ABAB
AUSTRALASIAN BIM ADVISORY BOARD

# POSITION STATEMENT

## Australian BIM and Digital Engineering Education

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# Australasian BIM Advisory Board

In May 2017, the Australasian BIM Advisory Board (ABAB) was established by the Australasian Procurement and Construction Council (APCC) and the Australian Construction Industry Forum (ACIF), together with NATSPEC, buildingSMART Australasia and Standards Australia. This partnership of national policy and key standard-setting bodies represents a common-sense approach that captures the synergies existing in, and between, each organisation's areas of responsibility in the built environment. It also supports a more consistent approach to the adoption of Building Information Modelling (BIM) across jurisdictional boundaries.

The establishment of the ABAB is a first for the Australasian building sector with government, industry and academia partnering to provide leadership to improve productivity and project outcomes through BIM adoption.

The ABAB is committed to optimal delivery of outcomes that eliminate waste, maximise end-user benefits and increase the productivity of the Australasian economies. The ABAB has evolved from a previous APCC–ACIF collaboration established in 2015 at a BIM Summit. This summit produced resource documentation to support BIM adoption (refer to www.apcc.gov.au for copies).

Members of the ABAB have identified that, without central principal coordination, the fragmented development of protocols, guidelines and approaches form a significant risk that may lead to wasted effort and inefficiencies, including unnecessary costs and reduced competitiveness, across the built environment industry.

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**Report prepared by:**

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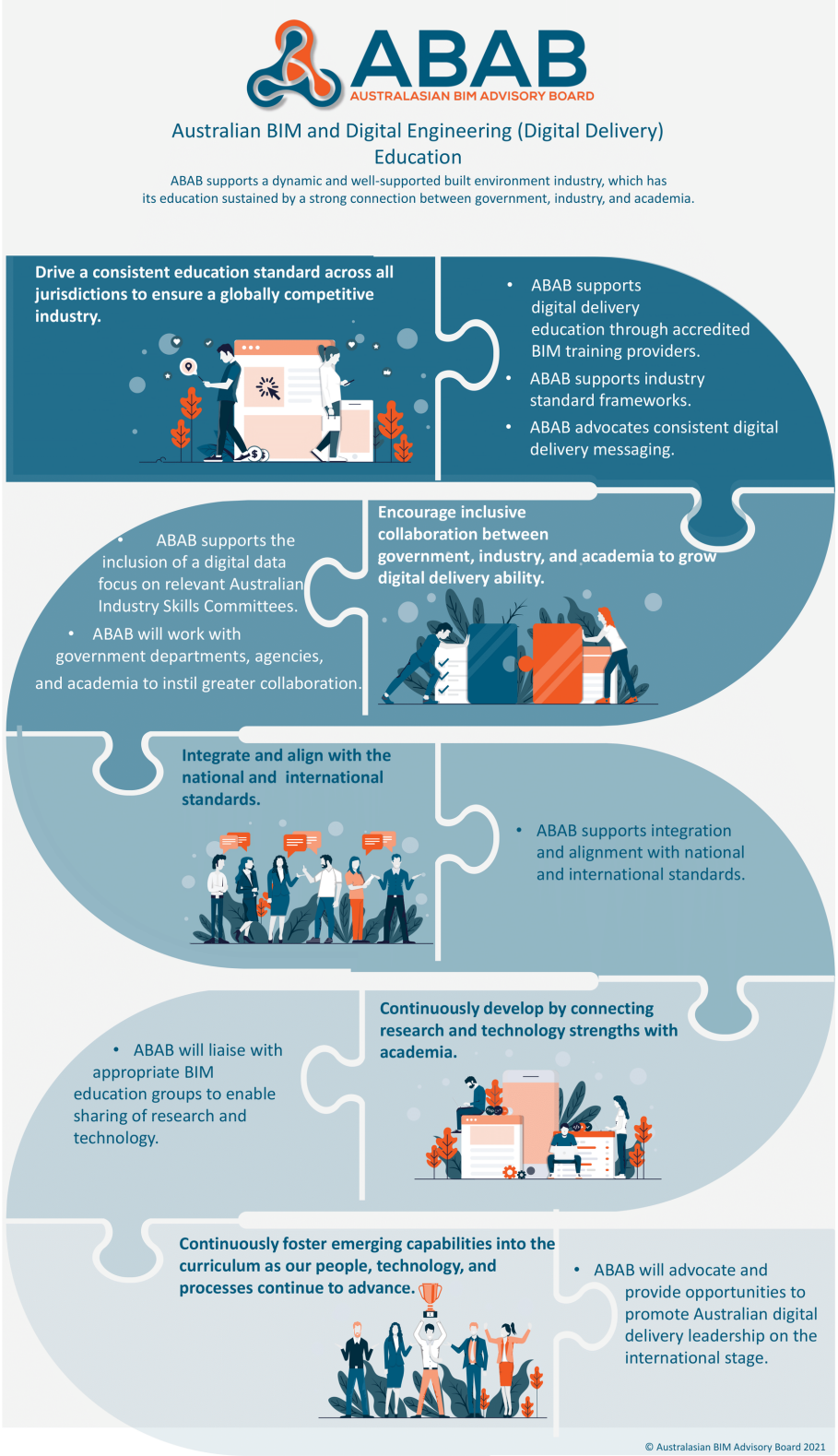
# Executive Summary



# Statement of Principle

Across Australia there are several vocational and university courses, offered in Building Information Modelling (BIM) and Digital Engineering (Digital Delivery), which range from initial awareness through to particular capabilities for specific disciplines.

While these courses are being delivered across formal and informal education streams, there are inconsistencies in the structure and content of what is being taught and the credentials received. Inconsistencies in delivery across the full range of sectors that utilise BIM and Digital Delivery limit workforce mobility and industry connectivity. This lack of a workforce baseline in Digital Delivery capability is making it difficult for students, clients, and employers to understand the skills they will be leveraging and the pathways to mastery. This inconsistency needs to be addressed to assist the Australian built environment workforce to meet its local needs and to achieve global competitiveness.

Further, Australia's coverage of Digital Delivery within the built environment, as a core qualification for practitioners, is not present, nor is it offered as a necessary requirement of course completion. This, combined with COVID-19 impacting Australia's access to imported digital delivery capability through skilled migration, has resulted in a greater dependence on the locally educated workforce, at least in the short-term.

Together, these issues are placing an increased burden on the built environment workforce by having workers that are neither job ready nor future ready.

This education gap has meant Australia relies heavily on the self-taught market, informal software training or those relying on international qualifications. Such an approach is creating discrepancies within an already tight profit margin industry, where Digital Delivery is not framed to directly support Australia's market, nor where experiences are extensive enough to deliver business transformations effectively, even to individual projects.

It is these discrepancies that requires Australia to take a strategic approach to Digital Delivery education to prepare our workforce to meet local and global standards, whilst enhancing its ability to be globally competitive. A mature Digital Delivery workforce for the built environment, supported by a robust connection between industry, government, and academia, will allow Australia to create an internationally advanced workforce and our own tailored solutions.

# Statement of Context

The built environment is an integral part of Australian life that supports a large portion of our economy, infrastructure and society. Global best practice acknowledges the adoption of digital delivery to data and knowledge, and the importance of education pathways to enable the workforce, across the lifecycle of the built environment to progress and remain contemporary.

In early 2017, the Australasian Procurement and Construction Council (APCC), in collaboration with the Australian Construction Industry Forum (ACIF), released its BIM Knowledge and Skills Framework (hereafter the Framework), which was built to align BIM education across Australian jurisdictions by assisting industry and educators in their capability development planning. This in-depth Framework, together with accredited courseware and certified qualification procedures, creates a digital delivery education model that supports job ready BIM practitioners.

In mid-2017, in the absence of national qualifications aligned with the Framework, BuildingSMART committed to developing further detail and invested in a project to create an exploratory assessment regime (BIMcreds) using the Framework as a basis to better understand the competency levels within Australia.

Since the soft release of this assessment, BuildingSMART Australasia is currently implementing in Australia the BuilidngSMART International Certification of training courses and individual testing in alignment with international standards and best practice. This certification is currently being used by governments in Europe as one measure to ensure BIM competency on projects.

As this initiative progressed, so did the interest in developing BIM digital delivery courses across both vocational training and university education. In 2019, a BIM Education Group was formed to explore these possibilities further. This Group, from across Australia, included representatives from TAFE and other registered training organisations (RTOs), as well as from universities. Their objective was to understand how to bring digital delivery education, using multiple credential approaches (such as micro-credentials), and incorporate them within qualifications aligned with the Australian Qualification Framework (AQF).

# The Australasian BIM Advisory Board's Position

As noted previously, Australia has invested in the development of a BIM Knowledge and Skills Framework that will assist in establishing the formal Digital Delivery Education Framework. This Framework is the foundation for helping the built environment workforce advance and progress. When the Digital Delivery Framework is delivered with accredited courseware and nationally recognised qualifications, this will assist in the upskilling of the Australian workforce and reduce dependency on skilled migration.

Further, it will create additional opportunities for State and Territory investment in traineeships and upskilling of existing workers.

**1. Drive a consistent education standard across all jurisdictions to ensure a globally competitive industry.**


To reach a consistent approach to Digital Delivery education, ABAB supports nationally recognised BIM training to provide a consistent approach to skilling that is embedded into training and education across the built environment value chain in all jurisdictions.

Until a formal industry wide standard to training and education is implemented, ABAB supports coursework or certification, which aligns to and follows the APCC and ACIF BIM Knowledge and Skills Framework

In the longer-term, coursework, certification schemes, and qualifications, consistent with the Framework, must meet formal AQF requirements required by the Australian Skills Quality Authority (ASQA) and its Skills Service Organisations (SSOs), and the Commonwealth Department of Education, Skills and Employment.

ABAB advocates for a consistent approach to ensure that the workforce is receiving the same message and that it aligns best practice Digital Delivery outcomes to effectively upskill those working in the built environment.

# The Australasian BIM Advisory Board's Position

**2. Encourage inclusive collaboration between government, industry and academia to grow digital delivery ability.**


ABAB recognises that the best solution to incorporating a consistent approach to Digital Delivery capability is to engage all training and educational stakeholders. ABAB will work with government agencies, along with industry, professional bodies, vocational training organisations and universities, to ensure greater collaboration, including promotion of Digital Delivery's importance to the built environment workforce. To support this initiative, a roadmap to Digital Delivery training and education should be placed on the agenda of all levels of government.

Within vocational training, ABAB intends to work with SSOs and their Industry Reference Committees to update nationally recognised vocational training packages to incorporate the digital delivery standards. ABAB will also work with universities, professional bodies and associations, and relevant government agencies, to update university curriculum.

Setting a national education standard will support and grow digital delivery capabilities within the workforce now and into the future.

# The Australasian BIM Advisory Board's Position

### 3. Integrate and align with the national and international standards.


To ensure Australia's approach to digital delivery education enables the built environment workforce to be globally competitive, ABAB supports curriculum developed by educators that meets a consistent standard aligning to global expectations. However, this should be done without disadvantaging the way the built environment workforce delivers or operates across Australian jurisdictions, noting that this includes government procurement models.

### 4. Continuously develop by connecting research and technology strengths with academia.


The advancements in research and technology will be connected to academia through liaison with BIM education groups. The connections will be formed through an ABAB representative on the BIM education groups to enable sharing of research and technology. This will include a tripartite relationship with the industry-led research initiative Building 4.0 Cooperative Research Centre (CRC). ABAB will ensure all advancements are progressively shared as they are made available or presented to the ABAB committee themselves. In addition to connecting research and technology, Australia will need to continuously support all emerging capabilities.

In addition to ensuring the standards are followed, academia must be connected to research and technology advancements to integrate into their curricula.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# The Australasian BIM Advisory Board's Position

**5. Continuously foster emerging capabilities into the curriculum as our people, technology, and processes continue to advance.**


ABAB will provide support for emerging capabilities. This support will include courses to be accessible to start-ups and small and medium enterprises (SME). This, in turn, will assist industry to capitalise on their agility and innovative approaches to further advance the digital delivery curriculum.

The Digital Delivery is a global market opportunity, and as such those who work in the Australian built environment have an opportunity to access international markets.

Furthermore, there is an opportunity for Australian education standards to become the benchmark for regional skills delivery, and to create an export opportunity for BIM training and education providers. An expanded leadership role in the global built environment industry will generate strategic advantages for Australian jurisdictions, but will depend on our capability, technological capacity and engagement. As the industry advances, ABAB will leverage its membership to promote Australia as global leaders in Digital Delivery through activities such as members participating in international forums. This will allow better access to international markets and ensure that the Australian built environment industry is integrated into the global marketplace.

ABAB supports a dynamic and well-supported built environment industry, which has its education sustained by a strong connection between government, industry and academia.

# Conclusion

## Statement of Authorisation

This position statement was subject to expert review by the Australasian BIM Advisory Board and authorised by the Board members at its meeting of July 2021.

## BIM Education Publication

BIM Knowledge and Skills Framework Media Release, Exploratory Notes, and Framework detail.

## Other Relevant Links

ABAB Website
APCC Publications
Artibus Innovation - A Skills Service Organisation
Australian Industry Skills Committee