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Queensland Building Plan
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Re: AMCA Queensland Submission to the Queensland Building Plan

Established in 1961, the Air Conditioning and Mechanical Contractors' Association (AMCA) is the peak body across Australia representing member companies operating in the commercial and industrial air conditioning as well as mechanical services industry.

AMCA members are highly skilled companies with expertise in the design, manufacture and installation of air conditioning and ventilation systems, as well as the ongoing service and maintenance of plant equipment and building infrastructure.

We appreciate the opportunity to provide input into the Queensland Building Plan and commend the Queensland Government and Minister Mick de Brenni MP as Minister for Housing and Public Works for his commitment to driving this plan which will benefit the entire community. Our submission will focus on the most important matter relating to the building and construction industry in sub-contractor payments as well as the proposed mechanical services occupational plumbing license.

SECURITY OF PAYMENT

Security of payment within the building and construction industry is a major concern for all subcontractors. Small and medium sized operations, traditionally family sized businesses, are the most exposed and often most affected by the current insecurity of payment within the construction industry. It is important to note that the vast majority of subcontractors, including those on large commercial sites, are not large businesses.

There is a consensus within the building and construction industry that there are issues associated with security of payments. This is not an issue simply relating to insolvent trading and bankruptcy it is also an issue that relates strongly to current payment practices which are leading to negative outcomes.

AMCA supports the development of individual Project Bank Accounts (PBAs) for construction projects over \$1 million in value. We believe that the PBA is the best mechanism to resolve

contemporary security of payment issues across a range of industry payments (including retention, progress and variation payments) without adding significant red-tape or administrative cost to the industry.

Project Bank Accounts

AMCA also supports PBAs addressing the current 'payment on account' nature of the construction industry. These payments are related to variations which comprise a significant percentage of the total project cost and are made to the subcontractor when claimed throughout the course of the job. However, head contractors reserve the right to challenge these amounts at final payment stage. The result is cash flows for subcontractors throughout the project, however, once the project is complete these 'payments on account' are challenged by the head contractor, which often leads to a negotiated outcome which can reduce the final dollar payment to the subcontractor by the amount in question. This practice erodes a subcontractor's profit margin and can mean that the subcontractor makes a loss. This is a form of artificial payment which has a long lasting critical impact on the subcontractor.

Payment insecurity within the building and construction industry is also a symptom of inadequate transparency within the supply chain. Not only is lack of transparency a concern for the productivity of the building and construction industry, but it also enables anti-competitive behaviour between different parties in the supply chain. This is why AMCA supports the principal creating the PBA as well as a strong pro-active audit and compliance regime operated by the Queensland Building and Construction Commission. It is simply not possible to rely on subcontractors to report the head contractor for non-payment. This is the case for a number of reasons: if the builder loses their license the subcontractor will not be paid; the industry is not large and there is usually a need for an ongoing relationship between the head contractor and their employees with the subcontractor and their employees. Although many subcontractors have the sophistication and ability to manage their client relationships, there is anecdotal evidence that some clients (head contractors) will place undue pressure on subcontractors to accept onerous terms in contracts which result in a weakening of the remedies available in the BCIPA legislation. Although this appears to be a business decision based on commercial reality, many subcontractors would seek to build long-term relationships with their clients and are likely to tender for work with that same client on numerous occasions in the future despite the onerous conditions in contracts.

Currently the QBCC undertakes proactive audits in many areas including in relation to local government forms. It seems inappropriate that large resources continue to be dedicated to whether maintenance forms are submitted when compared to the overwhelming and systemic problems relating to subcontract payments, including the social impacts that it is causing.

The importance of transparency

Head contractors are able to use the current payment system to engage in behavior which can afford special treatment to some subcontractors at the expense of others. Not only does this behaviour limit market entry to new participants, it can also inflate total project costs to principal

developers while forcing subcontractors to accept onerous contract terms and less than agreed value for work done.

The lack of transparency in the assembly of contracted parties also reduces subcontractors' capacity to appropriately budget and plan and deliver their component of a larger project without the need for site-directed variations, which are a principal cause of payment insecurity.

Variations need to be in writing

Variation requests are not a new phenomenon and are a reality of the building and construction industry. However, with the increase in popularity of 'design and construct' projects, the increasing number of site-requested variations is becoming a key driver of payment insecurity amongst subcontractors. It is a key point to note that under current arrangements, variations are not in writing, value is not agreed and subcontractors may not know if the variation has been requested by the principal or by the head contractor. In the case of non-payment, subcontractors have few avenues to pursue payment. Further, variations are often paid 'on account' by the head contractor. This means that the head contractor pays the full amount claimed by the subcontractor with the caveat that the head contractor reserves the right to challenge the payment at the end of the project. Following completion of the subcontractor's entire scope of work the head contractor then challenges the variation payments and reduces the final payment due to the subcontractor by the challenged amount. This action erodes a subcontractor's profit margin and possibility leaves them out of pocket for the entire project. It then has a knock on impact on the bottom line of the subcontractors business which can limit a business's ongoing viability.

Subcontractors usually do not have access to the contract between the principle and the head contractor. This lack of transparency in the contractual chain means that subcontractors have little or no understanding of which party is requesting the variation (principal or head contractor) and if the funds have been made available to pay for the full value of completed works. Instances where subcontractors are not paid in full (or at all) for variations are frequent. We would recommend that government procurement policy supports the need for a higher level of transparency within the contracting chain.

For example, the principal may direct the head contractor to vary the project design and pay for the variation. However, the head contractor may not pass the full payment received onto the subcontractor for work completed. In another example, the head contractor may have under-quoted the principal for a project and requests variations from a subcontractor without paying for the full value of the variations – passing on the loss of poor contracting practices to subcontractors.

Standard form contracts

Another concern for subcontractors is the substantial alteration of 'standard form contracts' issued by head contractors. In many instances, the contracts issued by head contractors contain onerous contractual provisions which transfer financial risk to subcontractors away from head

contractors. These contracts contain ‘termination for convenience clauses’, time barring as well as other onerous clauses. Due to the imbalance in market power, the cyclical nature of commercial construction as well as the small number of head contractors operating in Queensland, subcontractors often assume unacceptable economic risks and often see no options but to sign construction contracts to secure a continuity of work to support their workforce. This behavior has sadly become accepted as “business as usual” within industry.

Bank Guarantees and Retentions

The publication of a formal completion date of a project will enable contract dates relating to retention monies to be monitored, however, AMCA believes that given industry history and culture it is necessary to legislate that all forms of cash retentions (including bank guarantees) must be returned on the specified date. Further, this must also form part of the QBCC pro-active audit and compliance program.

Currently bank guarantees are the dominant form of transaction. Typically a subcontractor provides two bank guarantees with the agreement that the head contractor will hand one back at the completion of a project and the other at the end of the defect liability period.

While these bank guarantees are held, the subcontractor pays any interest on the guarantee and the guarantee is treated by banks as a cash debt so they limit the operating capacity of a business. Although subcontractors factor this into their business practices and growth strategies it is commonplace for the bank guarantees to be held for some time following their agreed expiry date. This results in subcontractors paying additional interest as well as significantly limiting their ability to access funds for commencing projects, this can result in either losing a project or simply deciding not to tender. Further, a head contractor is able to realise a guarantee as cash at any time while it is held. As previously mentioned the establishment of Project Bank Accounts along with the suite of proposals included in the Queensland Building Plan will address this important issue.

Finally on this subject we strongly support the Queensland Government’s commitment to fast track security of payment reforms.

MECHANICAL SERVICES PLUMBING OCCUPATIONAL LICENSING (MSPOL)

The AMCA supports the licensing of mechanical services plumbers at an occupational level. The Queensland Plumbing Certificate III (Mechanical Services) that is currently being delivered provides eligibility for a provisional plumbing licence and the addition of a MSPOL will enhance the attractiveness of this trade outcome. The proposal in the QBP references the Victorian VBA regulatory model. This VBA model is a line of site regulation to the occupationally licensed individual or the site supervisor, while the Queensland QBCC model is contractor focused with primary obligations and responsibilities to the licensed entity rather than the individual.

To provide certainty for workers who are specifically trained to do Mechanical Services plumbing, AMCA supports the need for workers in the sector to be occupationally licensed.

We advocate that the appropriate qualification for this license class is the Certificate III in Plumbing (Mechanical Services) – CPC32513.

The consideration under the proposed Queensland Building Plan for a compliance regime similar to the VBA or the Queensland Form 4 under the Plumbing and Drainage Act 2002 (PDA), would be inappropriate for work on commercial projects other than where there is a connection to a potable make-up water supply for cooling towers. The introduction of an additional PDA type compliance regime on commercial projects would be a challenge given the complexity of chilled water systems and the number of workers who would be engaged on these sites.

Certificate III in Plumbing (Mechanical Services) – CPC32513

This CPC32513 provides competencies as eligibility for a Provisional Plumber in Queensland and the qualification includes important Mechanical Services units of competency including:

- Provide basic emergency life support
- Cut and join sheet metal
- Weld using oxy acetylene equipment
- Install and test ducting systems
- Install air-conditioning control equipment
- Perform routine gas tungsten arc welding
- Install gas pressure control equipment
- Maintain mechanical services equipment

Mechanical Services Plumbers must be engaged for certain aspects of mechanical trade work. Because of the need to comply with specific regulations to ensure public safety, Mechanical Services Plumbers need to be Occupationally Licensed by the QBCC.

In air conditioning construction, Mechanical Services Plumbers are appropriately qualified to carry out:

- The location, placement, maintenance and installation of Chilled Water AHUs, Chillers, Pumps, Heat exchangers, Cooling Towers, Industrial Fluid Coolers, Buffer Tanks, Expansion Tanks and all associated line fittings including RPZ valves, isolation valves, strainers, non-return valves, balancing valves, motorised control valves, and including the flushing, filling and pressure leak testing of the chilled water system.
- The construction and installation of air conditioning and ventilation duct work including associated fire and smoke control features, balancing dampers, branch take offs and flexible ducts.
- Roof sheeting, flashing and weather proofing.

AMCA is supportive of the Mechanical Services Plumbing Occupational license and provides the following notes and limitations to the current qualification and the existing scopes of works for further consideration:

1. That the Plumbing Cert III (Mechanical Services) course in its' current form in Queensland does not contain the requisite Units of Competency, nor the prerequisite trail of competency units, to ensure the safe installation and commissioning and service and decommissioning of refrigerated air conditioning systems. However, this can be addressed for a restricted level of refrigeration work as indicated in point 6 of our submission below.
2. The commissioning and balancing of air supply, water, fire and smoke control systems in a multi-discipline contractual environment must to be carried out by a QBCC licensed entity. The entity would have contractual obligations to engage or undertake commissioning work where workers are appropriately occupationally licensed and meet all qualifications as required by NCC and state regulations.
3. The development of the chemical treatment regime and the provision of the chemical treatment system for air conditioning water systems must be carried out by specialist contractors
4. Refrigerated air conditioning work, including the safe installation and commissioning and service and decommissioning of refrigerated air conditioners will continue to be completed by a Refrigeration and Air Conditioning Mechanic who would hold the appropriate Full Australian Refrigeration Council (ARC) ARCTick license.
5. The design of chilled water and refrigerated air conditioning systems is to be completed by a QBCC licensed Refrigeration and Air Conditioning and Mechanical Services Contractor.
6. The Australian Refrigeration Council has recently provided a pathway - RSS03 for a restricted level of work which can be undertaken by individuals under their Restricted Heat Pump and Split System installation and decommissioning licence. This license allows the holder to handle ozone depleting and synthetic green-house gas refrigerants for the installation and decommissioning of any of the following:
 - A single head split system air conditioner of less than 18kW;
 - A 2-part hot water heat pump of less than 18kW;
 - A 2-part swimming pool heat pump of less than 18kW.

To obtain the licence, an individual must have one of the following qualifications:

- CPC32513 Certificate III in Plumbing (Mechanical Services)*; or
- CPC32413 Certificate in Plumbing*.

* Note: Individuals who attain CPC32513 and CPC32413 qualifications will be considered eligible to obtain the RSS03 licence on the condition that each of the following units are completed as part of the qualification/s:

- CPCPCM2043A Carry out WHS requirements;

- CPCPCM3023A Fabricate and install non-ferrous pressure piping;
- UEENEEJ105A Position, assemble and start up single head split air conditioning and water heating pump systems; and
- UEENEEJ172A Recover, pressure test, evacuate, charge and leak test refrigerants – split systems

Mechanical Plumbers carrying out chilled water air conditioning system installation should be Occupational Licensed through QBCC and these individuals would be required to undertake additional training available through the CPC32513 Certificate III to be eligible for an ARC RSSO3.

Queensland based training providers have expressed confidence in their ability to deliver the full qualification.

As a principle AMCA believes that an individual who is employed in a training position or otherwise engaged under a contract of training should be permitted to progress through the training at a pace which is in keeping with their ability to master the theoretical and practical aspects of the training program. Assessment of their progress in both theory and practice can only be carried out by appropriately qualified people. To date our experience with the Certificate III in Plumbing (Mechanical Services) meets this principal.

We note that the Victorian mechanical services license was implemented following an unfortunate incident at a public aquarium; this incident has been followed by others across Australia.

Under section 22 of the Work Health and Safety Act 2011, a designer of plant, such as components of cooling water systems, have a primary duty to ensure the plant is maintained in a condition that ensures it is safe, and without risk to health when used properly. AMCA is appreciative of the fact that the Queensland Government is seeking to ensure a training and occupational outcome for individuals who are engaged in the plumbing aspects of the installation and maintenance of devices such as cooling towers.

Mechanical services is amongst the most important work undertaken during the course of construction and we consider it of the utmost importance to introduce an MSPOL to help ensure that this work is performed to an appropriate standard. This work includes the control of temperature, flow of air and air quality to buildings such as hospitals, health facilities, universities, schools, commercial buildings, industrial buildings, high rises etc. In particular we point out the importance of the work which relates to areas of hospitals such as laboratories, surgical wards, emergency wards and recovery sections. The size and scale of mechanical services systems is vast and complex and should not be unlicensed - hence, our support for an occupational license.

AMCA would support appropriate transitional arrangements to ensure that Mechanical Services Plumbers who are working within the industry are afforded the opportunity to continue to do so, provided they are able to display the appropriate competencies.

SITE SUPERVISOR TO BE QUALIFIED TO CERTIFICATE III ONLY

As a complimentary amendment we urge the Government to remove the requirement for the Trade Contractors' Site Supervisor to hold an Unlimited Design License for the carrying out of Supervision work. We recognize the importance of appropriate supervision and we are supportive of the QBCC regulation to support quality outcomes through Site Supervisor licensing.

Currently Site Supervisors are typically qualified to Certificate III level in Refrigeration and Air conditioning, Mechanical Service Plumbing, Electrical or Sheet-metal work. As a multi-discipline trade, the industry would consider a tradesperson to be competent for selection as a Supervisor when that individual is qualified to a Certificate III level qualification or equivalent and where that individual can demonstrate a minimum of 2 years of experience in the field. Site Supervisors are not qualified to sign off on Compliance Certificates for Building Design or Specification Form 15 or Form 16 - Inspection Certificate/Aspect Certificate/QBCC Licensee Aspect Certificate. These Form 15 or 16 compliance requirements are the responsibility of the QBCC Contractor licensee or the entity Nominee.

The current requirement for a Site Supervisor to be the holder of an equivalent qualification for the scope of works for the Refrigeration and Air conditioning – Unlimited Design licence is unnecessary red tape; as the intent of the Unlimited Design license provides public and consumer protection for the design of complex air conditioning systems which in high-rise buildings usually includes life safety systems and specific design issues to address public safety.

Medical gas

AMCA supports the occupational licensing of medical gas work and associated work. We are all aware of the recent events at Bankstown/Lidcombe Hospital and other similar instances. The risks in this area are too great for it to remain unlicensed. Medical gas work falls within the Certificate III in Plumbing (Mechanical Services) package and as such we consider graduates suitability qualified. Additionally, we support a course for experienced plumbers from other streams to upskill and undertake this work. This course is CPC3034A and can be completed within 4 days. We are also supportive of the strengthening of AS 2896:2011 to ensure that commissioning standards are strengthened by way of an independent third party sign off. With regards to the mechanical services proposal we support appropriate transitional arrangements to ensure that all those who are working within the industry currently are afforded the opportunity to continue to do so, provided they are able to display the appropriate competencies.

CONSTRUCTION INNOVATION – A QUEENSLAND CONSTRUCTION IMPERATIVE

We note that the Queensland Government has recently provided an opportunity for industry to make comment on draft policy in relation to Building Information Modelling (BIM) and we look forward to making a contribution to that Policy development.

Recognising the benefits of innovation within the building and construction industry, the AMCA has actively promoted the adoption of building information modelling and associated technologies since 2010, with the formation of its BIM-MEP^{AUS} initiative.

The initiative aims to facilitate the exchange of design models and information through the standardisation of data to ensure, not only that the data can be trusted, but that it can be continuously shared between all parties to a project whilst maintaining the integrity of the model and design.

In addition to its standardisation program, the AMCA hosts an annual Construction Innovation Forum to assist industry make the transition towards more collaborative approaches to project delivery.

Construction Innovation - Submission summary

Building information modelling (BIM) and associated methods of project delivery has the potential to deliver significant benefits to government, industry and the community across a range of economic, cultural and social indicators. However, the fragmented and competitive culture of the industry, as well as the network characteristic of the technology, has converged to stifle the broader adoption of BIM.

The following issues are identified as key barriers to the adoption of building information modelling:

- The complexity of building and construction projects typically requires the contribution of a network ('building network') of professions and trade disciplines. The fragmented nature of the industry has contributed to an oftentimes confrontational culture. Traditional contractual arrangements of project delivery, where risk and liability for schedule and cost overruns is passed along the supply chain, is a constant source of tension between parties to a project. These tensions act as a barrier to increased collaboration and innovation, and therefore productivity and efficiency improvements.
- The benefit to firms who invest in BIM capabilities increases as the number of other firms in the network increases. Such network characteristics result in an innovation 'paradox', whereby all firms refrain from BIM adoption because there are not enough other firms in the network to make it beneficial. This is despite the enormous gains to be

achieved by all firms resulting from increased productivity, reduced wastage and reworks, improved coordination and more efficient building processes.

- A lack of industry standards acts as a barrier to small and medium sized enterprises. This is due to the costs and risks involved in developing BIM capabilities without a recognized industry benchmark. Industry agreed standards would encourage BIM adoption by providing all firms with certainty that their investment in BIM capabilities will be readily applicable to future projects. It is this barrier that the AMCA is working to address through the BIM-MEPAUS standardisation initiative.
- Demand for BIM-enabled projects has been constrained by a lack of information about the cost savings and long-term benefits for clients and asset managers. Lack of demand is perpetuated by a tendency within the industry to evaluate project tenders using a lowest-bid selection strategy. This is because demand for building projects is driven by capital budgeting decisions that aim to maximize return on investment. A lack of empirical data on cost savings from BIM-enabled project delivery, as well as an inability to quantify future cash flows resulting from higher rents and maintenance cost savings weakens the business case for BIM projects; therefore demand.
- Concerns about model ownership, proprietary knowledge, contractual obligations and liabilities persist, acting as a disincentive to greater collaboration and information sharing.

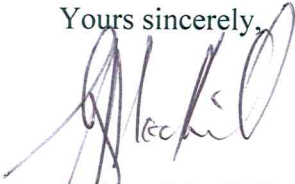
The AMCA submits the following recommendations to the Government for consideration:

- A Queensland Government BIM Procurement Strategy developed in partnership with industry would draw upon the existing stock of information (Allen Consulting Group, 2010; BEIIC, 2012), whilst enabling government to coordinate greater industry coherence to promote more efficient operation of markets. For example, the strategy would include the identification of key skill and educational gaps, creating a market for industry associations, tertiary institutions, TAFEs and other training providers. It is important that the strategy identifies tangible and achievable objectives to justify the allocation of administrative personnel.
- The harmonization of industry approaches relating to digital object libraries and communications protocols is imperative to facilitate broader adoption of BIM. However, the fragmented and highly competitive nature of the sector has limited cooperation on standard development. Government is uniquely placed to facilitate the creation of industry standards by providing funding, endorsement, coordination services and industry leadership. Agreed industry standards will lower the costs of transitioning to BIM-enabled project delivery and promote more efficient and competitive markets. Barriers to entry for all firms, particularly for SMEs, will be reduced due to the reduced costs and risk for firms considering investment in BIM capabilities.

- The specification of BIM on government projects will promote more efficient project delivery, deliver improved built outcomes, and reduce the cost of government projects. These benefits are expected to translate to the private sector due to an increase in the stock of knowledge pertaining to BIM project delivery, and the subsequent transfer of skills across the building network. A mandate is a preferred option because, as a major procurer of building and construction services, Government is able to influence the behaviour of industry via procurement processes to encourage broader adoption of BIM.

We thank the Queensland Government for this opportunity to provide input into this important initiative for Queensland and would welcome further discussion on the issues raised in this submission.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'G MacKrill', written over a light blue horizontal line.

Graham MacKrill
Executive Director
AMCA QLD