



Australian
Industry and
Skills Committee

PRECAST CONCRETE INSTALLATION IN BUILDING AND CONSTRUCTION

Case for Change

Construction, Plumbing and Services Industry Reference Committee

Artibus Innovation

September 2021

1. Administrative information

For a list of the products proposed to be reviewed as part of this project, please see **Attachment A**.

Name of IRC(s):	Construction, Plumbing and Services Industry Reference Committee
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Name of SSO:	Artibus Innovation
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1.1 Name and code of Training Package(s) examined to determine change is required

Two training packages were examined:

- CPC Construction, Plumbing and Services Training Package, and
- RII Resources and Infrastructure Industry Training Package,

as both include some units on working with precast concrete products.

2. The Case for Change

For information on the job roles to be supported through the proposed qualifications updates, enrolments data, completion rates, and the number of RTOs delivering these qualifications please see **Attachment B**.

2.1 Rationale for change

- The evolution of modern methods of construction have resulted in an increase in the use of precast concrete, with global demand predicted to increase at 6.5% per year, to an estimated value of \$185.35 billion by 2023. ¹
- Precast concrete products offer an efficient, cost effective, and sustainable solution to increasing demand for the construction of housing, commercial precincts, and infrastructure. It is easily transported, allows for precision in production and installation and consists of low carbon material composites that improve emission ratings. ²
- Construction using precast concrete products requires new work practices and associated skills and knowledge. Installation of these products involves a process of precise positioning and specialised patching and finishing methods to support building integrity. 'Due to their size and mass, prefabricated concrete elements can be vulnerable to uncontrolled collapse'³
- There have been several incidents of improper installation of precast concrete components, which in some cases, resulted in deaths. ⁴
- A skilled and capable workforce is required to ensure the installation of precast concrete is performed safely and correctly.
- There is no nationally recognised training currently available to meet this need. A failure to introduce nationally recognised training in the installation of precast concrete products increases the risks of workplace injury or death and the potential for compromised structural integrity due to inadequate or faulty workmanship.

¹ Wadlow, Tom. "Precast Construction Industry Set to Pass \$185bn Value Mark by 2023." Construction Global(<https://www.constructionglobal.com/equipment-and-it/precast-construction-industry-set-pass-185bn-value-mark-2023>), 31 May 2018

² M. Stambos & L. D'Agostino, National Concrete Precast Repair Association, (p.2), 2017

³ Safe Work Australia Guide to managing risk in construction: Prefabricated Concrete, page 8

⁴ Roberts, Lachlan. "Worksafe Investigating after Concrete Panel Falls from Braddon Building Site." RiotACT (<https://theriota.ct.com/worksafe-investigating-after-concrete-panel-falls-from-braddon-building-site/284764>), 30 January 2019. WorkCover Queensland. "Precast Panel Wall Failure." <https://www.worksafe.qld.gov.au/injury-prevention-safety/alerts/whsq/2018/precast-wallpanel-failure>, 6 June 2018. Bavas, Josh. "Eagle Farm Construction Deaths: Two Men Fatally Crushed in Concrete Panel Collapse." ABC News (<https://www.abc.net.au/news/2016-10-06/two-people-crushed-by-collapsed-concrete-panels/7910470>), 7 October 2016. "Huge Fine over WA Concrete Panels Deaths." Fully Loaded (<https://www.fullyloaded.com.au/industry-news/1805/huge-fine-over-waconcrete-panels-deaths>), 18 May 2018

2.2 Evidence for change

- While house construction in Australia is projected to remain subdued over the short term, new housing construction is subsequently forecast to rise.¹ Application of modern methods of construction by Tier 1 companies such as Lendlease has driven demand for specialist trade skills in prefabricated and modular construction techniques.
- The supply of trade labour is under pressure and, according to the National Precast Concrete Association of Australia (NPCAA), construction workers trained in the use of precast concrete products are in even shorter supply.
- The NPCAA, the peak body for the Australian precast concrete industry, with membership comprising precast manufacturers, product and service suppliers and building contractors, made a direct approach to the Construction, Plumbing and Services IRC in 2019 about the urgent need for nationally recognised training for the installation of precast concrete products.
- The development of training products for precast concrete installation is proposed in the routine category.

2.3 Consideration of existing products

- A search of existing training products identified two courses, two accredited and two non-accredited, similar, or related to, that proposed in precast concrete installation. One of the accredited courses, the [10945NAT Certificate IV in Concrete Structures Quality Construction](#) is enterprise owned. It is aimed at supervisors and managers and would potentially complement the proposed qualification/skill set by offering a pathway to further training.
- The second accredited course, [22497VIC Course in Concrete Precast Rectification](#), provides a vocational outcome for a person to be employed as a concrete precast rectifier/patcher and repairer. It includes three units which will be further investigated for their relevance and application to the installation of precast concrete:
 - VU22666 Patch and repair concrete precast components
 - VU22667 Apply surface finishes to patched concrete precast components
 - VU22668 Caulk concrete precast elements.
- The non-accredited courses also demonstrate that there is an industry need for such training. They appear to align with and would potentially support the proposed qualification/skill set.
 - non-accredited training in [Precast Concrete Panel Erection](#) is offered by Construction Training International (CTI), a private registered training organisation.
 - non-accredited online course in [Precast Wall and Column – Concrete Structure Series](#), suitable for builders, site managers/engineers and project managers/engineers, offered by TeleTraining.
- Several units of competency similar, or related to, installation of precast concrete were identified on the National Register of VET and may have relevance.
 - One safety unit, [CPCCOM1016 Identify requirements for safe precast and tilt-up work](#) (in the CPC30320 Certificate III in Concreting)
 - Two units for tilt-up concrete construction were found: The units will be investigated for their potential to inform new units for precast concrete or to be modified to include precast concrete.
 - [CPCCRI3015 Perform advanced tilt-up slab erection](#) (in the CPC30720 Certificate III in Rigging)
 - [CPCCB4022 Supervise tilt-up work](#) (in the CPC4120 Certificate IV in Building and Construction).

¹ <https://www.ibisworld.com/au/industry/house-construction/309/> (19 May 2021).

- Note: The concrete systems 'tilt-up' and 'precast' differ in that tilt up concrete panels are cast on site adjacent to the destination point, whereas, precast concrete products are developed off site, then transported and installed on site.

2.4 Approach to streamlining and rationalisation of the training products being reviewed

- Artibus Innovation will continue to meet with PwC Skills for Australia, regarding the potential development of training products relevant to the installation of precast concrete products from a cross sector perspective and explore the applicability to both building and civil construction workplaces.
- Existing units of competency will be used where appropriate.

3. Stakeholder consultation

3.1 Stakeholder consultation undertaken in the development of Case for Change

*For a full list of industry-specific stakeholders that actively participated in the stakeholder consultation process undertaken to develop the Case for Change, please see **Attachment C**.*

- Engagement with stakeholders with a direct interest in the proposal to develop training products in precast concrete installation was done in conjunction with the peak association, the National Precast Concrete Association of Australia (NPCAA). The NPCAA emailed its 1500 members in all states and territories inviting them to participate in an online survey and have their say on training needed for workers in precast concrete installation.
- Artibus also used its communication channels comprising newsletters and social media to reach out to its stakeholders with an interest in precast concrete. The survey response rate was relatively low, but the 28 respondents provided clear information about the training gaps for workers in precast concrete installation, including loading/unloading, lifting, and handling, erection and securing, and specific considerations for cranes and rigging.
- Artibus conducted telephone and email discussions with:
 - Senior policy advisor for education and training at the Victorian Building Authority (VBA) who indicated that the VBA would support the proposal.
 - two private RTOs, Construction Training International (Victoria) and the Construction Training College (Queensland), which both offer non accredited training in aspects of precast concrete installation. Both RTOs indicated strong support for the introduction on an endorsed qualification in this area, commenting that it is long overdue.
 - Technical Services Manager, National Precast Concrete Association of Australia
 - President of the National Precast Concrete Repair Association, who provided strong support for the proposed qualification and offered to contribute to its development. The Association went through the process of having its own course accredited, the [22497VIC Course in Concrete Precast Rectification](#) as there were no nationally endorsed training products available.
 - National Technical Heavy Lift Manager, at Fulton Hogan, a major construction company
 - an engineer and professional educator and Director of Teletraining which provides technical training for project managers and overseeing sub-contractors
 - Victoria Curriculum Maintenance Manager - Building and Construction who oversaw the development of the 22497VIC Course in Concrete Precast Rectification. The CMM strongly supported the proposal for a qualification in precast concrete installation.
- Artibus Innovation, PwC Skills for Australia, and a member of the Civil Construction IRC, met online to discuss whether the CPC precast units of competency being proposed would be relevant for use in the RII Civil Construction Training Package.
- The consultation findings supported the development of a national qualification to:
 - set the benchmark for the skills and knowledge required for the installation of precast concrete
 - provide a consistent underpinning to the training of workers in precast concrete installation
 - raise the technical capability of workers in precast concrete and thus improve the standards of workmanship and safety on worksites.

3.2 Evidence of Industry Support

For a list of the issues raised by stakeholders during consultation and the IRC's response to these, please see Attachment D.

- The National Precast Concrete Association of Australia first raised the need for a nationally recognised qualification for those working in precast concrete installation with Artibus Innovation in 2019 and the proposal was included in the Construction, Plumbing and Services Industry Skills Forecast in 2020.
- Letters in support of the proposed development for a qualification in precast concrete installation are provided by:
 - [Akura](#) – a commercial builder and manufacturer of commercial building products
 - [Actech International](#) – supplier of products to the precast concrete industry
 - [ramsetreid](#) -brings together all the business activities of the Ramset™, Reid™ and Danley™ businesses across Australia and New Zealand, suppliers of concrete anchoring and fastening products, concrete lifting solutions and design/manufacturer of engineered load transfer, armour joints and crack control systems for industrial flooring and pavements, respectively.
 - Construction Training College/Mulherin Rigging and Cranes – support from trainer with 30 years of industry experience specialising in precast installation.
- Industry participation in the consultation process resulted in scoping the new units of competency required to provide the technical skills and knowledge by workers in precast concrete installation. The proposed unit titles at Attachment A reflect the intent and coverage of each unit.
- Industry representatives have offered their ongoing involvement in refining the development of the training products.
- Industry has indicated that they would use a qualification if it was available for the formal training of workers.

3.3 Proposed stakeholder consultation strategy for project

*Note: For a full list of industry-specific stakeholders who are planned to be contacted to participate in the stakeholder consultation process undertaken for this project, please see **Attachment E**.*

- The Construction, Plumbing and Services IRC will nominate a member to be the Precast Concrete Installation project chair.
- The Artibus Innovation project manager, in consultation with the IRC project chair, will develop a stakeholder communication and engagement plan and project governance plan.
- Information about the project will be disseminated using the Artibus newsletter, social media, and website; industry channels, including the NPCAA and other related industry associations (e.g. Master Builders Association, Australian Constructors Association), relevant union, industry training advisory bodies in each state and territory to assist in identifying rural and regional stakeholders, and trade publications (e.g. Inside Construction, Built Offsite and Construction Engineering Australia).
- Stakeholder consultation activities will include:
 - Information Webinars to launch the project and explain how stakeholders can contribute to the development of the proposed training products.
 - Consultation Webinars at the first draft – for stakeholders to provide direct feedback on the training product development.
 - In addition to the consultation webinars feedback will be invited via an online tool available on the Artibus website, written submissions, online meetings convened as necessary and, where possible, face to face meetings.
 - Validation stage of the project, webinar to inform stakeholders of proposed training products and gather final feedback.

4. Licencing or regulatory linkages

- *The Guide to managing risk in construction: Prefabricated Concrete, Safe Work Australia, September 2019*, includes broad guidance in relation to the link between training products and regulatory requirements (page 10):
 - 'All workers on the construction site must have completed general construction induction (White Card) training before starting work.
 - Other licences, such as a high-risk work licence, may also be required depending on the work being undertaken.
 - A person with relevant training and experience should also supervise prefabricated concrete construction work...'
- **Western Australia** is the only jurisdiction which specifies licensing requirements in relation to precast concrete construction:
 - When doing tilt-up work, a HRWL is required in the following cases:
 - Basic Rigging - Rigging work involving pre-cast concrete members of a building or structure (not including Panels)
 - Intermediate Rigging - Rigging work involving tilt slabs or 'panels'.
- The WA Occupational Safety and Health Regulations 1996 require workers to complete an approved training course before commencing tilt-up or precast concrete construction or manufacture.
 - *CPCCM1016A Identify requirements for safe tilt-up work* is identified as a recognised competency requirement, (superseded unit).

The WorkSafe Western Australia Commissioner has approved *CPCBC4022A Supervise tilt-up work* to satisfy the requirement that people who directly supervise tilt-up work at a construction site must have completed an approved course, (superseded unit).

5. Project implementation

5.1 Prioritisation category

- It is proposed that this product development is progressed as a routine project to be completed within a 12-month timeframe.
- The rationale for the approach is that precast concrete installation is a multi-step process involving workers in a range of roles. The 12-month timeframe is necessary to canvas and share the views of the different stakeholders involved at each stage of installation.
- The result is more informed training product development and greater industry ownership. It also reduces the risk of dissenting views arising toward the end of the project.
- The industry/Artibus interaction over the span of the project is an important opportunity to build stakeholder understanding of the VET system.

5.2 Project milestones

- Key project milestones include:
 - *AISC project approval – October 2021*
 - *DESE commissioned Activity Order – October 2021*
 - *Training product development and engagement with subject matter experts – October - January 2021*
 - *Draft 1 consultation/feedback – February 2022*
 - *Feedback on draft 1 incorporated to produce draft 2 – March 2022*
 - *Stakeholder consultation for validation of draft 2 – April 2022*
 - *Quality Assurance – June 2022*
 - *Final consultation with states and territories – July 2022*
 - *Case for Endorsement submitted for approval September 2022.*

5.3 Delivery or implementation issues

- As the proposed product is new, RTOs would need to apply to have it added to scope. RTOs with relevant qualifications already on scope (e.g., rigging, concreting, civil construction) will be informed at all stages of the precast concrete installation project so that they will be well positioned to apply for scope should they wish.

Any work placement requirements will be confirmed as the project develops.

6. Implementing the Skills Minister's Priority reforms for Training Packages (2015 and October 2020)

- The unit of competency Elements and Performance Criteria will be developed in consultation with industry and RTOs to ensure that current industry skills, knowledge and contemporary work practices are reflected. The articulation of assessment requirements in the Performance Evidence and Knowledge Evidence will reflect employer expectations of the skills and knowledge graduates would bring to a worksite.
- The stakeholder engagement strategy will include informing and involving RTOs at all stages in the development of the new training products for precast concrete installation. The aim is to build an understanding of the coverage and outcomes of the training products so that RTOs will be well positioned to assist consumers make informed course choices.
- The project will include a range of electives to provide breadth and depth of choice supporting individuals to move between related occupations and industry sectors.

- The development of units of competency will consider their application in as broad a context as possible so that they might be used across industry sectors and thus improve the efficiency of the training system.
- The development of skill sets will be considered at each stage of the project to support worker employability, career progression or movement between related occupations.
- Artibus will promote the benefits of skill sets, including:
 - 'chunking' training into smaller job-related components to provide the learner with initial success and motivation to undertake further training
 - for workers in other occupations to reskill and enter the industry
 - to engage more enterprises and their employees in nationally recognised training by overcoming barriers to training such as time sensitivities, arduous paperwork requirements or a qualification that exceeded requirements.

This Case for Change was agreed to by the Construction IRC

Name of Chair

Stuart Maxwell

Signature of Chair



Date

06 September 2021

Attachment A: Training Package components to change

Artibus Innovation

David Morgan, CEO

Submitted: 3 September 2021

Project number	Project Name	Qualification/Unit/Skillset	Code	Title	Details of last review (endorsement date, nature of this update transition, review, establishment)	Change Required
TBA	Precast Concrete Installation	Qualification/skill set	CPC2xxxx	Certificate II/Skill Set in Precast Concrete Installation in Building and Construction	Establishment	New
		Unit	CPPPRE2001	Brace and prop precast concrete components	Establishment	New
		Unit	CPCPRE2002	Remove bracing and propping from precast concrete constructions	Establishment	New
		Unit	CPCPRE2003	Level and secure precast concrete components	Establishment	New
		Unit	CPCPRE2004	Grout load bearing precast concrete components	Establishment	New
		Unit	CPCPRE2005	Grout non-load bearing precast concrete components	Establishment	New

Project number	Project Name	Qualification/ Unit/Skillset	Code	Title	Details of last review <i>(endorsement date, nature of this update transition, review, establishment)</i>	Change Required
		Unit	CPCPRE2006	Caulk precast concrete components	Establishment	New
		Unit	CPCPRE3007	Repair precast concrete components	Establishment	New
		Unit	CPCPRE4001	Inspect precast concrete erections	Establishment	New

Attachment B: Job role, enrolment information, the number of RTOs currently delivering these qualifications

Please set out the job roles to be supported through the updated qualifications, enrolment data over the past three years in which data is available for each qualification, completion rates for each qualification, and the number of RTOs delivering these qualifications.

The reason for this Case for Change is to develop a new qualification/skill set as there is no Training Package qualification/skill set which addresses the training needs of jobs related to installation of precast concrete products on the National Training Register.

Job role	Qualification to be updated to support the job role	Enrolment data (for the past three years)	Completion rates (for the past three years)	Number of RTOs delivering (for the past three years)
Precast concrete installation – commercial or high rise	N/A	Not available	Not available	As the qualification is to be newly created no RTOs have it on scope.

Attachment C: List of stakeholders that actively participated in the consultation process of the Case for Change

Name of stakeholder	Title	Organisation	Organisation type (e.g., Employer, peak body, union, RTO, regulator)	Jurisdiction/town/city (e.g., NSW/Sydney)
Alan Mascord	Manager	Akura	Employer, Installer	Kelso, NSW
Aria Nick Bakht	Managing Director	Lattice Group	Employer	Ryde, NSW
Aaron Jamalzadeh	Managing Director	TeleTraining	Training organisation	Based in NSW but offering courses nationally
Barry McCormick	NSW State Manager	Actech International	Employer, Installer	Arndell Park, NSW
Ben Harragon	Project Consultant	Hunter Precast	Employer, Installer	Thornton, NSW
Brendan Mulherin	Trainer with 30 years of experience in rigging and precast	Construction Training College	RTO	Eagleby, QLD
Brent Williamz	Self employed	Contract Building Designer	Employee	QLD
Brett Walker	Managing Director	Walker Panels Pty Ltd	Employer, Manufacturer	Colac, Victoria and Wollongong, NSW
Chloe Langbroek	Manager	PwC Skills for Australia	Skills Service Organisation	National
Clinton Lane	Managing Director	Allied Steel Detailers	Employer	Rye, Victoria
Craig Moss	Director, Professional Services	Institute of Public Works Engineering Australasia	Industry Association and member of the Civil Construction IRC	Brisbane, Queensland
Gavin Stollery	Operations Manager	Southern Precast Victoria	Employer, Installer	Dandenong, Victoria
J.D. Chaitanya Kumar	Civil Engineer	K L University	Researcher	Andhra Pradesh, India
Jay Wilson	Area Manager	BCP Precast/Civilmart Concrete	Employer, Manufacturer	Stapylton, QLD

Jeffery Pellerin	Product Manager	RamsetReid	Employer	Chirnside Park, Victoria
Jennifer Mason	Senior Policy Advisor Education and Training	Victorian Building Authority	Regulator	Victoria
John Clark	Project Manager, Estimator	GCB Constructions	Employer, Manufacturer	Varsity Lakes, QLD
John Cousins	Manager Safety	AMA Projects	Employer, Builder	Braddon, ACT
John Woodside	Principal	J. Woodside Consulting	Employer	Kingswood, SA
Jose Manuel Sorazu	Manager of Sales	HWS Concrete Towers	Employer	San Sebastian, Spain
Jukka Ylinen	Manager	Fine Form Precast Solutions	Employer, Manufacturer	Moonee Beach, NSW
Kevin Crompton	Director	Kevin Crompton Management Services	Employer, Installer	Castle Hill, NSW
Levi Robinson	Technical Services Manager	National Precast Concrete Association of Australia	Peak body	National
Lyndon Valente	Managing Director	HMV Structural	Employer, Manufacturer	Gillman, SA
Marcel McLeod	Managing Director	Totalfab – Hazell Bros.	Employer, Manufacturer	Kingston, Tasmania
Michael Carsley	Associate – Management Consulting	PwC Skills for Australia	Skills Service Organisation	National
Michael Stambos	Director, CXM and President	CXM Building Constructions National Concrete Precast Repair Association	Employer, Association	Balwyn, Victoria
Peter Patterson	Director and lead trainer	Construction Training International	RTO	Victoria
Raelene Finn- Patterson	Director	Construction Training International	RTO	Victoria
Riccardo Musella	Managing Director	Reinforced Earth	Employer, Manufacturer	Hornsby, NSW
Sarabjeet Singh	Contractor	Kreatives Actech	Employee	Craigieburn, Victoria

Stojan Lujic	Manager, Engineering and Estimating	Australian Precast Solutions, Lendlease	Employer, Manufacturer	Macksville, NSW
Susan Pardel	Acting Head Teacher, Engineering Drafting	TAFE NSW	RTO	Granville, NSW
Teresa Signorello	Executive Officer	Curriculum Maintenance Manager Building and Construction	Victorian Department of Education	National responsibility for developing the Purchasing Guide
Tim O'Shannessy	Contract Administrator	Richard Crookes Construction	Employee	Inverell, NSW
Tom Clark	National Technical Heavy Lift Manager	Fulton Hogan	Employer	National, metro and remote

Attachment D: Issues Raised by Stakeholders during consultation on the development of the Case for Change

Stakeholder Type	Issues Raised	IRC's Response to Issues Raised
<p align="center">Industry Reference Committee (IRC) Representatives</p>		<p>The Construction, Plumbing and Services IRC agreed that the issues raised were important and needed to be resolved. The IRC supports the proposal to develop a components for precast concrete installation.</p>
<p align="center">Peak Industry Bodies</p>	<p>National Precast Concrete Association of Australia (NPCAA) identified that lack of trained workers in the area was a problem for the industry in terms of safety and quality.</p>	
<p align="center">Employers (Non-IRC)</p>	<p>Shortage of people with skills and knowledge in precast concrete.</p> <p>Currently no formal training for builders, installers or contractors in manufacture, handling and installation of precast concrete.</p> <p>Safety incidents, injuries and near misses are on the rise and incorrect installation comprises structural integrity.</p> <p>Industry needs its own qualification to train new workers and CPD for existing workers to make it a safe workplace.</p> <p>Qualification needed to validate job applicant's experience.</p>	
<p align="center">Regulators</p>	<p>WA is the only jurisdiction that has licensing requirements for precast concrete installation.</p>	

	Victoria would be supportive of qualification for precast concrete installation.	
Registered Training Organisations (RTOs)	Training should be for precast handlers, manufacturers, transport, installers and the head contractor.	
Training Boards/Other		
State and Territory Training Authorities (STAs)	<p>Support for this Case was received from Tasmania, Victoria, WA and NSW. No response was received from the other states and territories.</p> <p>In NSW, the demand for skills in this area is likely to grow in the future and it is prudent for an accredited qualification to be developed in this skills area. NSW supports the Case for Change.</p>	
Unions		
<i>Please add other categories as appropriate</i>		

Attachment E: List of stakeholders to be contacted as part of the development of the Case for Endorsement

Name of Stakeholder	Title	Organisation	Organisation type (e.g. Employer, peak body, union, RTO, regulator)	Jurisdiction/town/city (e.g. NSW/Sydney)
In addition to the those listed at Attachment C, the following stakeholders will be contacted:				
Nathan Lee	High Risk Work and Industries Policy/Director	Safe Work Australia	Regulator	National
Erika Berzins	Manager Business Operations, Performance and Assurance	Department of Fair Trading NSW	Regulator/Licensing	NSW
Nigel Mainland	State Inspector	Safe Work NSW	Regulator/Licensing	NSW
		Queensland Building and Construction Commission	Regulator/Licensing	Qld
		Consumer, Building and Occupational Services	Regulator/Licensing	Tas
		Dept Mines, Industry Regulation and Safety	Regulator/Licensing	WA
		Access Canberra	Regulator/Licensing	ACT
		NT.Gov.au	Regulator/Licensing	NT
		SA.Gov.au	Regulator/Licensing	SA
Jennifer Mason	Senior Policy Advisor	Victorian Building Authority	Regulator/Licensing	VIC
Jennifer Lawrence	Senior Adviser Industry Policy	Master Builders Australia	Industry Association	National
		Housing Industry Association	Industry Association	National
Brook Noble	Area Manager	Concrete Institute of Australia	Peak body	National
Martin Sweeney	Managing Director	Perdon Group	Employer	National

Aaron Jamalzadeh	Director	TeleTraining – online professional development courses	Industry consultant	Sydney, NSW
		Construction Mining and Energy Industry Skills Council	Industry Skills Council	South Australia – metro and regional
		Construction Industry Training Board	Industry Training Advisory Body	South Australia – metro and regional
Adam Smith	Project Manager	Construction Training Fund	Industry Training Advisory Body	Western Australia – metro and regional
Kevin Swarts	Industry Liaison Officer	Keystone Tasmania	Industry Training Advisory Body	Tasmania metro – and regional
Neda Aleksic	Training Product Development	Industry Skills Advisory Council	Industry Training Advisory Body	Northern Territory – metro and regional
Vince Ball	Executive Director	Construction Industry Training Council	Industry Training Advisory Body	ACT
Bob Bowden	CEO	Building, Construction, Resources and Infrastructure Training Advisory Body	Industry Training Advisory Body	NSW
Susana Armstrong	Director – Strategy/Policy	Construction Skills Queensland	Industry Board	QLD
David Lingard	CEO	Master Concreters Australia	Peak Body	National
Graham Vile	President	Australasian Concrete Repair and Remedial Building Association (ACRA)	Industry Association	National
Chris Brooks	Business Unit Manager Precast	Ancon Australia	Employer	Sydney, Head Office but company operates nationally
Graeme Mauger	National EHS Operations Manager	Lendlease	Employer	National
David Cremona	National Director of Construction	Meriton	Employer	National
Brian Richards	Design Director	Built	Employer	National

Dave Higgon	Manager Employee Relations	Multiplex	Employer	National
David Beslich	Executive Director	Hansen Yuncken	Employer	National
David Roberts	Building Services	Hutchinson Builders	Employer	National
Joshua Kent		SafeWork NSW	Regulator	NSW
Kate Moore	National Manager Education and Research	Australian Institute of Architects	Peak Body	National
Patrick Cran	Technical Advisor	The Crane Industry Council of Australia	Peak Body	National
Brendan Mulherin	Trainer/Assessor	Construction Training College	RTO	Qld
Jennifer Low	Director/Work Health & Safety and Health Policy	Australian Chamber of Commerce and Industry	Peak Body	National
Jeff Pellerin	Product Manager	RamsetReid	Employer	National
Alan Mascrod	Operations Manager	Akura Pty Ltd	Employer	NSW
Barry Kearney	Education and Training Unit	CFMEU	Union	National
		Engineers Australia	Peak Body	National
		Austral Rigging – specialises in the installation of precast concrete panels	Employer	Melbourne Victoria
		Concrete Precast Systems	Employer	Mulgrave Victoria
		Kenny Constructions	Employer	Auburn NSW
		Diamond Precast Logistics	Employer	WA – Perth metro and regional
		All Rigging Solutions	Employer	WA – Perth metro and regional
		Queensland Panel Installation	Employer	Queensland – metro and regional

		United Precast	Employer	SA – metro and regional, including regional Victoria
		Ramco Precast	Employer	Lonsdale, SA
		Shorelands	Employer	Hudson Creek, NT
		Advanced Precast Australia	Employer	Victoria, NSW, QLD
		Holcim	Employer	National
<ul style="list-style-type: none"> • State Training Authorities • Safe Work – every state and territory • RTOs 				

Attachment F: Letters of support



To whom it may concern,

As a member of the Construction Industry for the past 30 years, I would like to offer my opinion regarding instigating formalized training for Precast concrete panels.

I started out in the industry pushing a broom and progressed to patching concrete from swinging stages, and trailing decks of form work shutters. I graduated to dogging duties (HRWL) and then rigging, both basic and intermediate. (I hold Advanced Riggers but that is for another work application).

I am currently employed with the above Registered Training Organization. Prior to this, I was the Operations Manager for Mulherin Rigging & Cranes Aust Pty Ltd, 48 Union Circuit Yatala. My duties included but were not limited to the installation of precast concrete panels.

Over the years I have worked with some very skilled installers and some very poorly skilled installers. I have seen extremely dangerous installations where the installer thought it was in order to support the end of three levels of a precast panel using a standard push/pull prop and a limited number of angle brackets to tie the panels in at each level. When we arrived on site, the prop had a 50-80mm bow in it so it was working very hard. The builder was not qualified to call the job unsafe and asked Mulherin Rigging to inspect the panel installation and provide a report.

The end result, MRCA removed approximately 26 previously installed panels, re-installed them in the correct manner and tied in as per Engineers' instructions. That particular installation Company is no longer operating. What concerns me is that the actual guys who installed these panels are still out there in the industry.

I believe by regulating the installation process, these unsafe practices have a better chance of being removed from the industry thus improving the safety process for installation of precast concrete elements and panels. By regulating, I mean the inclusion of both informal (RTO) and onsite training (formal training). The training should not be limited to installers but should include the entire chain of precast handlers, manufacturers, transport, installers and most especially, the Head Contractor. I believe this can be aligned with basic rigging training.

In conclusion, I believe this has been a long time coming and with the current level of experience in some areas of the construction industry this matter needs to be addressed urgently and with the highest priority.

If you need to contact me, please do not hesitate to use any of the contacts details below.

Regards,

A handwritten signature in black ink, appearing to read 'B. Mulherin', with a horizontal line extending to the right.

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To Whom it may concern,

It has been documented that the use of precast has been ever increasing as a method of construction. It is beneficial to many stakeholders in any given project. It crosses many industries from commercial, industrial and residential. In all areas the use of precast concrete can increase the speed of construction and this is advantageous to all.

With all advantages come inherent risk and precast concrete is not something that is any different. What is concerning as a member of the industry is the lack of formal training for the skills required to complete a build accurately and safely. Many current roles involve on the job training. This is something which should and could be improved with proper training. There is no formal training for builders, installers or contractors when it comes to the manufacture, handling or installation of precast concrete. The lack of regulatory body has equated to a fragmented system which overviews the process. Lastly, many codes and standards make reference to a 'competent person'; yet do not nominate who or what makes up this person. Without having this outlined, someone who may not be qualified may be in position to make a decision regarding how a safety critical activity may be performed. They may think they are performing an act correctly, unbeknownst to them. A formal qualification would assist in mitigating this.

Safety incidents, whether it be injuries or near misses are on the rise, something which could be mitigated through education. Furthermore, this would allow employers to determine if an employee or potential employee (if employing new staff) would be suitable to perform a given task prior to taking the risk by handing over the reins and trusting the person is as capable as they say they are.

As a supplier to the precast market, I frequently answer questions from the greater industry and can confirm there are those whom I have spoken to who would benefit greatly from participating in a formal training around the safe practices of precast concrete. Furthering this, there are many workers who participate in a build who do not fall under the scope of 'concreter' or 'rigger' as outlined in the national trade register; but would have just as much influence on how a precast product is manufactured, handled or installed. In all these instances a failure can result in the build having roll on effects (e.g. causing delays) as well as a potential safety event should something go wrong.

I support the need for formalised training around the precast concrete industry and would have staff within my company participate in it, should it ever become available. At the moment, all new staff within our company participate in house training to gain skills from those whom have been in the industry as well as reviewing current standards from around the globe.

Jeff Pellerin | Product Manager – Precast Lifting ANZ



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9-3-2020

Re; Precast Concrete Construction Qualification Development.

Actech is a supplier of a number of products to the precast industry which include but are not limited to concrete lifting systems.

Recently I have seen an increase in the number of new tradespeople conducting precast for builders that clearly have no idea about what precast is all about and I would like to share with you a recent example.

We received an order from a distributor for the client to collect. The nature of the items made me ask the customer when they collected what they were doing and he explained they were making concrete precast slabs for a builder. I explained they had the wrong product, had over specified the lifters and subsequently found they did not have a lift design prepared.

The customer came back with a new order which was duly collected but they then contacted me about changing the design without referral to the engineer. I again explained the problems with what they planned to do and again insisted they refer back to the engineer.

This is a clear example of a tradesperson undertaking a dangerous task in that they were lifting a ten tonne slab in the workplace and had no idea of what they were doing.

The main issues were

- Not understanding how different lifters work and their application.
- Required engineering support for lifting and installation.
- Not understanding that there are many factors that reduce a lifters performance including but not limited to;
 - o Edge distance.
 - o Concrete strength.
 - o Sling angle when lifting.
 - o Flexural strength of element to stop cracking.
 - o The role of embedment.



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To whom it may concern

I am writing to offer support for the development of a National Qualification in Precast Manufacturing and Erection.

Akura are a commercial builder and manufacturer of commercial building products based in Regional NSW and Sydney. Our manufacturing facility encompasses 2 factories focused on Precast Panels and Structural Steel elements. The Precast facility employs 14 staff and operates 5-6 days a week.

Due to rapid growth we have been looking to employ new team members with experience primarily in Concrete & Carpentry, ideally with precast knowledge and experience. This has been a very difficult exercise mostly as there is not a lot of experienced people available. The process of validating an applicant's experience is made more difficult by not having a National Qualification to reference or rely upon.

I strongly support the development of a Precast Qualification. The key areas I suggest are

- Quality systems and importance of quality
- Measuring accuracy and techniques
- Fundamentals of set out – squareness, basic geometry, volume & weight calculations
- Concrete characteristics – strengths, admixtures, components
- Steel in concrete – types, basic functions
- Accessories and fitments
- Class system and determining the requirement, measuring the outcome
- Bed Lifting methods and hardware
- Basic panel engineering
- Precast panel element design and how they used in buildings
- Placement of panels
- Connections and Propping
- Erection and transport
- In-situ elements and how they work with precast

If I can assist further with this initiative, please let me know

Kind Regards,

Alan Mascord

Operations Manager

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