General Practitioners June 2022 Newsletter

Welcome to our second newsletter for 2022, already past half-way through the year, it seems to be flying by.

In this quarter's newsletter we have a few great articles by Martin Pratchett of Engineering New Zealand, some useful links to find information that are beneficial to Engineering General Practitioners and an Options for Climate Change survey by BRANZ that can get you into a draw to win one of 3 x $300 prezzy cards.

Nick Calvert has provided us an update on the EGP Slack Channel and the recent discussions/topics that have been brought up. If you have not already, we would like to encourage all of members to join Slack as it is a very useful tool for sharing information and networking (and can be included in your CPD activities for the year).

We also have another great lessons learned article on a splice installed by the contractor due to no detail being provided. Again, **I would like to encourage you all to submit your lessons learned to include in our following newsletters.** This is anonymous and a great tool to help other engineers to not repeat the same mistakes. We are also asking for you to submit photos that you think best describe Engineering General Practice, so that we can showcase exactly what we as EGPs do. Submission can be sent to general.practitioners@engineeringnz.org.

Tamlyn Adams
Editor

In this issue:

Message from the Chair

2022 is racing away and I have to confess that it has so far thrown more at me than I can easily handle, but I am swimming. However, the committee has continued to meet and we have progressed on a number of initiatives identified below:

- Webinars – we have had some success with these but have also learned a few lessons.
- Liaison with other groups
    - SESOC – we have a rep from both groups to provide a quick link to work together on mutual interests
    - Geotech Society – we have contacts into the Geotech Society and have supported them and SESOC with a letter to MBIE to advocate for a Geotech report database.
    - Timber Design Society – we have already collaborated on some webinars and are looking at some new initiatives around the uses of timbers.
    - Emerging Engineers and Universities – I have been able to address a group of 4th year students about the alternative of General Practice vs large practice engineering.
    - Concrete Society, Steel Construction, Civil (including Stormwater and waste water) are next on the list.
    - Regional Groups – we are hoping, now that travel and meetings are back on, that we can get to the various groups to promote the cause of EGPs
- Contacts with BRANZ
- Contacts with TA's and the TA society
- Working with Engineering New Zealand, through Kennie Tsui on the board, Martin Pratchett, Rebecca Mather and others. Engineering New Zealand have been an immense support during our first few years and without them our cause would be much more difficult to promote.
- Continuing to work on influencing the CPEng assessment process and the plans for the new registration framework. We have been collaborating with other groups on this as well as now having 2 lead assessors on our committee. Also 2 of our members are part of the CPEng continued registration Triage system.

There seems to be no end of work in spite of the financial downturn. **It would be good to get feedback from our members on this.** We would also welcome input on matters we can take up or promote on behalf of EGPs.

There's much of interest in this newsletter – enjoy.

Nga mihi,

Pete van Grinsven
Chair

The EGP One Question Survey

This issue, we are asking Engineering General Practitioners:

Some members will already have insurance cover for themselves, and others will be covered by their employer. Some may be reluctant to go out on their own because of uncertainty about how they would be protected from claims.

How confident are you that professional insurance would protect you against a claim?

- I have complete confidence and sleep like a baby!
- I pay the premium and cross my fingers.
- Personal liability is one of the reasons why I choose my current employment.
- Other _____

If you have any ideas or anonymous examples that you would like to share, we would love to discuss them in the upcoming webinar on Wednesday 10 August, by Craig Lewis from CEAAS on Professional Indemnity Insurance – What Does it Cover?

TAKE THE SURVEY

In the last issue we asked:

In general, when does your company usually invoice for services?

- We require payment before releasing any documents
- We invoice when the work is completed
- We invoice every month
- Other / don't know _____

We had 45 responses with 56% invoicing when the work is complete, 42% invoice every month, 4% require payment before releasing any documentation and 18% other. We received a few comments regarding “other”, summarised below:

- We invoice when a recognisable part of the work is completed
- A mixture of all the above options - it depends on the type of job and client.
- End of every Month for completed works
- We require a deposit on all jobs - helps ensure client is serious
- Short jobs invoiced when work is completed. Big jobs invoiced monthly.
- We invoice for design work (incl PS1) when it is completed. We require payment in full for construction observation before our PS4 documents are released.

Options for Climate Change – Survey on Engineered Wood Products in New Zealand

David Carradine – BRANZ

We are still trying to seek input on the use of engineered wood products in New Zealand, so if you are involved in the building industry we want your valuable insights! A big thanks to all those who have already responded to previous requests to take this survey and the information gathered so far is already very promising. We are seeking further input to ensure we have robust representation across the building sector!

Those completing the survey and providing contact information will go into the draw to win one of 3 prezzy cards valued at $300 each. If you have already taken the survey and wish to be included in the draw please contact David Carradine at david.carradine@branz.co.nz and he can verify your participation and include you, but please don't take the survey a second time. The survey will be open until 31 July 2022. Please find the survey link below:

TAKE THE SURVEY

On-Site Wastewater Management designs

Aaron Holland

Below is a link to what I have found to be a very useful website when it comes to on-site wastewater management designs for those who are interested.

There is some really good information from NZ's leading experts in this field which could be very useful to expand your knowledge in this area. Ian Gunn has been writing this since around 1995 and now has on board Andrew Dakers as Ian is nearing retirement, both have decades of experience in this field.

READ MORE

Learning Opportunities

The biggest opportunities to learn from are not when things go right, but when they go wrong. The best way to learn from your mistakes is to recognise what went wrong and how you (and others) can avoid making the same mistake again.

Click on the links below to read some anonymous Learning Opportunities submitted by two different contributors:

1. Contractor adding in spice with no detail

Do you have a learning opportunity that would be of interest to your fellow EGP members? Download the Learning Opportunities form and send it to egp.sig.anonymous@gmail.com.

Core Skills Graduates Require When They Leave University

Martin Pratchett

After a discussion with a group of academics I recently engaged with, there was an interest in better understanding the core skills we as engineers believe are required of graduates entering the industry. Below is a summary of the responses I received on this:

- Know when to, and be happy to ask for help, to THINK and question
- Hand sketch in 3D or isometric and how to attempt to show a buildable design (how to build in your head), then visualise and express load paths through the drawings. This links into the answer below,
- Understanding and ability to model structural/system behaviour, not just computer modelling.
- Understanding load paths, how the load travels through the structure/elements from top down to ground.
- Get a rough answer before commencing detailed design - order of magnitude calculation first.
- Knowledge of engineering materials,
- How to Write: i.e. how to communicate your calculations (design features reports, integrating sketches of load paths into calculations), reports, site notes etc in a clear and concise way (whether or not they are right or wrong).
- How to See: i.e. how to observe the world and notice the things beyond your directly assigned task

In general engineers want students to be good at the basics as most else can be taught on the job provided the student nails the basics.

Civil/Structural Engineers – Geotechnical Input Decision Chart

Martin Pratchett

Structural engineers are sometimes criticised for acting outside the bounds of their competence when undertaking geotechnical work. The flowchart in the link attached is designed to help engineers, building consent authorities (BCA's) and others understand when input from a specialised

geotechnical engineer is likely to be required. The tool should provide a good indicator and contribute to clearer communication and expectations between engineers, clients and BCA's.

This document is only an indication of when additional information or expertise may be required. There will always be exceptions to general guidance, and you should use your professional judgement in every case to determine the appropriate skills and expertise required for the job. The chart will vary slightly from region to region due to the different topographies and soil conditions throughout New Zealand. To use the chart, if the answer to the question is no, continue to the next question. If the answer is yes, input from a Chartered Professional Engineer (Geotechnical) or Professional Engineering Geologist is recommended.

We have also drawn up an initial geotechnical assessment report to be used by engineers to support their use of the Geotechnical input decision flow chart. You can view both below.

GEOTECHNICAL INPUT DECISION CHART

GEOTECHNICAL ASSESSMENT REPORT - TEMPLATE

Changes to Simple Earthworks Fill Requirements – NZS4431

Aaron Holland

For those not aware there has been a recent update to the New Zealand Earthworks Fill standards revising the older 1989 version of NZS:4431 (Code of practice for earth fill for residential development)

This has been replaced by *NZS 4431:2022 – Engineered fill construction for lightweight structures*

The new standard is promoted as playing a fundamental role in ensuring engineered fill construction is delivered safely and provides a stable foundation for lightweight residential and commercial buildings, and their associated infrastructure. See link below for new standard.

READ MORE

EGP Slack Channel Update

Nick Calvert

The EGPSIG Slack channel provides a useful forum for technical discussion. The committee recommends that all our members are active on the slack channel. There are many ways to know when content has been posted, but I find the best way is to get a notification through the system tray on my computer.

Recent technical discussion topics are summarised below:

- Discussion on slender precast panels and which elements of the system are designed for parts loading
- A member raised a question regarding strengthening an existing deck structure with piles hitting rock
- A member asked what sign-off documentation would be required for precast floor systems
- Discussion occurred on the design issues with multi-storey inter-tenancy wall systems – some of these systems do not meet typical design requirements without SED modification

These topics are, in general, dominated by structural, however, members are encouraged to raise conversations relating to all disciplines of general practice engineering.

JOIN THE EGP SLACK CHANNEL

Upcoming EGP Webinars

Tamlyn Adams

The EGP has recently been rolling out a few great webinars for our members with a few other exciting ones lined up. Below are some webinars that may be of interest to our members coming up soon, otherwise please refer to the Engineering New Zealand link below for a full list of upcoming webinars:

Date	Webinar/Course
21/07/2022	Timber Design Society Series 2022/6
27/07/2022	Stormwater Management and Design – An Introduction
05/08/2022	Gravity Retaining Walls
10/08/2022	EGP – Professional Indemnity Insurance – What Does it Cover?
11/08/2022	Pile Design & Analysis of Single Piles - Online
14/09/2022	EGP – Safety in Design

REGISTER NOW

The SIGEGP Committee has also received feedback about two recent webinars that were delivered for our members. We wanted to thank members that raised concerns and to reassure the wider membership that the committee are looking at ways to ensure we maintain strong standards for the group's webinars and other resources.

As a voluntary committee, we want to bring you quality content to support your work as a General Practitioner and we hope you'll join us for our next webinar. If you have ideas for future webinar topics, please get in touch, we would love to hear from you.

Missed any webinars and not sure where to find them, I find the two links below very useful from Engineering New Zealand and the Timber Design Society where you can find some of the recent webinars:

Webinar recordings

Timber Design webinar series

Structural Tips and Tricks

Martin Pratchett

We released the structural tips and tricks in the December 2021 Newsletter, but we were a bit quick off the block. Find the link below to the updated and full article to help you avoid failure by understanding some basic rules of thumb and simplifying a complex problem to compare your understanding to a computer output. By working heuristically (applying rule of thumb) to quickly estimate ballpark solutions, you can understand whether something (such as a computer model) is accurate or not.

ENGINEERING TIPS & TRICKS

Get to know some of your committee

Member – Martin Cockitt:

I was born and educated in the UK and after a short 2-year period in Queensland arrived in New Zealand over 25 years ago.

I started working in small consultancies doing sub-divisional work including stormwater, wastewater and roading then moved into civil roading and specialised in inspection and asset management of bridges.

Starting in Auckland, I then moved to the South Island to work for a large consultancy doing bridges and roading and then Taranaki running two consultancy offices offering civil engineering.

In 2018 I set up on my own doing all aspects of civil engineering and works, but with a specialisation in the inspection, asset management and

design of bridges. I am well recognised in the bridge inspection field after being a Regional Bridge Practitioner for NZTA for 5 years in the South Island and am currently working on several bridges and structures around the country.

In my spare time I am a Reiki Master teacher and have been teaching Reiki, a hands-on healing modality, for over 20 years in the UK, Australia and here. I am also an avid geocacher often to be found wandering around in the bush following a GPS to a hidden container with a logbook and trinkets.