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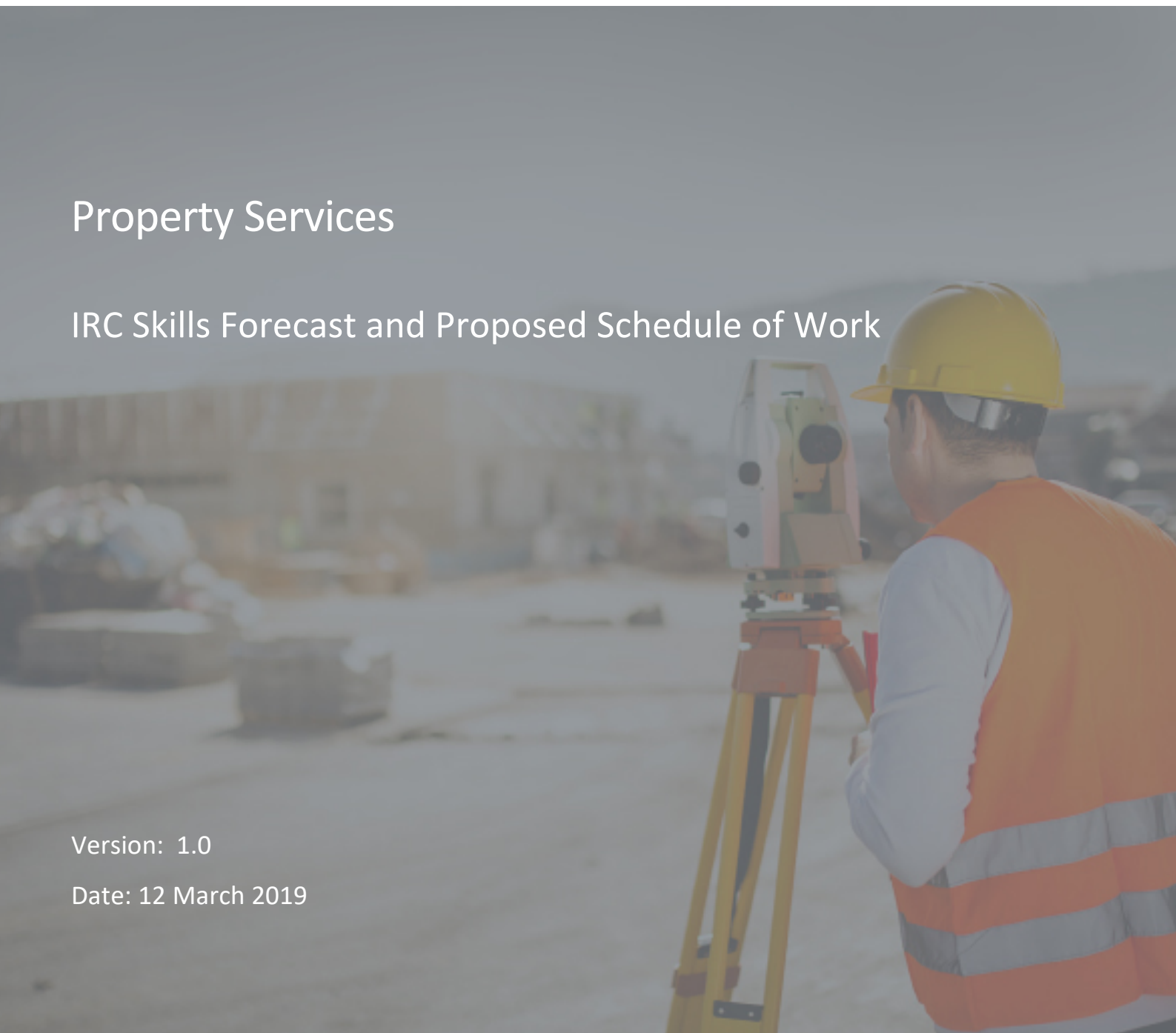
Developing industry skills

Property Services

IRC Skills Forecast and Proposed Schedule of Work

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Property Services

IRC Skills Forecast and Proposed Schedule of Work

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Property Services

IRC Skills Forecast and Proposed Schedule of Work

Executive Summary

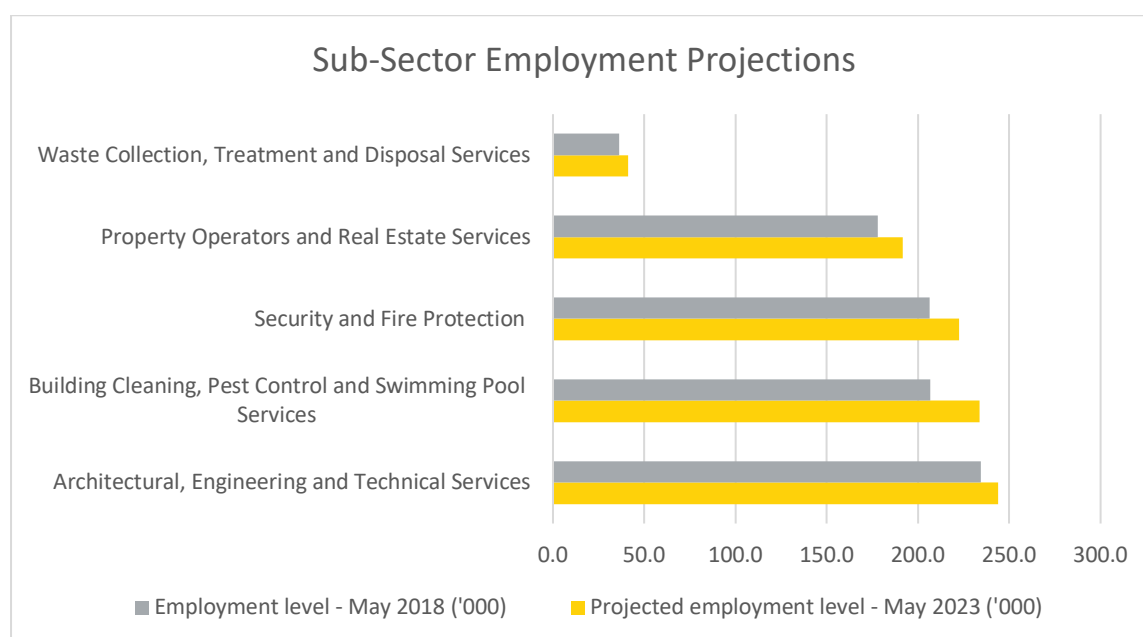
Sector Overview

The Property Services industry bookends the construction industry and encompasses a broad range of sectors providing services to the built environment - pre-build; design and compliance assessment, and post-build; sale, management, maintenance, cleaning and waste services.

Employment Outlook

The industry is growing three times faster than the construction industry, and as a collective, employs close to 1 million workers, in parity with the construction industry. The highest growth is forecast in the architectural, engineering and technical services sector.

Graph i: *Projected Employment Growth by Sub-Sector – Five Years to May 2023¹*



¹ Labour Market Information Portal, 2018 Industry Projections – five years to May 2023, accessed online 12/02/19 at <http://lmip.gov.au/default.aspx?LMIP/GainInsights/EmploymentProjections>

Key Skills Needs

The industry is riding three waves of change and opportunity from digital disruption, regulation and consumer demand. The result is an increased need for highly skilled para professionals with deep technical skill sets and knowledge domains. These para professionals are supporting the industry to deliver digitally integrated services.

Key Drivers for Change

The rise, and rapid evolution, of digitisation and new technologies, and its enabling effect across the built environment is fuelling an industry 4.0 term 'the PropTech' industry. Building Information Modelling (BIM) is the enabler of 'digital integrated delivery' across the industry. The effects of increased urbanisation, environmental sustainability, heightened regulation, and growing consumer demand is leading to a convergence of services provided and thus the need for more diverse skill sets among property services professionals.

Current Projects

In the last year the IRC has completely overhauled and delivered new qualification sets in its two biggest sectors, security and real estate. Projects are well advanced in Fire Protection, Home Sustainability, Waste Management, Urban Pest Management, Swimming Pool and Spa, Building Design, Technical Security and Risk. Throughout these activities the IRC has supported the Minister's priorities of reducing duplication and further streamlining training packages and increasing industries shared understanding of the sector interactions.

Proposed Work

The IRC is proposing projects to further the skill development of the sector. These include:

- a review of the surveying qualifications to meet significant skill shortages
- qualifications and skill sets in building information modelling to drive growth in this rapidly emerging transformational technology
- a new qualification in built environment auditing to meet emerging compliance and reporting requirements
- a new pathways qualification to introduce school pathways into this growing industry.

Skills Forecast

Administrative Information

Skills Services Organisation (SSO):

Artibus Innovation

Artibus Innovation has been commissioned by the Australian government to support the IRCs for Construction, Plumbing and Services and Property Services. We look at skills training and qualifications for occupations in the building and property industries. We talk to employers, workers, trainers, regulators and other industry stakeholders. We explore current and anticipated skills needs, examine data on enrolments and outcomes, and make recommendations for change.

Industry Reference Committee (IRC):

Property Services

The Property Services IRC is responsible for national training package qualifications relevant to: waste collection, treatment and disposal services; property operations and real estate services; architectural, engineering and technical services; public order and safety; swimming pool and spa servicing; facility management; surveying and spatial information services; building cleaning and pest control; fire protection; strata management; and access consulting.

Sector Overview

The property services training package is comprised of a diverse range of sectors including:

- Real Estate Services, Strata Management and Facility Management
- Architectural Services
- Engineering and Technical Services
- Waste Collection, Treatment, and Disposal Services
- Building Cleaning Services
- Pest Control Services
- Security Services
- Fire Protection and Fire Safety Services
- Swimming Pool and Spa Servicing.

CPP Property Services Industry Sub-Sectors

Real Estate Services, Strata Management and Facility Management

The real estate sector services two markets, residential and commercial. Combined they account for 39,163 businesses², which are characterised by small, self-employed agents and property managers.

² IBISWorld, October 2018, IBISWorld Industry Report L6720: Real Estate Services in Australia, accessed online 11/01/19 at <http://clients1.ibisworld.com.au/reports/au/industry/default.aspx?entid=539> (p3)

In the past five years (2013-2017) residential property operators have faced competition from an increase in owner-lessors who are not utilising real estate agent services.³ The geographic distribution of operators is influenced by population demand pressures,⁴ with most operators located in the eastern states of New South Wales (38.3%)⁵, Victoria (20.2%)⁶ and Queensland (25.8%).⁷

The primary activities undertaken in this industry are:

- Conveyancing (other than by qualified legal practitioners)
- Real estate agency, auctioning, body corporate management and brokering
- Real estate management
- Real estate title transfers (other than by qualified legal practitioners)
- Timeshare apartment managing
- Title searching
- Appraisal of real estate.⁸

State and territory specific licensing requirements apply to this sector.

Architectural Services

There are 13,059⁹ businesses, predominantly small firms and sole proprietors, in the Architectural Services sector. Businesses that have developed strong green building credentials have provided a new point of difference, setting themselves apart from competitors¹⁰. The geographic distribution of operators aligns with population distribution, economic activity and construction activity.¹¹ The industry is heavily concentrated across the eastern seaboard, with New South Wales (32.7%)¹², Victoria (30.7%)¹³ and Queensland (17.2%)¹⁴ accounting over 80%¹⁵ of operators.

The primary activities undertaken in this sector are:

- Architectural consultancy services (excluding construction management)
- Architectural design and drafting services
- Architectural landscaping services
- Town planning services.¹⁶

³ Ibid (p4)

⁴ Ibid (p16)

⁵ Ibid (p15)

⁶ Ibid (p15)

⁷ Ibid (p15)

⁸ Ibid (p2)

⁹ IBISWorld, June 2018, IBISWorld Industry Report M691: Architectural Services in Australia, accessed online 11/01/19 at <http://clients1.ibisworld.com.au/reports/au/industry/default.aspx?entid=550> (p3)

¹⁰ Ibid (p7)

¹¹ Ibid (p17)

¹² Ibid (p16)

¹³ Ibid (p16)

¹⁴ Ibid (p16)

¹⁵ Ibid (p17)

¹⁶ Ibid(p2)

A specialist area of the architectural industry is Access Consulting, which is concerned with accessible facilities and built environments. Access Consulting's primary activities include accessibility appraisals, audits, design, research, training, information on codes, and advice on good practice.¹⁷

Licensing requirements apply to this sector in some states and territories.

Engineering and Technical Services

This sector is comprised of 3,430¹⁸ businesses, characterised by many micro businesses, 95.5%¹⁹ of them employ less than 20 people. The four largest businesses: Fugro Holdings (Australia) Pty Ltd, AAM Pty Ltd, Jacobs Australia Holdings Company Pty Ltd and Veris Limited²⁰ account for less than 20%²¹ of industry revenue. The geographic distribution of operators aligns with population concentration and economic activity²², with states such as Western Australia (20.0%)²³ and Queensland (22.0%)²⁴ having a slightly higher distribution of operators due to demand in these areas for mapping and mine surveying.²⁵

The primary activities undertaken in this industry are:

- Aerial surveying service
- Cadastral surveying service
- Engineering surveying service
- Geodetic surveying on a contract or fee basis
- Hydrographic and oceanographic surveying
- Land surveying service
- Map preparation service
- Mining surveying service
- Photogrammetry surveying on a contract or fee basis
- Seismic surveying service.²⁶

Licensing requirements apply to this sector in some states and territories.

Waste Collection, Treatment, and Disposal Services

The Waste Collection sector is comprised of 1,974²⁷ businesses, characterised by small operators, over 96%²⁸ of which employ fewer than 20 staff or are non-employing. The sector has four major operators

¹⁷ Association of Consultants in Access Australia, 2018, Accessibility in the Built Environment, accessed online 11/01/19 at <http://www.access.asn.au/index.php/accessibility-in-the-built-environment>

¹⁸ IBISWorld, February 2018, IBISWorld Industry Report M6922: Surveying and Mapping Services, accessed online 14/01/19 at <http://clients1.ibisworld.com.au/reports/au/industry/default.aspx?entid=551> (p4)

¹⁹ Ibid (19)

²⁰ Ibid (24)

²¹ Ibid (19)

²² Ibid (p18)

²³ Ibid (p17)

²⁴ Ibid (p17)

²⁵ Ibid (p18)

²⁶ Ibid (p2)

²⁷ IBISWorld, August 2018, IBISWorld Industry Report D2911: Solid Waste Collection Services in Australia, accessed online 14/01/2019 at <http://clients1.ibisworld.com.au/reports/au/industry/default.aspx?entid=5023> (p4)

²⁸ Ibid (p18)

which account for over 40%²⁹ of sector revenue (2017-18). The largest market share (18.5%)³⁰ is held by Cleanaway Waste Management Limited. The geographic distribution of operators is related to population (household numbers) and business activity³¹ and for this reason New South Wales (32.9%)³² and Victoria (28.6%)³³ receive the highest proportion of industry revenue.

The primary activities undertaken in the Waste Collection sector are:

- Bin hiring and waste collection service
- Garbage collection service
- Solid hazardous waste collection service
- Solid industrial waste collection service
- Metal barrel/skip hiring and waste collection service
- Night soil collection service
- Portable toilet hiring and waste collection service
- Rubbish collection service
- Solid waste collection service
- Solid waste haulage service (local).³⁴

Licensing is not applicable to this sector.

The Waste Treatment and Disposal industry is comprised of 74³⁵ businesses, which are predominantly larger operators due to acquisition activity and outsourcing of services by local councils.³⁶ There are four major operators in the industry who account for just under 50%³⁷ of the market share, the largest of which is Suez Recycling & Recovery Holdings Pty Limited (22.4% market share).³⁸ Some operators specialise in a specific market segment such as medical waste disposal services.³⁹ The geographic distribution of operators is aligned with the concentration of populations, industrial manufacturing and construction activity, and the extent of government involvement,⁴⁰ for these reasons New South Wales (29.8%)⁴¹ and Victoria (26.6%)⁴² account for a large share of industry activity.

The primary activities undertaken in the Waste Disposal and Treatment sector are:

- Garbage disposal services
- Hazardous waste treatment and disposal services

²⁹ Ibid (p18)

³⁰ Ibid (p22)

³¹ Ibid (p17)

³² Ibid (p16)

³³ Ibid (p16)

³⁴ Ibid (p2)

³⁵ IBISWorld, May 2018, IBISWorld Industry Report D2921: Waste Treatment and Disposal Services in Australia, accessed online 14/01/19 at <http://clients1.ibisworld.com.au/reports/au/industry/default.aspx?entid=5024> (p4)

³⁶ Ibid (p19)

³⁷ Ibid (p24)

³⁸ Ibid (p24)

³⁹ Ibid (p19)

⁴⁰ Ibid (p18)

⁴¹ Ibid (p17)

⁴² Ibid (p17)

- Non-hazardous waste treatment and disposal services
- Operating landfills
- Operating other waste treatment facilities
- Rubbish dump or tip operation
- Sanitary disposal services
- Septic tank pumping or cleaning services (except repairs and maintenance).⁴³

State and territory specific licensing requirements apply to waste management facilities.

Building Cleaning Services

There are 29,517⁴⁴ businesses operating in the industry, predominantly comprised of more than 90% small operators.⁴⁵ The geographic distribution of operators is influenced by population density and number of institutions⁴⁶ and for these reasons a majority of businesses are located in New South Wales (35.3%)⁴⁷ and Victoria (25.7%).⁴⁸

The primary activities in this industry are:

- Bathroom and toilet cleaning
- Building interior and exterior cleaning (excluding sandblasting and steam cleaning)
- Chimney and duct cleaning
- Gutter cleaning
- Janitorial services
- House and residential building cleaning
- Office and commercial building cleaning
- Road and street cleaning
- Transport equipment cleaning
- Window cleaning.⁴⁹

Licensing is not applicable to this sector.

⁴³ Ibid (p2)

⁴⁴ IBISWorld, July 2018, IBISWorld Industry Report N7311: Commercial Cleaning Services in Australia, accessed online 15/01/2019 at <http://clients1.ibisworld.com.au/reports/au/industry/default.aspx?entid=574> (p4)

⁴⁵ (p23)

⁴⁶ Ibid (p18)

⁴⁷ [Ibid](#) (p4)

⁴⁸ Ibid (p4)

⁴⁹ Ibid (p2)

Pest Control Services

This sector is comprised of 2,897⁵⁰ businesses, the majority of which are small private operators (82.9%)⁵¹ with the exception of two major players: Rentokil Pty Limited (7.8%)⁵² and Anticimex Pty Ltd (10.7%).⁵³ Merger and acquisition activity by major players is expected to continue over the next five years (2018-2022)⁵⁴. The geographic distribution of operators is influenced by population size and climatic conditions⁵⁵, the latter being a significant factor, with operators heavily concentrated in the warmer, humid, tropical areas of New South Wales (34.2%)⁵⁶ and Queensland (32.4%).⁵⁷

The primary activities in the industry are:

- Exterminating services*
- Fumigating services*
- Insect control services*
- Pest control services*
- Pest inspection report services*
- Termite control services*
- Weed control services*. ⁵⁸

** except agricultural and forestry*

License requirements are applicable to this sector and all operators apart from Western Australia (WA) must complete the skill set CPPSS00046. In WA, a provisional licence may be granted after completing CPPPMT3006. The Certificate III must be achieved over a period of 12 months to continue practicing.

Security Services

This sector is comprised of 6,018⁵⁹ businesses, most of which are small local operators (81.3%)⁶⁰ who act as sub-contracted agents for larger businesses.⁶¹ There are three major operators in the industry: Linfox Proprietary Limited (5.8%)⁶², SIS Australia Holdings Pty Ltd (7.9%)⁶³ and Wilson Parking Australia 1992 Pty Ltd (5.0%),⁶⁴ collectively they account for approximately 18.7% of industry revenue in 2016-17.⁶⁵ The geographic distribution of operators is influenced by concentration of business clients and

⁵⁰ IBISWorld, August 2018, IBISWorld Industry Report N7312: Building Pest Control Services in Australia, accessed online 14/01/2019 at <http://clients1.ibisworld.com.au/reports/au/industry/default.aspx?entid=573> (p4)

⁵¹ Ibid (p22)

⁵² Ibid (p22)

⁵³ Ibid (p22)

⁵⁴ Ibid (p18)

⁵⁵ Ibid (p17)

⁵⁶ Ibid (p16)

⁵⁷ Ibid (p16)

⁵⁸ Ibid (p2)

⁵⁹ IBISWorld, August 2018, IBISWorld Industry Report O7712: Investigation and Security Services in Australia, accessed online 14/01/2019 at <http://clients1.ibisworld.com.au/reports/au/industry/default.aspx?entid=572> (p4)

⁶⁰ Ibid (p24)

⁶¹ Ibid (p19)

⁶² Ibid (p24)

⁶³ Ibid (p24)

⁶⁴ Ibid (p24)

⁶⁵ Ibid (p19)

population size.⁶⁶ For this reason a majority of operators are located in New South Wales (35.9%),⁶⁷ Victoria (24.5%)⁶⁸ and Queensland (19.1%).⁶⁹ These states accounted for 79.5%⁷⁰ of industry revenue for 2018.

The primary activities in this industry are:

- Armoured car services (cash transfers)
- Bodyguard services
- Burglary protection services
- Detective work or private investigative services
- Locksmith services
- Nightwatchman services
- Security and protection services (except police)
- Security guard services
- Security service monitoring
- Security alarm monitoring.⁷¹

Licensing requirements apply to this occupation in all states and territories.

Fire Protection and Fire Safety Services

There are 3,310⁷² businesses operating in the industry, of which 97.0%⁷³ employ less than 20 employees and 44.3%⁷⁴ operate as sole proprietors or partners. The three major operators, UTC Australia Commercial Holdings Pty Ltd (8.4%),⁷⁵ Johnson Controls Holding Australia Pty Ltd (5.0%),⁷⁶ and Wormald Australia Pty Ltd (5.0%)⁷⁷ are expected to increase their share of the commercial market and dominate specialised service segments over the next five years (2018-2022).⁷⁸ The geographic distribution of operators is influenced by construction activity and population size.⁷⁹ The majority of operators are located in the capital cities of New South Wales (36.8%),⁸⁰ Victoria (24.3%)⁸¹ and Queensland (19),⁸² which have a large share of high-rise apartments and offices that require complex fire and security systems.⁸³

⁶⁶ Ibid (p18)

⁶⁷ Ibid (p17)

⁶⁸ Ibid (p17)

⁶⁹ Ibid (p17)

⁷⁰ Ibid (p18)

⁷¹ Ibid (p2)

⁷² IBISWorld, December 2018, IBISWorld Industry Report E3234: Fire and Security Alarm Installation Services in Australia, accessed online 14/01/2019 at <http://clients1.ibisworld.com.au/reports/au/industry/default.aspx?entid=327> (p3)

⁷³ Ibid (p20)

⁷⁴ Ibid (p20)

⁷⁵ Ibid (p25)

⁷⁶ Ibid (p25)

⁷⁷ Ibid (p25)

⁷⁸ Ibid (p20)

⁷⁹ Ibid (p19)

⁸⁰ Ibid (p18)

⁸¹ Ibid (p18)

⁸² Ibid (p18)

⁸³ Ibid (p19)

The primary activities in this industry are:

- Fire alarm system installation
- Fire sprinklers installation
- Closed circuit video surveillance system installation
- Security systems installation
- Smoke detectors installation
- Repair of installed fire or burglar security alarm systems.⁸⁴

In recent times, fire protection and safety compliance has been in the national and international spotlight due to a number of fires in high rise buildings (Lacrosse Tower in 2014, Grenfell Tower in 2017 and Neo200 in early 2019). Issues of non-conforming materials, non-compliant building products and responsibility in the supply chain have recently been considered by the Building Ministers' Forum through a report by Professor Peter Shergold and Ms Bronwyn Weir, on *Assessment of the Effectiveness of Compliance and Enforcement Systems for Building and Construction Industry across Australia*. This report is further discussed in the key drivers for change section.

Licensing is not currently applicable to this occupation but national accreditation schemes exist.

Swimming Pool and Spa Servicing

The sector is comprised of 1,082⁸⁵ businesses, predominantly small, independent and locally owned and there are no major players.⁸⁶ The geographic distribution of operators is influenced by warm climatic conditions and population size and for these reasons the coastal regions of northern New South Wales (29.6%)⁸⁷ and Queensland (30.9%)⁸⁸ have a disproportionately high number of operators.⁸⁹

The primary activities in this industry are:

- Routine maintenance of domestic, commercial and public swimming pools and spas⁹⁰
- Treatment of water quality problems
- Service and repair of key components of domestic, commercial and public swimming pools and spas.⁹¹

Varying licensing requirements are applicable to this sector in Queensland and South Australia, dependent on the scope and cost of work.

⁸⁴ Ibid (p2)

⁸⁵ IBISWorld, July 2018, IBISWorld Industry Report OD4034: Swimming Pool and Spa Equipment Stores in Australia, accessed online 14/01/2019 at <http://clients1.ibisworld.com.au/reports/au/industry/default.aspx?entid=4034> (p3)

⁸⁶ Ibid (p17)

⁸⁷ Ibid (p15)

⁸⁸ Ibid (p15)

⁸⁹ Ibid (p16)

⁹⁰ training.gov.au, Qualification details: CPP31212 - Certificate III in Swimming Pool and Spa Service (Release 2), accessed online 30/01/18 at <https://training.gov.au/Training/Details/ CPP31212>

⁹¹ training.gov.au, Qualification details: CPP41312 - Certificate IV in Swimming Pool and Spa Service (Release 2), accessed online 30/01/18 at <https://training.gov.au/Training/Details/ CPP41312>

Peak Bodies and Associations

- Association of Building Sustainability Association
- Association of Consultants in Access Australia
- Australian Environmental Pest Managers Association
- Australian Graphic Design Association
- Australian Environmental Pest Managers Association
- Australian Institute of Building Surveyors
- Australian Security Industry Association
- Building Service Contractors Association of Australia
- Building Designers Australia
- Consulting Surveyors National
- Facility Management Association of Australia
- Fire Protection Association of Australia
- National Association of Building Designers
- Property Services Industry Advisory Body
- Property Council of Australia
- Prudential Investment Company
- Real Estate Institute of Australia
- Royal Institute of Chartered Surveyors Australia
- Strata Community Australia
- Swimming Pool and Spa Association of Australia
- Swimming Australia
- Surveying and Spatial Sciences Institute
- Waste Management Association of Australia

Property Services Qualifications

Table 1: CPP Property Services Qualifications by Sub-Sector

Real Estate Services, Strata Management and Facility Management	No. of Enrolments 2017⁹²	No. of Completions 2017^{93**}
CPP30211 Certificate III in Property Services (Agency)	1,515	116
CPP30311 Certificate III in Property Services (Operations)	468	4
CPP40307 Certificate IV in Property Services (Real Estate)	22,225	4,046
CPP40407 Certificate IV in Property Services (Stock and Station Agency)	144	136
CPP40507 Certificate IV in Property Services (Business Broking)	96	98
CPP40611 Certificate IV in Property Services (Operations)	324	171
CPP50307 Diploma of Property Services (Agency Management)	3,785	418
CPP50409 Diploma of Property Services (Business Broking)	N/A*	N/A*
CPP50511 Diploma of Property Services (Asset and Facility Management)	60	29
CPP60211 Advanced Diploma of Property Services (Asset and Facility Management)	N/A*	N/A*
CPP30416 Certificate III in Strata Community Management	N/A*	N/A*
CPP40516 Certificate IV in Strata Community Management	91	50
CPP50316 Diploma of Strata Community Management	N/A*	N/A*
Architectural Services		
CPP41110 Certificate IV in Home Sustainability Assessment	36	18
CPP41212 Certificate IV in NatHERS Assessment	445	119
CPP40115 Certificate IV in Building Design Drafting	254	16
CPP50911 Diploma of Building Design	3,714	455
CPP51012 Diploma of Residential Building Energy Assessment	N/A*	N/A*
CPP80113 Graduate Certificate in Building Design	0	3

⁹² NCVER, 2019, VOCSTATS Portal – Total VET program enrolments, accessed online on 19/02/2019 at: <http://vocstats.ncver.edu.au/>

⁹³ NCVER, 2019, VOCSTATS Portal – Total VET program completions, accessed online on 19/02/2019 at: <http://vocstats.ncver.edu.au/>

CPP80213 Graduate Diploma of Building Design	18	4
Engineering and Technical Services		
CPP20116 Certificate II in Surveying and Spatial Information	24	N/A*
CPP30216 Certificate III in Surveying and Spatial Information Services	226	107
CPP40216 Certificate IV in Surveying	241	90
CPP40316 Certificate IV in Spatial Information Services	43	2
CPP50216 Diploma of Spatial Information Services	22	8
CPP50116 Diploma of Surveying	378	151
CPP60116 Advanced Diploma of Surveying	85	57
CPP40811 Certificate IV in Access Consulting	30	29
CPP50711 Diploma of Access Consulting	29	29
CPP80313 Graduate Diploma of Access Consulting	N/A*	N/A*
Waste Collection, Treatment, and Disposal Services		
CPP20411 Certificate II in Waste Management	6	3
CPP30711 Certificate III in Waste Management	70	20
CPP40911 Certificate IV in Waste Management	41	34
CPP50811 Diploma of Waste Management	0	0
Building Cleaning Services		
CPP20611 Certificate II in Cleaning Operations	5376	495
CPP30316 Certificate III in Cleaning Operations	1,923	503
CPP40416 Certificate IV in Cleaning Management	104	34
Pest Control Services		
CPP30115 Certificate III in Urban Pest Management	993	48
Security Services		
CPP10107 Certificate I in Security Operations	139	105
CPP20212 Certificate II in Security Operations	19,526	13,309
CPP20307 Certificate III in Technical Security	46	5
CPP30411 Certificate III in Security Operations	11,817	7,898
CPP30507 Certificate III in Technical Security	67	6
CPP30607 Certificate III in Investigative Services	684	272

CPP40707 Certificate IV in Security and Risk Management	585	227
CPP50611 Diploma of Security and Risk Management	428	265
Fire Protection and Fire Safety Services		
CPP20511 Certificate II in Fire Protection Inspection and Testing	1,261	386
CPP30811 Certificate III in Fire Protection Inspection and Testing	53	19
CPP20518 Certificate II in Fire Protection and Safety Measures	N/A*	N/A*
CPP30818 Certificate III in Fire Protection and Safety Measures	N/A*	N/A*
Swimming Pool and Spa Servicing		
CPP31212 Certificate III in Swimming Pool and Spa Service	222	74
CPP41312 Certificate IV in Swimming Pool and Spa Service	28	23

**no enrolment data found on NCVER/VOCSTATS website*

***completion numbers are not indicative of attrition, as qualification durations are typically longer than 12 months*

Challenges and Opportunities

The Challenges

The Property Services industry is set to experience a number of major changes in the future. These changes will both disrupt and innovate the industry providing opportunities for growth as well as redundancies to some skills and occupations.

Increased Urbanisation

The increasing urbanisation of major cities presents critical opportunities for the property services sector, particularly in areas such as security,⁹⁴ infrastructure and building maintenance and the energy efficiency of buildings.⁹⁵ Poorly planned urbanisation could result in infrastructure becoming strained and inefficient as populations expand.⁹⁶ Urbanisation drives an increase in the need for at-home security systems, pest control and waste services and heightens the need for buildings to be more

⁹⁴ PWC, 2016, Five Megatrends and Their Implications for Global Defence & Security, accessed online 31/01/18 at <https://www.pwc.com/gx/en/government-public-services/assets/five-megatrends-implications.pdf>

⁹⁵ PWC, 2014, Real Estate 2020: Building the future, accessed online 30/01/18 at <https://www.pwc.com/sg/en/real-estate/assets/pwc-real-estate-2020-building-the-future.pdf>

⁹⁶ PWC, 2016, Five Megatrends and Their Implications for Global Defence & Security, accessed online 31/01/18 at <https://www.pwc.com/gx/en/government-public-services/assets/five-megatrends-implications.pdf>

eco-efficient.⁹⁷ Meeting the challenge of urbanisation will require investment and innovation from both the private sector and funding from governments.⁹⁸

Convergence of Industries

Hyper complex issues such as climate change and rapid urbanisation requires responses and collaboration between planning, policy, innovation and technology – all key drivers of the property industries sectors.⁹⁹ Cross-sector collaboration and convergence of industries means that the property services industry is being disrupted by the introduction of new technology and the increase in environmental sustainability regulations and standards for buildings. This disruption is leading to a change in the skills profile needed among workers. The industry needs T-Shaped professionals, which is a person that has both depth and breadth in their knowledge and skillset, as opposed to an I-Shaped professional, who has a narrow skill set in one particular area.¹⁰⁰ A Property Services T-Shaped professional will have training in a specific area, but also have technological literacy and knowledge and comprehension of the environmental sustainability industry and the building codes and regulations it impacts.

Customer Demand

Consumers are increasingly empowered with knowledge of the products they are consuming and how their consumption affects the world around them. Consumers are driving transparent and competitive pricing, energy-efficient, environmentally friendly products, and flexible, more personalised ways to interact with businesses.¹⁰¹ For the property services industry, this means that consumers are helping drive the shift towards digital integrated delivery, the convergence of services within businesses as well as the increase in demand for smart and green buildings.¹⁰²

Digitalisation

There are two major technological advances that will affect the Property Services training package. The first is automation and research suggests that in the property service industry, real estate sales agents have an 85.2% probability of being automated.¹⁰³ Secondly, Building Information Modelling (BIM). BIM is an evolving technology, that in its first instance will allow property services professionals to access 3D walk-through animations for marketing, track the building's sustainability rating and view and record sales, leasing and ownership information all in the one place.¹⁰⁴ As the technology matures

⁹⁷ PWC, 2014, Real Estate 2020: Building the future, accessed online 30/01/18 at <https://www.pwc.com/sg/en/real-estate/assets/pwc-real-estate-2020-building-the-future.pdf>

⁹⁸ Ernst & Young, 2016, The upside of disruption: Megatrends shaping 2016 and beyond, accessed online 31/01/18 at [http://www.ey.com/Publication/vwLUAssets/EY-the-upside-of-disruption/\\$FILE/EY-the-upside-of-disruption.pdf](http://www.ey.com/Publication/vwLUAssets/EY-the-upside-of-disruption/$FILE/EY-the-upside-of-disruption.pdf)

⁹⁹ Ibid

¹⁰⁰ Foltynowicz, Zenon, 2013, T-shaped Professionals, accessed online on 27/03/2018 at:

https://www.researchgate.net/publication/264419889_T-shaped_Professionals

¹⁰¹ Ernst & Young (2016) The upside of disruption: Megatrends shaping 2016 and beyond, accessed online 31/01/18 at [http://www.ey.com/Publication/vwLUAssets/EY-the-upside-of-disruption/\\$FILE/EY-the-upside-of-disruption.pdf](http://www.ey.com/Publication/vwLUAssets/EY-the-upside-of-disruption/$FILE/EY-the-upside-of-disruption.pdf)

¹⁰² Jadhav, NY, 2016, Green and Smart Buildings, Springer, Singapore

¹⁰³ PWC, 2015, A Smart Move: Future-proofing Australia's workforce by growing skills in science, technology, engineering and maths (STEM), accessed online 19/01/2018 at <https://www.pwc.com.au/stem.html>

¹⁰⁴ Azhar, S et al. (2012) 'Building information modeling (BIM): now and beyond', *Australasian Journal of Construction Economics and Building*, 12 (4) 15-28

it will become the enabler of a virtual representation of the built environment, connecting and integrating all services provided to and for a property throughout its lifecycle.

Sustainability

With the need for action on climate change and sustainability becoming a focal point globally, so too comes an increased emphasis on the use of renewable energies and green buildings in the built environment. Green buildings significantly reduce the negative impact that buildings have on the environment by incorporating sustainable design, construction and operational elements.¹⁰⁵ In addition, the waste treatment and disposal industry is heavily influenced by government compliance such as the National Waste Policy of 2009 that encourages recycling and raised landfill disposal costs.¹⁰⁶

Product Regulation

These drivers for change are not only going to impact jobs and business models, but are also going to challenge current regulations in fire safety and testing, waste disposal and treatment, and building sustainability. The 2017 Senate inquiry into *Non-conforming building products* identified substantial shortcomings in Australia's regulatory regimes covering the import, installation and use of non-conforming building products.¹⁰⁷ It will be challenging to find the right balance between innovation and regulation in order to create regulatory regimes for the future of the industry, which will allow for further innovation and change while making sure standards and policy are adhered to.¹⁰⁸

The Opportunities

With challenges come opportunities to support the industry's trajectory to 'Industry 4.0 of the built environment', supporting streamlined, digitally integrated, data rich, environmentally sustainable systems and services. In the process of this transformation new technologies need to be adopted, and the workforce will need to be trained, re-trained and upskilled with a broader range of skills - T-shaped professional. The ongoing review and redevelopment of the property services training package presents the opportunity to do this. Of significant relevance to this industry are four cross-sector projects in automation, big data, cyber security and environmental sustainability.

Building Information Modelling (BIM) has the potential to disrupt and challenge all of the property services' current processes, tasks and occupations. The IRC has been actively researching this area to determine how this disruption will occur, what occupations will be affected and what implications this has for the training package. The outcomes of this research has lead to the proposal for a series of new qualifications in BIM for application across the built environment, housed within the Property Services Training Package but applicable across the supply chain.

¹⁰⁵ Green Building Council of Australia, 2018, *What is Green Building?* <https://www.gbca.org.au/about/what-is-green-building/>

¹⁰⁶ IBISWorld, November 2017, IBISWorld Industry Report D2921: Waste Treatment and Disposal Services in Australia, accessed online 01/02/18 at <http://clients1.ibisworld.com.au/reports/au/industry/default.aspx?entid=5024>

¹⁰⁷ Senate Economic References Committee (6 September 2017), *Non-conforming Building Products Inquiry: Interim Report – Aluminium composite cladding*, p.7, accessed 18/04/2018.

¹⁰⁸ Ernst & Young (2016) *The upside of disruption: Megatrends shaping 2016 and beyond*, accessed online 31/01/18 at [http://www.ey.com/Publication/vwLUAssets/EY-the-upside-of-disruption/\\$FILE/EY-the-upside-of-disruption.pdf](http://www.ey.com/Publication/vwLUAssets/EY-the-upside-of-disruption/$FILE/EY-the-upside-of-disruption.pdf)

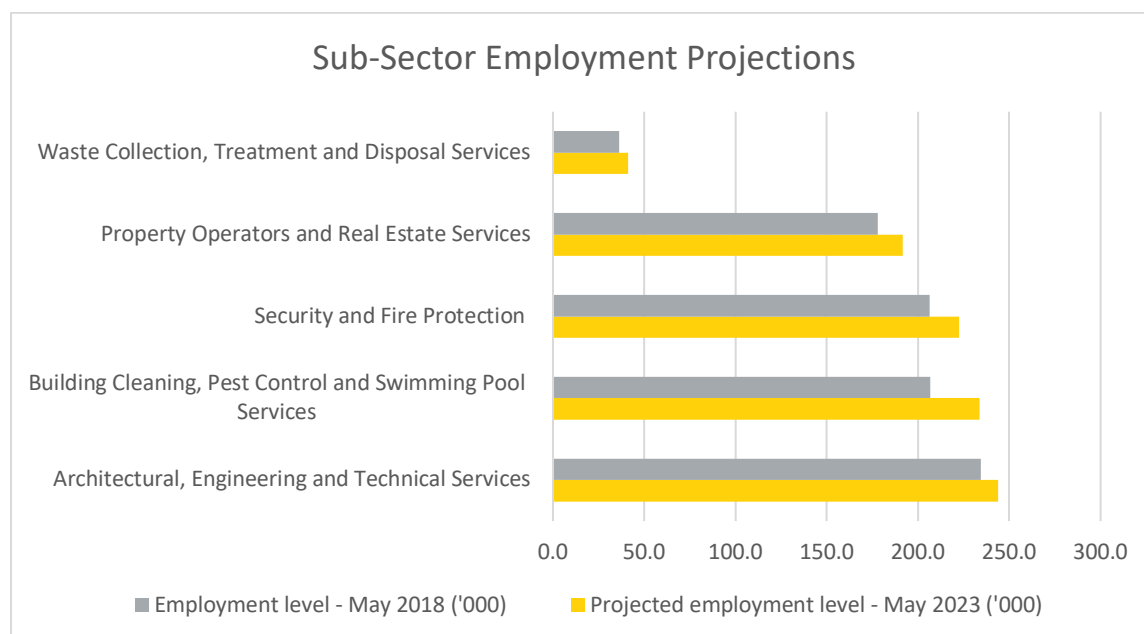
Employment and Skills Outlook

This section explores current and projected employment levels in the Property Services sector.

Employment Outlook

All Property Services sectors are growing. The graphs below show the sub-sector and occupation employment projections for the next five years in the Property Services Sector.

Graph 1: *Projected Employment Growth by Sub-Sector – Five Years to May 2023*¹⁰⁹



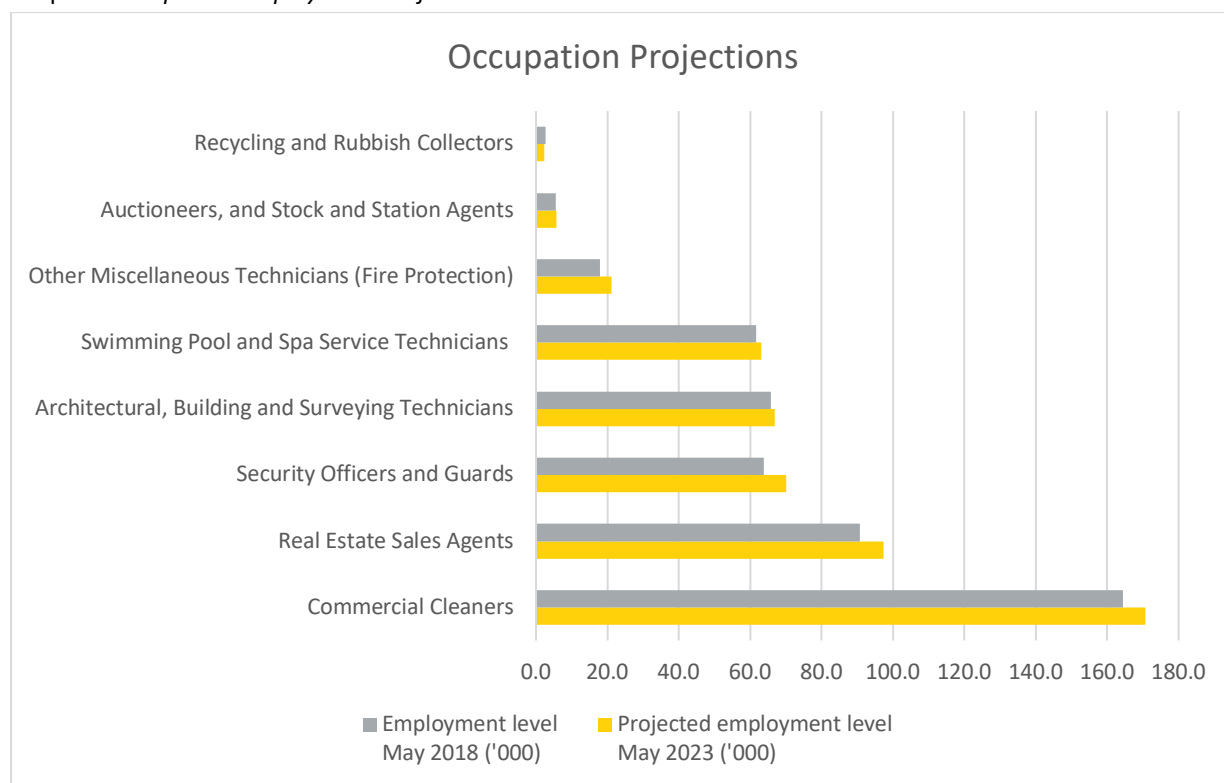
Graph 1 shows that all subsectors are growing. The waste collection, treatment and disposal services sub-sector is projected to grow by 13.3% in employment. The property operators and real estate services subsector is projected to grow by 7.6% in employment, while the building cleaning, pest control and swimming pool service sectors and the architectural, engineering and technical services sectors are growing by 13.1% and 4.1% respectively.¹¹⁰ It should be noted that the Property Services training package does not cover all areas of the architectural, engineering and technical services sub-sector, rather it covers only home sustainability, building design, surveying and spatial services and access consulting, however, as shown in Graph 2, these occupations are projected to grow by 1.6% over the next five years.¹¹¹

¹⁰⁹ Labour Market Information Portal, 2018 Industry Projections – five years to May 2023, accessed online 12/02/19 at <http://lmip.gov.au/default.aspx?LMIP/GainInsights/EmploymentProjections>

¹¹⁰ Ibid

¹¹¹ Labour Market Information Portal, 2018 Occupation projections, accessed online 12/02/19 at <http://lmip.gov.au/default.aspx?LMIP/GainInsights/EmploymentProjections>

Graph 2: Occupation Employment Projections: Five Years to 2023¹¹²



Ranking of 13 Generic Workforce Skills

The Department of Education and Training has developed a list of 13 generic workforce skills. Each year, Artibus Innovation asks stakeholders to rank these skills in order of importance through the *Artibus Innovation CPP Skills Forecast Survey 2019*. This question received 24 responses, and the results are presented in table 2.

Table 2 13 Generic Workforce Skills in Order of Importance¹¹³

12 GENERIC WORKFORCE SKILLS					
2019		Skill	2018	2017	2016
-	1	Managerial/Leadership	1	2	4
↑ 9	2	Language, Literacy and Numeracy (LLN)	11	1	6
-	3	Customer service/Marketing	3	6	7
-	4	Financial	4	9	1

¹¹² Labour Market Information Portal, 2018 Occupation projections, accessed online 12/02/19 at <http://lmip.gov.au/default.aspx?LMIP/GainInsights/EmploymentProjections>

¹¹³ Artibus Innovation CPP Skills Forecast Survey 2019.

12 GENERIC WORKFORCE SKILLS					
-	5	Technology use and application	5	4	3
-	6	Design mindset/Thinking critically/System thinking/Solving problems	6	3	5
↑ 1	7	Science, Technology, Engineering & Maths (STEM)	8	12	8
↑ 1	8	Data analysis	9	11	9
↓ 2	9	Communication/Virtual collaboration/Social intelligence	7	7	11
-	10	Learning agility/Information literacy/Intellectual autonomy and self-management	10	5	12
↓ 9	11	Environmental and Sustainability	2	8	10
-	12	Entrepreneurial	12	10	2
-	13	Other (please specify)	13	N/A	N/A

The top responses to the category of 'other' included:

- Adaptability
- Good work ethic (attitude, reliability, desire to work hard)
- Business management skills
- Empathy.

Key Drivers for Change

This section further explores the challenges and opportunities for the property services sector. The key drivers for change are categorised according to the STEEP analysis model, which analyses emerging trends in relation to six key domains:

- Social
- Technological
- Environmental
- Economic
- Educational
- Political.

While some of the issues discussed below could be categorised in more than one STEEP domain, we have chosen to place them in the most relevant category to how they are affecting the property services industry.

Social drivers for change in the property services industry

Increasing Urbanisation

The increasing urbanisation of major cities presents critical challenges for the property services sector, particularly in areas such as security,¹¹⁴ infrastructure and building maintenance and the energy efficiency of buildings.¹¹⁵ The United Nations projects that by 2030; 4.9 billion people will live in urban centres.¹¹⁶

In developed countries, such as Australia, increasing urbanisation will result in:

- infrastructure becoming strained and inefficient as populations expand¹¹⁷
- an increase in the need for at-home security systems
- a higher need for more complex, effective and efficient pest control and waste services¹¹⁸
- the need for buildings to be more eco-efficient in order to combat the effects of carbon emissions¹¹⁹
- a greater number of high-density residential properties¹²⁰

¹¹⁴ PWC, 2016, Five Megatrends and Their Implications for Global Defence & Security, accessed online 31/01/18 at <https://www.pwc.com/gx/en/government-public-services/assets/five-megatrends-implications.pdf>

¹¹⁵ PWC, 2014, Real Estate 2020: Building the future, accessed online 30/01/18 at <https://www.pwc.com/sg/en/real-estate/assets/pwc-real-estate-2020-building-the-future.pdf>

¹¹⁶ PWC, Workforce of the future: The competing forces shaping 2030, accessed online 08/02/18 at <https://www.pwc.com/gx/en/services/people-organisation/workforce-of-the-future/workforce-of-the-future-the-competing-forces-shaping-2030-pwc.pdf> (p7)

¹¹⁷ PWC, 2016, Five Megatrends And Their Implications for Global Defence & Security, accessed online 31/01/18 at <https://www.pwc.com/gx/en/government-public-services/assets/five-megatrends-implications.pdf>

¹¹⁸ Ibid

¹¹⁹ PWC, 2014, Real Estate 2020: Building the future, accessed online 30/01/18 at <https://www.pwc.com/sg/en/real-estate/assets/pwc-real-estate-2020-building-the-future.pdf>

¹²⁰ IBISWorld, September 2017, IBISWorld Industry Report L6720: Real Estate Services in Australia, accessed online 01/02/18 at <http://clients1.ibisworld.com.au/reports/au/industry/default.aspx?entid=539>

- an increased demand placed on the fire protection and safety industry to install and maintain sophisticated fire safety systems in high rise buildings.¹²¹

The rapid growth of urban populations may outpace governments' ability to provide the basic services needed, such as infrastructure upgrades and waste management¹²² and therefore meeting the challenge of urbanisation will also require investment and innovation from the private sector.¹²³ This could include innovation and investment in retrofitting and upgrading existing infrastructure to not only cope with increased use, but also to help cities become more sustainable and more habitable into the future, with the addition of smart grids and better network load balancing¹²⁴ as well as investment in recycling and waste services and innovation in the security sector.

Clandestine laboratories

A clandestine laboratory (clan lab) is a location used for the manufacture of illegal substances, most notably drugs, explosives and biological or chemical weapons.¹²⁵ The locations of most of these clan labs is residential buildings and homes and the impact to the Australian public and property industry is becoming more prevalent issues for the industry. A 2017 paper released by the Department of Health noted that in Australia:

- 68.4% of detected labs are either in or adjacent to domestic dwellings
- The number of clan lab detections in Australia has more than doubled since 2002
- For every identified lab, at least 10 will go undetected.¹²⁶

As most clan labs are discovered in residential buildings, contaminant residues from the manufacture process remain on many surfaces, placing existing and future occupants at potential health risk.¹²⁷ The severity of the health risks are still being researched and understood,¹²⁸ however, research undertaken at Flinders University examining five case studies of people living in meth contaminated properties shows that the occupants were affected in various ways that impact on their day-to-day living.¹²⁹ Flinders University researcher Jackie Wright states of the research findings:

¹²¹ IBISWorld, May 2017, IBISWorld Industry Report E3234: Fire and Security Alarm Installation Services in Australia, accessed online 01/02/18 at <http://clients1.ibisworld.com.au/reports/au/industry/default.aspx?entid=327>

¹²² PWC, 2016, Five Megatrends and Their Implications for Global Defence & Security, accessed online 31/01/18 at <https://www.pwc.com/gx/en/government-public-services/assets/five-megatrends-implications.pdf>

¹²³ Ernst & Young (2016) The upside of disruption: Megatrends shaping 2016 and beyond, accessed online 31/01/18 at [http://www.ey.com/Publication/vwLUAssets/EY-the-upside-of-disruption/\\$FILE/EY-the-upside-of-disruption.pdf](http://www.ey.com/Publication/vwLUAssets/EY-the-upside-of-disruption/$FILE/EY-the-upside-of-disruption.pdf)

¹²⁴ Ibid

¹²⁵ Pathtech.com.au, *The impact of clandestine laboratories*, accessed 21/02/2019 at: https://www.pathtech.com.au/site/wp-content/uploads/2017/10/PTEC-501-DDS_Meth-Surface-Testing-Whitepaper-Digital.pdf

¹²⁶ Department of Health, 2017, *enHealth Guidance on: Clandestine Drug Laboratories and Public Health Risks*, accessed online 21/02/2019 at: [https://www.health.gov.au/internet/main/publishing.nsf/Content/A12B57E41EC9F326CA257BF0001F9E7D/\\$File/Guidance-Clandestine-Drug-Laboratories-Public-Health.pdf](https://www.health.gov.au/internet/main/publishing.nsf/Content/A12B57E41EC9F326CA257BF0001F9E7D/$File/Guidance-Clandestine-Drug-Laboratories-Public-Health.pdf)

¹²⁷ Department of Health, 2017, *enHealth Guidance on: Clandestine Drug Laboratories and Public Health Risks*, accessed online 21/02/2019 at: [https://www.health.gov.au/internet/main/publishing.nsf/Content/A12B57E41EC9F326CA257BF0001F9E7D/\\$File/Guidance-Clandestine-Drug-Laboratories-Public-Health.pdf](https://www.health.gov.au/internet/main/publishing.nsf/Content/A12B57E41EC9F326CA257BF0001F9E7D/$File/Guidance-Clandestine-Drug-Laboratories-Public-Health.pdf)

¹²⁸ Moussailli, I., and Silva, I., *Mandatory meth testing on the cards for WA rental homes in Australian first*, ABC.net.au, accessed online 21/02/2019 at: <https://www.abc.net.au/news/2019-02-06/mandatory-meth-testing-on-the-cards-for-wa-homes/10783304>

¹²⁹ Moussailli, I., and Silva, I., *Mandatory meth testing on the cards for WA rental homes in Australian first*, ABC.net.au, accessed online 21/02/2019 at: <https://www.abc.net.au/news/2019-02-06/mandatory-meth-testing-on-the-cards-for-wa-homes/10783304>

*"The sort of health effects we're consistently seeing are things like persistent coughs and asthma-like symptoms, rashes, eye irritation, difficulty sleeping, headaches, and we're also seeing behavioural changes."*¹³⁰

Clan labs not only have health implications for dwelling occupants, but also impact the property industry as there are economic, time and human resource costs associated with testing dwellings for residue and cleaning if tests are positive. For example, in Western Australia the State Government is set to consider mandatory testing for methamphetamine contamination in rental properties. Compulsory testing will be raised in a review of the Residential Tenancies Act, however, any legislative reform is likely to take two years, if introduced.¹³¹ To deal with the potential costs to the landlord, it is suggested that mandatory testing happens after one tenancy is finished and before another starts, to make sure the tenant is liable for the clean-up costs.¹³²

Technological drivers for change in the property services industry

The property services industry in Australia will experience a shift in skills in jobs needed because of significant digital disruption. The major technological advances that will affect the CPP training package are automation, drones and Building Information Modelling (BIM).

Automation

In the Australian labour market, about 40% of current jobs are deemed to be at high risk of automation over the next 10-15 years. The Foundation for Young Australians suggest that this is particularly critical for young people, as more than half of young Australians are be trained for jobs that will no longer exist in the same capacity in the future.¹³³ According to PWC modelling, real estate agents have an 85.2% probability of being automated in the next 20 years, this would affect 70,673 workers in this occupation.¹³⁴

Drones

Unmanned Aerial Vehicles, or drones, are becoming more increasingly used in the property services industry, most notably in the surveying and spatial and real estate sectors. In the surveying and spatial sector, mapping drones are becoming considered as a primary tool to accurately, safely and efficiently capture aerial data. They are also used for displaying 360-degree virtual tours of a site in real time.¹³⁵

The main benefits that the surveying and spatial sector has noted from using drones are:

- they provide a safe and more efficient method of capturing large areas of survey data
- they are more cost effective

¹³⁰ Moussailli, I., and Silva, I., *Mandatory meth testing on the cards for WA rental homes in Australian first*, ABC.net.au, accessed online 21/02/2019 at: <https://www.abc.net.au/news/2019-02-06/mandatory-meth-testing-on-the-cards-for-wa-homes/10783304>

¹³¹ Ibid.

¹³² Ibid

¹³³ Foundation for Young Australians, 2015, *The New Work Order: Ensuring young Australians have skills and experience for the jobs of the future, not the past*, accessed online 06/02/2018 at: <https://www.fya.org.au/report/new-work-order/>

¹³⁴ PWC, 2015, *A Smart Move: Future-proofing Australia's workforce by growing skills in science, technology, engineering and maths (STEM)*, accessed online 08/02/18 at <https://www.pwc.com.au/pdf/a-smart-move-pwc-stem-report-april-2015.pdf>

¹³⁵ Sphere Drones, *Surveying*, accessed online 22/02/2019 at: https://spheredrones.com.au/industries/surveying/?creative=298801090508&keyword=drone%20surveying&matchtype=e&network=g&device=c&gclid=EAIaIQobChMlxqan7PzN4AIVgxiPChOX6QxIEAAYAiAAEgJx8fD_BwE

- they provide a high degree of accuracy and
- they do not interfere or cause delays to ground work.¹³⁶

Drones are also being increasingly used in the real estate sector, as they are able to collect data and take photos on a property more efficiently than human resources can.¹³⁷ For example, some real estate agencies are now using aerial photography captured by drones to present the best side of a property to potential buyers. Additionally, drones are also being used for property inspections to examine hard-to-see places such as roofing and gutters, which is also takes away the safety risks of the job.¹³⁸

Building Information Modelling (BIM)

BIM is the digital version of a building, which includes all information on the building through its whole lifecycle – from design, to build, to operations and even demolition. BIM allows construction professionals, as well as owners and operators to access construction and operation information about the building.¹³⁹ The Australian construction industry has had a gradual and varied adoption of BIM, depending on how complex the project is.¹⁴⁰

BIM has shown to have major benefits for both the construction and property service industries, as it allows for better communication between project owners, designers, subcontractors and workers on site.¹⁴¹ BIM is projected to completely replace current computer-aided design (CAD) systems. The adoption of BIM is helped by smartphone and tablet technologies, which allow project workers and stakeholders to quickly access building information virtually everywhere.¹⁴² Governments in Australia have been slow to mandate BIM for public works, however, in late 2018 the Queensland government mandated that all major government construction projects with an estimated capital cost of \$50 million or more will be required to use BIM.¹⁴³

BIM will span across many occupations such as building designers and architects, engineers, property, facilities and strata managers, and even service delivery such as pest and waste management. BIM will bring about new and more efficient ways of working, as it enables construction and property services professionals to collaborate and work together more efficiently and therefore will require these professionals to learn how to use and incorporate BIM into their practice.¹⁴⁴

¹³⁶ Land Surveys, *Aerial Surveys*, accessed online 22/02/2019 at: <https://www.landsurveys.net.au/aerial-surveys/>

¹³⁷ Steele, J., *Drones taking off in real estate industry applications*, Forbes.com, accessed online 22/02/2019 at: <https://www.forbes.com/sites/jeffsteele/2018/11/26/drones-taking-off-in-real-estate-industry-applications/#9c076197e369>

¹³⁸ Raywhite.com, *Could drones change the future of real estate?* Accessed online 22/02/2019 at: <https://www.raywhite.com/blog/market-news/could-drones-change-the-future-of-real-estate/>

¹³⁹ Construction and Property Services Industry Skills Council, 2014, *Environmental Scan 2014-15*

¹⁴⁰ StartupAUS, 2017, *Digital Foundations: How technology is transforming Australia's construction sector*, accessed online 01/02/2018 at <https://startupaus.org/document/constructiontech/>

¹⁴¹ Azhar, S et al, 2012, 'Building information modelling (BIM): now and beyond', *Australasian Journal of Construction Economics and Building*, 12 (4) 15-28

¹⁴² Ibid

¹⁴³ Queensland Government, 29 Nov 2018, *Building Information Modelling (BIM)*, accessed online 21/02/2019 at: <https://www.statedevelopment.qld.gov.au/infrastructure/building-information-modelling-bim.html>

¹⁴⁴ Bryne, C., 2014, *Building Information Modelling in Australia: Lesson from the UK*, ISS Institute Inc, accessed online 01/02/2018 at: <http://www.issinstitute.org.au/fellowships/fellowship-reports/building-and-construction/>

Economic drivers for change in the property services industry

Growth in property services industry

The Property Services Training Package encompasses many sectors that bookend the construction industry such as - pre-build; design and compliance assessment, and post-build; sale, management, maintenance, cleaning and waste services. Together these industries provide services to the built environment, and as the employment outlook section shows, they are all growing.

This predicted growth means that attracting new students to the property services industry is vital. Additionally, as skill needs change in each sector due to technological advances, the convergence of industries, legislative and societal responses to sustainability needs and changing regulatory environments, current and future workers in the industry will need the most up to date knowledge and skills in order for each sector and the industry as a whole to continue to grow.

Consumer Demands

Consumers are helping drive the shift towards the adoption of new technologies and the convergence of services within businesses. Businesses in security services for example, are no longer only providing security solutions for the home, but are also providing home energy management solutions and are developing and adopting security solutions from smart technologies which gives consumers control and oversight of their home security at the touch of a button.¹⁴⁵

In addition, as we move towards more sustainable practices and ways of living, consumer demand is helping drive the increase in smart and green buildings.¹⁴⁶ According to a study conducted by Dodge Data and Analytics in 2016, client demand and environmental regulations were the top two drivers for green buildings in 2015 globally. This trend can also be seen for Australia, as respondents' ranked environmental regulations, the desire for healthier neighbourhoods and client demands as the top three drivers in 2018.¹⁴⁷

Customers are increasingly requiring businesses to offer integrated services, such as architecture, engineering consulting and construction services. This is driving industry convergence, as businesses move towards providing this full suite of services for projects at a lower price.¹⁴⁸ Similarly, consumers are increasingly looking to circumvent real estate professionals in favour of online channels where information about property history and sales is presented more conveniently. This is projected to be the most significant threat to the industry over the next five years, particularly to the real estate sales and management occupations.¹⁴⁹

¹⁴⁵ Ibid

¹⁴⁶ Jadhav, NY, 2016, *Green and Smart Buildings*, Springer, Singapore

¹⁴⁷ Dodge Data & Analytics, 2016, *World Green Building Trends 2016: Developing Markets Accelerate Global Green Growth*, accessed online 19/01/2018 at <http://www.worldgbc.org/news-media/world-green-building-trends-2016>

¹⁴⁸ IBISWorld, September 2017, IBISWorld Industry Report M692: Architectural Services in Australia, accessed online 01/01/18 at <http://clients1.ibisworld.com.au/reports/au/industry/default.aspx?entid=550>

¹⁴⁹ Ibid

Environmental drivers for change in the property services industry

Sustainability

With the need for action on climate change and sustainability becoming a focal point globally, so too comes an increased emphasis on the use of renewable energies and green and smart buildings in the built environment. As the world's population is projected to reach 9.7 billion by 2050, natural resource constraints will significantly challenge the established use of non-renewable energies.¹⁵⁰ This is already happening, as renewable energy is the fastest growing energy source, aided by falling costs and increased consumer awareness.¹⁵¹

Green buildings significantly reduce the negative impact buildings have on the environment by incorporating sustainable design, construction and operational elements. This also translates to healthier buildings for occupants¹⁵² Similarly, smart buildings are those that incorporate technology and materials that capture data on how the building is performing. This allows for a greater level of control over energy usage, monitoring tenant usage and maintenance and repair needs while also improving safety features.¹⁵³ Often, buildings that incorporate green elements also incorporate smart elements and vice versa.

Educational drivers for change in the property services industry

Convergence of Industries Leading to Diverse Skill Needs

Tackling large, multifaceted issues such as climate change and rapid urbanisation requires partnership and collaboration from the technology, environmental sustainability and property sectors.¹⁵⁴ This cross-sector collaboration and convergence of industries therefore means that the property services industry is being disrupted by the introduction of new technology (see technology section above) and the increase in environmental sustainability regulations and standards for buildings.

This disruption is leading to a change in the skills profile needed among workers in the industry, as the industry is increasingly needing workers that have technological literacy and a knowledge and comprehension of the environmental sustainability industry and the building codes and regulations it impacts. A T-Shaped professional in fire protection and fire safety, for instance, will not only have expert skills in inspecting, testing, verifying and reporting systems and equipment, but also an understanding of the broader legislative and regulatory requirements they operate within and general auditing and reporting skills.

¹⁵⁰ Ernst & Young (2016) The upside of disruption: Megatrends shaping 2016 and beyond, accessed online 31/01/18 at [http://www.ey.com/Publication/vwLUAssets/EY-the-upside-of-disruption/\\$FILE/EY-the-upside-of-disruption.pdf](http://www.ey.com/Publication/vwLUAssets/EY-the-upside-of-disruption/$FILE/EY-the-upside-of-disruption.pdf)

¹⁵¹ Ibid

¹⁵² Green Building Council of Australia, 2018, *What is Green Building?* <https://www.gbca.org.au/about/what-is-green-building/>

¹⁵³ StartupAUS, 2017, *Digital Foundations: How technology is transforming Australia's construction sector*, accessed online 01/02/2018 at <https://startupaus.org/document/constructiontech/>

¹⁵⁴ Ibid

Political drivers for change in the property services industry

Compliance and regulation

The National Construction Code (NCC) is Australia's performance-based building and plumbing code. The key objectives of the NCC are to address issues of safety and health, amenity and accessibility, and sustainability for the built environment in Australia. The NCC also provides the *minimum necessary* requirements for the design, construction, performance and liveability of buildings in Australia. It is managed by the Australian Building Codes Board (ABCB) and was developed to incorporate all on-site construction requirements into a single code.¹⁵⁵ It is revised according to a three-year cycle and its next release is scheduled for early 2019.

Under the Australian Constitution, governance of the built environment is the responsibility of state and territory governments. Recent failures in the performance of certain buildings in Australia (e.g., Lacrosse Tower in 2014, Opal Tower in late 2018 and Neo200 in early 2019) have highlighted how many buildings in Australia do not conform to standards outlined in the NCC. Issues of non-conforming materials, non-compliant building products and responsibility in the supply chain have recently been considered by the Building Ministers' Forum through a report by independent experts, Professor Peter Shergold and Ms Bronwyn Weir, on *Assessment of the Effectiveness of Compliance and Enforcement Systems for Building and Construction Industry across Australia*.

The report investigates the shortcomings in the implementation of the National Construction Code (NCC) and assesses the compliance and enforcement systems in place across Australia.¹⁵⁶ Shergold and Weir make 24 recommendations that relate to various aspects of the compliance and enforcement systems such as documentation and (digital) record keeping, integrity of private building surveyors, the roles of fire authorities and regulators and the training of the workforce.¹⁵⁷ Together, these recommendations are intended to operate as a framework of solutions to the weaknesses in the compliance and regulation systems, which will require legislative reform and changes to regulatory practice in each state and territory.¹⁵⁸

Throughout the skills forecast consultation with IRC members, this report was noted frequently as a key driver for change, not only for the industry, but also for training, as a number of recommendations focus on continuous professional development of the workforce around the NCC, career pathways, and the tasks and roles of certain occupations (fire protection for example) covered in the CPP training package.¹⁵⁹

Banking royal commission

¹⁵⁵ National Construction Code, 2018, accessed online 14/01/19 at: <https://www.business.gov.au/planning/templates-and-tools/industry-factsheets/national-construction-code>

¹⁵⁶ Shergold, P., & Weir, B. (2018). *Building Confidence: Improving the Effectiveness of Compliance and Enforcement Systems for the Building and Compliance Industry Across Australia*. Retrieved from <https://aibs.com.au/Public/News/2018/ShergoldWeir.aspx>

¹⁵⁷ Ibid

¹⁵⁸ Ibid

¹⁵⁹ Ibid

The royal commission into banking has already seen the banks tighten lending practices and property prices in major cities fall,¹⁶⁰ but there were concerns that the property industry would be further impacted by the policy recommendations to come out of the royal commission. Economist Saul Eslake noted there was potential for the royal commission's recommendations to have "unintended consequences" for the property market such as a steep fall in house prices.¹⁶¹ While house price falls to date have been small, there were predictions that Australia could be in for a record housing decline due to the royal commission recommendations.¹⁶² However, in the final report, released in February 2019, there was no directive for banks to further tighten their lending practices, as the desired outcome on lending practices by banks have already been met.¹⁶³

Proposed Responses and Risks of Not Proceeding

Proposed Responses

Continuing to update the current training package to respond to new skill needs

The IRC will continue to update the CPP training package to ensure current and emerging skills needs are met. New technologies and consumers with more knowledge, power and control means that the skill and knowledge profile of the workers in the property services sector will need to shift and become more diverse as businesses adapt their models in alignment with the convergence and collaboration of industries. These T-Shaped professionals in the property services industry will have expert knowledge and skills in one particular area (for example, property management), but will also have general knowledge and skills in IT literacy and environmental sustainability practices in order to use new technologies in their role and apply environmental regulations and policies. Continually updating the CPP training package to account for these skill needs is vital to the prosperity of the industry.

Having an eye on the future

The future of the property services industry is more streamlined, environmentally friendly and cost effective as a result of digitisation, increased consumer demand for sustainable practices and integrated businesses services, leading to a convergence of industries and a shift in skills needs. The workforce will need to be trained, re-trained and upskilled with the skills and knowledge to use new technologies such as BIM and with knowledge across a variety of industries and sub-sectors. It is therefore important that the skills and knowledge needed for the future are embedded in the CPP training package.

¹⁶⁰ Fuary-Wagner, I., 4 Feb 2019, *Banking royal commission final report: no further pressure on housing market*, Financial Review, accessed online 21/02/2019 at: <https://www.afr.com/real-estate/no-further-pressure-on-housing-market-from-royal-commission-final-report-20190204-h1atuf>

¹⁶¹ Taylor, D., 3 Oct 2018, *Banking royal commission could trigger biggest housing bust in three decades, economists warn*, ABC.net.au, accessed online 21/02/2019 at: <https://www.abc.net.au/news/2018-10-03/banking-royal-commission-could-trigger-house-price-collapse/10333150>

¹⁶² Ibid

¹⁶³ Fuary-Wagner, I., 4 Feb 2019, *Banking royal commission final report: no further pressure on housing market*, Financial Review, accessed online 21/02/2019 at: <https://www.afr.com/real-estate/no-further-pressure-on-housing-market-from-royal-commission-final-report-20190204-h1atuf>

On behalf of the IRC, Artibus Innovation aims to continue researching these drivers for change to determine their impact on the Property Service Training Package, including what occupations will be affected and what implications this has for the training package.

Risks of not proceeding

The risks of not proceeding are a loss of currency and erosion of the knowledge and skills in the training package, and therefore in the property services industry. Emerging technologies and the convergence of industries will have a major impact across the industry, leading to new skill needs and new jobs. However, in order for these impacts to become opportunities, it is vital that the workforce be trained, re-trained and upskilled. If this does not occur the CPP training package risks becoming outdated with obsolete skills and knowledge, which could lead to a shortage of skills, knowledge and experience among the industry's workforce.

Consultation Undertaken

The Artibus Innovation consultation strategy for the development of the skills forecast included consultation with IRC, an industry stakeholder survey, and specific industry stakeholder consultation where additional information was needed.

Though time constraints limited the scope of this year's consultation, through targeted interviews with IRC members we obtained key insights in four crucial industry priorities for the skills forecast: training package gaps, emerging trends and challenges, drivers of change, and future skills needs. Issues identified by IRC members were explored through further research and developed in our skills forecast.

Consultation will continue to be a major priority throughout the proposed projects.

Name	Organisation	Consultation Type	Topics covered during consultation
Ray Fogolyan	Australian Building Sustainability Association	Interview with CPP IRC member	<ul style="list-style-type: none">• Climate change effects on housing – energy efficiency, thermal performance• Compliance in industry – Shergold and Weir report• Technology change in industry – building design software• BIM – prevalent in commercial sector because buildings are more complex• Need for the built environment auditor project
Nicholas Burt	Facility Management Association of Australia	Interview with CPP IRC member	<ul style="list-style-type: none">• Spoke about facilities management industry specifically. Skills shortages industry because it's a hidden industry• Technology changes – AI and robotics, BIM, drones• No facilities management qualification in CPP training package, accredited courses though

Name	Organisation	Consultation Type	Topics covered during consultation
Susan Hobbs	National Association of Building Designers	Interview with CPP IRC member	<ul style="list-style-type: none"> • Shergold and Weir report in relation to building design • BIM – commercial industry using, residential customers not willing to pay for it • Drones – not focus in industry yet • CPP gap – interior design, currently in manufacturing training package, is that the best place for it?
Michelle Blicavs	Consulting Surveyors National Ltd	Interview with CPP IRC member	<ul style="list-style-type: none"> • About surveying industry specifically: current course is very outdated - only TAFES teach it and they are having to go off book because the quals are so out of date – therefore, there is no national standard of training being delivered. This is a risk to the industry. <ul style="list-style-type: none"> ○ Content updates for surveying quals: pre-reqs and pathways need to be clearer ○ Tools and techniques for measuring – distance measuring and laser scanning, these are not reflected in the current quals ○ Tech: drones - the skills and knowledge to interpret and analyse the data they collect and to determine if the data collected is the right data. • Top issues for skills forecast: technological change – training not changing as fast as industry, but micro-credentialing could be a way to address this. Big data, project and business management gap in CPP quals, soft/transferrable skills gap in TP

Name	Organisation	Consultation Type	Topics covered during consultation
Danielle Andrews	Real Estate Institute of Australia (REIA)	Interview with CPP IRC member	<ul style="list-style-type: none"> Emerging technology: big data, BIM, drones Gap in training package: diploma in real estate Royal commissions effects on property industry Discussed building compliance in relation to Shergold and Weir report
Ray Ellis	First National Real Estate	Interview with CPP IRC member	<ul style="list-style-type: none"> Spoke about real estate industry specifically. Tech is an opportunity Royal commission's effects on industry – approval rates for mortgages Clandestine meth labs – in NZ 1 in 3 rentals affected. Huge problem for industry Airbnb effects on industry Property managers deal with more than just property, also dealing with people and therefore need appropriate skills
Noel Hamey	Surveying and Spatial Sciences Institute	Interview with CPP IRC member	<ul style="list-style-type: none"> Top issues for skills forecast: Digital disruption, big data and management of data, BIM – recent QLD government legislation BIM – gap in training package - nothing in strata, security etc. Will need to be across both low and high level occupations, but differently. Surveying and spatial specific info: content updates needed in tech (robotics and radar), data capturing and mapping overlays. Skills to use databases, foundation level maths, problem solving skills

Name	Organisation	Consultation Type	Topics covered during consultation
			<ul style="list-style-type: none"> • To be a cadastral surveyor – need a degree, so the VET quals are either technicians and/or a pathway to the degree. Will need to involve the unis in the review • Advanced diploma of surveying – low enrolments because the qual came from a push from WA as there was a need for mining surveyors. Mining boom is over, so enrolments are low. Will need to consult with industry, particular in WA and with mining industry to understand if still needed. • Certificate II in Property Pathways – opportunity for sector to market itself – qual could be foundation skills that are needed across all occupations in the core, then streams for the different sectors
Michael Hurley	Strata Community Association	Interview with CPP IRC member	<ul style="list-style-type: none"> • Spoke specifically about the strata community management qualifications • Strata industry growing yet not many RTOs taking on the quals – RMIT delivering Cert IV but ran into staffing issues, WA TAFE Cert IV and diploma on scope • Demand for qualifications is there, but lack of RTOs delivering them • NSW licensing requirements in Cert IV
John Murray	Australian Environmental Pest Managers Assoc Ltd	Interview with CPP IRC member	<ul style="list-style-type: none"> • Spoke about the pest management industry mostly • Challenge is getting suitable staff in industry • Emerging tech – online reporting, tablets etc

Name	Organisation	Consultation Type	Topics covered during consultation
			<ul style="list-style-type: none"> • Soft skills becoming important – customer service, communication • Gap in training package – not training for all pests and dealing with pests in food/grocery industry • Property pathways project – good thing for pest management sector – provides a lead in to the cert III
Chris Wyborn	Fire Protection Association of Australia	Interview with CPP IRC member	<ul style="list-style-type: none"> • Spoke about fire protection industry specifically • Tech challenges – integrated fire systems on rise, will create skills gap because technicians not trained in the tech (digital literacy and baseline data) • BIM – great for building requirements into the future – more bespoke and complex, more data • Compliance in relation to Grenfell tower and Shergold and Weir report – highlights people need to know about fire risks • Training package needs more about compliance, building surveyor don't have capacity to know it all
Sylvia Healy	Whittles Strata and Community Title Services	Industry Interview – Strata Project	<ul style="list-style-type: none"> • Cert IV traineeship in WA • Licensing requirements with Cert IV in NSW so qual essential • RTOs finding development of training materials difficult • Ideally Cert IV will be the professional standard in industry
Julie Mclean	Ace Body Corporate Consulting/ Strata Community Association	Industry Interview – Strata Project	<ul style="list-style-type: none"> • Cert III – definitely needed – assistant position – but no training materials

Name	Organisation	Consultation Type	Topics covered during consultation
			<ul style="list-style-type: none"> • RTOs won't take on because they don't see return on investment – only looking at the business case not industry need. SCA could work in collaboration with RTOs to develop training materials • NSW licensing for Cert IV • Cert IV – supported as minimum requirement for strata manager • Industry has a skills crisis – industry growing therefore need more people. Possible solution is to recruit from high school – Cert III as VET-in-school • Content updates: BIM, legal obligations for disability access and aged care modifications
Scott Bellerby	Bellcourt Strata Management	Industry Interview – Strata Project	<ul style="list-style-type: none"> • WA – upcoming legislation changes will affect qualifications • Current 'A100' course content too broad • Cert III – admin level qualification • Cert IV – should be minimum education requirement for strata manager. Traineeship in WA • Content updates: state-based terminology, old legislation • RTO delivery – lack of is a problem, new industry and RTOs reluctant to take on board, online delivery may be an option.
Sharon Donsky	PRET Australia	Skills Forecast 2019 Survey	<p>All respondents answered questions regarding:</p> <ul style="list-style-type: none"> • skills shortages in their industry in the past 12 months

Name	Organisation	Consultation Type	Topics covered during consultation
Wayne Carrigg	South Metro TAFE	Skills Forecast 2019 Survey	<ul style="list-style-type: none"> • If they have noted any gaps in the CPC training package • What trends, challenges or issues are emerging in their industries • If these trends, challenges or issues will give rise to any new jobs or skills that will require training • Rank the 13 generic skills.
Robert Willis	Asset Training	Skills Forecast 2019 Survey	
Alan Daniel	Chisholm	Skills Forecast 2019 Survey	
Robert Minto	Itrak Real Estate	Skills Forecast 2019 Survey	
Mike Nuthall	Defend Fire Services	Skills Forecast 2019 Survey	
Rick French	Control Fire Services	Skills Forecast 2019 Survey	
Luis Espinoza	Charles Darwin University	Skills Forecast 2019 Survey	
Jenny Culgan	MODE	Skills Forecast 2019 Survey	
Wendy Parry	Quack Pest Control	Skills Forecast 2019 Survey	

Name	Organisation	Consultation Type	Topics covered during consultation
Junior Muna	Public Transport Authority	Skills Forecast 2019 Survey	
Paula Dewhurst	North Metropolitan TAFE	Skills Forecast 2019 Survey	
Bronwyn McLaws	HITsa	Skills Forecast 2019 Survey	
Carmen	CF Residential Real Estate Services	Skills Forecast 2019 Survey	
Marilyn Wheeler	Wheeler Contract Services	Skills Forecast 2019 Survey	
Dennis Bruce Mackenzie	Property Training Australia	Skills Forecast 2019 Survey	
Leyanne Corcoran	Corley Consulting	Skills Forecast 2019 Survey	
Quentin	Resolute	Skills Forecast 2019 Survey	
Daniel Irvine	Licensed Real Estate Agent	Skills Forecast 2019 Survey	

Name	Organisation	Consultation Type	Topics covered during consultation
James Callaghan	Connect Skills Institute	Skills Forecast 2019 Survey	
Peter Ford	Complete Property Training	Skills Forecast 2019 Survey	
Phil Sayer	Garrards	Skills Forecast 2019 Survey	
Marie Williams	REIQ	Skills Forecast 2019 Survey	
Adam Moore	QED Educational Group	Skills Forecast 2019 Survey	
George Ganter	Real Estate Training Academy	Skills Forecast 2019 Survey	

Proposed Schedule of Work

Proposed Schedule of Work	
2019 - 20	<p>Project 1 – Surveying and Spatial To review the suite of surveying and spatial components in the CPP training package and update in order to:</p> <ul style="list-style-type: none"> • update units and qualifications to incorporate technologies used in the industry • review and update the packaging rules across the qualifications to better align with the occupational outcomes • adhere with the four-year review cycle of the national review schedule as per the training package development and endorsement process policy Nov 2016.
	<p>Project 2 – Strata Community Management To review and update the suite of strata management qualifications in the CPP training package to:</p> <ul style="list-style-type: none"> • make sure the qualifications align with occupational outcomes and are fit for industry needs • assist in the attraction and retention of people into the industry • adhere with the four-year review cycle of the national review schedule as per the training package development and endorsement process policy Nov 2016.
	<p>Project 3 – Property Services Pathways To develop a new Certificate II in Property Pathways to:</p> <ul style="list-style-type: none"> • address the industry gap of no school-based industry pathways for the property services industry • attract and support new entrants to the property industry • enhance articulation into high level VET qualifications.
	<p>Project 4 – Built Environment Auditor To develop a new qualification - Certificate IV in Built Environment Auditing. This proposed qualification will provide a core compliance audit skills base to enable a range of existing building inspection and compliance functions and provide the ability for this para profession in the built environment to respond to emerging compliance reporting requirements.</p>
	<p>Project 5 – BIM for Property Management The Property Services IRC supports the development of a suite of qualifications in Building Information Modelling (BIM) for property. The project aims to incorporate Building Information Modelling to the CPP and other training packages in the built environment and support credit arrangements with existing qualifications offered in universities across Australia.</p>
2020 – 21	<p>Project 6 – Cleaning</p>

	<p>Review and maintenance of the suite of cleaning qualifications:</p> <ul style="list-style-type: none"> • Certificate II in Cleaning Operations • Certificate III in Cleaning Operations • Certificate IV in Cleaning Management. <p>Projects 7 – Mould</p> <ul style="list-style-type: none"> • Feedback during skills forecast consultations noted mould management as a gap in the training package. <p>Other Projects</p> <ul style="list-style-type: none"> • IRC to advice on further industry skilling needs and required projects for 2020-2021.
2021 – 22	IRC to advice on further industry skilling needs and required projects for 2020-2021.
2022 – 23	A general review, update and maintenance of a suite of qualifications will be undertaken.

2018-19 Project Details

PROJECT 1 – Surveying and Spatial

Description	<p>To review the suite of surveying and spatial components in the CPP training package and update in order to:</p> <ul style="list-style-type: none"> • update units and qualifications to incorporate technologies used in the industry • review and update the packaging rules across the qualifications to better align with the occupational outcomes • adhere with the four-year review cycle of the national review schedule as per the training package development and endorsement process policy Nov 2016.
Rationale	<p>The following drivers for change are evident for this project.</p> <p>Qualifications are outdated</p> <p>A robust review of the units of competency content was not undertaken when the qualifications were transitioned to the 2012 Standards for Training Packages in 2016 and IRC members with expert experience and knowledge in this field have identified skills and regulatory gaps in the qualifications and units of competency. These gaps relate to outdated content, processes, tools and equipment.</p> <p>For example, surveying technology has seen significant changes in new instrument technology, computational capability, modelling techniques, advances in global navigation satellite systems, usage of drone technology for data capture and laser scanners.¹⁶⁴ As such, the current suite of qualifications does not meet industry requirements anymore.</p> <p>In fact, the current qualifications are so out of date that expert IRC members noted during consultation that RTOs delivering the qualifications are having to tailor the units to fit what graduates need rather than what the unit covers, which has a detrimental impact on the national standard of training graduates are receiving. This has negative implications for the quality assurance of the training package, when approximately 720 occupants (6% of the workforce) change state of residence every five years and their qualifications cannot guarantee consistent skills.¹⁶⁵</p> <p>Employment outlook and looming skill shortages</p> <p>Demand for surveying skills is generally correlated to the construction cycle. In a report prepared for Consulting Surveyors National in 2014, it was predicted that by around 2025 there will be a shortage of nearly 7,000 surveyors and surveying professionals.¹⁶⁶ This they</p>

¹⁶⁴ CRSBANZ (2017). "Assessing Cadastral Surveying Competency: A report into the cadastral surveyor competency assessments imposed by each jurisdiction affiliated with the Council of Reciprocating Surveyors Boards of Australia and New Zealand". Accessed 16/11/18 at <http://surveyorsboardsa.org.au/images/pdfs/Hirst%20Cadastral%20Surveying%20Competency%20V2.2.pdf>

¹⁶⁵ BIS Oxford Economics, 2019, *Determining the future demand, supply and skills gap for surveying and geospatial professionals: 2018-2028*, BIS Oxford Economics for Consulting Surveyors National

¹⁶⁶ BIS Shrapnel for Consulting Surveyors National (2015). "Determining the Future Demand, Supply and Skills Gap for Surveying and Geospatial Professionals: 2014 – 2024". Accessed 27/11/18 at [http://admin.acsnational.com.au/uploads/9/docs/CSN%20Skills%20Gap%20Study_BIS%20Shrapnel%20Update%20Report%20December%202014%20-%20FINAL%20\(3\).pdf](http://admin.acsnational.com.au/uploads/9/docs/CSN%20Skills%20Gap%20Study_BIS%20Shrapnel%20Update%20Report%20December%202014%20-%20FINAL%20(3).pdf)

PROJECT 1 – Surveying and Spatial

attributed to growth in the construction sector at around one percent per annum in the first half of the next decade, rising to 2.8 percent later in the decade.¹⁶⁷

This makes updating the qualifications even more important because, even though the skills shortage is linked to the construction cycle and is predicted for early next decade, the demand surveying and spatial technicians will precede the period when actual construction takes place – during the planning phase when design, measurement, calculations and documentation of a construction project occurs.¹⁶⁸

In addition, the ideal time to attract, retain and train competent surveying-related professionals is before the predicted skills shortage period, giving the industry a chance to lessen the impact, or alleviate a skills shortage altogether.¹⁶⁹

There is a need to attract young people to the industry, with only 7% of the workforce aged less than 24 year, significantly lower than the all occupation average 18%.¹⁷⁰ Without targeting this demographic issue, the industry risks an aging workforce that cannot be replaced at the same rate of retirement.

Enrolment data

Enrolments vary across each qualification. The most popular qualifications are the Diploma of Surveying, Certificate IV in Surveying and the Certificate III in Surveying and Spatial Information Services, while the Certificate II in Surveying and Spatial Information Services is used predominately as a pathway qualification.

The Certificate IV and Diploma in Spatial Information Services cater to a niche part of the industry, explaining the lower enrolments.

Regarding the Advanced Diploma, IRC members noted during consultation that it was developed specifically for mine surveying in response to the mining boom and therefore, enrolments can be predictably cyclical. Artibus Innovation will consult with the mining and mining surveying industries to analyse current and future industry needs.

Qualification	ANZSCO Code	2015 enrolment	2016 enrolment	2017 enrolment
CPP20116 Certificate II in Surveying and Spatial Information Services	521915 Surveyor's Assistant	0	0	24

¹⁶⁷ BIS Shrapnel for Consulting Surveyors National (2015). "Determining the Future Demand, Supply and Skills Gap for Surveying and Geospatial Professionals: 2014 – 2024". Accessed 27/11/18 at [http://admin.acsnational.com.au/uploads/9/docs/CSN%20Skills%20Gap%20Study_BIS%20Shrapnel%20Update%20Report%20December%202014%20-%20FINAL%20\(3\).pdf](http://admin.acsnational.com.au/uploads/9/docs/CSN%20Skills%20Gap%20Study_BIS%20Shrapnel%20Update%20Report%20December%202014%20-%20FINAL%20(3).pdf)

¹⁶⁸ BIS Shrapnel for Consulting Surveyors National (2015). "Determining the Future Demand, Supply and Skills Gap for Surveying and Geospatial Professionals: 2014 – 2024". Accessed 27/11/18 at [http://admin.acsnational.com.au/uploads/9/docs/CSN%20Skills%20Gap%20Study_BIS%20Shrapnel%20Update%20Report%20December%202014%20-%20FINAL%20\(3\).pdf](http://admin.acsnational.com.au/uploads/9/docs/CSN%20Skills%20Gap%20Study_BIS%20Shrapnel%20Update%20Report%20December%202014%20-%20FINAL%20(3).pdf)

¹⁶⁹ BIS Shrapnel for Consulting Surveyors National (2015). "Determining the Future Demand, Supply and Skills Gap for Surveying and Geospatial Professionals: 2014 – 2024". Accessed 27/11/18 at [http://admin.acsnational.com.au/uploads/9/docs/CSN%20Skills%20Gap%20Study_BIS%20Shrapnel%20Update%20Report%20December%202014%20-%20FINAL%20\(3\).pdf](http://admin.acsnational.com.au/uploads/9/docs/CSN%20Skills%20Gap%20Study_BIS%20Shrapnel%20Update%20Report%20December%202014%20-%20FINAL%20(3).pdf)

¹⁷⁰ BIS Oxford Economics, 2019, *Determining the future demand, supply and skills gap for surveying and geospatial professionals: 2018-2028*, BIS Oxford Economics for Consulting Surveyors National

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	CPP20112 Certificate II in Surveying and Spatial Information Services (superseded qualification)		10	31	32
		Total	10	31	56
	CPP30216 Certificate III in Surveying and Spatial Information Services	312116	0	14	226
	CPP30112 Certificate III in Surveying and Spatial Information Services (superseded qualification)	Surveying or Spatial Science Technician	403	358	68
		Total	403	372	294
	CPP40216 Certificate IV in Surveying	312116	0	12	241
	CPP40112 Certificate IV in Surveying (superseded qualification)	Surveying or Spatial Science Technician	320	301	80
		Total	320	313	321
	CPP40316 Certificate IV in Spatial Information Services	312116	0	7	43
	CPP40212 Certificate IV in Spatial Information Services (superseded qualification)	Surveying or Spatial Science Technician	131	88	32
		Total	131	95	75
	CPP50116 Diploma of Surveying	312116	0	52	378
	CPP50112 Diploma of Surveying (superseded qualification)	Surveying or Spatial Science Technician	514	522	114
		Total	514	574	492
	CPP50216 Diploma of Spatial Information Services	312116	0	8	22
	CPP50212 Diploma of Spatial Information	Surveying or Spatial Science Technician	52	50	18

PROJECT 1 – Surveying and Spatial

Services (superseded qualification)				
	Total	52	58	40
CPP60116 Advanced Diploma of Surveying	312116 Surveying or	0	0	85
CPP60312 Advanced Diploma of Surveying (superseded qualification)	Spatial Science Technician (Mining Surveyor)	75	84	26
	Total	75	84	111

State and territory qualification funding and RTO scope

The tuition fees for these qualifications are partially, and in some cases, fully funded by the following state governments in 2019.¹⁷¹

Qualification	QLD	NSW	ACT	VIC	TAS	SA	WA	NT
CPP20116 Certificate II in Surveying and Spatial Information Services				✓				
CPP30216 Certificate III in Surveying and Spatial Information Services		✓		✓				
CPP40216 Certificate IV in Surveying		✓	✓	✓		✓		
CPP40316 Certificate IV in Spatial Information Services		✓	✓	✓				
CPP50116 Diploma of Surveying		✓	✓	✓		✓		
CPP50216 Diploma of Spatial Information Services		✓	✓	✓				
CPP60116 Advanced Diploma of Surveying				✓				

¹⁷¹ All data sourced from myskills.gov.au under the specific qualifications page on 09/02/2019

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Qualification	Number of RTOs with qualification on scope
CPP20116 Certificate II in Surveying and Spatial Information Services	4
CPP30216 Certificate III in Surveying and Spatial Information Services	4
CPP40216 Certificate IV in Surveying	8
CPP40316 Certificate IV in Spatial Information Services	3
CPP50116 Diploma of Surveying	7
CPP50216 Diploma of Spatial Information Services	4
CPP60116 Advanced Diploma of Surveying	4

Ministers' Priorities Addressed

The minister's priorities addressed in this project are detailed in the table below.

Reform	Action to address reform
Remove obsolete and superfluous qualifications from the system.	We will consult with stakeholders, particularly in the mining sector to determine if the CPP60116 Advanced Diploma of Surveying is still required in the industry or if can be deleted.
Make more information about industry's expectations of training delivery available.	The training package components will be written to reflect industry expectations and the Companion Volume Implementation Guide will be updated with additional information targeted at training providers and consumers.
Ensure the training system better supports individuals to move easily from one related occupation to another.	This update will look at the structures of the suite of qualifications to make sure they enable appropriate pathways through the VET system as well as pathways into university education.
Improve the efficiency of the training system at a unit level so that units can be owned and used by multiple industry sectors.	Where appropriate import relevant cross industry and cross sector units to minimise the duplication of units in the system.
Foster greater recognition of skill sets.	The development of skill sets will be considered, on such things as emerging technologies (drones, laser scanners for example) or licensing

PROJECT 1 – Surveying and Spatial

		requirements, to provide for the continuing professional development needs of the workforce.																
Consultation Undertaken and Consultation Plan	<p>Consultation Undertaken</p> <p>The consultation undertaken for this project included one-on-one interviews with members of the Property Services IRC and an ISF survey widely promoted to industry through our website and newsletter. There were two key interviews with IRC members who have expert knowledge in the surveying and spatial industry who detailed the issues with the current qualifications and why they need to be reviewed and updated. These IRC members also passed on key pieces of literature for further research.</p> <p>As time constraints limited the scope of this year’s consultation process, stakeholder engagement will be an ongoing priority throughout the proposed project.</p> <p>Consultation Plan</p> <p>The key engagement methods will be as follows:</p> <ul style="list-style-type: none">• technical Advisory Groups (TAGs) will be established in accordance with internal policy and procedures to guide the subject matter expertise components of the work• direct correspondence with regulators• direct correspondence with State Training Authorities• direct correspondence with IRC and key stakeholders• industry associations and other stakeholders will be invited to capital city forums in all state/territories. A copy of forums material will be published on the web and an online forum will also be facilitated• RTOs will be engaged through online survey and trainer networks• public web project page updated fortnightly• newsletter survey distribution to 4,200 stakeholders, including all RTOs, regulators, industry associations. Minimum of three newsletter profiles• industry survey on early and late draft material• distribution of survey through TAG networks and Artibus digital channels• social media – twitter and linkedin.																	
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PROJECT 1 – Surveying and Spatial

	Training package components put forward for validation	November 2019
	Finalisation and Quality Assurance	February 2020
	Training package components sent to STAs for sign-off	April 2020
	Submitted for endorsement training package components to Commonwealth Department of Education and Training	May 2020
Summary of Project Components	<p>Seven qualifications to be reviewed and updated:</p> <ol style="list-style-type: none"> 1. CPP20116 Certificate II in Surveying and Spatial Information Services 2. CPP30216 Certificate III in Surveying and Spatial Information Services 3. CPP40216 Certificate IV in Surveying 4. CPP40316 Certificate IV in Spatial Information Services 5. CPP50116 Diploma of Surveying 6. CPP50216 Diploma of Spatial Information Services 7. CPP60116 Advanced Diploma of Surveying. <p>Total of 64 Units of Competency to be reviewed and updated (please see Attachment A: CPP Training Components Proposed for Work for 2019-2020 for list of units).</p>	

PROJECT 2 – Strata Community Management

Description	<p>To review and update the suite of strata management qualifications in the CPP training package to:</p> <ul style="list-style-type: none"> • make sure the qualifications align with occupational outcomes and are fit for industry needs • assist in the attraction and retention of people into the industry • adhere with the four-year review cycle of the national review schedule as per the training package development and endorsement process policy Nov 2016.
Rationale	<p>The following drivers for change are evident for this project.</p> <p>Employment and enrolment outlook</p> <p>A UNSW study into the strata management sector revealed that approximately 9330 people are directly employed in the industry in Australia, with many other occupations gaining business through the strata industry such as gardeners, plumbers, electricians, lawyers, insurers and valuers.¹⁷² However, since strata management is not coded for in the ANZSCO, the direct employment numbers in the industry are likely to be higher.</p> <p>This study also showed the growth in the industry, as figure 1 shows, 2015 was the first year that there were more dwelling starts for attached properties (apartments and townhouses) than for detached houses in Australia's history.¹⁷³ Much of this growth is accounted for by a rapid rise in the numbers of approvals for apartment buildings with 4 or more storeys over the past 10 years and is concentrated in the eastern states of New South Wales, Victoria and Queensland.¹⁷⁴</p>

¹⁷² Easthope, H, Buckle, C., and Mann, V., 2018, *Australian National Strata Data 2018*, City Futures Research Centre, UNSW Australia, accessed online 24/01/2019 at:

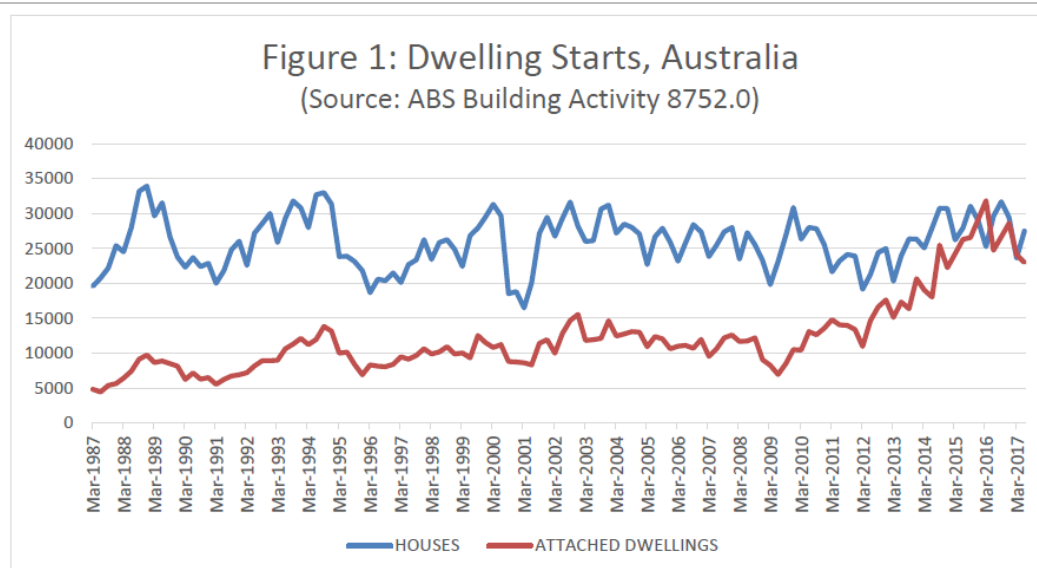
<https://cityfutures.be.unsw.edu.au/research/projects/national-strata-data-analysis/>

¹⁷³ Easthope, H, Buckle, C., and Mann, V., 2018, *Australian National Strata Data 2018*, City Futures Research Centre, UNSW Australia, accessed online 24/01/2019 at:

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PROJECT 2 – Strata Community Management



This rapid growth has led to changes in the industry and strata management as an occupation (discussed in next section below).

Qualification	2015 enrolment	2016 enrolment	2017 enrolment
CPP30416 Certificate III in Strata Community Management			
CPP40516 Certificate IV in Strata Community Management	0	0	91
CPP50316 Diploma of Strata Community Management			

The table above shows the enrolment numbers across the three qualifications, and through consultation with expert IRC and other strata management industry members we found that the no and low enrolments are a result of only minimal RTOs delivering the Certificate IV in Strata Community Management and almost no RTOs delivering the other two qualifications (see the table below).

Qualification	Number of RTOs with qualification on scope
CPP30416 Certificate III in Strata Community Management	0
CPP40516 Certificate IV in Strata Community Management	8
CPP50316 Diploma of Strata Community Management	2

Industry has been advised by RTO's that they do not see the return on their investment to develop the training and assessment materials needed to deliver the qualifications along with sufficient continuing enrolments to support the costs of delivering the course. The

PROJECT 2 – Strata Community Management

Strata Community Association (SCA) is working to solve this problem by talking with RTOs and working out ways to collaborate with RTOs to develop the training materials needed.

Additionally, TAFE WA are working with RMIT and SCA to begin delivering the Diploma as well as the Certificate IV, which will lead to an increase in enrolments, particularly given legislative changes in WA that may affect the minimum education requirements for the industry. The Certificate III leads to the occupation outcome of Strata Community Manager assistant and SCA aim to introduce this qualification as a VET-in-schools career pathway to attract more people into the industry.

Strata Industry needs have changed

Consultation with expert IRC and industry members revealed that while the qualifications were endorsed in 2016, the strata industry has grown and changed rapidly since then. Changes in the industry such as licensing and regulation have shifted the occupation and as a result, the qualifications do not fully line up with current occupational requirements. The qualifications need to be structurally adjusted to provide more appropriate regulation content relevant to Strata Community Management as it varies greatly around the country. Some other content updates may include:

- inclusion of Building Information Modelling (BIM)
- legalities & management of disability and aged care access and building modifications
- disaster planning and management
- certain building manager skills such as risk and compliance, since not all buildings have a building manager and the strata manager often ends up filling part of this role.

Further needs for specific strata community management training and qualifications have been highlighted by Industry consultation conducted by the Strata Community Association VIC (SCA) with the key objective of creating a Strata Workforce Competency Framework to support businesses in the sector.¹⁷⁵

The SCA findings include:

- there are clear demarcations in roles undertaken by the Strata workforce that require significant increase in knowledge, skills and capabilities from one role to the next.
- there is an increasing need for all levels of Strata Managers to be upskilled through qualifications to be able to deliver to specific performance KPIs related to job levels. These KPIs relate to the:
 - increasing consumer expectations,
 - diversity in the nature of owners' corporations managed,
 - increasing volume of properties managed,
 - changing regulatory and legislative demands,
 - changing landscape with respect to safety requirements e.g. Flammable cladding etc.

¹⁷⁵ Report set for release March 2019. Please note: Consultation conducted by Playmakers Consulting Services on behalf of SCA (Vic) used quantitative and qualitative methods including online survey, phone interviews and focus groups to gather data

PROJECT 2 – Strata Community Management

This rapid changes within the strata industry have created a need for distinct strata community management training in its own right within the Property Services training package. While other courses within the training package may use similar electives, the core skills required are significantly different. For example, the legal obligations strata community managers must adhere to are governed by different legislation to other sectors that currently sit under the Property Services training package (such as real estate). Therefore, the training of strata community managers must reflect this requirement.

The current qualifications “scratch the surface” of the skills and knowledge needs of strata community managers and assistants, according to the consulted industry members, and need to be reviewed to meet not only current, but also future needs.

Upskilling the workforce needs to be holistic – raising technical skills levels while building professional and soft skills through structured and potentially mandated in-job training and mentoring. Placement training models may need to be considered.

The courses on scope need to be further aligned with skills required in the sector for the industry to engage in accredited VET training.

Qualification updates will be informed by the Strategic Strata Workforce Competency framework being developed with strong Industry consultation (commissioned by the SCA VIC and will soon to be expanded to cover information from all of Australia). Details of the draft framework are available upon request.

Despite low enrolments in the existing qualifications (as shown in the table above), the Strata Industry has identified compelling reasons for these qualifications to be reviewed and updated to meet the needs of current and future practitioners.

National Review Schedule Policy

Additionally, the Strata Community Management qualifications will be reviewed and updated in adherence with the four-year review cycle of the national review schedule as per the training package development and endorsement process policy Nov 2016.

The minister’s priorities addressed in this project are detailed in the table below.

Ministers’ Priorities Addressed

Reform	Action to address reform
Make more information about industry’s expectations of training delivery available.	The training package components will be written to reflect industry expectations and the Companion Volume Implementation Guide will be updated with additional information targeted at training providers and consumers.
Ensure the training system better supports individuals to move easily from one related occupation to another.	This project will strengthen the pathway through the strata community management qualifications by clearly redefining the occupational outcomes for each qualification.

PROJECT 2 – Strata Community Management

	<p>Improve the efficiency of the training system at a unit level so that units can be owned and used by multiple industry sectors.</p>	<p>Where appropriate import relevant cross industry and cross sector units to minimise the duplication of units in the system.</p>																						
<p>Consultation Undertaken and Consultation Plan</p>	<p>Consultation Undertaken</p> <p>The consultation undertaken for this project included one-on-one interviews with members of the Property Services IRC, an ISF survey widely promoted to industry through our website and newsletter and additional interviews with key industry associations and employers.</p> <p>There was one key interview with an IRC member who has expert knowledge in the strata community management industry who detailed the issues with the current qualifications and why they need to be reviewed and updated. This IRC member also passed on a key piece of literature for further research as well as contact details for other key members of the industry for us to consult with.</p> <p>We also spoke with employers and members of the Strata Community Association about the industry need for the qualifications and why they need to be reviewed and updated.</p> <p>As time constraints limited the scope of this year’s consultation process, stakeholder engagement will be an ongoing priority throughout the proposed project.</p> <p>Consultation Plan</p> <p>The IRC approved consultation process will be undertaken that will ensure all key stakeholders are consulted in the Strata Community Management Project.</p> <p><i>Detailed description of the process is outlined in Project 1.</i></p>																							
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PROJECT 2 – Strata Community Management

	Submitted for endorsement training package components to Commonwealth Department of Education and Training	May 2020
Summary of Project Components	<p>Three qualifications to be reviewed and updated:</p> <ol style="list-style-type: none">1. CPP30416 Certificate III in Strata Community Management:<ul style="list-style-type: none">• 9 units to be reviewed and updated2. CPP40516 Certificate IV in Strata Community Management:<ul style="list-style-type: none">• 28 units to be reviewed and updated3. CPP50316 Diploma of Strata Community Management:<ul style="list-style-type: none">• 12 units to be reviewed and updated. <p>Total of 49 units of competency to reviewed and updated. Please see Attachment A: CPP Training Components Proposed for Work for 2019-2020 for list of units.</p>	

PROJECT 3 – Property Services Pathways

Description	<p>To develop a new Certificate II in Property Pathways to:</p> <ul style="list-style-type: none"> • address the industry gap of no school-based industry pathways for the property services industry • attract and support new entrants to the property industry • enhance articulation into high level VET qualifications. 								
Rationale	<p>The following drivers for change are evident for this project.</p> <p>Currently no school-based industry pathway</p> <p>There are currently no school based industry pathways for the property services industry. This problem was identified as part of the waste management project which led to the development of a Certificate II pathways concept which could be used by all sectors of the Property IRC. The IRC agreed on the merits of the Certificate II to provide exposure for the industry and pathways for VET-in-Schools students into the industry.</p> <p>Creating pathways for a growing property services industry</p> <p>As the employment outlook section shows, the Property Services industry is growing. This is why attracting new students and workers into the industry is vital. This new qualification will do this through VET-in-Schools and provide pathways into further property services qualifications.</p>								
Ministers' Priorities Addressed	<p>The minister's priorities addressed in this project are detailed in the table below.</p> <table border="1"> <thead> <tr> <th>Reform</th><th>Action to address reform</th></tr> </thead> <tbody> <tr> <td>Make more information about industry's expectations of training delivery available.</td><td>The training package components will be written to reflect industry expectations and the Companion Volume Implementation Guide will be updated with additional information targeted at training providers and consumers.</td></tr> <tr> <td>Ensure the training system better supports individuals to move easily from one related occupation to another.</td><td>This qualification will form a pathway for the property services training package and industry and attract a new workforce to the industry from VET-in-schools. The streams within the qualification provide the learner with opportunities to learn about a number of sub-sectors before deciding which education and career pathway to follow.</td></tr> <tr> <td>Improve the efficiency of the training system at a unit level so</td><td>This is a cross -sector qualification using units across the CPP Property Services Training Package</td></tr> </tbody> </table>	Reform	Action to address reform	Make more information about industry's expectations of training delivery available.	The training package components will be written to reflect industry expectations and the Companion Volume Implementation Guide will be updated with additional information targeted at training providers and consumers.	Ensure the training system better supports individuals to move easily from one related occupation to another.	This qualification will form a pathway for the property services training package and industry and attract a new workforce to the industry from VET-in-schools. The streams within the qualification provide the learner with opportunities to learn about a number of sub-sectors before deciding which education and career pathway to follow.	Improve the efficiency of the training system at a unit level so	This is a cross -sector qualification using units across the CPP Property Services Training Package
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Improve the efficiency of the training system at a unit level so	This is a cross -sector qualification using units across the CPP Property Services Training Package								

PROJECT 3 – Property Services Pathways

	that units can be owned and used by multiple industry sectors.	as well as units from other training packages where appropriate.																								
Consultation Undertaken and Consultation Plan	<p>Consultation Undertaken</p> <p>The lack of VET-in-Schools pathways for the Property Services Training Package was initially identified in a TAG meeting during the Waste Management project. This led to the development of a Certificate II pathways concept which could be used by all sectors of the Property IRC and the proposal of this project.</p> <p>Further consultation has been undertaken for this project, which has included one-on-one interviews with members of the Property Services IRC and an ISF survey widely promoted to industry through our website and newsletter. Several IRC members mentioned support the property pathways project during interviews.</p> <p>As time constraints limited the scope of this year’s consultation process, stakeholder engagement will be an ongoing priority throughout the proposed project.</p> <p>Consultation Plan</p> <p>The IRC approved consultation process will be undertaken that will ensure all key stakeholders are consulted in the Property Services Pathways Project.</p> <p><i>Detailed description of the process is outlined in Project 1.</i></p>																									
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Summary of Project Components	<p>One new qualification to be developed:</p> <ul style="list-style-type: none">CPP2XXXX Certificate II in Property Services Pathways:<ul style="list-style-type: none">14 new units to be developed.																									

PROJECT 3 – Property Services Pathways

Please see Attachment A: CPP Training Components Proposed for Work for 2019-2020 for list of units.

PROJECT 4 – Built Environment Auditor

Description	<p>To develop a new qualification - Certificate IV in Built Environment Auditing. This proposed qualification will provide a core compliance audit skills base to enable a range of existing building inspection and compliance functions and provide the ability for this para profession in the built environment to respond to emerging compliance reporting requirements.</p> <p>Additionally, the Access Consulting qualifications will be consulted on as part of this project to identify whether there is need for the stand-alone qualifications or whether the qualifications can be deleted, and the units merged into the Certificate IV in Built Environment Auditing.</p>
Rationale	<p>The following drivers for change are evident for this project.</p> <p>Building Compliance and Regulation</p> <p>The effectiveness of compliance and enforcement systems for the building and construction industry has been highlighted recently as a result of the Lacrosse apartments' fire in Melbourne in 2014, Grenfell Tower apartments' fire in London in 2017 and the concrete cracks in Sydney's Opal Tower in late 2018. Issues of non-conforming materials, non-compliant building products and responsibility in the supply chain have recently been considered by the Building Ministers' Forum through a report by independent experts, Shergold and Weir, on <i>Assessment of the Effectiveness of Compliance and Enforcement Systems for Building and Construction Industry across Australia</i>.</p> <p>This report places the building surveying and compliance sector under scrutiny over quality when certifying building compliance at the point of completion, however, the building audit process straddles the lifecycle of the building, from design and construction to post construction and building maintenance and is conducted by a variety of occupations, such as:</p> <ul style="list-style-type: none"> • Pre-purchase property inspectors • Thermal performance and sustainability assessors • Access consultants • Liveability assessors • Pest inspector • Security auditor • Community safety assessor • Mould and biotoxin inspectors • Asbestos inspector. <p>There are also a number of emerging occupations such as:</p> <ul style="list-style-type: none"> • Methamphetamine residue testers • Domestic fire protection assessors • Greenstar assessors • Building material compliance inspector • Other roles will emerge relating to government schemes around areas like building greening standards (green walls and roofs). <p>Consultations with expert IRC members noted that all these occupations share the same base skills in auditing and compliance. These skills include:</p>

PROJECT 4 – Built Environment Auditor

- Reading and interpreting plans
- Understanding building systems and materials and construction methodology
- Interpreting Australian Standards, workplace health and safety requirements, the NCC and BCA, construction material standards and government scheme requirements
- Undertaking audits of planned and existing buildings.

Additionally, the Access Consulting qualifications remain un-transitioned to the *Standards for Training Packages 2012* and will be consulted on as part of this project to identify whether there is need for the stand-alone qualifications or whether the qualifications can be deleted, and the units merged into the Certificate IV in Built Environment Auditing.

Training package need

Consultations with expert IRC members found there is a training package gap in this area. This proposal does not seek to directly impact the building surveyor's work but to expand the skills of related professionals in the pre and post construction compliance areas. The proposed qualification for built environment auditors will provide a core set of skills to:

- Read and interpret plans
- Understand building systems and materials and construction methodology
- Interpret standards including:
 - NCC
 - BCA
 - Materials Standards
 - Government scheme requirements
- Undertake audits of planned buildings
- Undertake audits of existing buildings
- Related WHS considerations.

The qualification will, where possible, draw specialist skills from existing training products to provide skills sets specialising in key areas such as:

- Pre-purchase structural inspection
- Residential tenancy safety and compliance
- Thermal Performance
- Energy and water efficiency
- Liveability
- Access
- Fire protection
- Security.

Additional skills sets can be developed as needed to address future requirements and create additional business and employment opportunities building on the core audit skill.

A large proportion of businesses currently providing services in this space are small or micro businesses or sole traders who are reliant on past experience in construction related fields

PROJECT 4 – Built Environment Auditor

rather than specialist qualifications in auditing. The majority of these will benefit from an increase in audit skills and the ability to diversify through the use of skill sets.

Ministers' Priorities Addressed

The minister's priorities addressed in this project are detailed in the table below.

Reform	Action to address reform
Make more information about industry's expectations of training delivery available.	The training package components will be written to reflect industry expectations and the Companion Volume Implementation Guide will be updated with additional information targeted at training providers and consumers.
Ensure the training system better supports individuals to move easily from one related occupation to another.	<p>Built environment auditing is a core skill which enables graduates to conduct compliance based audits of planned and existing structures and to add specialisations as business, economic or regulatory need demands.</p> <p>This qualification will also provide unregulated inspectors, such as the emerging clandestine lab inspector, the opportunity to develop skills to provide better services to consumers and enhance consumer confidence.</p>
Improve the efficiency of the training system at a unit level so that units can be owned and used by multiple industry sectors.	This is a cross -sector qualification using units across the CPP Property Services Training Package as well as units from other training packages where appropriate.
Foster greater recognition of skill sets.	<p>The qualification will, where possible, draw specialist skills from existing units of competency to provide skills sets specialising in key areas such as:</p> <ul style="list-style-type: none"> • Pre-purchase structural inspection • Residential tenancy safety and compliance • Thermal Performance • Energy and water efficiency • Liveability • Access • Fire protection • Security <p>Additional skills sets can be developed as needed to address future requirements and create additional</p>

PROJECT 4 – Built Environment Auditor

		business and employment opportunities building on the core audit skill.																						
Consultation undertaken and Consultation Plan	<p>Consultation Undertaken</p> <p>The consultation undertaken for this project included one-on-one interviews with members of the Property Services IRC and an ISF survey widely promoted to industry through our website and newsletter. The interviews with IRC members provided key insights in three crucial industry priorities for the skills forecast: training package gaps, emerging trends and challenges, drivers of change and future skills needs. As time constraints limited the scope of this year’s consultation process, stakeholder engagement will be an ongoing priority throughout the proposed project.</p> <p>Consultation Plan</p> <p>The IRC approved consultation process will be undertaken that will ensure all key stakeholders are consulted in the Built Environment Auditor Project.</p> <p><i>Detailed description of the process is outlined in Project 1.</i></p>																							
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Summary of Project Components	<p>One new qualification to be developed:</p> <ul style="list-style-type: none">• CPP4XXX Certificate IV in Built Environment Auditing:<ul style="list-style-type: none">○ 15 new units○ Importing of existing CPP, CPC and BSB where required.																							

PROJECT 4 – Built Environment Auditor

Three Assess Consulting qualifications and units will be reviewed for deletion or potential integration into the new qualification:

- CPP40811 - Certificate IV in Access Consulting
- CPP50711 - Diploma of Access Consulting
- CPP80313 - Graduate Diploma of Access Consulting
 - 53 CPPACC units.

Please see Attachment A: CPP Training Components Proposed for Work for 2019-2020 for list of units.

PROJECT 5 – Building Information Modelling (BIM) for Property Services

Description	<p>This project will build a suite of qualifications for the functions of BIM managers, which are emerging roles across the occupations building, maintaining and servicing the built environment. The project aims to incorporate Building Information Modelling to the CPP and other training packages in the built environment¹⁷⁶ through the development of skill sets – or micro-credentials – that can be drawn from these qualifications and used by practitioners in other related fields.</p>
Rationale	<p>The following drivers for change are evident for this project.</p> <p>Emerging technology in industry creating training package gap</p> <p>BIM is the digital version of a building, which includes all information on the building through its whole lifecycle – from design, to build, to operations and even demolition. BIM allows professionals across the built environment – from construction to property management and maintenance to access construction and operation information about the building.¹⁷⁷</p> <p>As discussed in the key drivers for change section, BIM has shown to have major benefits for both the construction and property service industries. For the property services sector, BIM will span across many occupations such as building designers and architects, engineers, property, facilities and strata managers, and even service delivery such as pest and waste management.</p> <p>Through consultation with members of the Property Services IRC, it was noted that BIM will become an integral function of many property services occupations covered by the training package, but that currently there are no units or qualifications in the training package to address this. This project will therefore build a suite of qualifications for the functions of BIM managers, which are emerging roles across these occupations in designing, maintaining and servicing the built environment.</p> <p>In addition to the qualifications, skill sets will be developed that can be used as micro-credentials by practitioners in other related fields. For example, a builder might do a skill set on BIM to upskill their knowledge after or during completion of their Certificate III or IV in Construction. Similarly, students in civil construction, manufacturing, electrotechnology or aviation may also undertake the skill sets and therefore this project will require broad engagement with other related IRCs in order to make sure the units can be fit for purpose and imported into other training packages that cover the built environment.</p> <p>It is hard to obtain specific employment projections and data relating to how BIM is going to affect occupations, as it is still an emerging technology that is predicted to impact several occupations in a variety of ways as well as create BIM specific occupations.</p>

¹⁷⁶ TLI, BSB, RII, UEE, MSF, MSM etc

¹⁷⁷ Construction and Property Services Industry Skills Council, 2014, *Environmental Scan 2014-15*

PROJECT 5 – Building Information Modelling (BIM) for Property Services

International and national uptake

BIM is a globally disruptive technology rapidly being adopted across the construction and property industries. The technology offers improved productivity, reduced waste, better control and predictability over costs and capacity to deliver comprehensible lifecycle values to all involved in the built environment. Many governments including the USA, UK, Singapore, Finland, Hong Kong, UAE and Netherlands have mandated BIM on their public projects for these reasons.

International experience suggests that the adoption of BIM impacts existing jobs, particularly pre-construction, construction management and facility management as well as creating new vocations. Singapore, which is 11 years ahead of Australia in responding to this technology has 20,000 students per year in training for the new vocation of BIM manager.

In Australia, governments have been slow to mandate BIM for public works, however, in late 2018 the QLD government mandated that all major government construction projects with an estimated capital cost of \$50 million or more will be required to use BIM.¹⁷⁸ Additionally, Tier One construction companies are already well advanced in BIM usage and are starting to require sub-contractors to be able to connect with this technology.

Furthermore, the Australian Procurement and Construction Council (APCC) and the Australian Construction Industry Forum (ACIF) have developed a BIM knowledge and skills framework. This framework provides guidance around the required skills and knowledge relevant to BIM for a broad range of industry workers and stakeholders.¹⁷⁹ This framework will be utilised as part of this project to develop the units and align with current industry thinking.

Changing legislation and regulatory environment

The recent report into the weaknesses of building and construction compliance systems (Shergold and Weir) noted that there are considerable weaknesses in the collection, storage and sharing of building records, making it difficult to access all the relevant documents about a building when needed, especially when the building has been sold.¹⁸⁰ Shergold and Weir recommend the creation of a central database by each jurisdiction for record keeping and collaboration to develop a platform that has information sharing capabilities.¹⁸¹ This is a function that can be performed by BIM.

Additionally, as mentioned above, in late 2018 the QLD government mandated that all major government construction projects with an estimated capital cost of \$50 million or more will be required to use BIM.¹⁸² This will greatly increase the need for BIM management skills across the built environment, particularly as other states and territories across Australia follow QLD.

Ministers' Priorities Addressed

The minister's priorities addressed in this project are detailed in the table below.

Reform	Action to address reform
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PROJECT 5 – Building Information Modelling (BIM) for Property Services

	Make more information about industry's expectations of training delivery available.	The training package components will be written to reflect industry expectations and the Companion Volume Implementation Guide will be updated with additional information targeted at training providers and consumers.
	Ensure the training system better supports individuals to move easily from one related occupation to another.	BIM skills will span across many occupations that design, build, maintain or service the built environment. This project will develop qualifications, units and skill sets that are applicable across these occupations.
	Improve the efficiency of the training system at a unit level so that units can be owned and used by multiple industry sectors.	This project will create units and skill sets that will be applicable across a number of sectors. Skills sets and unit can be imported into other training packages that cover the built environment for the micro-credentialing and upskilling of related occupations.
	Foster greater recognition of skill sets.	Skill sets will be developed that can be used as micro-credentials by practitioners in other related fields (building and construction, civil construction, manufacturing, electrotechnology, aviation).
Consultation Undertaken and Consultation Plan	<p>Consultation Undertaken</p> <p>The consultation undertaken for this project included:</p> <ul style="list-style-type: none"> • one-on-one interviews with members of the Property Services IRC, • an ISF survey widely promoted to industry through our website and newsletter and • meetings with the Australian BIM Advisory Board. <p>The interviews with IRC members and meetings with the Australian BIM Advisory Board noted how important BIM is as a training package gap, driver of change and future skill need in the property services industry.</p> <p>As time constraints limited the scope of this year's consultation process, further stakeholder engagement will be an ongoing priority throughout the proposed project.</p>	

¹⁷⁸ Queensland Government, 29 Nov 2018, *Building Information Modelling (BIM)*, accessed online 21/02/2019 at: <https://www.statedevelopment.qld.gov.au/infrastructure/building-information-modelling-bim.html>

¹⁷⁹ Australian Procurement and Construction Council (APCC), 2017, *BIM skills and knowledge framework*, accessed online 24/02/2019 at: <http://www.apcc.gov.au/SitePages/BIM%20Knowledge%20and%20Skills%20Framework.aspx>

¹⁸⁰ Shergold, P., & Weir, B. (2018). *Building Confidence: Improving the Effectiveness of Compliance and Enforcement Systems for the Building and Compliance Industry Across Australia*. Retrieved from <https://aibs.com.au/Public/News/2018/ShergoldWeir.aspx>

¹⁸¹ Shergold, P., & Weir, B. (2018). *Building Confidence: Improving the Effectiveness of Compliance and Enforcement Systems for the Building and Compliance Industry Across Australia*. Retrieved from <https://aibs.com.au/Public/News/2018/ShergoldWeir.aspx>

¹⁸² Queensland Government, 29 Nov 2018, *Building Information Modelling (BIM)*, accessed online 21/02/2019 at: <https://www.statedevelopment.qld.gov.au/infrastructure/building-information-modelling-bim.html>

PROJECT 5 – Building Information Modelling (BIM) for Property Services

Consultation Plan

The IRC approved consultation process will be undertaken that will ensure all key stakeholders are consulted in the Building Information Modelling Project.

Detailed description of the process is outlined in Project 1.

Timeline and Key Dates

Details	Date
Expected approval by AISC of proposed work	April 2019
Project kick-off	May 2019
Initial project consultation	May – June 2019
Establish Technical Advisory Group (TAG)	June 2019
Review feedback and update Draft Pack 1 accordingly, as per TAG advice	July 2019
Training package components put forward for consultation (Draft pack 2)	August 2019
Review feedback and update Draft Pack 2 accordingly, as per TAG advice	October 2019
Training package components put forward for validation	November 2019
Finalisation and Quality Assurance	February 2020
Training package components sent to STAs for sign-off	April 2020
Submitted for endorsement training package components to Commonwealth Department of Education and Training	May 2020

Summary of Project Components

Development of 3 new qualifications:

1. CPP4XXX Certificate IV in Building and Information Modelling (BIM):
 - 10 new units
2. CPP5XXX Diploma of Building and Information Modelling (BIM) for Property:
 - 10 new units
3. CPP6XXX Advanced Diploma of Strategic Implementation of Building Information Modelling (BIM):
 - 10 new units.

Two skill sets – BIM awareness and BIM Application

Total of 30 new units to be developed. Please see Attachment A: CPP Training Components Proposed for Work for 2019-2020 for list of units.

IRC Sign Off



Noel Hamey

Property Services Industry Reference Committee Chair

26 February 2019

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