18th August 2017

Alexander de Belin

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Dear Alex,

MACQUARIE UNIVERSITY ARTS PRECINCT PROJECT

ACCESSIBILITY ASSESSMENT REPORT AT DEVELOPMENT APPLICATION

Executive Summary

The report is a high-level access assessment for the proposed development of the Macquarie University Arts Precinct Project. These comments have been prepared after assessment of the Development Application (DA) drawings prepared by Architectus.

The report outlines the access legislative framework, provides general access planning considerations and preliminary access comments for mandatory compliance to assist with the incorporation of reasonable access provisions for people with disability within DA documentation.

The assessment reports favourably on the inclusive nature of the design, which responds well to the design requirements of the Disability Discrimination Act, the Building Code of Australia, referred Australian Standards and Local Government Plans. The design also considers best practice elements contained in Universal Design Principles, Human Rights Commission Notes and the like – with the assessment going on to examine how the design responds to the general access planning considerations.

Preliminary accessibility (mandatory) comments explore:

- External Access Linkages
- Entry Access to Buildings
- Level of Access within the Building
- Paths of Travel
- Central Courtyard and Covered Atrium
- Emergency Egress
- Passenger Lifts
- Sanitary Facilities
- Seating and Service Counters
- Accessible Car Parking
- Lighting
- Signage and Hearing Augmentation

The report concludes that the documentation provided for this schematic design shows a mature and comprehensive response to the extensive range of mandatory and best practice provision for people with a disability.

Access Legislative Framework

The following legislation, standards and guidelines that apply to this development:

- Federal Disability Discrimination Act (DDA)
- Disability (Access to Premises – Buildings) Standards 2010 (APS);
- Building Code of Australia 2016 (BCA) Parts D3, E3, F2.4
- AS 1428.1:2009 - (General Requirement of Access);
- AS 1428.4.1:2009 - (Tactile Ground Surface Indicators);
- AS 2890.6:2009 - (Parking for People with Disabilities);
- AS 1735.12:1999 - (Lift Facilities for Persons with Disabilities);
- AS 1735.7:1998 – (Lifts, escalators and moving walks: Stairway lifts)
- Macquarie University Concept Plan (06_0016) 2009
- Macquarie University Urban Design Guidelines, including Signage and Wayfinding Guidelines;
- Macquarie University Disability Action Plan 2012 -2017 (lodged with HEREOC);
- Macquarie University Campus Master Plan 2014;
- LEP Ryde Local Environmental Plan (LEP) 2014

Please note that there are also additional advisory standards, not currently referenced by BCA or DDA Premises Standards, as well as other relevant guidelines that should be considered, as relevant, to promote safety, equity and dignity in line with over-arching DDA principles and aspirational objectives. These include:

- City of Ryde DCP 2014 Part 9.2 Access for People with Disabilities (that in some parts references AS1428.2:1992)
- Universal Design Principles
- Human Rights Commission (HEREOC) Advisory Note February 2013 on streetscape, public, outdoor areas, fixtures, fittings and furniture.
- AS1428.2:1992 Enhanced and Additional requirements

- AS1428.4.1 Draft Way-finding Standard
- AS1428.5:2010 Communication for People who are Deaf or Hearing impaired
- AS3745:2010 – Planning for Emergencies in Facilities (to assist with design strategies for provision for escape for people with disability that may require assistance)

General Access Planning Considerations

- The Macquarie University Design Excellence Strategy and Urban Design Guidelines are required by and form part of the Concept Plan approval that is the current statutory planning regime that applies to the Macquarie University site. The Guidelines outline the controls and design measures against which future development on the campus is to be assessed instead of Council's DCP controls.

- The Guidelines, Volume 1, *Part 2.2.8 Accessibility* highlights the importance of providing accessible pedestrian connections across most of the campus so that people with disability can freely move from transport nodes to all buildings, within and between buildings and across the public domain. The key initiatives are:
    - *New buildings should achieve level access at major entries*
    - *Accessible gradients should be achieved wherever possible throughout the public domain*
    - *Major level changes on significant public paths should be negotiated by lifts or ramps in the same course of travel*
    - *Development should be considerate of the University's Disability Action Plan*

- City of Ryde DCP 2010 Part 9.2 (Cl. 5.31 Infrastructure) reinforces similar aims of ensuring accessibility and connectivity throughout the Council area.

- By utilising the AS1428.1 Suite of Standards, the overall aim is to provide continuous accessible paths of travel to connect the proposed development to key transport linkages (train station, bus stops, taxi stands, car-parking) to and through public domain areas (open-space plazas, landscape and parks) and between associated accessible buildings, including the adjacent connected buildings.
- It is noted that generally the site allotment boundary is the line at which mandatory building requirements (BCA and DDA Premises Standards and referenced standards) commence. However, the context of this development and its critical relationship to surrounding 'public domain' and key pedestrian connections will also require

consideration of the bigger picture.

- Macquarie University Disability Action Plan (DAP) 2012 -2017 Part 4 Inclusive Physical Environment states the following over-arching access goals:

  Goal 4.1: Macquarie University will aspire to become a best practice model of an inclusive built environment, based on universal design principles.

  Goal 4.2: Macquarie University will aim to develop a physically 'connected' campus with identifiable improvements in physical accessibility for people with disability to, from and around campus.

- The DAP proposes an Accessible Environments Advisory Group (AEAG) be established to assist develop appropriate consultation mechanisms with people w disability regarding the physical environment, barriers, improvements and physical connectivity within the campus. We understand that this Advisory Group has been in place for a number of years. Liaison between the Advisory Group and the management and design team, as appropriate, is essential to better inform the design.

- MGAC supports the application and consideration of Universal Design (UD) principles into the design to maximize access for all people. We will assist the design team to incorporate UD principles, where possible within the project, while still meeting mandatory compliance requirements.

- A UD approach has numerous benefits for the client as an education provider, for business functions within the building, for individual users and for society in general. An inclusive environment that can be accessed, understood and used by as many people as possible, is proven good business sense, is more sustainable and is socially progressive - in line with the aims of the DAP.

- Universal Design principles consider the needs of a broad range of people including older people, families with children and pushing prams, people from other cultures and language groups, visitors in transit and people with disability. By considering the diversity of users, the design will embed accessibility into and within it, so that benefits can be maximized, without 'adding on' specialized accessible features, which can be costly, visually unappealing and may perpetuate exclusion and potential stigma.

- The seven key Universal Design principles to consider in the on-going design are:
  - Principle 1: Equitable Use
  - Principle 2: Flexibility in Use

- Principle 3: Simple and Intuitive Use
- Principle 4: Perceptible Information
- Principle 5: Tolerance for Error
- Principle 6: Low Physical Effort
- Principle 7: Size and Space for Approach and use

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Preliminary Accessibility Comments (Mandatory)

External Access Linkages

1. Provide a pedestrian accessible path of travel from the main pedestrian entry points at the site allotment boundary to building entrances, compliant with AS1428.1:2009.

   The size and nature of the campus and reference to the ACCESSIBILITY MAP available on the University's web-site suggests that there are accessible pathways from the property boundary to the proposed development.
   http://www.mq.edu.au/__data/assets/pdf_file/0004/108148/map_accessibility.pdf

   At Ground Level, there is a covered Open Courtyard that connects directly from Wally's Walk and the adjoining buildings, the Ground Level Main Entry via stairways and an extensive ramp system that lead to the Main Lift Lobby. Other building entrances are shown on the Ground Floor, including around the Covered Atrium Space and a high-level connection to Level 1 from Building W5C to the East. At the Western end, there is an accessible entry into the Student Centre and several other entries that connect to areas that are exempt under Clause D3.4 of the BCA and are not required to be accessible.

2. Provide an accessible path of travel between buildings that are connected by a pedestrian linkage to the Building compliant with AS1428.1:2009.

   At Ground Level, there is a covered Open Courtyard that connects directly from Wally's Walk and the adjoining buildings, the Ground Level Main Entry via stairways and an extensive ramp system that lead to the Main Lift Lobby.

   Other building entrances are shown on the Ground Floor, including around the Covered Atrium Space and a high-level connection to Level 1 from Building W5C to the East.

   At the Western end, there is an accessible entry into the Student Centre and several other entries that connect to areas that are exempt under Clause D3,4 of the BCA and are not required to be accessible.

3. Vehicular provision and access, including vehicular pick-up and drop-off, is not yet indicated on the issued drawings.

Entry Access to Buildings

1. Access is required through at least 50% of entrances, including the principal pedestrian entrance/s to the Building. Note it is preferred that all entrances are accessible.

   The proposal indicates that accessibility through 100% of entrances is achievable. Particular attention must be given to the threshold condition of areas where large expanses of enclosure can be opened to the exterior (e.g.. Retail premises). If incorrectly

detailed these may restrict accessibility and present trip hazards.

2. A non-accessible entry (if provided) cannot be located more than 50m distance from an accessible entry – unless exempted by D3.4 of the BCA).

3. Wheelchair access is required to and through any external entrances to/from any outdoor terrace areas compliant with AS1428.1.

   This is relevant to a number of terraces on the upper levels. The accessibility requirements are considered readily achievable and will be further developed at detailed design stage.

4. All accessible doors to have 850mm minimum clear width opening and suitable door circulation areas, compliant with AS1428.1:2009. Manual doors require lightweight door forces to be operable by people with disabilities (20N maximum).

   The accessibility requirements are considered readily achievable and will be further developed at detailed design stage. Review is required of the many instances of double leaf and multi-leaf door types, at the majority of entrances, where the active leaf is required to offer the necessary clear minimum opening width. Consideration must also be given to the influence of wind pressure on door operating forces, it may be necessary to include auto-opening or powered opening options. Note: Macquarie University Property Design Guidelines state that where required, entrance doors should be powered auto-opening bi-parting sliding doors.

5. All stairs and ramps to be designed to comply with AS1428.1 and AS1428.4.1. This requires suitable setback from top and base landings for handrails on both sides with required handrail extensions that do not protrude into paths of travel. Stairways are shown in a number of locations, including those nominated as 'Vertical Link' stairs, as well as fire-isolated stairs intended only for emergency. Emergency-only fire-isolated stairways need only comply with Clause D.17 of the BCA. The vertical link stairs and ramps will require full detailing with AS1428.1 features, including handrail extensions and appropriate setback from a transverse path of travel. Where stairs are free-standing/exposed underneath, the design will need to consider appropriate means to impede access in areas where 2m or less vertical clearance.

6. There are stairways that have a stairway lift to accommodate people with mobility assistance devices. The stairway lifts will be the type that folds down a platform that allows a wheelchair and person to be carried up or down.

7. An accessible path of travel e.g. ramp or lift needs to be provided adjacent (or in reasonable proximity) to any stair access. Note: providing choice of access route directly adjacent so that people can start and finish in the same location/travel similar route promotes inclusion and UD principles.

   These details are considered readily achievable and will be further developed at detailed design stage.

Level of Access within the Building

Access is to be provided according to BCA and DDA Access Code Part D3 including Table D3.1 for range of building classifications (all classifications need to be confirmed by BCA consultant).

Under Table D3.1:

- To and within all areas normally used by the occupants (including public, visitors, staff, students etc.) in compliance with AS1428.1:2009. Note: this excludes areas exempted under Part D3.4 e.g.. loading docks, plant/equipment rooms.

Advisory recommendation under Ryde Access DCP:

- As above, however compliant with AS1428.1:2009 and AS1428.2:1992 (for some but not all elements). Where the DCP requirement differs from AS1428.1:2009, the higher level of access will be considered - such as for paths of travel under the DCP having 1200mm minimum width pathways and corridors instead of 1000mm minimum width, as required by AS1428.1:2009.

Paths of Travel

1. Turning spaces (at least 1540mm W x 2070mm L) are required within 2m of every corridor end and at 20m maximum intervals along all access-ways. This is needed for wheelchairs to make a 180° turn, compliant with AS1428.1:2009.

   This has been clearly demonstrated in the proposal.

2. All common-use doors (i.e. not excluded under Part D3.4) to have 850mm minimum clear width opening (each active door leaf) and suitable door circulation area, compliant with AS1428.1:2009.

   Although doors are not yet shown to some of the interior layout the required details are considered readily achievable and will be further developed at detailed design stage. Review is required of the many instances of double and multi-leaf door types.

3. All common-use corridors and accessible paths of travel to be at least 1000mm clear width when travelling in linear direction (or advisory recommendation of 1200mm minimum under AS1428.2 in line with Ryde Access DCP).

   This has been clearly demonstrated in the proposal.

4. Provide slip-resistant flooring surfaces within all areas that are required to be accessible with appropriate minimum wet pendulum test rating under HB198/AS4856. This level of information is appropriate - to detailed design stage.

Central Courtyard and Covered Atrium

1. These areas are expected to be used both informally and formally for lectures, presentations, entertainment and the like. Wheelchair seating spaces consistent with BCA and DDA Premises Standard Table D3.9 should be provided wherever seating is provided. A suitable design response is necessary in the detailing of features such as handrails and fall protection, which is considered readily achievable at detailed design stage.

Emergency Egress

1. It appears that most stairways, including fire-isolated stairs, are open and used for vertical circulation and communication between floors. Stairways for emergency use need only have a handrail on one side and be according to AS1428.1 from BCA D2.17, while vertical circulation stairways will have full compliance with handrails, with extensions, on both sides, tactile ground surface indicators and the like.

2. There is currently no mandatory requirement within the BCA or DDA Premises Standards for provision of independent accessible egress for people with a disability in accordance AS1428.1 and this remains an important DDA issue. Consideration of an accessible egress strategy with emergency evacuation plan will be needed as a minimum starting point.

3. Macquarie University design guidelines include a requirement for consideration of provision for escape. The design team in consultation with the project user group are to develop an approach for the managing the process of evacuation *of all* potential building occupants. AS3745:2010 will assist.

   The detail matters are considered readily achievable and will be further developed at detailed design stage.

Passenger Lifts

1. The proposal includes three separate sets of passenger lifts. One bank of three is located near the centre of the floor of the northern wing and connects with all levels of the building. Another is a bank of two in the southern wing where one is very large and sized for operational reasons and large exhibition movement. A third, single lift is located at the north-east of the site and serves Ground Level to Level 2.

   The two main lift banks are conveniently and strategically located serving the whole project and integrated with the development's main sanitary facilities and grand circulation stairways, while the single lift at the north-east corner serves three levels and conveniently located where the bridge from Building W5C connects.

   The lifts will be sized according to Table E3.6 in the BCA by the BCA consultant.

   The areas in front of the passenger lifts have sufficient circulation spaces to allow 360° turn, for two wheelchairs to pass each other and will allow a person with or without a mobility aid (wheelchair or mobility scooter) the ability to enter and exit the passenger lift in a safe, equitable and dignified manner, compliant with AS1428.1:2009.

2. All lift car components (grabrail, call/control buttons, lighting, arrival indicators) including the stairway lifts will comply with the appropriate parts of AS1735.

   The schematic design drawings show accessibility considered readily achievable and will be further developed at detailed design stage.

Sanitary Facilities

1. There are sanitary banks provided around both main passenger lift cores on all floors. Each bank has provision that exceeds minimum compliance.

2. At all banks of toilets there is a unisex accessible toilet (UAT) and on each floor, one UAT has a left-hand transfer and the other, a right-hand transfer.

   The necessary details are considered achievable and will be further developed at detailed design stage.

3. At each bank of toilets, under the BCA and DDA Premises Standards, a sanitary compartment/cubicle suitable for the use by a person with ambulant disability is required and provided - designed in accordance with AS1428.1, and separate for male and female.

   These details are considered achievable and will be further developed at detailed design stage.

Seating and Service Counters

1. Where table heights are fixed, such as café seating, consider providing a range of table heights with appropriate foot (290mm) and knee (650mm) clearance to accommodate wheelchair users.

   The tables should be at least 800mm in width, preferably within the following height ranges according to AS1428.2 advisory/best practice:

   (i) Where only one table height is provided, the table top will be between 830 and 870mm above FFL with 800-840mm under-bench clearance.

   (ii) Where two table heights provided, the other table top will be between 730 and 770mm above FFL with 710-750mm under-bench clearance.

2. Service counters within retail premises are likely to comprise of rigid fixed elements. Consideration should be given to locating all or, at least, a portion of the service counter suitable for the use of a person using a wheelchair, to enable interaction with staff. The setout of the service counter would be similar to the above dimensions advised for table heights and further guidance on clearances, reach ranges with diagrams can be found in AS1428.2.

Accessible Car Parking

1. The project is understood to make no provision for parking of any kind. Should this change at some point in the future it will be necessary to understand the minimum requirements for accessible car parking as contained in the BCA and DDA Access to Premises Standards. Accessible parking is to be designed in full accordance with AS2890.6 with different rates of parking based on building classification. For example, Class 5 allocation must have accessible parking at the rate of 1%, whereas Class 6 and 9b must have accessible parking at the rate of 2% (up to 1000 spaces).

2. Note also advisory recommendations under Ryde Access DCP which requires parking for people with disabilities at a rate of 3%. Macquarie University will have its own site-specific parking restrictions and arrangements.

Lighting

1. In general, the maintenance illumination levels should be 150 lux for paths of travel, corridors and stairs. Ensure all lighting levels comply with AS1680.

Signage and Hearing Augmentation

1. Signage to comply with BCA and DDA Access to Premises Standards part D3.6, which also reference AS1428.1. Note also the Macquarie University Signage and Wayfinding Guideline, particularly Part Two: Access, and the emphasis on “best practice” principles for accessible wayfinding.

2. Provide hearing augmentation where an inbuilt amplification system, other than the one used for emergency warning is installed, in accordance with DDA Premises Standards Part D3.7. These are likely to occur in rooms for teaching, learning labs, seminar, functions and the like. It is the preference for Macquarie University to install Infra-Red Hearing Augmentation Systems, as outlined in the Property Design Guidelines. If infra-red or FM systems are used, then a suitable number of receivers will also be required in line with Part D3.7 (2) (b) in relation to the number of persons to be accommodated in the room or space. Macquarie University may have its own loan/management system arrangements with respect to hearing augmentation receivers for potential users and this will need to be articulated to the design team and considered for this development.

Conclusion

The documentation provided for this schematic design shows a mature and comprehensive response to the extensive range of mandatory and best practice provision for people with a disability. Detailed spacial requirements, fittings, features and equipment will evolve accordingly as the project progresses through design development, construction certification, construction certification through to occupation.

Report prepared by:

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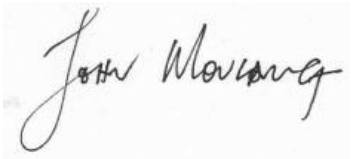

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Document Tracking

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4th May 2017	Draft	John Moulang	
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