

Learning and Teaching  
Academic Standards Project

ARCHITECTURE

Learning and Teaching  
Academic Standards Statement  
September 2011



AUSTRALIAN  
LEARNING  
& TEACHING  
COUNCIL

Promoting excellence in higher education

An initiative of the Australian Government Department of Education, Employment and Workplace Relations

## CONTENTS

|                                                                               |    |
|-------------------------------------------------------------------------------|----|
| Executive Summary                                                             | 01 |
| 1. Learning and Teaching Academic Standards Project Background                | 04 |
| 1.1 Discipline areas encompassed in the demonstration project                 | 04 |
| 2. Architecture in the Learning and Teaching Academic Standards Project       | 05 |
| 2.1 Scope                                                                     | 05 |
| 2.2 Rationale                                                                 | 05 |
| 2.3 Consultation and development process                                      | 06 |
| 3. Learning and Teaching Academic Standards Statement for Architecture        | 08 |
| 3.1 Nature and extent of architecture                                         | 08 |
| 3.2 Threshold learning outcomes for Architecture                              | 08 |
| 4. Notes on the Threshold Learning Outcomes for Architecture                  | 10 |
| 5. Appendices                                                                 | 12 |
| Appendix 1: Discipline Reference Group: Terms of reference and membership     | 12 |
| Appendix 2: Professional accreditation comparison                             | 14 |
| Appendix 3: Selected sources of benchmark standards and accreditation systems | 20 |
| Appendix 4: Abbreviations                                                     | 21 |



# ARCHITECTURE STANDARDS

## Learning and Teaching Academic Standards Project

### Learning and Teaching Academic Standards Statement for Architecture

September 2011

#### EXECUTIVE SUMMARY

The development of the Learning and Teaching Academic Standards Statement for Architecture (the Statement) centred on requirements for the Master of Architecture and proceeded alongside similar developments in the building and construction discipline under the guidance and support of the Australian Deans of Built Environment and Design (ADBED). Through their representation of Australian architecture programs, ADBED have provided high-level leadership for the Learning and Teaching Academic Standards Project in Architecture (LTAS Architecture).

The threshold learning outcomes (TLOs), the description of the nature and extent of the discipline, and accompanying notes were developed through wide consultation with the discipline and profession nationally. They have been considered and debated by ADBED on a number of occasions and have, in their final form, been strongly endorsed by the Deans. ADBED formed the core of the Architecture Reference Group (chaired by an ADBED member) that drew together representatives of every peak organisation for the profession and discipline in Australia.

The views of the architectural education community and profession have been provided both through individual submissions and the voices of a number of peak bodies. Over two hundred individuals from the practising profession, the academic workforce and the student cohort have worked together to build consensus about the capabilities expected of a graduate of an Australian Master of Architecture degree. It was critical from the outset that the Statement should embrace the wisdom of the greater 'tribe', should ensure that graduates of the Australian Master of Architecture were eligible for professional registration and, at the same time, should allow for scope and diversity in the shape of Australian architectural education.

A consultation strategy adopted by the Discipline Scholar involved meetings and workshops in Perth, Melbourne, Sydney, Canberra and Brisbane. Stakeholders from all jurisdictions and most universities participated in the early phases of consultation through a series of workshops that concluded late in October 2010. The Draft Architecture Standards Statement was formed from these early meetings and consultation in respect of that document continued through early 2011.

This publication represents the outcomes of work to establish an agreed standards statement for the Master of Architecture. Significant further

work remains to ensure the alignment of professional accreditation and recognition procedures with emerging regulatory frameworks cascading from the establishment of the Tertiary Education Quality and Standards Agency (TEQSA). The Australian architecture community hopes that mechanisms can be found to integrate TEQSA's quality assurance purpose with well-established and understood systems of professional accreditation to ensure the good standing of Australian architectural education into the future. The work to build renewed and integrated quality assurance processes and to foster the interests of this project will continue, for at least the next eighteen months, under the auspices of Australian Learning and Teaching Council (ALTC)-funded Architecture Discipline Network (ADN), led by ADBED and Queensland University of Technology.

The Discipline Scholar gratefully acknowledges the generous contributions given by those in stakeholder communities to the formulation of the Statement. Professional and academic colleagues have travelled and gathered to shape the Standards Statement. Debate has been vigorous and spirited and the Statement is rich with the purpose, critical thinking and good judgement of the Australian architectural education community. The commitments made to the processes that have produced this Statement reflect a deep and abiding interest by the constituency in architectural education. This commitment bodes well for the vibrancy and productivity of the emergent Architecture Discipline Network (ADN).

Endorsement, in writing, was received from the Australian Institute of Architects National Education Committee (AIA NEC):

The National Education Committee (NEC) of the Australian Institute of Architects thank you for your work thus far in developing the Learning and Teaching Academic Standards for Architecture ... In particular, we acknowledge your close consultation with the NEC on the project along with a comprehensive cross-section of the professional and academic communities in architecture. The TLOs with the nuanced levels of capacities – to identify, develop, explain, demonstrate etc – are described at an appropriate level to be understood as minimum expectations for a Master of Architecture graduate.

The Architects Accreditation Council of Australia (AACA) has noted:

There is a clear correlation between the current processes for accreditation and what may be the procedures in the future following the current review. The requirement of the outcomes as outlined in the draft paper to demonstrate capability is an appropriate way of expressing the measure of whether the learning outcomes have been achieved. The measure of capability as described in the outcome statements is enhanced with explanatory descriptions in the accompanying notes.

## Endorsement

The Australian Deans of Built Environment and Design commend the 2010–2011 national consultation process, undertaken by the Discipline Scholar Architecture under the guidance of the Architecture Reference Group, for the development of the minimum or threshold learning outcomes for architecture.

The Deans endorse the Learning and Teaching Academic Standards Statement for Architecture as a statement of the threshold learning outcomes that are required of architecture graduates at masters level from any Australian higher education provider.

### Project Leaders

Discipline Scholar: Professor Susan Savage

Project Officers: Dr Barbara Jack (August 2010 – December 2010)  
and Ms Jo Allbutt (February 2011 – June 2011)

# 1. Learning and Teaching Academic Standards Project Background

The Australian Government is developing a new Higher Education Quality and Regulatory Framework which includes the establishment of the Tertiary Education Quality and Standards Agency (TEQSA).

TEQSA will be a national body for regulation and quality assurance of tertiary education against agreed standards. In developing the standards, the Australian Government is committed to the active involvement of the academic community. The Australian Government has commissioned the ALTC to scope aspects of the Learning and Teaching Academic Standards component of the framework. The approach was designed to ensure that discipline communities would define and take responsibility for implementing academic standards within the academic traditions of collegiality, peer review, pre-eminence of disciplines and academic autonomy.

In 2010–11, both directly through a specific contract and indirectly through base funding of the ALTC, the Australian Government funded a demonstration project to define minimum discipline-based learning outcomes as part of the development of Learning and Teaching Academic Standards.

The project took as its starting point the award-level descriptors defined in the Australian Qualifications Framework (AQF). Threshold learning outcomes (TLOs) were defined in terms of minimum discipline knowledge, discipline-specific skills and professional capabilities including attitudes and professional values that are expected of a graduate from a specified level of program in a specified discipline area. The process took account of and involved the participation of professional bodies, accreditation bodies, employers and graduates as well as academic institutions and teachers. These representatives of the discipline communities were encouraged to take responsibility for the project and the outcomes within broad common parameters. Some disciplines extended the brief to begin consideration of the implications of implementing standards at institutional level.

## 1.1 Discipline areas encompassed in the demonstration project

Broad discipline areas were defined according to Australian definitions of Field of Education from the Australian Standard Classification of Education. They correspond to the most common broad structural arrangements of faculties or aggregates of departments within Australian universities.

Ten broad discipline groups participated in the project:

- architecture
- arts, social sciences and humanities
- building and construction
- business, management and economics
- creative and performing arts
- education
- engineering and ICT
- health, medicine and veterinary science
- law
- science.

Discipline Scholars were appointed to lead each discipline area. The key deliverable for each Discipline Scholar was the production of a document of minimum learning outcomes for a specified discipline at an agreed AQF level or levels. This booklet represents that outcome for this discipline.

## 2. Architecture in the Learning and Teaching Academic Standards Project

### 2.1 Scope

The Learning and Teaching Academic Standards Statement for Architecture addresses the Master of Architecture degree, the entry-level professional qualification and, thus, the initial prerequisite for becoming an architect in Australia. The Master of Architecture is the focus of accreditation by the Architects Accreditation Council of Australia (AACA) on behalf of statutory boards of architects in every state and territory.

Currently, sixteen Australian courses are recognised (one of which is offered by a private provider) and three others are on offer and in the preliminary stages of recognition pending the graduation of their first cohorts. In addition, seven courses from New Zealand and South East Asia are recognised for the purposes of graduates' eligibility to enter the Australian Practice Examination which forms the last step in registration of architects in Australia.

Typically the Master of Architecture is one or two years in length and follows a four or three year (respectively) bachelor degree in architectural studies or a closely allied field. The professional accreditation procedure for courses is currently the Australian Architecture Program Accreditation and Recognition Procedure (AAPARP) and will soon be the Australia and New Zealand Architecture Program Accreditation Procedure (following the imminent conclusion of a current review). This accreditation procedure also forms the basis for full corporate membership of the nation's professional association for architects, the Australian Institute of Architects (AIA). Quinquennial accreditation visits are conducted cooperatively between the AACA (on behalf of statutory boards) and the AIA.

This Statement acknowledges the robustness of current accreditation processes, both in Australian and internationally. The LTAS project, undertaken to prepare this Statement, began with a wide selection of existing statements about current expectations for graduates both in Australia and elsewhere; the process of establishing this Statement began with what is known. Australian architectural education is proudly diverse and relies, as do the threshold learning outcomes (TLOs), on institutional mission to provide context and variety for nineteen programs of study currently on offer around the nation.

The Statement does not prescribe any particular pedagogical method; however, it does suggest breadth in the curriculum, albeit with scholarly professional focus as would be expected for AQF Level 9 Masters (Coursework), and a range of teaching and assessment methods which would provide evidence of student learning in respect of the threshold learning outcomes.

### 2.2 Rationale

The Master of Architecture is the entry-level qualification for the Australian architecture profession. It is the most common means by which graduates qualify for the process of registration in the nation. As a result, the Master of Architecture is closely scrutinised by statutory boards of architects in every state and territory. These boards cooperate, through the AACA, with the profession's professional body, the AIA, for the purposes of promoting the quality of Australian architectural education through a rigorous and consistent national course accreditation procedure. It was for these reasons that ADBED, in its leadership role for Australian courses of architecture, proposed that the Master of Architecture should be the subject of the LTAS project.

Further impetus was given to the selection of the masters degree because the quinquennial review (the Review) of the accreditation procedure, the Australian Architecture Program Accreditation and Recognition Procedure (AAPARP), was occurring concurrently with this project. This process, led by the AIA NEC in consultation with the AACA, formed a useful touch point for the development of the Statement. Dialogue between the Chair of the Review and the Discipline Scholar was ongoing

over the course of the LTAS project with a view to aligning the criteria for accreditation with the TLOs. This work, which has a strong beginning in this project, will be ongoing and will track with the regular reviews of accreditation criteria in the AACA's National Competency Standards in Architecture (NCSA) and the AIA's Policy on Tertiary Education of Architects.

The LTAS project proceeded on an understanding that not all graduates submit for statutory registration (through a national examination process) following graduation. Professional registration is one important pathway for graduates. Successful completion of registration examination processes, the Architectural Practice Examination (APE), after graduation both protects the title 'architect' for those who are admitted to the register and focuses on the practice of architecture in the interests of consumers and the public. Nonetheless, it remained important that the project allow scope for diverse interpretation of the Statement, the TLOs in particular, in order that diverse career paths remain possible for graduates. Clearly, however, the profession, the discipline and graduates have a considerable stake in the outcomes of professional accreditation and, therefore, the quality of outcomes of the Master of Architecture. The profession and formal discipline networks were, therefore, vitally interested in the threshold learning outcomes foreshadowed by the project; they were a primary source for consultation about the project.

## 2.3 Consultation and development process

The Statement has undergone a range of consultative processes in two broad stages. At inception and in both stages, ADBED and the Architecture Reference Group selected to provide advice to the Discipline Scholar have endorsed the project's progress. Professional associations, statutory boards and their peak body, heads of programs in the nineteen universities where architecture is offered, practitioners, students and academic staff have participated. Each of these entities (listed below) has played a significant role in the establishment of the Statement:

- The statutory boards of architects in each state and territory, through the AACA which they form, and at times individually, have given advice from their perspective as regulators of the profession and as admitting authorities
- The AIA NEC, in representing the interests of the profession, has ensured that the values the profession holds for tertiary education have influenced the development of the Statement
- The Association of Architecture Schools of Australasia (AASA), representing the heads of schools where architecture courses are offered, has also participated actively in the project offering advice from the perspective of those who will be responsible for guiding teaching and learning in relation to the TLOs
- Two hundred individuals from the practising profession, the academic workforce and the student cohort have also worked together to build consensus about the capability expected of a graduate of an Australian Master of Architecture degree.

It was critical from the outset that the development of the Statement for architecture should embrace the wisdom of the greater 'tribe' and, at the same time, allow for scope and diversity in the shape of Australian architecture programs.

Broad consultation occurred from July 2010 to February 2011. The following developmental activities were conducted and endorsements gained:

ADBED gave steer to the project from the outset. The Deans' group assisted in July 2010 in determining that the project would focus on the Master of Architecture.

From August 2010 to November 2010 two approaches to developing the Draft Architecture Academic Standards Statement were taken:

- Firstly, professional organisations, statutory boards and peak academic organisations were consulted both to brief them on the project and to seek their advice about participation in subsequent workshops and how best to formulate the Statement
- Secondly, and on advice from stakeholder organisations, a series of workshops were held around the country. The workshops began with what was known about national and international standards for

architectural education. During these workshops participants, in mixed groups of practitioners, students and academics, were asked to sort and prioritise approximately forty representative statements (a different selection in each group) about architecture course outcomes drawn from a wide range of sources. From the poetic, eg those published by the *Union Internationale des Architectes/UNESCO Charter for Education*, to the prosaic, eg the *National Competency Standards in Architecture* (used within Australia to determine competency for professional registration), these statements traverse the ideas, values and beliefs that are held internationally about the education of architects. Links to other sources consulted, including the *UK Quality Assurance Agency for Higher Education Subject Benchmark Statement for Architecture (2010)* are included at Appendix 4. These sources provided about 380 statements and, thus, formed a rich source of prompts about architecture graduate capability and established a justifiable starting point for vibrant conversations about what 'we' want for Australian architectural education.

ADBED was briefed on the development of the Statement in late October 2010. The Deans endorsed the progress of the project and the need to align threshold learning outcomes with the National Competency Standards in Architecture (NCSA) in the hope that a future national regulator would recognise the merit of an integrated accreditation process for architecture.

In November–December 2010 the Discipline Scholar prepared the Draft Architecture Standards Statement for discussion at the first Architecture Reference Group meeting in early December. Throughout the preceding months the Discipline Scholar maintained conversation with the Chair of the Review of AAPARP.

The first stage of development of the Draft Architecture Academic Standards Statement (for consultation) concluded in late February 2011 with a presentation to and discussion with ADBED. The Deans endorsed the draft statement with some amendment and agreed that it should form the basis for broad consultation.

The second phase of consultation in respect of the Statement then began.

During February and March 2011 an online survey was developed using the *SurveyMonkey* web-based tool. The questionnaire was developed to seek feedback mostly in relation to the TLOs, their categorisation and the extent to which they are currently developed in Australian Master of Architecture programs. Demographic information about respondents was also collated. Questions were included which required text-based answers.

The survey remained in circulation, along with the Draft Architecture Academic Standards Statement, from April through May 2011. The invitation to complete the survey was accompanied by an invitation to meet with the Discipline Scholar or to provide responses in written form. A number of universities made written submissions as did the Western Australian Board of Architects, the AIA NEC and the AACA. A number of individuals provided written comment and around twenty-seven responses were received for the survey.

The low response rate to the survey and the prominence of accrediting and professional bodies in architectural education meant that the analysis of feedback – whilst cognisant of the views of individuals who made submissions – necessarily gave privilege to professional and high-level academic groups who had convened to produce a response and who represent large proportions of the stakeholder constituency, eg AIA, AACA and groups of academics in universities. Despite their small number, respondents to the survey made observations and comments which generally accorded with the views of peak organisations.

In June 2011 the Discipline Scholar, upon consideration of the feedback, prepared a final draft of the Statement. ADBED members reviewed the final Statement as did the Chair of the Review of the AAPARP and, finally, the Architecture Reference Group. The views of these groups drove minor amendments to the nature and extent of the discipline statement and to the TLOs. The Statement was finalised.

During June 2011 endorsement was sought and gained from ADBED for the process and outcomes of the LTAS Project in Architecture.

# 3. Learning and Teaching Academic Standards Statement for Architecture

## 3.1 Nature and extent of architecture

Architecture as a practice and profession assumes responsibility for designing and procuring places that accommodate and celebrate human habitation. The discipline is unique in its knowledge, skills, values and practices, which have been forged over many years through practice and scholarship. The knowledge base of architecture is characterised by the synthesis of the discipline's history and practice and knowledge from the natural and social sciences, mathematics and the physical sciences, humanities, construction and the arts. Australian students, over five years of coursework culminating in the Master of Architecture, achieve a level of competence derived from this knowledge that enables them to enter architectural practice.

The discipline is concerned with accommodating and celebrating habitation of natural, social and virtual environments. The practice of designing for this habitation is the central focus of architectural education and scholarship. This practice requires varied and complex skills and a repertoire of professional dispositions that productively bring ideas about spaces, buildings, cities and landscapes to fruition as proposals that enhance the built environment. Education in the discipline is, therefore, wide-ranging and varied and is concerned with ensuring students are capable of responding responsibly to changing social, economic, technological and environmental contexts which are characterised by climate change, globalisation, cultural and artistic diversity, increasing information demands and changing social patterns and relationships.

Diversity of method is to be expected in architectural education which recognises various contextual factors as characteristic of the field. The contested nature of the context in which architecture is developed gives rise to debate that ultimately advances the discipline. Design that provides for an intensification of the emotional, sensual, spiritual and intellectual habitation of places is at the centre of architectural education. It requires that students conceive solutions to complex, often ill-stated, scenarios. Student conceptions are developed from evidence about the problem at hand and achieved through the imaginative interaction of ideas, intentions and possibilities inherent in the scenario and applied to it. Solutions emerge through iterative, well-reasoned, pragmatic judgments about conceived alternatives. The foundation of designing lies, therefore, in bringing understanding of architecture's unique knowledge base to the solution of propositions about habitation.

After graduation students enter an ethical service-oriented profession that is characterised as creative and which has interrelationships with other professions and vocations along with public and private patrons of the designed environment. The profession operates within a regulatory context. In professional practice, architects work with others in participatory and/or leadership roles to ensure that the quality of designed places provides for enriching and sustainable habitation in a context characterised by change. Propositional, imaginative, iterative, integrated thinking underpins the practice of the profession.

## 3.2 Threshold learning outcomes for architecture

The threshold learning outcomes tabulated on right have been finalised from the consultation and development process outlined previously.

**Graduates of the Master of Architecture will be capable of:**

**Rationale**

**Knowledge**

- 1.1 Identifying, explaining and working with appropriate knowledge of architecture, its history and precedents and with knowledge of people, environments, culture, technology, history and ideas pertinent to architectural propositions
- 1.2 Researching and evaluating emergent knowledge as it becomes necessary to fulfil the profession's role in society

Graduates must be able to draw upon, interpret and integrate information from the history and precedent of the discipline of architecture and from a range of other fields depending on the architectural brief at hand. These knowledge fields are diverse and, therefore, ability must be developed to evaluate and build upon new information emerging in relevant fields. Graduates will be greatly assisted in the development of appropriate knowledge by exposure to and interaction with a range of ideas from across a variety of fields.

**Design**

- 2.1 Propositional, imaginative, iterative, integrated thinking to synthesise complex architectural designs
- 2.2 Supporting their decision-making using evidence-based, reasoned argument and judgement pertaining to architectural propositions

Architectural designing is a complex heuristic process characterised by creative thinking. Graduates must be able to use their knowledge of various fields to produce designs for complex buildings and spaces at a variety of scales and for a range of purposes. To do so, graduates will be required to imagine, represent and test their ideas for possible solutions in order that judgements about the efficacy of proposed designs can be made prior to these designs being committed to procurement.

Given the range and extent of information that might be considered in proposing architectural designs and the need to produce designs that effectively use resources, graduates must be able to explain and justify their propositions drawing on evidence and exercising judgement.

**Professional practice**

- 3.1 Communicating with a variety of audiences in appropriate ways
- 3.2 Demonstrating their understanding of architecture's status as an ethical service-oriented profession committed to responsible care for the inhabited environment
- 3.3 Engaging proactively in the effective procurement of architectural propositions

Graduates contributing to architectural practice, or an allied field, will use their skills in a variety of settings amongst colleagues and clients from a wide range of disciplines and backgrounds.

Graduates must understand the roles of all participants in the project procurement process and strive to ensure that all contributions are effectively considered. In presenting architectural propositions to clients and/or other stakeholders, graduates must be able to communicate in a way that is fit for purpose and considerate of audience needs. This includes the need to communicate with other experts. In all their work graduates have the capability to influence and alter the state of the natural and built environments. Graduates must understand the future impacts of proposals on the lives of the people and the quality of environments affected by their work and must behave in an appropriate way in regulatory and contractual contexts.

## 4. Notes on the Threshold Learning Outcomes for Architecture

The consultation phases of the project were focused on producing the TLOs. However, during discussions and through limited responses to the online survey, a number of issues emerged which warrant further discussion in the various forums of the discipline. These include:

### The alignment of TLOs with professional accreditation

There is widespread impetus for the discipline's existing course accreditation procedures to be aligned with those which emerge from TEQSA to ensure that the burden of course quality assurance is streamlined. Stakeholders in this project recognise and acknowledge the need for external measures of quality. Providers are accustomed to accounting on a five-year cycle to the profession's regulators for the architecture courses that they offer on a five-year cycle. It is hoped that, with careful steerage through the formulation of TEQSA's and universities' course accreditation procedures, a constructively-aligned process which satisfies a variety of regulators may be forged. The AIA has, in its feedback about the Statement, stated that it will at the next review of its Policy for Tertiary Education suggest that the Policy be written in relation to the TLOs given the wide consultation with the profession that has underpinned their development.

### The Review of the AAPARP – alignment of criteria for accreditation and a more streamlined process

As stated previously, a review of the architecture profession's accreditation procedure for courses has, coincidentally, run concurrently with the LTAS Architecture project. This current Review of the AAPARP has foreshadowed the alignment of criteria for accreditation and a more streamlined process.

The Review has focused on removing confusion in the existing procedure and on providing it with a significantly more enhanced outcomes focus. The AAPARP, which will in the future be known as ANZ APAP (Australian and New Zealand Architecture Program Accreditation Procedure) has provided a map which links statutory accreditation (through AACANCSA) to the AIA's Policy on Tertiary Education of Architects. This LTAS project has provided a map (see Appendix 2) which links TLOs, NCSA and AQF requirements. Together these maps demonstrate that the criteria for judging the outcomes of architectural education (the NCSA, the TLOs, the Policy of Tertiary Education and the AQF) can be constructively aligned.

The challenge of the future will be to ensure that evidence of students' achievement of outcomes can be demonstrated and evaluated through accreditation procedures that serve the needs of all regulators simultaneously.

### Gaps in courses

As would be expected, a focus on learning outcomes has led to commentary about the extent to which current courses allow, or require, students to achieve the desired outcomes. Indeed, one feature of the online survey conducted for the project was to garner feedback about the extent to which current programs are focused on the TLOs. As the survey response was small, however, further investigation of this question is warranted since there is some evidence that courses, whilst they are achieving reasonably well in the areas of Knowledge (TLOs 1.1 and 1.2) and Design (TLOs 2.1 and 2.2) are less focused on some aspects of Professional Practice (TLOs 3.1, 3.2 and 3.3). Given that the Master of Architecture, the recognised and accredited professional degree, is a reasonably recent advent in architectural education in Australia, this is perhaps not surprising. However, the enhanced place of the AQF in the quality assurance processes of higher education and, in particular, its focus on masters degrees (coursework), probably means that educators and regulators alike should reflect on ways in which the Master of Architecture achieves threshold standards in relation to professional practice. The need for the development of pedagogies and practices to ensure that evidence of student achievement of threshold standards in the Master of Architecture is facilitated by assessment patterns and tasks may be supported, in the coming years, through ADBED's ADN.

### Recommendations for the review of TLOs

The architecture discipline has, through the LTAS project, developed a coherent set of TLOs that represent its current beliefs and values about tertiary education in the discipline. While the TLOs are immutable, according to many in the constituency, it is, nonetheless, important that the Statement is reviewed from time to time. Just as the professional accreditation system for the discipline and its competency standards are revisited every five years, the TLOs may need refreshing in time. Clearly, if the accreditation systems at play in the discipline can be brought into alignment in ways which satisfy the regulators of professional education in the discipline, it would be wise to review both the procedures of accreditation and the criteria against which courses are assessed (the TLOs, the Policy for Tertiary Education of Architects and NCSA) at the same time. Additionally, if these systems can be aligned, it would be advantageous to engage a wider set of stakeholders in the regular reviews. This could include ADBED as well as representatives of the national higher education regulator.



## Appendix 1: Discipline Reference Group: Terms of reference and membership

### Terms of reference

The terms of reference for this peak governance group for the project included:

- To advise and assist the Discipline Scholar on the direction and development of a set of threshold learning outcomes for the Master of Architecture
- To consider and provide feedback on the draft threshold learning outcomes developed through consultation processes with stakeholders (professional, academic, industry and student communities)
- To facilitate and promote the national consultation process with appropriate stakeholder groups and
- To act as the key group of discipline experts representing the discipline through peak national bodies.

The Architecture Reference Group met twice, face-to-face, during the project. At other times members of the Reference Group reported at meetings of the Australian Deans of Built Environment and Design and provided advice to the Discipline Scholar on request. Members of the Reference Group also attended workshops in major cities designed to allow members of the discipline and the profession opportunity to inform the development of threshold learning outcomes.

### Discipline Scholar Architecture

**Professor Susan Savage** Professor and Assistant Dean Teaching and Learning, Faculty of  
FRAIA Built Environment and Engineering, Queensland University of Technology.

### Reference Group

The membership of the Architecture Reference Group was derived to ensure representation of peak discipline and professional groups, representatives of practice and international communities of architects and students. The membership was as follows:

|                                            |                                                                                                                                                                                                      |
|--------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Professor Richard Blythe</b><br>(Chair) | Head of School of Architecture and Design, College of Design and Social Context, RMIT University; member Australian Deans of Built Environment and Design.                                           |
| <b>Professor Hisham Elkadi</b>             | Head of School of Architecture and Building, Faculty of Science and Technology and Chair of Academic Board, Deakin University; member of Australian Deans of Built Environment and Design.           |
| <b>Mr Andrew Hutson</b>                    | Senior Lecturer, Faculty of Architecture, Building and Planning, University of Melbourne; President Architects Accreditation Council of Australia; Chair, Architects Registration Board of Victoria. |
| <b>Ms Clare Newton</b>                     | Senior Lecturer, Faculty of Architecture, Building and Planning, University of Melbourne; Chair Association of Architecture Schools of Australasia.                                                  |
| <b>Professor Des Smith</b>                 | Chair in Architecture, School of Architecture and Building, Faculty of Science and Technology, Deakin University; Deputy Chair, Australian Institute of Architects National Education Committee.     |
| <b>Mr Sean McEntee</b>                     | President, Student Organised Network for Architecture; Student, University of South Australia.                                                                                                       |

|                                                 |                                                                                                                                                                                                                                                                                      |
|-------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Professor Michael Ostwald                       | Dean, Professor of Architecture, ARC Future Fellow, Research Director, Centre for Interdisciplinary Built Environment Research, School of Architecture and Built Environment, Faculty of Engineering and Built Environment, University of Newcastle.                                 |
| Professor Stephen Loo                           | Professor of Architecture, School of Architecture and Design, University of Tasmania; Chair, Australian Institute of Architects National Education Committee; Member, Australian Deans of Built Environment and Design.                                                              |
| Professor Tony Radford                          | Professor of Architecture, School of Architecture, Landscape Architecture and Urban Design, University of Adelaide.                                                                                                                                                                  |
| Professor Lisa Findley                          | Professor and Chair of Architecture, California College of the Arts.                                                                                                                                                                                                                 |
| Associate Professor<br>Li Shiqiao               | School of Architecture, Faculty of Social Science, Chinese University of Hong Kong.                                                                                                                                                                                                  |
| Mr Shane Thomson                                | Architect.                                                                                                                                                                                                                                                                           |
| Associate Professor<br>Leigh Shutter (Observer) | Griffith School of Environment, Faculty of Science, Environment, Engineering and Technology, Griffith University; Member, Australian Institute of Architects National Education Committee; Chair, Review of Australian Architecture Program Accreditation and Recognition Procedure. |

## Appendix 2: Professional accreditation comparison

The following table maps the threshold learning outcomes to:

- Australian Qualifications Framework accessed at <<http://www.aqf.edu.au/>> and
- the performance criteria of the National Competency Standards in Architecture (NCSA) accessed at <<http://www.aaca.org.au/publications/>>. Note that the NCSA Performance Criteria are numbered 1 to 149 inclusive.

Australian Master of Architecture courses are accredited in respect of performance criteria numbers 1–65, 84–95, and 143–149. All other competencies are tested after graduation as part of the architect registration process that occurs through the Architectural Practice Examination in every Australian state and territory.

| Threshold Learning Outcomes<br>Graduates of the<br>Master of Architecture will<br>be capable of:                                                                                                                                          | Australian Qualifications<br>Framework Level 9<br>Master by Coursework                                                                                                                                                                                                                                                                                                        | NCSA Performance Criteria                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.1 Identifying, explaining and working with appropriate knowledge of architecture, its history and precedents and with knowledge of people, environments, culture, technology, history and ideas pertinent to architectural propositions | <p><b>Knowledge</b></p> <p>Graduates at this level will have advanced and integrated understanding of a complex body of knowledge in one or more disciplines or areas of practice</p> <p>Graduates of a Masters Degree (Coursework) will have a body of knowledge that includes understanding of recent developments in a discipline and/or area of professional practice</p> | <p>5 The design concept demonstrates sensitivity to the ordering, sequencing and articulation of three-dimensional form and spatial content is evident</p> <p>6 The design concept demonstrates an understanding of architectural history and building traditions</p> <p>7 The design concept demonstrates an understanding of relevant social, cultural and environmental issues</p> <p>8 The design concept demonstrates an appreciation of economic factors, building systems and materials</p> <p>11 The design concept demonstrates an understanding of issues of national and regional planning and their relationship to local demography and resources</p> <p>12 The design concept demonstrates the observation of society's values influencing health, safety, welfare and use of the built environment</p> <p>14 The design concept demonstrates compliance with the law, relevant codes, regulations and industry standards for development, design, construction and services</p> <p>21 The architectural design demonstrates an investigation of human, social, environmental and contextual issues</p> <p>22 The architectural design demonstrates the implications of physical, technical, cost and regulatory constraints</p> <p>28 The schematic design is informed by theoretical considerations, and intellectual and aesthetic judgement</p> <p>52 The detailed design demonstrates that all building elements are sufficient and appropriate for construction</p> <p>87 The limitations of the site and its environs are investigated, identified and opportunities recorded</p> |

| Threshold Learning Outcomes<br>Graduates of the<br>Master of Architecture will<br>be capable of:                        | Australian Qualifications<br>Framework Level 9<br>Master by Coursework                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | NCSA Performance Criteria                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                         | <b>Knowledge...continued</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <p>88 Site access and utility connections are identified and considered</p> <p>91 The implications of environmental factors are investigated, assessed and reported</p> <p>92 The implications of cultural factors are investigated, assessed and reported</p> <p>94 The implications of the law, relevant codes, regulations and industry standards are identified, understood and assessed</p> <p>95 Construction systems, service systems and material options consistent with the project brief and the design objectives are considered</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 1.2 Researching and evaluating of emergent knowledge as it becomes necessary to fulfil the profession's role in society | <p><b>Knowledge</b></p> <p>Graduates at this level will have advanced and integrated understanding of a complex body of knowledge in one or more disciplines or areas of practice</p> <p>Graduates of a Masters Degree (Coursework) will have knowledge of research principles and methods applicable to a field of work or learning</p>                                                                                                                                                                                                                                                                                                                                                                                            | <p>25 The schematic design is progressively investigated, emerging issues researched, experiential, material and aesthetic options considered and alternatives explored, tested and refined</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 2.1 Propositional, imaginative, iterative and integrated thinking to synthesise complex architectural designs           | <p><b>Skills</b></p> <p>Graduates at this level will have expert, specialised cognitive and technical skills in a body of knowledge or practice to independently: analyse critically, reflect on and synthesise complex information, problems, concepts and theories; research and apply established theories to a body of knowledge or practice; interpret and transmit knowledge, skills and ideas to specialist and non-specialist audiences</p> <p>Graduates of a Masters Degree (Coursework) will have cognitive, technical and creative skills to investigate, analyse and synthesise complex information, problems, concepts and theories and to apply established theories to different bodies of knowledge or practice</p> | <p>1 The design concept demonstrates an analysis of and response to the design brief, user intent and built purpose</p> <p>2 The design concept demonstrates a considered response to the physical location and addresses the relevant wider issues of urban or rural context</p> <p>3 The design concept demonstrates the exercise of critical choice, aesthetic judgement and creative imagination</p> <p>4 The design concept demonstrates a clear and coherent design approach</p> <p>24 The schematic design demonstrates that the program has been analysed, priorities evaluated, problems defined, strategies formulated and theoretical design approach considered</p> <p>26 The schematic design satisfies the project brief, site analysis, user requirements, design parameters and identifies constraints</p> <p>27 The schematic design is validated by technical considerations, integrating structure, construction technologies and service systems into a functionally effective whole</p> |

**Threshold Learning Outcomes**  
**Graduates of the**  
**Master of Architecture will**  
**be capable of:**

**Australian Qualifications**  
**Framework Level 9**  
**Master by Coursework**

**NCSA Performance Criteria**

**Skills...continued**

and

cognitive, technical and creative skills to generate and evaluate complex ideas and concepts at an abstract level

**Application of knowledge and skills**

Graduates at this level will apply knowledge and skills to demonstrate autonomy, expert judgement, adaptability and responsibility

Graduates of a Masters Degree (Coursework) will demonstrate the application of knowledge and skills with creativity and initiative to new situations in professional practice and/or for further learning

- 35 The detailed design determines specific spatial requirements and relationships for building occupancy and functions
- 36 The detailed design investigates internal and external patterns of circulation and project implications are assessed
- 37 The detailed design demonstrates the integration of construction and technical systems in the spatial arrangement
- 38 The detailed design interprets, assesses and incorporates information and recommendations provided by consultants, specialists and manufacturers
- 44 The selection of building materials is consistent with and appropriate to the structural and construction system proposed and details of assembly are technically proficient
- 50 Appropriate technical and mechanical systems and equipment is integrated with the schematic design
- 51 The detailed design demonstrates the consideration and resolution of each aspect of the project brief
- 53 The detailed design documentation demonstrates consistency between the proposed building elements, construction systems, project budget and time constraints

**2.2 Supporting their decision-making using evidence-based, reasoned argument and judgement pertaining to architectural propositions**

**Skills**

Graduates at this level will have expert, specialised cognitive and technical skills in a body of knowledge or practice to independently: analyse critically, reflect on and synthesise complex information, problems, concepts and theories; research and apply established theories to a body of knowledge or practice; interpret and transmit knowledge, skills and ideas to specialist and non-specialist audiences

Graduates of a Masters Degree (Coursework) will have cognitive skills to demonstrate mastery of theoretical knowledge and to reflect critically on theory and professional practice or scholarship

- 3 The design concept demonstrates the exercise of critical choice, aesthetic judgement and creative imagination
- 17 The architectural design demonstrates a critical response to budget and time frame based on an analysis of the project brief
- 18 The architectural design demonstrates a consideration of the feasibility of the project brief and a review of alternative options
- 19 The architectural design demonstrates a critical response to spatial and functional requirements and relationships, including access
- 20 The architectural design demonstrates an investigation of the interests of building users and reconciles those interests with the project brief
- 31 The schematic design proposals are evaluated and tested to enable agreement on selection and commitment to the development of a preferred design

**Threshold Learning Outcomes**  
**Graduates of the**  
**Master of Architecture will**  
**be capable of:**

**Australian Qualifications**  
**Framework Level 9**  
**Master by Coursework**

**NCSA Performance Criteria**

**Skills...continued**

and

cognitive, technical and  
creative skills to generate and  
evaluate complex ideas and  
concepts at an abstract level

and

communication and technical  
research skills to justify and  
interpret theoretical  
propositions, methodologies,  
conclusions and professional  
decisions to specialist and  
non-specialist audiences

- 39 The detailed design investigates and evaluates the choice of structural system, based upon an understanding of structural principles and their application
- 40 The detailed design investigates and evaluates construction elements based upon an understanding of technical performance and the requirements of building standards
- 41 The detailed design is assessed for consistency with design concept
- 42 The detailed design investigates and evaluates materials and building components based upon an understanding of their physical properties, strength, performance and durability
- 43 The detailed design demonstrates a considered judgement of the visual and contextual qualities of the structural system, construction elements, materials and building components
- 45 The selection of fittings, fixtures and finishes is suitable for the purpose, cost and assembly
- 47 The active and passive service systems for thermal comfort, lighting and acoustics are suitable for the occupation, function and environmental parameters
- 48 The mechanical and electrical, hydraulic and transportation systems selected are suitable for the occupation, function and environmental parameters and appropriate to time constraints
- 90 The options for re-use and life cycle costing and, where relevant, the conservation of existing buildings and infrastructure are considered

**3.1 Communicating with**  
**a variety of audiences in**  
**appropriate ways**

**Skills**

Graduates at this level will have expert, specialised cognitive and technical skills in a body of knowledge or practice to independently: analyse critically, reflect on and synthesise complex information, problems, concepts and theories; research and apply established theories to a body of knowledge or practice; interpret and transmit knowledge, skills and ideas to specialist and non-specialist audiences

- 15 The development of the design concept utilises freehand drawings, diagrams, other graphic techniques and modelling (physical and/or computer simulated) to explore three-dimensional form and relationships
- 16 The design concept is described through drawings and/or three-dimensional representation, computer simulation or other visual and/or written techniques
- 29 The development of the schematic design utilises freehand drawings, diagrams, other graphic techniques and modelling to explore three-dimensional form and relationships
- 30 Describe the schematic design through drawings and/or three-dimensional representation, computer simulation or other visual and/or written techniques

**Threshold Learning Outcomes**  
**Graduates of the**  
**Master of Architecture will**  
**be capable of:**

**Australian Qualifications**  
**Framework Level 9**  
**Master by Coursework**

**NCSA Performance Criteria**

**Skills...continued**

Graduates of a Masters Degree (Coursework) will have communication and technical research skills to justify and interpret theoretical propositions, methodologies, conclusions and professional decisions to specialist and non-specialist audiences

- 32 The design approach, concept and conditions are articulated to inform a client and other interested parties
- 33 Client expectations and limitations are reconciled, differences resolved, consequences recognised, alternatives ordered and responsibility for decisions assumed
- 56 The development of the detailed design utilises freehand drawings, diagrams, other graphic techniques and modelling to explore three-dimensional form and relationships
- 57 The detailed design is described through drawings and/or three-dimensional representation, computer simulation or other visual and/or written techniques

- 3.2 Demonstrating their understanding of architecture's status as an ethical service-oriented profession committed to responsible care for the inhabited environment

**Application of knowledge and skills**

Graduates at this level will apply knowledge and skills to demonstrate autonomy, expert judgement, adaptability and responsibility

Graduates of a Masters Degree (Coursework) will demonstrate the application of knowledge and skills with high level personal autonomy and accountability

- 9 The design concept demonstrates respect for the natural environment and awareness of the issues of sustainability
- 10 The design concept demonstrates an assessment and understanding of the impact of the project on building users and community
- 13 The development of the design concept demonstrates knowledge of the ethical basis, laws and statutes that regulate the practice of architecture
- 34 The agreement of client to proceed to the detailed design stage is obtained
- 55 The detailed design demonstrates continuing consideration of the interests of building users, the community and other relevant groups
- 58 Clear and accurate professional advice is provided on the detailed design response to each aspect of the project brief
- 59 The reasons for any departure from the project brief are explained and agreed
- 93 Opportunities for engagement with community participation processes are investigated and recommendations made
- 143 Compliance with the law and regulations governing the conduct of an architectural practice, as a business entity and as an employer is demonstrated
- 144 Compliance with the law and regulations governing accounting and financial matters is demonstrated
- 145 Compliance with common law and duty of care provisions, and the laws of contract and tort is demonstrated

**Threshold Learning Outcomes**  
**Graduates of the**  
**Master of Architecture will**  
**be capable of:**

**Australian Qualifications**  
**Framework Level 9**  
**Master by Coursework**

**NCSA Performance Criteria**

**Application of knowledge**  
**and ...continued**

- 146 Compliance with copyright law and the protection of intellectual property is demonstrated
- 148 An understanding of the legal responsibilities of an architect, with regard to registration, practice and building contracts is demonstrated
- 149 An understanding of professional ethics and ethical practice is demonstrated

3.3 Engaging proactively in the effective procurement of architectural propositions

**Application of knowledge**  
**and skills**

Graduates at this level will apply knowledge and skills to demonstrate autonomy, expert judgement, adaptability and responsibility

Graduates of a Masters Degree (Coursework) will demonstrate the application of knowledge and skills to plan and execute a substantial research-based project, capstone experience and/or piece of scholarship.

- 23 The architectural design demonstrates the process of collaboration and integrates sources of specialist information and expertise
- 46 Specialists are consulted as necessary (structural system)
- 49 Specialists are consulted as necessary (building service systems)
- 50 Appropriate technical and mechanical systems and equipment is integrated with the schematic design
- 54 The detailed design demonstrates the integration of specialist information and expertise
- 60 All other outstanding issues are resolved in readiness for commencement of the construction documentation
- 61 A strategy and program for construction documentation is adopted
- 62 The requirement of any additional specialist consultants is identified and their scope of work defined
- 63 The detailed design demonstrates a clear and coherent design approach has been maintained
- 64 Decisions made are timely and conform to the agreed contractual and administrative program
- 65 The ongoing contribution of consultants and suppliers is coordinated
- 84 Project requirements are established, evaluated and assessed and priorities allocated
- 85 Project budget and time constraints are confirmed following an analysis of the project brief and factors affecting delivery
- 86 The project brief is monitored and assessed against the budget, program and external factors
- 89 Specialist input is identified and obtained
- 147 Specialists are consulted as necessary for financial, legal, professional and other practice advice

## Appendix 3: Selected sources of benchmark standards and accreditation systems

### National Sources

Architects Accreditation Council of Australia, *National competency standards in architecture*. Retrieved from <<http://www.aaca.org.au/publications/>> June 2011.

Australian Architecture Program Accreditation and recognition procedure. Retrieved from <<http://www.architecture.com.au/i-cms?page=649>> June 2011. (Note that this accreditation procedure, jointly owned by AIA and AACA, is currently in the final stages of review and will, in the future, be called Australia and New Zealand Architecture Program Accreditation Procedure).

The Australian Institute of Architects, *Policy on tertiary education of architects - Standards for programs in architecture*. Retrieved from <<http://www.architecture.com.au/i-cms?page=13312>> June 2011.

### International Sources

Architects Registration Board (UK)  
<[http://www.arb.org.uk/qualifications/arb\\_criteria/default.php](http://www.arb.org.uk/qualifications/arb_criteria/default.php)> July 2011.

Canadian Architectural Certification Board  
<[http://cacb.ca/index.cfm?Vair=sections&Id=2787&M=1357&Repertoire\\_No=660386109](http://cacb.ca/index.cfm?Vair=sections&Id=2787&M=1357&Repertoire_No=660386109)> July 2011.

Commonwealth Architects Association, *Qualifications in architecture recommended for recognition by CAA: Procedures and criteria*. Retrieved from <[http://www.comarchitect.org/val\\_procedure.htm](http://www.comarchitect.org/val_procedure.htm)> July 2011.

ExAC Examination for Architects in Canada.  
Retrieved from <<http://www.cexac.ca/en/exac.php>> July 2011.

National Architectural Accrediting Board (USA)  
<[http://www.naab.org/documents/home\\_origin.aspx?path=Public+Documents%5cAccreditation](http://www.naab.org/documents/home_origin.aspx?path=Public+Documents%5cAccreditation)> July 2011.  
<<http://www.naab.org/accreditation/>> July 2011.  
<<http://arch.ou.edu/naab/>> July 2011.

National Council of Architectural Registration Boards  
<<http://www.ncarb.org/ARE/Preparing-for-the-ARE.aspx>> July 2011.

Royal Institute of British Architects, *Becoming an architect*. Retrieved from <<http://www.architecture.com/EducationAndCareers/BecomingAnArchitect/BecomingAnArchitect.aspx>> July 2011.

Royal Architectural Institute of Canada  
<[http://www.raic.org/architecture\\_architects/becoming\\_an\\_architect/education\\_e.htm](http://www.raic.org/architecture_architects/becoming_an_architect/education_e.htm)> July 2011.

The Quality Assurance Agency for Higher Education (QAA) UK  
<<http://www.qaa.ac.uk/Publications/InformationAndGuidance/Pages/Subject-benchmark-statement-Architecture.aspx>> July 2011.

UIA/UNESCO, *Charter for architectural education*.  
Retrieved from <<http://www.unesco.org/most/uiachart.htm>> July 2011.

UNESCO-UIA, *Validation system for architectural education*.  
Retrieved from [http://www.uia-architectes.org/image/PDF/Systeme\\_eng.pdf](http://www.uia-architectes.org/image/PDF/Systeme_eng.pdf) July 2011.

## Appendix 4: Abbreviations

|         |                                                                         |
|---------|-------------------------------------------------------------------------|
| AACA    | Architects Accreditation Council of Australia                           |
| AAPARP  | Australian Architecture Program Accreditation and Recognition Procedure |
| AASA    | Association of Architecture Schools of Australasia                      |
| ADBED   | Australian Deans of Built Environment and Design                        |
| ADN     | Architecture Discipline Network                                         |
| AIA     | Australian Institute of Architects                                      |
| AIA NEC | Australian Institute of Architects – National Education Committee       |
| ALTC    | Australian Learning and Teaching Council                                |
| APE     | Australian Practice Examination                                         |
| AQF     | Australian Qualifications Framework                                     |
| LTAS    | Learning and Teaching Academic Standards                                |
| M Arch  | Master of Architecture                                                  |
| NCSA    | National Competency Standards in Architecture                           |
| SONA    | Student Organised Network for Architecture                              |
| TEQSA   | Tertiary Education Quality and Standards Agency (Australia)             |
| TLO     | threshold learning outcome                                              |

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