REGISTRATION AUTHORITY
FOR CHARTERED PROFESSIONAL ENGINEERS

2021 Annual Report

Annual Report of the Registration Authority to the Chartered Professional Engineers Council pursuant to section 52 of the Chartered Professional Engineers of New Zealand Act 2002

1 January – 31 December 2021

Under the Chartered Professional Engineers of New Zealand Act 2002, the Registration Authority reports to the Chartered Professional Engineers Council each year on its administration of the Register of Chartered Professional Engineers. This report covers the 19th year of operation of the Chartered Professional Engineers (CPEng) Register.

The Registration Authority under the Chartered Professional Engineers of New Zealand Act 2002 is the Institution of Professional Engineers New Zealand (trading as Engineering New Zealand Te Ao Rangahau).

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Overview

System review

A key strategic priority for the Registration Authority during 2021 was commencing and completing a formal end to end review of the CPEng quality mark (the CPEng Review). The first phase of the CPEng Review is on track for completion by the end of the 2022 calendar year. A report will be presented to the newly formed Chartered Professional Engineers Board (CPEng Board) later in 2022.

As previously reported, in 2019 the Ministry of Business, Innovation and Employment (MBIE) proposed a new regulatory system for engineers. This work did not progress ahead of the 2020 election but was picked up again in 2021, with public consultation on a regulatory model that would replace CPEng. MBIE proposes mandatory registration for all engineers, and licensing for safety-critical engineering work. The Registration Authority has continued to liaise with MBIE in support of their wider review of occupational regulation for engineers. MBIE has advised that a final set of proposals has been developed for consideration by the Minister and Cabinet in the first quarter of 2022. Announcements on these proposals are expected in March.

Key activities

The key activities completed by the Registration Authority in 2021 were:

- Completing an end-to-end review of the current CPEng processes and procedures to identify challenges and opportunities to create a strengthened and more fit for purpose regulatory model.
- Imbedding a Customer Relationship Management (CRM) system for the organisation.
- Continuing our work to increase the proportion of female CPEngs'.
- Furthering the Kimihia Rangahaua strategy to embrace Te Ao Māori (Māori world views), within the engineering profession, informing the values and practices shaping what it means to be an engineer in Aotearoa.

Highlights

Some of the highlights of the Registration Authority's work in 2021 were:

- Increasing the number of engineers registered as CPEngs from 4010 to 4251.
- Completing 446 assessments for admission to the CPEng register.
- Establishing the CPEng Board which separates the governance of the Registration Authority from Engineering New Zealand Te Ao Rangahau.
- Developing a preliminary framework for the registration of Recognised Engineers in view of the proposed Dam Safety regulations.
- Redesigning the Professional Development Framework to serve CPEngs' needs better.
- Closing 46 complaints files, surpassing annual file closure rates for the last five years.
- Continuing to drive Engineering New Zealand Te Ao Rangahau's diversity programme, the Diversity Agenda.

Challenges

2021 placed further financial and resourcing pressure on CPEng assessment and the complaints investigation functions. These two functions are heavily reliant on volunteer decision makers.

We saw the number of applications for initial CPEng assessment consistent with the increased number we received in 2020, and the reassessment workload continued to steadily increase. To manage this workload we recruited additional assessor resource for both Practice Area Assessors and Lead Assessors. In addition, we began work on a right touch regulatory approach by focusing on qualifying and quantifying risk when candidates are reassessed. We completed a further pilot of a technical triage panel, who review reassessments in the structural practice field. We will be working to develop this further in 2022 as part of the CPEng Review.

We ended the financial year with a net financial deficit of $66,511.00 on CPEng related activities (Appendix 2). This is in part due to Engineering New Zealand Te Ao Rangahau revising its accounting policy in relation to upfront configuration and customisation. Further information on this revision is found in Note 5 of Appendix 2 of this report.

The financial deficit also reflects an operating environment in which rising costs have not been matched by any increase in registration fees, which have not been revised since 2015. In recent years, any review of fees has been deferred because of MBIE's proposed changes to Occupational Regulation (2018/19) and the pandemic.

While we are confident that we are delivering fair and robust processes we are cognisant of the large amount of work our volunteer decision makers undertake. We are also mindful of the sustainability of being able to continue to deliver these functions with a heavy reliance on volunteers, and while operating at a significant financial deficit.

Key statistics at a glance

At the end of the reporting period:

Number of registered CPEngs	4,251
Number of first time applicants registered	421
Number of applicants declined registration	25
Number of engineers resigned or removed from the register	89
Number of registrations placed in abeyance	42
Number of registrations suspended	92
Number of disciplinary findings made against registered CPEngs	8
Charges payable for registration (less any rebates)*	$3,253.00
Charges payable for the issue of a registration certificate*	$460.00

*Charges are set out in Schedule 2 of the Chartered Professional Engineers of New Zealand Rules (No.2) 2002.

CPEng Review

MBIE expects their proposed regulatory model will be considered by Cabinet in the first quarter of 2022 and progress through the legislative drafting process. Implementation of any changes to the regulatory model will still likely be several years away, so we see our own internal review of the current CPEng model as an important step in maintaining a robust and unambiguous framework that works for all engineering professionals and for the public.

A key outcome of the CPEng review was establishing a separate CPEng Board to oversee the governance of the Registration Authority function. Appointing a separate Board distinguishes CPEng governance from membership governance as far as possible under the current CPEng legislation. The new CPEng Board was appointed in December 2021 and the first meeting of the Board was held on 14 February 2022. The CPEng Board will meet six times throughout the year.

We also completed an end-to-end review of the current CPEng assessment processes. Through this review, the CPEng assessment and reassessment protocols have been documented and a range of opportunities for improvement have been identified. The two key factors guiding this work are ensuring that our processes are fit for purpose and follow a proportionate to risk-based methodology.

During 2022 our focus will switch to implementing the identified improvement opportunities, including:

- Improving the guidance for candidates and assessors to enhance the quality of assessment applications and assessment decision making.
- Increasing moderation/audit processes for Lead Assessors.
- Consolidating existing documentation into a single, version-controlled repository of forms/documentation.
- Introducing specific CPEng assessments for some disciplines (incorporating assessment against Bodies of Knowledge and Skills (BOKS) developed in collaboration with technical groups), leading to registration classes which will provide assurance that engineers can perform specific work (NB: we also see this as supporting any transition to a licensing regime).
- Moving from standardised periodic reassessment for all to a more targeted, risk-based reassessment based on robust audit processes and a proportionate to risk approach.

Strategic priorities for 2022

Priorities for the Registration Authority in 2022 include:

- Implementing the findings of the CPEng Review.
- Reviewing fees and charges for registration as a CPEng (currently set in legislation).
- Working with MBIE on the refinement of any proposed occupational regulation of engineers.
- Addressing current assessment resourcing constraints and the associated backlog of re-assessments.
- Increasing the systemisation of the assessment process and procedures with our CRM system.
- Developing a framework for the registration of Recognised Engineers within the proposed Dam Safety regulations.

Competence assessment

Applications for initial registration

As in 2020, there was strong interest in initial assessment. The national lockdown in 2021, again, gave some applicants a window of opportunity to complete their assessment submissions and accounted in part for the high number of initial assessments we received.

During 2021, 446 first time applicants successfully gained CPEng registration. This number bested the number of successful initial assessments in 2020. 2021 was the second year in a row we assessed more candidates for initial assessment at any time since the register was implemented in 2003/04.

We have reintroduced assessment rounds for initial applications, which has helped engineers determine when they need to complete their assessment portfolio submission. This has also provided us with increased visibility on the allocation of assessors to the numbers of applicants in the scheduled rounds. In addition, hosting interactive assessments online has increased the efficiency of the assessment process.

We held assessment information workshops throughout the year, which attracted a wide geographical spread of attendees. The number of applications already scheduled for future assessment rounds at the end of 2021 demonstrate that strong demand for initial competence assessments will continue in 2022.

Applications for continued registration

At the start of 2021 we had a backlog of reassessment applications to process. Throughout the year, we refined our procedures to improve the efficiency of the reassessment process, including:

- Streamlining the reporting format to reduce administrative burden for assessors, reducing turnaround time.
- Recalibrating the intent of the reassessment to focus on CPD and engagement within the profession.
- Placing the onus on the candidate to provide succinct information which demonstrates their continued competence.
- Consolidating the technical triage panel for structural reassessments, in addition to generally triaging applications. We intend to grow the number of technical triage panels for structural engineering registrants in the first part of 2022.

With no visible let up in the demand for initial registration, the current reassessment model places an ever-increasing workload on our assessors. Integrating a risk-based approach will address the reliance on (the limited capacity of) the volunteers we engage to complete the assessment process.

Incorporating a triaged approach to assessments helps to process reassessment applications more efficiently and effectively. We were successful in reducing the backlog of reassessments across the majority of engineering disciplines. However, the second lockdown impacted the number of structural reassessments we were able to complete in 2021. We have carried over a backlog of 280 structural reassessments from 2021 into 2022. Our key priority in 2022 is to clear the backlog of re-assessments by the end of the year. We aim to achieve this by building on the process improvements implemented in 2021.

With the success of scheduling initial assessment cohorts, we intend to move to a cohort/caseload arrangement for all the 2022 reassessments. Competence Assessment Advisors will each be assigned even allotments of the 2022 reassessments to manage. This will allow more visibility, allocation and tracking in the management of reassessments.

Consistent with provisions in the CPEng Rules, we are publishing the names of applicants for initial and continued registration in each monthly cohort on the Engineering New Zealand Te Ao Rangahau website. This gives the public, and other relevant parties, an opportunity to provide feedback on applicants.

Registration of Recognised Engineers – Dam Safety

Cabinet has agreed to implement dam safety regulations which place the responsibility on dam owners to ensure dams are maintained to acceptable safety levels. The regulations will outline a system for identifying which dams are included in the regime, determining the dam's potential impact classification (PIC) and prescribing the required contents of a Dam Safety Assurance Programme (DSAP) to promote regular monitoring and surveillance practices for the safe operation of dams.

In March 2021, Cabinet approved a set of dam safety policy decisions, including a definition of Recognised Engineer, which Engineering New Zealand Te Ao Rangahau, New Zealand Society of Large Dams (NZSOLD) and MBIE have been working on.

MBIE released a draft of the regulations for feedback and comment from the wider profession to ensure the regulations are fit for purpose.

Once the regulations have been finalised Engineering New Zealand Te Ao Rangahau will be able to determine the level of support that will be required from MBIE to implement the framework, the additional competencies, registration, and regulation of Recognised Engineers. Engineering New Zealand Te Ao Rangahau in collaboration with delegates of NZSOLD are looking at these requirements to determine the cost and work required to implement the work.

The next step for finalising the regulations is to have them approved by Cabinet in 2022. There will then be a two year lead in time before the regulations come into force in 2024.

Candidate satisfaction

A 15-question survey is distributed to all candidates who go through the assessment process. The results shown below summarise overall satisfaction with the assessment process and the relative importance of CPEng to applicants. While the survey response rate is relatively low (10%), it provides a reasonable representation of candidates' views.

Levels of satisfaction measured in the 2021 respondents remain broadly consistent with previous years. This reflects well on assessment staff, who have been able to manage candidate expectations in the face of processing time delays, loss of institutional knowledge with longtime staff moving on and the number of assessments to process.

Figure 2: *Survey response – Qu: Overall, the assessment process was...*

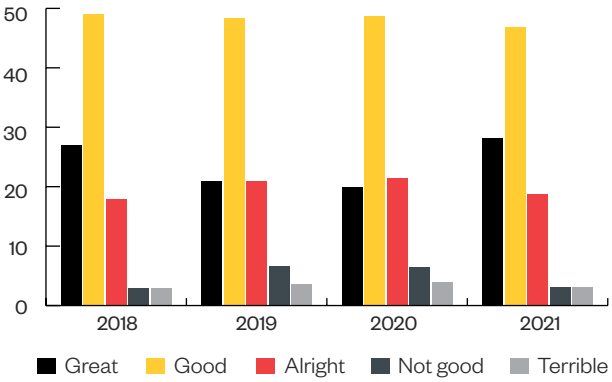


Figure 3: *Survey response – Qu: The quality mark of CPEng is important to my role as an engineer*

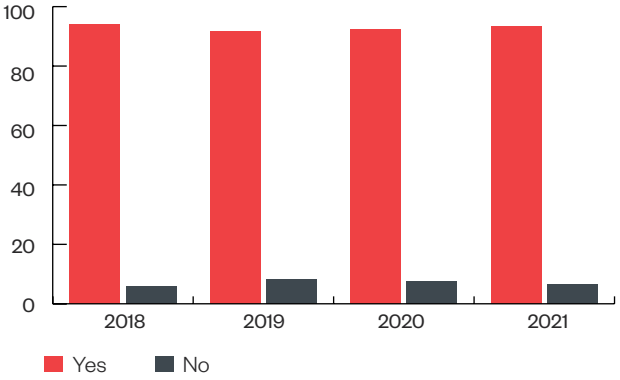
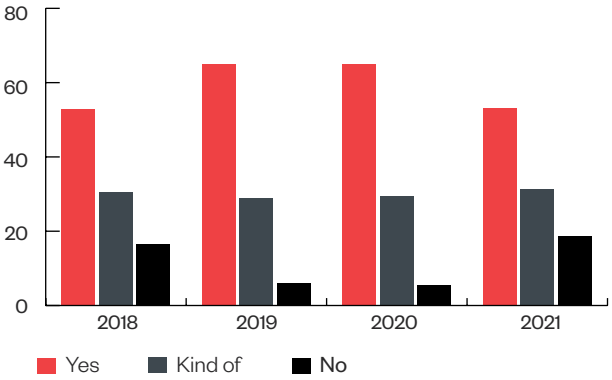


Figure 4: *Survey response – QU: I understand the similarities and differences of Chartered Member and CPEng*



The ongoing confusion between CPEng and Chartered Member is something we are seeking to address as part of the CPEng review. Engineering New Zealand Te Ao Rangahau created Chartered Member in 2017 on the understanding that the Government would soon repeal CPEng and replace it with a new system of regulation that Chartered Member would complement. While the Registration Authority knew having CPEng and Chartered Member operating together would be confusing, our vision was that this would be temporary, and that Chartered Member would become the quality mark for the profession once CPEng was repealed.

Competency Assessment Board

The Competency Assessment Board (CAB) met monthly during the reporting period (except for January where there was no meeting) to consider recommendations from Assessment Panels. All of the meetings were held by videoconference in response to the COVID-19 lockdowns.

CAB Members are CPEngs' with extensive experience in, and knowledge of, professional engineering. In appointing members, the Registration Authority looks for candidates with experience in competency assessments and quality assurance of competency assessments. Consideration is given to geographical representation, diversity, and inclusivity within the CAB membership.

The CAB welcomed new members Matt Harris, and Sheila Karimi (Governing Board Representative). The CAB also said farewell and thank you to Don Tate, Kathryn Ward and Branko Veljanovski in March whose third two-year terms on the Board concluded.

The members of the CAB in 2021 were:

- Stewart Hobbs: appointed chair in 2019 and reappointed in 2020 for two years – term expires March 2022
- Sisira Jayantha: re-appointed in 2021 for two years – term expires March 2023
- Sheila Karimi: Governing Board representative appointed as board representative in 2021 for one year – term expired December 2021
- Daniel Kennett: appointed in 2020 for two years – term expires March 2022
- Matt Harris: appointed in 2021 for two years – term expires March 2023
- Sina Cotter-Tait: appointed in 2020 for two years – term expires March 2022
- Brady Cosgrove: appointed in 2020 for two years – term expires March 2022
- Dominique Tharandt: appointed in 2020 for two years – term expires March 2022

Assessors

In 2020, the uncertainty of the pandemic led to many assessors delaying their own engineering work, meaning they had plenty of availability to complete assessments. In 2021, the opposite occurred, work drummed up in 2020 was now being completed. This meant Practice Area Assessors, especially within the structural discipline became harder to attract to undertake assessments.

While this did not influence the number of initial assessments completed, it has affected the number of structural reassessments carried over into 2022.

During the lockdown, we used a Lead Assessor Electronic Forum, which allowed assessors to share questions about the assessment process and procedures that helped build and maintain consistency. A Lead Assessor was nominated to the CPEng Review Steering Group to deliver feedback from the coal face and to share outcomes from the steering group with the Lead Assessors.

Given projections of future assessment demand, an area of particular focus in 2022 will be the recruitment of additional Lead and Practice Area Assessors, as well as refresher training for current Practice Area Assessors.

***Table 1:** Summary of assessor numbers as at end of 2021*

Assessor Type	2018	2019	2020	2021
Practice Area Assessor	428	439	448	464
Contract Lead Assessor	16	20	24	23
Engineering New Zealand Staff Lead Assessor	3	3	3	2
Knowledge Assessor	4	4	4	4

Register/Assessment Trends

Table 2 provides a summary of key registration and assessment statistics, including those required by section 52(2) of the CPEng Act.

***Table 2:** Registration Statistics*

Registration Statistics for	2017	2018	2019	2020	2021
(A) Chartered Professional Engineers at the end of the reporting period (see figure for longer-term-trend)	3,610	3,780	3,879	4010	4,251
(B) Applicants (first) registered during the reporting period	242	313	247	398	421
(C) Applicants (first) registered via mutual recognition (subset of B)	43	46	31	31	36
(D) Applicants declined registration during the reporting period	6	11	6	23	25
(E) Total Assessments for Admission completed (B+D) - (see figure 5 for longer-term trend)	248	324	253	421	446
(F) Assessment for Admission pass rate	97.6%	96.5%	97.5%	95%	95%
(G) Continued Registration Assessments completed (see figure 5 for longer term trend)	376	330	507	587	461
(H) Registrants resigned or removed during the reporting period (see note 1)	107	142	153	79*	89*
(I) Registrants suspended during the reporting period	62	94	133	117	92
(J) Registrants placed in abeyance during the reporting period	31	39	48	36	42
Median Processing times					
Assessments for Admission	81 days	92 days	120 days	101 days	116
Continued Registration Assessment	68 days	99 days	160 days	147 days	151

* This number is markedly lower than previous years and may be due to registrants holding on to CPEng because of the competitive drivers from the COVID-19 lockdowns.

Note 1: Reasons for removal from the register can include:

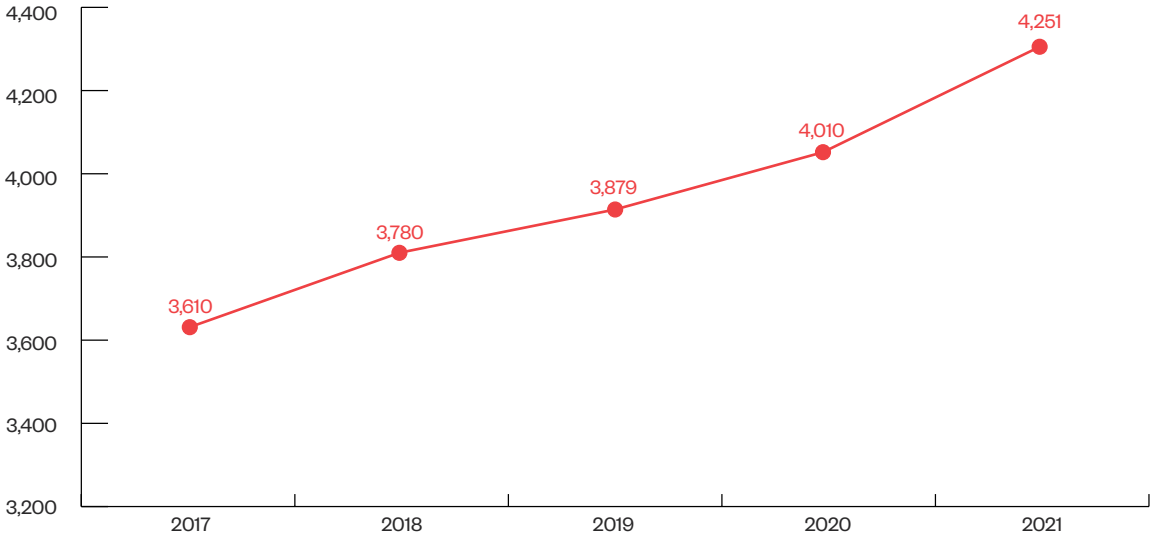
- Resignation
- Death
- Registration Authority action due to non-payment of fees, inability to meet the standard for continued registration or disciplinary action.

The number of registrants who resigned or were removed from the register during a year includes registrants whose registration was already suspended at the beginning of that year.

Overall registration numbers

The overall number of CPEng registrants continues to increase steadily.

Figure 4: *Number of CPEng Registrants*



Assessment numbers

Figure 5: *Number of assessments processed*

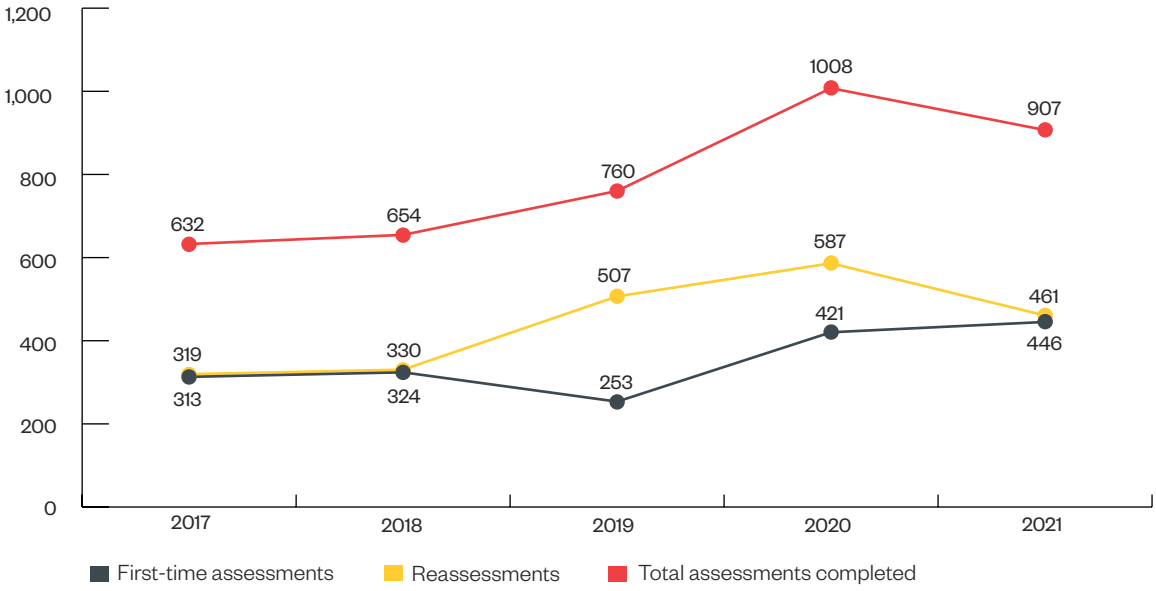


Figure 5 shows the success of the scheduled assessment rounds. An upside of the COVID-19 lockdowns is matching the record number of first-time assessments that we completed in 2021.

The number of reassessments completed in 2021 declined in comparison to 2020. This is in part a result of the availability of structural assessors. The total number of completed assessments met the number completed in 2014.

CPEng registration under mutual recognition

Thirty six engineers successfully applied for CPEng under mutual recognition schemes in 2021. The successful applicants came via the Trans-Tasman Mutual Recognition Act (TTMRA) or through mutual recognition from other jurisdictions.

We continue to apply the policy developed in 2004 for handling applications for CPEng from Registered Professional Engineers Queensland (RPEQ) in compliance with the TTMRA. The same principles are applied to those who have attained registration in other jurisdictions that require an equivalent level of competence to CPEng.

Assessment processing times

Our goal is to complete first-time assessments within 84 days. In 2021 our median was 116 days for first time assessments and 151 days for reassessments. This is captured in table 2.

The median process times shows a gradual increase on the targeted completion times. The year-on-year growth of our completion times can be attributed to peak assessment years (793 for 2019) and the compounding backlogs of previous years. The introduction of the triage process, our new system, a recruitment marketing drive, and further collaboration with our Professional Development Partners (PDPs) will help bring the completion times closer to our target.

Assessment pass rates

The pass rates for CPEng assessments remain high with a 95% pass rate over the last three years. This is in part due to the nature of the assessment process. By the time an applicant has submitted their assessment they have had the benefit of the guidance we provide through our presentations and our strong recommendation candidates share their portfolios with mentors who are CPEng. Our validation process also assists us to discriminate between good and poor submissions. We return poor submissions back to applicants for improvement before progressing them to an assessment panel.

Additionally, as the assessment is competency-based an applicant must be able to demonstrate their ability to undertake complex engineering activities and solve complex engineering problems aligned with the minimum standard. The assessment panel may advise the applicant to withdraw if they consider the applicant is unlikely to meet the standard. Alternatively, applicants may also request to withdraw their assessment on their own accord. In both of these cases, the applicant's assessment report is not progressed to the CAB and therefore not captured as either a successful or unsuccessful result.

Age distribution and gender breakdown

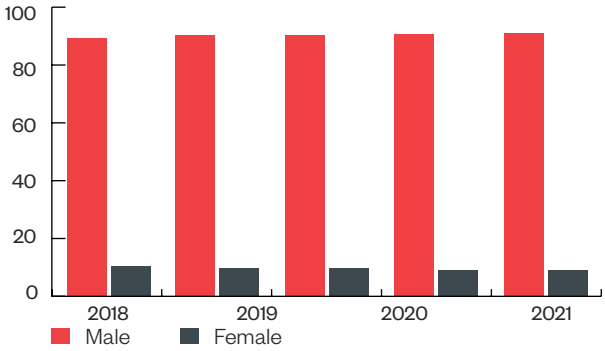
In 2018 the Registration Authority set a goal of increasing the number of women represented on the register by 20% in 2021. To attain this, we needed to have 400 women registered as CPEng. At the end of the reporting period, the Registration Authority had 467 women recognised as CPEng.

Increasing the representation of women in the engineering profession remains a critical issue, but one that requires a sustained, multi-faceted approach. The Diversity Agenda is Engineering New Zealand Te Ao Rangahau's key leadership initiative for the profession and has over 160 firms committed to driving change. In 2020 the Diversity Agenda was enhanced by the launch of the Diversity Agenda Accord - which has drawn formal commitments from Chief Executives and business owners to diversity objectives and targets.

Engineering New Zealand Te Ao Rangahau's work on the Diversity Agenda and Accord helps the Registration Authority achieve its wider targets for diversity across CPEng.

Beyond that, Engineering New Zealand Te Ao Rangahau's innovative schools programme, the Wonder Project has a particular focus on engaging with young people, particularly girls, Māori and Pasifika to shift perceptions about STEM subjects and the impact that engineers can have on society. This also has positive flow on effects for the CPEng register.

***Figure 6:** Gender (binary) breakdown of CPEng registrants*



Note: we are working on implementing the ability to capture non-binary genders in our reporting.

Te Ao Māori

Kimihia Rangahaua is Engineering New Zealand Te Ao Rangahau's strategy to embrace Te Ao Māori (Māori world views). Te Ao Rangahau is committed to embedding Te Ao Māori and Mātauranga Māori (Māori knowledge and knowledge systems) within the engineering profession, informing the values and practices that shape what it means to be an engineer in Aotearoa.

Māori have been, and continue to be, underrepresented in the profession. While providing ethnicity data to the Registration Authority is optional, the data we hold shows that only 0.3% of CPEngs are Māori.

Data from the 2018 Aotearoa census indicates that 7% of engineers in Aotearoa identify as Māori, with Māori comprising 16.5% of the national population. The profession has not been welcoming, safe nor inclusive of non-western concepts and perspectives. There have been instances of overt racism within the profession, including at the tertiary education level. Racism and a general lack of understanding of Te Reo Māori and the importance of Te Ao Māori to engineering continues.

The skills championed through Kimihia Rangahaua, such as engagement and relationship-building, will support the interconnection of engineers. Support networks and the incorporation of Mātauranga Māori in engineering practice will enable greater connection within Māori engineering communities and between Māori and the wider profession.

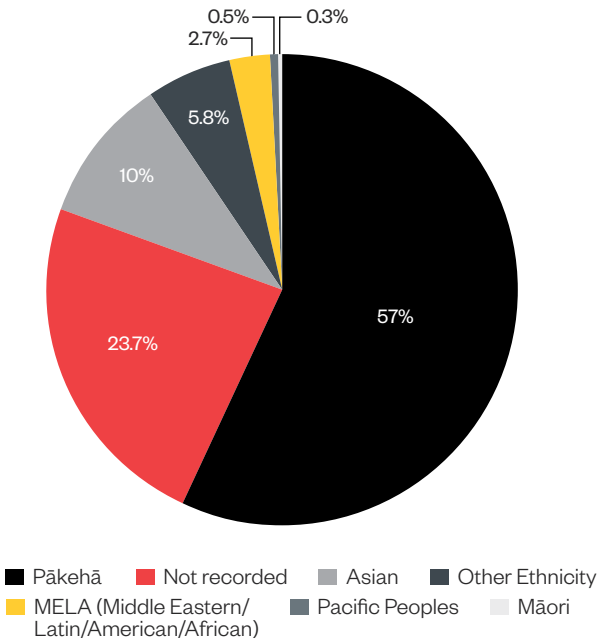
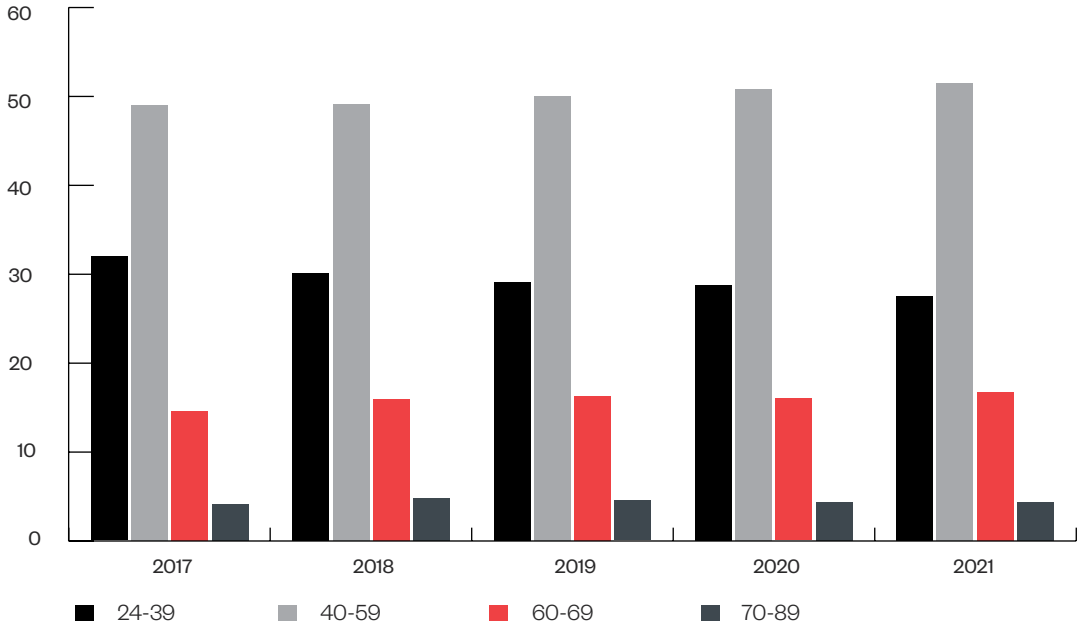


Figure 7 shows a distributed age profile of CPEngs. Engineers tend to follow wider workforce trends of working longer, with 4.8 percent of registrants working and contributing to the profession in the 70-89 age bracket.

Figure 7: *Breakdown of CPEng registrants by age*



Fields of engineering practice

Applicants and candidates self-declare one or two practice fields they consider their practice area best aligns with as part of their portfolio of evidence for either their first-time assessment or reassessment.

While many engineers have more than one practice field, we advise assessors and candidates that having more than one practice field should be an exception.

The information in table 3 provides the number of current registrants in a practice field and answers the question of "How many (or what percentage) of CPEng align within a certain discipline of engineering?"

NB: totaling the number of registrants across all fields exceeds the total number of current CPEng registrants.

Table 3: *Distribution of CPEng registrants by practice field*

Practice field	2017	2018	2019	2020	2021	2021
Structural	1,154	1,199	1,258	1,402	1,457	1
Civil	1,471	1,439	1,427	1,505	1,415	2
Management	590	562	520	499	420	3
Geotechnical	314	337	354	392	401	4
Transportation	331	323	311	352	345	5
Mechanical	298	298	285	306	315	6
Environmental	414	392	382	380	312	7
Electrical	238	248	241	277	270	8
Building Services	115	160	187	224	227	9
Water	0	0	2	48	126*	10
Industrial	120	116	113	119	123	11
Fire	85	91	93	97	108	12
Petroleum	35	36	34	33	32	13
Chemical	32	37	31	35	31	14
Information	23	21	20	17	14	15
Aerospace	13	12	11	11	10	16
Mining	9	8	6	6	7	17
Bio	3	2	0	1	1	18
Academic	0	5	6	1	1	19
Mechatronics	0	0	0	0	0	20
Software	0	0	0	0	0	21

*The increase in the number of CPEng in the Water Discipline can be attributed to a general desire to have a recognised water and waste workforce stemming from the Three Waters reform. The demand for CPEng Water engineers with recognised skills and experience is likely to continue.

Geographical distribution

Table 4 shows the geographical distribution of CPEng registrants that are also members of Engineering New Zealand Te Ao Rangahau. The challenge for any engineers practising overseas will be their ability to demonstrate (depending on their practice area) that they are able to comprehend and apply knowledge of accepted principles underpinning widely applied good practice for professional engineering specific to Aotearoa when when they are being (re)assessed. Throughout 2021 the ability to conduct assessments and reassessments using on-line videoconferencing was a distinct advantage for engineers overseas as well as locally during the lockdowns.

Table 4: *Geographical distribution of CPEng registrants*

Engineering New Zealand branch					
Year	**2017**	**2018**	**2019**	**2020**	**2021**
Northland	60	64	60	68	71
Auckland	1332	1358	1,390	1558	1,628
Waikato-Bay of Plenty – Hamilton	221	216	225	248	254
Waikato-Bay of Plenty –Tauranga	122	117	123	136	157
East Coast	6	4	4	6	6
Taranaki	74	78	76	79	80
Hawkes Bay	73	78	67	75	82
Whanganui	11	11	11	11	11
Manawatu	46	44	42	42	36
Wellington	439	439	430	464	486
Nelson-Marlborough	86	79	80	88	93
West Coast	11	10	11	12	10
Canterbury	619	618	645	742	728
South Canterbury	14	13	12	15	20
Otago	25	120	117	128	122
Southland	42	23	19	21	21
United Kingdom	25	39	46	47	32
No branch*	319	351	200	200	257
CPEng Non-members**	0	118	321	227	157
TOTAL	3610	3780	3,879	4167	4,251***

*CPEng/Engineering New Zealand Te Ao Rangahau members overseas (outside of the UK) or not affiliated to a branch in Aotearoa.

**Registered CPEng who are not Engineering New Zealand Te Ao Rangahau members and therefore not members of a branch.

***The 2021 total includes those CPEng on voluntary hold (4), in abeyance (42) and suspended (117).

Complaints and disciplinary activity

Key themes and highlights

Last year the disruptions of the pandemic, combined with a high number of complex complaints progressing through the formal complaints process, and an increasing backlog of complaints carried over from previous years, put pressure on our system. In 2021 we successfully put in place resources and measures in place to clear this backlog and ensure the complaints function remains efficient, robust, and credible. As a result, we closed more complaints annually than in the last five years.

2020 was the first time we had held disciplinary hearings by videoconference. In 2021 we improved these processes, and in addition, we held a number of hybrid hearings – where a disciplinary committee convened in Wellington and the parties appeared by videoconference. Following the lockdown in August 2021 we have held all disciplinary hearings virtually.

This year we also saw an increase in the number of respondent engineers, at the disciplinary stage, accepting the Investigating Committee's decision established grounds for discipline. This meant the complaint could proceed directly to penalty with no need for a disciplinary hearing, reducing the costs of the investigation to the profession.

We had a spike in the number appeals to CPEC we received. While we usually we have less than five appeals annually, in 2021 we received 12. Of the seven appeals heard by CPEC in 2021 only one was upheld. Despite this appeal being upheld we are pleased with these outcomes as they highlight the robustness of our decisions.

We also received a number of enquiries where people were allegedly holding themselves out to be, or signing off work as, a CPEng. These enquiries were forwarded on to MBIE for potential prosecution.

Finally, we are pleased to report the Masterton Buildings Inquiry, which has been in progress since 2016, was completed this year, and the disciplinary decisions published on Engineering New Zealand Te Ao Rangahau's website. The findings from those decisions will inform our work to improve the CPEng system, our broader analysis of issues facing the structural engineering sector, and where we might target additional CPD or engineering practice advice.

Complaints snapshot

Concerns/complaints received

We received 32 concerns/complaints about CPEngs' during the 2021 calendar year. This is 12 less than in 2020 and nine less than in 2019. The majority of concerns and complaints come from engineers' private clients, but we have had a steady number from building consent authorities and other engineers.

Jurisdiction

We are regularly contacted by clients wishing to dispute invoices or seek compensation where a contract has soured. These enquiries are not included in our complaints statistics but are usually received on at least a weekly basis.

We set clear boundaries and manage complainants' expectations by explaining our role and powers – we only have the jurisdiction granted to us under the Act and Rules, including to investigate whether there has been a breach of the Code of Ethical Conduct or a failure to meet the competency standards – we do not have the power to resolve commercial disputes. We encourage complainants who are seeking financial outcomes to consider other options, such as the Disputes Tribunal. Complainants who come to this process with financial goals at front of mind are often dissatisfied with the eventual outcome.

In 2021 we created an information sheet, which includes an FAQ, to provide to complainants around our jurisdiction and powers. While this information has always been communicated to complainants, the creation of an information sheet has helped us reinforce this messaging.

Concerns/complaints closed

We are obliged to respond to all complaints we receive. Our first step on receiving concerns is to undertake an initial investigation. During this stage we categorise the case as a "concern" rather than a "complaint" so we can ascertain if the Registration Authority has the jurisdiction to investigate the complaint, and whether it is suited for our early resolution procedures.

Process improvements and the addition of another legal advisor to the complaints team has seen an increase in the number of files closed. Forty six concerns and complaints about CPEngs' were closed in the 2021 calendar year – 12 more than in 2020. This includes concerns/complaints received during and before 2021. We also had the advantage of having three Disciplinary Committee Chairs during 2021. Unfortunately, only two Disciplinary Committee Chairs are able to stay on in 2022, and our focus is on recruiting at least one more.

Early resolution

More than half of the concerns we receive are resolved by early resolution, which we are proud of. We put a lot of effort into finding resolutions that leave both parties with a sense of resolution, as opposed to the limited and adversarial outcomes available through the formal process. The formal process certainly has its place for more serious complaints, but it does not necessarily promote the restoration of trust and confidence between a client and an engineer – for low-level concerns regarding communication or client care, early resolution is a hugely valuable tool.

The only limitation of early resolution is the parties willingness to engage; both parties need to agree to concerns being resolved this way. Since the start of the pandemic, we have noticed an increased reluctance, especially on behalf of complainants, to engage in mediation (which can be held either face-to-face or in person).

Formal complaints process

If we do have jurisdiction and the complaint is not suitable for early resolution, the matter will be formally categorised as a complaint and considered in accordance with the formal complaints and disciplinary process set out in the Act and Rules.

The complaints process has three decision-making stages: adjudication, investigating committee and disciplinary committee. A complaint may be dismissed at any of these three stages but can only be upheld by a disciplinary committee.

Manner of resolution

Table 5: Manner of resolution of complaints files

Year	Early Resolution (Including ADR, OJ)	Adjudicator dismissed	IC Dismissed	DC Dismissed or upheld
2021	17	16	4	9 upheld
2020	19	5	6	4 upheld
2019	20	8	2	3 upheld
2018	16	15	4	1 upheld

The table above shows the manner of resolution for concerns/complaints. The number of concerns/complaints resolved by early resolution, while the number resolved in the formal complaints process increased in 2021.

Eight Disciplinary Committee decisions were upheld in 2021, most significantly five decisions in relation to one long standing investigation, the Masterton Buildings Inquiry (discussed below). These decisions were published on Engineering New Zealand Te Ao Rangahau's website in December 2021.

At the end of 2021 there were five complaints currently being considered by Disciplinary Committees, and seven being considered by Investigating Committees.

Duration of complaints

In 2020 we closed 34 complaints about CPEngs and received 44 complaints, which left us starting 2021 with 54 open files. In 2021 however we closed 46 complaints bringing the number of open files down to 43.

Concerns closed through early resolution took, on average, eight months to resolve. This is up two months compared to 2020. Complaints that proceeded through the formal process to a disciplinary committee took, on average, 18 months to resolve. This is a six month decrease on 2020. The duration of complaints varies due to factors including:

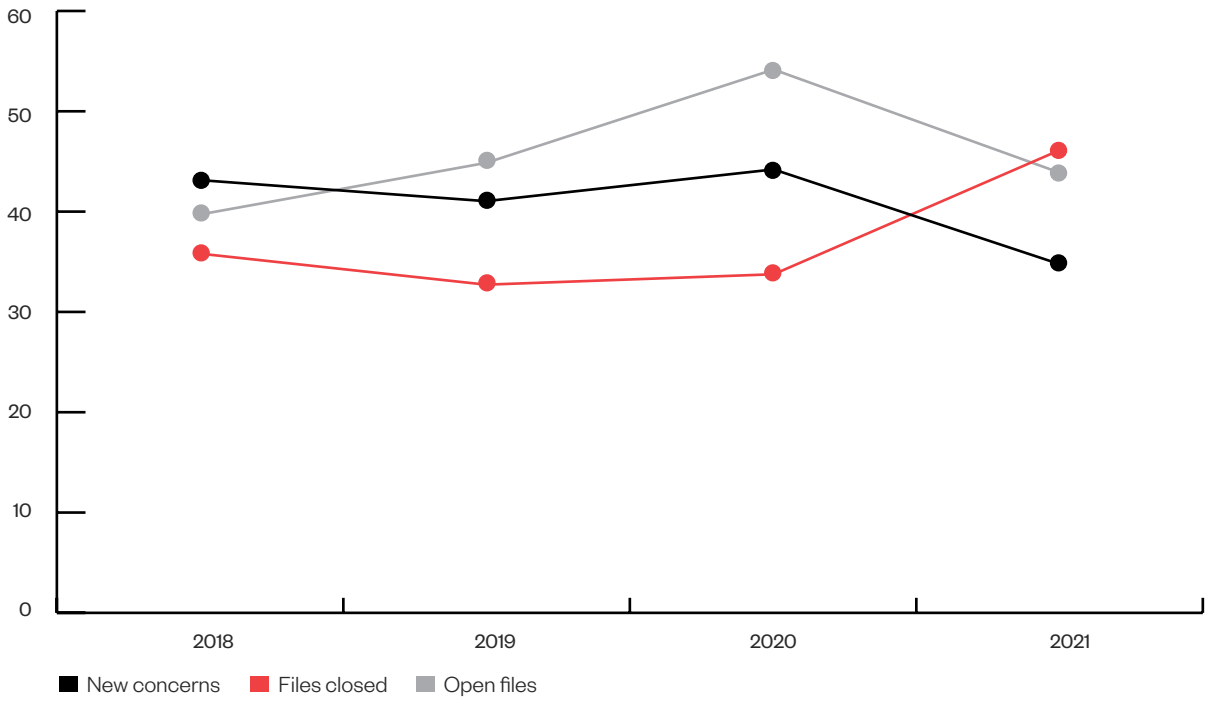
- The technical complexity of the subject matter
- The responsiveness and engagement of the parties
- The availability of decision-makers and expert advisors
- Time spent exploring the possibility of early resolution, and
- The complaints team's case load.

We are pleased to report that in 2021 the complaints team reversed the trend of the last three years of closing fewer files than it receives each year. We are continuing to focus on process improvements to the complaints process to improve how the Registration Authority engages with parties during investigations, to avoid lengthy delays due to lack of responsiveness.

While a large number of complaints were closed in 2021, due to the number of technical complex cases, and appeals, the complaints team is still dealing with a heavy case load. The year was also disrupted, again, due to the pandemic. It is anticipated this disruption will continue in 2022.

The statistics for the duration of complaints closed has been affected this year due to the closure of the six complaints relating to the Masterton Buildings Inquiry, which has been our longest running investigation, taking five years to complete.

Year on year comparison: Open files, concerns received, and files closed



Decision maker capability

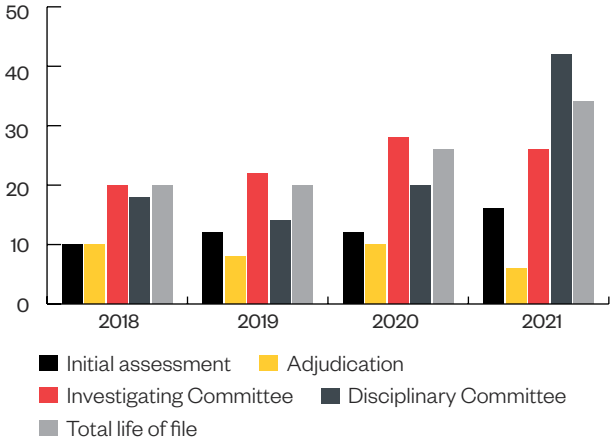
In accordance with the Rules, we keep a list of Investigating Committee Chairs and Disciplinary Committee Chairs, along with a list of engineers who have agreed to be members of these committees. These are volunteer positions.

We work closely with our decision-makers to ensure robust, fair, and proportional decision-making. While the team moves the complaints files through the process quickly. However, as stated above, one of the factors that contributes to the length of time a complaint takes to move through the process is the availability of our decision makers. At the end of 2021 we had seven Investigating Committee Chairs (one less than at the end of 2020) and three Disciplinary Committee Chairs.

Investigating Committee Chairs also act as Adjudicators, which means those in this role are expected to make a large number of decisions. At the end of 2021, we had 18 files that were assigned to, or needed to be assigned to, Adjudicators. This is just under half our case load.

We are committed to ensuring the roles of our decision makers are sustainable ones. We have been working to increase the number of members available to sit on committees, with the intention they will eventually become Chairs.

Figure 8: *Duration of cases*



Themes and trends

The 46 concerns/complaints closed in 2021 have been categorised according to the key issues (as identified from the letter of complaint) and the practice field of the engineer involved.

In line with previous years, issues of competency and the adequacy of engineering design or assessment remain the most common source of complaints. Also in line with previous years, a significant number of complaints arise from concerns about professionalism and ethical conduct. This includes complaints about conflicts of interest, client care, and the attitude and response of engineers when disputes arise. Almost all complaints include an element of relationship breakdown between the parties.

Our early resolution process continues to be an asset in responding to complaints where the key issue is relationship or communication-based, as opposed to complaints that raise significant competence or safety concerns.

Table 6: *Key issues of complaints files closed*

Year	Ethics, behaviour and professionalism	Competency
2021	13	27
2020	16	18
2019	16	20
2018	10	30

NB, numbers do not always match total number of complaints closed, as some complaints encompass both ethical and competence key issues.

Practice fields

Consistent with previous years, most complaints we receive are about structural engineers. We perceive this as being largely due to the nature of their work, as opposed to the quality of engineers practising in this industry. Structural engineers often have more direct and frequent contact with their clients, who are usually members of the public.

Table 7: *Practice fields relating to complaints received*

Year	2021	2020	2019	2018
Structural*	18	24	22	33
Civil	1	6	6	2
Geotechnical	2	3	1	2
Water	-	1	-	-
Transport	1	-	2	-
Fire	-	-	1	-

* Includes earthquake repairs

Appeals to CPEC

Normally there are around three appeals to CPEC per year. In 2021 there were 12 appeals. The majority of these were complainants who were appealing decision to dismiss their complaint. While we cannot know the exact reason for this spike in appeals, one observation is that since the start of the pandemic complainants' desire to have their complaint proceed to discipline has increased. Notably there has been an unwillingness from complainants to consider alternative dispute resolution as an avenue to resolve their complaint.

Despite this spike in appeals, of the seven appeals that were heard, all but one was dismissed. Interestingly, the appeal that was upheld was an appeal by a respondent engineer, rather than a complainant. We are still confident the credibility of our decision-makers, and the robustness of our process, is reflected in the low numbers of appeals to CPEC arising from complaints decisions.

Learning from complaints

The legal team continues to include a column in every issue of Engineering New Zealand Te Ao Rangahau's quarterly EG magazine, building on case studies and emerging legal issues, and we regularly contribute to Engineering New Zealand Te Ao Rangahau's newsletter Discover. Articles about complaints and disciplinary decisions consistently attract high readership figures.

In December we were able to release the decisions relating to the Masterton Buildings Inquiry. This inquiry had been ongoing for a number of years. Although the subject engineers were disciplined this inquiry further highlighted the need for strengthening the regulation of the profession.

As in previous years, we continued to see a large number of complaints arising from the structural residential sector, usually about solo practitioners or those working in smaller consultancies. We are also currently managing a number of complaints regarding high profile building failures.

In 2022 we are working towards publishing the learnings from complaints in a more accessible format to the profession and the public.

Own Motion Inquiry and systems report

In December 2016, the Registration Authority commenced an Own Motion Inquiry into the engineering design of six buildings in Masterton. These decisions have now been finalised. Engineer Kevin O'Connor was censured and fined, for negligence relating to his involvement in signing PS1 producer statements for five Masterton buildings found to be inadequate. Another engineer was fined for his involvement in signing off a sixth design which was also found to be inadequate.

As the well as investigating the individual engineers responsible for the buildings design, the inquiry has brought to the surface many issues relating to the system in which engineers operate – from issues with individual engineers repeating mistakes, better exchange of information on problems that have arisen, a better standard of peer review, through to quality assurance initiatives across the system. The Registration Authority is developing a report to help understand issues affecting engineers working in the building industry, and what can be done to avoid mistakes being repeated in the future. Although our decision to produce this report was motivated by the own motion investigations, the report also draws on recurring themes and lessons learned from other complaints. It is important the report is not a finger-pointing exercise or simply a showcase of the problems in the industry – the report will identify clear and actionable recommendations for addressing these issues. Expert input is being sought to ensure the recommendations are practical, realistic and impactful. The report should be published in the first half of 2022.

GCCRS and CEIT

We have previously reported on Engineering New Zealand Te Ao Rangahau's involvement in the establishment of the Greater Christchurch Claims Resolution Service (GCCRS) in 2018. This involved establishing an expert engineering panel to assist with GCCRS and Canterbury Earthquake Insurance Tribunal matters. The GCCRS is due to be wrapped up in mid-2022, and a new national service established.

Case studies

The following three case studies show how complaints are being resolved through our complaints process. These case studies paint a picture of our approach to complaints, working with the parties to achieve resolution that is proportional and fair, which in turn helps to rebuild trust and confidence in the profession.

CASE STUDY ONE
Upheld by Disciplinary Committee

In August 2017, a truck towing a trailer was driving at speed along a highway to Nelson when the towing connection between the truck and trailer separated. This resulted in the truck crashing into a bank along the highway. Luckily, no one was injured. A year before the incident, Peter Wastney, at the time a Heavy Vehicle Specialist Certifier (HVSC) had certified the towing connection as safe. In February 2018 Mr Wastney relinquished his HVSC certification and retired. In December 2019 the New Zealand Transport Agency Waka Kotahi revoked all towbar, drawbar and drawbeam certifications issued by Mr Wastney. Waka Kotahi agreed to cover the cost of inspection, recertification and any necessary repairs or replacements.

In February 2019 Waka Kotahi complained to Engineering New Zealand Te Ao Rangahau that Mr Wastney had not acted as reasonably expected of a CPEng when he certified the truck-trailer towing-connection.

When the matter was referred to a Disciplinary Committee, Mr Wastney agreed his actions, as set out in the Investigating Committee's report, amounted to a breach of the Code of Ethical Conduct and met the grounds of discipline.

The Disciplinary Committee agreed with the Investigating Committee's decision and the complaint was upheld. The Committee found Mr Wastney had acted negligently when he certified the towing connection. It ordered Mr Wastney be censured, fined $1,500, and ordered to pay 40% of costs; his name be published in a press release and the Committee's decision published.

This decision forms only a small part of the broader issues around Waka Kotahi's regulation of Heavy Vehicle Engineers. However, as a self-regulating profession, the Registration Authority's disciplinary process plays an important role in giving the public confidence that behaviour that does not meet reasonable standards will not be condoned.

CASE STUDY TWO
Dismissed by Investigating Committee

In 2017, the complainant engaged an architect to design an extension to her house. The architect in turn engaged a firm to carry out structural engineering work. A year later, the complainant had some issues with the extension. The two engineers who had done the work had left the firm, so the complainant and the architect tried to contact the principal engineer and director of the engineering consultancy. The engineer did not respond nor return their calls.

The complainant complained to Engineering New Zealand Te Ao Rangahau about the engineer's unprofessional behaviour. The Adjudicator reviewed the matter and found there was no evidence of poor technical work nor any issues relating to competence. He was however concerned with the way the engineer chose to conduct himself and referred the parties to mediation. The engineer agreed to mediation but with conditions on his involvement. He would apologise to the complainant for not having contacted her but was adamant that he would not assist in resolving any building issues nor admit to any wrongdoing. As a result, the complainant changed her mind about mediation. The matter went back to the Adjudicator who referred it to an Investigating Committee. The complaint was eventually dismissed as being insufficiently grave to warrant disciplinary action.

This case serves as a useful reminder of both the benefits and limitations of alternative dispute resolution. Mediation would have served the parties well in this situation. The complainant was keen to discuss the problem with the engineer to better understand what had happened. If the engineer had been willing to meet with her with an open mind, resolution may have been reached much earlier, saving both parties (and the profession) significant time and energy. Although the complaint was ultimately dismissed, the Investigating Committee did find the engineer had not acted in the way a reasonable engineer would have done and should have treated the complainant with more courtesy and respect. Discussions with an experienced mediator would have been a useful vehicle to address these issues and facilitate a resolution that left both parties feeling heard. A mediated resolution would have been more likely to restore the complainant's faith in the profession and could have assisted the engineer in his professional development.

CASE STUDY THREE
Early resolution

A Building Consent Authority (BCA) raised a concern with Engineering New Zealand Te Ao Rangahau, as it considered construction works on a subdivision site did not match the engineers as built drawings. It was also concerned the works did not comply with resource consent conditions, but the engineer had signed off the NZS 4404:2010 Schedule 1C certification upon completion of land development/subdivision anyway. The BCA asked the engineer to outline the steps he had taken before signing the 1C certificate but did not consider the engineer's response was adequate.

The engineer unreservedly apologised that he had misread the BCA's request to outline the steps he had taken in signing off the 1C certificate – he then outlined those steps. The engineer said he believed the 1C certificate was issued appropriately as it certified the works shown on the as-built plans as being complete. He also explained how he considered the construction works complied with the resource consent conditions. The engineer apologised for not including "outstanding works" on the 1C certificate and for the omission.

The BCA accepted most of the engineer's response, except his comment about the outstanding works. The BCA stated the as-built drawings did not match what was constructed. The engineer responded providing further justification for his actions and said that he believed the as-built drawings depicted the work done to a practical level of detail. The BCA responded saying it was happy to conclude the matter and to withdraw the complaint.

The matter was closed on the basis that there were no safety, public interest, or significant competency concerns. The matter only took two months to resolve and was a time and cost-effective outcome.

Appendix 1

CPEng fees for 2021 (unchanged since 2015)

Initial registration

Charge or rebate	Amount (excl. GST)
	($)
Registration application charge	3,253
less any of the following rebates that apply:	
if there is no engineering knowledge assessment	1,175
if there is no interactive assessment	270
for each assessor (if any) who is not remunerated for an assessment during which there is an interactive assessment	513
for each assessor (if any) who is not remunerated for an assessment during which there is no interactive assessment	378
for applicants exempted under rule 9(2) from having to provide certain information, if the assessment panel uses only a single interactive assessment	350

Registration certificates

Charge	Amount (excl. GST)
	($)
Registration certificate charge for a certificate issued for 1 year commencing 1 January	460
Registration certificate charge for each calendar month, or part of a calendar month, for which a certificate is issued if issued for less than 1 year	40

Continued registration

Charge or rebate	Amount (excl. GST)
	($)
Further interactive assessment charge	640
less the following rebate if it applies:	
for each assessor (if any) who is not remunerated for the further interactive assessment	225

Review of registration decision procedures

Charge	Amount (excl. GST)
	($)
Charge for review of decision procedures	1,000

Voluntary abeyance

Charge	Amount (excl. GST)
	($)
Charge for each 12-month period of abeyance	289

Appendix 2

Summary of fee income and costs incurred 2021

CPENG Annual Summary

Summary of fee income and costs incurred	**2021**	**2020**
	$	**$**
Revenue from annual CPEng fees, fines and admission applications	**2,141,807**	**2,129,555**
Less:		
Operational costs	710,238	971,406
Professional standards costs	947,093	1,081,256
Complaints and litigation costs	550,986	450,333
Total Expenditure	**2,208,318**	**2,502,995**
Net Deficit	**(66,511)**	**(373,441)**
Carry forward loss	**-$2,166,740**	**-$2,100,229**

Notes:

All figures are for the year ended 30 September 2021 and are taken from The Institution of Professional Engineers New Zealand Incorporated (Engineering New Zealand) audited accounts and associated management reporting.

Operational costs are an allocation of costs based on the relative membership numbers.

Professional standards costs are based on a direct allocation of costs associated with CPEng professional standards activity.

Complaints and litigation costs are the direct costs associated with receiving and processing complaints and costs associated with individual hearings.

During the year, Engineering New Zealand revised its accounting policy in relation to upfront configuration and customisation costs incurred in implementing Software-as-a-Service (SaaS) arrangements in response to the IFRIC agenda decision clarifying its interpretation of how current accounting standards apply to these types of arrangements. Historical financial information has been restated to account for the impact of the change and the 2020 carry forward loss has increased from $1,732,165 to $2,100,229 as more costs are expensed upfront rather than capitalising and impaired over their useful life of the asset.

There is a carried-forward deficit of $2,166,740 after this year's result.

REGISTRATION AUTHORITY
FOR CHARTERED PROFESSIONAL ENGINEERS

engineering new zealand
te ao rangahau

The Registration Authority under the Chartered Professional Engineers of New Zealand Act 2002 is the Institution of Professional Engineers New Zealand (trading as Engineering New Zealand).

2022/03