

Meeting the broad challenges of sustainability

In a past life, I managed AB Lime's quarry in Southland and established its landfill, a Class A facility now receiving most of the region's waste.

I'd like to think we ran a good and sustainable business back then but fully acknowledge that Steve Smith, who took over in 2008, has taken things to a whole new level and congratulate him on his accomplishment.

You'll see from our feature article (p 45) that Steve has had AB Lime (well supported by its Board), establish an environmentally-leading dairy farm, is well underway on putting 380,000 native plants across the entire site to soak up nutrients and carbon; he's also using methane from the landfill to help dry the lime and initiated vigorous waterway testing and management amid a whole wide array of sustainability initiatives.

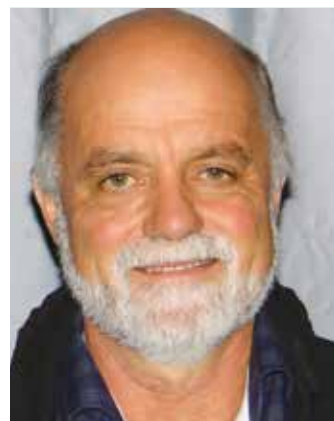
So our CEO Wayne Scott has asked Steve Smith to feature in two sustainability workshops the AQA is hosting in Hamilton and Christchurch in September. No doubt Steve and one or two other workshop contributors will challenge the thinking of

many in our sector but when he observes dairying is now ahead of quarrying in its focus on environmental sustainability, we need to take notice.

Fast-looming climate change is one reality to be faced but it's much more than that. Look at how WorkSafe CEO Phil Parkes is making clear that his inspectors are now assessing a wider range of issues than avoiding injuries which are only a fraction of work-related health issues (p 46). Leadership is being sought in all sectors including ours to include the well-being of our workers in every aspect of business decision-making.

Given our current workforce, as observed by our new Workforce Development Strategy, is dominated by aging males, I'm heartened to see initiatives such as the open day which saw 70+ girls from Northland high schools talk to and observe women working in every aspect of infrastructure delivery.

Well done to Golden Bay Cement (GBC) and Fulton Hogan in Whangarei for supporting this. As Kelly Stevens from GBC observes, if only a fraction of our workforce



Peter Walsh.

(15 percent) is women, we are not opening up to the full range of good candidates (p 47).

Meanwhile, the light is starting to emerge from the tunnel we entered into with Waka Kotahi (NZTA) to define new specifications for M4.

After some good work by AQA Technical Adviser Mike Chilton and the AQA Technical Group, the specs were released for industry comment some months ago; there's not been a great deal of feedback. The M4 draft specs were due to be given final consideration by the National Pavements Technical Group in late May and if confirmed, it's then up to Waka Kotahi to have them published and introduced.

Also, have a look at Mike's update on Auckland Transport's move to include recycled and synthetic materials in road pavements on page 49.

Finally, this is the last edition of Aggregate News before our QuarryNZ Conference in Wellington from July 14-16. If you haven't already booked, I'd recommend you do so right now.

Our AQA AGM is on day one of a packed programme. Our conference is happening at a time of considerable change in our industry – across sustainability, training, workforce challenges and beyond.

We are fortunate we can gather and help work together on meeting those challenges.

Hope to see you in Wellington. **AQA**

Peter Walsh,
Chair, AQA

It's almost time for our first conference in two years – get booked now!



Time our pendulum swung towards sustainability

A trained accountant who grew up on a farm near Gore and who now runs a quarry and landfill, as well as a major dairy farm, Steve Smith is not your typical profile of an ardent environmentalist.

General manager of AB Lime in Southland, Steve Smith says it's time to swing the pendulum in the quarrying sector towards sustainability. He's shown it does not have to come at a cost to the balance sheet.

"I'm a businessman, a quarryman, a dairy farmer and an environmentalist."

Steve left John McGlashan College to complete an accountancy degree at Otago University before going to work at Ravensdown where he soon became involved in a major IT project, as well as meeting his wife Fiona, an environmental scientist, whom he credits as a strong influence on his thinking.

He was recruited by Invacare, a major US corporate making medical equipment and ended up heading its business applications team for the Asia Pacific region.

The constant travel got tiring so in 2008, he accepted the GM role at AB Lime near Winton.

Over the past 13 years, Steve has, with strong Board support, expanded the

business and included environmental gains at every step. The site includes a 63 hectare bush block which was in a poor state.

"One of the first things I did was fence off the bush." Pest control began and native plants purchased to plant both the block and the quarry's wetlands working with local school groups. AB Lime has already employed a Conservation Ranger who started growing seeds in a \$300 glasshouse. Now, 10,000 trees and shrubs are being grown for a planting plan that will total 370,000 plants.

Some will go towards planting around the dairy farm. Adjoining blocks were bought when they became available to create a buffer zone. Land was converted to a dairy farm which now covers 374 hectares, has a value of \$17m and carries 950 cows.

There's no controversial winter grazing on this farm. Water run-off is tested regularly to test for things like nitrogen, phosphorus and e-coli, including habitat assessments. Some recent environmental initiatives have seen contaminant levels down by 42 percent.

A composting barn is currently being established to reduce winter impacts and nitrogen use.

Sediment and run-off from the quarry are also monitored. At times it is a 24-hour operation, so a surface miner has been purchased. This ended night time extraction and cartage, cutting diesel use, emissions



Steve Smith is the key presenter at two AQA forums on sustainability to be held in Hamilton on September 9 and Christchurch on September 16. Register your interest to attend with office@aqa.org.nz.

and wage costs as well as improving health and safety.

Southland lime needs to be dried in a kiln. Steve has started using gas from the landfill, which means 20 percent less coal is now required.

Steve's unable to comment on the landfill given a current resource consent renewal application, but says such operations as landfills and quarries are facing more and more issues with neighbours, and efforts have to be made to bridge the gaps.

"We need to connect to the generation that is now protesting climate change. That is the future."

He says the pendulum has swung too far towards financial gain and environmental cost and quarrying is as complicit as any sector.

"Somewhere there is a balance."

He acknowledges it's not one size fits all and every quarry is very site dependent. "But every operator needs to start to feel comfortable with their level of sustainability and the impact of their quarry on the environment."

Steve has become a Climate Change Ambassador for DairyNZ and suggests that this industry is further ahead than quarrying, with its discussion on sustainability.

He says his role is to help present the realities, while working towards also achieving good environmental outcomes.

"I haven't got all the answers, but as a quarrying industry, we need to start to talk about these issues." **AQA**

Below: A surface miner used at AB Lime has ended night time extraction and cartage, cut diesel use, emissions and wage costs as well as improving health and safety.



WorkSafe looking for leadership

A shift in approach on health and safety is underway this year by WorkSafe, says its CEO Phil Parkes.



Phil Parkes.

"One of the biggest challenges for New Zealand is we tend to treat health and safety as if it is something separate from everyday work. Health and safety should be integral to every work conversation.

"This means thinking about it when we develop strategy, when we do business planning and when we develop new business models.

"I'm confident that by changing their mindset to a value proposition rather than a liability, not only will company directors reduce the risk of action by WorkSafe, they will also improve the productivity of their organisations."

Parkes stresses that this is not just an issue for boards. Management and workers also need to think about health and safety in a positive way.

"We don't want the worker to put his hard hat on because a director is coming to do a safety walk. They should because they don't want to get injured at work, because they have family responsibilities, because it is the right thing to do."

The historical focus of a health and safety policy has been on preventing physical injury or death, but the majority of the impact is in occupational health harm such as hearing loss, respiratory illness and musculoskeletal disorders.

As a consequence, WorkSafe is evolving its priorities – and its capability – to deal with well-being issues.

"Our ability to deal with builders on a construction site or quarry workers will remain important but we are going to have to be much more sophisticated and focused on creating a work environment where organisations prosper and workers thrive. That's about culture. That's about leadership. That's about diversity and inclusion."

Phil Parkes says the Health & Safety at Work Act is deliberately not prescriptive on what 'due diligence' and 'reasonably practicable' should look like.

For the regulator, the bottom line is that directors and managers need to be able to show they exercised good judgement in any health and safety environment and ensured all reasonable precautions were taken to protect their staff. It's too passive for directors or senior managers to simply receive a monthly report on health and safety.

"My expectation is they are asking questions about resourcing and about how work is being undertaken on the frontline.

"That might mean getting out of the boardroom or office and talking to staff about how they do their work.

"I would expect them to go beyond health and safety questions – have you got PPE? are you following correct procedures? – to ask productivity questions – are you under pressure? have you got the tools you need to do the job?"

"This will give them richer insights into health and safety in their organisations."

Directors and senior managers need to take particular care in understanding the modern workplace is not linear and duties overlap. A construction site for example could have a plumber, electrician, main contractor, subcontractor and concrete deliveries all operating in the same footprint.

"It is not enough to say 'well, I'm only looking after my concrete truck.' It is not reasonable to say 'it's not my site so I am not responsible' because you are putting your employees into that environment."

Directors and senior managers should ask themselves what they need to do to make sure their people are looked after.

"If they do that, they can improve health and safety outcomes in their organisations and reduce the risk of prosecution by WorkSafe in the event of an accident," says Phil Parkes.

• Article abridged from the *Institute of Directors Boardroom*. Thanks to Aaron Watson and IOD. **AQA**

AQA works for the quarry industry – join us today

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Girls the focus for careers event

Kelly Stevens fell into a job in the quarrying sector as a career and knowing what it can offer helped organise a Girls in Infrastructure event at Golden Bay Cement's Whangarei site where she works.

More than 70 Northland high school girls attended the highly successful March event supported by 10 local and national infrastructure companies and training organisations.

Kelly who is Process Engineering Manager says the girls toured the Golden Bay Cement site in four rotations looking at the quarry, workshops, plant and equipment, laboratories as well as displays from the other companies. They met a range of women working in various trades, technical roles, health and safety, environmental planning, engineers and project managers.

"The girls liked the hands-on things. Seeing rather than just talking to people worked best."

They got to experience driving a small digger, operating other things in virtual reality, seeing a 60-tonne dump truck being loaded by excavators, cranes operating and a whole range of other activities,

"I wish something like this was around when I was at school in Kaitia. It was super cool to be involved. Our GBC team did an amazing job bringing the event together."

Kelly says the current low levels of women in the quarrying and infrastructure sectors meant it was attracting less of the available talent.

"The main story you hear from women in our sector is that they fell into the business rather than deciding on it as a career.



Some of the 70+ Northland secondary school girls at the Girls in Infrastructure day at Golden Bay Cement's Whangarei site.

We want the best person for the job and sometimes that's a woman."

She says it's hard to recruit from other sectors so high school girls are a logical target.

Two years ago the Northland Chapter of Women's Infrastructure Network hosted a similar event for girls centred around civil contracting. Arden Hermans, Ancillary Projects Manager for Fulton Hogan Northland, helped organise that event as well as the one in March. She's a graduate of NorthTec's Civil Engineering diploma and is focused on bringing more women into the infrastructure industry.

Josie Boyd, who chairs the Northland Chapter of Women's Infrastructure Network (part of Infrastructure New Zealand) says the event was designed to increase awareness of the awesome and diverse range of jobs across the

infrastructure industry.

"The infrastructure industry is absolutely for everybody. There are a range of great career options out there, but often young women haven't had any exposure to these roles, whether through their family, school or their wider community networks. That is why we are passionate about creating awareness and giving students access to speak to women with successful careers across the infrastructure industry. We look forward to making this an annual event in Northland.

"There is a large pipeline of infrastructure projects in Northland and New Zealand and once these young women have the skills they will be very employable." Josie trained and practised as a lawyer but is now General Manager Network for Northpower, the Whangarei and Kaipara lines company. **AQA**



YouTube features youngsters diving off high cliffs into the water at the former Waitakere quarry.

Signs and fences no bar to entry

People illegally entering quarries and former quarries continue to present major risks to operators and owners.

AQA CEO Wayne Scott is very familiar with a case at Brisbane's Mt Gravatt quarry which became a swimming hole for teenagers after the quarry closed in 1991. At the time, Wayne was an inspector of small mines at the Queensland Department of Natural Resources and Mines.

"People would cut fences to enter the site to swim, even though the water was toxic. Sometimes there were hundreds of swimmers over a weekend until a teenager drowned there in 2013."

He says unauthorised access remains a major hazard for all quarries, especially those containing water. However, illegal entries included those stealing fuel, mountainbikers unaware of site hazards, even locals walking their dogs.

"You have an obligation to keep people out. It can be really hard. It's really important to understand the nature and extent of a site and its attractions."

Wayne says if you have a sign which warns trespassers will be prosecuted, make sure you carry this out if people are caught. Don't just use it as an idle threat.

Within a week of the Mt Gravatt fatality, 17 people were charged and fined \$500 each. This helped send a message to the community that illegal access was taken seriously.

However, Wayne says it's also important to engage with your local community to both outline the risks posed to trespassers and increase your own social license with residents.

"The more you are part of the community, the less chance you

will be broken into."

Mark Allen who is a member of the Waitakere Ranges Local Board in Auckland says a different approach is needed when a quarry becomes a public asset.

Four years ago, then a senior rural firefighter in west Auckland, Mark warned about the risks posed at the abandoned Waitakere quarry, owned by Auckland Council. Swimmers gained access despite the locked gate at its entrance which also has a carpark. Further risks were posed by cars parking along the busy narrow road nearer to where people went to swim. YouTube clips continue to promote the former quarry as a place to swim, with youngsters featured diving off high cliffs into the water.

Mark says his advocacy at the time was in response to community access to the site. He was requesting Council work with the previous operator in accelerating the remediation and making the space accessible – not to shut people out.

"Fencing and fines have limited effect and would have been very expensive. The operator was already in a process of remediation so the need was to accelerate it."

"My contention is that Council and operators should recognise that if a quarry is going to become a park, then the public will want access very quickly after it is shutdown and so we should move quickly to prepare the site and secure dangerous areas."

He says Auckland Council is aware of the risks of the Waitakere site and as its inheritor has done a number of risk assessments. The Waitakere Ranges Local Board recently considered a management plan for the former quarry. **AQA**

Technical issues for AQA members



Recycled/synthetics soon part of Auckland aggregate stream.

Auckland Transport backs recycling & synthetics

- After some years of work including consultation, in 2019 Auckland Transport defined a new specification for aggregates to promote sustainable materials and practices, consistent with AT's sustainability goals and objectives.
- This sets out requirements for the supply of basecourse, sub-basecourse, bedding aggregates and backfill materials, for use in road pavements so as to promote sustainable alternatives to the virgin materials, such as recycled (i.e. crushed concrete) and synthetics (i.e. Melter Slag).
- The specification allows AT to formally embrace the use of synthetic aggregates, used internationally for many years and tested from a performance and environmental impact perspective.
- To have recycled and synthetic materials on the same playing field as virgin aggregates, the specification also defines a new performance-based approval process to allow the inclusion of these alternatives. AT is currently developing this approval process. The idea is that the approval system will be on its website, as published Rules & Specifications, in conjunction with the AQA.
- A proforma document produced with AQA will be circulated with AQA members for feedback.
- At a recent meeting with AQA, CCNZ and related suppliers, a hybrid recycled Concrete/Virgin aggregate was discussed, aiming at testing it as a standard aggregate prior to supply to ensure it meets or beats existing performance requirements.
- You can find the aggregates specification at the Transport Design Manual (TDM) website. The specification is to be a live document. Any feedback to tech@aqa.org.nz or TransportDesignManual@at.govt.nz, particularly if you see opportunities to further promote sustainable practices.

Pipe Bedding Material

- AQA has developed a guide to pipe bedding material and its use. Look out for it on the AQA website in the next month.

Hi-Lab Supplier Guide

- AQA is collating Hi-Lab documents now to form a supplier guide.

Concrete Aggregates Suppliers

- ConcreteNZ has reminded AQA of the coming changes to the Alkali Silica Reaction document TR3, particularly the introduction of the concrete prism test as an alternate to the 24-hour chemical test.
- It would be wise for providers of unknown or potentially reactive aggregates to have their aggregates tested using the concrete prism method, currently under research at the University of Canterbury.
- If you would like your aggregates tested, please contact tech@aqa.org.nz to direct your enquiries.
- The test takes 3-4 months. **AQA**

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