CONSTRUCTION AND INFRASTRUCTURE SERVICES

WORKFORCE DEVELOPMENT PLAN 2025

WAIHANGA ARA RAU
Construction and
Infrastructure
Workforce Development Council

About the quotes

The quotes featured throughout this publication are drawn from real interview participants in the industry voice research we conducted. To respect the anonymity of those who shared their experiences and insights, individual attributions have not been included. We value the honesty and authenticity of these voices, which reflect the diverse perspectives of the participants.

CONTENTS

CONSTRUCTION AND INFRASTRUCTURE SERVICES SECTOR VISION

A skilled, diverse workforce aligned with industry needs, ready to meet the evolving demands of the construction and infrastructure services sector.

Through industry-led training, inclusive learning pathways, and continuous development in digital and technical skills, we will foster a workforce that drives innovation and supports sustainable growth for the future.

SETTING THE SCENE

Sector interviews conducted during 2022–2023 highlighted the challenges facing the Construction and Infrastructure Services sector at that time. These discussions identified several key themes, which were subsequently captured in the Construction and Infrastructure Services Sector Voice Report.

The key themes included workforce attraction, retention, upskilling, and enhancing diversity and inclusion. Additionally, the sector required improved access to data, stronger relationships, and greater regulatory support to respond proactively to economic changes.

Based on these findings, a range of recommendations was developed, incorporating both long-term strategic actions and short- to medium-term activity. While the economic environment has since evolved, the key themes and recommendations remain highly relevant.

To ensure alignment with the shifting landscape, industry input and guidance from the Strategic Reference Group (SRG) have been integral to shaping the SRG Action Plan and priorities, which address the sector's immediate and medium-term needs while keeping an eye on the future.

SERVICES SECTOR
OVERALL PROJECT PIPELINE

$295.8 billion

Anticipated work put in place from Dec 2024 to Dec 2029

Workforce Information Platform | Project pipeline

CONSTRUCTION AND INFRASTRUCTURE SERVICES
WORKFORCE SIZE

52,857 people

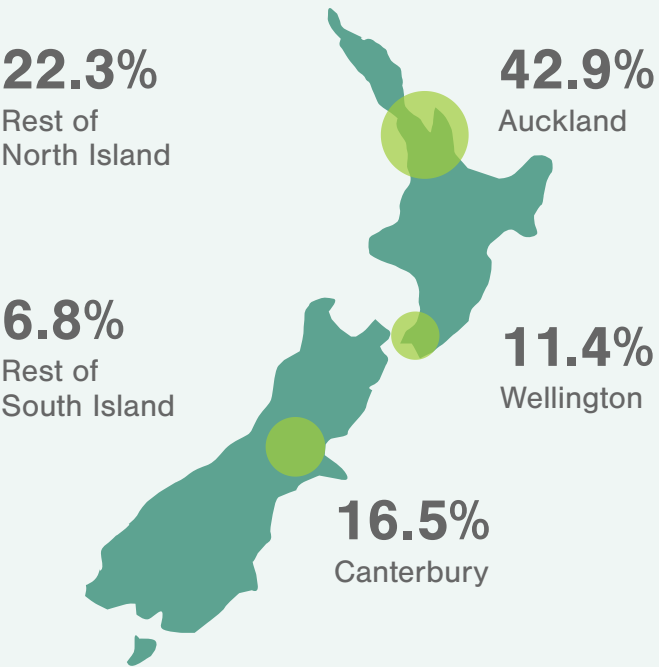Workforce Information Platform | Total workforce size

CONSTRUCTION AND INFRASTRUCTURE SERVICES
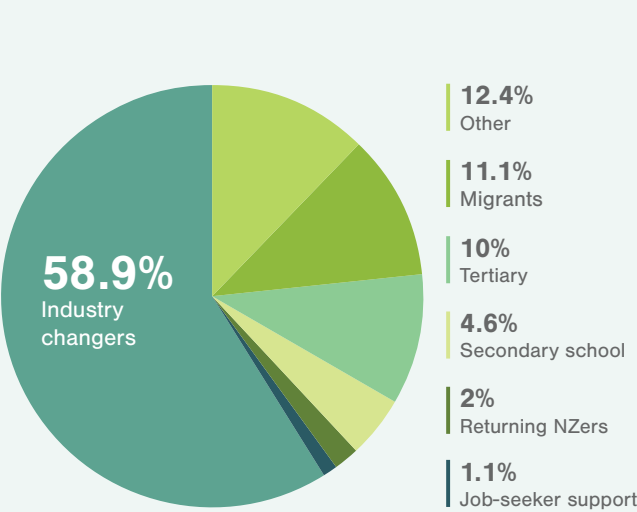## WORKFORCE SHORTAGE

19,928 people

Projected shortage by June 2026

Workforce Information Platform | Workforce gaps

STATE OF THE SECTOR

EMPLOYMENT BY REGION[1]

2023

22.3%
Rest of
North Island

42.9%
Auckland

6.8%
Rest of
South Island

11.4%
Wellington

16.5%
Canterbury

GENDER[2]

2023

67% Men

33% Women

AGE[3]

2023

15 to 24	10.1%
24 to 34	30.3%
35 to 44	25.9%
45 to 54	17.6%
55 to 64	11.2%
65+	4.9%

NEWCOMERS BY ORIGIN[4]

2023

58.9%
Industry
changers

12.4%
Other

11.1%
Migrants

10%
Tertiary

4.6%
Secondary school

2%
Returning NZers

1.1%
Job-seeker support

18.7% of newcomers left the
workforce within one year[6]

ETHNICITY[5]

2023

%	Māori	Pacific	Asian	Euro.	MELAA	Other
	6.8	2.2	20.5	66.2	3.1	1.1
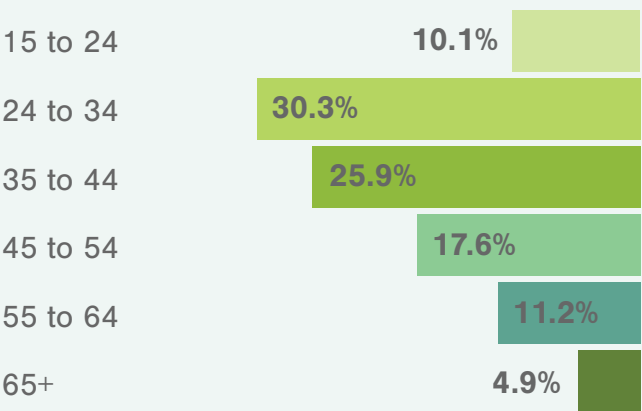
13,500

TOTAL NUMBER OF BUSINESSES[7]

2023

1,158

TOTAL NUMBER OF SOLE TRADERS[8]

2023

BUSINESS OWNERSHIP BY ETHNICITY[9]

2023

MELAA	1%
Pacific	1%
Māori	4%
Asian	7%
European	47%
Not identified	41%

1   Workforce Information Platform | Employment by region
2   Workforce Information Platform | Employment by gender
3   Workforce Information Platform | Employment by age
4   Workforce Information Platform | Newcomers by origin
5   Workforce Information Platform | Employment by ethnicity
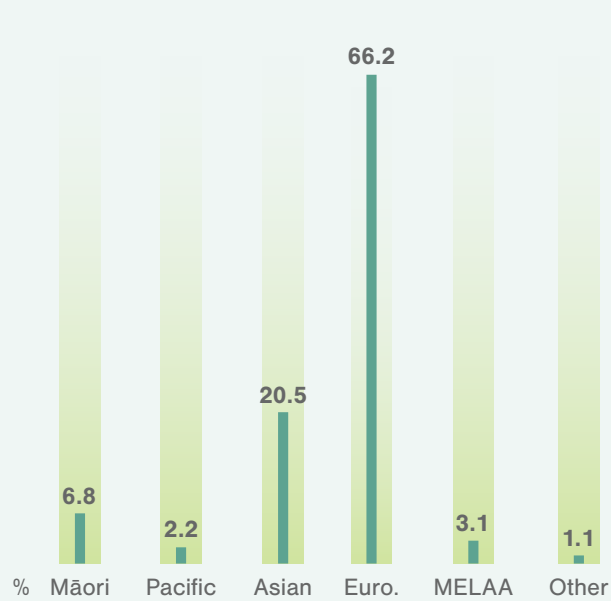
6   Workforce Information Platform | Industry tenure
7   Workforce Information Platform | Total number of businesses
8   Workforce Information Platform | Total number of sole traders
9   Workforce Information Platform | Business ownership

ROADMAP FOR CHANGE

Insights from industry and analysis of sector trends have highlighted three key priorities for workforce development:

1.0

Industry-aligned, accessible, and practical training

- Ensure industry-aligned training products
- Integrate digital and technical skills
- Expand work-integrated learning and early industry learning
- Promote inclusive and accessible training

→ *View actions on pg 18*

2.0

Talent retention, development, and diversification

- Enhance the sector through diversity and inclusion
- Invest in employee development and retention
- Increase sector awareness and expand the talent pool

→ *View actions on pg 20*

3.0

Strategic workforce development and collaboration

- Strategic policy advocacy
- Enhance sector data for better decision-making
- Foster partnerships and collaboration

→ *View actions on pg 21*

INDUSTRY INSIGHTS

METHODOLOGY

We carried out a qualitative research study to explore the workforce challenges and opportunities in the Construction and Infrastructure Services sector.

The study involved semi-structured interviews with members of the Strategic Reference Group (SRG) and other sector representatives recommended by the group. These interviews were conducted between November 2022 and March 2023, and varied in length depending on the nature of the conversation. They were held both virtually and in person, using a semi-structured format that followed a prepared question guide while allowing flexibility to explore emerging topics.

Participants received the interview questions in advance, along with a briefing on the study's purpose and potential outcomes. Key topics included workforce trends, emerging technologies, training and qualifications, diversity and inclusion, and pathways for future development. All interviews were recorded and transcribed with consent.

Ethical considerations were prioritised throughout the process, including informed consent, confidentiality, and secure data storage.

We analysed the interview data using thematic analysis, which involved coding and grouping responses to identify common patterns, insights, challenges, and opportunities across the sector. These insights were gathered during a period when the Strategic Reference Group was known as the Construction and Infrastructure Professional Services group, so the term "professionals" is used throughout the insights.

The findings from this research have directly informed the Workforce Development Plan and will shape the recommendations presented.

WHAT WE HEARD

Labour and skills shortages

The Construction and Infrastructure Services (C&I Services) sector is under significant pressure due to labour and skills shortages, which are limiting its ability to meet growing demand. Participants reported consistent challenges in filling roles across all levels—from entry-level positions to senior professionals. As one business owner shared, "We are experiencing both a labour shortage and a massive demand for work," emphasising the scale of the issue.

Vacancies often remain open for extended periods, with smaller businesses especially impacted, as many are already operating at full capacity. The lack of experienced mid-career professionals is particularly concerning, as it limits opportunities for mentoring and support for new entrants. Some participants also noted the long-term effects of immigration policies, which have reduced the flow of skilled workers into the sector.

A related challenge is the loss of institutional knowledge as experienced professionals retire, and succession planning remains limited. Existing staff are increasingly burdened with heavier workloads, contributing to burnout. The sector acknowledges that developing a sustainable talent pipeline will take time and investment.

To address these shortages, participants emphasised the need to grow local talent. Suggestions included reintroducing built environment career exposure in secondary schools—such as through the revival of planning in the curriculum—as a long-term strategy to increase domestic supply and reduce reliance on immigration.

Attraction and retention

Attracting and retaining talent remains a major challenge for the sector. One of the primary issues is the lack of accessible workforce data, which makes it difficult for industry members to understand what steps are needed to address workforce gaps. Without comprehensive data, addressing these shortages becomes increasingly difficult.

Barriers to the inclusion of Māori and Pacific Peoples were also highlighted. Participants expressed concerns that the sector is not yet prepared to create an environment where these communities can thrive. The lack of access to experience, understanding, and the ability to make meaningful connections continues to limit opportunities for these groups.

A key concern raised was the lack of clear career pathways and limited awareness of the available roles within the sector. Many learners are unaware of career options in the industry, and there is a need for clearer guidance on the opportunities available. As one participant noted, "None of our students know the first thing about that pathway... the institutions don't tend to tell them."

Participants also recommended involving iwi to help drive meaningful change. They stressed the need for better communication, access to workforce data, and stronger support for Māori and Pacific Peoples. Improvements in the education system, clarifying career pathways, and raising awareness of the sector's potential among a broader range of learners were identified as crucial steps.

Perceptions of career prestige also affect recruitment. Certain professions are viewed as more prestigious, making attracting talent to trades and technical roles harder. As one participant explained, "Parents want their kids to be doctors and lawyers, but we need sparkys, chippies, and plumbers." This mindset continues to challenge efforts to attract and retain a skilled workforce.

Regulation

The C&I Services sector faces a range of regulatory challenges that pressure businesses and limits the sector's ability to respond to current and future demands. Participants highlighted issues including compliance burdens, unclear standards, and regulatory gaps, particularly in fields like building surveying and project management.

In some areas, the absence of regulation remains a key concern. One participant from the building surveying sector stressed the need for proper oversight to protect consumers from unqualified practitioners, pointing to inconsistent regulation across professions.

There was also frustration with the complexity and frequent changes in regulatory requirements. One participant observed, "More time is spent on compliance than on doing the actual work," reflecting the administrative load these processes create. Civil construction contractors echoed these concerns, describing compliance obligations as excessive and difficult to navigate, particularly amid uncertainty about future project pipelines.

Another issue raised was the lack of standardised job descriptions and competency frameworks across several professions. For example, the absence of clear expectations for project management roles was seen to hinder the development of consistent career pathways and sector-wide clarity around responsibilities.

Slow immigration processes were noted as a regulatory factor contributing to workforce pressures.

While workforce shortages are a concern, participants emphasised that processing delays and restrictive settings make it harder to access much-needed skills from overseas. There is a call for more inclusive and responsive systems that support sector growth, with several participants encouraging regulators to engage more directly with industry to shape fit-for-purpose solutions.

Training and education gaps

Across the design, construction, and engineering sectors, participants described a persistent and evolving training gap. In architecture, this was often linked to a shift away from traditional learning models. "There's a gap in how people have been trained... we used to work in the design office and be taught things on the job," one participant shared, highlighting concerns that contemporary pathways may not fully equip learners for current demands.

Others noted a lack of structured pathways—particularly in project management—where the competencies, behaviours, and scope of services were unclear. In engineering, challenges included declining literacy and numeracy, and a difficulty attracting young people into STEM fields. As one participant explained, "Whether you are doing trades training or professional qualifications, you must get excited about those technical subjects, and kids are not getting enough exposure to that at a young age." A hybrid approach, combining classroom learning with hands-on experience, was widely endorsed.

Several participants pointed to the lack of formal standards or accreditation for architectural technologists, highlighting the need for a structured framework to formally recognise their skills and role within the sector. "We don't have a minimum standard, and we don't have an accreditation programme for those skills that are absolutely going to be essential," one noted. Broader concerns were raised about the skill levels of new entrants across disciplines, and a sense that workplace learning alone is no longer sufficient.

Participants also emphasised the importance of training in soft skills, cultural competency, and consulting—particularly when working with clients and communities. "We need marketers, people who are good at writing reports, who can talk to people, who can influence..." one explained. Strengthening partnerships with Māori and indigenous communities was seen as critical to more inclusive and culturally grounded training approaches. If these gaps remain unaddressed, participants feared the sector would struggle to attract and prepare a workforce that reflects the diversity and complexity of future work.

Lack of pipeline and public awareness of the sector

Participants highlighted a lack of clear and accessible entry points for those considering a career in the sector. One participant noted, "There's not really a pipeline for young people to get into the industry," pointing to the scarcity of opportunities as a real barrier for new entrants. This was consistent across multiple disciplines, calling for more visibility, structure, and support to attract and retain future professionals.

Public awareness of professional roles was another recurring concern. Many participants noted that the general public still doesn't fully understand the roles of architects, planners, or surveyors. One participant remarked, "There's still not a huge amount of awareness of what architects do," supported by another who emphasised the lack of awareness around building surveying. As a result, career paths in these fields are often overlooked, particularly by students exploring their future options.

Engineering faces similar challenges. A shortage of qualified applicants is becoming more pronounced, with fewer students entering the pipeline. One participant highlighted, "There is a limited pool of qualified candidates applying for positions in our industry." Insufficient outreach and a lack of awareness about engineering careers were identified

as contributing factors. Suggestions included targeted school engagement, career expos, and hands-on promotional events.

Planning also faces a lack of awareness, with many young people unaware of it as a career option. As one participant noted, "There is limited awareness of planning as a career choice," which can directly impact enrolment in relevant courses or training.

In construction, outdated assumptions persist. One participant reflected, "Our biggest challenge is understanding that there are professional pathways to it," noting that many communities—particularly Māori and Pacific Peoples—view construction primarily as trade work, unaware of the diverse career paths available in design, planning, and management.

The broader C&I Services sector shares these difficulties, with one participant stating, "We're not getting enough young people coming into the industry." Without clearer promotion of career opportunities and long-term benefits, the sector risks missing out on fresh talent and perspectives.

To address these issues, participants called for coordinated efforts to raise the profile of professional roles through school outreach, clearer job descriptions, and stronger messaging about the value and impact of the work. These industries aim to cultivate a more diverse and well-prepared workforce by building understanding and interest early.

Diversity and inclusion

The sector recognises the importance of diversity across professions, particularly within architecture, where one participant stated, "It is crucial to have diversity in the profession to ensure it reflects the broader society." This reinforces the view that a more representative workforce not only strengthens design outcomes but also enhances the industry's connection with the communities it serves.

Despite this awareness, participants noted persistent gaps in representation—especially in leadership. One participant observed the "notable absence of diversity at the top," suggesting that systemic barriers continue to affect progression for underrepresented groups. These challenges are particularly evident in building surveying, where a limited diversity pipeline constrains growth and innovation. Participants stressed that increasing diversity in this field is essential to ensure the profession remains relevant, resilient, and aligned with future societal needs.

The need to engage more young people from diverse backgrounds was seen as key to driving long-term change. As one participant shared, greater inclusion of younger voices and varied experiences could transform perceptions of professions like building surveying and help shift outdated narratives.

The sector is also becoming more candid in acknowledging its own shortcomings. One participant described the industry as "male, pale, and stale," while adding that this does not diminish the value of existing contributions. Instead, it reflects a collective willingness to evolve and improve.

True inclusion, however, requires more than recruitment. Several participants emphasised the importance of inclusive environments where people can bring their authentic selves to work, contribute meaningfully, and feel that their ideas are genuinely heard. As one participant put it, increasing numbers alone is not enough—the sector must actively foster cultures of inclusion and belonging.

Need for partnerships and collaboration

The challenges facing the C&I Services sector are increasingly recognised as too complex for any single individual or organisation to resolve alone. As one participant shared, "The challenges we face today are so complex that no single individual or firm can address them alone," reinforcing the growing consensus on the need for collaboration.

Collaboration within the sector is highly valued for its ability to bring diverse perspectives, skills, and resources together. As one professional noted, "Collaboration can bring diverse perspectives, expertise, and resources to the table, leading to more innovative and comprehensive solutions." This approach fosters broader thinking, which can result in more creative and effective solutions.

Partnerships across industries and disciplines are also viewed as essential for driving innovation and resilience. Participants highlighted that collaboration with other sectors pushes the boundaries of what is possible, creating more sustainable and forward-thinking outcomes. These connections help professionals explore new solutions, contributing to long-term sector resilience.

Engaging with academic institutions, industry associations, and government agencies—was emphasised as a way to deepen understanding and enhance the sector's impact through shared learning and coordinated action.

Ultimately, partnerships are seen as fundamental for progress. By building strong networks across professions and organisations, individuals can share insights, pool expertise, and collectively address sector-wide challenges. Clear communication and shared goals are critical to successful collaboration, ensuring alignment and facilitating open dialogue to achieve meaningful outcomes.

TURNING INSIGHTS INTO ACTION

Insights from industry and analysis of sector trends have highlighted three key priorities for workforce development:

→ Industry-aligned, accessible, and practical training

→ Talent retention, development, and diversification

→ Strategic workforce development and collaboration.

The following recommendations aim to support the future of Construction and Infrastructure Services by addressing these priorities and assigning suggested owners to each action.

Priority	Actions	Owner/s
1.0 **Industry-aligned, accessible, and practical training.**	**1.1 Ensure industry-aligned training products** • Ensure industry needs are adequately represented during review of qualifications.	🟡 🟢
	• Assess the feasibility of creating accredited training pathways, including those for project management and architectural technology roles.	🟢
	• Identify and develop targeted training programmes to address skill shortages in critical high-demand sectors.	🟡 🟢
	1.2 Integrate digital and technical skills • Identify gaps in training for industry-specific software and tools.	🟡 🟢
	• Explore opportunities to embed digital literacy and emerging technologies into curricula.	🟢
	• Explore approaches for ensuring training remains responsive to technological advancements.	🟢
	• Explore ways to support businesses in promoting continuous professional development in digital and technical skills.	🟡

🟡 Industry　　🟢 Waihanga Ara Rau　　🟢 Training organisations　　⬤ Government

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Actions	Owner/s
1.3 Expand work-integrated learning and early industry learning • Integrate practical training into academic programmes: - Ensure alignment with industry needs.	🟢
• Expand access to internships, apprenticeships, and industry projects to provide practical experience and improve job readiness.	🟡
• Develop mentorship programmes and industry partnerships to connect learners with professionals.	🟡
1.4 Promote inclusive and accessible training • Ensure newly developed programmes are accessible to a diverse range of learners (e.g. differing schedules, learning styles, etc) - Ensure this is integrated into existing programs over time.	🟢
• Offer targeted support to help underrepresented groups access training opportunities.	🟡
• Build cultural competency into curricula to make learning more inclusive and relevant.	🟢

🟡 Industry　　🟢 Waihanga Ara Rau　　🟢 Training organisations　　⬤ Government

Priority	Actions	Owner/s
2.0 **Talent retention, development, and diversification.**	**2.1 Enhance the sector through diversity and inclusion**	
	• Offer resources and training on unconscious bias and cultural competency to people leaders initially, then roll out wider.	🟡 Industry
	• Adopt diversity, equity, and inclusion policies that foster innovative recruitment, leadership development, and mentorship programmes.	🟡 Industry
	• Organise industry-led events to promote diverse perspectives and role models.	🟡 Industry
	• Ensure ample opportunities for underrepresented groups to participate in sector networking events.	🟡 Industry 🟢 Waihanga Ara Rau
	2.2 Invest in employee development and retention	
	• Provide professional development programmes focused on career progression for diverse employees.	🟡 Industry
	• Foster workplaces that prioritise employee wellbeing initiatives and work-life balance.	🟡 Industry
	• Ensure businesses are equipped to help skilled migrants upskill and contribute to developing the local workforce.	🟡 Industry
	• Explore alternative and innovative compensation packages to retain top talent.	🟡 Industry
	2.3 Increase sector awareness and expand the talent pool	
	• Develop campaigns that showcase the sector, it's diverse career and growth opportunities.	🟡 Industry 🟢 Waihanga Ara Rau 🟩 Training organisations 🔵 Government
	• Explore funding options for scholarships and financial aid for underrepresented groups.	🟡 Industry
	• Industry and training organisations collaborate to create initiatives that attract a diverse talent pool: - Partner with educators to promote alternative career pathways. - Collaborate with schools and associations to provide career information. - Host workshops and outreach programmes showcasing industry opportunities.	🟡 Industry 🟩 Training organisations

🟡 Industry   🟢 Waihanga Ara Rau   🟩 Training organisations   🔵 Government

Priority	Actions	Owner/s
3.0 **Strategic workforce development and collaboration.**	**3.1 Strategic policy advocacy**	
	• Establish a mechanism that empowers the industry to influence key policies essential for sector workforce growth: - Regulatory compliance processes. - Immigration policies. - Workforce development policy and planning	🟡 Industry
	• Ensure immigration policies and any relevant 'green lists' prioritise roles that address critical sector workforce gaps.	🔵 Government
	• Advocate for incentives that recognise businesses excelling in workforce development.	🟡 Industry
	3.2 Enhance sector data for better decision-making	
	• Identify and collaborate with key quantitative data organisations to ensure the sectors data is comprehensive and current: - Create feedback loops to improve data relevance.	🟡 Industry
	• Provide tools and resources to empower business owners and sector to leverage workforce and project data for informed decision-making.	🟡 Industry
	3.3 Foster partnerships and collaboration	
	• Facilitate cross-sector knowledge-sharing to address skill gaps.	🟢 Waihanga Ara Rau
	• Partner with key Iwi and Māori organisations to ensure sector planning respectfully incorporates a Te Ao Māori worldview.	🟡 Industry 🟢 Waihanga Ara Rau
	• Strengthen collaboration with Māori and Pacific communities and organisations, with a focus on raising sector awareness.	🟡 Industry 🟢 Waihanga Ara Rau 🟩 Training organisations 🔵 Government
	• Intentional partnerships with key organisation who are critical to address the sectors workforce challenges.	🟡 Industry

🟡 Industry   🟢 Waihanga Ara Rau   🟩 Training organisations   🔵 Government

SUPPORTING INFORMATION

Construction and Infrastructure Services is one of 11 strategic groups within construction and infrastructure identified by Waihanga Ara Rau. The ANZSIC codes and occupations below align with this sector, helping to define its subsectors and job types while highlighting workforce needs and opportunities.

Common occupations

People are commonly employed in the following occupations within the Construction and Infrastructure Services sector:

Engineering technicians (civil, electrical, electronics, mechanical or fire)	Construction site managers, construction management assistants and construction project management assistants
Civil engineers, electrical engineers, electronics engineers, mechanical engineers and fire engineers	Building surveyor, building inspectors, building consultants and compliance officers
Hydrographic surveyors	Quantity surveyors
Assistant surveyors	Architectural technicians
Land surveyors and surveying technicians	Asset managers
Structural detailers	Infrastructure procurement
Technical support officers	

ANZSIC codes

The following ANZSIC codes identify the industries that represent the Construction and Infrastructure Services sector.

ANZSIC code	Industry
M692100	Architectural Services
M692300	Engineering Design and Engineering Consulting Services
M692200	Surveying and Mapping Services

Learners and qualifications

Qualification		Learners 2023
2416	New Zealand Diploma in Architectural Technology (Level 6)	1,205
2420	New Zealand Diploma in Construction (Level 6) with strands in Construction Management, and Quantity Surveying	2,525
2612	New Zealand Diploma in Engineering (Level 6) with strands in Civil Engineering, Electrical Engineering, Electronics Engineering, Mechanical Engineering, and Fire Engineering	495
2957	New Zealand Certificate in Surveying (Level 4)	50
2958	New Zealand Certificate in Hydrographic Surveying (Level 4)	0
2959	New Zealand Diploma in Surveying (Level 6)	105
3029	New Zealand Certificate in Building Regulatory Environment (Level 4)	60
3030	New Zealand Diploma in Building Surveying (Level 6)	220
3179	New Zealand Certificate in Infrastructure Procurement Procedures (Level 6)	195
3180	New Zealand Diploma in Infrastructure Asset Management (Level 6)	15
-	Programme: Construction Site Management Training Programme	45
4515	NEW: New Zealand Diploma in Detailing (Structural) (Level 5) with strands in Light Steel Frame, Steel Reinforcing, Structural Steel, and Precast Concrete	N/A
Total learners		**4,870**

Data source: Ngā Kete (Tertiary Performance - ITR)