Civil Construction Industry

Workforce Profile

February 2025

stenning & associates

SIMPLIFYING GOVERNMENT

Disclaimer

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Acknowledgements

Stenning & Associates thanks all stakeholders consulted for their input.

Stenning & Associates acknowledge the Traditional Owners of country throughout Australia and recognise their continuing connection to land, waters and culture. We pay our respects to their Elders past, present and emerging.

Front cover graphics supplied by the Civil Contractors Federation Tasmania

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Glossary

Term	Definition
ABS	Australian Bureau of Statistics
ANZSCO	Australian and New Zealand Standard Classification of Occupations
ANZSIC	Australian and New Zealand Standard Industrial Classification
CCFSA	Civil Contractors Federation South Australia
CCFTas	Civil Contractors Federation Tasmania
FTE	Full time equivalent
RTO	Registered Training Organisation
VET	Vocational Education and Training
VETIS	VET in Schools

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1 Introduction

This profile of Tasmania's civil construction industry workforce has been produced as part of the development of the *Civil Construction Workforce Plan 2025–2030*. The Plan will replace the *Civil Construction Industry Workforce Plan 2019–2025*.[1] Appendix A outlines the current initiatives implemented by CCFTas under the existing Plan.

The profile outlines the key economic, workforce and skills, education and training characteristics of the industry and identifies a range of workforce challenges it faces. The key findings from this profile will inform the development of priority areas and recommendations for action for the new Workforce Plan.

The civil construction industry plays a critical role in designing, building and maintaining the infrastructure crucial to supporting the Tasmanian economy.[2] The reach of the industry is broad and involve construction activities related to 'roads and highways; subdivisions; bridges; railways; harbours; water storage and supply; sewerage and drainage; electricity generation, transmission and distribution; pipelines; recreation, and telecommunications'.[3]

The prospective infrastructure pipeline in Tasmania is strong, with Infrastructure Tasmania stating that '[T]he estimated investment of planned Tasmanian Government, local government and known private sector projects is more than $27 billion over the next decade'.[4]

The industry is facing significant growth over the next five years, with the Tasmanian Government's 10 Year Infrastructure Pipeline (see Figure 1) identifying $13.3 billion of infrastructure spending from now to 2030.[5] It should be noted that $0.8 billion of this is allocated to digital projects that are unlikely to involve civil construction work.

Figure 1: Tasmanian 10 Year Infrastructure Pipeline
Source: Infrastructure Tasmania, accessed 3 February 2025

The projects in this substantial pipeline of work will require significant input from the civil construction industry and a significant strengthening of its workforce. This is despite the inevitable

1 Civil Construction Industry Workforce Plan 2019-2025, accessed 28 August 2024

2 The Civil Contractors Federation – what we do, accessed 28 August 2024

3 Civil Contractors Federation Submission, The House of Representatives Standing Committee on Infrastructure, Transport and Cities Inquiry into Procurement Practices for Government Funded Infrastructure, accessed 28 August 2024

4 Infrastructure Tasmania, Tasmanian 10 Year Infrastructure Pipeline, accessed 20 August 2024

5 Infrastructure Tasmania, Complete Interactive Database, accessed 28 January 2025

uncertainties regarding the timing of projects, as well as industry concerns about the slowing Australian economy and its implications for firm growth and workforce development.

The workforce implications of this emerging industry growth were demonstrated by a needs analysis undertaken to support the business case for the Earthworks Academy, which confirmed there was a need to recruit and train over 650 new plant and machinery workers annually to at least 2027. This estimate is conservative and doesn't account for existing skill shortages, the upskilling of the existing workforce, the older age profile of the workforce or unplanned civil infrastructure works.

Nevertheless, there are concerns in the civil construction industry and more generally about the slowing national economy, with the Australian Contractors Association (ACA) indicating that 'market outlook has reversed across most markets, with overall sentiment declining'.[6] The ACA drew attention to concerns over increasing wage costs, stagnating productivity and the declining market sentiment caused by government cutbacks, commercial sector uncertainty and delayed commencement of new energy initiatives.[7]

All these factors have implications for firm growth and workforce development in the industry and provide context for the development of the new industry Workforce Plan.

This profile has been compiled using desktop research and significant industry feedback through consultation that included an online survey, detailed discussions with key civil construction industry representatives and a highly successful Industry Stakeholder's Workforce Forum attended by 84 people. A more detailed description of the method and scope of the project can be found in Appendix B, with Appendix C containing the online survey, Appendix D summarising industry response regarding the most challenging and high priority workforce issues, Appendix E containing the list of consultations held (including attendance at the Forum) and Appendix F listing the occupations covered within this profile. Appendix G outlines the numbers of people in each occupation in 2021, Appendix H shows the civil construction-related occupations in shortage, and Appendix I contains an extract of the Building and Construction Industry Skills Compact.

6 Australian Contractors Association, May 2024, 2024 Construction Market Sentiment Survey, accessed 28 August 2024

7 Australian Contractors Association, 19 June 2024, Rising wages and stagnating productivity costing construction, accessed 28 August 2024

2 Economic contribution

Key Findings

- Civil construction in Tasmania has consistently contributed around 2% of all industry value added to Tasmania's economic productivity over the last decade.
- Annual worker productivity for the civil construction industry has increased to $253,747 per worker and is more than double the productivity of the broader construction industry (including civil construction).

The Tasmanian civil construction industry is an important contributor to Tasmania's economic productivity, generating $605m in 2022–23. This contribution has risen almost 50% over the past decade (Figure 2).

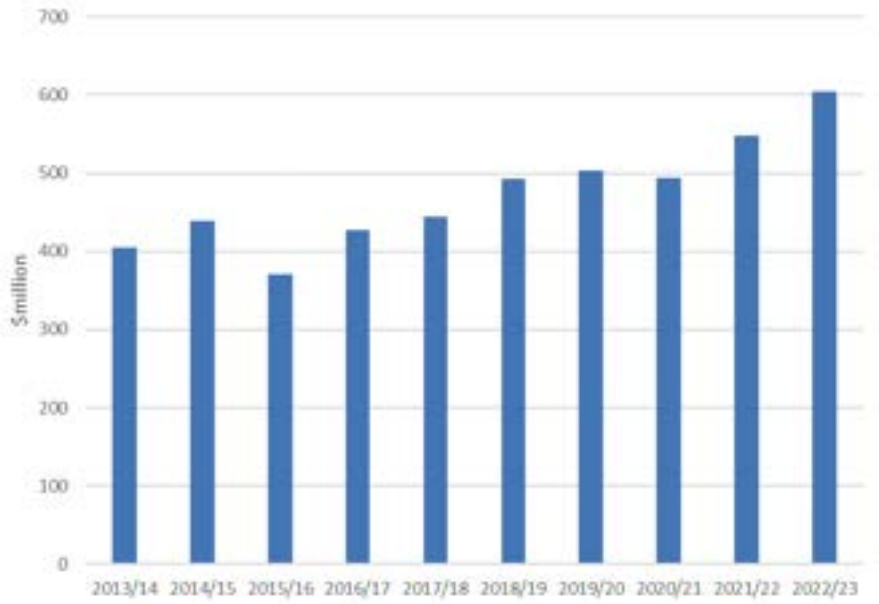


Figure 2: Heavy and Civil Engineering Construction value added ($m)[8]

The industry contributes 2% of all industry value added for Tasmania. This share of Tasmania's productivity has remained consistent since 2012–13, even during the COVID-19 pandemic period.[9]

Furthermore, annual worker productivity for civil construction has risen by 14% in the last decade, with a 29% increase in the five years to 2022–23. Notably, worker productivity in civil construction in Tasmania in 2022–2023 (value added of $253,747 per worker) was 5% above that for the civil construction industry nationally ($242,210) and 133% higher than for the broader construction industry ($108,732).[10]

Figure 3 clearly shows this upward trend for productivity in the civil industry that has been trending upwards since 2015–2016 and is markedly higher than both the broader construction industry and Tasmania – all industries.

[8] Industry Sector Analysis, National Institute of Economic and Industry Research (NIEIR) ©2023. Compiled and presented in economy.id by .id (informed decisions), accessed 16 December 2024

[9] National Institute of Economic and Industry Research (NIEIR) ©2023. Compiled and presented in economy.id by .id (informed decisions), accessed 24 June 2024

[10] The broader construction industry includes civil construction

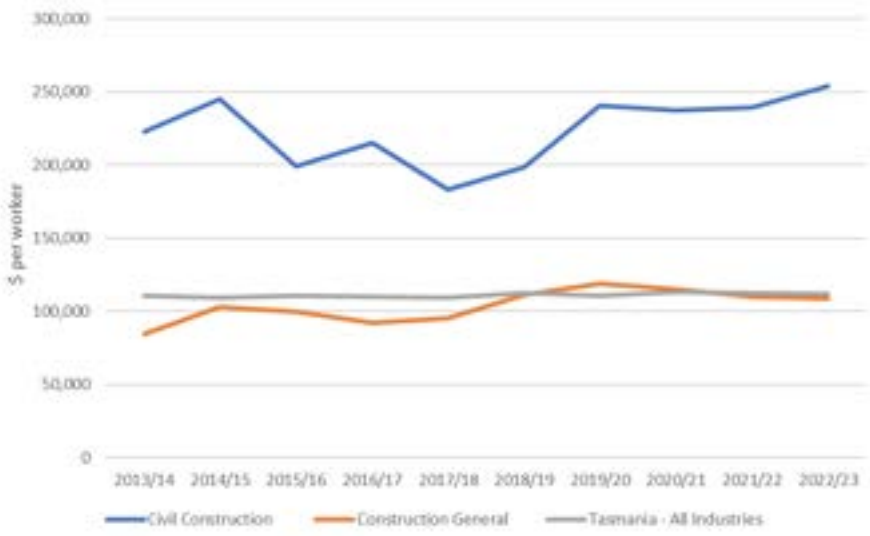


Figure 3: Civil construction productivity compared to construction industry and Tasmania - all industries[11]

Tasmania's South accounted for over half of the value added by the industry in 2022–23:

- 59.4% ($359 million) in the South
- 22.2% ($134 million) in the North
- 18.4% ($112 million) in the North West.[12]

There are estimated to be over 200 businesses in the civil construction industry in Tasmania.[13] Small businesses dominate the industry, together with a smaller number of medium and large firms (Figure 4):[14]

- 67% of businesses employ 1 to 9 employees
- 14% employ 10–19 employees
- 19% employ more than 20 employees.

[11] Industry Sector Analysis, National Institute of Economic and Industry Research (NIEIR) ©2023. Compiled and presented in economy.id by .id (informed decisions)

[12] The North West region includes Tasmania's west coast

[13] Civil Construction Live Works Training Site - Needs Analysis, accessed 19 June 2024.

[14] Australian Bureau of Statistics (2018–19) Businesses in Australia 2018–19, TableBuilder, accessed 30 November 2023

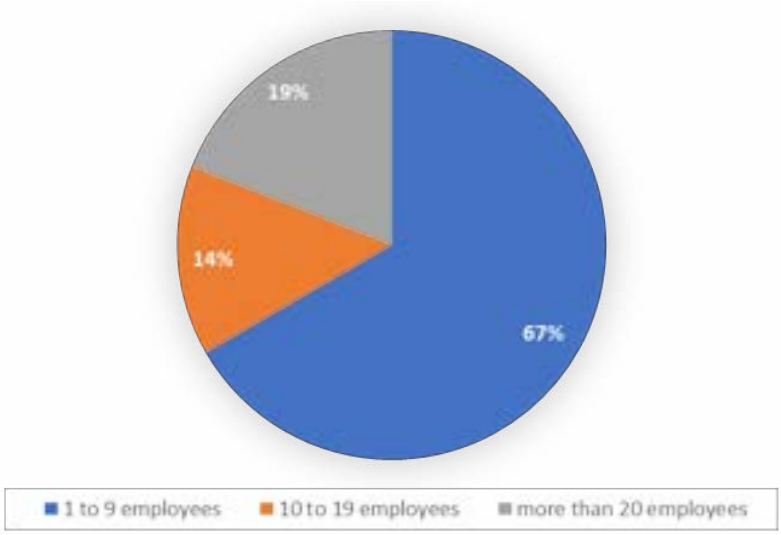


Figure 4: Heavy and Civil Construction Businesses[15]

[15] Australian Bureau of Statistics (2018–19) Businesses in Australia 2018–19, TableBuilder, accessed 30 November 2023

3 Workforce demographics

Key Findings

- The civil construction workforce represents 1% of Tasmania's Full Time Equivalent (FTE) working population – this has decreased since 2017–2018.
- The workforce and industry activity is concentrated in the South, with more jobs than workers in both the North and North West regions of the state.
- Machinery operators/drivers and labourers are the dominant occupations within the workforce, with most of the workforce working full time hours and earning higher than average weekly incomes.
- Civil construction workers are working longer hours per week with almost a quarter of the workforce working 50 hours or more per week.
- The civil construction workforce is significantly less diverse than Tasmanian workforce, with low participation rates for both women and migrant workers.
- The workforce has increasing numbers of workers approaching retirement age.

3.1 Employment

The civil construction industry employed 2384 people in 2022–23 (or 2262 FTE). This is below the peak employment reached in 2018–19, but above that during the COVID period.

The industry employed 1% of Tasmania's FTE working population in 2022–23, a share that has decreased slightly since a peak in 2018–19, when civil construction represented 1.1% of Tasmania's FTE workforce (Figure 5). This indicates that the industry is a powerful contributor to Tasmania's economy – as this 1% share of the state's workforce contributes more than 2% in value-add to the economy.

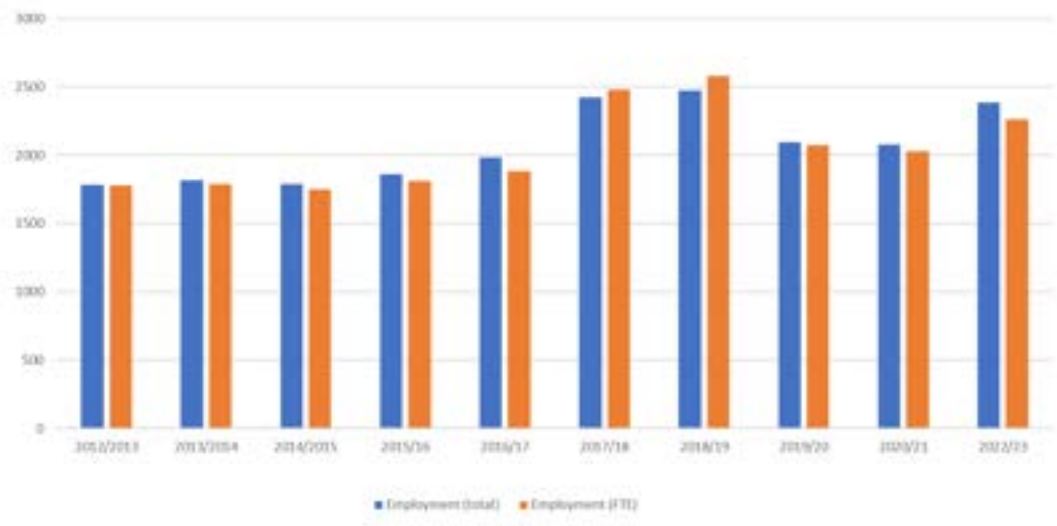


Figure 5: Change in civil construction workforce – total employed vs FTE[16]

Tasmania's civil construction workforce of 2022–23 was concentrated in the South with 56.6% of the FTE working population. Tasmania's North recorded 23.8% and the North West recorded

[16] Industry Sector Analysis, National Institute of Economic and Industry Research (NIEIR) ©2023. Compiled and presented in economy.id by .id (informed decisions), accessed 28 August 2024

19.6%.[17] Within the South region, the greater Hobart area accounts for most of the workforce in terms of numbers of workers with 93%[18] of the South region of the workforce located in greater Hobart area (Figure 6).[19]

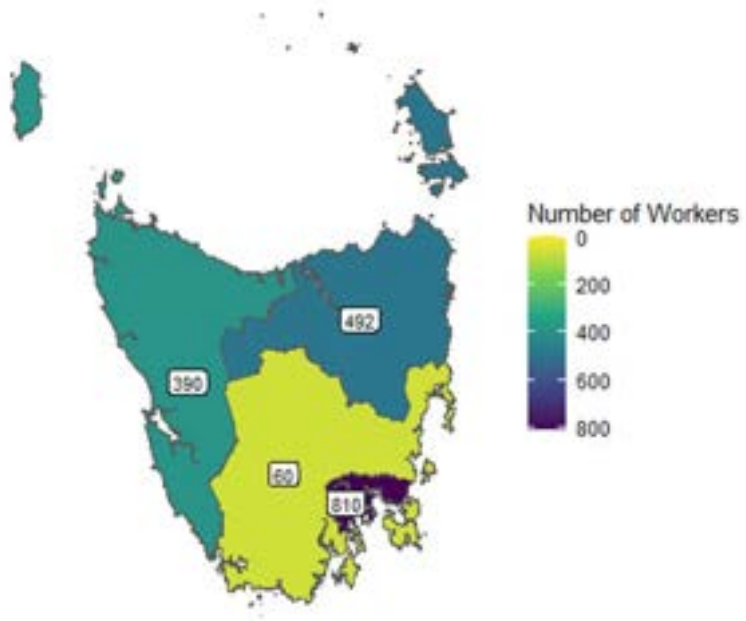


Figure 6 Geographic Distribution – Civil Construction workforce, 2021 Census Data[20]

The regional shares of the economic contribution of the civil construction industry closely reflects the distribution of its workforce (Figure 7).

[17] National Institute of Economic and Industry Research (NIEIR) ©2023. Compiled and presented in economy.id by .id (informed decisions), accessed 24 June 2024

[18] Australian Bureau of Statistics (2021) Census of Population & Housing Tasmania TableBuilder, accessed 26 June 2024

[19] Australian Bureau of Statistics (2021) Census of Population & Housing Tasmania TableBuilder, (data sourced by adding SA4 regions of Hobart and South East together and taking percentage for Person records 2021 census employment, income and education – Heavy and Civil Engineering), accessed 28 August 2023

[20] Map generated using ABS Geopackage Tasmania Table G55 Industry of Employment - GDA2020, and data for number of workers sourced from ABS table builder Employment, Income and education 2021 Census, Person Records Heavy and Civil Engineering Construction, accessed 26 June 2024

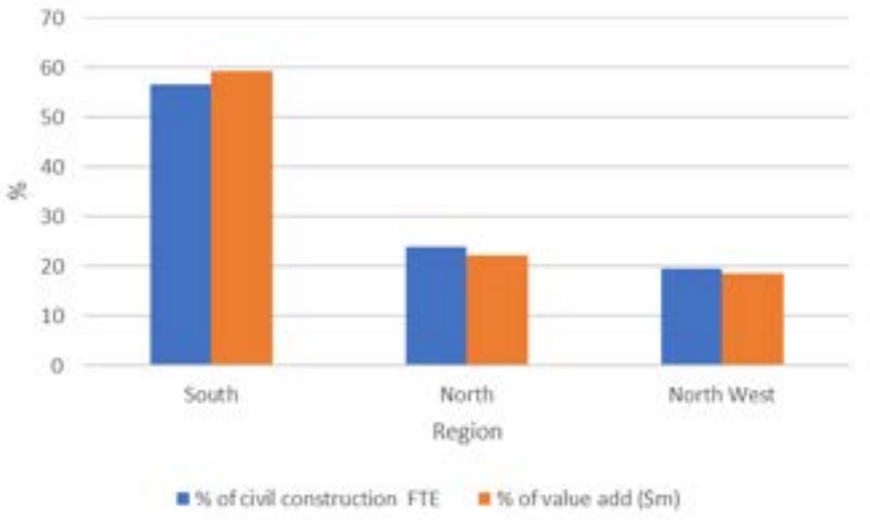


Figure 7: Regional contribution to value add($m) and Employment (FTE) – 2022–23[21]

The industry's job to resident workers ratio varied between the regions:

- In the North and the North West there were more local jobs in the industry than resident workers in the industry, with the ratio above 1 for both regions (1.07 and 1.02 respectively)
- In the South the jobs to resident workers ratio was 0.96, indicating there are more resident workers than local jobs in this region.[9]

This indicates that some workers from the South travel to the other regions to work.

3.2 Occupations

Machinery operators/drivers (27% of workers) and labourers (23%) make up half of the civil construction workforce. Technicians and trades workers account for a further 18% of the workforce. Combined, these three occupational groups account for over two-thirds of the workforce.

Of the remainder of the workforce, the next biggest occupational group is managers at 15%, followed by clerical and administration workers at 8 % and professionals at just under 8% (Figure 8).

Appendix G shows the numbers of civil construction workers employed in Tasmania in 2021 by detailed occupation title.

[21] National Institute of Economic and Industry Research (NIEIR) ©2023. Compiled and presented in economy.id by .id (informed decisions), accessed 24 June 2024

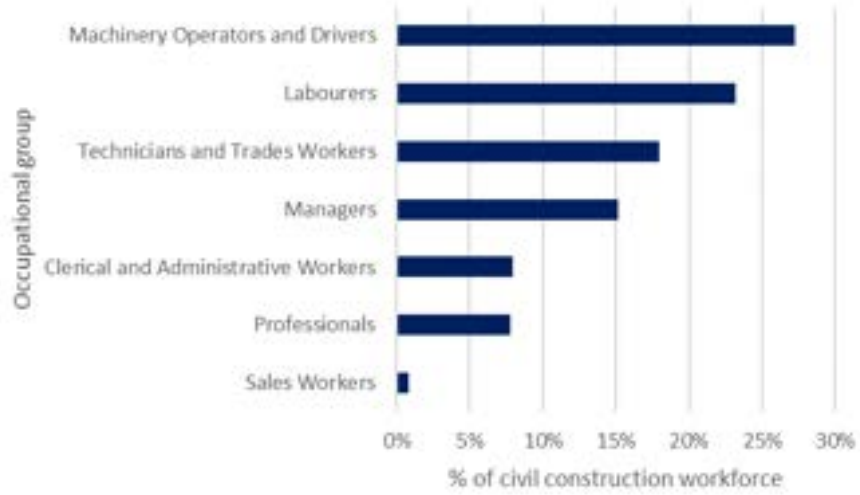


Figure 8: Civil construction occupations, 2021[22]

3.3 Age

The age structure of the civil construction workforce for 2021 is spread uniformly from the age groups 25 to 64 years:

- 9.3% are aged between 15 and 24 years
- 19.1% are aged between 25 and 34 years
- 20.6% are aged between 35 and 44 years
- 24% are aged between 45 and 54 years
- 21.7% are aged between 55 and 64 years
- 5.3% are 65 years or older.

The industry workforce is aging, with increasing numbers in the 55 years and older age groups – rising from 20.6% to 27% in the decade to 2021. Over the same period, workers in the age group 35 to 44 years decreased 13% to 20.6% and workers in the age group 45 to 54 years decreased 13% to 24% (Figure 9).

[22] Australian Bureau of Statistics (2021) Census of Population & Housing Tasmania TableBuilder, accessed 26 June 2024

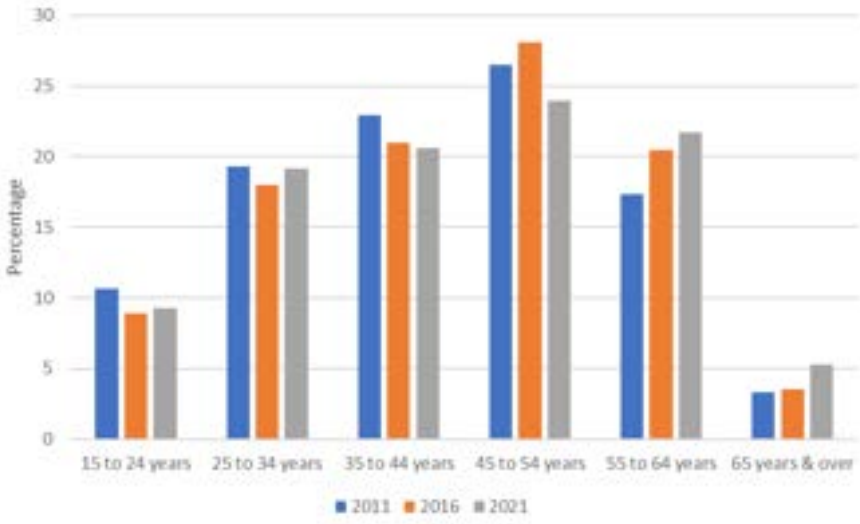


Figure 9: Age structure of civil construction workforce 2011–2021[23]

Compared to the overall Tasmanian workforce, the civil construction industry is older, with statistics showing:

- a lower percentage of the workforce in the younger age groups, with numbers of workers in the 15 to 24 years group being 32% lower and 25 to 34 years being 16% lower, indicating the industry is not attracting its share of the younger workers
- a higher percentage of the workforce over 45 years of age, being 14% higher in the 45 to 55 years group, 19% higher in the 55 to 64 years group and 4% higher in the 65 years and over group (Figure 10).

[23] Australian Bureau of Statistics (2021) Census of Population & Housing Tasmania TableBuilder, accessed 26 June 2024

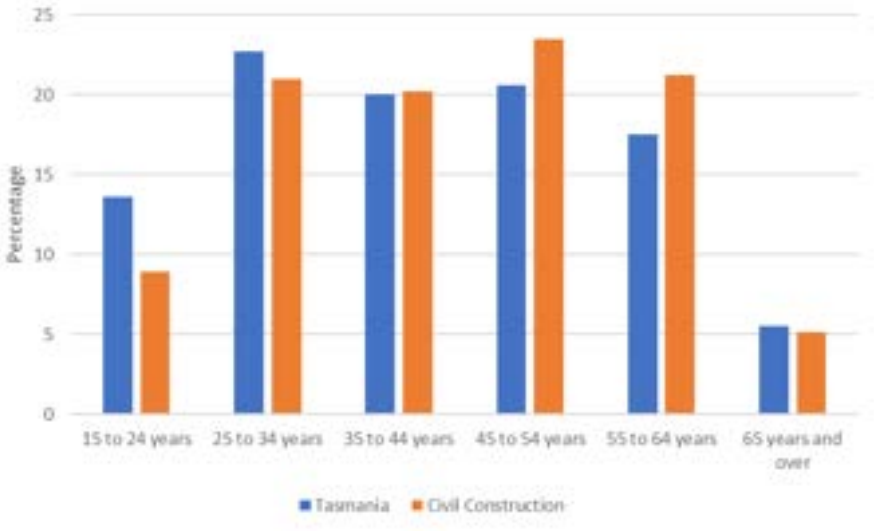


Figure 10: Age comparison – Civil construction and Tas all industries, 2021[24]

3.4 Gender

The civil construction workforce is heavily male dominated, with 87% of workers being male (Figure 11). This is slightly below the broader construction[25] industry which has 89% male workers, but significantly higher than for Tasmania's overall workforce, where the split is 50% males and 50% females.

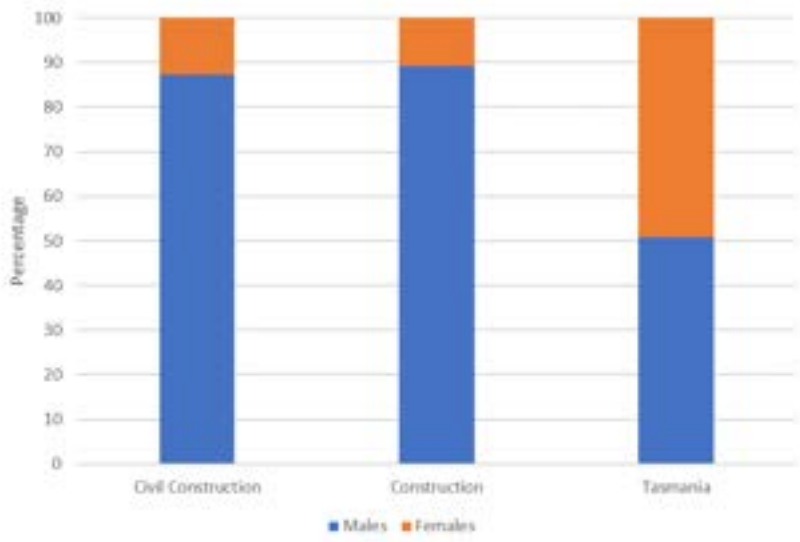


Figure 11: Workforce composition by gender – civil construction, construction and all industries, 2021[26]

[24] Australian Bureau of Statistics, Census of Population & Housing 2016 and 2021. Compiled and presented in economy.id by .id (informed decisions), accessed 24 June 2024

[25] Any references to the construction Industry, broader construction industry or construction sector refers to data collected for Building Construction, Heavy and Civil Engineering and Construction services when data is sourced from EconomyID. Where data is sourced directly from ABS, Construction Industry refers to: Construction, nfd; Building Construction; Heavy and Civil Engineering Construction; and Construction Services

[26] Australian Bureau of Statistics (2021) Census of Population & Housing Tasmania, 2021,2016,2011 TableBuilder and W09 INDUSTRY OF EMPLOYMENT BY SEX, accessed 24 June 2024

The proportion of female workers represented in the civil construction workforce increased by 31% since 2011 (Figure 12).

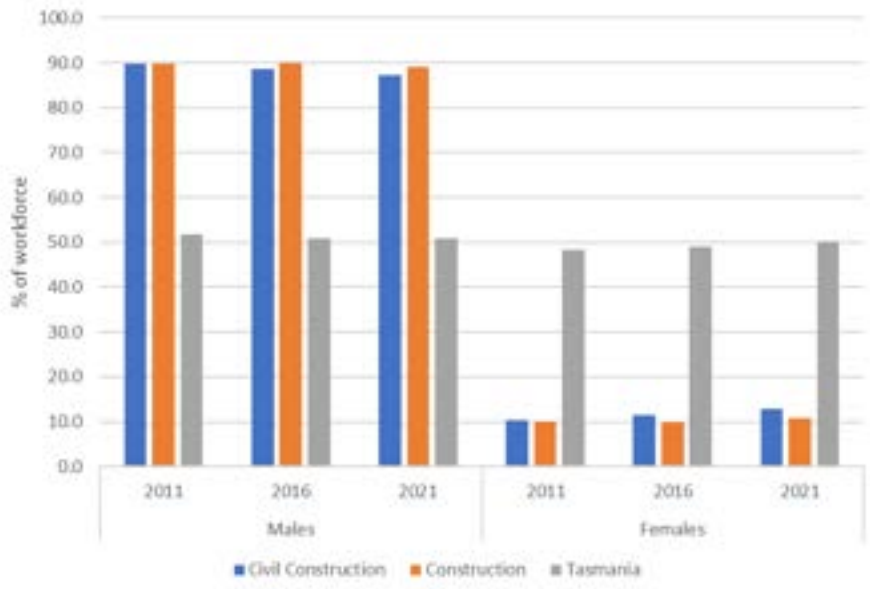


Figure 12: Gender structure of the civil construction workforce compared to construction and all industries Tasmania, 2011–2021[27]

Female workers tend to be concentrated in clerical and administration roles, with 53% of all civil construction female workers in this one occupational group in 2021. Female workers are contributing to leadership with 15% of the female workforce in management roles. The other significant occupations for female workers are labourers (15%) and professionals (11%). The data indicates no female workers in the technicians and trades or sales worker roles in 2021. (Figure 13).

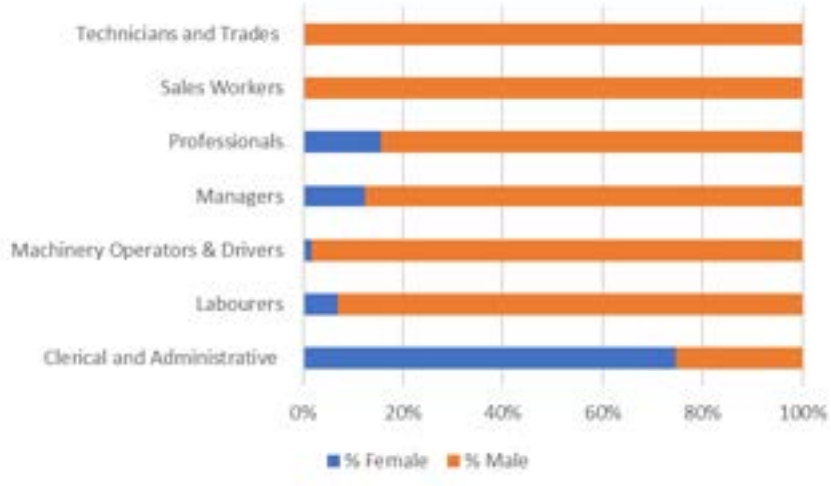


Figure 13: Female/male distribution within occupational categories, 2021[28]

[27] Australian Bureau of Statistics (2021) Census of Population & Housing Tasmania, 2021,2016,2011 TableBuilder and W09 INDUSTRY OF EMPLOYMENT BY SEX, accessed 24 June 2024

[28] Australian Bureau of Statistics (2021) Census of Population & Housing Tasmania, 2021,2016,2011 TableBuilder and W09 INDUSTRY OF EMPLOYMENT BY SEX, accessed 24 June 2024

Females in civil construction are more likely to be working more than 35 hours per week when compared to the construction industry generally and to all other industries in Tasmania (Figure 14). This may be indicative that less part-time work is available to workers in the industry, which in turn is likely to be a barrier to attracting more women to the industry.

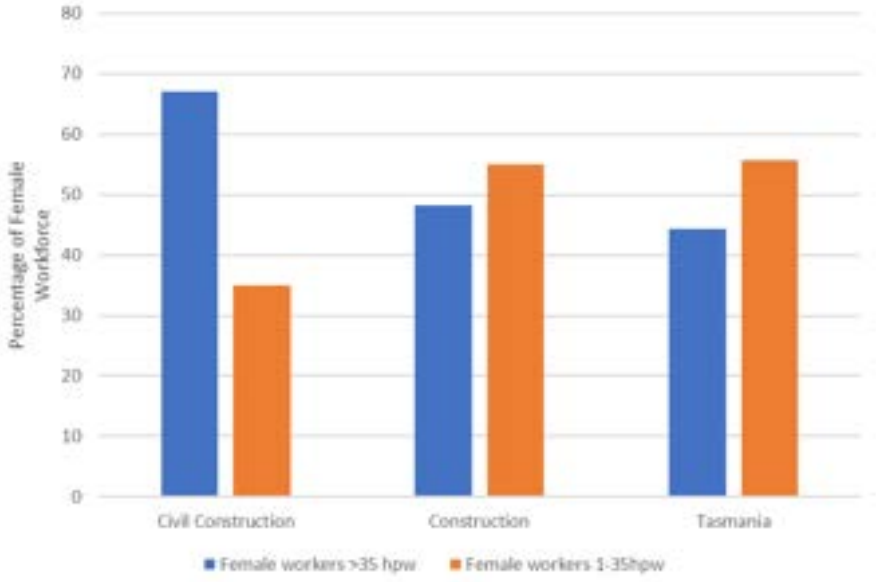


Figure 14 : Hours worked by females in civil construction, construction and all industries, 2021[29]

In terms of income, female workers appear to dominate the lower earning income brackets compared to their male co-workers (Figure 15). This may be indicative of a gendered pay gap in the industry, or a reflection of the occupations and hours of work common for female employees in the industry.

[29] Australian Bureau of Statistics (2021), Census of Population & Housing, 2021, TableBuilder, accessed 24 June 2024

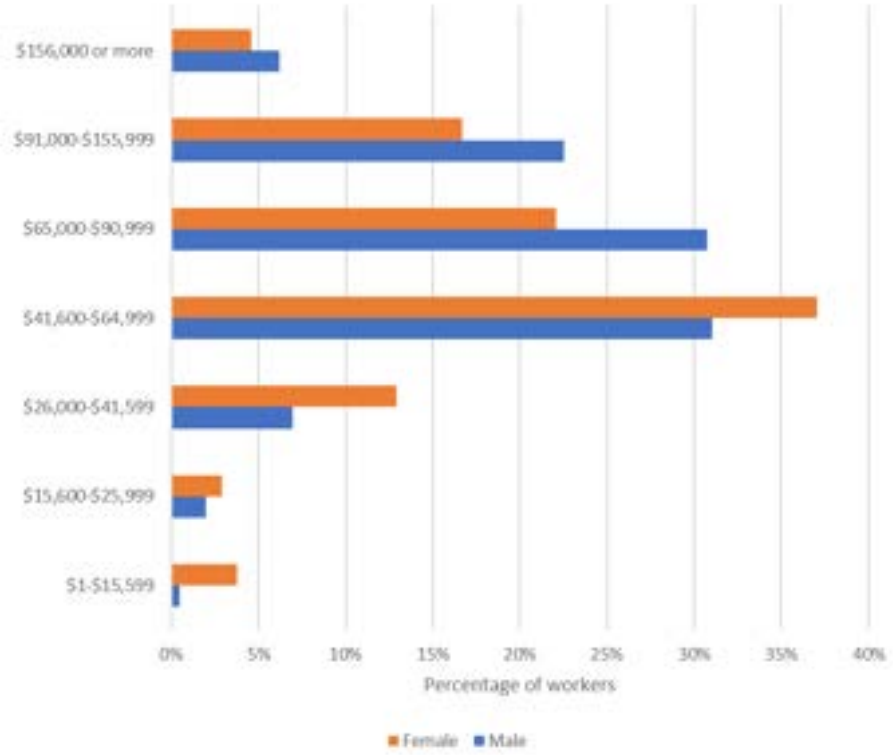


Figure 15: Comparison of income by gender[30]

3.5 Income

Civil construction income levels are generally higher than for the construction industry and the Tasmanian workforce as a whole (Figure 16).

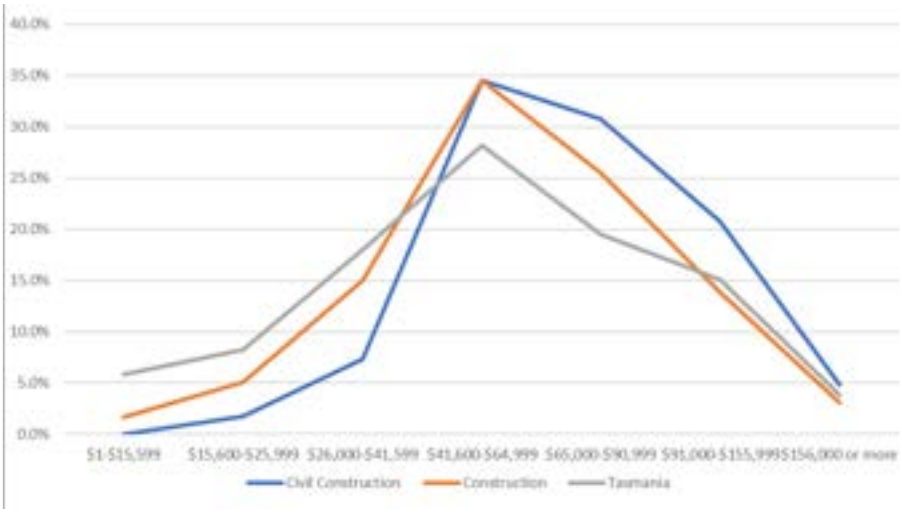


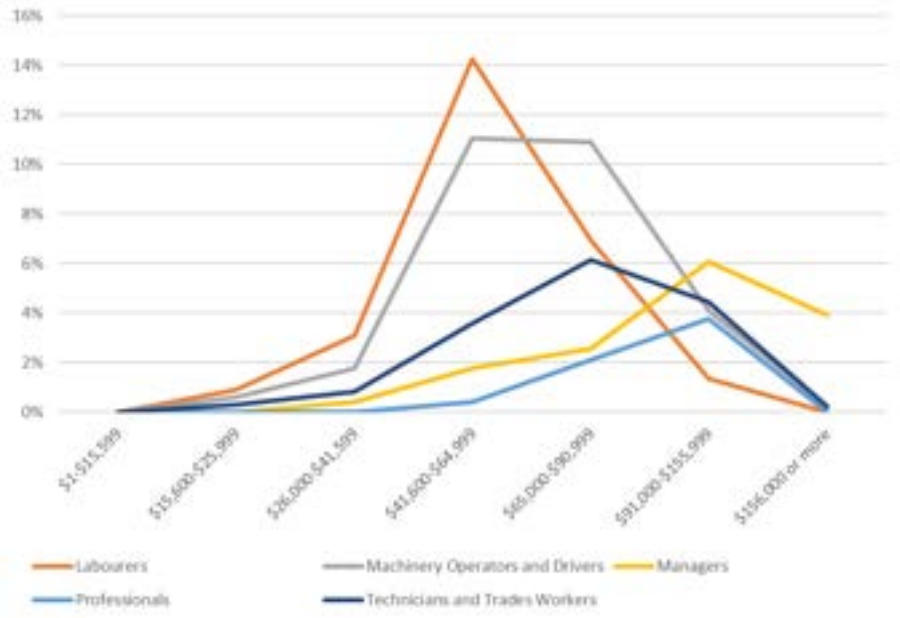
Figure 16: Civil construction income compared to all industries in Tasmania for in-scope occupations[31]

[30] Australian Bureau of Statistics (2021), Census of Population & Housing, 2021, TableBuilder, accessed 24 June 2024

[31] Australian Bureau of Statistics (2021), Census of Population & Housing, 2021, TableBuilder, accessed 24 June 2024

The income profile is further explained by looking at the major occupational group's annual incomes (see Figure 17). For example, machinery operators and drivers, and technicians and trades are both large occupational groups with a significant proportion of each (4%) earning $91,000-$155,999 annually. Additionally, managers and professionals also contribute to the higher-than-average incomes of the civil workforce, with 4% of professionals earning $91,000–$155,999 and 4% of Managers earning $156,000 or more.

Figure 17: Annual income - selected occupations as percentage total civil construction workforce, 2021[32]



3.6 Hours worked

The civil construction industry is characterised by a largely full-time workforce. In 2021, 87% of the workforce worked more than 35 hours per week, with only 13% working between one and 35 hours per week. The reliance on a full-time workforce is slightly higher than the whole construction workforce, but significantly higher than the all-Tasmanian workforce (Figure 18).

[32] Australian Bureau of Statistics (2021), Census of Population & Housing, 2021, TableBuilder, accessed 24 June 2024

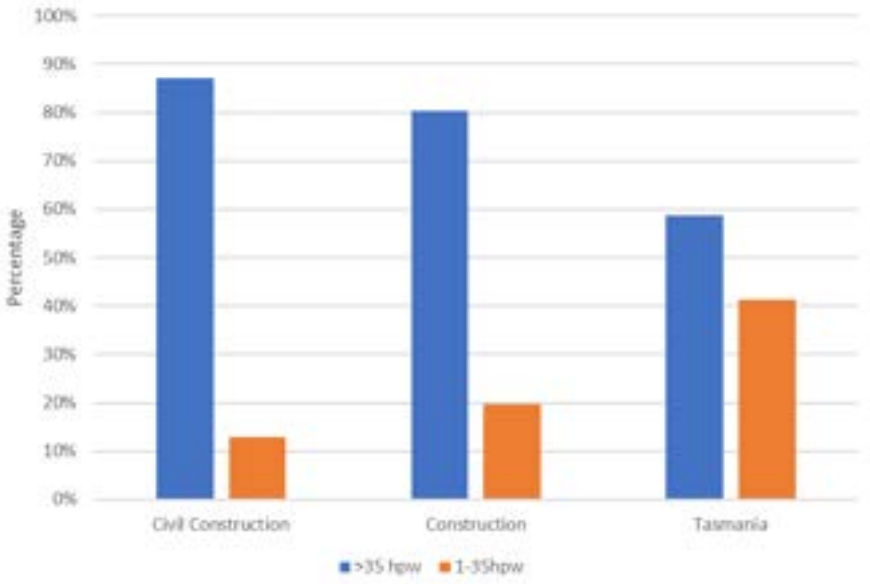


Figure 18: Hours worked per week, civil construction, construction and Tasmania as a whole, 2021[33]

Notably, the civil workforce is doing a lot of overtime, in 2021 66% of the workforce were working 40 hours or more per week and 22% were working 50 hours or more per week, see Figure 19. This may also partially explain why the Civil Construction annual incomes are higher than average, see section 3.5.

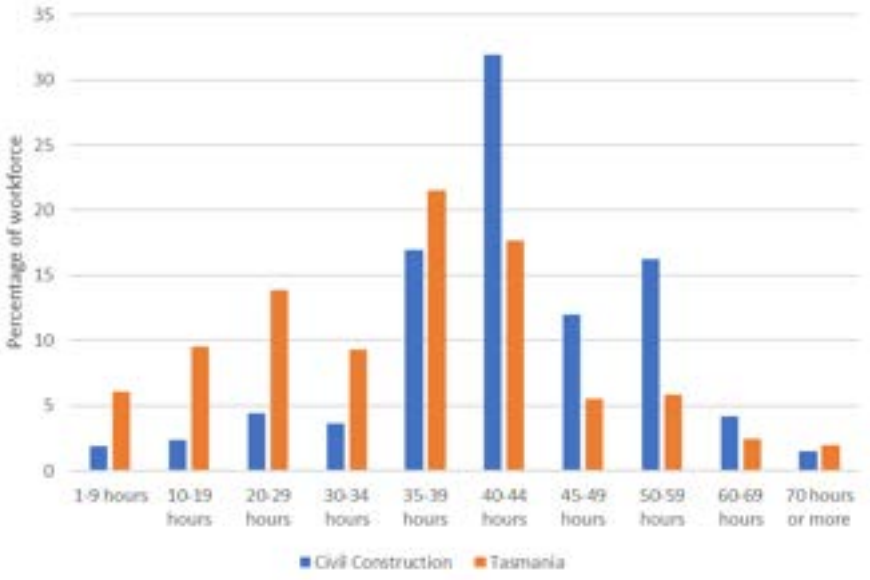


Figure 19 Civil construction workforce working hours vs Tasmania All Industries from 2021[34]

[33] Australian Bureau of Statistics (2021) Census of Population & Housing TableBuilder, accessed 26 June 2024

[34] National Institute of Economic and Industry Research (NIEIR) ©2023. Compiled and presented in economy.id by .id (informed decisions), accessed 24 June 2024

3.7 Migrant participation

Migrants[35] represent 275 workers or 14% of the workforce in 2021. This is below the average for Tasmania, where migrants comprised almost 18% of the workforce.[36] The number of migrant workers in the civil construction workforce has increased since 2011 – this increase has been below the increase experienced across the Tasmanian workforce (Figure 20).

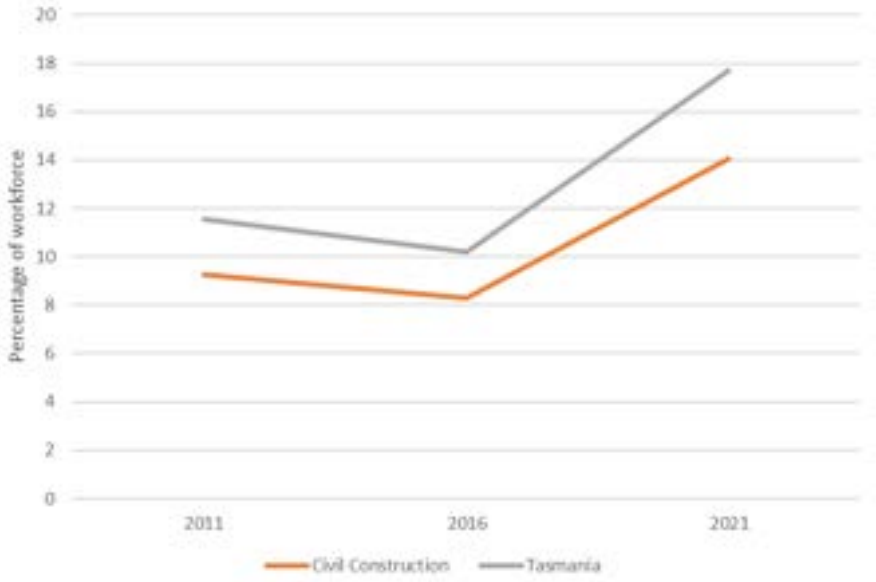


Figure 20: Percentage of migrants in civil construction workforce vs all Tasmanian workers[37]

Migrant workers in the industry tend to come from the United Kingdom and New Zealand (Figure 21).

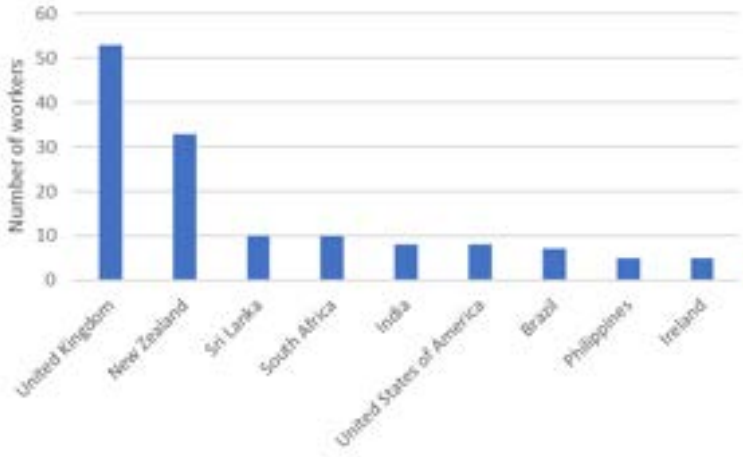


Figure 21: Country of birth of migrant civil construction workers, 2021[38]

[35] Workers not born in Australia (or external territories)

[36] Australian Bureau of Statistics (2021) Census of Population & Housing TableBuilder, accessed 26 June 2024

[37] Australian Bureau of Statistics (2021) Census of Population & Housing TableBuilder, accessed 26 June 2024

[38] Australian Bureau of Statistics (2021) Census of Population & Housing Tasmania TableBuilder, accessed 24 June 2024

4 Skills, Education and Training

The civil construction workforce is constantly changing due to the project-based nature of the work. The broad scope and dynamic nature of the industry requires the workforce to master skills and competence in the operation of various plant and machinery, depending on the project and the environment.

This places a heavy training demand on business to simply fill an immediate need (i.e. having the skills to operate machinery safely in one type of material or environment). This is a particularly difficult burden for the smaller operators.

4.1 Skill shortages

Key Findings

- There are currently significant skill shortages in the workforce.

The civil construction industry has some notable skill shortages: Construction Managers, Surveyors and Spatial Scientists, Civil Engineering Professionals, Civil Engineering Draftspersons and Technicians.[39]

Jobs and Skills Australia's Skills Priority List identifies that 72 out of the 142 occupations in the civil construction workforce are in shortage in Tasmania:[40]

- Clerical and Administrative Workers (5 occupations)
- Labourers (2 occupations)
- Machinery Operators and Drivers (12 occupations)
- Managers (18 occupations)
- Professionals (13 occupations)
- Technicians and Trades Workers (22 occupations)

The 2023 Skills Priority List report indicated that occupations that are heavily gender skewed are more likely to have significant skill shortages, with some 54% of occupations where males make up at least 80% of workforce being found to be in shortage.[41] This suggests that the pronounced gender skew in the civil construction workforce is likely to be a key driver of skill shortages. A detailed summary of the occupations in shortage is provided in Appendix H.

4.2 Educational attainment

Key Findings

- The majority of workforce hold secondary or Certificate III/IV qualifications.

Most civil construction workers are either educated through secondary school or VET (Figure 22). In 2021, 45% of civil construction workers were educated to secondary school level and 34% held VET Certificate III and IV qualifications.[42] Tertiary level qualifications were held by 14% of workers.

[39] Tasmania Onshore Skilled Occupation List (TOSOL), accessed 25 June 2024

[40] Jobs and Skills Australia (2023) Skills Priority List – Data using 6 Digit ANZSCO level Occupations – Tasmania Shortages, accessed 24 June 2024

[41] 2023 Skills Priority List Key Findings Report September 2023

[42] Australian Bureau of Statistics (2021) Census of Population & Housing Tasmania TableBuilder, accessed 26 June 2024

No civil construction workers held a certificate I or II qualification as their highest level of qualification.

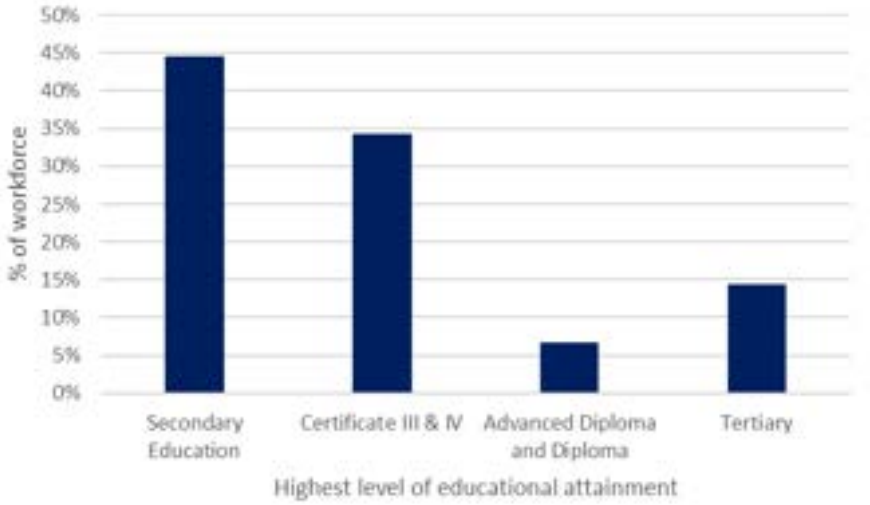


Figure 22: Educational attainment – civil construction workforce[43]

Workers having completed secondary education as their highest educational attainment dominate the clerical and administrative, labourer and machinery operator and driver occupational groups. In contract, VET trained workers are predominant in the sales workers and technicians and trades occupations and professionals are generally tertiary educated. Around half of managers hold VET level qualifications, with 30% holding tertiary qualifications and the remainer hold secondary qualifications as their highest level of educational attainment (Figure 23).

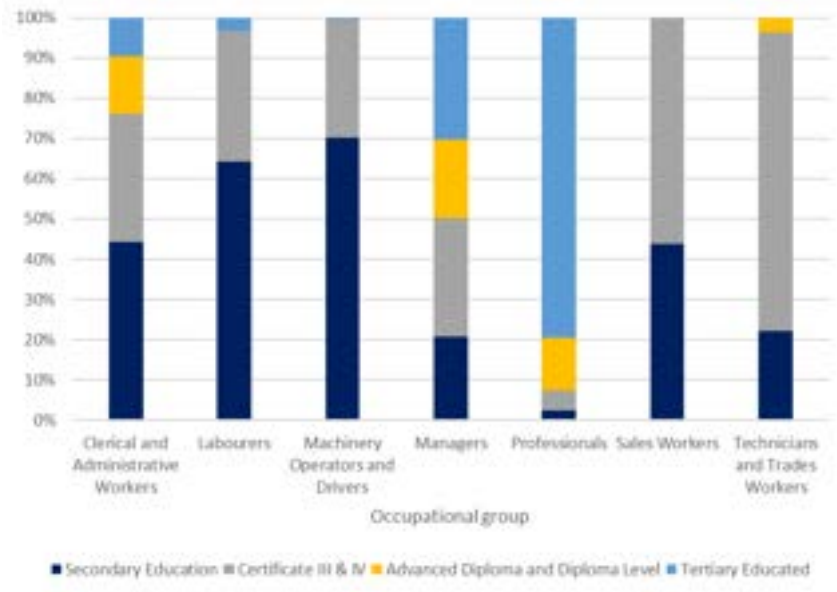


Figure 23: Educational attainment by occupation civil construction[44]

[43] Australian Bureau of Statistics (2021) Census of Population & Housing Tasmania TableBuilder, accessed 24 June 2024

[44] Australian Bureau of Statistics (2021) Census of Population & Housing Tasmania TableBuilder, accessed 24 June 2024

4.3 Current training effort

Key Findings

- The focus of education and training tends to relate to units of competency rather than full qualifications.

Workforce training demand is driven by:

- recruitment of workers to
  - fill new jobs required to service increased civil construction activity
  - replace workers who leave the industry (natural attrition)
- upskilling of existing workers – often in response to obtaining new work
- direct and indirect regulatory requirements to attain 'tickets, for example
  - to obtain required plant/machinery or vehicle licences
  - to meet employer's duty of care requirements under work health and safety legislation to ensure that workers are adequately trained for their job role.

Civil construction course enrolments for 2022 made up 1.4% of all VET enrolments, which indicates that training effort for this industry is proportional to the size and contribution of the industry to Tasmania's economy, as civil construction contributes 2% of Tasmania's value add $million for 2022/23 and accounts for 0.8% workforce in terms of total numbers and 1% of workforce in FTE.[45]

Commencement of apprenticeships and traineeships has increased overall since 2018 (Figure 25). Enrolment in other civil construction courses has fluctuated since 2018, with program enrolments experiencing a low in 2020 then increasing 222% to 680 enrolments in 2022 (Figure 24), and completions have also fluctuated since 2018 (Figure 25).[46] Calculating a completion rate for this field of education is not viable due to large numbers of program enrolments being due to people intending to complete single units of competency or 'ticket', rather than full qualifications. The low numbers of program completions compared to program enrolments is likely due to this ticket-based compliance approach to training.

[45] National Institute of Economic and Industry Research (NIEIR) ©2024. Compiled and presented in economy.id by .id (informed decisions), accessed 24 June 2024

[46] NCVER (2023) Total VET students and courses 2022 Tasmania Enrolments 2018-2022, accessed 26 June 2024

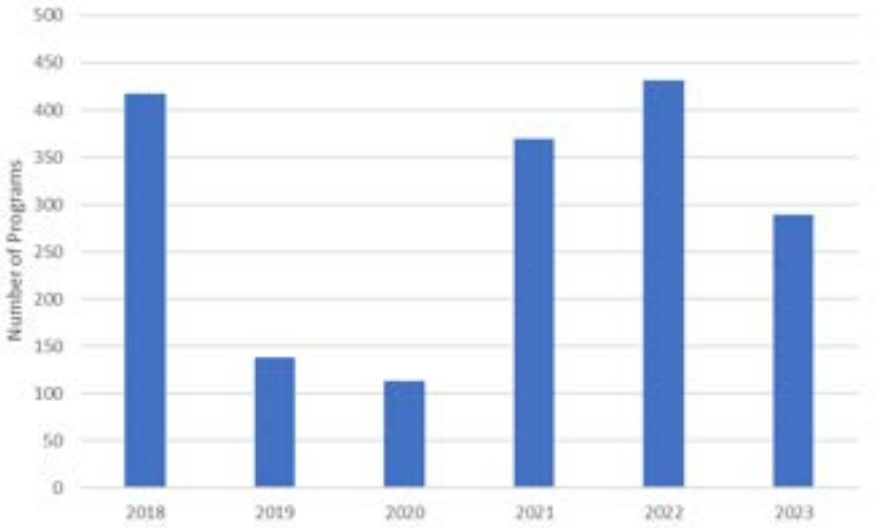


Figure 24: VET Course enrolments for Civil Engineering Field of Education[47]

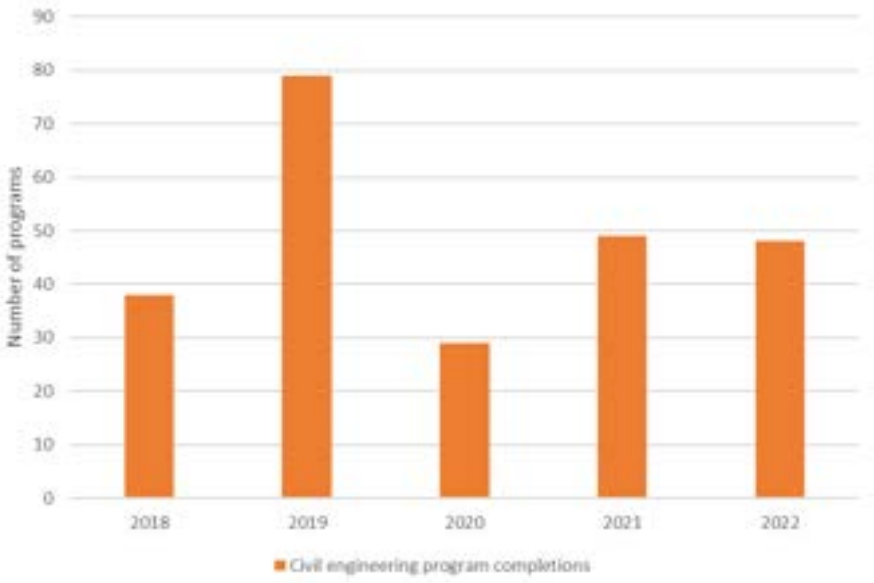


Figure 25 VET Course completions for Civil Engineering Field of Education[48]

[47] NCVER (2023) Total VET students and courses 2022 Tasmania Enrolments & Completions 2018–2022, accessed 26 June 2024

[48] NCVER (2023) Total VET students and courses 2022 Tasmania Enrolments & Completions 2018–2022, accessed 26 June 2024

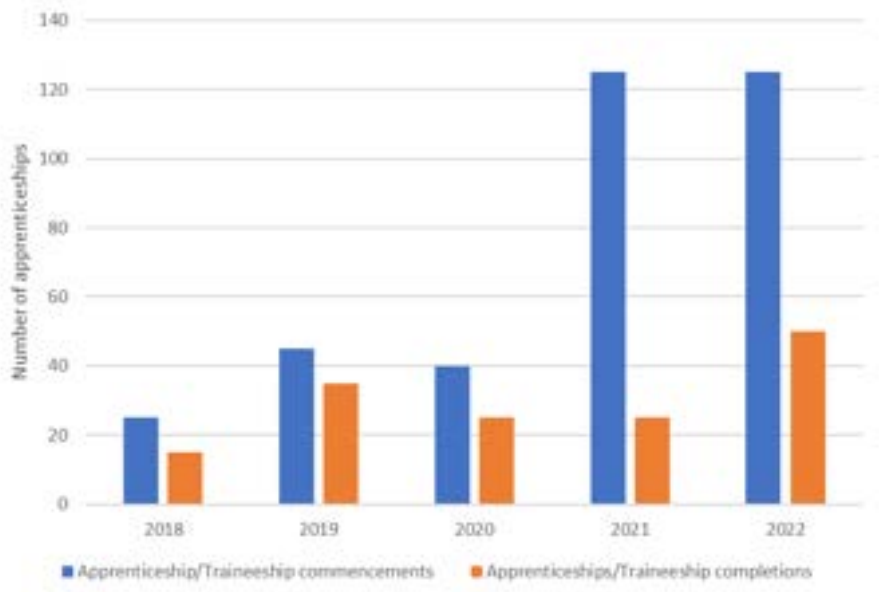


Figure 25: Civil construction apprenticeship commencements and completions[49]

There is a range of funded apprenticeship pathways for civil construction in Tasmania (Table 1).

Table 1: Approved Apprenticeship and Traineeships pathways – Civil Construction[50]

Apprenticeship or Traineeship	National Code	Duration (months)	Funded hours	School Based Pathway
Certificate III in Civil Construction	RII30920	36	1174	Yes
Certificate IV in Civil Construction	RII40720	24	839	No
Certificate II in Civil Construction	RII20720	18	505	Yes
Certificate IV in Civil Construction Design	RII40820	36	849	No
Diploma of Civil Construction Design	RII50520	36	1521	No
Certificate III in Civil Construction Plant Operations	RII30820	36	1239	Yes

Enrolments in civil construction units of competency increased by 29% between 2018 and 2022. This increase was largely driven by High Vis Army activities. This may be indicative of the ticket-based compliance approach to training within the industry. [51]

[49] NCVER (2023) Apprentices and trainees: Tasmania Enrolments & Completions 2018-2022, accessed 26 June 2024

[50] Skills Tasmania List of approved apprenticeships or traineeships (July 2024), accessed 28 August 2024

[51] Licences or evidence of competency where licences are not required

The level of civil construction training demand related to tickets is shown by the enrolments in civil construction units of competency.[52]

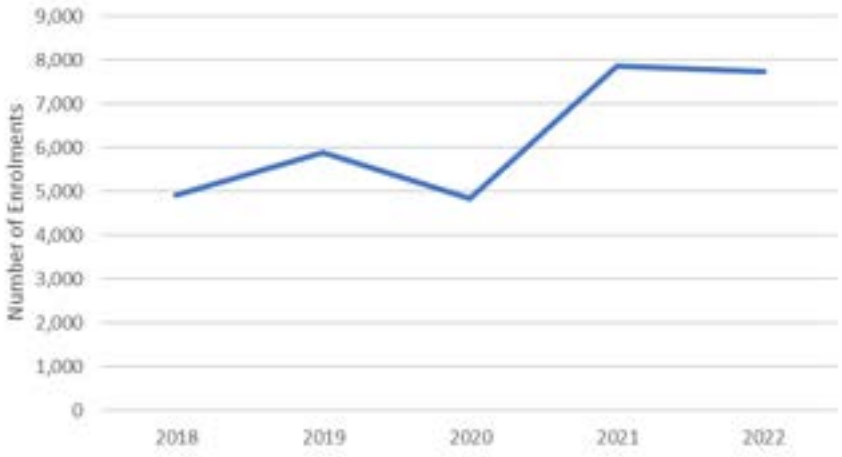


Figure 26: Enrolments in Units of Competency for Civil Construction [53]

NCVER data indicates that there were no qualifications completed for VET in Schools courses in the civil engineering field of education between 2006 and 2023. There were, however, enrolments in VET in Schools courses in civil engineering over this period, all of which were school-based apprentices and trainees (Figure 27).[54] There were no enrolments in 2019 and 2021 in civil engineering VET in Schools courses in Tasmanian schools.

[52] The primary Training Package used for civil construction training is the Resources and Infrastructure Industry Training Package. Other Training Packages used are the Agriculture, Horticulture and Conservation and Land Management and the Construction, Plumbing and Services Training Package

[53] NCVER 2023, Total VET students and courses 2022: subject enrolments DataBuilder, Total, State/territory of delivery location, Type of training, Subject, Apprentice/trainee status, Subject type by Year

[54] NCVER Vocstats 2024, VET in schools, VIS program completions (Tasmania) 2006–2023, accessed 16 December 2024

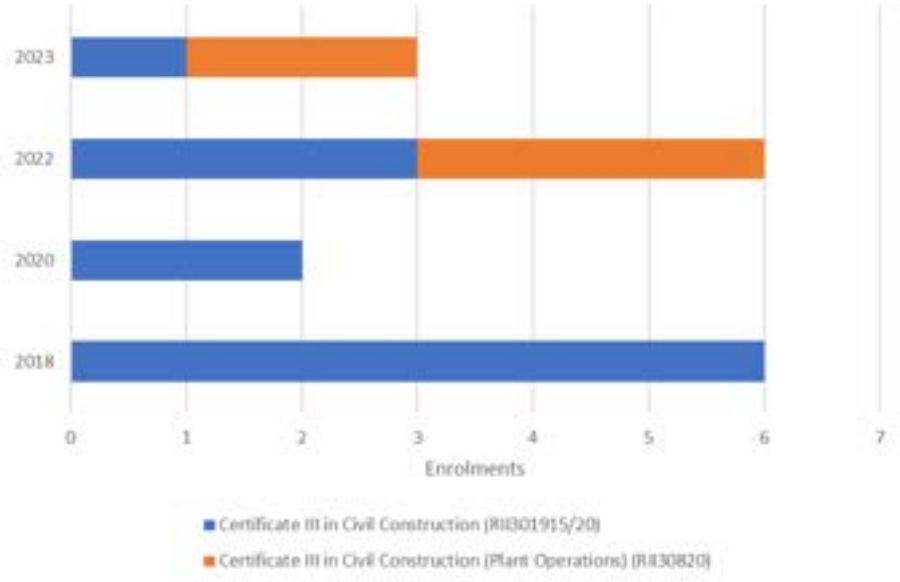


Figure 27: VET in Schools enrolments, Civil Construction, 2018–2023[55]

[55] NCVER Vocstats 2024 VET in schools, VIS program enrolments (Tasmania) 2006-2023, accessed 16 December 2024

5 Industry feedback

5.1 Industry survey and individual consultation

Industry stakeholders were asked for their views on the key challenges for the civil construction workforce in terms of general workforce issues, worker attraction, recruitment and retention and skill development. This was done through an online industry survey (Appendix C outlines the survey questions) combined with 20 individual consultations.

An Industry Stakeholder's Workforce Forum was then held to consider the emerging results of the desktop research and industry survey and consultations and to identify the key priority areas for the new Workforce Plan.

5.1.1 Industry survey

Attraction and recruitment were clearly highly significant challenges for civil construction, with skill development and retention still significant, but not quite at the same level of concern (Figure 28).

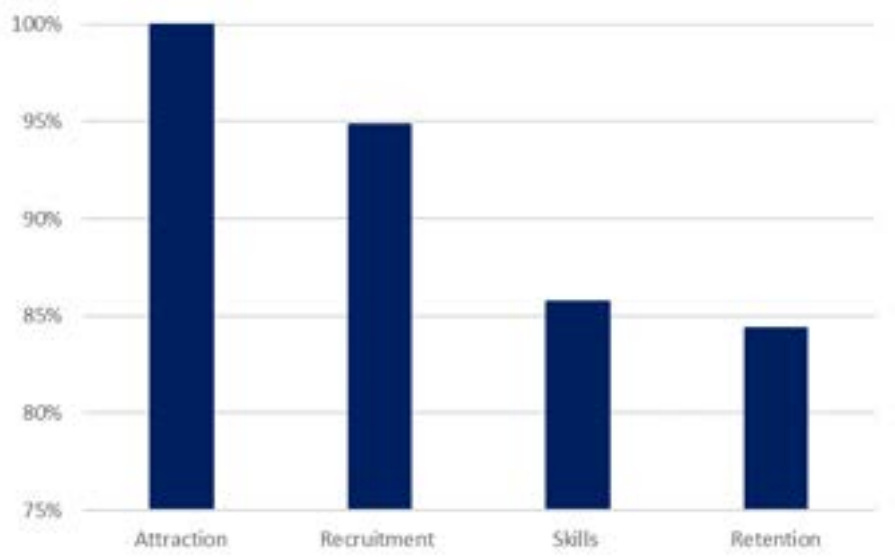


Figure 28: Workforce challenges[56]

More specifically, over 80% of survey respondents reported that the following issues are particularly challenging:

- attracting new workers to the industry
- increasing the size of your workforce
- filling vacancies in your workforce
- an aging workforce
- meeting workforce regulatory requirements
- managing the introduction of new technology
- partnering with training providers
- accessing appropriate training

[56] Industry Survey conducted by Stenning and Associates July 2024

- improving the productivity of your workers
- managing workforce wellness (i.e. issues relating to mental health, alcohol and other drugs, etc.)
- retaining your workers
- retaining corporate knowledge.

75% of respondents reported challenges with literacy and numeracy skills.

Other challenging workforce issues that survey respondents expect to face over the next five years are outlined in Appendix D.

When asked what the highest priority workforce issues that need to be addressed over the next one to five years, responses were varied, tending to focus on issues relating to:

- attracting new staff
- retaining existing staff
- the ageing workforce
- uncertainty about the pipeline of work
- literacy and numeracy issues (including digital literacy)
- issues relating to heavy vehicle licensing and traffic management training.

Detailed responses are outlined in Appendix D.

Managers, machinery operators and drivers, plan operators and professional staff were flagged as the most difficult occupational groups to recruit (Figure 29).

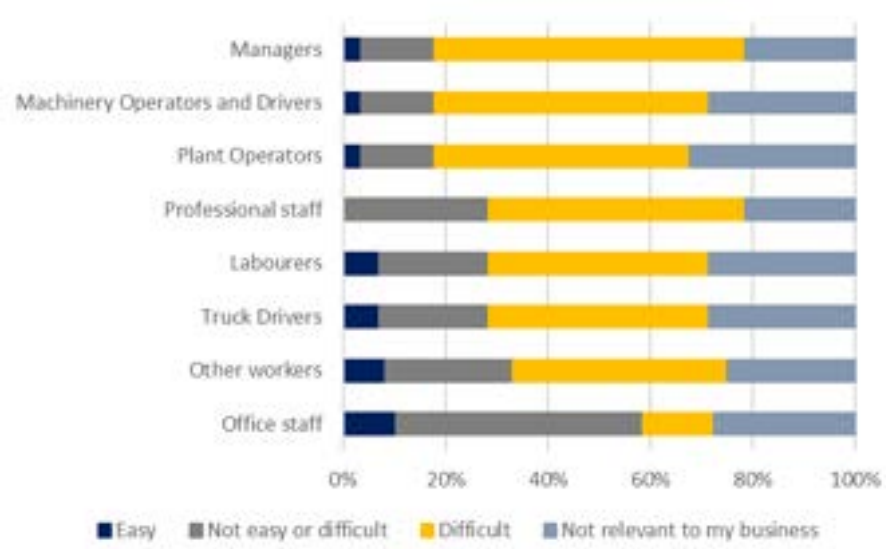


Figure 29: Recruitment difficulty[57]

The lack of appropriately skilled applicants was the most commonly cited reason for recruitment difficulties (Figure 30).

[57] Industry Survey conducted by Stenning and Associates July 2024

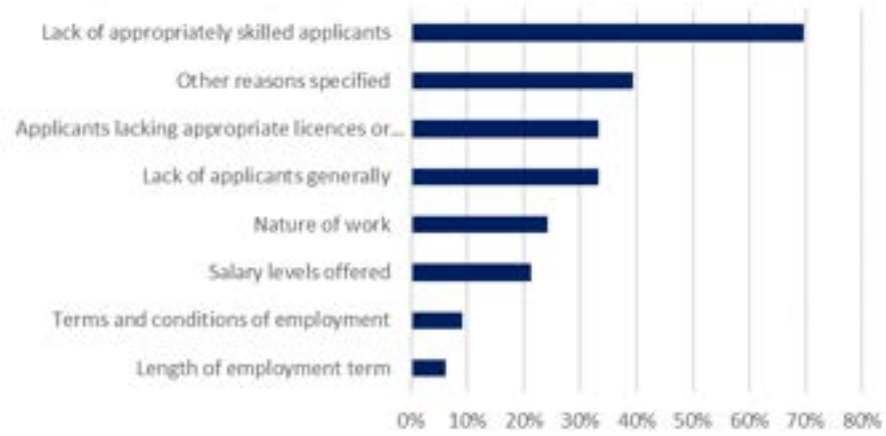


Figure 30: Issues with recruitment[58]

Other reasons cited for recruitment difficulties included:

- Our experience has demonstrated high-skilled 'final trim' excavator operators and civil plumbers have been extremely difficult to recruit. There appears to be a drastic shortage of these skills in the civil construction industry that is understandably compounded by very high wage and conditions expectations from workers.
- Often it is difficult to find suitably qualified candidates who have the necessary skills to use a variety of machine tools when assisting students in construction.
- Workers who are licensed with no experience is the biggest issue.
- The lack of resources in Tasmania - so needing to recruit from the mainland and the added costs of relocation etc.
- A lack of local skill workers in specialised roles e.g. Steel Fixers.
- Job experience is the main issue as most of our people come in green with little to no experience at all and we then have to train them all over again which can be anywhere 3–6 months before they are able to run a job with one other person, it just seems like a constant battle and an ongoing issue faced by not only our company but many others in the traffic management space.
- It is difficult to recruit for roles across both white collar and blue collar.
- Can't compete on wages with big companies.

Retaining workers was not identified as such a big issue as recruitment or attraction. Labourers were cited as the most difficult to retain, and office staff as the least difficult (Figure 31).

[58] Industry Survey conducted by Stenning and Associates July 2024

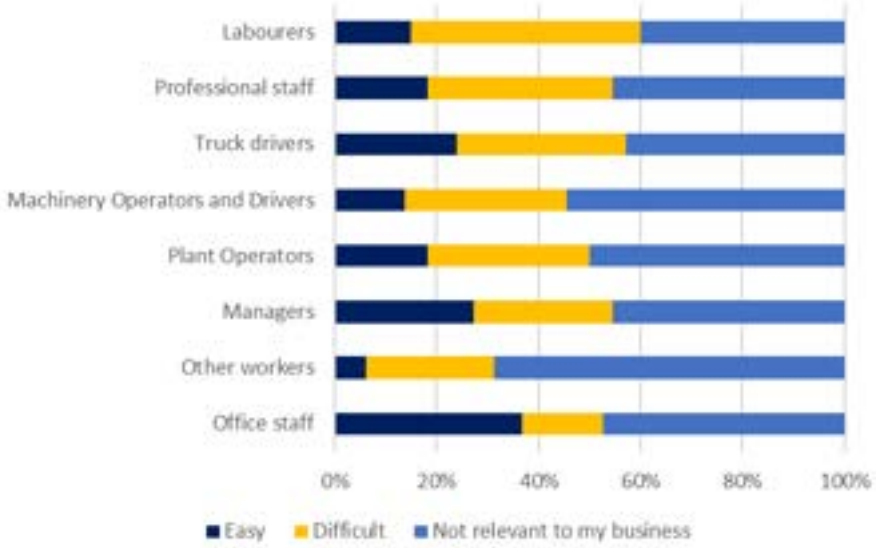


Figure 31: Worker retention[59]

The main reason for difficulties associated with retaining workers relates to the nature of the work and salary levels offered (Figure 32). Working away from home for long periods was another reason identified.

Figure 32: Reasons for difficulties in retaining workers[60]

There are some issues with ensuring that workers are adequately skilled – the primary issues relating to releasing workers to undertake training and providing facilities for on the job training. Identifying and accessing cost effective, appropriate training also raise difficulties for civil construction businesses (Figure 33).

[59] Industry Survey conducted by Stenning and Associates July 2024

[60] Industry Survey conducted by Stenning and Associates July 2024

Figure 33: Issues with accessing skills development[61]

Other comments offered by survey respondents included:

- The 2024–25 reduction in available training subsidies through Keystone will only add to the challenging situation we face as a small to medium sized civil construction business.
- The challenges are training funding and the tenders/works being released to capitalise on the previous projects skilled workers to keep the skills in Tasmania.
- One of the challenges I see going forward is improving the literacy and numeracy skills of students who want to pursue a career in the construction industry.
- A key area of focus needs to be government, industry and training providers come together with a partnership approach.

5.1.2 Individual consultations

Individual consultations were held with civil construction representatives across a range of business sizes and type, including construction companies, government agencies and government business enterprises, traffic management firms. Discussions were also held with a trade training centre and an apprenticeship provider.

The consultations focussed on the following issues/questions:

- What are the highest priority workforce issues that need to be addressed to meet business's skill and labour needs:
  - over the next 12 months
  - over the next five years?
- What key initiatives would stakeholders like to see in the new workforce development plan for civil construction relating to:
  - attracting workers
  - recruiting workers or filling vacancies
  - ensuring your workers have the correct skills for their job

[61] Industry Survey conducted by Stenning and Associates July 2024

- retaining workers?

- What opportunities do stakeholders see for the sector to improve how it collaborates on workforce development initiatives?

The consultation outcomes consistently confirmed the survey findings and provided a depth of understanding of the impact of the challenges on the individual firms consulted.

5.2 Industry Stakeholder's Workforce Forum

An Industry Stakeholder's Workforce Forum was held on 13 August 2024 and was opened by the Hon. Felix Ellis, Minister for Skills and Training. The forum was very well attended, with 84 participants covering a diverse range of stakeholders. This included a cross section of civil construction and traffic management businesses of varying sizes, State and Federal Government representatives, Government Business Enterprises (GBEs), Registered Training Organisations (RTOs), Jobs Hubs, Group Training Organisations (GTOs), community organisations, Senior Secondary colleges, University of Tasmania and employer bodies (see Appendix E for forum attendees).

The forum was positive, energetic and highly successful in generating an understanding across participants of the key issues and priorities being faced by civil construction in Tasmania. It highlighted the importance of collaboration in forming a united approach to addressing issues. The forum concluded with a list of priority issues that forum participants strongly felt needed to be addressed in the new Workforce Plan. Following the forum, detailed interviews were held with selected RTOs and State Government representatives to clarify some key issues raised at the forum, thus ensuring that the content of the Workforce Plan accurately reflects the current environment.

The forum demonstrated the energy of Tasmania's civil construction stakeholders, and their commitment to paving the way for a skilled and competent workforce.

6 Workforce challenges

The review of data and existing literature combined with the industry feedback from consultation indicate that there are some key challenges for the industry to address in its new Workforce Plan. These are outlined below, grouped to align with three pillars of workforce development: attraction, recruitment and retention, and skilling.

Attraction	Recruitment and Retention	Skilling
Attracting new workers to the industry from: • the traditional youth market • non-traditional groups (e.g. women, mature workers, migrants). Developing or maintaining a workforce culture that supports workers from non-traditional groups and worker skilling and retention. Helping potential new entrants understand the nature of work in the industry and typical career paths.	Recruiting sufficient • new workers to meet business requirements • specialist professionals/para-professionals. Identifying and recruiting people with attributes that make them highly employable. Recruiting from non-traditional recruitment groups. Improving the capacity of small to medium enterprises (SMEs) to recruit and train new workers. Improving the understanding of typical career pathways.	Improving industry understanding of what training and job subsidies are available. Improving the training culture of SMEs including use of structured entry pathways. Providing workplace-based literacy, numeracy, learning support that suits worker needs and the industry's operational context. Funding non-accredited industry specific training programs where there isn't an accredited alternative. Ensuring digital literacy skills of the training sector match industry needs.

Attraction	Recruitment and Retention	Skilling
	Steady pipeline release.	Increasing the number of workers that have skills in environmental compliance.

These workforce challenges were presented, discussed and prioritised in the Forum.

Table 2 summarises the forum participant vote[62] on the most challenging issues needing attention in the new Workforce Plan. These issues have been categorised against the four key pillars of industry workforce development: attraction, recruitment, skilling and retention. Collaboration has been added as a fifth important pillar of industry workforce development.

Improving the visibility and certainty of the pipeline of work emerged as the most important challenge for the industry, particularly given that firms experience difficulties in workforce planning without certainty in relation to the availability of work.

Challenges relating to attracting workers to the industry were identified as important, with over half of all votes relating to issues involving worker attraction.

Table 2: Key challenges for the civil construction industry

Challenge	# of votes	%	Attraction	Recruitment	Skilling	Retention	Collaboration
Improve the visibility and certainty of the pipeline of work	38	15%					Yes
Provide information about careers and provide training pathways into the industry	34	14%	Yes			Yes	
Attract new workers to the industry	23	9%	Yes				
Collaborate to improve industry workforce outcomes	18	7%					Yes
Provide accurate information about the nature of jobs in the industry	17	7%	Yes			Yes	
Fill identified gaps in training provision	17	7%			Yes		
Ensure workplace culture supports worker attraction/recruitment/retention	17	7%	Yes	Yes		Yes	
Improve the perception of industry	15	6%	Yes				
Improve management/leadership skills	9	4%			Yes		
Provide improved support for workers - transport, child care, housing	8	3%		Yes		Yes	
Compliance planning and reform	8	3%					Yes
Improve attractiveness for workers to remain in the industry (is portable long service leave already available in civil construction)	7	3%				Yes	
Increase the number of the VET trainers	7	3%			Yes		
Improve availability of driver training for young people	6	2%			Yes		
Provide improved support for workers - digital language literacy numeracy	6	2%	Yes		Yes	Yes	
Ensure that civil construction traineeship is available as an apprenticeship	5	2%	Yes		Yes		
Improve skills of the existing workforce	5	2%			Yes		
Provide training in real life situations	4	2%			Yes		
Promote relevance of environmental issues/ sustainability as they relate to civil construction	2	1%	Yes		Yes		
Total	**246**	**100%**	**119**	**25**	**61**	**89**	**64**

The consultation outcomes contained within this Profile have formed the basis for the development of the Civil Construction Workforce Plan 2025–2030.

This Workforce Plan enables CCFTas to meet its commitments under the recently signed Building and Construction Industry Skills Compact with the Tasmanian Government (Appendix I).

62 Forum participants were asked to vote on what they considered the most challenging issues that required attention. Each participant was provided with 5 votes. Not all participants used all 5 votes

Appendix A: Current CCFTas Workforce Initiatives

Initiative	Outline
Jobs Noticeboard	Provides a list of job opportunities in the civil construction industry in Tasmania, with a focus on High Vis Army.
Liveworks Training Site	Information regarding the development of a liveworks training site.
High Vis Army Civil Job Ready Program	A job-ready pre-employment training program delivered by TasTAFE to up skill people to join the civil construction industry. The program is full time and runs 5 days per week over 4 weeks.
Building the High Vis Army – Schools Engagement Program	Awareness program with schools – focus on years 10–12. Undertaken in conjunction with Master Builders – starts with a general session and they refine down to really interested students over a 4 touch (4 events over a school year) approach. Currently extend as far back as Year 9, but ideally need to go back to primary school to start influencing thinking on possible careers.
High Vis Army – Skills Analysis Program	This program involves engaging employers on what tools and training they need for their organisation to succeed. The program can work with Government and RTOs to deliver solutions and create a solid civil construction sector for the future. Throughout the duration of the project, employers may be invited to attend events, participate in surveys and receive updates on what funding is currently available to them to train existing employees, as well as programs to upskill new employees for the industry.
Training – Pathways into Civil Construction	Civil Careers Wheel. List of common industry courses and their providers.
Women in Civil mentor program	Mentor program.
Women in Civil	Tools and information to assist women to understand career and training opportunities in Civil Construction.
Apprenticeships	Information page on apprenticeships in Civil Construction.
School Based Apprenticeships	Information page on SBAs in Civil Construction.
Professional Development	Outlines a partnership with the Institute of Civil Infrastructure to provide professional development opportunities.
Your Speed is Our Safety campaign	Important educational tool to drive increased awareness and improved behaviour for the safety of our on-road workforce.

Appendix B: Project method and scope

Desktop research was used to identify key statistics regarding Tasmania's civil construction workforce. The key secondary data sources used include:

- Australian Bureau of Statistics, Census of Population and Housing, 2011, 2016 and 2021
- Australian Bureau of Statistics, Businesses in Australia (BLADE) dataset, 2018
- Australian Bureau of Statistics, Census GeoPackages, 2021 Tasmania
- National Centre for Vocational Education Research (NCVER) data
- Economy ID, State Growth Tasmania dataset
- Jobs and Skills Australia.

An online survey was developed and distributed to civil construction firms throughout Tasmania. The survey sought to gain an understanding of the key workforce-related issues facing civil construction firms in Tasmania over the next 5 years (Appendix C).

There were 33 responses to the online survey. Assuming there are 200 civil construction businesses in Tasmania, 33 responses represent the population with a confidence level of 90% and a 13.4% margin of error.[63]

Detailed consultations were held with 20 key civil construction industry representatives to explore in depth the key issues facing the industry in terms of the highest priority workforce issues that need to be addressed in the WDP and initiatives that should be included in the WDP.

A Workforce Plan – Stakeholder's Input Forum was held in August 2024 to gain further understanding and context around the issues raised through the online survey and individual consultations (Appendix E outlines the attendance at the forum).

This profile has been developed on the basis of the ANZSIC industry category 'heavy and civil engineering and construction', and the seven groupings of 142 ANZSCO occupations as defining the Tasmanian civil construction industry:

- Managers
- Professionals
- Technicians and Trades Workers
- Clerical and Administrative Workers
- Sales Workers
- Machinery Operators and Drivers
- Labourers.

Appendix F provides the full list of detailed occupation titles grouped into these categories.

Data for Civil Construction was predominantly sourced from the Australian Bureau of Statistics 2-digit level INDP Industry of employment: 'Heavy and Civil Engineering Construction', this is referred to throughout the document as 'Civil Construction'. This is found within the 3-Digit level INDP Industry of employment: 'Construction' which is used when comparing to the wider industry/sector, so that data about 'Construction' will include data about 'Civil Construction' as well as Construction nfd; Building Construction; and Construction Services. Data sourced from Economy.ID has the same Industry breakdowns, 'Construction' refers to: Building Construction; Heavy and Civil Engineering Construction; and Construction Services combined, whereas 'Civil Construction' refers only to category of 'Heavy and Civil Engineering Construction.

[63] Sample Size Calculator accessed 24 September 2024

Regional data was predominantly sourced using the ABS SA3 regional groupings of: Southern Tasmania – which includes Hobart; Northern Tasmania – which includes Launceston, and North West Tasmania as defined by Economy.ID demographic resources. Alternative regional groupings were the statistical area 4 (SA4) regional areas of: Hobart; Launceston and the North East; South East; and West and North West Tasmania, as pictured in Figure 6.

Appendix C: Online industry survey

CIVIL CONTRACTORS FEDERATION TASMANIA

Civil Construction Workforce Development Plan

stenning associates

CCFTas has commissioned Stenning & Associates to assist it in developing a new industry Workforce Development Plan for the civil construction sector to guide collaborative activity over the next 5 years.

The current CCFTas Workforce Development Plan 2019-2025 is nearing completion and has been successful in achieving a range of workforce improvements eg. Hi-Vis Army.

Please complete this short survey by Wednesday, 31 July 2024 to help CCFTas determine the challenges and opportunities for the civil construction workforce over the next 5 years.

Stenning & Associates will treat your responses as confidential and only group results will be presented.

Please contact Amber Forrest at CCFTas on (03) 6159 6157 or amber.forrest@ccftas.com.au if you have any queries or would like to discuss the project in detail.

Thank you in anticipation for completing our survey.

Next

Civil Construction Workforce Development Plan

Challenges and Priorities

* 1. How challenging do you expect the following workforce development issues to be for your business over the next 5 years?

	Not challenging	Somewhat challenging	Very challenging	N/A
Increasing the size of your workforce	○	○	○	○
Attracting new workers to the industry	○	○	○	○
Filling vacancies in your workforce	○	○	○	○
An aging workforce	○	○	○	○
Retaining your workers	○	○	○	○
Literacy and numeracy skills	○	○	○	○
Meeting workforce regulatory requirements	○	○	○	○
Managing the introduction of new technology	○	○	○	○
Partnering with training providers	○	○	○	○
Accessing appropriate training	○	○	○	○
Retaining corporate knowledge	○	○	○	○
Improving the productivity of your workers	○	○	○	○
Managing workforce wellness (i.e. issues relating to mental health, alcohol and other drugs, etc)	○	○	○	○

What other challenging workforce related issues do you think your business will face over the next 5 years?

* 2. What are the highest priority workforce issues that need to be addressed over the next 1 – 5 years that should be included in the workforce development plan for the civil construction industry?

Civil Construction Workforce Development Plan

Recruitment, Skills Development and Retention

* 3. Have you experienced difficulties over the last 12 months in recruiting new workers or filling vacancies in your workforce?

	Easy	Not easy or difficult	Difficult	Not relevant to my business
Managers	○	○	○	○
Professional staff	○	○	○	○
Office staff	○	○	○	○
Plant Operators	○	○	○	○
Machinery Operators and Drivers	○	○	○	○
Truck Drivers	○	○	○	○
Labourers	○	○	○	○
Other workers	○	○	○	○

4. For those job roles where you indicated it was difficult to fill recruit new workers or fill vacancies, please indicate which of the following reasons caused the difficulties

- ☐ Lack of applicants generally
- ☐ Lack of appropriately skilled applicants
- ☐ Applicants lacking appropriate licences or permits
- ☐ Salary levels offered
- ☐ Terms and conditions of employment
- ☐ Length of employment term
- ☐ Nature of work

Please specify any other reasons for the difficulties you experienced, and whether there are any particular occupations that have been difficult to recruit

* 5. What has been your experience over the last 12 months in retaining workers?

	Easy	Not easy or difficult	Difficult	Not relevant to my business
Managers	○	○	○	○
Professional staff	○	○	○	○
Office staff	○	○	○	○
Plant Operators	○	○	○	○
Machinery Operators and Drivers	○	○	○	○
Truck Drivers	○	○	○	○
Labourers	○	○	○	○
Other workers	○	○	○	○

6. For those job roles where you indicated it was difficult to retain workers, please indicate which of the following reasons caused the difficulties

- ☐ Lack of training opportunities
- ☐ Lack of promotion opportunities
- ☐ Inability to obtain appropriate licences or permits
- ☐ Salary levels offered
- ☐ Limited availability of ongoing work, resulting in short term engagements
- ☐ Terms and conditions of employment
- ☐ Nature of work

Please specify any other reasons for the difficulties you experienced, and whether there are any particular occupations that have been difficult to retain

* 7. What has been your experience over the past 12 months when trying to fulfil your business' skill needs?

	Easy	Not easy or difficult	Difficult	Not relevant to my business
Identifying suitable training	○	○	○	○
Accessing appropriate training	○	○	○	○
Identifying cost effective training	○	○	○	○
Providing facilities for on-the-job training	○	○	○	○
Releasing workers to undertake training	○	○	○	○
Ensuring workers complete the training	○	○	○	○

* 8. What is your organisation type?

- [ ] Civil construction business
- [ ] Professional services supplier
- [ ] Plant/machinery supplier/distributor
- [ ] Plant/machinery hire company
- [ ] Training organisation
- [ ] Industry body
- [ ] Other (please specify)

9. Do you have any further comments?

10. Please provide your email address if you would like to to contact you to discuss the project in further detail

Thank you for completing this survey, and please feel free to share the link to the survey to any civil construction business operators you think would be interested in participating.

Prev Done

Appendix D: Workforce issues

Challenging workforce issues over the next five years

The individual responses to the online survey regarding the most challenging workforce issues over the next five years are listed below.

- Work ethic, resilience
- Visibility of project pipeline – lack of certainty and visibility of the pipeline of work make it difficult to retain and recruit workforce
- Soaring material costs
- The way that the industry fund Keystone will have challenges moving forward. This includes understanding what they will or will not support, timing of getting applications in for funding to be eligible
- The remote location of various projects adds to our challenges in attracting and retaining workforce. So does competing with well-paid FIFO options to WA and QLD
- Slowing economy
- Skills shortages with experienced qualified plant operators, training providers Lack of accountability and responsibility by to industry Ever growing regulatory and compliance requirements for govt / private tenders without consideration of our regional workforce capability and local provider knowledge / capability and /or availability for industry to fulfil these requirements Grappling with the emerging technology challenges ensuring broader offerings are available/accessible to support and cater for the ever-changing diverse individual learning needs effective, meaningful and supportive mentoring and coaching support programs for apprentices / trainees or junior staff. Broader and relevant effective fit for purpose industry funding opportunities / programs specifically tailored to the civil construction industry for mental health
- Skilled employees
- Rising costs wages etc and costs to train staff and lack of training pathways in Tasmania
- Retention of all workers in a shrinking market of opportunities
- Overhead cost management. Specifically, labour and insurances
- One of the main issues we face is finding people with the drive to learn and take responsibility for their actions to maintain a correct site in accordance with relevant guidelines
- Retention of workers within our field is hard as a lot only use the traffic space as a fill in till the right job comes along.
- New starters coming into the industry and training costs for young people trying to upskill to the new AGTTM training requirements
- More flexibility in work -life balance
- Labour costs, in particular wages and workers compensation premiums have been escalating in recent years with no signs of easing.
- Gap between new to industry and experienced leaving the industry
- Funding for Training. Access to Skilled Workers. Turn over due to delays in new tenders
- Decline in STEM qualified school age students that can access post-secondary training and education
- Competing with the big companies for small jobs us owner operators rely on!

- Availability of supply chain of works that will support a 'business' to meet the questions above. 'Shovel ready' projects across all infrastructure levels that will allow for a 'business to consider the sustainability into the future. This will allow for effective planning in; training for the now and the future, asset management (replacement technologies), growth or sustain status quo for a 'business'. To consider new opportunities and or improvements in productivity processes. I could go on, but I wont!
- "1. Skills shortage: - Retaining and developing qualified and experienced plant and machinery operators, - Increase number of reputable local training providers who have the knowledge, expertise and accessibility and availability to deliver industry specific programs pertaining to civil construction industry across all regions of Tasmania. 2. Emerging technologies are impacting the way Industry such as ours do business, operating plant, machinery and equipment safely and efficiently e.g. using GNNS systems technology, laser levels etc. as well as successfully and meaningfully integrating sustainable renewable energy technologies into everyday practice. 3. Having fit for purpose Literacy and Numeracy workplace-based learning support programs including digital literacy available which cater for various learning styles in a practical manner. 4. Innovative work practices – ability to do more with less – develop further upskill programs for frontline staff to verify safe operational practices for operate plant and machinery safely across various terrains- applies to staff and contractors. Potentially using the model from the successful pilot program developed by Hazell Bros in partnership with Swinburne 5. Ever changing regulatory requirements has highlighted a gap within Tasmania where regional training providers lack expertise and knowledge of workforce capability required for industry e.g. Environmentally Sustainable practices skillset aka Green Card training is stipulated in government tenders however currently there are no local providers to deliver the training - mainland providers are contracted 6. Apparent lack of funding opportunities for meaningful and fit for purpose industry training programs available to industry specifically pertaining to the civil construction industry. Programs for physical and psychosocial requirements e.g. first aid and mental health first aid – a concern given the industry training board for building and construction has removed all funding from previously funded programs. 7. Formal recognition of Certificate III Civil Construction as a trade qualification which enables access for participants to receive similar benefits to schemes available to traditional trades. 8. Review existing Cert III Civil Construction Qualification to offer Carpentry Formwork as a recognised trade pathway which would be more fit for purpose for the civil construction industry (as opposed to residential). 9. Workforce capability of local training providers ability to keep up with industry demand and govt priority areas in trade-based qualifications. e.g. TASTAFE capacity and available places for Civil Construction, Automotive apprenticeship/traineeships. Demand is outstripping supply. Minimal learning support programs available for students who require additional learning support assistance outside the normal LLN support model e.g. students who identify as having ADHD, Dyslexia is not part of the current LLN model used by TASTAFE – currently this must be classified as a disability in order for students to receive assistance."

Highest priority workforce issues

The individual responses to the online survey regarding the highest priority workforce issues are listed below.

- LLN, Minimum Licensing (P's), HR / MR licensing
- Continuing to feed the pipeline of new workers to be trained to meet the demand forecasted by major projects (stadium, energy projects). Continuing to evolve the culture and flexibility of the industry to retain more workers, particularly women and young people whom are looking for a different model than what is currently offered.
- Getting people into the industry sooner not just focusing on university pathways i.e. Cert 5, Diploma and Advanced Diploma and the cost associated with this to businesses.
- Lack of work

- Improving literacy and numeracy skills in students Improving pathways for students to gain employment in the building and construction industry.
- Renewing engineering skills as the workforce ages
- The aging work force attracting young people to the industry. Training and more training for interested people!
- Work ethic, resilience, training
- 1. Meaningful workplace-based literacy and numeracy learning support programs (incorporates digital literacy) for trainers / teachers as well as students. Programs are developed for people who have English is a first language in response to the emerging technologies and are designed to cater for a variety of learning styles – smart learning programs for hands on frontline roles. Providers such as TasTAFE are able to offer assistance. 2. Successful and meaningful knowledge transfer from experienced civil construction workers for new workers entering the industry via fit for purpose mentoring and coaching programs. 3. Apparent lack of industry consultation - government and industry bodies consulting only on requirements and not properly consulting key industry stakeholders as to implementation and impacts to changes, resulting in a significant lack of understanding as to the full impact of key policy changes to industry hampering the way we do business, economic confidence and the ability for our people to perform their roles safely. e.g. Keystone Tasmania revised training plan 2024/2025 removing key specialised programs from the offering and the workforce compliance upskill requirements for the revised Traffic Management Control and Implementation skills highly costly and impractical for industry to meet requirements. National Skills shortage list - is disconnected from actual skills shortage areas. 4. Heavy vehicle licensing – reduce existing waiting times and more choice with local providers. Tasmania requires more than one locally based Heavy vehicle training providers - who are knowledgeable, accessible, regionally based and have the required vehicles and equipment and coverage to service all areas of Tasmania. 5. Formal recognition of Certificate III Civil Construction as a trade qualification. 6. Develop Civil Construction Formwork carpentry qualification a fit for purpose offering specifically reflecting civil construction industry requirements. 7. Workforce capability of local training providers inability to keep up with demand. e.g. TASTAFE are booked out for various programs such as Civil Construction, Automotive apprenticeship/traineeships as demand is outstripping supply. Minimal funding opportunities for industry specific training programs 8. Graduate engineers for civil and structural have practical job ready skills as well as an understanding of the academic principles. Currently there is a big disconnect.
- Being able to attract workers that want to work and work within the civil construction industry, especially younger workers. Lack of workers with appropriate experience and expertise.
- Compliance costs that directly affect the civil sector are huge and growing almost by the week. There needs to support provided for all levels of 'business' to allow for the understanding and implementation of new and emerging federal, state and local government requirements. The growth in compliance requirements adds significant costs to a 'business' and directly affects a 'businesses' ability to train workers. Access to funding for workers is also a major impact for the civil sector, especially when all 'costs' are increasing, e.g. wage growth, superannuation, long service leave payments, redundancy and of course the impact of rouge unions and their coercive actions to employers and projects alike. (The Bridgewater Bridge project is a recent example of coercive action of a 'union' which has cost a business loss of income that flows directly back to training needs)
- 1. Meaningful workplace-based literacy and numeracy learning support programs (includes digital literacy) for trainers as well as students where English is a first language in response to the emerging technologies which are designed to cater for a variety of learning styles e.g. increased in online inductions/learning programs for hands on roles. 2. Successful and meaningful knowledge transfer from experienced civil construction workers for new workers entering the industry via fit for purpose mentoring programs. 3. Apparent lack of industry consultation from key government and industry bodies to key industry stakeholders on major decisions and policy changes which significantly impact the way we do business and the ability

for our people to perform their roles safely. e.g Keystone Tasmania revised training plan 2024/2025 and Traffic Management Control and Implementation. 4. Tasmania has a number of Heavy vehicle training providers in Tasmania - who are knowledgeable, accessible, regionally based and have the required vehicles and equipment and coverage to service all areas of Tasmania - reduced waiting list times 5.

- 1. Development and introduction of a mutually recognised civil apprenticeship that can be marketed to prospective candidates and can compete with other traditional apprenticeship options 2.Realisation of the proposed Civil Training Centre (for all workers not just new starters
- An accredited industry verification upskill program - using the pilot program partnered with Hazell Bros and Swinburne which was a huge success. Qualified and experienced plant operators. Additional provider for Heavy Vehicle licensing due to increased demand. Literacy and numeracy including digital
- It's a very complex problem that has many answers to fixing the problem
- Access to quality, fit for purpose training, specifically excavator. Available training services are ad-hoc and don't represent value for investment
- INCREASE IN SKILLS AND EXPERIANCE
- Succession planning - aging workforce. Training for the younger employees in the workforce.
- People having to right mindset as it is hard to find people that are fully engaged in their role
- Funding for workforce training and development and having projects lined up to continue to keep our local workforce engaged here in Tassie
- Motivating people
- Making it a career of choice rather than a fallback. Most kids think civil workers just hold stop/slow signs
- Support/education for those who are responsible for new entrants - like leading hands/foreperson who have apprentices or Senior Project Engineers who have Graduates. A program to support those who undergo pre-employment programs to gain additional experiences to get them job ready - a lot of time they will come out with a ticket, but no further experience to support they have applied what they know. If there was a placement program for these people or a centre where they could get hours up (playground effectively) this may be of benefit. Lack of major projects outside the BWB and potentially a stadium may also cause a drain with people going interstate. This is because there isn't a vision for what is coming up.
- Visibility of infrastructure investment (i.e.. certainty in projects)
- Attracting and retaining quality staff
- Training facilities to skill up employees
- Addressing labour market constraints through improved access to quality training & skill development, and tapping into migrant workers
- Training and retention
- Communication between the old and new generations
- Attracting and retaining young people and being prepared for living away from home on remote projects
- Pipeline of work. Hard to give certainty to workforce when the construction pipeline is not strong.

Appendix E: Consultations

Individual consultations

Name	Firm
Aaron McClug	Hazell Bros
John Rogers	Altus Traffic
Scott Miller	Cross Roads Civil Construction
Dennis	Cross Roads Civil Construction
Aaron Turner	Maintain Contracting
Mark Daly	Maintain Contracting
Luke Andrews	Maintain Contracting
Matt Jordan	Bridge Pro
Luke Moore	Moore Civil Contracting Pty Ltd
Jacob Gerke	Tas Irrigation
Jenna Viney	Hardings Hotmix
Sharon Halloran	ATC Traffic
Adrian Granger	Kelly Civil Contracting
Neridene Bracken	Ian Harrington Group
Jason Reed	Talent Advisory
Laura Jacques	Hydro
Gina Harvey	Hydro
Kathryn Browne	Hazell Bros
Warren Ferrari	MAS National
Traycee Di Virgillio	Southern Central Trade Training Centre

Industry Stakeholder's Workforce Forum Attendees

Name	Organisation
The Honourable Minister Felix Ellis	Minister for Skills and Training
Adam Bester	Elizabeth College
Adrian Paine	State Roads
Alexandra Paterson	Skills Tasmania
Amy O'Connor	McConnell Dowell
Andrew Harris	Skills Tasmania
Andrew Hyatt	Best Employment
Andrew Sertori	Tas Rail
Anthony Coe	Cosgrove High
Aron McClurg	Hazel Bros
Ben Goodsir	Infrastructure Tasmania
Ben Richards	Work skills Tasmania
Benita Husband	CPB Contractors
Carmen Warpole	MEGT
Cassie Athanasiou	Southern employment and training
Chris Edwards	DPAC
Danielle Kidd	West North West Working
Darren Beatie	Engineers Australia
Dearne Stone	SWN Jobs Hub
Diana Flores	MRC
Donna Clark	DECYP
Duane Houston	Programmed
Elicia Austin	MEGT
Fiona Brodribb	UTAS
Gary Baird	McConnell Dowell
Gina Harvey	Hydro Tasmania
Ingrid Anderson	Skills Tasmania
Jack van Ek	Bridgepro

Name	Organisation
James Atkinson	Black cap
James Richardson	Tas Ports
Jarrod Dawes	Survey Plus Tas
Jarrod Earley	Engineers Australia
Jessica Cepeniuk	New Norfolk High School
Jo Brett	Batchelor
Joe Luttrell	Shaw Construction
John Furness	DECYP
John Kamara	Department of Communities Tasmania
Josh Piesse	MKH
Kate Blizzard	TasWater
Kathryn Browne	Hazell Bros
Katrina Ailwood	Tas Networks
Kirsty Lyons	Batchelor Construction
Kylie Petryk	Work and Training
Laura Jacques	Hydro Tasmania
Leila Daniels	Jobs Tasmania
Leslee Charles	Ian Harrington
Luke Calvert	Batchelor Construction
Luke Walker	Glenorchy jobs hub
Marcus Hedlam	MKH
Martin Blake	Keystone
Marty Wilson	Tas Irrigation
Matthew Richardson	TAS UAL
Matthew Wheatly	TasRail
Maurice Bradley	Roadways
Meg Walker	Jobs Tasmania
Mr McKnight	Link-Resources
Muhammed Khan	DCS Civil

Name	Organisation
Nancy T'Joens	TasNetworks
Naomi Walker	McConnell Dowell
Nathan Zaneto	Zaneto Civil
Nick Broomhall	Hardings Hotmix
Nick Cameron	TasTafe
Nick Probert	Workforce Australia
Nicole Willing	Altus Traffic
Polly Woodruff	Blackcap
Rebeca Woolley	Centacare Evolve Housing
Renee Frost	Colony 47
Robyn Cooper	Cosgrove High
Samantha Chapman	Engineers Australia
Sarah Adams	St Francis School
Sarah Geale	Hobart High
Stephen Harper	AWC construction
Stewart Cameron	Hazellbros
Stewart Geeves	AWC construction
Tania Rowbottom	Work skills Tasmania
Tim Finnigan	UTAS
Tony Cook	Tas TAFE
Tracy Di'vigilo	Bridgewater Trade Training Centre
Zoe Florusse	TasNetworks

Appendix F: ANZSCO occupations

Occupation	Code	Occupational Grouping
Managers nfd	100000	Managers
Chief Executives, General Managers and Legislators nfd	111000	Managers
Chief Executive or Managing Director	111111	Managers
General Managers nfd	111200	Managers
Corporate General Manager	111211	Managers
Specialist Managers nfd	130000	Managers
Advertising, Public Relations and Sales Managers nfd	131100	Managers
Sales and Marketing Manager	131112	Managers
Advertising Manager	131113	Managers
Public Relations Manager	131114	Managers
Business Administration Managers nfd	132000	Managers
Corporate Services Manager	132111	Managers
Finance Manager	132211	Managers
Human Resource Manager	132311	Managers
Policy and Planning Manager	132411	Managers
Research and Development Manager	132511	Managers
Construction, Distribution and Production Managers nfd	133000	Managers
Construction Managers nfd	133100	Managers
Construction Project Manager	133111	Managers
Project Builder	133112	Managers
Engineering Manager	133211	Managers
Wholesaler	133312	Managers
Manufacturer	133411	Managers
Supply, Distribution and Procurement Managers nfd	133411	Managers
Supply and Distribution Manager	133611	Managers
Procurement Manager	133612	Managers
ICT Managers nfd	135100	Managers
Chief Information Officer	135111	Managers
ICT Project Manager	135112	Managers
Environmental Manager	139912	Managers
Quality Assurance Manager	139914	Managers
Specialist Managers nec	139999	Managers
Cafe or Restaurant Manager	141111	Managers
Customer Service Manager	149212	Managers
Transport Services Managers nfd	149400	Managers
Fleet Manager	149411	Managers
Transport Company Manager	149413	Managers
Facilities Manager	149913	Managers
Hospitality, Retail and Service Managers nec	149999	Managers
Accountant (General)	221111	Professionals
Management Accountant	221111	Professionals
Human Resource and Training Professionals nfd	223000	Professionals
Human Resource Professionals nfd	223100	Professionals

Occupation	Code	Occupational Grouping
Human Resource Adviser	223111	Professionals
Recruitment Consultant	223112	Professionals
Workplace Relations Adviser	223113	Professionals
Management Consultant	224711	Professionals
Information and Organisation Professionals nec	224999	Professionals
Engineering Professionals nfd	233000	Professionals
Civil Engineer	233211	Professionals
Quantity Surveyor	233213	Professionals
Structural Engineer	233214	Professionals
Transport Engineer	233215	Professionals
Electrical Engineer	233311	Professionals
Industrial Engineer	233511	Professionals
Mechanical Engineer	233512	Professionals
Environmental Consultant	234312	Professionals
Occupational Health and Safety Adviser	251312	Professionals
Technicians and Trades Workers nfd	300000	Technicians and Trades Workers
Building Associate	312112	Technicians and Trades Workers
Building Inspector	312113	Technicians and Trades Workers
Construction Estimator	312114	Technicians and Trades Workers
Civil Engineering Draftsperson	312211	Technicians and Trades Workers
Civil Engineering Technician	312212	Technicians and Trades Workers
Maintenance Planner	312911	Technicians and Trades Workers
Automotive and Engineering Trades Workers nfd	320000	Technicians and Trades Workers
Automotive Electrician	321111	Technicians and Trades Workers
Motor Mechanic (General)	321211	Technicians and Trades Workers
Diesel Motor Mechanic	321212	Technicians and Trades Workers
Sheetmetal Trades Worker	322211	Technicians and Trades Workers
Metal Fabricator	322311	Technicians and Trades Workers
Welder (First Class)	322313	Technicians and Trades Workers
Fitter (General)	323211	Technicians and Trades Workers
Fitter and Turner	323212	Technicians and Trades Workers
Metal Fitters and Machinists nec	323299	Technicians and Trades Workers
Vehicle Painter	324311	Technicians and Trades Workers
Construction Trades Workers nfd	330000	Technicians and Trades Workers
Carpenter	331212	Technicians and Trades Workers
Plumber (General)	334111	Technicians and Trades Workers
Gasfitter	334114	Technicians and Trades Workers
Electrotechnology and Telecommunications Trades Workers nfd	340000	Technicians and Trades Workers
Electrician (General)	341111	Technicians and Trades Workers
Electrical Linesworker	342211	Technicians and Trades Workers
Electronic Equipment Trades Worker	342313	Technicians and Trades Workers
Telecommunications Technician	342414	Technicians and Trades Workers
Technicians and Trades Workers nec	399999	Technicians and Trades Workers
Contract Administrator	511111	Clerical and Administrative Workers

Occupation	Code	Occupational Grouping
Program or Project Administrator	511112	Clerical and Administrative Workers
Office Manager	512111	Clerical and Administrative Workers
Personal Assistant	521111	Clerical and Administrative Workers
Secretary (General)	521211	Clerical and Administrative Workers
General Clerk	531111	Clerical and Administrative Workers
Data Entry Operator	532111	Clerical and Administrative Workers
Information Officer	541211	Clerical and Administrative Workers
Receptionist (General)	542111	Clerical and Administrative Workers
Accounts Clerk	551111	Clerical and Administrative Workers
Bookkeeper	551211	Clerical and Administrative Workers
Payroll Clerk	551311	Clerical and Administrative Workers
Despatching and Receiving Clerk	591211	Clerical and Administrative Workers
Inspectors and Regulatory Officers nec	599599	Clerical and Administrative Workers
Sales Representative (Building and Plumbing Supplies)	611311	Sales Workers
Sales Assistant (General)	621111	Sales Workers
Machinery Operators and Drivers nfd	700000	Machinery Operators and Drivers
Machine Operators nfd	711000	Machinery Operators and Drivers
Plastics Fabricator or Welder	711513	Machinery Operators and Drivers
Crane, Hoist or Lift Operator	712111	Machinery Operators and Drivers
Miner	712212	Machinery Operators and Drivers
Concrete Batching Plant Operator	712914	Machinery Operators and Drivers
Waste Water or Water Plant Operator	712921	Machinery Operators and Drivers
Mobile Plant Operators nfd	721000	Machinery Operators and Drivers
Agricultural and Horticultural Mobile Plant Operator	721111	Machinery Operators and Drivers
Earthmoving Plant Operators nfd	721200	Machinery Operators and Drivers
Earthmoving Plant Operator (General)	721211	Machinery Operators and Drivers
Bulldozer Operator	721213	Machinery Operators and Drivers
Excavator Operator	721214	Machinery Operators and Drivers
Grader Operator	721215	Machinery Operators and Drivers
Loader Operator	721216	Machinery Operators and Drivers
Linemarker	721912	Machinery Operators and Drivers
Paving Plant Operator	721913	Machinery Operators and Drivers
Road Roller Operator	721915	Machinery Operators and Drivers
Road and Rail Drivers nfd	730000	Machinery Operators and Drivers
Truck Driver (General)	733111	Machinery Operators and Drivers
Tanker Driver	733114	Machinery Operators and Drivers
Tow Truck Driver	733115	Machinery Operators and Drivers
Storeperson	741111	Machinery Operators and Drivers
Labourers nfd	800000	Labourers
Commercial Cleaner	811211	Labourers
Construction and Mining Labourers nfd	821000	Labourers
Builder's Labourer	821111	Labourers
Earthmoving Labourer	821113	Labourers
Concreter	821211	Labourers
Paving and Surfacing Labourer	821511	Labourers

Occupation	Code	Occupational Grouping
Railway Track Worker	821611	Labourers
Construction Rigger	821711	Labourers
Steel Fixer	821713	Labourers
Metal Engineering Process Worker	839111	Labourers
Product Examiner	839311	Labourers
Product Tester	839313	Labourers
Farm, Forestry and Garden Workers nec	841999	Labourers
Recycling or Rubbish Collector	899611	Labourers
Road Traffic Controller	899923	Labourers
Labourers nec	899999	Labourers

Appendix G: Civil Construction Occupations, 2021

	Heavy and Civil Engineering Construction, nfd			Road and Bridge Construction			Other Heavy and Civil Engineering Construction			Total		
	Hobart & South East	Launceston and North East	West and North West	Hobart & South East	Launceston and North East	West and North West	Hobart & South East	Launceston and North East	West and North West	Hobart & South East	Launceston and North East	West and North West
Managers nfd	0	0	0	4	0	0	7	3	0	11	3	0
Chief Executives, General Managers and Legislators nfd	0	0	0	0	0	0	0	0	0	0	0	0
Chief Executive or Managing Director	0	0	0	4	0	0	6	0	0	10	0	0
General Managers nfd	0	0	0	0	0	0	0	0	0	0	0	0
Corporate General Manager	0	0	0	3	5	3	6	0	0	9	5	3
Specialist Managers nfd	0	0	0	0	0	0	3	3	0	3	3	0
Advertising, Public Relations and Sales Managers nfd	0	0	0	0	0	0	0	0	0	0	0	0
Sales and Marketing Manager	0	0	0	0	0	0	0	0	0	0	0	0
Advertising Manager	0	0	0	0	0	0	0	0	0	0	0	0
Public Relations Manager	0	0	0	0	0	0	0	0	0	0	0	0
Business Administration Managers nfd	0	0	0	0	0	0	0	0	0	0	0	0
Corporate Services Manager	0	0	0	4	0	0	0	0	0	4	0	0
Finance Manager	0	0	0	8	4	0	0	0	0	8	4	0
Human Resource Manager	0	0	0	4	0	3	5	0	4	9	0	7
Policy and Planning Manager	0	0	0	0	0	0	0	0	0	0	0	0
Research and Development Manager	0	0	0	0	0	0	0	0	0	0	0	0
Construction, Distribution and Production Managers nfd	0	0	0	3	0	0	0	0	0	3	0	0
Construction Managers nfd	0	0	0	0	0	0	0	0	0	0	0	0
Construction Project Manager	0	0	0	27	12	13	31	15	4	58	27	17
Project Builder	0	0	0	0	0	0	4	0	0	4	0	0
Engineering Manager	0	0	0	0	0	0	5	5	0	5	5	0
Wholesaler	0	0	0	0	0	0	0	0	0	0	0	0

	Heavy and Civil Engineering Construction, nfd			Road and Bridge Construction			Other Heavy and Civil Engineering Construction			Total		
	Hobart & South East	Launceston and North East	West and North West	Hobart & South East	Launceston and North East	West and North West	Hobart & South East	Launceston and North East	West and North West	Hobart & South East	Launceston and North East	West and North West
Manufacturer	0	0	0	0	0	0	0	0	0	0	0	0
Supply and Distribution Manager	0	0	0	0	0	0	0	5	0	0	5	0
Procurement Manager	0	0	0	0	0	0	0	0	0	0	0	0
ICT Managers nfd	0	0	0	0	0	0	0	0	0	0	0	0
Chief Information Officer	0	0	0	0	0	0	0	0	0	0	0	0
ICT Project Manager	0	0	0	0	0	0	0	0	0	0	0	0
Environmental Manager	0	0	0	0	0	0	0	0	0	0	0	0
Quality Assurance Manager	0	0	0	0	0	0	0	0	0	0	0	0
Specialist Managers nec	0	0	0	0	0	0	0	3	0	0	3	0
Cafe or Restaurant Manager	0	0	0	0	0	0	6	0	0	6	0	0
Customer Service Manager	0	0	0	0	0	0	0	0	0	0	0	0
Transport Services Managers nfd	0	0	0	0	0	0	0	0	0	0	0	0
Fleet Manager	0	0	0	0	0	0	0	0	0	0	0	0
Transport Company Manager	0	0	0	0	0	0	0	0	0	0	0	0
Facilities Manager	0	0	0	0	0	0	4	0	0	4	0	0
Hospitality, Retail and Service Managers nec	0	0	0	0	0	0	0	0	0	0	0	0
Accountant (General)	0	0	0	3	0	0	0	3	0	3	3	0
Management Accountant	0	0	0	0	0	0	3	0	0	3	0	0
Human Resource and Training Professionals nfd	0	0	0	0	0	0	0	0	0	0	0	0
Human Resource Professionals nfd	0	0	0	0	0	0	0	0	0	0	0	0
Human Resource Adviser	0	0	0	4	0	0	0	0	0	4	0	0
Recruitment Consultant	0	0	0	0	0	0	0	0	0	0	0	0
Workplace Relations Adviser	0	0	0	0	0	0	0	0	0	0	0	0
Management Consultant	0	0	0	0	0	5	0	0	0	0	0	5
Information and Organisation Professionals nec	0	0	0	0	0	0	0	0	0	0	0	0
Engineering Professionals nfd	5	0	0	0	0	0	6	0	0	11	0	0
Civil Engineer	3	0	0	28	7	3	16	3	3	47	10	6

	Heavy and Civil Engineering Construction, nfd			Road and Bridge Construction			Other Heavy and Civil Engineering Construction			Total		
	Hobart & South East	Launceston and North East	West and North West	Hobart & South East	Launceston and North East	West and North West	Hobart & South East	Launceston and North East	West and North West	Hobart & South East	Launceston and North East	West and North West
Quantity Surveyor	0	0	0	0	0	0	0	0	0	0	0	0
Structural Engineer	0	0	0	0	0	0	0	0	0	0	0	0
Transport Engineer	0	0	0	0	0	0	0	0	0	0	0	0
Electrical Engineer	0	0	0	0	0	0	0	0	0	0	0	0
Industrial Engineer	0	0	0	0	0	0	0	0	0	0	0	0
Mechanical Engineer	0	0	0	0	0	0	5	0	0	5	0	0
Environmental Consultant	0	0	0	0	0	0	0	0	0	0	0	0
Occupational Health and Safety Adviser	0	0	0	0	0	0	6	0	4	6	0	4
Technicians and Trades Workers nfd	0	0	0	0	0	0	0	0	0	0	0	0
Building Associate	0	0	0	11	9	9	16	5	7	27	14	16
Building Inspector	0	0	0	0	0	0	0	0	0	0	0	0
Construction Estimator	0	0	0	3	0	0	0	0	0	3	0	0
Civil Engineering Draftsperson	0	0	0	0	0	0	0	0	0	0	0	0
Civil Engineering Technician	0	0	0	3	0	0	0	0	0	3	0	0
Maintenance Planner	0	0	0	0	0	0	0	0	0	0	0	0
Automotive and Engineering Trades Workers nfd	0	0	0	4	0	0	5	0	0	9	0	0
Automotive Electrician	0	0	0	0	0	0	0	0	0	0	0	0
Motor Mechanic (General)	0	0	0	0	0	6	9	4	0	9	4	6
Diesel Motor Mechanic	0	0	0	0	0	0	0	0	0	0	0	0
Sheetmetal Trades Worker	0	0	0	0	0	0	0	0	0	0	0	0
Metal Fabricator	0	0	0	0	4	7	7	13	4	7	17	11
Welder (First Class)	0	0	0	0	0	5	3	7	0	3	7	5
Fitter (General)	0	0	0	11	0	3	3	12	4	14	12	7
Fitter and Turner	0	0	0	0	0	0	3	0	0	3	0	0
Metal Fitters and Machinists nec	0	0	0	0	0	0	0	6	3	0	6	3
Vehicle Painter	0	0	0	0	0	0	0	0	0	0	0	0
Construction Trades Workers nfd	0	0	0	0	0	0	0	0	0	0	0	0

	Heavy and Civil Engineering Construction, nfd			Road and Bridge Construction			Other Heavy and Civil Engineering Construction			Total		
	Hobart & South East	Launceston and North East	West and North West	Hobart & South East	Launceston and North East	West and North West	Hobart & South East	Launceston and North East	West and North West	Hobart & South East	Launceston and North East	West and North West
Carpenter	0	0	0	3	0	12	0	6	7	3	6	19
Plumber (General)	0	0	0	4	0	0	3	8	4	7	8	4
Gasfitter	0	0	0	0	0	0	0	0	0	0	0	0
Electrotechnology and Telecommunications Trades Workers nfd	0	0	0	0	0	0	0	0	0	0	0	0
Electrician (General)	0	0	0	0	0	0	8	3	4	8	3	4
Electrical Linesworker	0	0	0	0	0	0	5	3	0	5	3	0
Electronic Equipment Trades Worker	0	0	0	0	0	0	0	0	0	0	0	0
Telecommunications Technician	0	0	0	0	0	0	0	0	0	0	0	0
Technicians and Trades Workers nec	0	0	0	0	0	0	0	0	0	0	0	0
Contract Administrator	0	0	0	5	0	0	5	0	0	10	0	0
Program or Project Administrator	0	0	0	3	9	0	6	4	5	9	13	5
Office Manager	0	0	0	0	0	0	7	5	0	7	5	0
Personal Assistant	0	0	0	0	0	0	0	0	0	0	0	0
Secretary (General)	0	0	0	0	0	0	0	0	0	0	0	0
General Clerk	0	0	0	7	3	6	4	6	3	11	9	9
Data Entry Operator	0	0	0	0	0	0	0	0	0	0	0	0
Receptionist (General)	0	0	0	3	0	0	0	0	0	3	0	0
Information Officer	0	0	0	0	0	0	0	3	0	0	3	0
Accounts Clerk	0	0	0	10	0	3	0	0	0	10	0	3
Bookkeeper	0	0	0	0	0	0	0	0	0	0	0	0
Payroll Clerk	0	0	0	6	0	0	0	0	0	6	0	0
Despatching and Receiving Clerk	0	0	0	0	0	4	0	0	0	0	0	4
Inspectors and Regulatory Officers nec	0	0	0	0	0	0	0	0	0	0	0	0
Sales Representative (Building and Plumbing Supplies)	0	0	0	0	0	0	0	3	4	0	3	4
Sales Assistant (General)	0	0	0	0	0	0	3	3	0	3	3	0
Machinery Operators and Drivers nfd	0	0	0	5	4	0	0	5	0	5	9	0

	Heavy and Civil Engineering Construction, nfd			Road and Bridge Construction			Other Heavy and Civil Engineering Construction			Total		
	Hobart & South East	Launceston and North East	West and North West	Hobart & South East	Launceston and North East	West and North West	Hobart & South East	Launceston and North East	West and North West	Hobart & South East	Launceston and North East	West and North West
Machine Operators nfd	0	0	0	9	8	0	0	0	0	9	8	0
Plastics Fabricator or Welder	0	0	0	0	0	0	0	0	0	0	0	0
Crane, Hoist or Lift Operator	0	0	0	0	0	0	4	3	0	4	3	0
Miner	0	0	0	0	3	0	0	0	0	0	3	0
Concrete Batching Plant Operator	0	0	0	0	0	0	0	0	0	0	0	0
Waste Water or Water Plant Operator	0	0	0	0	0	0	4	0	0	4	0	0
Mobile Plant Operators nfd	0	0	0	25	13	12	0	0	0	25	13	12
Agricultural and Horticultural Mobile Plant Operator	0	0	0	0	0	0	0	0	0	0	0	0
Earthmoving Plant Operators nfd	0	0	0	11	0	0	5	5	0	16	5	0
Earthmoving Plant Operator (General)	0	0	0	18	16	5	3	8	4	21	24	9
Bulldozer Operator	0	0	0	0	0	0	0	0	0	0	0	0
Excavator Operator	0	0	0	25	16	8	19	3	6	44	19	14
Grader Operator	0	0	0	0	9	3	0	0	0	0	9	3
Loader Operator	0	0	0	0	4	3	0	0	0	0	4	3
Linemarker	0	0	0	3	0	0	0	0	0	3	0	0
Paving Plant Operator	0	0	0	0	0	0	0	0	0	0	0	0
Road Roller Operator	0	0	0	0	0	0	0	0	0	0	0	0
Road and Rail Drivers nfd	0	0	0	0	0	0	0	0	0	0	0	0
Truck Driver (General)	0	0	0	41	30	30	31	11	10	72	41	40
Tanker Driver	0	0	0	0	0	0	0	0	0	0	0	0
Tow Truck Driver	0	0	0	5	0	0	0	0	0	5	0	0
Storeperson	0	0	0	0	0	0	0	0	0	0	0	0
Labourers nfd	0	0	0	0	0	0	4	0	0	4	0	0
Commercial Cleaner	0	0	0	0	0	0	5	4	0	5	4	0
Construction and Mining Labourers nfd	0	0	0	0	3	5	0	0	0	0	3	5
Builder's Labourer	0	4	0	16	3	16	24	8	6	40	15	22

	Heavy and Civil Engineering Construction, nfd			Road and Bridge Construction			Other Heavy and Civil Engineering Construction			Total		
	Hobart & South East	Launceston and North East	West and North West	Hobart & South East	Launceston and North East	West and North West	Hobart & South East	Launceston and North East	West and North West	Hobart & South East	Launceston and North East	West and North West
Earthmoving Labourer	0	0	0	0	0	0	0	0	0	0	0	0
Concreter	0	0	0	4	0	3	5	0	0	9	0	3
Paving and Surfacing Labourer	0	0	0	93	55	40	8	0	0	101	55	40
Railway Track Worker	0	0	0	0	0	0	0	0	4	0	0	4
Construction Rigger	0	0	0	0	0	0	0	0	0	0	0	0
Steel Fixer	0	0	0	0	0	0	0	0	0	0	0	0
Metal Engineering Process Worker	0	0	0	0	0	0	0	5	0	0	5	0
Product Examiner	0	0	0	0	0	0	0	0	0	0	0	0
Product Tester	0	0	0	0	0	0	0	0	0	0	0	0
Farm, Forestry and Garden Workers nec	0	0	0	0	0	0	0	0	8	0	0	8
Recycling or Rubbish Collector	0	0	0	0	0	0	0	0	0	0	0	0
Road Traffic Controller	0	0	0	25	14	5	4	0	0	29	14	5
Labourers nec	0	0	0	0	0	0	4	6	0	4	6	0
Supply, Distribution and Procurement Managers nfd	0	0	0	0	0	0	0	0	0	0	0	0
Total	**8**	**4**	**0**	**445**	**231**	**212**	**320**	**189**	**98**	**773**	**424**	**310**

Appendix H: Occupations in shortage by occupational grouping – Jobs & Skills Australia's Priority List

Clerical and Administrative Workers

- Accounts Clerk
- Bookkeeper
- Contract Administrator
- General Clerk
- Receptionist (General)

Labourers

- Construction Rigger
- Steel Fixer

Machinery Operators and Drivers

- Agricultural and Horticultural Mobile Plant Operator
- Bulldozer Operator
- Crane, Hoist or Lift Operator
- Earthmoving Plant Operator (General)
- Excavator Operator
- Grader Operator
- Linemarker
- Loader Operator
- Miner
- Road Roller Operator
- Storeperson
- Truck Driver (General)

Managers

- Cafe or Restaurant Manager
- Chief Executive or Managing Director
- Construction Project Manager
- Corporate General Manager
- Corporate Services Manager
- Customer Service Manager
- Engineering Manager
- Finance Manager
- Hospitality, Retail and Service Managers nec
- Human Resource Manager
- ICT Project Manager
- Policy and Planning Manager
- Procurement Manager
- Project Builder
- Research and Development Manager
- Sales and Marketing Manager
- Specialist Managers nec
- Supply and Distribution Manager

Professionals

- Accountant (General)
- Civil Engineer

Electrical Engineer
Environmental Consultant
Human Resource Adviser
Management Accountant
Mechanical Engineer
Occupational Health and Safety Adviser
Quantity Surveyor
Recruitment Consultant
Structural Engineer
Transport Engineer
Workplace Relations Adviser

Technicians and Trades Workers

Automotive Electrician
Building Associate
Building Inspector
Carpenter
Civil Engineering Draftsperson
Civil Engineering Technician
Construction Estimator
Diesel Motor Mechanic
Electrical Linesworker
Electrician (General)
Electronic Equipment Trades Worker
Fitter (General)
Fitter and Turner
Gasfitter
Maintenance Planner
Metal Fabricator
Motor Mechanic (General)
Sheetmetal Trades Worker
Technicians and Trades Workers nec
Telecommunications Technician
Vehicle Painter
Welder (First Class)

Appendix I: Building and Construction Industry Skills Compact[64]

Category	Action	Key Party
Training, facilities and resources	1. Work together on regular analysis of data and insights on training and the labour market. 2. Continue the review of policies and frameworks for supporting training and industry development. 3. Continue to work closely with industry and schools to introduce learners to new technologies and provide access to the latest technology for training. 4. Continue to explore opportunities to collaborate on sharing and upgrading training facilities, platforms and resources.	1. All Parties 2. Keystone 3. Industry 4. Peaks/ State Growth 5. All Parties
Trainers and supervisors	1. Continue supporting current and potential trainers with upskilling and practical experience, including transition to retirement programs. 2. Continue supporting Return to Industry programs that enable trainers to remain current and competent in their trade. 3. Share information with WorkSafe Australia regarding potential return-to-work options for injured professionals to join the training workforce. 4. Promote the changes to training standards that allow greater flexibility in the delivery and assessment of training and enable innovative models for industry experts to support the delivery of training.	State Growth/Keystone/Industry Peaks
Workforce recruitment and retention	1. Share current best practice examples for apprentices, including basic skills training (financial, digital), mentoring programs (for employers and learners). 2. Prioritise wrap-around services (including mental health support) for apprentices, and promotion of inclusivity and diversity. 3. Foster strong partnerships between industry peaks and employers to ensure their active engagement and commitment to apprenticeship programs. 4. Contribute to Skills Tasmania's review of apprenticeships and traineeships to	State Growth/Keystone/Industry Peaks

[64] Industry Skills Compact, Building & Construction, Accessed 6 February 2025

Category	Action	Key Party
	better understand best practice that meets the needs of the contemporary economy and employers. 5. Continue to promote the value of apprenticeships and attract a diverse range of candidates. 6. Continue to support positive changes to industry and workplace culture, promoting safety and examples of best practice. 7. Continue to establish diversity and inclusion initiatives to address underrepresentation and remove barriers.	
Pathways	1. Support a range of career and pathway development (entering, existing workers, transitioning, exiting, professional development, upskilling,) and identify skills sets to address the gaps. 2. Encourage business owners to engage with Jobs Tasmania's Employer of Choice program to improve their capacity to attract, retain and develop their staff.	Industry Peaks / State Growth