



# **STANDARDS FOR THE ACCREDITATION OF BUILDING & CONSTRUCTION MANAGEMENT PROGRAMS**

## **ACADEMIC STANDARDS**

### **For Course Accreditation**

Australian Institute of Building  
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## **INTRODUCTION**

This publication is prepared by the Australian Institute of Building (AIB) as part of the documentation presenting its “Standards for the Accreditation of Degree Programs”.

These standards apply to undergraduate and postgraduate courses meeting the Australian Qualifications Framework (AQF 2013) requirements for higher education awards in the discipline of building.

Universities and other approved higher education providers must adhere to these standards when seeking the accreditation of their courses and qualifications by the Australian Institute of Building.

The purpose of these standards is to promote excellence in the undergraduate and postgraduate courses in the relevant disciplines, and to identify pathways for members and non-members of the professional bodies to upgrade their qualifications and membership status.

The goals of the AIB in adopting these “Standards” are to:

1. offer a means to strengthen and improve existing academic programs in the disciplines covered;
2. provide guidelines for the development of new academic courses in the disciplines; and
3. provide standards for accrediting new courses and re-accrediting existing courses.

The Standards are described in two sets of documents;

1. a General Information document that provides administrative information for the accreditation of academic courses (for use by AIB Accreditation panel); and
2. Academic Standards For Course Accreditation (for use by Academic Institutions)

This Academic Standards for Course Accreditation document describes the position of the Australian Institute of Building with regard to course accreditation. It describes the accreditation process and sets out the discipline related standards that should be addressed in an application for course accreditation.

## **ACADEMIC STANDARDS FOR COURSE ACCREDITATION**

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## **THE CONTEXTUAL PRINCIPLES**

The academic standards for course accreditation by the Australian Institute of Building have been developed with regard to the following general contextual principles:

- alignment with the national regulatory and quality regime for Australian higher education, particularly the Higher Education Standards Framework;
- the goal for the education of Building Professionals;
- professional recognition;
- quality and continuous Improvement; and
- threshold and benchmark standards

### **Higher Education Standards Framework**

The Australian Institute of Building's policy position that it will align its professional accreditation process for building courses with the regulatory approach and standards framework adopted by the Tertiary Education Quality and Standards Agency (TEQSA).

The AIB has developed discipline relevant academic standards that are consistent with, and complement, the following components of TEQSA's Higher Education Standards Framework:

- Provider Registration Standards;
- Qualifications Standards;
- Information Standards; and
- Teaching and Learning Standards

The AIB will only accredit relevant courses that are offered by providers that meet TEQSA's provider registration standards. These providers may be:

- registered higher education providers;
- universities;
- universities of specialisation;
- university colleges; and
- Australian campus of overseas providers

The AIB will only accredit courses that lead to qualifications recognised under the Australian Qualifications Framework.

Information provided in support of course accreditation applications should be consistent with information provided to TEQSA to meet its Information Standards

The AIB has developed detailed discipline standards for teaching and learning quality assurance.

## **Goal for the Education of Building Professionals**

The Australian Institute of Building takes the position that the goal of education in preparing people to work as professionals in the building industry is to develop graduates who:

- have a sound foundation of knowledge and skills of contemporary practices and emergent trends;
- are willing and able to continue their learning over their lifetime in the profession; and
- have professional attributes in their approach to clients and the general community.

## **Professional Recognition**

AIB accreditation of a course and resulting qualification gives professional recognition to the qualification. Professional recognition means that:

- the AIB accepts that a graduate meets the academic requirement for:
  - admission as a member of the Institute in the appropriate category;
  - entry into its Chartered Builder Program
- employers can be confident that a graduate has the required professional knowledge, understanding, skills and attributes for initial employment under supervision
- prospective students can be confident that the program is designed, developed and delivered to achieve the outcomes required of a program that prepares its graduates to enter employment in the building industry.

The quality of an AIB accredited program is shown by the capacity of its graduates to work as professionals in the built environment, their willingness and ability to continue their learning.

An accredited qualification is a step on a pathway to meeting the full academic requirements of the Chartered Builder Program (CBP). AIB accreditation of a qualification includes identification of the relevant pathway for a graduate with this qualification and the position on that pathway.

## **Quality and Continuous Improvement**

The Australian Institute of Building is committed to supporting the establishment, success and improvement of high quality building degree courses that will produce graduates with the knowledge and skills to meet the needs of the national and international construction industry.

The course accreditation scheme is an integral part of this commitment and the AIB's approach to course accreditation will focus on promoting a culture of quality and continuous improvement.

## **Threshold and Benchmark Standards**

The academic standards required for course accreditation are expressed as either threshold or benchmark standards.

Threshold standards require minimum standards to be demonstrated. Where specific requirements are not stipulated, the applicant institution is expected to articulate its objectives and demonstrate that it is able and committed to achieve these objectives.

Benchmark standards are used, where appropriate, to encourage continuous improvement towards best practice and innovation in the areas of curriculum design, teaching and learning practices.

## **THE ACADEMIC STANDARDS**

The Academic Standards Framework used by the Australian Institute of Building to assess courses and providers for professional accreditation consists of the following components:

- program governance;
- course quality assurance;
- course, qualification, teaching and learning standards;
- curriculum standards;
- delivery effectiveness; and
- assessment standards

A qualification may be accredited by the AIB at the Corporate level if the course that leads to it meets these standards.

Note: The benchmark professional curriculum standard of the AIB is pegged to AQL (2013) Level 8 and Level 9 (i.e. with a cognate undergraduate degree) to meet the requirements for full (Corporate) membership of the AIB. Qualifications at AQF Level 7 and 9 (i.e. without a cognate undergraduate degree) may be accredited by AIB, but such accreditation will only meet the requirements for AIB membership at the Associate level; with further studies being required in order to meet the requirements for full (Corporate) AIB membership. Institutions will be required to clearly state in their publicity materials if their course meets the academic requirements for Corporate (Full) or Associate level AIB membership.

### **1. Program Governance**

#### **1.1 Governance Structure**

Threshold Standards:

*The governance structure and functions of the responsible Academic Unit are explicitly defined, including its relationships with:*

- *the higher education institution in which it is located*
- *delivery of courses*
- *assessment standards for award of qualifications*
- *professionals in practice in the construction industry.*

#### **Notes**

The course leading to a qualification should be designed, developed and delivered within a governance structure. The AIB requires that the Academic Unit, responsible for the course, has an identifiable governance structure that is capable of ensuring that the course delivers the required knowledge, understanding and skills for graduates of a professional program accredited by the AIB. The structure of this Academic Unit, regardless of what it is called (e.g. school, department, faculty, etc) may be part of a larger higher education organisation, such as a university.

## 1.2 Management of courses

Threshold Standards:

*The Academic Unit*

- *has sufficient autonomy to design, develop, resource and deliver the course to achieve its objectives;*
- *consults with external and internal stakeholders on key issues relating to its mission, its courses, the standards required for the award of qualifications;*
- *has an effective process of quality improvement that ensures its courses, in design and in delivery, reflect and are relevant to current and emergent practices in the construction industry; and*
- *has overall responsibility for the quality of the delivery of courses at geographically separate campuses or through distance learning.*

Notes

There should be formal mechanisms such as an Industry Course Advisory Committee to facilitate consultation with external stakeholders. The effective operation of such mechanisms should be evidenced.

## 2. **Course Quality Assurance**

### 2.1 Course Monitoring and Evaluation

Threshold Standards:

*The Academic Unit*

- *continually reviews, for each course, the content, the quality of teaching and assessment, and student progress, seeking and making systematic use of teacher and student feedback, and analyses of student performance in relation to the course and its outcomes; and*
- *uses information from these, and other review processes including graduate and industry feedback, to improve*
  - *course design, development, delivery, assessment methods and standards; and*
  - *guidance to students*

Notes

It is expected that the provider will have quality assurance systems in place, at institutional level that satisfy TEQSA's Provider Registration Standards. Course monitoring and evaluation mechanisms and processes should engage and be consistent with these higher level systems.

### **3. Course, Qualification, Teaching and Learning Standards**

#### **3.1 Course Framework**

##### Threshold Standards

*There is a course framework*

- *organised according to the overall outcomes which have, in turn, been broken down into more specific outcomes or objectives for each component unit of the course;*
- *identifying pre-requisite, co-requisite, and sequencing or staging relationships; and*
- *identifying the articulation between the course and subsequent stages of professional training.*

#### **3.2 Course Structure, Composition and Duration**

##### Threshold Standards

*There are:*

- *developed descriptions of the content, extent and sequencing of the course, its component units and stages that guide staff and students on the level of knowledge and understanding, skills and attitudes expected at each part of the course;*
- *with the duration and content of the course are consistent with the course outcomes in coverage and depth; and*
- *opportunities within the course for students to pursue elective choices consistent with overall course outcomes.*

##### Notes

The structure, duration, and expected outcomes of the course should comply with the requirements of the Australian Qualification Framework for the resulting qualification. The benchmark professional curriculum of the AIB is pegged to AQF Level 8 (AQF 2013). Qualifications at AQF Levels 7 and 9 may be accredited by the AIB – such accreditation will identify additional requirements, if applicable, that need to be undertaken for entry into the Chartered Builders Program and/or professional membership of the AIB.

#### **3.3 Teaching and Learning**

##### Threshold Standards

*The teaching and learning methods are appropriate for the content and outcomes of the course.*

##### Benchmark Standards

*The AIB encourages innovation in teaching and learning to better prepare graduates for the demands of professional practice in a challenging industry. Preferred teaching and learning approaches include those that are inquiry-orientated, encourage students to take responsibility for their learning process and prepare them for lifelong learning, working in teams and using information technology, demonstrating flexibility and adaptability in changing environments.*

Notes

Applications should describe the course philosophy and objectives, and align the teaching and learning methods used, in this overall context, to the specific outcomes expected in the course and its component units.

#### **4. Discipline Specific Curriculum Standards**

In deriving the curriculum standards for the building discipline, the AIB has referred to Learning and Teaching Academic Standards (LTAS) project in Building and Construction, the Australian Qualifications Framework and industry reference groups to establish curriculum benchmarks.

These are expressed as threshold standards for the expectations of graduates in terms of:

- discipline related knowledge outcomes;
- discipline related skills outcomes;
- application of knowledge and skills; and
- generic graduate attributes

The threshold standards for knowledge and skills and the application of knowledge and skills for professional building programs are pegged to AQF Level 8 (AQF 2013) qualifications. Qualifications at this level may be accredited at the Corporate category. Graduates of these courses will be eligible to enter the AIB Chartered Builder program.

While threshold standards are identified under the Discipline Specific Curriculum Standards for full and unconditional accreditation, the AIB encourages innovation and diversity in curriculum design. It accepts that higher education in Australia is diversified and represented by a range of qualification types and increasing pathway options.

Guidelines on curriculum benchmarks are set out in Appendix A. Providers may develop their own course emphases and profiles in accordance with identified course objectives.

Minor shortfalls in meeting in curriculum benchmarks may not prevent a course from being accredited as long as all other threshold standards are met, but accreditation may be subject to additional requirements being placed on the graduates of these programs for entry to, and completion of, the Chartered Builder Program.

Qualifications at AQF Level 7 and 9 (i.e. without a cognate undergraduate degree) may be accredited by AIB, but such accreditation will only meet the requirements for AIB membership at the Associate level; with further studies being required in order to meet the requirements for full (Corporate) AIB membership. Institutions will be required to clearly state in their publicity materials if their course meets the academic requirements for Corporate (Full) or Associate level AIB membership. These may be accredited and registered under the Associate category; and subject to additional requirements being placed on the graduates of these programs for entry to, and completion of, the AIB Chartered Builder Program.

#### 4.1 Discipline Related Knowledge

##### Threshold Standards

*Graduates will have advanced theoretical and technical knowledge in at least the following:*

- *current construction techniques and how these meet requirements for building performance;*
- *construction procedures & practices for residential, commercial & industrial building varying from simple structures through to large, complex and tall structures;*
- *how building components, system & services interact with each other;*
- *how to perform on-site inspections on residential, commercial & industrial buildings varying from simple structures through to large & complex structures at various stages of construction;*
- *how to protect the public, workers and property during construction, temporary support & demolition of structures;*
- *how to identify common building faults & failures and the options available for rectification;*
- *the most appropriate forms of construction for various building sizes & types;*
- *the relationship between Federal, State & local governments in creation & implementation of building & building related law;*
- *the application of the common and statute law to building issues, including liability;*
- *the management of risks, including legal risks, project risks and risks on construction sites;*
- *standard forms of contracts and common procurement methods used in the building industry, and options for dispute resolution;*
- *the details of the provisions of legislation associated with building, including building law & related codes & standards; planning; fair trading and consumer protection; environmental management; public health; disability discrimination; occupational health and safety;*
- *basic business management principles and understanding of financial statements and financial information applied to building activities;*
- *construction economics;*
- *management of project-based enterprises and multi-disciplinary teams through a project life cycle; and*
- *environmental protection and sustainability.*

#### 4.2 Discipline Related Skills

##### Threshold Standards

*Graduates will have advanced cognitive, technical and communication skills to select and apply methods and technologies to:*

- *analyse critically, evaluate and transform information to complete a range of activities;*
- *analyse, generate and transmit solutions to complex problems; and*
- *transmit knowledge, skills and ideas to others **in the following contexts:***
  - *reviewing construction documentation & details for:*
    - *compliance with codes, standards, acceptable construction practices,*

- *planning, programming and coordinating construction sequences and activities;*
- *estimating quantities and costs associated with building activities, and*
- *constructability;*
- *requirements of building & building related legislation, common law and statutes, including delegated legislation (regulation, codes, standards & other statutory instruments);*
- *meeting statutory duties, discriminatory powers & professional responsibilities (either under legislation or codes of professional conduct);*
- *administration of construction contracts;*
- *managing procurement and delivery of construction projects;*
- *managing risk;*
- *managing safety; and*
- *managing environmental protection and sustainability.*

#### 4.3 Application of Knowledge and Skills

##### Threshold Standards

*Graduates will apply knowledge and skills to demonstrate autonomy, well-developed judgement, adaptability and responsibility as a practitioner or learner.*

#### 4.4 General Graduate Attributes

##### Threshold Standards

*The design of curriculum articulates and embeds the general skills, understandings, qualities and attitudes that should be acquired by students through their participation in the course. These should be consistent with the objectives of the course, the design of the curriculum, and the teaching and learning approaches adopted in delivery.*

##### Benchmark Standards

*The AIB encourages course and curriculum design to develop graduate attributes in contexts including:*

- *creative, reflective and critical thinking;*
- *life long learning;*
- *knowledge skills;*
- *use of technology;*
- *communication;*
- *teamwork;*
- *social responsibility;*
- *environmental responsibility; and*
- *professional responsibility.*

#### 4.5 Professional Attributes

##### Threshold Standards

*Graduates demonstrate the following general attributes as they affect behaviour in professional practice:*

- *commitment to keeping up to date with the professional environment including changes in techniques, materials, technology, changes in the law as it affects building operations;*
- *commitment to dealing fairly with clients and providing honest and complete advice; and*
- *professional responsibility to take account of the interests of the public and to all who will use the buildings they construct.*

#### 5. **Delivery Effectiveness**

The effectiveness of course delivery is evaluated through:

- adequacy of academic and support staff;
- adequacy of teaching resources and infrastructure;
- demonstrated learning outcomes; and
- demonstrated graduate attributes

#### 5.1 Academic and Support Staff

##### Threshold Standards

*The Academic Unit has:*

- *a detailed staff plan that outlines the type, responsibilities and balance of academic staff required to deliver its courses adequately, including the balance between building construction and non-building construction academic staff, and between full-time and part-time staff;*
- *appropriate administrative and technical staff to support the implementation of the school's educational and other activities, and to manage and deploy its resources; and*
- *has defined the responsibilities of professional practitioners who contribute to the delivery of courses and the validation of assessment standards and the responsibilities of the school to these practitioners.*

##### Notes

The Academic Unit must ensure that it has the appropriate mix of staff (academic, administrative and technical) needed to achieve the stated outcomes of the course. This requires appropriate policies and actions in:

- staff recruitment and retention;
- the involvement of currently active professional practitioners in course planning, delivery and validating assessment standards; and
- the involvement of academic staff in scholarly activities (which helps both to recruit and retain leading scholars and to ensure currency of course content)

## 5.2 Resources and Infrastructure

### Threshold Standards

*The Academic Unit has:*

- *sufficient campus-based physical facilities and for staff and students to ensure that the courses can be delivered adequately; and*
- *sufficient information technology and information systems (including library) resources and expertise for the staff and students to ensure the courses can be delivered adequately.*

### Notes

The adequacy of resources and infrastructure to ensure that courses can be delivered effectively will be evaluated against course delivery strategies and objectives. It is recognised that face-to-face delivery, distance learning delivery and blended learning strategies generate different requirements for resources and infrastructure.

## 5.3 Demonstrated Learning Outcomes

### Threshold Standards

*The course and its component units have:*

- *clearly articulated learning outcomes that are relevant to, and adequately reflect curriculum intentions; and*
- *requirements for students to produce assessable outputs that demonstrate the achievement of these learning outcomes*

### Notes

The evidencing of learning outcomes is essential to the evaluation of curriculum intentions and effectiveness.

## 5.4 Demonstrated Graduate Attributes

### Threshold Standards

*The Academic Unit:*

- *identifies general attributes that the course is designed to develop in its graduates, that are consistent with the mission of the provider, and the goals of the AIB for the education of building professionals;*
- *maps the development of these through the planned curriculum; and*
- *demonstrates the achievement of these by graduates through appropriate assessment and evidence*

### Notes

The evidencing of the development of graduate attributes may be distributed through different components and stages of a course. This should be mapped to support the assessment of the course for accreditation.

The attributes of a building graduate that are consistent with the goals of the AIB for the education of building professionals are summarised in Appendix B.

## 6. Assessment Standards

### 6.1 Assessment of Student Learning

#### Threshold Standards

##### *The Academic Unit:*

- *has a defined and documented assessment policy which shows how assessment guides student learning towards attainment of the outcomes of the course;*
- *ensures that each course uses a range of assessment formats that are appropriately aligned to the components and outcomes of the course;*
- *ensures that the criteria and standards for making summative decisions about student achievement relate clearly to all the articulated outcomes of the course;*
- *regularly evaluates the reliability, validity and educational value of assessment methods and items;*
- *ensures that within each course assessment standards and processes are consistent across teaching sites; and*
- *ensures that for each course there is a clear statement of assessment and progression rules.*

#### Notes

Assessment includes both summative assessment (the basis for decisions about what students have learned) and formative assessment (information that helps students learn). Formative assessment is integral to education. Assessment policy must describe the principles for balance between formative and summative elements, the number and types of summative assessments including progressive assessment and examinations and other tests, and designing criteria and standards for making judgments about achievement.

Assessment should be an integral part of learning and policy should therefore emphasise the need for an integrated approach to assessment of the course outcomes rather than recall of isolated details.

Assessment methods should be made known to students at the outset of the course or the course component.

Best practice in assessment uses multiple measures of students' knowledge, skill and abilities over time as the basis for decisions about progress and final result. Reliable measures can be matched with other forms of assessment that emphasise validity, capturing information about students' achievements in terms of other important outcomes of the course, including team-work, professional practices, the flexible and adaptable use of information technology. The AIB encourages the development of assessment programs for their educational impact: setting the balance of valid, reliable and feasible assessment methods to align student learning with all of the course's goals and outcomes.

## 6.2 Benchmarking and Validation of Assessment Standards

### Threshold Standards

*The Academic Unit regularly benchmarks the assessment and grading standards of the course and its component units.*

### Benchmark Standards

*The Academic Unit demonstrates that:*

- *the assessment and grading standards of the course and its component units, and the quality of student learning outcomes compares favourably with similar courses offered by other providers; and*
- *it is committed to the maintenance of satisfactory standards and the improvement of student learning outcomes.*

### Notes

The Academic Unit should have in place an annual external examination or equivalent external moderation and benchmarking process. Such a process should be conducted by an independent person with the necessary skills and experience to make judgments on, and compare assessment and grading standards.

The AIB can help providers validate and benchmark their assessment standards through the use of independent external examiners, or such external examiners may be nominated by providers subject to the approval of the AIB.

## APPENDIX A

### CURRICULUM BENCHMARK - GUIDELINES

These guidelines are intended to guide the development of course curriculum and mapping of course content.

The Guidelines identify the content and application contexts that are relevant at the core of building degree courses. The AIB accepts that curriculum design requires a selective approach to the way content is incorporated and learnt in a course. Knowledge change and obsolescence and the time duration available for a course are relevant factors to consider in curriculum design.

The curriculum design of a course should be described with respect to:

- course philosophy and objectives;
- intended graduate outcomes; and
- teaching and learning approaches.

Applications for course accreditation should include a curriculum map of the stated outcomes of course against the curriculum benchmarks.

The extent of coverage should be self-assessed in accordance with the following scale against verifiable evidence in the form of assessable student work:

0	Not applicable, little or no evidence that an outcome of the program matches this objective
1	There is evidence that there is a partial match between outcomes of the program and some aspects of this objective
2	There is evidence of a match between outcomes of the program and the basic intent of this objective
3	There is good evidence that outcomes of the program match the intent of this objective but not to the depth expected for a full professional program
4	There is good evidence that outcomes of the program match all aspects of this objective but not always to the depth expected for a full professional program
5	There is good evidence that outcomes of the program match this objective comprehensively and completely

The result of this mapping is used to determine:

- if the program meets the minimum requirement for accreditation; and
- the pathway to the Chartered Builder program and the position on that pathway

**KNOWLEDGE DOMAIN – TECHNICAL**

<b>KNOWLEDGE &amp; SKILLS AREA</b>	<b>APPLICATION CONTEXT</b>
<p><b>Construction Process</b>            Building elements and components            Structure and enclosure            Assembly, erection, installation methods            Site establishment, preparation and protection            Excavation            Basement construction            Dewatering            Footings and piling            Site organization and management            Plant and equipment            Temporary and protective works            Civil works            Finishes            Weather and waterproofing</p>	<p>Domestic construction            Commercial and industrial            Low rise            Medium rise            High-rise and tall buildings            In-situ and offsite operations</p>
<p><b>Surveying</b>            Identification survey            Setting out            Levelling            Checking during construction           <ul style="list-style-type: none"> <li>• Levels</li> <li>• Plumbness/verticality</li> <li>• Dimensions</li> </ul> </p>	<p>Existing buildings            New buildings           <ul style="list-style-type: none"> <li>• Single</li> <li>• Multiple</li> </ul>           Sub-division</p>
<p><b>Building Services</b>            Reticulated services           <ul style="list-style-type: none"> <li>• Water</li> <li>• Power</li> <li>• Gas</li> <li>• Sewerage</li> <li>• Telecommunications/Data services</li> </ul>           Drainage            Vertical Transportation            HVAC            Sustainable services            Building Management Systems</p>	<p>Single buildings            Multiple tenancy buildings            High-rise and tall buildings            Sub-division developments</p>
<p><b>Building Science</b>            Lighting            Acoustics            Thermal performance            Comfort conditions            Indoor air quality            Total Building Performance</p>	<p>Physical principles            Design and installation principles            Performance criteria            Monitoring</p>

<p><b>Materials Science</b>          Properties of materials          Structural performance of materials          Interaction of materials in contact          Fire protection, decorative and protective finishes          Composite materials          Prestressing and post-tensioning</p>	
<p><b>Environmental Science</b>          Energy efficiency          Passive environmental controls          Active environmental controls          Environmental protection          Sustainability principles and practices</p>	
<p><b>Structures</b>          Structural concepts          Forces          Live and dead loads, wind loads          Stress and deformation          Footings and piling          Stability of cuts and excavations</p>	
<p><b>Building Documentation</b>          Design and construction drawings          Specifications          Contracts          Bills of quantities          Building Information Modelling</p>	<p>Architectural, structural, engineering, services          Specialist trades          As built or record documents</p>

**KNOWLEDGE DOMAIN – LEGAL**

<b>KNOWLEDGE AND SKILLS AREA</b>	<b>APPLICATION CONTEXT</b>
<b>Legal System</b> Constitution Legislature Courts Tribunals	Commonwealth State Local Government
<b>Sources of Law</b> Parliament Common law	Legislation, subsidiary legislation Tort, contract
<b>Building Related Law</b> Environmental and Planning Consumer and Fair Trading Industrial Relations and Workplace Property	Building enterprise Business transactions Building and planning approvals
<b>Contract Law</b> General contract law Building contracts	Business transactions Building projects
<b>Conflict and Dispute Resolution</b> Litigation Alternative Dispute Resolution Arbitration Mediation Tribunals	Projects Contract Community
<b>Building Requirements</b> Building codes Regulations Standards Licensing and registration requirements Certifiers procedures Codes of practice	Professional Practice Projects Construction activities

## KNOWLEDGE DOMAIN – MANAGEMENT

KNOWLEDGE AND SKILLS AREA	APPLICATION CONTEXT
<b>Construction site operations</b> Clearing and/or demolition Setting out Plant and equipment Site accommodation and amenities Storage and circulation On site construction activities Attendance to trades Commissioning and Handing over	Site mobilisation Site establishment Site organization and management Site disestablishment
<b>Project Management</b> Project management theory and principles Managing project teams Project programming techniques Constructability Value Management Quality management	Construction project management
<b>Business Management</b> Organisational behaviour and theory Financial information and analysis Marketing principles Business management and business planning Discounted cash flow and cash flow management Debt management	Construction business management at enterprise and project level
<b>Industrial Relations and Employment</b> Industrial relation system Employment law and employer obligations	Construction project/contracts Construction sites
<b>Occupational Health and Safety</b> Legislative and Regulatory requirements Construction site requirements Personal protection Roles and responsibilities Compliance procedures and processes	OH&S in permanent workplaces OH&S in construction activities and construction sites
<b>Human Relations and Resources</b> Human resource management Contracting and sub-contracting labour Managing community relationships	Community relations Employment and employee relations Contractor and sub-contractor relationships
<b>Risk Management</b> Risk Management theory and principles Techniques for risk identification, assessment and management	Project risks Enterprise risk Business risk

**KNOWLEDGE DOMAIN – CONSTRUCTION ECONOMICS**

<b>KNOWLEDGE AND SKILLS AREA</b>	<b>APPLICATION CONTEXT</b>
<b>Macro-economic Theory</b> Economic models Construction activity and business cycles Forecasting	Construction industry
<b>Micro-economic Theory</b> Theory of markets Price, costs and productivity	Construction business activities
<b>Economic Feasibility studies</b> Discounted Cash Flow techniques Appraisal of Project <ul style="list-style-type: none"> <li>• Net Present Value</li> <li>• Internal Rate of Return</li> <li>• Cost of capital, opportunity costs and holding costs</li> </ul> Property investment, development, valuation Market analysis Life cycle costing	Development Project Building Enterprise
<b>Estimating</b> Building-up rates and estimates from first principles Assembling project bids Tendering	Construction Project
<b>Cost Planning and Management</b> Elemental cost planning Cost control Value engineering	Development and/or construction project
<b>Project and Development Financing</b> Sources of finance (debt, equity, hybrids) Insurance and bonds Private Financing Initiative Public Private Partnerships	Construction projects Infrastructure projects

**APPENDIX B**

**ATTRIBUTES OF A BUILDING GRADUATE**

ATTRIBUTE	CHARACTERISTICS
<b>Knowledge</b>	<p>Ability to integrate and appropriately apply building discipline knowledge from the following knowledge domains:</p> <ul style="list-style-type: none"> <li>• Technical</li> <li>• Legal</li> <li>• Management</li> <li>• Construction Economics</li> </ul>
<b>Self-Development</b>	<p>Demonstrate a commitment to lifelong learning &amp; PD</p> <p>Understanding of, and ability to articulate &amp; promote the codes of practice of the AIB</p> <p>Understanding of the roles and responsibilities of professional construction manager in the development of building</p> <p>Strive for excellence and promote innovation</p>
<b>Communication</b>	<p>Able to communicate professionally in all work related situations</p> <p>Respect and maintain security and privacy of information</p> <p>Understanding of the use of information and communication technology in the construction industry (e.g. CAD, BIM)</p> <p>Able to apply negotiation skills in a range of professional practice contexts</p>
<b>Judgement</b>	<p>Able to identify and evaluate information to make reasoned and informed decisions</p> <p>Recognize and assess interactions between stakeholders</p> <p>Able to critically evaluate different views and complex information and propose justifiable solutions</p> <p>Able to challenge established positions using evidence and reasoning</p>
<b>Innovation</b>	<p>Demonstrate creativity and innovation through personal leadership</p> <p>Contribute to a culture that promotes innovation</p>

## APPENDIX C

### THE AIB ACCREDITATION PROCESS – SUMMARY

#### Standards

In its course accreditation processes the AIB adheres to the Standards for Professional Accreditation Processes, published by Professions Australia. In summary this is a commitment by AIB to adhere to the following standards for what AIB does as accreditation body:

- the standards set by the AIB are clear and auditable, focused on the outcomes of a course, such that applicants understand the meaning and intent of the standards;
- the AIB applies the standards in a transparent way and applicants understand the reasons for the AIB decision; and
- the AIB reviews the outcomes of having and applying the standards it has set in achieving the aim of accreditation – to accredit courses that actually deliver the required outcomes and to not accredit courses that do not.

#### The AIB Accreditation Process – Steps

In its accreditation process and decisions, the AIB acts through its Course Accreditation Committee, duly constituted by the AIB with powers to:

- set the form in which an application for accreditation is made;
- appoint persons to review applications, to conduct site-visits and to seek and review evidence supporting applications; and
- accept or refuse applications for accreditation, in whole or in part, having regard to the standards set by the AIB.

#### ***Step 1. The institution seeking accreditation completes a self-assessment***

The institution:

- identifies the course or courses for which it intends to seek accreditation;
- maps the outcomes of these courses against the three categories of AIB objectives, using the approach described in section 3 of the standards; and
- completes a self-assessment against each of the elements of the standards in section 4

A self-assessment is a tool to:

- help the institution determine if it should apply for accreditation and identify its strengths and directions for improvement in terms of the AIB standards; and
- help the AIB give institutions a rapid decision about whether the application should go any further.

A self-assessment:

- summarises the evidence that the institution will use to show the AIB that it meets each of the standards in section 4;
- includes as supporting material for each section of this summary any already existing material that is brief and in documentary form; and
- identifies where the institution considers that action is needed to meet each standard completely.

### **Step 2. The AIB reviews the self-assessment**

When the AIB receives an application in the form of a self-assessment together with an initial application fee, it appoints panel of at least two persons to review the self-assessment. The applicant is notified of the names of the members of the review panel so that it has an opportunity to raise any issues of conflict of interest or perceived possible bias.

The review panel evaluates the self-assessment to make a recommendation to the AIB as to whether this application should go to the next stage.

In reaching this decision, the panel looks at the self-assessment in terms of whether the evidence summarised together with any supporting material appears to be such that it could support accreditation.

### **Step 3. The AIB appoints an Assessment Team**

After the AIB decides to proceed with the application, it provisionally appoints a review team of at least three persons:

- at least one senior academic from an institution unrelated to the applicant (more than one senior academic may be needed where an institution applies for accreditation of a broad range of courses);
- an industry practitioner with experience of recent graduates from accredited courses in construction management; and
- an AIB officer.

The AIB will notify the applicant of the intended membership of the team. The applicant may raise issues of conflict of interest or perceived possible bias. The AIB will consider any such comments before confirming membership of the review team.

### **Step 4. The Assessment Team visits the institution**

The review team visits the institution to look at the evidence that the institution has about the extent to which it meets the standards. This evidence will take many forms, including but not limited to:

- documents;
- facilities;
- people – staff, students, industry practitioners;
- teaching learning materials;
- information technology;
- assessment items; and
- student work.

At the end of the site visit, the review team will conduct an exit interview with the head of school about its observations (but not its final conclusions) and any unresolved issues on which the school may wish to comment or provide further evidence.

### **Step 5. The Assessment Team completes a report**

The Assessment Team will complete a draft report based on its site-visit and any other evidence as required. Before going any further, including framing recommendations about a decision, the AIB will give the applicant an opportunity to correct any misstatements of fact in the draft report and to comment on the observations and draft recommendations. Any such comments will be included in the final report.

The report may include recommendations about matters that the AIB should monitor during the accreditation period.

The report must make recommendations about:

- the course or courses to be accredited;
- the relevant pathway and position on this pathway for each such course; and
- the period of accreditation.

**Step 6. The AIB makes its accreditation decision**

The AIB will consider the final report from the review team and any observations from the applicant in making its decision on the application for accreditation.

Normally, the AIB accredits or refuses accreditation. Exceptionally, the AIB may make accreditation of a course conditional on actions that the institution must do within a specified timeframe.

**Step 7. An applicant may appeal about a decision**

An appeal is heard by an AIB Appeals Committee, constituted for this purpose. The Appeals Committee is chaired by the President of the AIB and has two other members, neither of whom has previously been involved with the application in any way. At least one member of the Appeals Committee must be a senior academic and at least one member must be a current industry practitioner.

The grounds for appeal include:

- failure to follow stated procedures in the consideration of the application;
- failure to consider all the evidence and documentation provided;
- improper acts by disregarding accreditation standards; and/or
- Errors that affected material decisions

**Step 8. The AIB monitors the course during the accreditation period**

The AIB monitors a course during the accreditation period through:

- yearly reports from the institution about
  - the awarding of qualifications in accredited courses, and
  - any significant changes or developments in courses or institutional practices that may affect course outcomes or the institution's capacity to meet the AIB standards;
- yearly reports from external examiners;
- advice from industry practitioners and industry bodies;
- feedback from graduates; and
- Complaints – from students, graduates, industry or others.

## APPENDIX D

### SELF ASSESSMENT TEMPLATE - FOR A BUILDING RELATED UNDERGRADUATE AND POST GRADUATE COURSE

#### Introduction

The AIB Accreditation process is summarised in Appendix C (pages 24-26) of this “Academic Standards for Course Accreditation” document.

The first step in the process is to complete a self-assessment document for the course for which accreditation is being sought.

Note: Should accreditation be sought for more than one course, a separate self-assessment document will be required for each course to be assessed.

The template is provided as a guide to assist Institutions in the completion of their self-assessment. Additional information may be included as considered appropriate, e.g. Copies of Institute policies and procedures. The template references the relevant section in this document for additional information.

Two hard copies and one soft copy of this completed self-assessment must be forwarded, at least **four months** prior to a planned course assessment to:

The Australian Institute of Building  
PO Box 705, JAMISON CENTRE ACT 2614.

The self-assessment provided will be reviewed by an Assessment panel that will make a recommendation to the AIB as to whether the accreditation application should progress to the next Step, i.e. to appoint an Assessment team who will conduct as a panel visit to the University/Institution. Therefore, University/Institutions should ensure they provide sufficient and satisfactory material in their self-assessment documentation.

#### Important Notes

As stated on page 7, Qualifications at AQF Level 7 and 9 (i.e. AQF 9 without a cognate undergraduate degree) may be accredited by AIB, but such accreditation will only meet the requirements for AIB membership at the Associate level; with further studies being required in order to meet the requirements for full (Corporate) AIB membership. The University/Institutions will be required to clearly state in their publicity materials if their course meets the academic requirements for Corporate (Full) or Associate level AIB membership. These may be accredited and registered under the Associate AQF Level 7 and 9 (i.e. AQF 9 without a cognate undergraduate degree) may be accredited by AIB, but such accreditation will only

meet the requirements for AIB membership at the Associate level; with further studies being required in order to meet the requirements for full (Corporate) AIB membership.

1. There is no set requirement for formatting of the self-assessment document; although examples of tables have been provided as a suggested format for some sections.

## **SELF-ASSESSMENT TEMPLATE**

### **1. Introduction**

- a. Course objective - Provide a brief introduction outlining the objective of the course.
- b. Background – Provide a brief outline of the Faculty/School/Department which offers the course.
- c. Program/Course details – include:
  - i. Course title,
  - ii. Delivery mode, and
  - iii. Any pathways to the course.

### **2. Program Governance** (Refer to page 7, paragraph 1.1)

- a. Structure – Provide an outline of the governance structure and functions of the responsible Academic Unit, including its relationships with:
  - i. The higher education institutions in which it is located,
  - ii. Assessment standards for award of qualification, and
  - iii. Professionals in practice in the construction industry.
- b. Contact details - include:
  - i. the name and postal address of the Vice Chancellor, and
  - ii. the name, postal address, email address phone number of the contact person for the accreditation.

### **3. Management of Courses** (Refer to pages 7-8, paragraph 1.2)

- a. The Course - Provide a summary of how the course is designed, developed, resourced and delivered,
- b. Consultation – Outline how external and internal stakeholders are consulted on key issues,
- c. Quality improvement – Summarise how the improvement process to ensure the course, its design and delivery reflect and are relevant to current and emergent practices in the construction industry,
- d. Overall responsibility – Identify who has overall responsibility for the quality of the delivery of the course at geographically separate campuses or through distance learning, and
- e. Course Advisory Committee – Briefly outline any formal advisory mechanism such as an Industry Course Advisory Committee and describe how it operates.

### **4. Course Quality Assurance** (Refer to page 8, paragraph 2.1)

- a. Course Review – Outline how the course content, quality of teaching and assessment and student progress is reviewed.
- b. Feedback – Describe how teacher, student and industry feedback is obtained and analysed and how the this feedback is used to improve:
  - i. Course design, development, delivery, assessment methods and standards, and
  - ii. Guidance to students.

### **5. Course, Qualification, Teaching and Learning Standards** (Refer to pages 9-10, paragraphs 3.1 to 3.3)

- a. Course Framework – Provide detailed descriptions of the course including:
  - i. outcomes or objectives for each component,
  - ii. subjects, pre-requisites, sequencing etc, and
  - iii. identify the articulation between the course and subsequent professional training.
- b. Course Structure, Composition and Duration – Provide details of:
  - i. The course duration, and

- ii. Opportunities within the course for students to pursue elective choices consistent with the overall course outcomes.
- c. Teaching and Learning – Provide an overview of the teaching and learning objectives and method/approach employed by the Institution for the course.

6. **Discipline Specific Curriculum Standards** (Refer to Appendix A) – As outlined in the Appendix, a mapping is to be provided showing the matching of stated curriculum benchmarks listed on pages 18-22 of the Appendix to the course subject. The extent of coverage should be self-assessed using the scale provided in the Appendix. See a short example below for three subjects.

**Knowledge Domain**

Knowledge and Skills Area	Application Context	Introduction to Buildings	Project Management	Professional Communication								
<b>TECHNICAL</b>												
<b>Construction Process</b> – Building elements and components - Structure and enclosure - Assembly, erection, installation methods – Site establishment, preparation and protection – Excavation – Basement construction – Dewatering – Footings and pilings – Site organization and management – Plant and equipment – Temporary and protective works – Civil works – Finishes – Weather and waterproofing	Domestic construction – Commercial and industrial – Low rise – Medium rise – High rise and tall buildings – In-situ and offsite operations	<b>2</b>	<b>4</b>	<b>0</b>								

- a. Discipline related knowledge – Provide a mapping showing how the 16 identified knowledge requirements listed in paragraph 4.1 are covered during the course, i.e. list each of the subjects in the course and annotate with an “X” where each of the knowledge requirements are covered. See a short example below for two subjects:

**Discipline Related Knowledge**

Courses	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
<b>BUILD1234 Introduction to Buildings</b>	X	X	X				X									
<b>BUSIN2345 Project Management</b>														X	X	

- b. Discipline related skills – Provide a mapping showing how the 11 identified knowledge requirements listed in paragraph 4.2 are covered during the course, i.e. list each of the subjects in the course and annotate with an “X” where each of the skill requirements are covered. Refer to the short example below for two subjects:

**Discipline Related Skills**

Courses	1	2	3	4	5	6	7	8	9	10	11
<b>BUILD1234 Introduction to Buildings</b>				X							
<b>BUSIN2345 Project Management</b>								X			

- c. Application of Knowledge and skills – Briefly describe how the course equips student to apply their knowledge and skills as a practitioner upon graduation. (Refer to paragraph 4.3)
- d. General Graduate attributes - Provide a mapping showing how the 9 identified graduate attributes listed in paragraph 4.4 are covered during the course, i.e. list each of the subjects in the course and annotate with an “X” where each of the general attribute requirements are covered. Refer to the short example below for two subjects:

**General Graduate Attributes**

Courses	1	2	3	4	5	6	7	8	9
<b>BUILD1234 Introduction to Buildings</b>			X	X	X				
<b>BUSIN2345 Project Management</b>	X		X	X	X	X			

- e. Professional attributes - Provide a mapping showing how the 3 identified professional attributes listed in paragraph 4.5 are covered during the course, i.e. list each of the subjects in the course and annotate with an “X” where each of the professional attribute requirements are covered. Refer to the short example below for two subjects:

Courses	1	2	3	Courses	1	2	3
<b>BUILD8933 Professional Communication</b>	X	X	X	<b>BUSIN5409 Leadership and Managing Teams</b>	X	X	X

**7. Delivery Effectiveness** (Refer to pages 13-14)

- a. Academic and Support Staff – Provide the following details:
  - i. A list of the course academic staff and their qualifications,
  - ii. Which staff teach each of the course subjects,
  - iii. Which staff are full-time and which are part-time,
  - iv. The continuing professional development activities undertaken by academic staff.
  - v. A summary of the administrative and technical staff utilised to support the course and its students.
- b. Resources and Infrastructure – Briefly describe the campus-based physical facilities and support facilities such as information technology, information systems (including library) resources and expertise available to ensure the course can be delivered adequately.
- c. Demonstrate learning outcomes – Provide a summary of the learning outcomes for the course and its components.
- d. Demonstrated graduate attributes - Summarise the general attributes that the course is designed to develop. In particular, outline how the general attributes are consistent with the goals for the AIB for education and building professionals (Refer to Appendix B on page 23.)

**8. Assessment Standards** (Refer to pages 15-16)

- a. Assessment of Student Learning – Provide an outline of the assessments for the course, how they are communicated to students and how they are validated and reviewed by the Institute.
- b. Benchmarking and Validation of Assessments – Briefly describe the process for moderation and validation of assessment grading.