



# **2021 Targeted Update of the Australian and New Zealand Standard Classification of Occupations**

**SUBMISSION TO THE AUSTRALIAN BUREAU OF STATISTICS**

**JULY 2021**

## ABOUT US



Consult Australia is the industry association representing consulting businesses in design, advisory and engineering. Our industry comprises some 48,000 businesses across Australia, ranging from sole practitioners through to some of Australia's top 500 companies, providing solutions for individual consumers through to major companies in the private sector and across all tiers of government. Our industry is a job creator for the Australian economy, directly employing 240,000 people. The services we provide unlock many more jobs across the construction industry and the broader community.

### Our members include:



## EXECUTIVE SUMMARY

Consult Australia welcomes the opportunity to contribute to the Australian Bureau of Statistics' (ABS) 2021 Targeted Update of the Australian and New Zealand Standard Classification of Occupations (ANZSCO). We understand that in this targeted update the ABS is only looking at the following areas:

- agriculture related occupations
- cyber security related occupations
- naval ship building related occupations
- 25 emerging occupations in the National Skills Commission publication [Emerging Occupations](#).

We are supportive of the approach taken by the ABS to undertake a targeted review of ANZSCO, rather than a significant review of every occupation. The new targeted approach to updating the ANZSCO with ongoing targeted reviews is needed to capture further emerging occupations and to avoid those occupations being missed or ignored in policy decisions.

To assist the current update, Consult Australia has identified a number of roles with our sector that align with the Data Engineer and Energy Efficiency Engineer occupations which are within the 25 emerging occupations identified by the National Skills Commission. We have filled in the survey accordingly and that information is also below under '2021 targeted update'.

Our members have identified other emerging occupations that are outside of this targeted update which we would suggest should be prioritised in future updates to ANZSCO:

- Fire Engineer
- Bushfire Consultant
- Human Factors Consultant
- Rail Engineer (potentially under the existing Civil Engineer or Transport Engineer).

These occupations are largely the result of emerging industry developments in technology and digitalisation. We provide further information on these below under 'Other areas for attention'.

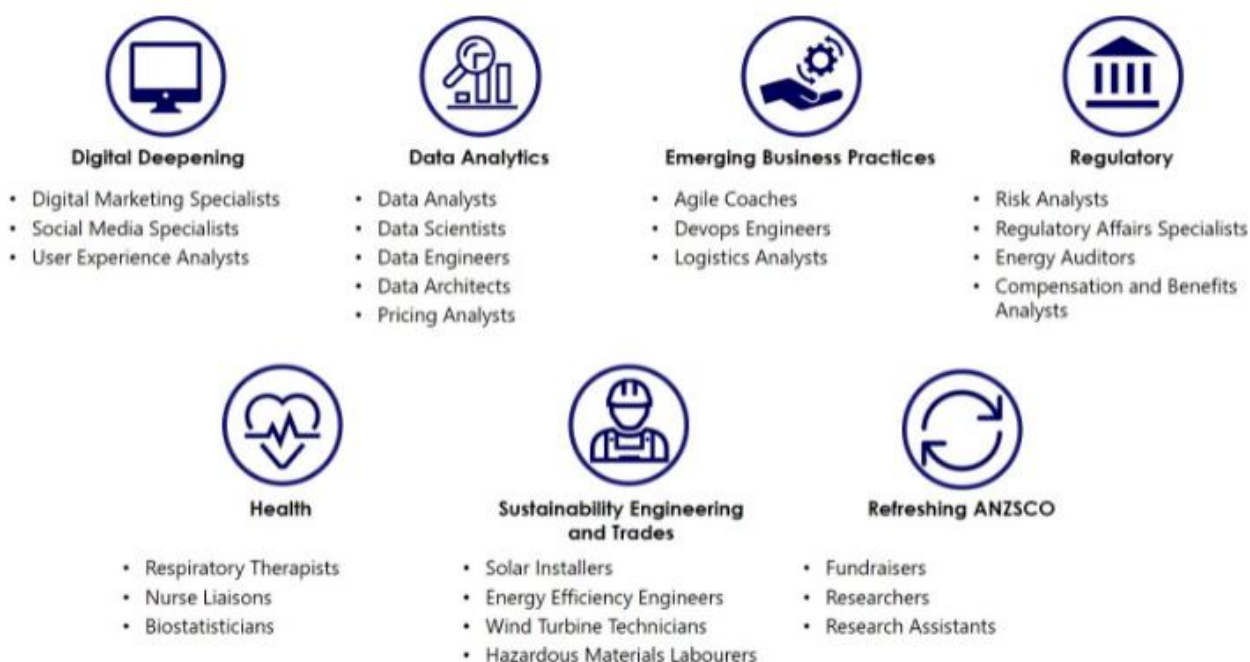
As we have made clear in previous submissions to the Commonwealth government, our industry is facing a significant skills shortage and it is therefore vital that we get the policy settings right and capture all relevant occupations that are essential to the Australian economy. We refer to our two part submission to the Inquiry into Australia's Skilled Migration Program (see [Part 1](#) and [Part 2](#)) for more information on skills shortages. Our recent success in having several engineering categories and surveying included in the latest Priority Migration Skilled Occupation List (PMSOL) adds even more urgency to the need to ensure those occupations in ANZSCO are covering the range of professionals we need for priority visa processing. The occupations recently included on the PMSOL most relevant to our members are Electrical Engineer, Civil Engineer, Geotechnical Engineer, Structural Engineer, Surveyor and Transport Engineer.

We wish to emphasise the need for ongoing regular reviews to ensure the ANZSCO keeps up to date with emerging expertise and supports Australia's recruitment from the global talent market.

## 2021 TARGETED REVIEW

### Emerging Occupations

Consult Australia has considered the National Skills Commission’s identified 25 emerging occupations across seven domains (see image below). These emerging occupations have a clear focus on occupations that respond to current challenges including the ever growing need to embrace digitalisation and technology, emerging practices in sustainability, and occupations needed in the wake of the COVID-19 pandemic.



Of the 25 emerging occupations, Consult Australia support Data Engineers (under the Data Analytics domain) and Energy Efficiency Engineers (under the Sustainability Engineering and Trades domain) being added to the ANZSCO.

#### Data Engineers (Digital Engineer/BIM Manager)

Consult Australia supports the inclusion of Data Engineers into the ANZSCO. Increasingly data analytics is a key focus for our members.

We believe that Digital Engineers/Building Information Modelling (BIM) Managers are roles that could fit within the occupation of Data Engineers. These roles are growing significantly with the increased use of digitalisation in design projects and the increasing mandate by governments in their digital strategies to rely on BIM and digital twins. BIM managers require a mix of IT and engineering, but do not necessarily require an engineering degree. BIM represents a significant growth area for our industry.

It is unclear if any existing ANZSCO occupation captures BIM Managers (under IT categories for example), but in any event we recommend that the Data Engineer occupation is a better fit.

Data Engineer also appears to be flexible enough to capture other emerging digital skills related to the built environment and infrastructure.

*Typical duties of a BIM Manager*

Implementing BIM standards on projects, providing input into company-wide BIM systems development, quality assurance checks on designs/documentation prepared to BIM standards to meet client expectations, implementing project documentation plans and any project BIM management or execution plans, participating in day-to-day modelling tasks.

*Skills and qualifications of a BIM Manager*

Knowledge of engineering software solutions (e.g. AutoCAD, Revit, Bentley) across different disciplines, including an ability to advise on best practice, interoperability and workflows. Experience developing and implementing digital design engineering strategies, and a degree in civil engineering or equivalent industry qualification.

### Energy Efficiency Engineers

Consult Australia supports the inclusion of Energy Efficiency Engineers into the ANZSCO. Increasingly sustainability and energy efficiency are a key focus for our members.

We believe there are numerous roles which can fit within the description of Energy Efficient Engineers. A sample of these include:

- Environmentally Sustainable Design (ESD) Consultant
- Environmentally Sustainable Design (ESD) Engineer
- Sustainability Engineer
- Life Cycle Design Consultant.

We would recommend broadening the description of Energy Efficient Engineers to incorporate the above. We are increasingly finding that these roles are becoming occupations in their own right.

## OTHER AREAS FOR ATTENTION

With technology rapidly improving and changing, and the future of work creating many new job types, we believe ANZSCO needs to be regularly reviewed and monitored to ensure that emerging occupations are appropriately captured. Regular industry consultation, like those undertaken through the PMSOL, is needed to ensure occupations are not excluded and are therefore missed in policy discussions.

Consult Australia advocates for design, engineering and advisory occupations to be a priority area for ABS' next targeted review of ANZSCO, as our industry faces significant skills shortages while simultaneously having significant work in the pipeline, including substantial infrastructure spends across the nation. Without designers nothing can be built.

Through targeted surveys of our members as well as regular discussions in our member committees we have identified a range of occupations that should be considered in the next targeted review of ANZSCO. Some of these are not captured in ANZSCO as far as our members are aware, which means that we find it very hard to get policies in place to address the skills shortages in the market for these skilled professionals. There are also occupations, such as Rail Engineer which our members remain unclear about their inclusion within an existing classification in the ANZSCO. Getting this setting right is vital as a number of engineering occupations were recently added to the PMSOL, such as Civil Engineer and Transport Engineer, and we see significant rail projects in the pipeline across Australia which will require skilled migration to assist in delivery.

### Rail Engineer

The industry is unclear whether Rail Engineer fits within either (or neither) the Civil Engineer or Transport Engineer classification. Neither classification specifically includes Rail Engineer. While we have been advised that Rail Engineer can potentially be picked up under the Transport Engineer occupation, within the industry these are viewed as different specialties. It is more likely that Rail Engineer would be considered by the industry as within the Civil Engineer classification.

Either way, the industry needs more clarity and specificity in the ANZSCO to address the current confusion in our industry (including how applications are assessed) and to ensure that either the Civil Engineer or Transport Engineer classification is sufficiently wide to capture Rail Engineer.

This is a priority issue for Consult Australia members as Rail Engineering is a unique skillset with significant shortages in Australia and there is substantial investment in rail projects in the pipeline across Australia. Both Civil Engineer and Transport Engineer were recently added to the PMOL for priority visas processing. Without this clarification, we might not have the workforce capacity to deliver the infrastructure spend in rail governments are looking for to stimulate the economy.

If Rail Engineer was to be included as a new sub-category of Civil Engineer it would become '233216, Rail Engineering.'

## Fire Engineer

Fire Engineers are appropriately qualified and experienced practitioners who, through sound and robust engineering practice, provide services that achieve reductions of risk of life for people in buildings, reduction in property and environmental damage from building fires and the implementation of cost-effective fire safety codes and regulations. Fire Engineers provide advice that affects the design and specification of services such as fire detection, fire suppression and access for fire service appliances. Fire Engineers understand and apply engineering training, fire science as well as the requirements of building codes and other relevant standards. Therefore, services by Fire Engineers can include:

- performance-based fire safety design
- fire safety analysis of smoke control systems, building detection/alarm and suppression systems
- evacuation modelling
- fire and smoke modelling
- building design
- design and development of building fire safety strategies.

### *Typical duties of a Fire Engineer*

Performance solutions, fire hazard analysis, evacuation analysis, structural fire engineering, and probabilistic risk assessment.

### *Skills and qualifications of a Fire Engineer*

Experience in fire engineering design, project management and implementation, experience in building code consultancy, strategic advice, fire prevention through specialised fire safety design, smoke and egress modelling, construction supervision, inspection and risk assessment, knowledge of relevant legislation, regulations, codes of practice and guidelines, and relevant tertiary qualifications in fire and life safety, structural engineering, or similar.

## Bushfire Consultant

Bushfire Consultants implement industry best practices within fire and land management planning and assessment. Services of a Bushfire Consultant can include:

- bushfire threat assessments
- bushfire building and planning compliance
- bushfire design briefings
- strategic bushfire management plans
- bushfire evacuation and emergency plans
- threatened species surveys and implementation of recovery plans
- development and implementation of restoration and recovery plans.

*Typical duties*

Preparing technical reports, management plans and strategies, making technical decisions, and contributing to the preparation of related proposals.

*Skills and qualifications*

Experience in natural resource management and/or bushfire management, qualifications in science or forestry/land management related disciplines, post-graduate qualifications in bushfire planning and design, and ability to deliver high quality and technically robust project outcomes.

### **Human Factors Consultant**

Human Factors Consultants design products, processes, and systems by applying human factors processes. This can also include considering human performance which applies principles of psychology, physiology, biomechanics and ergonomics to optimise the interaction between people and critical systems.

*Typical duties*

Developing relevant human factors management plans and procedures for complex projects, from both a technical and commercial perspective, identifying human factors issues and carrying out assessment for a range of projects (for example, a rail or road infrastructure project), carrying out human factors analysis techniques by using anthropometric data (for example, hierarchical task analysis, human error and reliability analysis, human factors analysis, workload analysis, and structured interviews with subject matter experts), preparing human factors requirements as part of inputs for a design, facilitating human factors workshops and participating in risk workshops, and supporting bid and proposal activities that identify human factors engineering solutions.

*Skills and qualifications*

Experience in undertaking formal human factors analysis as applied to engineering programs, knowledge of systems engineering and an understanding on how to integrate human factors into this approach, and relevant degree and/or post graduate qualification in occupational psychology or ergonomics (or three years equivalent experience).



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## **CONTACT**

We would welcome any opportunity to further discuss the issues raised in this submission. To do so, please contact:

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