2.2 Land Title and Zoning

The approximately 2,120 square metre site forms part of two lots owned by UTS (see site survey at **Appendix C)** legally described as:

- Lot 2003 in DP 1053548; and
- Lot 2004 in DP 1053548.

The site is located within the Sydney local government area and is currently zoned Residential-Business in the Ultimo-Pyrmont zoning map that forms part of the *Sydney Local Environmental Plan 2005* (SLEP 2005), see **Figure 5.**

The Council of the City of Sydney is finalising a new Local Environmental Plan in accordance with the Standard Instrument. For information, the site is to be zoned B4 Mixed Uses and educational establishments are permitted in this zone.

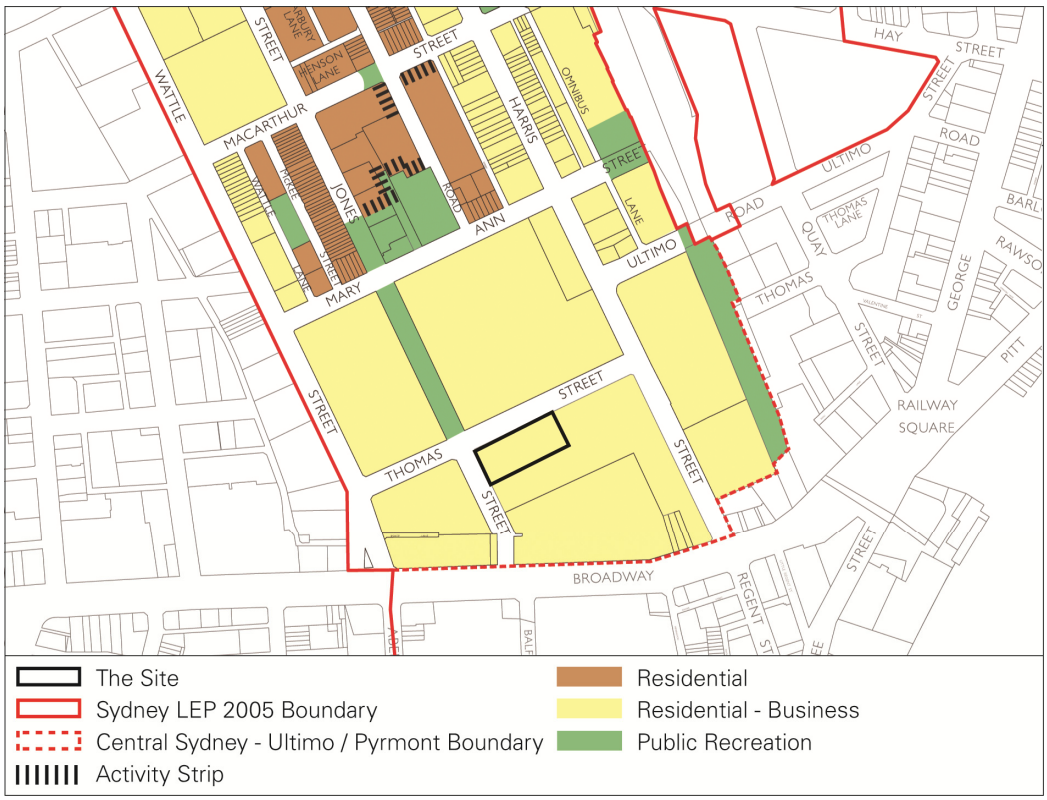

Figure 5 – Extract from Ultimo-Pyrmont zoning map, SLEP 2005

2.3 Existing Conditions

The site is currently vacant and was previously part occupied by the now demolished former TAFE NSW Building 'T'. As described in Section 1.2.2, the Concept Plan approval was modified to enable the bulk excavation of the site to proceed.

Two concrete ramps are located across the site providing north south connections between Thomas Street and the basement car park levels of Buildings 1 and 2. As noted, the existing western ramp is to be removed in order to accommodate the future Thomas Street Building and make way for the future LRS. The existing eastern ramp is to be widened to facilitate access to basement levels of the future LRS, future Thomas Street Building (via a service corridor through the LRS), Multi-Purpose Sports Hall and Buildings 1 and 2.

Existing landscape trees are scattered along the Thomas Street and Jones Street edges of the site. Approval to remove these existing trees was provided as part of the Concept Plan approval.

A selection of photographs of the site is shown at **Figure 6 - 11**.

Figure 6 – View of site fronting Thomas Street

Figure 7 – View of site fronting Jones Street

Figure 8 – View of existing Alumni Green

Figure 9 – View of site with Building 4 adjoining

Figure 10 – Building 4 fronting Thomas Street

Figure 11 – View of site looking west along Thomas Street

Topography

The site is relatively flat with a mild slope from south to north.

Geotechnical Conditions and Hydrogeology

The geotechnical investigation of the site, undertaken for Modification 3 to the Concept Plan by Jeffrey and Katauskas Pty Ltd, revealed that the subsurface profile of the site comprises a variable thickness of fill and residual silty clays over weathered shale and then sandstone bedrock. The groundwater below the site will be present at a reduced level of about RL7mAHD to RL10mAHD.

Access and Transport

The site has direct access to multiple car, bus, rail and bicycle routes, and is a short at grade walk to the other campus buildings in the Precinct across Alumni Green and via Jones Streets.

Broadway is a major public transport corridor with numerous, regular bus services. The site is about 500 metres from Central Railway Station via either the Devonshire Street Pedestrian Tunnel or along Broadway. Signalised crossings are available at Wattle Street and Broadway as well as Harris Street and Broadway.

3.0 The Project

3.1 Project Application

Approval is sought for the construction of a new building, as illustrated in the architectural drawings located at **Appendix D**, consisting of the following:

- A part four and part six storey building (plus three level basement), to a maximum height of 29.00 metres (RL 43.10);
- 11,295 square metres of gross floor area for education and associated ancillary uses;
- Associated landscaping works including provision of a green roof; and
- Extension/augmentation of services/utilities to the development.

The following additional associated works are also proposed as part of this Project Application:

- Modifications to Building 4 associated with providing access between the two buildings at upper levels (levels 1 to 5 of both buildings).
- Modifications at basement levels to accommodate access and services between basement levels of the Thomas Street Building and the LRS and Storage Building and Building 1 and Building 2 including car parks levels.

The long term strategic vision for UTS is 'to be one of the world's leading Universities of Technology'. A major component of the UTS Master plan and supporting the achievement of this vision, is the delivery of a new 'state of the art' facility for the Faculty of Science (the Thomas Street building). This new facility will enhance and support the expansion of the Faculty of Science and play an integral role in defining the science Precinct providing additional space for teaching and learning, research, administration, informal learning and meetings. The new Thomas Street Building as an extension to the existing Science building (Building 4) therefore creates a 'Science Precinct' within the University campus.

The new facility will:

- Provide and promote international linkages.
- Support UTS's model of practice-oriented research-inspired teaching and learning.
- Create a vibrant intellectual environment which will enhance opportunities to maintain and attract leading students, academics and partners.
- Assist in building the University's capacity to compete for international grant and commercial income.
- Create facilities and technology platforms that provide for the appropriate partnering with University faculty, institutes, industry and government.

3.2 Building and Design Overview

The Thomas Street Building will complete the northern built edge to the UTS Broadway campus and help frame Alumni Green. With a maximum height of 29.00 metres (measured in accordance with the provisions of the Standard Instrument), the building provides 11,295 square metres of gross floor area for educational and associated uses.

The design and built form of the building has been influenced by the need to comply with the height controls adopted for the Thomas Street Building site which ensure solar access to Alumni Green in winter. Factoring in the solar access objective of providing a minimum 10m of sun along the southern edge of Alumni Green at 12 noon at the winter solstice, a building of four storeys is able to be developed along the site's southern and western boundaries increasing to six storeys on the northern/Thomas Street elevation. The design and treatment of the southern façade also increases/facilitates sunlight penetration to Alumni Green, with the parapet edge scooping sky views into the green. Further detail with respect to the design approach of the southern elevation is provided within the Design Report included at **Appendix E**.

The development includes three (habitable) basement levels; pedestrian connections between Thomas Street, Alumni Green and Jones Street; and space at the ground level for potential active uses.

The building will accommodate the Faculty of Science and aims to build upon UTS's vision to be a world leading university. The design provides a benchmark for best practice standards in educational environments. The ways this is achieved include the following:

- Flexible open floor areas within an overall rectangular volume of around 86 by 23 metres, generating typical floor plates (above ground floor) of approximately 1,440 square metres useable floor area.
- Superior indoor environment quality including fresh air, good thermal comfort, sophisticated building services control systems, appropriate lighting levels and acoustic ratings, and ample natural light (with glare control).
- Light filled work, research and teaching spaces with good internal lines of sight.
- Open and naturally ventilated stairs located at the eastern end of the building to encourage internal department circulation, enhancing interconnectivity and teamwork.

3.3 Design Criteria and Quality Controls

The approved Concept Plan for the Broadway Precinct of the UTS City Campus articulated a series of Urban Design Principles to guide the future built form of development within the Precinct complemented by specific design quality controls for the new buildings within the Precinct. The design quality controls applying to the Thomas Street Building are addressed in Section 5.2 of this report.

In addition, the architects' design responds to the following criteria for the building:

- Be an outstanding and innovative work of architecture in both appearance and performance.
- Be an outstanding work of urban design that creates a campus gateway activating and connecting the University with its community.
- Create a Faculty building that is highly inspiring, flexible, effective and accessible.
- Support creativity, learning and social interaction to help achieve the Faculty's vision for innovation and international leadership in spaces where technology and creativity intersect.
- Provide advanced performance in the operation of environmental systems utilising best available techniques and technologies for sustainable design.
- Create an urban form that achieves at least a 5 Star Green Star Rating.

3.4 Design and Built Form

DBJ and BVN have prepared a Design Report for the Thomas Street Building which details its architectural genesis and design features (see **Appendix E).** The following describes the main features of the design and the building.

3.4.1 Built Form

The two Science Faculty buildings are separated at the ground plane by the void over the new vehicular ramp. At all other levels above ground, the two faculty buildings are joined through directly connected internal circulation systems. New lifts at the eastern end of the new Thomas Street Building will add additional vertical circulation and amenity to Building 4. Generally this primary core connects to a secondary core through a central corridor, lit by voids.

Three full floor plates at Levels 1-3 house laboratories and faculty offices. The fourth floor is used for offices and steps back, a maximum of 9.45 metres from the furthest external face on Alumni Green to accommodate the height control established in the Concept Plan. This setback allows for a substantial landscaped roof garden, directly accessible from the offices on this floor. The fifth floor is utilised mostly for plant and equipment, with circulation space connecting to the topmost floor of Building 4.

3.4.2 Façade Design

A key and striking feature of the proposal is its façade design, which responds to site orientation, climate considerations, view opportunities, existing built form, and the different characteristics of the 'street' public domain (i.e. Thomas Street and Jones Street) and 'campus' public domain (i.e. Alumni Green).

The key features of the façade design (as illustrated within **Figure 12**) are described below:

- The facade is a lightweight framed system supported off the building's concrete frame.
- The facade is penetrated by window frames, and components are canted both horizontally and vertically giving it a gentle undulating quality.
- Typically the windows are positioned in a 350mm deep frame. The depth of this frame takes up the dimension of the varying vertical and horizontal facade undulation, allowing windows to remain in the vertical plane.
- These curved and canted faces gently absorb the required setbacks to ensure sun access to Alumni Green, and smooth the alignment to Building 4.
- The variegated quality of the façade is reiterated though the billowing placement of solids and voids, branching across the façade. Different window types achieve the variation.
- The vertical façade on Thomas Street follows the gradual concertina system of solids and voids opening and closing.
- Gentle surface curves mark the new Thomas Street entry and a smooth street transition to Building 4.

Figure 12 – Proposed façade design (source DBJ and BVN)

3.5 Numerical Overview

The following table provides a level by level numerical overview of the proposed development. This should be read together with the drawings at **Appendix D** which provide more detailed information.

Table 1 – Numerical overview of development

Level	Gross floor area (m^2)*	Indicative main uses/features
Basement 3	1180	Laboratories / building plant and equipment
Basement 2	1480	Laboratories and auxiliary spaces
Basement 1	1265	Lecture theatre, laboratories and auxiliary space
Ground floor	1025	Potential active use, general teaching, building entry, through site link
Level 1	1770	Laboratory and office space
Level 2	1730	Laboratory and office space
Level 3	1700	Office space
Level 4	935	Office space
Level 5	210	Meeting room, building plant
Roof	-	Roof top tank experiment area, photovoltaics
Total	11,295	

* GFA measured in accordance with Sydney LEP 2005

3.6 Internal Layout

Functional Use Distribution

Flexibility of spaces is a core operational objective of the University and thus for the Thomas Street Building. As illustrated in the architectural drawings, the internal spaces of the building are allocated logically and functionally with the basements utilised for activities where natural light is generally neither required nor desirable. Provision is however made for large void spaces at basement levels in order to provide natural light into teaching and laboratory spaces.

Key to the design of the Thomas Street Building is its relationship and extension of the existing Science Building (Building 4), supporting the achievement of a Science Precinct. Particular attention is accordingly made in the design of the interface spaces at Levels 1 – 5 of the Thomas Street Building creating animated connecting spaces, containing meetings areas, informal learning spaces and circulation.

The floor plates are large and flexible and enable uses to be rearranged and allow adaption during the life of the building. Key characteristics of the functional use distribution include:

- Providing direct access from the main foyer to Alumni Green and thence to the rest of the campus from Thomas Street.
- Creating a welcoming colonnade through stepping the southern façade at ground floor level.
- Clustering active uses and connected lecture theatre (Basement level 1) at the western end of the building, animating the corner of Jones and Thomas Street during University hours and after hours for events.
- Placing general teaching spaces at ground floor, ensuring these heavily used spaces are easily accessible and highly visible.
- Focusing faculty offices at upper floor levels.
- Providing seamless and level links between the Thomas Street Building and Building 4 through aligning and directly connecting internal circulation systems.
- Providing offices and function room at level 4 and 5 which take advantage of views to the newly created green roof.
- Providing large and open informal learning and break-out areas at the eastern end of the building adjoining Building 4 (refer to **Figure 13**).

The ground floor glass façade together with the penetration of the façade by windows on upper floor levels allows for visual connection to internal spaces and supports the sentiment of 'seeing the science'.

Stairs providing access and circulation between levels are provided at basement levels at the western and eastern ends of the building, with open and skylit stairs located at the eastern end of the building between ground floor and upper floor levels (refer to **Figure 14**).

The ground level contiguous with Thomas Street, Jones Street, and Alumni Green are activated by active social spaces, teaching spaces, building entries, and circulation spaces, including external colonnade.

Figure 13 – Animated connecting space at eastern end of the building (source: DBJ and BVN)

Figure 14 – Skylit internal circulation space (source: DBJ and BVN)

Roof Plant

Plant is located on Level 5. As required under the Concept Plan conditions of approval, plant at roof level has been incorporated into the design of the proposed building. In addition, consistent with the building's ESD credentials and the science research therein, it will also incorporate:

- A rooftop garden (green roof);
- Salt water tanks for experiments; and
- Photovoltaic Panels.

3.7 Materials and Finishes

External building materials and finishes were selected for their durability, energy efficiency and life cycle costs. Selection has also been influenced to achieving a building of design excellence. A materials and finishes sample board has been provided separately.

The façade material is a lightweight infill element and a number of material options are being considered including GRC and a site applied render system.

The solids in the façade will emulate an off-white concrete finish, with fine dark steel frames lining the openings. The reveal linings to the windows on the Alumni Green Façade will be painted in greens, light yellow, blues and oranges. These will appear as fine planes of colour and reflect gently coloured light into the interiors of the building, cooling or warming the light depending on the orientation.

3.8 Access and Circulation

Pedestrian permeability is maintained and reinforced throughout the building and entries are located in direct response to pedestrian desire paths from elsewhere on the campus or from off-campus.

There is no vehicular access to, or parking within, the building. In accordance with the Concept Plan car parking provision within the UTS City Campus is not being increased. Bicycle parking, end of trip facilities and car parking will be provided elsewhere on the campus.

Pedestrian entry points and connections

There is one principal entry point and address to the building on Thomas Street which continues through and under the first floor of building to Alumni Green - thus providing direct access to the rest of the campus. The importance of this north-south pedestrian axis is further highlighted through the animation of the connecting spaces of the proposed building with Building 4.

The main pedestrian entry point to the upper floor and basement levels of the Thomas Street Building is provided from a centrally located lobby adjoining this through-site link between Thomas Street and Alumni Green.

A strong linear east-west connection is also provided along the southern edge of the site, fronting Alumni Green. This connection, which is created through setting back the façade of the ground floor, continues for almost the full length of the site terminating (and wrapping around the western end of the building) at Jones Street.

Together with provision for active uses, the 'colonnade' will help UTS further engage with City streets and create a new gateway to the campus.

The Thomas Street Building connects directly to Building 4 - the existing Science Faculty Building - at Levels 1 to 5 creating one contiguous corridor along the length of the two buildings. Level access is provided between the ground floor plane and Alumni Green.

Provision of these new connections and entry points is in accordance with the circulation routes approved under the Concept Plan.

Colonnade

The ground floor of the Thomas Street Building incorporates an colonnade along the Jones Street width and the length of the building adjacent to Alumni Green. This is achieved through setting the façade back from the site boundary by a minimum of 2.4m at street level providing pedestrians with a covered circulation path from the new Campus entry point on Thomas Street through to Jones Street. **Figure 15** illustrates the proposed colonnade along Alumni Green together with the through-site link provided between Alumni Green and Thomas Street.

Figure 15 – Proposed colonnade and through-site link (Source: DBJ and BVN)

Security

Crime Prevention Through Environmental Design (CPTED) measures are incorporated into the design in the following ways:

- clear lines of sight are provided between public and private places;
- opportunities for casual surveillance of public and private spaces are maximised;
- the ground level edges are activated;
- effective lighting will be installed in public spaces;
- entry / exit points will be security controlled after hours; and
- durable, high quality and varied materials will be used throughout to discourage vandalism.

Deliveries and Loading

Deliveries to the Thomas Street Building are proposed to occur at Basement level 1 via the secure goods lift located at the north east corner of the building. A service corridor will be provided through the storage area adjoining the LRS providing a connection between the LRS loading area and the Thomas Street Building.

Access to the LRS loading area will be provided via the widened ramp located at the eastern end of the Thomas Street Building. It is proposed that access to waste removal vehicles would also be provided at the LRS loading area via the basement levels of Building 1 and 2.

3.9 Landscaping

With the UTS Masterplan vision identifying Alumni Green as the central green space of the campus, the proposal seeks to frame its northern edge. The footprint of the proposed Thomas Street Building is accordingly positioned in accordance with the Concept Plan.

The design and landscaping of Alumni Green and its relationship to Jones Street is not part of this application.

Landscaping of the Thomas Street Building is focussed on level 4 as a roof garden over an area of approximately 750 square metres together with a small planter on the western side of Level 1. Proposed preliminary landscape plans, prepared by Deverson + Associates, are included at **Appendix F**. Further detailed landscape plans are to be submitted prior to determination of the Project Application. This is included as a Statement of Commitment at Section 6.0.

Key elements of the proposed preliminary landscape design (which is in accordance with the Landscape Master Plan approved under the Concept Plan) include:

- The garden area on level 4 will act as a green roof with environmental features that include stormwater management, insulation, visual amenity, and biodiversity.
- The roof top garden will provide a passive recreational space for staff, informal path, provision of seating nodes and gathering spaces. It will also be used for experiments relating to plants as noted below.
- Plant selection will be predominantly based on hardy, 'waterwise' grasses, groundcovers, shrubs and small trees with a sub-tropical character. Provision for experimental planting areas will also be provided.

In relation to the public domain, existing street trees and hardscape within Thomas Street and Jones Street will be retained. Trees damaged as a result of construction works will be replaced accordingly. No new works are proposed in the public domain.

3.10 Environmentally Sustainable Development

To ensure that the future development and design of the UTS City Campus has a defined direction in terms of sustainable design and performance, UTS has a campus wide master plan - 'ESD Masterplan 2020' - which provides recommendations for the strategies, performance targets and technologies to be employed to meet the sustainability objectives of the University. The master plan sets out recommendations for energy and water consumption, ventilation, lighting, materials use in construction and operations, and waste disposal and recycling.

In addition, the UTS Design Guidelines outline a number of passive design initiatives to reduce energy consumption through building design and site selection, minimising life cycle costs and optimising engineering services design. These Guidelines have been used in the design of the Thomas Street Building and for its services and construction.

In keeping with the above initiatives, UTS is committed to achieving a high standard of environmental performance in the development of the Thomas Street Building and has set the following Sustainable Design objectives for the project:

- Achievement of 5 star Green Star Education v1 design rating certified with the Green Building Council of Australia.
- Energy efficiency through implementation of appropriate technologies and passive design measures.
- Water efficiency through the use of rainwater capture and reuse.
- Minimisation of waste production in construction and operation.

As set out in Steensen Varming's ESD and Energy Efficiency Report (**Appendix G**), the proposed development will incorporate a number of ESD initiatives into the design and operation of the building. These are discussed in further detail at Section 5.6.

3.11 Construction and Site Management

Construction Management

A detailed Construction Management Plan will be prepared by the appointed contractor prior to commencement of works and will address:

- Construction hours;
- Construction traffic management;
- Pedestrian management;
- Noise and vibration management;

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

Hoardings, erosion and sediment control measures, site fencing and tree and root protection zones (in terms of protecting existing street trees) will be installed as part of the construction process to ensure the site remains safe at all times.

Excavation associated with constructing the basement levels has been approved as part of the modification to the Concept Plan Approval (Modification No 3).

Operations

The proposal involves the construction of a new building that will connect with the existing Faculty of Science Building (Building 4). The design of the proposed Thomas Street Building has accordingly provided well defined and easy to navigate connections and links with Building 4. The aim of the development is to create a new Science Precinct for UTS, and as such the relationship between these two buildings from a visual perspective as well as from a functional perspective is significant.

The main teaching, research, and office uses within the proposed building will operate in accordance with existing UTS arrangements and processes.

Handling and storage of waste during the operation of the building will be undertaken in accordance with existing UTS policies and procedures.

General waste and recyclables will be stored at basement level 2. Provision will be made throughout the building for the sorting of waste recyclables, organics, commingles and general waste.

Any clinical or medical wastes will be stored in secured areas before being disposed of by specialist contractors and transported for treatment or incineration.

3.12 Site Preparation

The excavation of the site in order to accommodate proposed basement levels has been the subject of a separate approval process (approved under Modification No 3 to the Concept Plan Approval).

Before any works the subject of this Project Application commence, the site will be made ready in accordance with the approvals and conditions that cover the bulk excavation works.

3.13 Staging

The construction of the Thomas Street Building will not be staged. An approximate 22 month construction programme (excluding bulk excavation) is envisaged, with works expected to commence by mid 2012 with occupation by the Faculty of Science intended for mid-2014.

4.0 Consultation

The DGRs for this proposal required that an appropriate level of consultation be undertaken with various nominated relevant public authorities/agencies and utility providers.

4.1 Public Authorities

As required by the DGRs the following public authorities and utility providers were consulted by the proponent or its consultants. The outcomes raised are summarised below.

- City of Sydney;
- Roads and Maritime Services (formerly the Roads and Traffic Authority);
- TransGrid; and
- Relevant utility providers.

Council of the City of Sydney

As part of the design process, UTS together with DBJ and BVN met with the Director of Planning and Regulatory Services and senior officers of the City of Sydney Council on 23 November 2011. The officers did not raise any issues in relation to the proposal and supported the design.

Roads and Maritime Services

A meeting was held with RMS on 2 December 2011. No issues were raised with the proposal. General construction comments included:

- No objection to trucks turning into the site from Thomas Street and turning out of the site onto Thomas Street or alternatively entering the site from Thomas Street and leaving via Jones Street.
- If exiting via Jones Street, there may be a need for a traffic controller.
- No objection to loading zone on Thomas Street.

Utility Providers and TransGrid

Table 2 below summarises the key issues from the consultation with Ausgrid / TransGrid and Sydney Water. Further information is provided in Sections 5.12 and 5.13 of this report.

Table 2 – Key consultation with utility providers

Issues	Comment / response
AusGrid/ TransGrid	
Location of existing cables & tunnels	AusGrid confirm that there is no apparent TransGrid transmission infrastructure planned in the Thomas Street building footprint.
Sydney Water	
On site detention	On-site detention of stormwater will be required for stormwater discharge. The requirements of Sydney Water have been incorporated into the design.

4.2 Other Stakeholders

Department of Planning and Infrastructure

UTS and the architects also briefed relevant offices of the Department of Planning and Infrastructure on 25 October 2011. The Department did not raise any issue in relation to the proposal.

Sydney Institute TAFE

UTS and the Institute share a good working relationship, being immediate neighbours and as members of the Ultimo Cultural and Educational Precinct, collaborating and contributing on various projects. UTS and DBJ met with the Acting Director and senior officers of the Institute on 16 December 2011 specifically in relation to the Thomas Street Building and building upon previous discussions about the transformation of the UTS Campus. The Institute did not raise any issues in relation to the proposal.

4.3 The Community

UTS has undertaken a program of engagement with the local community, students and staff of UTS, and other relevant stakeholders in relation to the implementation of the Broadway Precinct Concept Plan.

It is intended that future consultation on the Thomas Street Building will occur in parallel with the formal public exhibition of the proposal and include:

- Establishing a project display;
- Issuing a project notification letter to neighbouring residents and local businesses;
- Establishing a project email address;
- Provision of a 1800 community information line;
- Presenting project information on the UTS Masterplan website; and
- Arranging an informal community information session.

A report summarising the consultation undertaken and issues raised will be provided as part of the proponent's Response to Submissions Report following the statutory public exhibition of the proposal.

Further details of the consultation strategy to be implemented are provided at **Appendix H**.

5.0 Environmental Assessment

This section of the report provides an assessment of the environmental impacts of the proposal in accordance with the Director-General's Environmental Assessment Requirements (DGRs). The draft Statement of Commitments complements the findings of this section.

Director-General's Environmental Assessment Requirements

Table 3 sets out the matters listed in the DGRs and identifies where each of these requirements has been addressed in this report and the accompanying technical studies.

It should be noted that as the bulk excavation of the site is no longer part of this Project Application and was the subject of a section 75W Modification to the Concept Plan (Modification No 3), the assessment requirements pertinent and relevant to this element of the project are not addressed in this application.

Table 3 – Director-General's Environmental Assessment Requirements

Requirements	Location in Report
General Requirements	
(1) An executive summary;	Page vi
(2) Detailed description of the project including the:	
(a) project objectives and strategic justification for the project;	Section 1.4
(b) description of the site including cadastral and title details;	Section 2
(c) textual and diagrammatic description of the proposal;	Section 3; **Appendix D & E**
(d) design, construction, operation, management and staging, as applicable; and	Sections 3.4; 3.5; 3.6; 3.7; 3.11; 3.12; 3.13
(e) alternatives considered	Section 1.4
(3) An assessment of the environmental impacts of the project, with particular focus on the Key Assessment Requirements specified below	Section 5
(4) Draft Statement of Commitments, outlining commitments to public benefits including State and local infrastructure provision or contributions, environmental management, mitigation and monitoring measures and clear indication of responsibilities;	Section 6
(5) Signed statement from the author of the EA confirming that the information is neither false nor misleading; and	Page v
(6) Report from a quantity surveyor identifying the capital investment value of the project.	**Appendix B**
Key Assessment Requirements	
1. Urban Design and Built Form	
▪ Evidence that the design excellence process has been followed, including design competitions, and that the design is consistent with the design quality controls approved under the Concept Plan.	Sections 1.1, 5.1 & 5.2
▪ Detailed plans, elevations and sections showing height, bulk and scale of the proposed buildings in relation to existing and proposed site levels, adjoining buildings and surrounding locality including within the context of the Concept Plan.	Sections 3.2; 3.3; 3.4; 5.2; **Appendix D & E**
▪ 3D modelling and a physical model of the proposed building in accordance with the City of Sydney Model requirements.	Models to be provided separately
▪ Photomontages of key elements and views of the development from close-up and distant vantage points.	**Appendix D**

Requirements	Location in Report
▪ A materials/finishes sample board and detailed elevations confirming the application of materials and finishes.	Provided separately. See also **Appendix D**.
2. **Transport and parking** ▪ Proposed traffic and parking arrangements ▪ Loading/delivery arrangements, including waste collection vehicles ▪ Bicycle parking and facilities ▪ Impacts of proposed vehicle access design on adjacent road network and pedestrian paths	Sections 3.8 & 5.4; **Appendix I**
▪ Any local road upgrades.	None
3. Solar Access ▪ Shadow diagrams to show existing and proposed impacts on the site, adjoining properties and the public domain during the midwinter (June 21). Elevation shadow diagrams are to be provided if shadows fall upon neighbouring residential buildings. ▪ Solar access and amenity within the proposed buildings.	Section 5.3; **Appendix D**
4. Wind Effects ▪ Wind assessment to detail wind conditions on pedestrians within the site and public domain, and proposed mitigation measures.	Section 5.5; **Appendix J**
5. Energy Efficiency and ESD ▪ Energy efficiency report detailing measures to address energy efficiency and ESD in the design of the building. Measures should include water saving measures, energy efficiency, recycling and waste disposal.	Sections 3.10 & 5.6; **Appendix G**
6. Noise ▪ Submit a noise impact assessment to detail excessive noise that could be generated by the development, and any mitigation measures.	Section 5.7; **Appendix K**
7. Reflectivity ▪ Analysis of the reflectivity impacts of the façade, including solar glare on occupants of nearby buildings, public areas and roadways. New buildings should not result in glare that causes discomfort or threatens the safety of pedestrian or drivers.	Section 5.8; **Appendix M**
8. Contamination ▪ A report in accordance with the requirements of SEPP 55, including a stage 2 detailed investigation, and where relevant, remediation action plan and validation and monitoring plan.	Undertaken for s.75W Modification. See Section 5.9.
9. Landscaping ▪ Plans of existing and proposed trees and landscaping both within the site and the public domain, including pavement, tree planting, awnings, bus shelters etc.	Section 3.9; **Appendix F**
10. Archaeological Assessment ▪ An archaeological assessment where excavation is proposed in accordance with the Heritage Office guideline "Archaeological Assessment Guidelines".	Undertaken for s.75W Modification. See Section 5.10
11. Excavation and Construction Management ▪ An Excavation and Construction Management Plan is to include the following: - Demolition - Excavation work methods - Geotechnical report including any RailCorp and Sydney Metro requirements - Groundwater and water extraction - Noise and vibration – criteria to comply with and mitigation measures - Construction traffic management	Section 5.11; **Appendix L & N**. Some items relevant to s.75W Modification only

Requirements	Location in Report
- Waste management - Construction hours	
12. Utilities and Infrastructure ▪ Utility and infrastructure servicing, demonstrating development can be adequately serviced for water supply, wastewater, stormwater, electricity, gas and communications.	Section 5.12; **Appendix O**
13. Drainage, Stormwater and Groundwater Management ▪ Identify drainage and stormwater management regimes relating to the development.	Section 5.13; **Appendix P**
Consultation Requirements	
Consultation ▪ Written evidence shall be submitted to demonstrate that an appropriate level of consultation has been undertaken with the following relevant parties during the preparation of the Environmental Assessment having regard to previous consultation. - City of Sydney; - Roads and Traffic Authority; - TransGrid; and - All relevant utility providers. ▪ Document all community consultation undertaken to date or discuss the proposed strategy for undertaking community consultation. This should include any contingency for addressing any issues arising from the community consultation and an effective communications strategy. ▪ The consultation process and the issues raised should be described in the Environmental Assessment.	Section 4.0 **Appendix H**

5.1 Consistency with Approved Concept Plan

The proposal is generally consistent with the approved Concept Plan including the commitments made by UTS specific to the Thomas Street Building, as well as with the conditions applicable to the Thomas Street Building imposed by the Minister in the Instrument of Approval (as modified, 29 July 2011). **Table 4** provides a summary of consistency with the relevant elements of the Concept Plan and the Conditions of Approval.

Table 4 – Consistency with approved Concept Plan

Concept Plan element	Consistency/comment
Building dimensions	
Building height: ▪ 33.30m (including plant) adjoining existing Building 4 ▪ 23.70m (including plant) adjoining Jones Street	The maximum height of the proposed building adjoining existing Building 4 is 26.70m. (measured in accordance with the standard instrument). The maximum height of the proposed building adjoining Jones Street is 22.65m.
Gross floor area: 44,650m^2 (combined total for Broadway Building and Thomas Street Building)	Proposed Broadway Building GFA is 32,500m^2. Proposed Thomas Street Building GFA is 11,295m^2. Combined total is under the maximum at 43,795m^2.
Number of storeys: majority 4 storeys	The majority of the proposed Thomas Street Building is 4 storeys.

Concept Plan element	Consistency/comment
Setback of 4th level from the south	The purpose of this control is to achieve a minimum of 10m of sun along the southern edge of Alumni Green at 12 noon at the winter solstice. Detailed solar access modeling reveals that the current design achieves a minimum of 10m of sun along the southern edge of Alumni Green at 12 noon at the winter solstice. See Section 5.3 for further details. The proposed curved façade and scooped parapet also provides the sense of a stepped façade.
Commitments	
Design excellence ▪ Adopt the design excellence process and incorporate the design quality controls	The design of the building is the result of a design excellence competition and incorporates the design quality controls - see Sections 5.2.1 and 5.2.2.
Transport ▪ Provide facilities for cyclists	Cyclist facilities are provided within surrounding buildings. See Section 5.4.
▪ Prepare Construction Traffic Management Plan	Construction Traffic Management Plan attached at **Appendix N**.
Visual impact ▪ Use architectural treatment of facades to break down perceived scale and massing of new buildings	The building incorporates architectural features (e.g. canted and curved façade to Alumni Green, coloured reveals to Alumni Green, and the concertina system of solids and voids to the Thomas Street façade) that breaks up the scale of the building and adds considerable interest.
▪ Retain street trees or provide additional mature plantings to improve streetscape	Trees along Thomas Street and Jones Street will be retained where possible and replaced if damaged as a result of construction.
Wind ▪ Undertake detailed wind impact assessment of new buildings	Wind assessment attached at **Appendix J**. There are no unacceptable impacts on amenity as a result of the development, see Section 5.5.
▪ Locate pedestrian entrances to new buildings along internal pedestrian links to intercept strong wind flows	There are no unacceptable wind impacts at the proposed entrances to the building, see Section 5.5.
Landscape Design ▪ Sustainable design principles will be incorporated into the landscape design.	Proposed design of the rooftop garden (green roof) incorporates sustainable design principles, see Section 3.9.
Contamination ▪ Undertake Stage 2 Environmental Assessment including soil and groundwater sampling	Undertaken for s.75W Modification, see Section 5.9.
▪ Undertake waste classification for offsite disposal of soil and bedrock	Undertaken for s.75W Modification, see Section 5.9.
ESD ▪ Adopt 6 star Green Star Education target for the Thomas Street Building.	The proponent is targeting a 5 Star rating as detailed in this report - see Sections 3.10 and 5.6 and **Appendix G**.

Concept Plan element	Consistency/comment
▪ Reduction in overall water campus consumption. ▪ Meet or exceed requirements of Section J of the BCA for energy efficiency in building fabric and environmental systems	The proposal incorporates a rainwater reuse tank at basement level. Parts J1 to J8 of the BCA will be complied with but the design intent is to exceed Section J requirements.
Conditions of Approval	
A2 – Development shall be generally in accordance with the approved EAR and PPR.	The proposal is generally consistent with the approved EAR and PPR, including appendices.
B1 - Building plant setback 6m from façade or incorporated into the design of the building	All plant is incorporated into the design of the building ensuring visual impacts are minimised, see Section 5.2.4.
D1 - Hours of work	Hours of work will be in accordance with the Conditions of Approval for the Concept Plan.
D4 - Erosion and sediment control during construction	Measures to prevent erosion and sediment run-off will be incorporated in the Construction Management Plan - see Section 5.11.
D5 - Disposal of seepage and stormwater during construction	Disposal of seepage and stormwater will be incorporated in the construction management plan - see Section 5.11.
D6 - Dust control during construction	Measures to control dust will be incorporated in the construction management plan - see Section 5.11.
D7 - Waste management during construction	Waste will be disposed of in accordance with the construction management plan - see Section 5.6 and 5.11.

5.2 Urban Design and Built Form

Chapter 3 of this report, the architectural plans prepared by DBJ and BVN (at **Appendix D**) and the Design Report (at **Appendix E**) describe and illustrate in detail the design of the Thomas Street Building. A 3D model, physical model and materials and finishes board are also provided separately.

5.2.1 Design Quality Controls

The DGRs require that the proposal complies with the design quality controls applying to the Thomas Street Building in the approved UTS City Campus Broadway Precinct Concept Plan. All are incorporated into the design as explained below.

1. ***Limit the height of the building to generally 23.70 metres from ground level (including plant) adjoining Jones Street and 33.30 metres from ground level (including plant) at the junction with the existing Building 4.***

The maximum height of the building is 22.65 metres from ground level (at Jones Street) and 26.70 metres (adjoining Building 4) when measured in accordance with the Standard Instrument. **Figure 16** illustrates the proposed building's compliance with the approved maximum building height control for the site.

2. Set back the topmost floor of the building to maximise solar access to Alumni Green at 2pm at the winter solstice.

As illustrated on the proposed plans, the topmost floor levels/plant have been setback over 9m from the furthest external face on Alumni Green in order to maximise solar access to Alumni Green at the winter solstice. Overall, the proposal complies with the prescriptive solar access control (outlined within the Concept Plan) of allowing a minimum of 10m of sun along the southern edge of Alumni Green at 12 noon at the winter solstice. Further discussion with respect to solar access is provided at Section 5.3.

3. Provide a lift connection to level 7 of Building 4. The envelope of the connection will allow solar access to Alumni Green in accordance with relevant solar access provisions for public spaces.

The proposed design incorporates both horizontal (lifts and stairs) and vertical (doorways) connections that will facilitate movement of staff and students to all levels within the Science Precinct (i.e. Thomas Street Building and building 4). The provision of vertical connections has due regard to the solar access controls for Alumni Green. See Section 5.3.

4. Maximise the extent of permeability of the ground plane through retail and student union shop fronts and student and public facilities.

Special attention has been made in designing the ground floor plane of the proposed building to ensure it appropriately responds to its interface with the public realm and campus environment (in particular Alumni Green) and promotes permeability. For example:

- The proposal includes provision for an active space and connected lecture theatre (at basement level) at the building's western end, providing activation to the corner of Jones Street and Thomas Street during University hours and after hours for events.
- The setting back of the ground floor along Jones Street and Alumni Green provides a space for potential outdoor seating associated with an active use and draws pedestrians into the campus.
- The wide covered pedestrian entry from Thomas Street (together with the adjoining ramp) provides a strong visual connection through the site into the University campus.
- The ground floor, especially fronting Alumni Green and Thomas Street, uses glass extensively which further supports permeability and visual connections to educational activities.

5. Enable pedestrian connections through the site from Thomas Street to Alumni Green.

The proposal provides a through-site link at its eastern end that enables direct, level and convenient access from Thomas Street to Alumni Green.

6. Consider an element of transparency in the building design to express functions within.

The façade design supports a high level of transparency into the building, supporting the principle of 'seeing the science'. This high level transparency is illustrated within the photomontages included at **Appendix D**. The incorporation of voids along the northern façade at ground level also supports transparency from Thomas Street into the teaching spaces.

7. Provide a pedestrian colonnade or awning to Alumni Green along the southern edge of the building.

The design incorporates a pedestrian colonnade along the southern edge of the building fronting Alumni Green. The colonnade will assist with framing Alumni Green together with providing weather protection for pedestrians moving about the University campus.

5.2.2 Design Competition

UTS conducted a Design Excellence competition in early 2011 for the Thomas Street Building. The Design Competition jury comprised eminent professionals including nominees of the City of Sydney Council and UTS. The competition was won by a joint entry from DBJ and BVN and their design is the subject of this Project Application.

In selecting the winning DBJ and BVN scheme, the Jury made a number of recommendations in moving forward with developing and documenting the design.
A number of the recommendations sought to clarify aspects of the initial brief that were incorporated within the winning design entry. **Table 5** below provides a summary of the recommendations and commentary on how the Project Application has specifically responded.

Table 5 – Consideration and Response to Jury Recommendations

Jury Recommendation	Response
Prominence of the campus entry off Thomas Street next to the vehicular ramp should be enhanced.	The central core of the proposed Thomas Street Building has been moved west to allow for the wider vehicular ramp and a broader pedestrian entry to the campus.
The figured ends to Alumni Green, the pool and amphitheatre, reduce the usability of this precious outdoor space and should be abandoned in favour of the features contained within the master plan and Broadway Precinct Concept Plan; note that provision has been made in the construction of the Multiple Purpose Sports Hall to accommodate the "forest" at the eastern end of Alumni Green.	As confirmed by the Jury, the design of Alumni Green is to be the subject of a separate design competition and subsequent development application. The design of the Thomas Street Building aims to support a seamless transition between Alumni Green and pedestrian areas within the Thomas Street Building site.
The continuity of the covered walkway to the south of the Thomas Street Building which is similar to a proposed treatment to the south of Building 4 Thomas Street wing is not realizable as drawn due to the extent of the headroom void over the vehicle ramp further being south than depicted.	The competition scheme showed the old vehicular ramp, then in existence. The new vehicular ramp was designed separately to the Thomas Street Building and is now complete. The void to provide headroom breaks the continuity of the covered walkway to the southern edge of Alumni Green. An opportunity exists for the Alumni Green Competition brief to explore possible solutions with the as-built vehicular ramp.
Introduce more daylight to the basement level(s) to make these floors more acceptable as useable floor area.	Voids have been introduced to the basement floor plates to ensure overhead lighting to the circulation zones at the eastern and western ends of the building. A long void on the Northern edge allows for day lighting to Basement 1 and clerestory day lighting to Basement 2.
Calculate and confirm adequacy of daylight profile at the centre of the above ground floor plates.	The design and configuration of spaces above ground has been based on maximising daylight to offices and habitable spaces. On Levels 1 and 2, the centre of the deep floor plates is occupied by laboratories which by their function are artificially lit. Level 3 has provision for skylights through the roof garden to the centre of the floor ensuring adequate light levels for occupants.

Jury Recommendation	Response
Consider relocation of auditorium to the basement level with potential to adapt in future to other uses requiring flat floor; location of this facility, which is visited by students for relatively short spells, in valuable above ground space is not favoured over such space being used for permanent/semi-permanent occupants.	The proposed lecture theatre has accordingly been located on Basement Level 1.
Provide direct functional link from loading docks in Building 1 & 2 to service core of Thomas Street Building.	Loading access is provided through the LRS on Basement Level 1.
Demonstrate and confirm ability to achieve 6 star Green Star rating, similarly energy use savings; note the design must achieve a 6 star Green Star rating.	Subsequent to the Design Competition Brief, UTS determined that it would be more appropriate for the Thomas Street Building to achieve a 5 Star Green Star Rating given decisions made to (in the main) intensify the inclusion of highly serviced laboratories. The proposed design of the Thomas Street Building will accordingly achieve a 5 Star Green Star Rating. Refer to Section 5.6 of EAR for further discussion regarding the revised Green Star rating target for the Thomas Street Building.
Maintain/improve the UFA/GFA efficiency and maximize GFA within the allowable maximum 12,150sqm limit.	UFA/GFA efficiency has been increased within the design of the Project Application since the competition.

5.2.3 Building Form

The Thomas Street Building has been designed to complement its locality, while creating a Science Precinct to provide a functional and sustainable learning environment that meets the future needs of UTS students and staff. It complies with the Concept Plan in respect of height and gross floor area, and as elaborated above, achieves the design quality controls set in the Concept Plan.

Gross Floor Area

The Gross Floor Area (GFA) of the Thomas Street Building is 11,295 square metres measured in accordance with the Ultimo-Pyrmont provisions of SLEP 2005. This figure is less than the revised total (12,150 square metres) approved as part of Modification No 3 to the Concept Plan. Further, when combined with the proposed GFA for the Broadway Precinct (at 32,500 square metres), it is less than the total GFA approved in the Concept Plan for the combined Broadway Building and Thomas Street Building. **Table 6** provides a breakdown of compliance with the approved GFA for the Thomas Street Building and Broadway Building.

Table 6 – GFA compliance overview

Building Element	GFA (m^2)
Thomas Street Building (proposed)	11,295
Broadway Building	32,500
Total	43,795
Approved Combined Concept Plan total	44,650
Remaining GFA available	855

Building Height

The building consists of a single sloping and stepped envelope to a maximum height of 29.00 metres in height at the eastern/Building 4 end. This complies with the maximum approved height in the Concept Plan of 33.30 metres (standard instrument – refer to **Figure 16**).

Particular attention has been made in the design to ensure the building aligns with the height of existing Building 4 adjoining to the east together with managing the built form when viewed from key public vantage points (i.e. Jones Street and Alumni Green) to ensure it reads as a predominately 4 storey structure. This design outcome is in accordance with the approved indicative Concept Plan envelope for the Thomas Street site. Specifically, the height of the street wall fronting Jones Street is a maximum of 18.25m above ground level (compliant with the indicative 18.50m height limit included within the Concept Plan) and the height of the building adjoining Building 4 along Thomas Street is 26.70m (compliant with the indicative 27.10m height limit included within the Concept Plan).

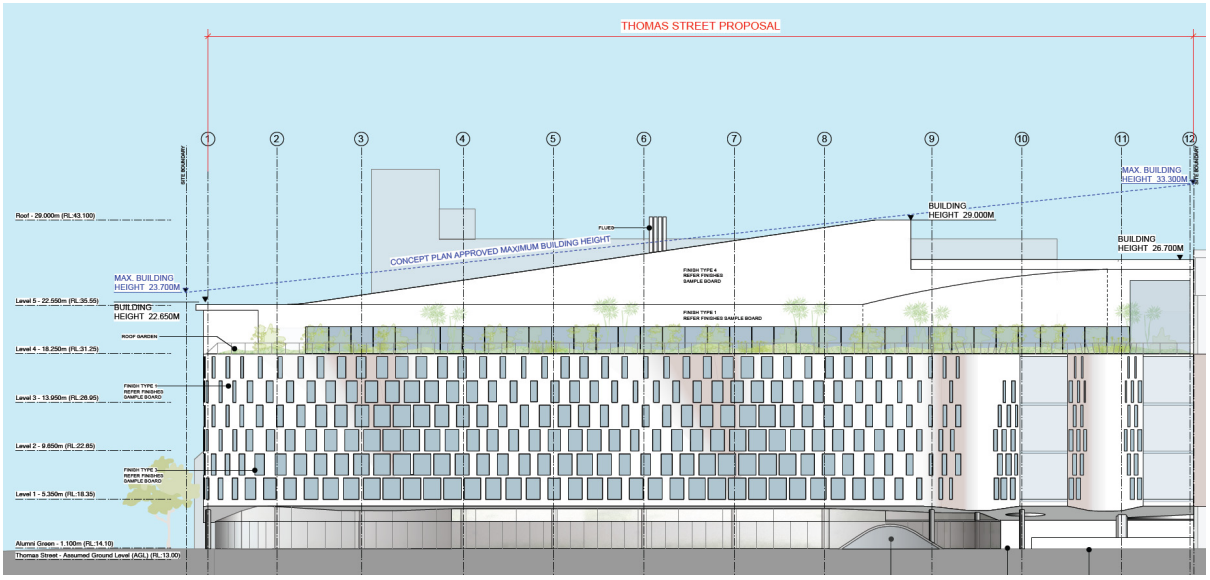

Figure 16 – Building height compliance (Source: DBJ and BVN)

5.2.4 Roof Plant Setback

Experimental salt water tanks are proposed to be sited at rooftop level. These tanks, along with a photovoltaic array support the building's function as an innovative, 'state of the art' science facility.

To minimise the visual impact, the Conditions of Approval for the Concept Plan require that the building plant be set back at least 6 metres from any façade of the building facing a public street or be incorporated into the design of the building.

As shown in the Architectural Plans at **Appendix D**, an integrated approach to rooftop plant has been adopted where plant has at rooftop level been incorporated into the design of the building.

As demonstrated above and in the accompanying photomontages, rooftop plant has been appropriately managed in the design of the proposed building to ensure an acceptable outcome is achieved in terms of minimising visual impact.

5.2.5 Visual Impact

Appendix D shows schematic elevations and materials for the development as well as photomontages, one of which is reproduced at **Figure 17** below. These images show how the palette of materials selected creates a distinct and identifiable presence for the newly created Science Precinct, while complementing surrounding existing and future academic buildings.

The new building and Alumni Green (not part of this application) will revitalise this part of the UTS Campus such that it will improve the streetscape appeal of this portion of Thomas Street and Jones Street.

The composition of the façade of the building has been developed to respond to the internal arrangements whilst also responding to the site's important connection with Alumni Green and relationship with Building 4. The different window types achieve variation through the façade, with the gentle surface curves providing a smooth transition to Building 4 and marking the new entry (through-site link) from Thomas Street.

The site's corner location fronting two public roads together with its framing of an important gathering and green space (Alumni Green) means the prominence of any redevelopment scheme on the site is going to be high. This does not, however, need to form a constraint to redevelopment, as the site's science research/teaching context provides an opportunity for a new, modern and cutting edge building to be established that further strengthens UTS's vision to create a 'world class' City campus.

The scale of the proposed building envelope is proportionate to the existing and planned scale and massing of development across the UTS Broadway Campus, and is also reflective of buildings (including other institutional buildings) found in this southern edge of the Sydney CBD. The compatibility of a new modern research/teaching building in the locality will increase as the Concept Plan for UTS Broadway is realised.

The treatment and setting back of the 5th level/rooftop plant ensures that the main built form of the Thomas Street Building reads as a 4 storey building. This readable 4 storey form will be visible by pedestrians from within Alumni Green together with pedestrians walking south/north along Jones Street.

More broadly, the proposal continues the rhythm of buildings along Thomas Street (infilling a 'gap' in the streetscape), sharing a close relationship in form between existing Building 4 adjoining immediately to the east and Building 10 (to the west across Jones Street). Refer to **Figure 17** below.

Figure 17 – Thomas Street and Jones Street (Source: DBJ and BVN)

The rooftop garden and planting along the western end of the building (level 1) also assists with minimising the visual impact of the development, specifically new planting along the site's Jones Street elevation will assist with softening the bulk and scale of the development and ensuring the new green heart of the campus (Alumni Green) continues along and through the site.

In terms of views, the proposed development does not materially affect the views from directly adjoining properties, particularly given their respective research/teaching functions. Views along the site boundaries of the site are improved through the activated street fronts and the architectural design. Given the isolation of the site from any nearby residential dwellings and the relatively low-medium form of the proposed Thomas Street Building, view impacts on residential dwellings will be negligible.

In addition, the natural surveillance that is to be afforded through the incorporation of an active and useable rooftop garden is also considered to be of benefit. The rooftop garden will provide a visual connection between Alumni Green and the proposed Thomas Street Building.

The visual impact of roof plant has also been considered. As discussed above, the building has been purposefully designed to integrate rooftop plant. There will be little or no impact on surrounding streets from the salt water tanks and photovoltaic array and views will be limited to neighbouring tall buildings (including the adjacent TAFE building to the north) and possibly distant vantage points to the west along Thomas Street. If the salt water tanks were to be glimpsed from afar this is considered appropriate as it displays and announces the research and teaching credentials of the Thomas Street Building.

5.3 Solar Access

Impacts on the Locality

Fundamental to the design of the proposed building is achieving compliance with the prescriptive sun access plane control included within the approved Concept Plan for the Thomas Street Building site. The aim of the control is to ensure the built form of the Thomas Street Building affords appropriate solar access to the future Alumni Green.

As demonstrated within **Figure 18** below, the proposal achieves compliance with the sun access plane control ensuring that there is at least on average a 10m strip along the south side of Alumni Green that will receive sun at 12 noon at the winter solstice as demonstrated by the detailed shadow impact assessment undertaken by DBJ and BVN (refer to **Appendix D**). Overall, the future Alumni Green will receive a reasonable level of solar access throughout the morning period at the winter solstice.

The shadow impact assessment also confirms that at the equinoxes (22 September and 22 March) Alumni Green will receive over approximately 50% of solar access between 8am and 2pm.

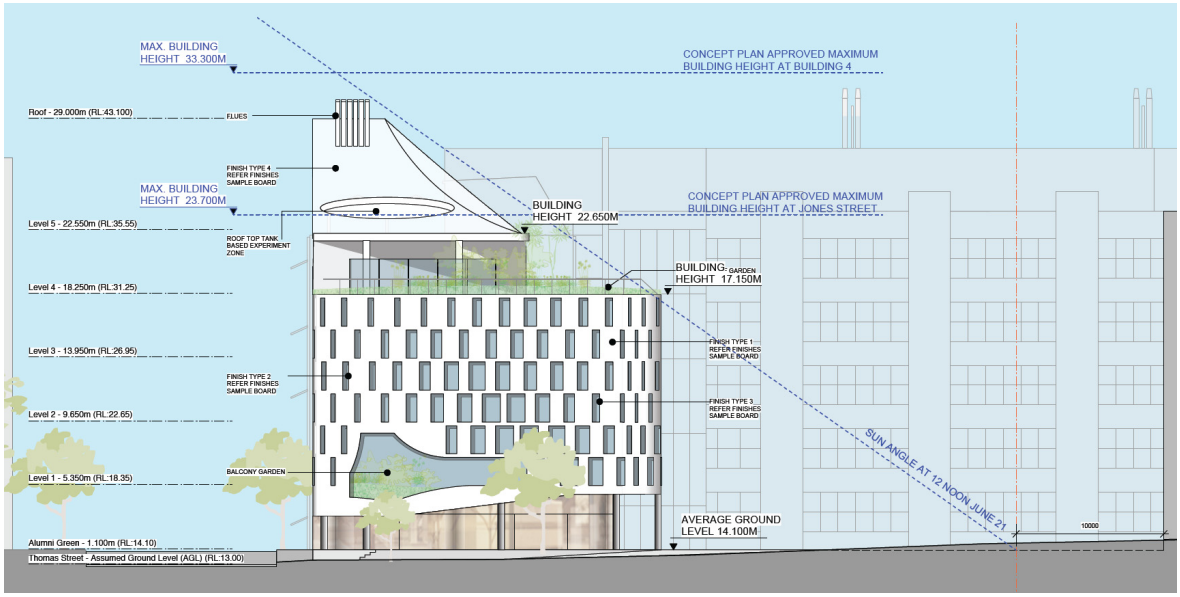

Figure 18 – Solar access compliance (Source: DBJ and BVN)

Internal amenity

The three primary facades are punctuated by windows of varying sizes. Combined they maintain a high level of transparency and enable reasonable solar access into the Thomas Street Building. Internally, glazed partitions are proposed to all main circulation paths, allowing solar penetration and promoting a transparent and active interior. The incorporation of full height glazing to the animated connecting eastern spaces adjoining Building 4 together with the open circulation voids further improve the penetration of natural light into the Building.

A double height void at ground and basement levels along the northern edge of the building further enables some intrusion of natural lighting from above, ensuring some sense of the outside even at the lowest levels of the proposed building.

5.4 Transport and Parking

An assessment of the impacts of the proposed traffic and parking is detailed in the Transport and Parking Report prepared by Halcrow located at **Appendix I**.

As elaborated below, the assessment concluded that the proposed development generally complies with the proposals put forward in the approved Concept Plan, that the impacts are equivalent to those identified in the Concept Plan, and that there will be no adverse effects on road users or active transport as result of the development.

5.4.1 Traffic

Assessment

A detailed assessment of the impacts of the Concept Plan on the existing road and public transport network was undertaken by Halcrow MWT in May 2009 including the cumulative impacts of the proposal and the Frasers Broadway development. The assessment found that the performance of nearby intersections will be only marginally impacted by the overall development contemplated by the Concept Plan, and concluded that the local road and public transport network will be able to accommodate the additional demand generated by both the proposal and the Frasers development.

The design of the Thomas Street Building does not include provision for car parking, and accordingly Halcrow confirms that traffic generation associated with the proposal would be negligible.

Management

No management or mitigation measures are necessary. Notwithstanding this, the Thomas Street Building will be incorporated into the University's Sustainable Transport Strategy and Transport and Access Guide (which were included in the TMAP for the Concept Plan).

5.4.2 Parking

Assessment

No car parking spaces are proposed as part of the Thomas Street Building. However, given the relationship of the Building with adjoining buildings, minor car parking demand will be catered for in the basement levels of surrounding buildings.

Not providing car parking spaces in the building also aligns with the transport objective of the Concept Plan, i.e. to maintain the same number of car parking spaces in an effort to maintain traffic at its current levels. In this context the proposal supports this objective with no increase in car trips to the new building.

Management

No management or mitigation measures are necessary.

5.4.3 Loading and Deliveries

Assessment

There will be a minor increase in the number of service vehicles /refuse trucks visiting the site. Service vehicles will use the LRS loading area, which will be accessed through the basement levels of Building 1 and 2 via the approved widened ramp located at the eastern end of the site. Halcrow confirms that Thomas Street has adequate capacity to serve the site.
The proposed service access corridor provided at Basement Level 1, which connects to a secure goods lift, will allow goods to be dropped off and transferred easily to the new building. No management or mitigation measures are considered necessary.

The LRS loading area would also enable waste removal vehicles to service the proposed building. Halcrow confirms that the size of the service area is considered adequate to handle the increase in vehicles.

Management

Due to the increase in waste, it may be necessary to increase the number of waste collections during the week.

5.4.4 Bicycle and Parking Facilities

Assessment

Given the sustainable travel initiatives being promoted by UTS, there is likely to be an increase in the number of cyclists visiting the site.

Management

While the proposal does not include any bicycle facilities on site, the increase in demand for bicycle parking and facilities would be catered for in adjacent buildings. In this regard, UTS has adopted a broader Campus wide approach to the provision of bicycle parking and facilities. The adjoining Multi Purpose Sports Hall in Building 4 for example has provision for 30 bicycle storage spaces and 56 cycle racks provided within Building 10 with a further 250 additional cycle racks planned. There is also potential within the basement levels associated with the adjacent LRS building to accommodate additional bicycle parking if required.

5.4.5 Local Road Upgrade

No local road upgrades are proposed as part of this development.

5.5 Wind Effects

The DGRs require an assessment of the wind conditions on pedestrians within the site and the public domain together with details of proposed mitigation measures. The assessment was carried out by Cermak Peterka Peterson Pty Ltd (CPP), see **Appendix J** for details.

Assessment

After analysing the prevailing winds experienced on the site and referring to other wind tunnel tests undertaken for other development in the vicinity of the Thomas Street building, CPP conclude that the wind environment at the existing site is likely to be suitable for intended student usage and amenity.

In terms of impacts of prevailing winds on the proposed Thomas Street Building, CPP's analysis reveals:

- Westerly winds channelling along Thomas Street will have minimal impact on this development as there are no major building openings fronting Thomas Street.
- The Jones Street length of the proposed colonnade will have some exposure to prevailing winds from the west and south; as such it may be desirable to improve wind conditions through the colonnade during stronger wind events (e.g. temporary screening).
- General winds conditions along the Alumni Green length of the colonnade are expected to be calm and suitable for short term stationary type activities.
- Proposed door seals to the lift lobby are appropriate to avoid lift door operability and wind noise problems associated with pressure differentials.
- The level 4 terrace will receive some wind protection from northern and southerly winds by the level 4 and 5 building massing.
- The terrace will be exposed to westerly bias winds, however the proposed planting at the western edge of the terrace is supported to deflect and disperse westerly winds. Proposed planting on this level is encouraged to deflect and disperse westerly winds, with local screening potentially needing to be developed for any activities space within the terrace.

Summary

Overall, CPP confirm that:

- Surrounding buildings offer significant wind protection to the proposed Thomas Street Building.
- Wind conditions at pedestrian level around the development are expected to be similar to those currently experienced and are suitable for intended use.
- Air quality at the site may be affected by emissions from various sources within the proposed building. These can be examined further during detailed design.

5.6 Energy Efficiency and ESD

The environmental assessment is required to report on how energy efficiency and ESD is to be addressed in the design of the Thomas Street Building. As detailed in the report prepared by Steensen Varming (see **Appendix G**), the project has the following Sustainable Design objectives:

- Achievement of 5 star Green Star Education v1 design rating certified by the Green Building Council of Australia;
- Contribute to reduction in overall campus water consumption by up to 20%; and
- Meeting or exceeding the requirements of Section-J of the BCA for energy efficiency in building fabric and environmental systems.

The following sections describe the proposed initiatives to be incorporated into the building to achieve the above objectives as well as the intended Green Star rating.

5.6.1 Energy Efficiency

The proposed energy efficiency measures are intended to conserve energy and reduce greenhouse gas emissions through design and management. Measures proposed to reduce overall electricity demand and energy consumption include:

- Provision of natural ventilation, with the incorporation of openings within the southern façade.
- Incorporation of a roof garden to provide thermal insulation and assist in reducing the building's heating and cooling loads and surface run-off. The roof garden also provides an opportunity to enhance the ecological value of the site.
- Maximising daylight penetration in the design of the façade design, whilst also restricting solar loads.
- Incorporating a Central Air Handling unit (AHU) with localised Fan Coil Units (FCUs) for zoned control.
- Fitting fan coil units with electronically commutated direct current (ECDC) motors.
- Modulating the fume-cupboard make-up air to match fume cupboard exhaust rate in order to reduce energy consumption.
- Utilising mixed-mode ventilation for all office areas.
- Undertaking energy sub-metering in accordance with the requirements of BCA Section J-8, as well as Green Star requirements.
- Linking all sub-meters to the building management system (BMS) for energy auditing, energy monitoring and troubleshooting.
- Using Cross-Linked Polyethylene (XLPE) and Low Smoke Zero Halogen (LSZH) cables in the electrical distribution systems in place of traditional PVC type cabling.
- Using daylight sensors where appropriate to control the perimeter artificial lighting in the development to reduce energy usage.
- Using efficient external lighting to meet or exceed the minimum requirements of AS 1158 for illuminance levels.
- Providing a lighting system that incorporates energy efficient lamps and uses luminaires with high light output ratios.
- Incorporating roof-mounted photovoltaics.

In addition to the above measures, connection of the Thomas Street Building to a campus district energy scheme (encompassing trigeneration) is also under investigation.

5.6.2 Water Efficiency

The following water efficiency measures to conserve water and reduce stormwater runoff /output from the site are incorporated in the design:

- Rainwater is to be recovered and reused on site. Rainwater harvested from the main roof structure of the building will be used for WCs, urinals, cooling towers and irrigation of landscaping.
- Water efficiency fixtures will be installed across the building.
- Water meters will be installed to all major water uses within the building.

5.6.3 Waste Management

The project will be targeting a minimum 80% diversion of construction waste from landfill through re-use and recycling. This will be covered and implemented as part of the Construction Management Plan (refer to Section 5.11 of this EAR).

Operational waste will be in accordance with the University's usual policies for waste reduction and minimisation as described in Section 3.11 of this report.

5.6.4 Green Star Rating

The Green Star Rating system is an environmental design rating tool that has been tailored for the Australian climate and environmental issues. It focuses on a range of elements that encompass leading design in energy and water efficiency, materials, emissions, transport systems, management and indoor environment. The Green Star Education tool has been developed for new and refurbished university buildings.

It is noted that the Statement of Commitments included within the Concept Plan approval identified a 6 star Green Star target (World Leader) for the Thomas Street Building. This target reflects UTS's strong focus on sustainability and was based on the *UTS City Campus ESD Masterplan 2020* developed by ARUP in 2008. This 'guideline' document recommends that all new buildings on campus achieve 6 star Green Star ratings. As an aspirational target, it was subsequently carried through for the Thomas Street Building prior to the concept design phase when the Faculty of Science's exact requirements and activities to be undertaken in the building were not yet determined.

Since the approval to the Concept Plan and having further defined the uses for the Thomas Street Building, it has been determined that a 5 star Green Star rating (Australian Excellence) would be more appropriate and feasible for this laboratory type building. The key reasons for revaluating the green star target for the Thomas Street Building include:

- Compliance with some of the Green star credits is not feasible for the proposed facility. These credits include:
  - Daylighting - due to the presence of basement levels, it is difficult to achieve a high score for this credit.
  - External views - difficult to achieve compliance with this credit, due to the presence of basement levels.
  - Greenhouse gas emissions - this credit recognises designs that minimise greenhouse gas emissions associated with operational energy consumption. The proposed services design is limited to the efficiency of the existing central University plant. As such it is difficult to achieve a high score for this credit.
  - Air change effectiveness - due to the specific air-quality requirements of laboratories, it is difficult to achieve compliance with this credit.
  - Dematerialisation - dematerialisation is not relevant to laboratory facilities.
  - Topsoil - due to the basement excavation, it is not possible to achieve compliance with this credit.
  - Legionella - compliance with this credit cannot be achieved because the proposed facility will be served via existing campus cooling towers.

- Some of the ESD initiatives that are currently proposed by UTS are not recognised under Green Star (meaning that ESD measures being adopted are not able to contribute towards weighted points under the Green star rating system).
- A cost / benefit analysis was undertaken by the University and it was determined that given the additional cost of achieving a certified 6 star Green Star rating as well as the difficulty in achieving a 6 star rating with this building type, the financial investment would be better utilised on facilitating the wider UTS targets for greenhouse gas emission reductions. UTS, as part of its Australian Technology Network (ATN) commitments, has made a commitment to achieve an 11 per cent reduction in greenhouse gas emissions by 2012-13 based on 2007 levels by 2012-13 and a 30 per cent reduction by 2020-21on 2007 levels. These targets are quite ambitious given the increase in floor area associated with the implementation of the City Campus Master Plan. One of the proposed carbon reduction strategies to meet these targets is the installation of a precinct-based trigeneration system that will serve several buildings on campus, including the Thomas Street Building, with electricity and chilled water.

Achievement of 5 Green Star 5 star rating

In order to achieve a Green Star 5 star rating, the development must score a minimum of 60 weighted points. Based on the sustainable design initiatives described above, the proponent has set the following Green Star Education v1 target across the relevant categories to achieve the 5 star rating (refer to **Table 7**).

Table 7 – Green Star Education v1 target

Category	Points available	Points targeted	Additional points to be confirmed
Management	14	14	-
IEQ	25	17	2
Energy	29	6	7
Transport	10	6	-
Water	16	10	2
Materials	20	8	8
Ecology	6	-	2
Emissions	14	3	7
Sub-total weighted points		**49**	**18**
Total weighted points		**67**	
Equivalent Green Star Rating		**5 stars**	

Source: Steensen Varming

Achievement of a 5 Star Green Star rating forms part of the draft Statements of Commitments included at Section 6.0.

5.7 Noise and Vibration

Noise and vibration during construction and operational noise associated with plant and equipment has the potential to impact on neighbouring education buildings - primarily Building 4 and Building 2 - and the buildings on the western side of Jones Street and northern side of Thomas Street. Traffic noise from surrounding roads – Thomas Street and Jones Street - as well as from internal plant and services could impact on the internal amenity of the building. Accordingly Renzo Tonin Associates was commissioned to assess the noise and impacts associated with the development (see **Appendix K**).

5.7.1 Construction Noise and Vibration

Noise

A quantitative noise assessment was undertaken consistent with the requirements in the Department of Environment, Climate Change and Water (DECCW) and recently released NSW Interim Construction Noise Guideline (ICNG) requirements. Sensitive noise receivers were identified as UTS Building 4 (adjoining the site along Thomas Street to the east), UTS Building 2 (adjacent to Alumni Green to the south), UTS Building 10 (adjacent to Jones Street to the west), and Ultimo TAFE College building (adjacent to Thomas Street to the north).

The assessment showed that noise emissions from construction activities will generally exceed the set noise criteria for all receiver locations and that noise mitigation measures will be required to reduce noise levels. To mitigate the impacts of noise the proponent will implement a combination of management measures, to be implemented as part of the Construction Noise and Vibration Management Plan for the site (included at **Appendix L**).

Typical noise control measures identified by Renzo Tonin Associates that may be appropriate and considered for the construction activities on the site include:

- Noise control kits;
- Partial acoustic enclosures;
- Erection of temporary hoarding;
- Managing truck movements; and
- Noise management measures, e.g. managing the route and number of trucks around the site, implementing time restrictions/providing periods of repose for neighbours, relocation of classes to quieter areas, noise monitoring, implementation of a complaints handling procedure etc.

Vibration

The vibration related impacts associated with construction including foundation piling and truck traffic etc. As noted by Renzo and Tonin, the effects of ground vibration on buildings near construction sites may be broadly defined by the following three categories:

1. Disturbance to building occupants - vibration in which the occupants or users of the building are inconvenienced or possibly disturbed;
2. Effects on building contents - vibration where the building contents may be affected; and
3. Effects on building structures - vibration in which the integrity of the building or structure itself may be prejudiced.

With excavation for the site already addressed as part of the Modification to the Concept Plan (Modification No 3), it is not expected that the physical construction of the proposed building will generate excessive vibration related impacts. Notwithstanding this, a range of measures will be implemented, as outlined within the Construction Noise and Vibration Management Plan (refer to **Appendix L**) to ensure vibration impacts are minimised to acceptable levels during the construction period.

5.7.2 Operational Noise

Assessment

Noise from mechanical plant necessary for the building (condensing units, exhaust and intake fans; diesel generators, etc) could impact on neighbouring buildings. Similarly, noise from mechanical plant and equipment (including laboratory equipment) could potentially impact on the acoustic environment of the building itself, as could external noise from traffic on Thomas Street.

In order to establish an understanding of the existing noise level on the site, noise in the vicinity of the site was measured to establish background and ambient levels. As described in the Renzo Tonin report (refer to **Appendix K**), these will serve as the basis for the acoustic treatments to control noise impacting on the neighbouring buildings and noise intrusion into the Thomas Street Building.

Management

The mechanical plant items for the building are not yet finalised. Once selected, their noise specifications and their proposed locations will be checked prior to their installation on site to ensure that either singularly or in total they will not emit noise which exceeds the noise limits specified as a result of the above measurement.

If during detailed design noise emissions from the specified plant items are calculated to be in excess of the set criteria, then further acoustic treatments will be implemented to ensure compliance with the relevant noise criteria. In general, noise controls for mechanical plant are standard and commercially available, and can be readily added to silence any potentially noisy plant.

The study of external noise intrusion into the building found that appropriate controls can be incorporated into the building design to achieve a satisfactory environment consistent with the intended quality of the building and relevant standards. The design of the building envelope will be detailed to achieve the limits stipulated in Australian Standard AS2107:2000 "Recommended Design Sound Levels and Reverberation Times for Building Interiors".

In summary, the proposed development will be capable of complying with the applicable noise criteria outlined in the Renzo Tonin report by incorporating the appropriate noise control measures.

5.8 Reflectivity

The proposed design of the Thomas Street Building has the potential to create traffic disability glare and pedestrian discomfort. Accordingly, UTS commissioned CPP to assess the interaction of the building with the local environment in terms of reflectivity (see **Appendix M** for the CPP report).

Assessment

The reflectivity assessment undertaken by CPP identified that:

- The building is reasonably well shaded by surrounding buildings.
- The most likely motorist impacts are on Thomas Street.
- The greatest potential for the proposed development to generate reflections onto Thomas Street is morning solar rays glancing off the north façade of the building with reflections toward the west of the site.
- Maximum Threshold Increment (TI) reflectivity values exceeding 20% were calculated to occur around 8 am in the months on either side of the winter solstice lasting until the equinox.
- The limited width of the punch windows on the north façade can be used to limit these reflections. The recess of windows by a minimum 150 mm behind the gfacade line will intercept the highest glancing incident angles.
- Similar morning reflections off the Alumni Green façade onto Jones Street will have less impact on passing motorists. In this instance a driver's line of sight will be perpendicular to the potential glare source producing low TI values. The location of Alumni Green to the south of the site will limit the potential for glancing solar reflections to impact upon park users.

Management

The form of the building and shielding provided by surrounding developments will minimise glare impacts upon surrounding roads. To ensure reflectivity related impacts are minimised to acceptable levels (consistent with the recommendations of CPP), the proponent will incorporate the following mitigation measures:

- ensure all exterior cladding elements on the Thomas Street Building will have a reflectivity coefficient of less than 20%; and
- Recessing windows a minimum 150 mm behind the Thomas Street façade.

5.9 Contamination

The proposal does involve any excavation works, with excavation of the site approved as part of the Modification to the Concept Plan (Modification No 3). Contamination issues associated with the site have accordingly been addressed. Conditions imposed as part of the Modification to the Concept Plan also ensure contamination is appropriately dealt with as part of the future excavation of the site.

5.10 Archaeology

There will be no direct impacts on the archaeological values of the site as a result of the proposed construction of the Thomas Street Building. The impacts of the excavation of the site were covered and resolved as part of the section 75W Modification (Modification No 3) to the Concept Plan.

5.11 Construction Management

The excavation of the Thomas Street Building is not part of this project application and was dealt with as part of Modification No 3 to the Concept Plan. Accordingly, the following matters in the DGRs in relation to the management of construction impacts are not relevant to this EAR and were covered by the Modification to the Concept Plan:

- demolition;
- excavation work methods;
- geotechnical matters including any RailCorp and Sydney Metro requirements;
- groundwater and water extraction; and
- noise and vibration associated with excavation.

In relation to the management of issues relevant to the construction of the building, a detailed Construction Management Plan (CMP) will be prepared by the appointed contractor prior to the commencement of works. The CMP will address as a minimum:

- Construction hours;
- Construction traffic management (see below);
- Pedestrian management;
- Noise and vibration management;
- Waste management;
- Erosion and sediment control;
- Air and dust management; and
- Protection of existing street trees.

This matter is included in the draft Statement of Commitments in Section 6 of this EAR.

Construction Traffic Management

The impacts of construction traffic will be controlled through the Construction Traffic Management Plan (CTMP) prepared by Halcrow (see **Appendix N**). The CTMP covers:

- construction vehicle routes;
- access to the site;
- loading and deliveries to, and waste removal from, the site;
- the closure of Jones Street;
- management of pedestrian access/movements;
- emergency vehicle access; and
- driver protocols.

5.12 Utilities and Infrastructure

As discussed in this section, the site is able to be serviced for water, drainage, sewer, gas, electricity, and communications. Details are provided below.

Water, Wastewater, Stormwater, and Gas

Warren Smith & Partners were commissioned to investigate and report on the capacity of existing services and infrastructure to meet the hydraulic and gas servicing needs of the building (see statement at **Appendix O**).

Following analysis of the Thomas Street Building's hydraulic services requirements Warren Smith & Partners concluded that the building can be adequately serviced. Specifically:

- There are two Sydney Water water mains situated in the surrounding streets which provide some external coverage of the site. Thomas Street has a 150mm diameter water main with Jones Street also having a 150mm diameter water main. Both water mains have adequate capacities to provide domestic cold water supply and fire services supplies to the proposed building.
- There is adequate capacity in both the Sydney Water sewer lines that traverse Thomas and Jones Streets (225m diameter sewer mains) to service the proposed building.
- City of Sydney stormwater infrastructure is situated in Jones Street adjacent to the corner of Thomas Street and is available for connection of stormwater drainage. Also, a 525mm Sydney Water stormwater drainage line situated in Jones Street has adequate capacity to drain stormwater from the proposed building and is available for connection. The design incorporates water sensitive urban design principles such as rainwater harvesting to minimise flows and prevent stormwater runoff together with onsite detention.
- The site is served by two Jemena/AGL medium pressure 210kPa (32mm) natural gas mains situated in Thomas Street and Jones Street. The building can be serviced by one of the natural gas mains which should have adequate capacity to service the proposed buildings.

Electricity

Steensen Varming has consulted with AusGrid in regards to power infrastructure to the Thomas Street Building. As noted within **Appendix O**, Steensen Varming confirm:

- The new building will have power provided to the building's main switchboard from adjacent buildings via the electrical infrastructure consisting of an existing substation and new 11kV/415V substations and proposed embedded generation plant.
- There is no apparent Transgrid Transmission infrastructure planned in the Thomas St building footprint.

Communications

The new Thomas Street building's telecommunications services shall be reticulated from the adjacent existing UTS buildings IT network. Steensen Varming confirm that both copper and optical fibre links from the existing UTS buildings shall connect to the new building's MDF / BD to provide adequate communications services.

5.13 Drainage and Stormwater

The DGRs require information on the development's drainage and stormwater regimes. This is addressed in a report prepared by Warren Smith & Partners (see **Appendix P**).

Details of the proposed site drainage and on site detention system are summarised below:

- All rainfall and runoff from the roof of the building will be captured via a Green roof which will provide relevant stormwater treatment via filter media.
- Stormwater runoff will be filtered by the specialist media and thereon transported within the site drainage system.
- Drainage from the Ground Floor Colonnade areas and the Ground Floor external paved and landscaped areas will be connected to drainage outlets to drain to the on-site detention tank.
- Stormwater will pass through a proprietary gross pollutant trap which will be located below ground level and thereon filtered stormwater will be captured and attenuated within the proposed on-site detention (OSD) storage facility.
- It is proposed to reticulate the site drainage pipe network to a connection point within the existing Sydney Water drainage pipeline system in Jones Street.
- The combined OSD/Rainwater Reuse tank will be located within Basement Level B1 beneath the ground floor.
- Collected rainwater is to be used for irrigation on landscaped areas and for WC flushing.
- All stormwater drainage and overflow systems will be designed to cater for a 100 Year storm frequency event.

Warren Smith & Partners advise that the stormwater drainage system surrounding the site has adequate capacity to drain stormwater from the proposed building.

Final calculations and plans showing the size and volume of on-site storage will be submitted to Sydney Water/the City of Sydney Council for approval prior to commencement of any drainage works.

5.14 Building Code of Australia

Steve Watson & Partners has undertaken a review of the proposal for compliance with the Building Code of Australia (BCA) and prepared a Preliminary Report (**Appendix Q**).

The building classification is Class 6 (retail/cafe), Class 8 (labs and associated areas), and Class 9b (conference rooms).

The report finds that the proposed development is capable of complying with the requirements of the BCA, subject to the resolution of identified issues (including fire engineered alternative solutions) during the detailed design stage.

In relation to energy efficiency, it is intended that the design meets or exceeds the requirements of Parts J1 to J8 and Design Certification will demonstrate that compliance is achieved. A full BCA assessment and report will be completed prior to the issue of a construction certificate.

5.15 Access for People with Disabilities

Access Australia has prepared an Access Report to provide advice and strategies to maximise reasonable provisions of access for people with disabilities (see **Appendix R**). The access review responded to the requirements of the AS1428 series, the BCA, UTS's Accessible Environments Policy, and the Commonwealth Disability Discrimination Act (DDA).

Assessment

Access Australia confirms that the Project Application is generally access compliant subject to detailed design and resolution of identified issues.

Management

The proponent will adopt the recommendations in the Access Report prior to construction certificate. The recommendations are in accordance with the DDA Access to Premises Standard which was incorporated in the BCA from 1 May 2011. Accordingly, these provisions will be assessed as part of BCA compliance. In addition, the requirements of UTS's Accessible Environments Policy will be addressed through detailed design.

6.0 Draft Statement of Commitments

In accordance with the Director-General's Environmental Assessment Requirements, the proponent is required to include a Draft Statement of Commitments in respect of environmental management and mitigation measures for the site. The following are the commitments made by UTS to manage and minimise potential impacts arising from the project.

6.1 Landscaping

Further detailed assessment and landscaping plans are to be prepared and submitted to the Department of Planning and Infrastructure prior to determination of the Project Application.

6.2 Ecologically Sustainable Development

In relation to the sustainability of the Thomas Street Building, the proponent will:

- Incorporate/investigate the measures and initiatives outlined within the ESD and Energy-Efficiency Report prepared by Steensen Varming (December 2011).
- Achieve a 5 star Green Star Education v1 design rating certified by Green Building Council of Australia.

6.3 Construction Management

Prior to the commencement of construction, UTS/or an appointed contractor will prepare a detailed Construction Management Plan. As a minimum the plan will cover:

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

7.0 Conclusion

The Thomas Street Building at UTS's City Campus not only provides a significant development at the southern gateway to the Sydney CBD, but importantly, presents through its unique design, a modern, cutting edge image of the university.

The design of the building, selected through a design excellence competition, is consistent with the UTS Broadway Precinct Concept Plan approved by the then Minister for Planning in December 2009. The development of the Thomas Street Building site maximises the social and economic potential of an existing underutilised university asset and significantly enhances the general locality and the university's Thomas Street and Jones Street frontages.

The assessment of the proposal has demonstrated that the development is consistent with the approved Concept Plan and that it will not generate any adverse environmental impacts. The design of the building and the range of sustainability measures included as part of the development enable UTS to demonstrate its commitment to reducing its environmental footprint and to achieving a targeted 5 Star Green Star rating using the Green Star Education tool for new buildings. Generous through-site links are provided at ground level and the whole building benefits from natural light through the design and proportion of the windows.

The site is suitable for the proposed development for the following reasons:

- The land is owned by the university and is currently utilised for non-educational purposes.
- It was subject to extensive analysis through the development of the Broadway Precinct Concept Plan.
- It is in the immediate vicinity of significant and multiple public transport modes, and will have negligible impacts on the local road network.
- It is surrounded on all sides by educational uses and buildings and is entirely in keeping with the quality and size of existing and planned development occurring across the UTS Broadway Campus.
- It makes economic use of existing access arrangements, car parking, bicycle parking and other infrastructure in the basement levels of Building 1 and 2, Building 10 and the LRS Building.

The proposed development, which will deliver a new cutting edge Science Precinct, is considered to be in the public interest as State, regional and local needs will be met by effectively boosting the capacity of an existing, high quality tertiary institution.
We therefore recommend that the Minister approves this Project Application.