Street between Broadway and Thomas Street, and subsequent public domain upgrade of this area. The provisions of the Roads Act 1993 apply to the closure of this road and undertaking of public domain works.	The permanent closure of Jones Street is not part of this application.
Green Travel Plan A Green Travel Plan for the building must be prepared for the building prior to its occupation.	Noted. A Green Travel Plan for the Broadway Building will be captured in a Campus-wide Green Travel Plan. The Plan will accord with the vision outlined in the City of Sydney's Sustainable Sydney 2030.
Roads and Traffic Authority	
The proposed development will generate additional pedestrian movements in the area. Therefore consideration should be given to ensuring pedestrian safety.	Noted. Pedestrian safety will improve when Jones Street is closed to traffic. Management of pedestrian traffic during construction is a key part of the construction traffic management plan.
Clear sight lines shall be provided at the property boundary line to ensure adequate visibility between vehicles leaving the car park, and cyclists and pedestrians along the frontage road footpath in accordance with relevant Australian Standards.	The proposed scheme uses an existing egress point which already provides adequate visibility between vehicles, pedestrians and cyclists.
In accordance with AS2890.1-2004, the queuing area is to be provided between the vehicular control point and the property boundary and shall be sufficient to allow a free influx of traffic which will not adversely affect traffic or pedestrian flows in the frontage road. In this regard, the minimum queuing length between the boom gates and the property boundary shall be a minimum of three (3) car lengths per lane for two (2) entry lanes.	Appendix C of the Transport and Parking Report, prepared by Halcrow, submitted with the EAR considered queuing between the boundary and the boom gates and calculated the capacity of the existing entry lane to the carpark as well as capacity with an additional entry lane. It was found that a single entry lane would result in a maximum of five cars queuing to enter into the car park. Calculations based on the two entry lanes show that the number of queuing vehicles will be reduced to three as approaching cars will be processed more quickly at the boom gates. Accordingly, no more than three queuing spaces are required, one in the first lane and two in the second lane. Although queuing space for only three car lengths is required, the floor plan allows for four. The minimum queuing length between the boom gates and the property boundary will be two (2) car lengths per lane for two (2) entry lanes.
The DP&I shall liaise with the RTA, Department of Transport, STA, Council and the developer for any changes that may occur to bus services including bus stops, bus zones and bus lanes.	Noted
All vehicles are to enter and exit the site in a forward direction.	Noted
Off-street parking shall be designed and constructed in accordance with relevant Australian Standards.	Noted

Issue	Response
Roads and Traffic Authority	
The layout of the proposed car parking areas associated with the subject development should be in accordance with relevant Australian Standards. The internal aisle ways are to be marked with pavement arrows to direct traffic movements in/out of the site and guide traffic circulation through the car park.	Noted
All loading and unloading shall occur on site.	Noted
A Demolition and Construction Traffic Management Plan detailing construction vehicle routes, number of trucks, hours of operation, access arrangements and traffic control should be submitted to Council for approval, prior to the issue of a construction certificate. All demolition and construction vehicles are to be contained wholly within the site and vehicles must enter the site before stopping.	Demolition and early works/ bulk excavation were the subjects of a previous separate consent. A detailed CTMP for the works the subject of this application will be prepared by the appointed contractor in accordance with the CTMP outlined in the EAR.
Department of Transport	
Conditions of approval should be applied to ensure further engineering detail is undertaken to confirm the application is consistent with earlier agreed engineering testing and to determine any impact on the future constructability and operations of the Westmead to CBD transport corridor.	Noted. The conditions of approval proposed by the Department of Transport reflect the same conditions for the approved Broadway Precinct Concept Plan. These conditions were the outcome of extensive discussions, negotiations and the provision of reports in relation to any potential impacts on the Westmead to CBD Transport corridor.
The provision made for through-site pedestrian connections between Jones Street, Wattle Street and Broadway is noted. Attempts to improve pedestrian permeability on site are commended.	Noted
The site has a high level of public transport accessibility. The proposed level of car parking is consistent with the concept plan approval and represents a low car growth scenario.	Noted
10% of car parking spaces will be designated for car pooling. Additional spaces should made available for car share arrangements. Parking allocation should be in line with the recommendations of a Workplace Travel Plan (WTP).	The traffic report confirms that the Building 10 car park will include priority spaces for small cars and alternative-fuel vehicles but no car share spaces are currently proposed. It is envisaged that the proposed Green Travel Plan would investigate and propose the demarcation of parking spaces for different uses which could include car share.
Travel Demand Management measures should be prepared as part of the WTP and an update to the pre-existing Transport and Access Guide (TAG), to encourage and support sustainable means of travel, with a particular focus on increasing public transport usage. This should be conditioned as part of the consent. The Institute for Sustainable Futures at the University of Technology Sydney should be contacted to assist in the preparation of a WTP for the Broadway campus.	Noted

Issue	Response
State Transit Authority	
State Transit cannot support the proposed full street closures of Jones Street for the loading and unloading of vehicles.	The permanent closure of Jones Street is not part of this application.
Bus infrastructure is to be provided prior to the closure of Jones Street to ensure the 501 service can be redirected. The EAR is unclear on whether Jones Street will be permanently closed as part of this project application or if this comes under the approval of the Frasers Development.	The closure of Jones Street is not part of any UTS proposal and is part of the Frasers Broadway development. As part of this a right turn bay for buses from Broadway at Wattle Street is intended.
The turning paths as shown in Figure 4 of Appendix M of the Traffic Report cannot be supported by State Transit as conflict points have been identified as follows: ▪ the bus passing the opposing vehicle on the right turn from Broadway into Jones Street; ▪ the bus passing the parked vehicles in the load zone near the intersection of Jones Street and Broadway; ▪ the bus passing a vehicle travelling in the opposing direction when the lane slightly diverges on Jones Street; and ▪ the bus passing the parked vehicles in the load zone prior to the relocated bus zone. Alternatively Jones Street could be made one way with trucks leaving the site via Jones Street, Thomas Street and Harris Street.	Figure 4 of the Construction Traffic Management Plan submitted with the EAR identifies all the potential conflict points raised and shows that the manoeuvres can be undertaken safely by all vehicles. The swept paths for a bus entering Jones Street and a heavy rigid truck leaving Jones Street have been overlaid on Figure 4 to show that they can pass each other while the arrangements are in place. All of the swept paths allow for 300mm clearance of kerb and 300mm clearance to other vehicles. Therefore, there would be a 600mm clearance between two vehicles passing each other. Road marking alterations are proposed in addition to the removal of on-street parking which, as shown, will clearly delineate vehicle paths in order that the movements can be undertaken safely. Furthermore, pedestrians will be directed to the eastern side of Jones Street to further reduce conflict. It is proposed to remove the two 2P on street car parking spaces to permit trucks to pass each other.
Any construction work (i.e. Crane lifts etc) that will require the closure of Jones Street cannot be supported as the 501 service cannot be redirected.	Noted. An on-site crane is proposed. Its erection and dismantling is planned to occur out of hours from Broadway subject to the relevant approvals/permits.
Due to the high volume of bus services in the area, STA request an opportunity to provide input and approval for any Traffic Management Plans.	Noted

3.0 Proposed Changes and Preferred Project

In response to issues raised and as a result of further design development the proponent has amended some elements of the design of the Broadway Building. These are described and assessed below and illustrated in the revised architectural drawings which replace those in the EAR (**Attachment 1).** In addition, the Department of Planning and Infrastructure (DoP&I) requested further details on the height of the screen, the building and plant/ equipment as they relate to screening of the roof plant. This information is provided in the elevations at **Attachment 2.**

3.1 Weather Protection along Broadway

The City of Sydney, in its submission, raised concerns about the adequacy of weather protection in the undercroft between the screen and the building along Broadway and impacts on pedestrian amenity. The matter was further discussed in a meeting between the University and City officials (Graham Jahn and others, 16 June 2011) where a width of 2.5 to 3 metres for the undercroft was suggested.

The architectural image of the building is formed by the tilted and skewed plates, providing a strong sculptural response to the scale of the building. Notwithstanding this, extensive cutaways have been created at the lower level of the screen to allow pedestrians to move between the footpath and the undercroft.

In response to the issues raised by the City of Sydney, the proponent has increased the width of the undercroft by moving the southern glass facade of the building inwards at street level. This also required moving the columns behind. The new arrangement creates a covered walkway within the property boundary of a minimum width of 2.4 metres (see **Figures1** & **2** and **Attachment 3)**. Due to the skewed facade plate, the walkway widens to about 2.6 metres towards Wattle Street.

Any further adjustment of the glass facade (to achieve a 3 metre wide walkway) would have significantly compromised the structural components of the building.

This adjustment is considered adequate and suitable to meet the City's requirements given that two other weather protected routes supplement the Broadway footpath - the diagonal path through the Broadway Building and the covered Arcade one the northern side of the building.

In relation to rain penetration, it should be noted that 42% of the length of the Broadway frontage is screened and of this, about 83% of the screen material is effectively solid in the anti climb zone (that is, 3 to 6.5 metres above ground). The extent of solid to void in the anti-climb zone contributes to protection from wind driven rain.

It is considered that the extent of weather protection needs to be balanced on the one hand against the overall design intent for the screen (as above and detailed in the EAR) and the need to provide an open safe space with limited opportunities for concealment, on the other. On balance, the increased extent of weather protection is considered reasonable given the conflicting drivers.

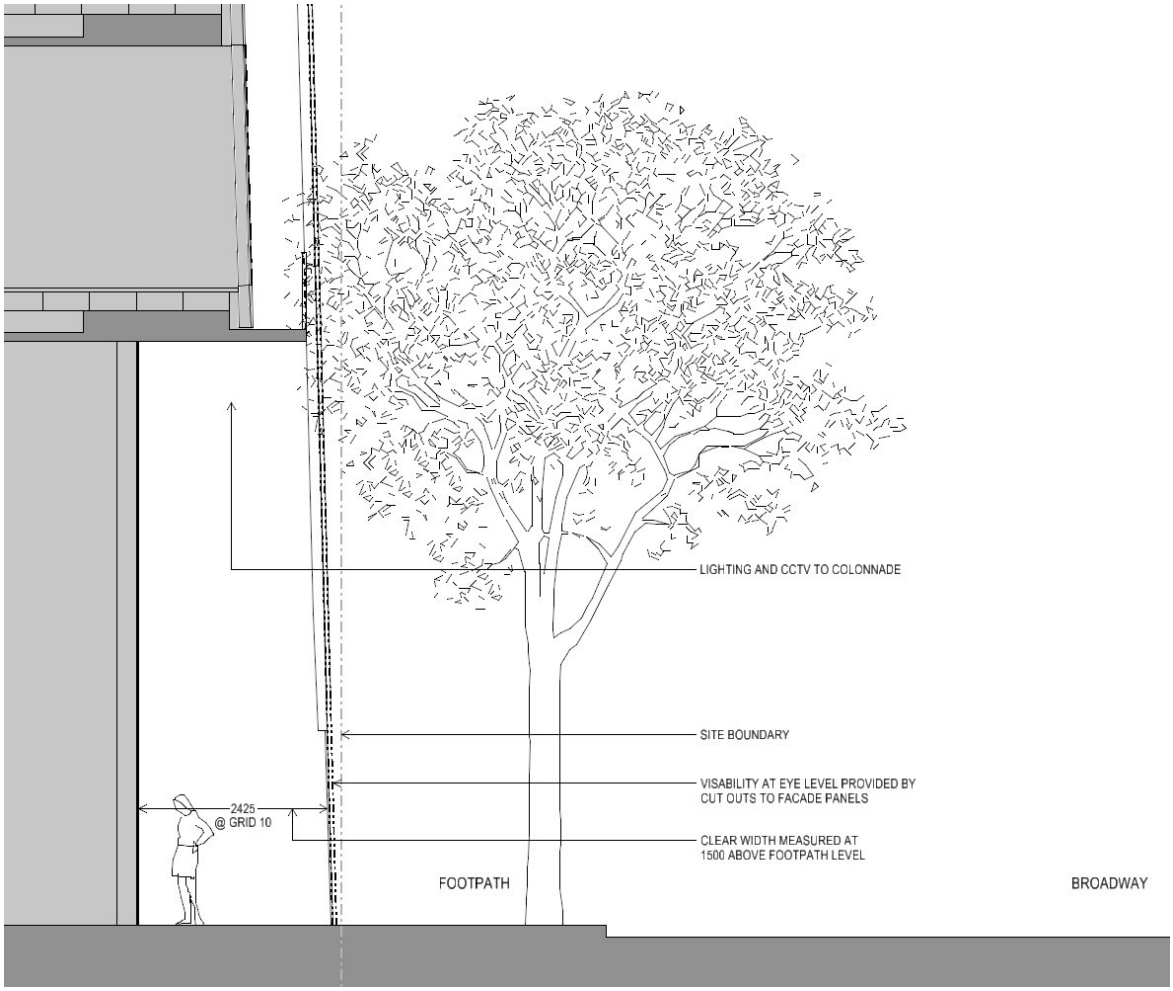


Figure 1 - Section of Colonnade along Broadway *(Source: DCM)*

Figure 2 - Extent of covered walkway along Broadway *(Source: DCM)*

3.2 Safety and Security of the Screen

In addition to issues about the width of the colonnade, concerns were raised that the screen could provide a concealment hazard or be dangerous. The proponent's response to potential safety and security matters is described below.

Surveillance and Concealment

The ratio of free to solid area within the aluminium screen varies dependent on safety and structural requirements. At footpath level a high degree of visual transparency is necessary for safety in, and surveillance of, the colonnade. The pattern of cut outs in the aluminium screen enable a pedestrian walking along the colonnade to see street activities through the screen. Visual connectivity to the building's interior is provided at the same time. This is achieved where the screen is entirely cut back from touching the ground on the three street frontages as follows:

- Broadway - 58% open
- Jones Street - 73% open
- Wattle Street - 71% open.

In addition, the activities and uses intended for the main concourse that runs from street level at the Wattle Street (Level 00) entrance to street level at the Jones Street (Level 02) entrance (lecture theatres and informal learning lounges; student union bar and canteen; displays and exhibitions; coffee shop) will result in a significant number of staff and students occupying and moving through this area of the building throughout the day and until lectures and other activities conclude. These activities will provide both visual interest when viewed externally and passive supervision of pedestrians using the colonnade behind the screen.

As teaching occurs on the campus till 10.00pm at night internal lighting will illuminate the area behind the screen.

Once the building closes for the night, the area will continue to be illuminated from the canopy overhead. The specialist lighting consultant for the project, Electrolight, has indicated in the Schematic Lighting Report (see **Attachment 5**) that lighting levels for the colonnade will exceed AS1158.3.1 Category P7 (see Section 3.4 of this PPR).

In addition to the above passive surveillance and lighting there will be CCTV coverage of this area linked back to the university's security service.

The proposed measures were assessed on behalf of the proponent by the Designing Out Crime Research Centre at UTS (see **Attachment 6)** . The assessment generally concluded that the lighting and CCTV coverage of the colonnade would be sufficient to detect and identify people in the colonnade so contributing to a safe environment around the building.

The report further recommended that interactive projected imagery onto the surface of the building be used to indicate an active, used and alive space at night. This recommendation is not considered feasible or appropriate and instead, subject to further design development, additional motion lighting (activated via motion detectors as pedestrians walk through the space) will be integrated into the facade, soffit or footpath within the colonnade.

The report also examined and made recommendations regarding the safety of the screen structure. In response, the specification of the screen has been further developed with the thickness of the aluminium panels near footpath level increased from 4mm to 6mm, and the detail of the leading edge of the screen revised.

Steel framing to the back of each panel improves the structural integrity of the screen, where pedestrians may attempt to damage it. Moreover, advice from leading aluminium fabricators such as Universal Anodizers and Australian Aluminium Finishing, indicates that graffiti paint is generally easy to clean off an anodised aluminium surface by applying thinners or steam cleaning.

Misuse of, and damage to, the screen structure

The potential for students and others to attempt to climb, damage or deface the screen has been obviated by a number of measures.

As discussed earlier, visual transparency is necessary along the footpath to increase pedestrian safety in the colonnade, with slots and cut outs in the aluminium screen providing a visual connection between the building's exterior and interior.

In order to make the screen difficult to climb, the level of perforation is to be reduced and solid areas are to be increased in the 'anti-climb zone' which is approximately 3.0m to 6.5m above the street. In the non-climb zone the slots and cut outs will be filled in with a fine perforation, which increases the solid area from 58% to 83% (see **Figure 3**). Since the fine perforations in the anti climb zone extend below the height of the covered walkway, they also contribute to rain protection within the colonnade.

The perforations around the screen edges and gills areas will be 77% solid to support the screen's structural integrity and to withstand physical damage.

Specific treatments to the screen to prevent/minimise graffiti damage, such as coating the surface, are being investigated.

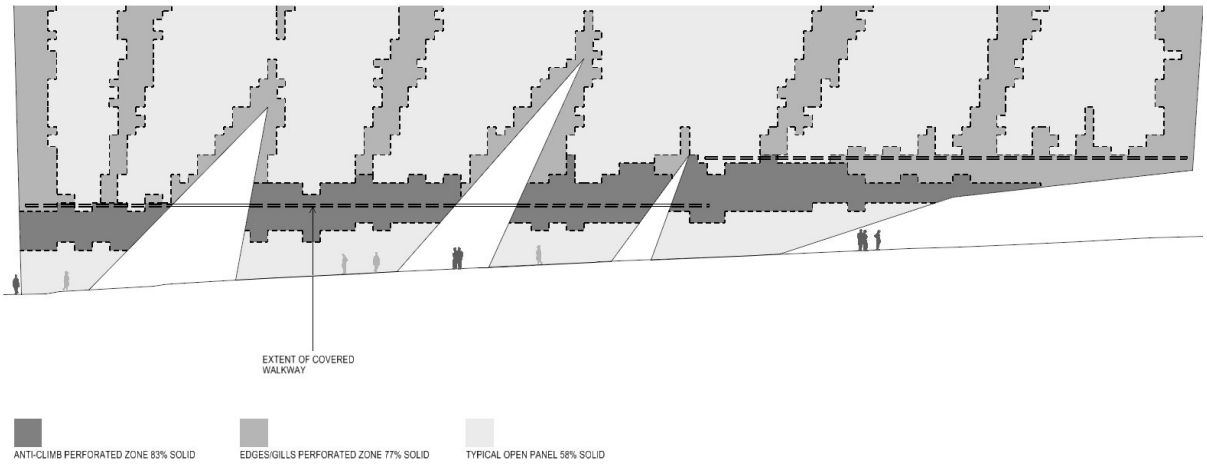


Figure 3 - Anti-climb zone *(Source: DCM)*

Injury

As shown at **Attachment 3**, the edges of the screen that are elevated above ground level at pedestrian level will be fitted with a rubber edge capping to protect pedestrians from potential injuries. Steel bollards are also proposed at pavement level to prevent pedestrians walking into the edge of the screen.

3.3 Arcade between Broadway Building and CB10

The space between the Broadway Building and the adjoining Building 10 (CB10) was referred to as the Laneway in the EAR. In order to emphasize that the space is covered by a glass roof and functions as an arcade, it is now referred to as the 'Arcade'.

Revised Design Details

The design of the Arcade has been further developed since the exhibition of the EAR (see **Figure 4**). The Arcade will provide a semi-enclosed circulation space protected from the elements by a glass roof above. In addition to its role as a circulation route, the Arcade will provide a social hub between the two buildings, linking the student union spaces in the Broadway Building via an open on-grade terrace to the student services and proposed informal teaching spaces within CB10.

As part of this project, a new on-grade entrance to CB10 is to be created via a new opening - approximately 3.5metres high and 3.5 metres wide - to the existing south facade of CB10 to connect activities across the Arcade between the Student Union in the Broadway Building and the student services area in CB10. Existing fixed windows and glass louvres on the CB10 facade will be removed and new glazed double doors will be installed to match the existing conditions (see Level 01 Floor Plan at **Attachment 1).**

The Arcade will be detailed with display cases and screens inserted into the Broadway Building elevation at ground level. These will exhibit UTS information, student work, retail displays, etc.

The Arcade will be paved with granite. Towards the Jones Street and Wattle Street ends of the Arcade the pavers will transition to an asphalt surface that will blend into the existing footpath material.

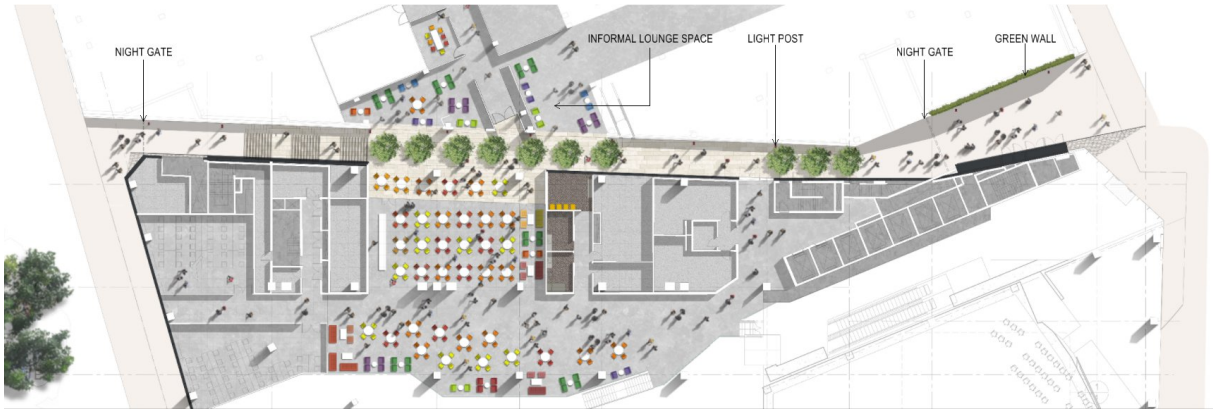


Figure 4 - Plan of Arcade *(Source: DCM)*

Proposed Landscaping

The landscape treatment of the Arcade has been significantly modified since the exhibition of the EAR in response to issues raised by the City of Sydney. A new Landscape Design Report, replacing that in the EAR, is appended to the PPR at **Attachment 7.**

Because the Arcade is essentially a space for people to transition and move through, it needs to be uncluttered with activation and interest placed at the edges. The landscaping of the space reflects this.

A single row of semi mature trees of an appropriate species will assist in adjusting the height of the Arcade to a more human scale and counterpoint the urban nature of the space. Seven trees are to be arranged in a row along the main zone of interaction between the Broadway Building and CB10. A shorter row of three trees further east will provide a landscaped strip away from the busy link between the two buildings.

The trees will be planted in a central continuous soil trench fitted with drip irrigation lines. An air gap between the supported pavers and the topsoil below will provide appropriate drainage and air exchange. The trees will be regularly pruned to maintain a healthy proportion and to avoid outgrowing the width of the space.

A green wall, in the form of a vertical garden, is to be established along the CB10 facade towards the Jones Street end of the Arcade (see **Figures 5** & **6**).

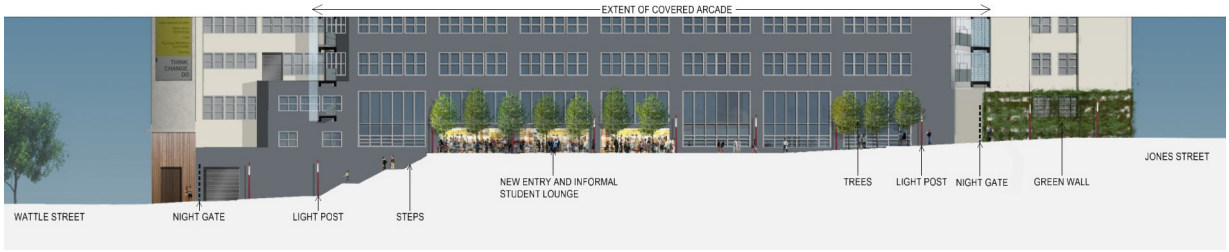


Figure 5 - Landscaping to Arcade looking north *(Source: DCM)*

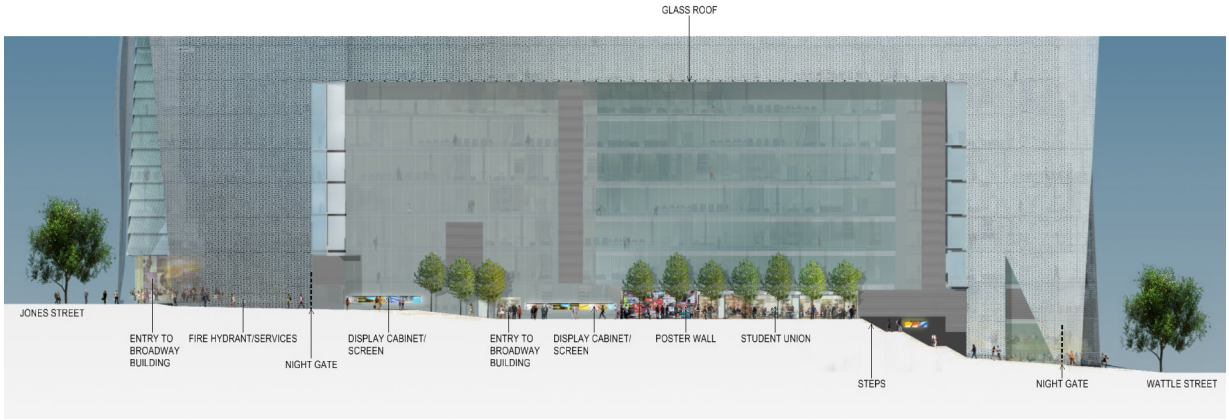


Figure 6 - Landscaping to Arcade looking south*(Source: DCM)*

Safety & Security

For safety reasons, there will be no public access to the Arcade at night, but egress will be available at all times. The gates to be located at each end of the space will be designed to be integrated into the building's facades while open.

The lighting concept for the Arcade involves a series of tall light posts, positioned along the CB10 facade at regular intervals. The light fittings will illuminate the Arcade at pedestrian level and enhance the perception of security. They will be extended beyond the gate towards Jones Street and beyond the stairs towards Wattle Street.

3.4 External Illumination and Lighting

Since the exhibition of the EAR, the proponent has undertaken extensive work on the feature lighting and external illumination of the building. The strategy is detailed in an expert report prepared by Electrolight at **Attachment 5** and involves the following key components:

- Illuminating the facades and 'gills';
- lighting to the colonnades; and
- lighting to building entrances.

These are described below and summarised in the table which follows. Detailed information and illustrations may be found in the Electrolight report. A further feature is the strategy for building identification - described in Section 3.5 below.

Facades and Gills

Instead of a uniform wash of light which risks flattening the textured nature of the façade and contributing to unwanted sky glow, it is proposed to contain the light of the southern, western and eastern facades to the 'gills' of the screen, as shown in **Figure 7**. These integrated highlights on the façades will allow the perimeter of the building to visually extend and merge without a defined edge or prescribed direction.

Custom lengths of 20mm diameter cold cathode tube will be mounted along the outer edge of the protruding gill. The effect will be to produce a subtle green glow, activating the gill's form and defining the leading edge with a visible linear source. To ensure the visual comfort of pedestrians, motorists and occupants of the building, the largest available diameter of cold cathode will be used to provide a diffused source with a relatively low surface brightness. The vertical mounting arrangement will provide light to the facade material without contributing excess light to the night sky.

The gills will not be illuminated during daylight hours, and will be controlled through UTS's building management system and/or timer devices as appropriate to maximise energy efficiency.

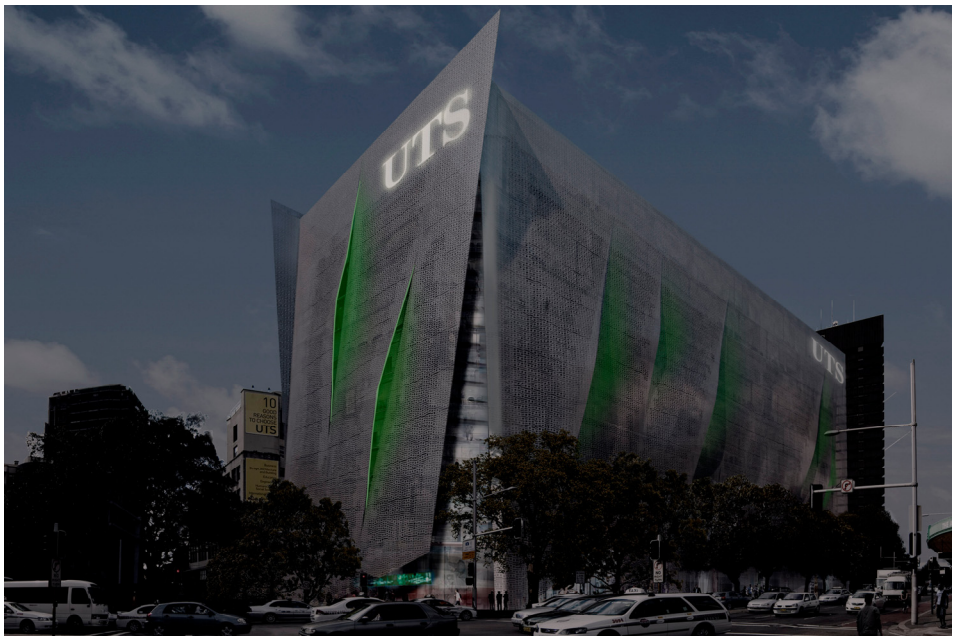


Figure 7 - Image of screen and gills at night (*Source: Electrolight*)

Colonnades

The lighting concept for the colonnades along Broadway, Wattle Street and Jones Street aims to support the design intent for transparency and visual interest at street level by creating a sense of added depth, dimension and luminosity. A line of rectangular and square light sources centrally mounted to the soffit of the canopy will provide appropriate levels in both the vertical and horizontal planes to enhance safety and ease of access. The lighting levels will be consistent with the recommendations of AZ/NZS Standards 1158.3.1 Category P7 (Pedestrian Category) as a minimum.

Building Entrances

The four entries to the Broadway Building will be activated at street level with a surface mounted fluorescent light to the soffit above the entry concealed by the first glazed shingle. The next three levels of glazed shingles above each entrance will have a linear LED source which will wash the front of the shingles to add luminous depth and activation.

Table 2 - Summary of proposed lighting

Building element	Light source	Colour	Illumination period
Gills and screen	Cold cathodes	Green	From dusk to dawn
Colonnades	Fluorescent or LED	White	From dusk and as required during the day
Entrances	Fluorescent and LED	White	From dusk and to dawn
Arcade	Light posts along CB10 facade	White	From dusk and as required during the day

3.5 Building Identification Signage

Building identification signage to the UTS Broadway Building's facade is an essential part of the building's overall design. The signage is not an element added to the building's facade but is designed to be fully integrated into the perforated aluminium screen which forms the outer skin of the building.

When illuminated the three letters of the university's acronym - U T S - will shine and glow through the perforations and cut outs in the screen. LED light boxes in the shape of the three letters will be fitted behind the perforated screens on the Broadway and the Wattle Street facades (see **Figures 8** & **9)**. From the approach the letters will have a discreet halo effect against the binary screen with the letters in silhouette. Through the screen, from the alternative approach, the shape of the letters will glow through cut outs within the aluminium panel.

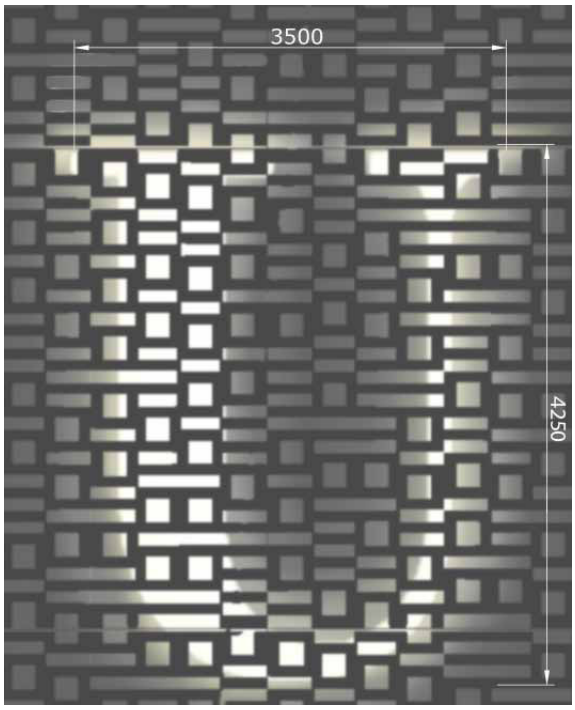


Figure 8 - Dimensions and front view of one letter through the screen (*Source: Electrolight*)

Figure 9 - Building identification signage on Broadway and Wattle Street *(Source: DCM)*

The location of the signs on the facades and their approximate size are detailed in the architect's drawings at **Attachment 2** and the Specialist Schematic Lighting Report at **Attachment 5).** One sign is proposed on the southern facade facing Broadway and another on the western facade facing Wattle Street. Both will be located near the top of the screens on both facades and cover an approximately 80sqm area (5m high and 16m wide).

While the UTS logo is not strictly signage mounted on the building facade, the proposal has been considered against the requirements of the *City of Sydney Signage and Advertising Structures Development Control Plan 2005* (Signage DCP). Due to their location near the top of the screen, the signs can be defined as 'wall signs'.

The signs comply with all relevant requirements of Section 3.4.1.of the Signage DCP in that they:

- are compatible with the design of the building, as they are fully integrated into the facade screen;
- occupy a minor proportion of each building elevation,
- do not project from the elevations; and
- are limited to one sign per elevation.

The signs are appropriately less than 1.5% of the area of the Broadway elevation and less than 5% of the area of the Wattle Street elevation.

They also comply with the relevant illumination requirements in the DCP (Section 2.5):

- They will not detract from the architecture of the supporting building during daylight as they are integrated into the facade screen's perforated pattern.
- Cabling will be concealed within the screen.
- They will be part powered through a renewable energy source, the PV panels mounted to the top of the plant roof.
- Both signs will operate 24 hours a day and the estimated energy consumption over a three year period will be in the range of 150 MW per sign if LEDs are used as light sources. The advantages of various light sources are currently being investigated.

The proposed signage complies with all requirements in State Environmental Planning Policy No 64 - Advertising and Signage (SEPP 64) and meets all relevant objectives. All the assessment criteria specified in Schedule 1 of SEPP 64 are satisfied. In summary, the signage is compatible with the character of the area and consistent with the overall design of the building. In particular, the proposal demonstrates imagination and innovation in its relationship to the building (and indeed the proposed use of, and activities within, the building). Illumination will not result in unacceptable glare and will not affect the safety of pedestrians, motorists or aircraft, or the amenity of nearby residents.

In short, the signage is suited to the location and building and is a discreet and innovative way of identifying the university in general and the 'owner' of the building in particular.

3.6 Multi-Media Screens

Multi-media screens will be incorporated into the facade near the entrances to the building and in the Arcade. The purpose of these multi-media screens is to convey information and imagery to the university community, and possibly to the broader public, and to reflect and suggest the hi-tech nature of the teaching and research within building (see **Figure 10**).

Three main locations are proposed for the multimedia screens:

- along the main street front entrances, incorporated into the shopfront glazing above head height where they will be visible to pedestrians;
- internally within the high pedestrian traffic zones such as the Wattle Street and Jones Street entrances, the lecture theatres at Level 0, the coffee shop/showcase and the lift lobby on Level 2; and
- in the Arcade at the interface between CB10 and the Broadway Building, providing an information hub outside the Student Union.

Figure 10 - Multi-media screens at corner of Broadway and Jones Street *(Source: DCM)*

3.7 Screening of Roof Plant

The Department of Planning and Infrastructure has requested confirmation that the plant and equipment on the roof will be suitably screened. The elevations at **Attachment 2** show the height of the screen, top of plant room, and top of the building.

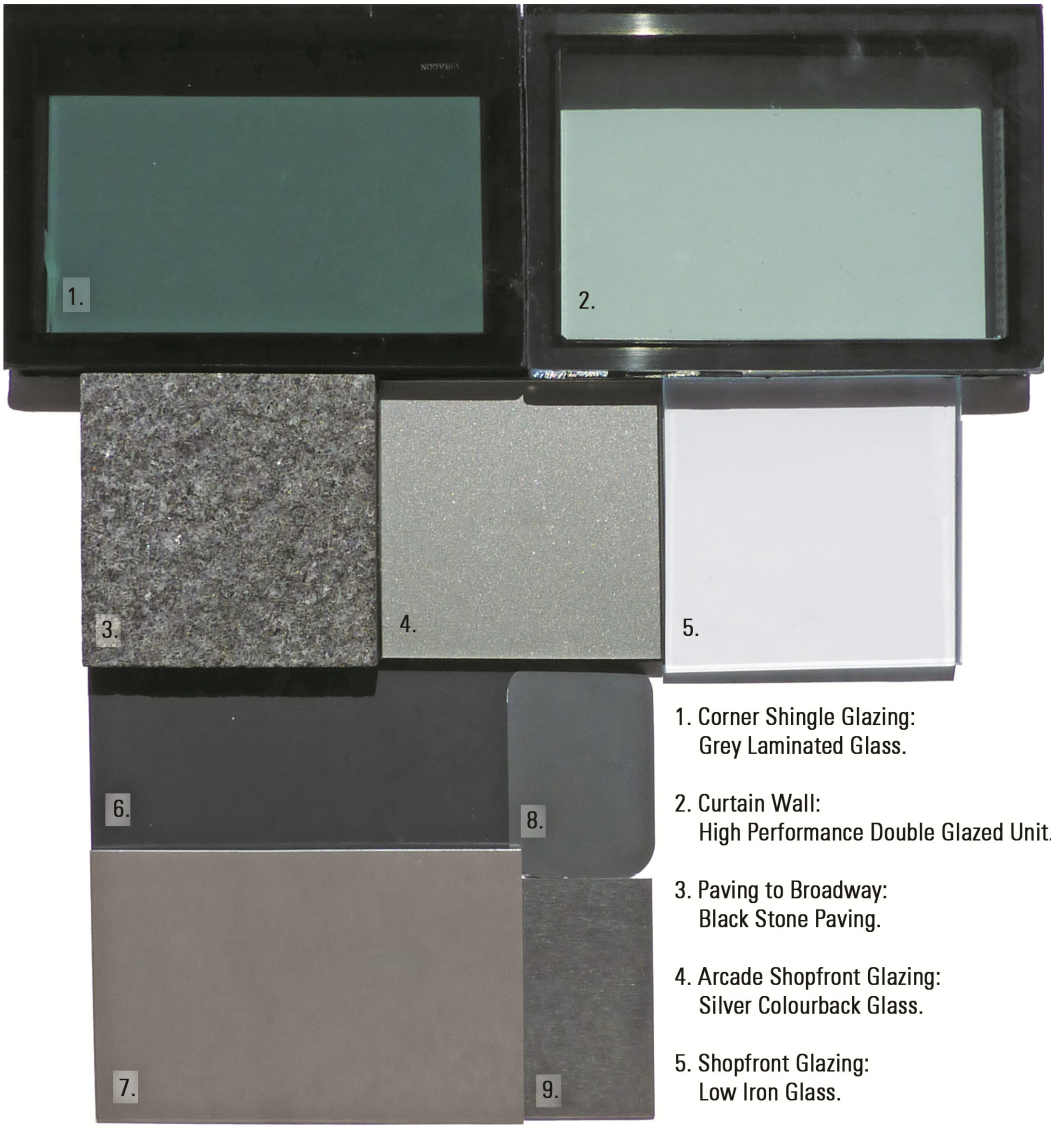
As outlined in the EAR, in keeping with the teaching/research function of the building and as part of EIF funding, a 7.89 metre high wind turbine is mounted on the roof of the plant room set back more than 13 metres from the Broadway and Wattle Street façades. Also on the roof is a 4.99 metre high solar collector set back over 19 metres from the Broadway façade, as well as a photovoltaic array. All are hidden behind the architectural feature and none are visible from the corner of Wattle Street and Broadway opposite the building.

The wind turbine may become visible from more distant vantage points to the west: this is considered acceptable as it announces and displays the sustainability and teaching credentials of the Broadway Building.

3.8 Materials and Finishes

A revised materials and finishes board for the exterior of the building is submitted separately with this PPR and reproduced below in **Figure 11**. After review by UTS, the colour of the anodised aluminium for the screen has been changed and is now a customised lighter medium grey colour (refer to Item 7 on **Figure 11**).

The granite paving along Broadway is 'Austral Black'. Asphalt will be used for the footpaths along Wattle Street and Jones Street.



1. Corner Shingle Glazing:
   Grey Laminated Glass.

2. Curtain Wall:
   High Performance Double Glazed Unit.

3. Paving to Broadway:
   Black Stone Paving.

4. Arcade Shopfront Glazing:
   Silver Colourback Glass.

5. Shopfront Glazing:
   Low Iron Glass.

6. Binary Screen Framing:
   Dark Grey Anodised Aluminium.

7. Binary Screen:
   Anodised Aluminium: UTS Sample 1.

8. Shopfront Mullions:
   Stainless Steel.

9. Roof:
   Dark Grey Colourbond Metal Deck Roofing.

Figure 11 - Proposed external materials and finishes *(Source: DCM)*

3.9 New Plans and Reports

As a result of the above changes and design development, the proponent has amended and replaced the following reports/ plans that were included with the EAR:

- Architectural drawings, prepared by DCM (Appendix E to EAR), now at **Attachments 1**, **2** and **3**.
- Landscape Design Report, prepared by Taylor Brammer Landscape Architects (Appendix H in EAR), now at **Attachment 7**.

The following are new specialist reports that now form part of the Project Application:

- Consultation Report, prepared by KJA (see **Attachment 4**).
- Specialist Schematic Lighting Report, prepared by Electrolight (see **Attachment 5**).
- Crime Prevention Design Advice for UTS Broadway Building, prepared by Designing Out Crime Research Centre, University of Technology Sydney (see **Attachment 6**).

4.0 Final Statement of Commitments

In accordance with Part 3A of the *Environmental Planning and Assessment Act 1979*, the following are the commitments made by UTS to manage and minimise potential impacts arising from the proposal. These commitments are the same as the draft commitments included with the EAR for the Broadway Building, and replace them.

4.1 Ecologically Sustainable Development

In relation to the sustainability of the Broadway Building, the proponent will:

- Achieve a 5 star Green Star Education v1 design rating certified by Green Building Council of Australia;
- Implement the sustainability measures detailed in this report in relation to energy, water, waste and transport;
- Monitor and report on the performance of the building in accordance with the measures set out in Section 5.6.7 of this report.

4.2 Construction Management

Prior to the commencement of construction, UTS will prepare a detailed Construction Management Plan based on the framework plan at **Appendix M** of the report. As a minimum the plan will cover:

- Construction traffic management;
- Noise management;
- Waste management;
- Erosion and sediment control;
- Air and dust management;
- Pedestrian management; and
- Protection of existing street trees.