CosmanParkes
RETHINKING SAFETY

Health and Safety Lessons Learnt from the Canterbury Earthquake Response

PREPARED FOR:

EQC Health and Safety Board Committee

EARTHQUAKE COMMISSION

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Some names have been withheld from this report to protect the privacy of individuals

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Executive Summary

Our overall assessment of the performance of EQC in relation to ensuring the health and safety of its staff, contractors, customers and others throughout the period from before the first Canterbury earthquake to now is like a game of two halves. In 2010 it was an organisation of about 22 staff with a simple approach to health and safety that focussed predominantly on office risks- whether in the Head Office or field offices set up to manage an event. There was some recognition of duties and responsibilities to third parties, but a fairly basic system and process to manage this and no real visibility and ownership by senior management or proactive governance. This is perhaps understandable in the prevailing context.

Not surprisingly, planning for a major event did not envisage anything on the scale of either September 2010 or February 2011 alone, never mind the cumulative impact of multiple damaging earthquakes across the same region that had the effect of resetting the baseline each time. The standard response model of EQC assessing damage, determining cover and cash settling claimants had been assumed to be the only relevant choice at the time preceding these events. It was clearly not a viable option in 2010 -11 and hence a whole new operating model had to be developed in a matter of days and implemented in a matter of weeks.

5 years later EQC is a totally different business employing up to 2000 staff and with a track record of having delivered one of the most challenging multi $bn. construction projects in recent New Zealand history whilst having achieved significantly higher standards of health and safety performance than the rest of the residential construction sector –and on a par with the commercial sector. This is a significant achievement that must be noted and applauded and EQC and its network of suppliers can be justifiably proud of what has been achieved.

The period in between has been characterised by a vast amount of learning, significant external regulatory and public scrutiny; together with a Project Management Office (PMO) arrangement where the precise roles and responsibilities of EQC and Fletcher EQR were never conclusively determined. As a result there was sometimes what could best be described as a 'creative tension' between the two main players until a more stable partnership approach could be established.

In the early days there was some good fortune that more serious injuries did not result as evidence suggests weak systems, poor demonstrable competence and inherently unsafe practices amongst small residential building contractors were common. From 2012 onwards good judgement, good management and good governance progressively wrapped around those working at the 'sharp end' and helped raise standards both within the CHRP and beyond through the combined efforts of the Canterbury Rebuild Charter and similar industry groups.

EQC's state of preparedness for another major event is certainly much better than in 2010 and a legacy of systems and processes has been left which should be capable of being reenergised at short notice, provided health and safety remains a front of mind issue for

EQC's board and senior management at that time. In all likelihood EQC's role in leading any future repair strategy will not be the same as that introduced in the tumultuous few weeks after September 2010. A number of reviews are underway that may recommend more of a collaborative approach with private insurers. It will be important that once the outcomes of these reviews are known that consideration is given to developing a decision making framework or procurement model that will help determine the optimal process for delivering such a programme in a range of circumstances and which has health and safety roles and responsibilities as one element. We recommend that this be developed now so that rapid decisions can be made in the aftermath of a major event.

Finally, but importantly, the legal context is also changing with the new Health and Safety at Work Act 2015 placing much greater emphasis on good health and safety governance, a clearer set of responsibilities for multiple parties to cooperate, coordinate and collaborate to deliver safe outcomes, removal of the perceived split between duties towards employees and contractors, supported by a new independent and better resourced regulator in WorkSafe NZ.

The full impact of these changes is only now starting to be seen with the passing of the Bill into law and draft Regulations, including on important topics such as asbestos, under final discussion. EQC is already working to assess the impact of these changes and to prepare for their implementation in April 2016.

EQC is to be commended for commissioning this 'lessons learnt review', which will be part of the beneficial legacy of these tragic events.

In our opinion it is important that this report should not be seen as critical of EQC, individuals or any of the other parties involved. Exceptional circumstances called for an exceptional response and in many ways this was what was delivered. Tough decisions had to be made with limited time, information and resources. The lives and wellbeing of tens of thousands of Cantabrians were at risk and any delay or perceived bureaucracy surrounding worker safety could potentially have put more people in jeopardy. The benefit of 20:20 hindsight provides the opportunity to learn and not to judge.

We would like to thank EQC for the opportunity to be involved in this process and to all the current and former staff of EQC, Fletchers, Tonkin and Taylor and others who contributed their time and insights. These have been highly informative however the views and opinions expressed in this report are those of the author and do not represent any individual or an official EQC position.

For the sake of all New Zealanders we trust that another similar catastrophic event will not occur in our lifetimes but EQC must '*hope for the best and plan for the worst*'.

Recommendations

We recommend that EQC:

- Develop an overarching strategic vision for post-event health and safety recognising that huge projects such as the Canterbury rebuild present opportunities not just to repair, but also to make better. This could be modelled on the London 2012 Olympic Delivery Authority Legacy approach of '*safe (no fatalities, low accident rate), healthy (no occupational ill health) and wellbeing (everyone healthier for working on the programme)*'.[1]
- Develops a decision making model or set of principles to help guide it through the various procurement and delivery options for responding to a range of future events that treats health and safety as one of the critical success factors.
- Engages construction client experts to advise it during the scoping, letting, negotiation and monitoring of significant contracts to ensure that the commercial and health and safety considerations are considered in tandem.
- Engages senior level, professional health and safety advisors at the earliest opportunity post-event with a specific focus on ensuring contracting arrangements (whether with a PMO, assessors, surveyors, engineers or building/civil engineering contractors) have health and safety at their core. One role should report directly to the CEO and assist in managing strategic and governance issues while another should report to the Chief Operations Officer (or equivalent) responsible for delivery.
- Ensures any contracts it lets are explicit about the respective roles and responsibilities of each party and the means by which they will be monitored and held to account for agreed standards of performance. This should build on the new legal concept of the PCBU's role in relation to all those at work under its influence, direction or control and the requirement for PCBUs to cooperate, coordinate and collaborate.
- Takes a leadership role in developing consistent health and safety approaches to be adopted across public and private sector stakeholders in any future residential repair programme (e.g. with Housing NZ and other social housing providers, TLAs, private insurers and PMOs, CERA equivalent, etc.)
- Develops strategic level relationships with WorkSafe NZ designed to ensure clarity of expectation during critical phases of a post-event response.
- Incorporates health and safety as a specific element of its strategic risk matrix.
- Retains and updates its existing health and safety systems on a 'care and maintenance' basis so that they are available to be deployed at short notice.
- Formally develops plans to address the risks of short and long term psychological harm for staff exposed to and responding to a future disaster.
- Develops an implementation plan to respond to the changes outlined in the Health and Safety Reform Bill –in particular around duties of 'officers'.

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[1] http://www.hse.gov.uk/research/rrpdf/rr942.pdf
[2] http://www.business.govt.nz/worksafe/information-guidance/all-guidance-items/a-principals-guide-to-contracting-to-meet-the-health-and-safety-in-employment-act-1992-1/guide-contracting.pdf
[3] Quoted in the influential judgement of Central Cranes Ltd v Dept. of Labour
[4] *Department of Labour v Southroads Limited* [2013] NZHC 1620 (Whata J)
[5] http://allright.org.nz/about-us/
[6] http://www.lifelinewa.org.au/download/FIFO%20DIDO%20Mental%20Health%20Research%20Report%202013.pdf

Introduction

The EQC Health and Safety Board Committee (HSBC) has requested that EQC undertake a Review to understand the level of health and safety capability, capacity and performance prior to and in responding to the Canterbury earthquake events, the first of which occurred on 4th September 2010.

EQC is committed to the continuous improvement of its health and safety performance and it is therefore appropriate to commission this Review now as it will provide a valuable summary of lessons learnt following natural disaster events of significant magnitude. Furthermore, it will provide an opportunity to review and improve (if applicable) EQC's health and safety preparedness and the management of future events.

Terms of Reference

The HSBC broadly seeks an understanding of the following:

a) The adequacy of health and safety processes and procedures that were in place across EQC prior to the Canterbury earthquakes and whether they were sufficiently developed and implemented at the time.

b) The operationalization of health and safety immediately following the earthquakes and the adequacy of the health and safety response.

c) The adequacy of EQC's management of health and safety in its role as an employer and principal under the Health and Safety in Employment Act 1992 following its internal staff growth and engagement of its agent, Fletcher EQR, to manage residential repairs.

Methodology

Semi-structured discussions were conducted with a range of current and former EQC, EQR, Tonkin and Taylor staff and others with direct experience of working on the Canterbury Home Repair Programme (CHRP). These were conducted in such a way that interviewees felt able to speak frankly and to provide insights that a more formal closed set of questions might have inhibited. Interviewees are listed in the Appendix.

The project sponsor carried out a document search on the EQC system to identify relevant reports and other information. It was acknowledged that the document management system may not have captured all relevant information in an easily retrievable form and hence references to 'limited evidence' or similar indicate that more information may exist to support (or refute) a particular view but that it was not available for this review.

The author's own observations were included as someone who provided health and safety advice to EQC at various stages from 2007 onwards.

By its nature such a review is predominantly subjective and partial, however the reflections it contains provide a robust basis for planning for future events. As such we consider that EQC will gain the most benefit from looking forward rather than re-litigating what may have happened in the past.

The report is structured around the 4 phases:

- Pre Sept 2010 –the dormant phase
- Sept 2010- mid 2012 – the emergency phase
- 2012-present- the delivery phase
- Preparedness for a future event

It also differentiates EQC's approach to the safety of its own staff from its role as a principal engaging others to do work on its behalf.

Reviewer

Mike Cosman, Partner in CosmanParkes Ltd carried out the review. Mike is a highly experienced health and safety professional who has worked alongside EQC at various stages of the Canterbury Home Repair Programme, initially as the Managing Director of Impac Services Ltd and more recently in his current role. He has undertaken two recent reviews of asbestos policies and practices for EQC.

Mike was a member of both the Independent Taskforce on Workplace Health and Safety and the Independent Forestry Safety Review. He holds tertiary qualifications in management and occupational safety and health. He is a Chartered Member of IOSH and a Member of the Institute of Directors.

Legal fundamentals

It is important at the outset to describe some of the core legal duties and standards that EQC and its suppliers were required to meet during this period. This is a high level overview of some of the key concepts as they relate to this report.

Employers

The primary duty under the Health and Safety in Employment Act 1992 (HSE) is that of an employer to its employees. Duties include identifying, assessing and controlling hazards, training and supervision, employee participation, etc.

Principals

A principal is anyone (other than the occupier of a private home) who engages another to do work of any kind on their behalf. A principal has to ensure no employee of a contractor or sub-contractor is harmed whilst doing that work. The duty extends down the supply chain

through as many levels of sub-contracting as may exist. Each person who contracts another becomes a principal, therefore there may be multiple principals in that supply chain; each of whom is probably also an employer of their own staff as well. EQC is at the top of the supply chain and therefore has the greatest reach, but not the sole responsibility.

WorkSafe NZ has issued guidance that describes 6 steps in good contractor management[2]. These are:

- Scoping the work
- Pre-qualify the contractor
- Contractor selection and negotiation of terms
- Awarding the contract
- Monitoring the contract
- Post contract review

The guidance makes reference to the role of an 'agent' and states that use of an agent does not negate the principal's obligation. It also states that an agent may have obligations in their own right (over and above their duty as an employer). This is particularly important in considering the status and responsibilities of Fletcher EQR.

Persons in Control of a Place of Work

This third duty applies to anyone who may control a workplace and who has duties to others, in or in the vicinity of the workplace that are not its employees or contractors. Residential repair sites were under the control of the building contractor.

Overlapping duties

As can be seen it is common for more than one party to have multiple duties in relation to the same worksite or work activity and for these to overlap. This is an intentional feature of health and safety legislation to ensure that there are several lines of accountability to keep people safe, especially in high risk, dynamic situations like a construction site.

All practicable steps

The duties are qualified by a requirement to take *all practicable steps*. What these steps are in any given situation is "*a matter of fact and degree in each particular case*"[3]. The need for clarity about who does what and who is responsible for what in complex supply chains is crucial to avoid overlaps or gaps.

Recent case law has clearly differentiated the roles of those at the top of the supply chain that are procuring the work but may not be expert in the delivery, from those technically

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[2] http://www.business.govt.nz/worksafe/information-guidance/all-guidance-items/a-principals-guide-to-contracting-to-meet-the-health-and-safety-in-employment-act-1992-1/guide-contracting.pdf

[3] Quoted in the influential judgement of Central Cranes Ltd v Dept. of Labour

competent contractors who are managing the risks at an operational level. *"It would be too onerous to impose an obligation on a principal to have an intimate understanding of the sub-contractor's work to ensure that it is carried out correctly. This … would defeat the purpose of engaging a subcontractor at all."*[4]

Pre 2010. The 'business as usual' phase

Throughout its 70-year history EQC has responded to a range of claim events that have typically been highly localised and of limited impact. Its approach, as an insurance company, has been to assess claims, determine if they are within scope and arrange a financial payout to the insured party to enable them to commission the necessary repairs. It had a core staff of about 22 based in a Head Office in Wellington and engaged contracted loss adjusters, assessors and builders as required in order to make the filed assessments of content and property damage. Claims assessment and management was run out of the GBS offices in Australia until early 2013. A long-standing relationship with engineering consultants Tonkin and Taylor provided access to technical advice about ground stability and geotechnical issues. Meanwhile EQC funded research organisations like GNS Science to investigate and help plan for future events.

The business as usual work covered managing financial investments through the Natural Disaster Fund, arranging re-insurance cover, training a network of assessors and builders in EQC's claims procedures, running annual assessment exercises along with desktop planning and maintaining its internal management systems and procedures. The core skills at a leadership and governance level tended to be around financial, government and insurance industry experience. Construction or commercial project management expertise was not a core area of expertise.

Scenario planning using an EQC specific modelling system called MINERVA, identified a maximum credible event based on damage to 100-150,000 homes and outline plans were in place to scale up to respond to a single localised event of this magnitude.

As far as we are able to establish these scenarios were all based on the existing model of making payments to insured parties and did not envisage a more interventionist approach.

In terms of health and safety the focus was predominantly on office-based risks –either in the Head Office or in field offices set up in the vicinity of an event. A Field Health and Safety Manual was produced in June 2008 and there was also a general Health and Safety Manual, Health and Safety Policy, ACC Policy, Smoke Free Policy and Personal Protective Equipment Policy. Health and safety was partly an HR function as well as a responsibility of the Operations Manager, but with no dedicated specialist resource to advise on best practice.

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[4] *Department of Labour v Southroads Limited* [2013] NZHC 1620 (Whata J)

The OSH Box

An 'OSH Box' starter pack was available to be sent out to any field office as part of the set up process. It contained basic items such as:

- First Aid, Exit and Fire Evacuation signs
- Copies of various policies and procedures. Forms – checklists, incident report forms, hazard identification forms
- Hard hats and dust masks for use at damage inspection sites
- First Aid kits for the office and rental vehicles and floor warden hard hat and arm band

Training

The Manual identified training requirements for contracted field staff including First Aid and Site Safe Residential Passports. Once mobilised the site manager was tasked with arranging further training including:

- A formal health and safety briefing as part of the induction process
- Site specific briefings at the induction centre (normally held about 50km away from the event) and at each field office covering fire and evacuation process, names of fire wardens and first aiders, location of first aid equipment, bomb threat, earthquake and tsunami procedures
- A video training and booklet on stress management

A training matrix identified the need for other training for different staff including:

- Trade training
- Fire warden training
- Accident investigation
- Safety training required to manage particular hazards e.g. working at height

Most of this training was to be delivered 'as required'

Identification of site hazards

The Manual makes some reference to site hazards that might be found during damage assessment. These include:

- Overhead power lines
- Gas
- Sewage
- Falling objects (chimneys, walls)
- Falls from height

- Work on brittle roofs
- Asbestos
- Toxic mould
- Stress

Interestingly these cover most of the items that now constitute Safe6.

There was limited detail included in this documentation, although reference is made to relevant OSH (now WorkSafe NZ) publications. In most instances the controls are minimisation "use safe systems of work". Responsibility for implementing the controls is either with EQC or the employer (the building contractor for whom the builder/assessor/estimator works), although they had no active involvement while their staff were seconded to EQC.

Contractor management

Those parts of the manual we have been provided with make no mention of contractor management processes to address EQC's role as a principal, for example in relation to Tonkin and Taylor, although there is reference to it in the Audit Checklist (see below).

Our understanding is that EQC only engaged individual estimators who were Master Builders/Certified Builders or similar and loss adjusters with an insurance industry or Police background. It was assumed that this would provide an adequate level of health and safety competence and capability and hence there was no need to do more by way of pre-qualification. There does not appear to have been any documented monitoring of working practices on site or any process for coaching anyone found working unsafely. In reality most builders worked to the standards they were used to.

Monitoring and audit

There are two types of audit described in the Manual –against a Field Office Health and Safety Checklist and a Field Audit Checklist that is supposed to be applied within the first month after an event and then every 3 months thereafter. Audits are 'by contracted field health and safety consultants who may work in conjunction with internal audits managed by KPMG'.

The office checklist covers about 20 items such as:

- Floors, passages, exits/egress
- Lighting, temperature, noise
- Stacking/storage
- Electricity
- Fire Protection
- First Aid Kits
- Equipment and substances

- Ergonomics and manual handling
- Work Flow Management

The field checklist covers the following sections:

- Site management and responsibility
- Hazard identification, assessment and management
- Accident and Injury Reporting, Recording and Investigation
- Workplace Consultation and Training
- Emergency Preparedness
- Contractor Management
- Site Safety Observation

We are aware that Impac Services carried out field office safety inspections after the Gisborne earthquake in 2007 under a call off contract with EQC, but there is no evidence of field audits happening until mid 2011.

Conclusion

Prior to 2010 EQC has a fairly limited view of its health and safety responsibilities and appears to have worked largely on the assumption that the people it engaged to work for it after an event had the inherent knowledge and experience to keep themselves safe, based largely on their trade skills. Reporting, if there was any, was purely on lag indicators of injury along with field office audits. There is no evidence of health and safety being discussed at a governance level prior to 2010. When seen in the context of what other organisations were doing at the time (pre Pike River) this would not be uncommon for Boards. The level of Board oversight of health and safety has changed significantly in EQC and elsewhere since and is one of the key changes arising from the new health and safety legislation that will be enacted in 2016.

September 2010-mid 2012. Emergency mode

The devastating earthquake of 4th September 2010 started a chain of events that tested EQC and the system it operates under to the limit. The initial 7.1 quake around Darfield and multiple aftershocks up to early February 2011 resulted in over 150,000 claims for damage to personal effects and property; more than the worst-case scenario for which EQC had planned. Some houses suffered recurring damage meaning that the number of affected properties and claims were different with the individual impact of each aftershock having to be reassessed for each new claim.

Damage was widespread across the region stretching from Ashburton and Timaru to the Selwyn and Waimakariri Districts.

EQC staff and assessors

The EQC disaster plan was rapidly put into action and contracted assessors and builders mobilised from across the country within a few hours. This core team was insufficient to undertake the level of assessments required and assessors and loss adjusters were rapidly recruited from across New Zealand and Australia. Many of these staff and contractors worked massive hours under very challenging conditions for an extended period to respond to the demands for an early, visible presence from EQC. Because of the scale and extent of the damage a series of hubs was established in each affected area to coordinate local activities.

Commendably, each of these hub offices was inspected under the Impac contract within a few weeks, starting on 28th September 2010. The auditor noted that the scope of work did not include field staff and expressed concern about a number of hazards that assessors were reporting as having encountered. These included:

- Confined space entry, under floors and in ceiling spaces
- Work at heights
- Exposure to dust and particulates, including brick dust and asbestos
- Chemical exposure, e.g. from spilt cleaners, paints, and other chemicals (such as precursors to "P")
- Sewage exposure, or exposure to materials contaminated with sewage
- Fatigue, from long hours and travel in difficult circumstances, broken sleep due to aftershocks, etc.
- Stress, particularly from exposure to the destruction of property and contact with distressed people, as well as separation from their own families and other support networks at home
- Dog or other animal bite, particularly as animals in Canterbury are thoroughly unsettled due to the continued aftershocks and even normally placid animals may bite or scratch. Exposure to animal droppings and urine

The auditor noted *'In general, the field operations in Canterbury are being very well handled. The office environments are excellent, particularly considering that they have been put together in a very short space of time, with limited resources and in many cases limitations to how equipment could be brought into Canterbury. EQC is to be commended for the fast and comprehensive response they have put together for this event.*

There are a number of significant hazards that will require careful control and monitoring, particularly for the field teams. At present, no formal hazard identification has been carried out, although it is clear that discussions about hazards have occurred, particularly around the risks of fatigue and stress. It is important that these controls are documented and that staff are trained in the controls and the reasons for them.

We understand the manual claim form completed by assessors did include a section in which to record hazards such as dangerous dogs or aggressive owners so there was at least some prior warning to those following on. As many of the loss adjusters were ex-Police they would have had some familiarity with these types of issues

A second round of visits took place in January 2011 which included spending some time out with assessors. The report noted *'A number of indicators are now starting to identify that some hazard controls may need to be improved. The most notable of these hazards is stress and fatigue during tours and the associated factors arising from protracted dislocation from the home environment.*

Indicators include:

- *The rising number of motor vehicle incidents, particularly in the third week of a rotation*
- *Anecdotal evidence of forgetfulness, loss of concentration, tardiness, and reduced attention to personal hygiene and appearance towards the end of tours*
- *Increasing attrition rates of staff not returning for further tours*
- *Increasing numbers of staff pulling out in the middle of tours*
- *Increasing numbers of staff missing a rotation in order to catch up with their families and business activities*

Field Supervisors noted that none of them had a complete picture of the hazards likely to be faced by their field teams and that there was a lot of duplication of effort. They recommended that EQC should have a more fully developed field hazard register of the likely hazards and controls required when responding to an event.

This second report concluded that *'... in general, EQC is handling this event extremely well. Office environments are well appointed, with equipment appropriate to the level of exposure.*

The most significant area of concern is around stress and fatigue for the teams who are on rotation. Hours are long and breaks are few, and this is showing for all staff now, particularly

those who have completed multiple tours. It is our opinion that the current roster pattern is unsustainable due to the length of the response time for this event and the complexity of the work that is being undertaken.'

20 recommendations were made. We are aware that these were discussed and that legal advice echoed the recommendations, however we are unaware of if, how and when these actions were completed.

The only further external report was on an office inspection in Wellington in March 2011.

Stress and fatigue

As noted above stress and fatigue were critical issues for EQC staff and contractors in this period. Long hours, disrupted sleep, dislocation from family and normal social activity, poor diet, excessive alcohol consumption, stress from dealing with affected families as well as their own domestic issues and other factors all created a potentially damaging cocktail. Anecdotal evidence of relationship breakdowns, physical and mental ill health, driving accidents and high attrition rates suggest that real harm was being caused –as has been documented by mental health services supporting the general Canterbury population. However as far as we have been able to ascertain none of this has been documented or analysed in relation to those working for EQC.

The illustration below from *All Right?* , a Healthy Christchurch initiative led by the Canterbury District Health Board and the Mental Health Foundation of New Zealand[5] demonstrates the different states that those affected by and responding to the earthquakes would have experienced.

Whilst it appears that EQC used its best endeavours to respond to the situation its staff faced, there did not appear to be any plan or more formal process to anticipate and put in place proactive strategies in a systematic way for these effects. This will be an important element of future planning.

We **recommend** that EQC develops plans to address the risks of short and long term psychological harm for staff exposed to and responding to a future disaster, including considerations of staff rotation, limiting working hours, peer support, etc. Much can be learnt in this regard from the experience of Fly In Fly Out (FIFO) schemes in the Australian resources sector.[6]

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[5] http://allright.org.nz/about-us/
[6] http://www.lifelinewa.org.au/download/FIFO%20DIDO%20Mental%20Health%20Research%20Report%202013.pdf

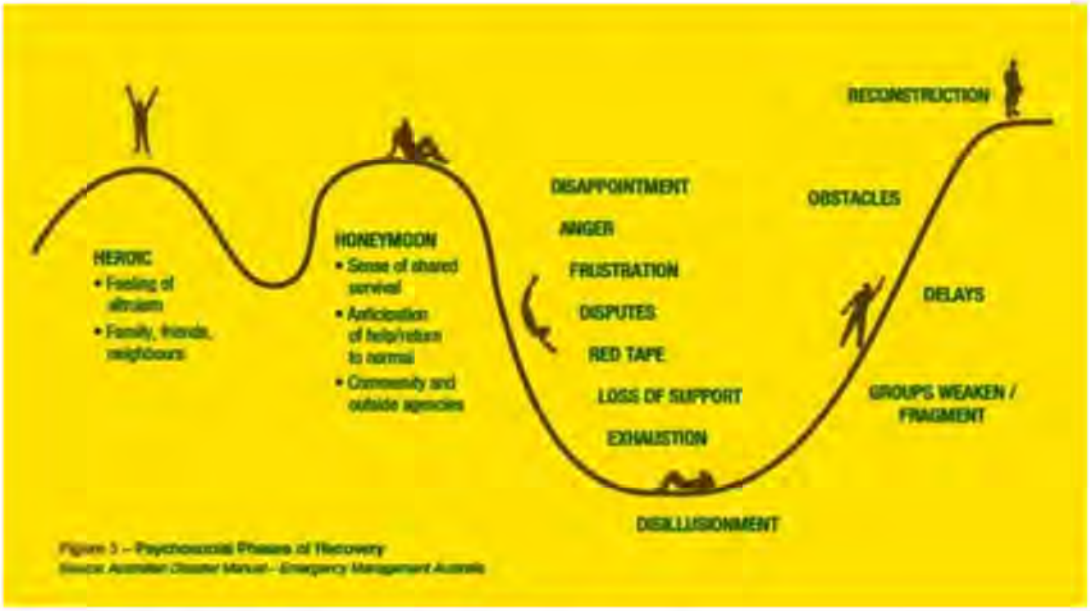


Figure 1: Phases of Recovery

Threats and violence

In the early stages of the response EQC staff were seen in a positive light as people who could help address the multiple challenges being faced by affected homeowners. Over time as the scale of the task became clear and inevitable delays occurred in getting homes assessed and repaired, the mood of some customers changed as frustration turned to anger. EQC field and call centre staff became the target for verbal abuse and in some cases threats of violence. Staff wearing EQC tabards or driving EQC branded vehicles were abused at petrol stations or in going about their normal business, call centres received threats to come down to the office with weapons or of customers self-harming; such was the level of anxiety.

EQC responded to these threats by increasing physical security at its offices and provided a range of training for its staff including a course on Empathy run by occupational psychologists. All staff visited in pairs for operational and safety reasons and had mobile phones to summon assistance if required.

Employee Assistance Programmes were put in place and staff encouraged to report all instances and to take all threats seriously. Work to further enhance the psychological support to staff continued throughout the programme.

In recent months a public sector wide set of Protective Security Requirements[7] has been put in place and there is increased focus on staff safety as a result of the shootings at the WINZ office in Ashburton. EQC, along with all other agencies, will be following the outcome of the subsequent WorkSafe NZ prosecution of MSD with interest.

[7] https://protectivesecurity.govt.nz

Employee participation

In August 2011 EQC established its internal Safety and Wellbeing Committee as a means of engaging with staff representatives.

Its objectives were:

- To help set the strategic direction for EQC's Safety and Wellbeing Programme
- To provide support and direction to the ELT and Safety and Wellbeing Representatives
- Promote Safety and Wellbeing initiatives throughout EQC

The focus of this Committee was on EQC staff and temporary contractors. It appears that the Committee has been effective in engaging staff around some of the more obvious issues in the office environment and in particular around promoting wellbeing.

Health and Safety Management Information System

At the start of this period EQC had no health and safety management information system in place –and with only 22 staff in low risk roles had no need for one. As staff numbers increased the need to utilise such a system to manage data became clear and a decision was made to licence software called GOSH to capture basic incident data and to act as a form of safety intranet. This filled a gap for a number of months but as demands for more and better data arose it became clear a more sophisticated system was required. By this stage EQR had licenced a commercial system called Risk Manager and EQC decided that it would make sense if both key players used the same system to exploit obvious synergies. Data from the two organisations was collected separately and collated when required, for example for Board reports. Over time more data has been collected and analysed which has underlined the value of this data collection tool.

Access to advice

Throughout this period EQC had no dedicated health and safety resource and relied on the call-off contract with Impac and its legal advisors for *ad hoc* advice when required. The main conduit for this was via the Operations Manager. In March 2011, at Impac's suggestion, the scope was broadened to cover advice relating to EQC's role as a principal, including the FCC contract and other land repair work. A temporary, part time resource was deployed for a few months up to June 2011 to work with EQC staff in Christchurch and to undertake some sample site visits to verify what was happening in the field.

EQC assigned health and safety responsibilities to the newly appointed Assistant HR Manager from January 2011 who reported that there was very little in place at that stage and no real controls over whether or not agreed standards were being followed.

EQC senior management gradually became aware of the gaps in their internal knowledge and systems and expected that Fletcher EQR as the PMO, would manage most of the operational

risks and provide subject matter expertise on their behalf. This proved to be a somewhat misleading assumption as issues of liability, responsibility and safety leadership became rather confused with differing interpretations on the part of EQC and EQR. A lack of clarity in the commercial contract and the absence of authoritative guidance on the role of an agent from WorkSafe NZ allowed this dissonance to continue for some time.

The need for a dedicated, professionally qualified internal resource was raised as early as June 2011 but It was not until January 2012 that EQC created a National Health and Safety Manager role based in Christchurch but reporting to the GM Organisational Development. The impetus to recruit largely came from the GM managing the claims and repair programme in Christchurch who personally advocated for specialist resources to help manage the supply chain issues.

Configuring the role and reporting line in this way was probably not optimal as in reality there were two discrete functions to be performed –one at a corporate level looking inwards and upwards, and a second looking downwards and outwards through the supply chain working on the ground.

In future we **recommend** that EQC engages senior level, professional health and safety advisors at the earliest opportunity post-event with a specific focus on ensuring contracting arrangements (whether with a PMO, assessors, surveyors, engineers or building/civil engineering contractors) have health and safety at their core. One role should report directly to the CEO, ideally be based in Wellington and assist in managing strategic and governance issues while another should report to the Chief Operations Officer (or equivalent) responsible for delivery and be co-located with that role.

Engagement of Fletcher EQR

Within days of the September 2010 earthquake it became clear to Government and EQC that the scale of the damage was such that the 'normal' approach of paying out householders was not going to be practical and there were real strategic risks including degradation of the housing stock, price gouging, insufficient skilled builders wanting the work, vulnerable claimants being exploited, quality standards, etc.

We have not seen any strategy papers that describe the options analysis undertaken by EQC or other parts of Government, but in late September a Request for Proposals (RfP) was put out inviting tenders to provide a Project Management Office (PMO) to manage repair works on behalf of EQC. Tenders closed on 4th October with two being submitted.

A managed repair programme is one of the options available to EQC under the Earthquake Commission Act 1993 however we are not aware if planning for such an approach was undertaken prior to this event. It appears that officials from across Government worked from first principles to very quickly scope how such a programme might operate and put steps in place to get work underway.

As noted above, EQC's senior management and governance expertise was predominantly in the insurance and financial services area with little if any expertise around construction and project management. A highly experienced project engineer was put on the Board of EQC shortly after the September 2010 earthquake and MED (now MBIE) seconded someone onto the PCG, but in our view there was a significant skills gaps in relation to the process of scoping, negotiating, letting and monitoring the initial contract with FCC from a health and safety perspective.

There is a pool of construction client expertise within the public sector in areas such as NZTA and Transpower, as well as within SOEs in the energy sector that we believe could have been called on to enable EQC to become an 'intelligent customer' of the services it was proposing to procure. We **recommend** that EQC engages construction client experts to advise it during the scoping, letting, negotiation and monitoring of significant contracts to ensure that the commercial and health and safety considerations are considered in tandem.

The contract

On 14th October 2010 a recommendation was made that The Fletcher Construction Company (FCC) was the preferred tenderer and a Memorandum of Understanding (MoU) was put in place on 22nd October to allow them to begin mobilising. The MoU included a section on Health and Safety that stated:

EQC requires FCC to use all its reasonable endeavours to discharge or assist in discharging EQC's obligations under the Health and Safety in Employment Act 1992 in relation to the reinstatement works, including:

- *Requiring each contractor performing reinstatement works to have a health and safety plan and;*
- *Proactively raising health and safety issues with contractors, property occupiers and any other person in control of the workplace, and ensuring these are addressed appropriately and swiftly*

This was an important statement coming at such an early stage in the post-quake response and clearly reflects concern that safety was going to be a critical success factor for the programme. The wording of the section however did not directly align with the health and safety law it referenced as it left the legal status of FCC ambiguous between being an advisor to EQC, a principal and employer and/or person in control of reinstatement work sites. This was to be an issue that continued to be equivocal for several years.

A better form of words would have clarified who and how each of the discrete primary duties under the Act (as employer, principal and person in control of a workplace) were to be discharged and to have framed the duty using the legal test of taking '*all practicable steps*'. In May 2010 WorkSafe NZ had recently issued guidance on the role of a principal that would

have provided at robust starting point for assigning specific roles amongst the various parties (see footnote 2).

Our understanding from speaking to those involved at the time is that FCC (and the other prospective bidder) quite naturally was not prepared to take on such an enormous and ill-defined role with all the financial, reputation, delivery, quality and health and safety risks involved and that, in effect, EQC had little choice but to assume more liability than would typically be the case in a conventional construction project with a main/managing contractor acting on behalf of an inexperienced client. EQC consciously tried to contract out more responsibility onto FCC but could not get agreement to do so.

FCC representatives have commented that had they taken on the full panoply of principal's duties from day 1 they probably would not have been willing to start repair work until all the required systems and processes were in place –something that would have been politically unacceptable.

Whilst from a purely health and safety perspective it might have been desirable to have clarified these issues early on, we understand the bigger picture was one of enormous confusion, complexity, anxiety and risk to the welfare and safety of Canterbury residents who needed urgent work carried out to make their homes secure and warm during the remains of the winter/spring period. Only an organisation of the size of FCC would be able to take on such a project and hence the MoU was developed largely on a 'good faith' basis.

In March 2011 the author (through the Impac contract) was asked to review a number of aspects of the proposed health and safety management approach from FCC as well as arrangements being made for land remediation work through a joint venture with Waimakariri District Council. Early drafts of the formal agreement between EQC and FCC were also reviewed. A report of 11th March 2011 concluded that:

From a narrow legal perspective EQC needs to be more demonstrative as to its safety objectives and expectations of its key partners and how these are to be achieved.

At a governance and assurance level, EQC needs to establish a clear accountability mechanism by which the performance of the PMO is to be monitored, including the setting of targets and key results areas which will help provide objective measures of current and expected performance.

At a leadership level EQC needs to actively demonstrate its commitment through its public and private communications and the actions of its staff.

Over the next few months' the MoU was turned into a PMO Services Agreement signed by the CEOs of EQC and FCC on 6th July 2011. This largely repeated the wording around health and safety from the MoU but referenced a joint Statement of Intent 'Safety in the Earthquake Recovery Project' between EQC and FCC signed by the respective CEOs in mid 2011.

Drafting of this statement along with an Expectations Schedule (effectively a set of initial KPIs) was the subject of considerable debate before the final wording was agreed. This Expectations Schedule has continued to be one of the key accountability processes for health and safety used by the Project Control Group (PCG) to this day.

Statement of Intent:

Safety in the Earthquake Recovery Project (EQR)

The September 2010 and February 2011 earthquakes have been a tragedy for the people of Canterbury with many lives lost and many thousands of others affected. The priority now is to repair the damage. We want to make sure we play our part to ensure Cantabrians have warm and weather-tight homes as soon as possible so that life can return to normal.

Fletcher EQR is committed to repairing homes as swiftly as possible but in a way which does not put householders, their families or construction workers at further risk. To work both quickly and safely, we must have good health and safety management as a key focus.

We know that many small and medium-sized construction businesses and builders have never worked under a health and safety management system. In many cases, businesses have lacked the resources or incentives to follow industry best practice in health and safety.

So, as we want to create work for local trades-people to help encourage employment in the region, we will ensure there is the necessary support for the local building industry to learn and improve regarding safety. Fletcher EQR is committed to providing training, mentoring, resources and other materials to help contractors and sub-contractors raise their game when it comes to ensuring everyone goes home safe and well.

In return we expect all contractors working on Fletcher EQR to commit to working safety and to cooperating with us on a process of continuous improvement in working practices and procedures.

We've suffered enough from this tragedy. We don't want anyone else to get hurt; especially when this time we can do something to prevent injuries. If we work together, we can make this goal a reality. The Fletcher EQR Health and Safety Management System is designed to help bring this about.

Thank you for helping us repair Canterbury safely.

Ian Simpson
Chief Executive Officer
Earthquake Commission

Mark Binns
Chief Executive - Infrastructure
Fletcher Building Ltd

To see Fletcher EQR's progress visit eqr.co.nz

EQC Helping the recovery in CANTERBURY
THE FLETCHER CONSTRUCTION COMPANY

Figure 2: EQC/EQR Statement of Intent

The PMO Services Agreement also stated *"The EQC is the principal for the purposes of the Health and Safety in Employment Act 1992 and acknowledges that individual Contractors will be required to take responsibility for all aspects of health and safety on work sites".*

As referred to above, this statement left unsaid what precisely the legal roles and responsibilities of FCC were between EQC and the individual builder and created a lot of the subsequent confusion. The decision to leave this unstated, with FCC and EQC having differing views of the implications of the contract wording, appears to have been intentional, due to failure to agree, rather than an omission. As the contract remained in effect unaltered until mid 2015 this uncertainty overlaid the whole programme.

The financial aspects of the contract also raised some health and safety concerns. As FCC was paid a management fee on a cost plus basis, any increase in the amount contractors were charging also increased FCC's income. As health and safety considerations started to impact on builders, who now needed to price for essentials such as scaffolding or site fencing, the per claim cost started to rise. Some builders and loss adjusters apparently suggested FCC was setting their standards too high simply to inflate their fee income. This reported (and incorrect) observation appears to reinforce views expressed elsewhere that some of the problems the project faced were not only in terms of contractor's low expectations of health and safety standards (and ignorance of the law), but because right across the board from assessors, loss adjusters to contracts managers there was a common background and poor safety culture. This proved to be a considerable mountain for FCC to overcome.

Access to advice

As FCC started to deploy its resources and engage contractors it looked to have dedicated health and safety personnel as part of the PMO. Initially it seconded advisors on a revolving basis from other parts of its business and placed a highly experienced compliance process manager into Christchurch to oversee a range of regulatory matters. This individual was the lynch pin of FCC's approach to health and safety and acted as the internal and external interface with key stakeholders. He remained in that role throughout the Canterbury Home Repair Programme (CHRP).

In November 2011 FCC appointed a full time professional health and safety manager as it had become clear that the scale of the health and safety challenges on the programme was far higher than has been anticipated. He subsequently built a team including advisors, investigators and auditors located in the hub offices and working directly, and in a highly effective manner, with the hub managers and their teams.

Health and Safety Management System

The initial approach from FCC was to develop a high level health and safety management system document based upon its experience in the commercial construction industry. This included four main elements:

- Select and engage competent contractors
- Contractor site specific safety plans for each job
- Focus on high risk work activities
- Incident reporting and investigation

Prequalification and accreditation

One of the conditions of the PMO Services Agreement was that FCC could engage contractors directly without needing EQC's approval, but that it did need to get EQC's approval of its procedures for doing so.

Pre-qualification and accreditation covered a number of aspects as well as safety including financial status, quality and trade competencies.

FCC soon discovered that the pool of contractors drawn from the residential construction sector struggled to provide any form of health and safety documentation, such as a policy statement, that would meet even the barest minimum accreditation standard. However as the work needed to get underway there was a tension between needing evidence to meet the standard and expediency. The accreditation process therefore moved from being purely one of assessment to having a large educational and coaching role with the development of simple model policy documents that contractors were encouraged to use.

It took some considerable time to ensure all the first wave of contractors got over this bar. By 30th June 2011, for example, the PMO had accredited 696 contractors. Of these 366 had submitted their health and safety policies; 330 had failed to do so. Of the 366 received by the PMO, 200 had been approved, whilst 166 had been rejected as needing further work.

This meant that less than 1/3rd of the "accredited" contractors had demonstrated that they had an acceptable safety policy.

Site specific safety plans

The need for a simple plan that demonstrates an awareness of the specific hazards on a site and how they will be managed has existed in the construction industry since the 1990s, largely through the efforts of organisations like SiteSafe. However lack of enforcement of this in the residential sector and the absence of experienced clients to drive it meant that for many small builders this was unknown territory and quite a challenging requirement.

FCC soon realised that it would need to provide significant support to builders if they were to be able to meet their obligations to EQC in the PMO Services Agreement, which was clearly predicated on the main contractor on each site being the 'person in control', having a safety plan and with FCC assessing compliance with it.

This realisation precipitated a whole programme of activity designed to coach and mentor contractors in basic health and safety management practices as well as setting programme wide standards for controlling particular risks.

Managing high-risk work.

FCC carried out a high level health and safety risk assessment very early in the programme and the first draft of the FCC project health and safety management plan included reference to:

- Work at height
- Confined spaces
- Deep excavations
- Prevention of access to sites by children
- Isolation of services
- PPE
- Infection risks (toxic mould, sewage, etc.)
- Asbestos
- Demolition

However the lack of health and safety competence amongst the contractors meant that they proved incapable in many instances of setting their own standards that met legal requirements and needed considerable guidance around what FCC's expectation were. Early audits of sites found significant non-conformances and some pushback from contractors who were unwilling or unable to change their traditional working practices. A number of contractors either opted out or were exited from the programme in the early stages.

The history around asbestos has been well documented elsewhere but illustrates the scale of the challenge for all concerned in that the majority of builders did not have any real understanding of the likely presence of asbestos containing materials in residential properties, the health risks involved and how to remove it safely. This ultimately necessitated a fundamentally different approach with FCC taking a more interventionist role than had been envisaged.

It was this demand for greater clarity and certainty that led to the development of the Safe6 campaign in 2013.

Incident reporting and investigation

Lack of reliable data was a critical factor for those managing CHRP with even basic data on injuries being hard to come by in the early part of the programme. Again custom and practice in the industry with lots of self-employed workers and small contractors was that things only got reported if they were really serious and there was little recognition of the need for a main

contractor to collect and report data on all of those working on the programme. This meant that early data was very patchy with little reporting of near misses or at risk behaviours unless identified by the FCC auditors and advisors.

FCC also had challenges with data capture and analysis. The Fletcher corporate system, Job Safe, was not really suitable for CHRP and hence in late 2011 it decided to set up a stand-alone health and safety management information system using a proprietary software system- Risk Manager. This became the main reporting tool for all health and safety data for the remainder of the programme.

The other major obstacle to progress was that the EQR contract supervisors were drawn from the same pool as the contractors themselves and hence were probably no better informed on good practice health and safety than the people they were supposed to be managing. As one person commented it was a case of "poacher turned gamekeeper".

Project governance

A Project Control Group (PCG) was established as soon as the contract was let comprising senior executives from EQC and FCC. Its role and functioning are described later in this report.

Tonkin and Taylor Ltd

Tonkin and Taylor (T&T) provide a range of engineering and geotechnical services to EQC. This includes inspecting properties and ground conditions, undertaking surveys, drilling bore holes and in more recent times project managing ground remediation trials.

The contract between EQC and T&T has been in place for many years and is founded on a high degree of trust and autonomy based on proven technical credibility. However there was little or no active management oversight of the safety of T&T staff and contractors by EQC.

Inherently the work T&T do has significant risks associated with it, but their systems, capability and performance were never proactively reviewed during this period. The regular performance reports from T&T to EQC contain some health and safety data –lag indicators of injuries and incidents and internal safety audits by T&T. However we could find no evidence that there was any discussion around this, no agreed performance expectations, EQC audits, review of safety plans or other surveillance activities even though EQC had a legal responsibility to do so in order to meet its duties as a principal under S.18 of the Act.

Conclusion

As the first 18 months of emergency response drew to a close and major aftershocks diminished the whole programme started to move into a business as usual phase. The appointment of new operational GMs in EQC and EQR with a strong safety focus meant that these issues were now being escalated from within and the organisations were starting to get a grip on their respective roles and responsibilities. Critical decisions had been made to

properly resource the health and safety functions in both EQC and EQR and recruitment was underway. IT systems were in place with the capability to deliver meaningful management information and the accountability structure of the PCG was driving demand for robust analysis and real time reporting of health and safety performance.

At a governance level there was limited time devoted to discussion of health and safety on the busy EQC board agenda and understandable reliance by senior management on FCC to 'do the right thing'.

Mid 2012 to present

External Context

The Pike River mine tragedy happened only 10 weeks after the first Darfield earthquake and by late 2011 the Royal Commission was starting to uncover some of the serious failings in the company, its governance and the regulatory system. The Independent Workplace Health and Safety Taskforce was established by the Minister of Labour in June 2012 to look at the wider failings in the health and safety system in New Zealand and international experts such as the Head of the London Olympic Safety Authority were brought in to see what lessons could be learnt in the rebuild. Meanwhile a new organisation, the Business Leaders Health and Safety Forum was set up to engage CEOs in leading a change in approach to how business saw its responsibilities. Fletcher Building (the parent company for FCC/EQR) was an early member.

Public, political and media concern was rising and health and safety became a front-page news item. The health and safety regulator (then MBIE) was under resourced and demoralised but had enough resolve to create a dedicated Canterbury Rebuild team led by an Australian health and safety specialist with a commitment to use the opportunity to embed best practice from overseas into the construction sector here.

Official estimates suggested that, based on historic performance, 1-2 construction workers would die each year during the rebuild and many more would be seriously injured or suffer a life-changing work-related illness. This could cost more than $80 million in ACC costs and 600,000 hours in lost time – putting an unacceptable time and cost pressure on the rebuild. This realization that something must change led to the creation of the Canterbury Rebuild Safety Charter, of which EQC, FCC and others were early signatories.

Internal context

This period can be characterised by the professionalization of health and safety as it became mainstream in EQC and CHRP. Senior level health and safety specialist appointments were made in both organisations and internal and external demands for greater performance became evident. Health and safety was seen as a critical success factor and in many ways a leading indicator for other aspects of performance on the programme.

Safety leadership within EQC was reenergised through the appointment of a GM with an oil industry background and a strong commitment to health and safety. In early 2013 the EQC board decided to create a Health and Safety Board Committee (HSBC) chaired by an experienced construction project engineer to provide more focus on this increasingly important issue. Meanwhile in EQR the new GM came from a construction industry supplier background where fatal accidents had helped shape his appreciation of the personal impacts of poor safety performance.

Work was ramping up with up to 2000 repairs underway at any one time from over 20 hub offices. By the end of 2012 over 700,000 claim exposures had been lodged and over $4bn had been paid out of which around $1bn was on the EQR home repair programme. Over 1000 contracting firms had been accredited by EQC with around 16,000 inducted workers.

EQC

EQC's new national health and safety manager took up office in February 2012, based in Christchurch but reporting to the GM Organisational Development in Wellington. She quickly undertook a gap analysis to provide a starting point for the work programme she was to develop. This identified a number of structural weaknesses in EQC's approach and systems. Her initial report in March 2013 identified 16 action items of which four were described as Critical, two as High and seven as Medium risks. She stated that '*It is the intention that over the next 2-3 years that EQC will move from a culture of regulatory compliance to best practice in health and safety management, however due to the enormity of change to the organisation over the last 18 months the short term focus needs to on achieving/improving statutory compliance.*'

The programmes and initiatives put in place by the National Manager and her team over that 2-3 year period are too numerous to list and describe in any detail. Suffice to say that her efforts were highly effective and as a result she was recognised by becoming Safety Practitioner of the Year in 2014 in a prestigious national safety awards competition.

Some of the highlights are briefly described below.

Safe6

It was identified by EQC and EQR as a result of early site audits that one of the key barriers to effective engagement of the construction workforce was communication of key concepts and standards in a readily accessible manner. Up to this point a lot of documentation was fairly wordy and written more from a systems perspective than a user one.

Ideas around focussing on a small number of the key risks had been around from the start of the response programme however it was only when these were brought together under the Safe6 banner that the concept started to become a reality.

In late 2012 a marketing company was asked to consider how to best communicate concepts around safety to the target audience. They developed the Safe6 brand, using a deliberate play on words (Safe Sex), as something that was immediately identifiable and slightly tongue in cheek. The brand, colour, logo and collateral were all developed and rolled out in a way that made it accessible and easy to understand by a wide range of workers, not all of whom would be highly literate or have English as their first language.

canterbury home repair programme

ToolBox Talk safe6

Stay safe. Stay alive.

12 June 2014 - 012

Falls from Height

Falls from any height can pose a significant risk of serious harm or death. Roof work is inherently dangerous and incidents can result in serious injuries or a fatality. Serious injuries have resulted from falls when working at a height of less than a metre. The risk of falling even at this height cannot be ignored.

Rules to Live By

- Use full fall protection when working at height
- Secure ladder top and bottom
- Use at least 3 points of contact when on a ladder (two feet and one hand, or two hands and one foot)

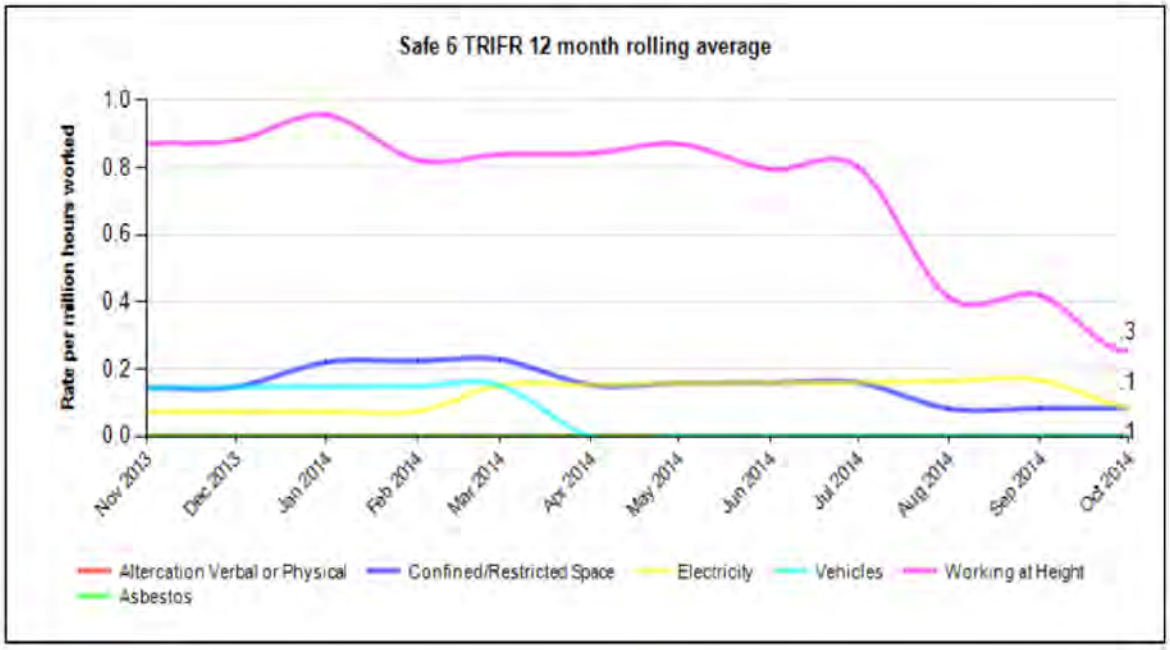
Figure 3: Safe6 ToolBox Talk

Safe6 has a programme steering group and a tactical planning group to ensure it is clearly focussed on the right issues in the right way. Over time performance against the 6 key risks and their risk control standards became a lead indicator in the PCG reports.

The Safe6 risks are:

. Falls from height
. Confined/restricted spaces
. Electrical danger
. Motor vehicles
. Personal threat and
. Asbestos exposure.

Interestingly these are predominantly the same risks that had been identified prior to 2010. The success of this approach can be seen in the graph below which shows that performance across the 6 risks significantly improved over time and led to a substantial reduction in injuries.



(TRIFR = Number of medical treatment (provided by a registered medical provided) and lost time injuries per million hours work, divided by the total hours worked (12 month rolling average)

Non-injury reports were also categorised against the 6 risks and the scale of the non-conformance rated to give a measure of how well the controls were being followed as one of a growing number of lead indicators.

Feedback from contractors suggests strong support for the Safe6 approach and messages that were seen to be clear, simple and practicable. Presenting them in this way and reinforcing key messages across the whole programme ensured that there was a level playing field and hence no financial disincentives to working to the Safe6 standards. As everyone was doing the same thing there were also fewer cultural barriers to overcome as being safe wasn't a question of being soft, rather '*the way we do things around here'*.

The success of Safe6 has resulted in the concept being adopted by the Canterbury Rebuild Safety Charter group through its critical risk campaign and internally the same approach was used to create the OfficeSafe programme for EQC's own office staff.

We have not looked in detail at the individual risk areas under Safe6 but given the prominence of one issue (asbestos) we have commented on this below.

Asbestos and occupational health

Asbestos started to raise its head as a critical issue when the Canterbury Medical Officer of Health publically expressed concerns that the risks were not being properly controlled in the

residential rebuild. This was contrary to his earlier statements and hence became a matter of significant interest to householders and the media.

In August 2012 he noted, *"So what is the asbestos health risk to Christchurch residents post-quake? Extremely low, according to Canterbury medical officer of health Dr. Alistair Humphrey, who is eager to dispel community concerns. The question is, 'could people have been exposed at the time to asbestos?' The evidence suggests not."* [8]

By early 2013 however he described the EQC/EQR policy of encasement of textured ceilings containing asbestos as *"a serious health risk"*.[9] Further concerns were raised at a public WorkSafe seminar that cast doubt on the processes in place for builders to formally identify asbestos containing materials prior to work starting, and the methods for removing them where it was identified.

These concerns proved to have some validity but were perhaps more indicative of a growing awareness that the whole issue of residual asbestos containing materials in the New Zealand building stock was grossly misunderstood and underestimated. Equally it confirmed that the level of competence, including amongst those holding Certificates of Competence issued by MBIE/WorkSafe NZ, was highly variable.

The asbestos issue came to a head when WorkSafe NZ decided to mount a major investigation into EQC/EQR's handling of it on the CHRP programme. Although the eventual outcome, some 18 months later, was that they decided to take no enforcement action it was clear that a more interventionist approach was required by EQC /EQR in relation to the most significant project risks. The setting and monitoring of standards and practice was to be become a far more significant responsibility for the upstream players.

The asbestos issues have been well described elsewhere however the broader lesson that can be learnt is that chronic occupational health issues can easily be overlooked at a time when acute risks are more evident. Whilst exposure to hazards such as asbestos, silica, noise, wood dust, solvents, vibration, etc. are unlikely to cause harm within the timeframe of a disaster response, and hence won't feature in any lag indicators, there is an obligation to ensure that the burden of these exposures during the period spend working on a programme such as CHRP does not add to the cumulative risk that construction workers already face.

This was one of the other learnings from the 2012 London Olympic build where specific programmes around health and wellbeing were incorporated under the 'Health like Safety' banner.

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[8] http://www.stuff.co.nz/the-press/news/christchurch-earthquake-2011/7545933/Asbestos-fears-unlikely-to-be-realised
[9] http://www.stuff.co.nz/the-press/news/christchurch-earthquake-2011/8155982/Asbestos-in-homes-a-health-landmine

EQR

EQR underwent a similar transformation in its approach to health and safety management in this period partly as a result of increased pressure from EQC, but also a realisation that there really was no alterative other than to knuckle down and work to improve the performance of the building contractors. It appointed a full time professional health and safety manager in November 2011 who progressively built a team of advisors and investigators to help deliver a programme of work.

He acknowledged that the scale of the task was far greater than had been initially envisaged and that the demands of building systems and capability amongst several thousand contractors and sub-contractors and up to 20,000 individual workers on hundreds of different jobsites was without precedent in New Zealand.

The initial approach had been predicated on the assumption that once accredited contractors had been assigned jobs they would take ownership of the responsibility for managing safety on that site, including for their sub-contractors. In reality this proved not to be the case with audits revealing significant non-conformances in relation to basic standards such as having a site-specific safety plan. Emerging issues around asbestos confirmed that the skill deficits were technical as well as at a system level. This realisation fundamentally changed EQR's approach with much greater direction and proactive monitoring of contractors.

EQR managers spoken to are divided as to whether or not FCC was naïve in its initial assumptions about the capability of the residential construction sector, but regardless of the starting point there was a strong commitment to ensure that safety was a priority and that the only way ahead was a path of continuous improvement. EQC's more directive approach towards EQR reinforced this message.

EQR also recognised that simply playing the compliance and auditor role was not going to work and would create a culture of failure. EQR needed to give its contractors a 'leg up' to help them get to an acceptable level of performance and recognise and reward them (particularly with extra work) for doing so. They also needed to make the safety messages simple, direct and accessible.

Safe6 was seen as the greatest single driver towards this more collaborative approach and both EQC and EQR embraced the concept and made it work. The EQR contractor website[10] became the portal for large amounts of safety information in the form of tool box talks, safety alerts, tips and hints, newsletters and other resources. Meanwhile the delivery approach ensured that everyone on the project was inducted and in most cases received further specific training from EQR on the Safe6 priority areas, over and above anything provided by their employer.

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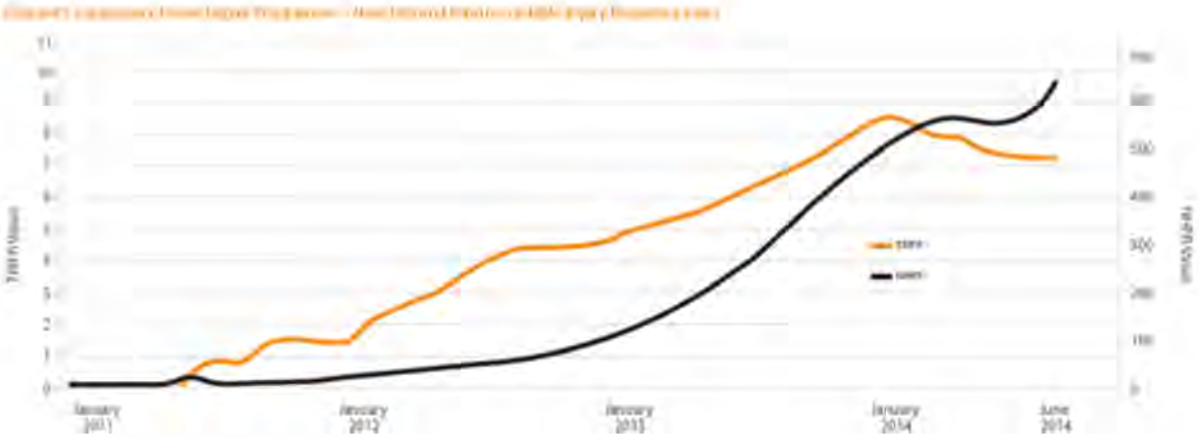
[10] http://www.eqr.co.nz/contractors/tool-box-talk

In early 2012 EQR rebuilt its health and safety management system, ultimately achieving ACC Tertiary Accreditation under the WSMP programme. They then ramped up the surveillance activity with over 400 audits per month being carried out by hub-based auditors working closely with their hub manager and team. This process was iterative in that common issues identified from the audits then became the focus for more education and information. In 2014 8,245 audits were carried out representing around 22% of all active sites. The figure for asbestos audits was even higher at around 75%.

Safe6 Training	EQR / EQC	Contractors	Total
Inductions / Re-inductions	1,050	16,434	17,484
Asbestos	1,113	10,543	11,656
Confined Space	11	-	11
Electrical Safety	200	17	217
Personal Safety	473	-	473
Scaffold	224	-	224

Figure 4: 2014 data

There was a strong push to improve reporting of both injuries, however trivial, and near hits and the graph below shows significant progress with both. The steep increase in Total Recordable Injury Rate (TRIFR) from 2012 onwards is probably a reflection on improved reporting rather than a drop in performance, although the type and level of activity ramped up significantly in this period. The cross over point in January 2014 probably represents a truer reflection of the actual level of performance and subsequent reductions in TRIFR (currently at 3.8) and NHFR (currently around 960) demonstrate very positive improvements have become embedded.



- Improved reporting culture
- More Near Hits
- Fewer injuries

Figure 5: TRI and Near Hit frequency rates 2011-2014

Relationship with EQC

As referred to elsewhere the lack of clarity about the respective roles and responsibilities of EQC and EQR created challenges for EQR. In their heads managers maintained their position of simply doing EQC's bidding as their agent. In their hearts they realised that they had to act much more like a principal contractor if they were going to keep people safe and be true to the overall FCC safety culture. On the one hand this created some resentment that EQC were constantly on their backs and wouldn't let EQR get on with it, but on the other hand enabled them to claim they were only doing what they were told.

This 'creative tension' ultimately meant that CHRP benefitted from having two actively engaged parties with strong minded health and safety professionals and operational GMs 'locking horns' but keeping each other honest.

Assurance process

EQC progressively enhanced the level and types of surveillance activity it had in place to monitor EQR's performance. This included site audits, reviewing EQR investigation reports, fortnightly meetings between the respective health and safety managers, review of PCG reports and external audits against the expectations schedule. EQC also retained the right to see and sign off on any changes to the EQR health and safety management system and policy or procedure changes.

EQR had a performance target to complete certain numbers of site audits and they typically reviewed over 20% of active sites each month, adopting a thematic approach, and 50-75% of

asbestos sites. The results of these audits were tracked to identify patterns and trends of non-conformances that then informed the selection of the following month's theme.

Expectations Schedule Audits

One part of the assurance programme EQC had in place to monitor the performance of EQR was an annual independent audit of performance against the Expectations Schedule. The most recent audit in November 2014 found generally good conformance by EQR, but identified 4 fairly significant areas of non-conformance. This demonstrates the value of that process and of balancing internal assurance with external audit. This approach will be particularly important in enabling 'officers' of EQC to meet their new 'due diligence' duties under the Health and Safety Reform Bill.

Tonkin and Taylor

When the contract with T&T was renewed in mid 2014 an opportunity arose to put the relationship between them and EQC on a more formal footing with regard to health and safety. Using the experience of the EQR contract, a series of health and safety performance expectations were agreed and incorporated into the contract supported by an annual audit of T&T's health and safety management system and practices.

The expectations were:

- A Health, Safety and Environmental Management System has been developed and implemented
- Contractor Pre-qualification and appointment of contractors
- Site Specific Safety Plans are mandatory across T&T
- There is a system to ensure that high risk tasks are documented on a Task Analysis (TA) or equivalent
- There is a system for undertaking audits of contractors against health, safety and environmental compliance
- There is a system for issuing PIN/Strikes
- There is a system to ensure management co-ordination meetings are held
- There is a system to ensure that incidents and near hits are reported and recorded
- There is a system to ensure serious harm incidents are reported to regulatory authorities and EQC
- There is a system in place to ensure that T&T monthly report includes required details

When EQC audited T&T in February 2015 they found *'Further work needs to be done in six out of the 11 areas covered in our audit of the Expectation Schedule to ensure that all the health and safety requirements are fully met.'*

T&T report that they found the audit enlightening and that it revealed that their systems were disjointed and didn't cover everything they should. They responded by setting up a health and safety working group, employing a new health and safety manager and now have regular two monthly meeting with EQC purely on safety. They described health and safety as a top of mind issue now in all their dealings with EQC.

This demonstrates quite clearly that despite the low number of injuries reported by T&T and their obvious commitment towards safety, it is only when a proactive monitoring programme is put in place that the system weaknesses that could lead to a future accident are revealed.

Leadership and Governance

There were three accountability mechanisms in place surrounding the CHRP programme comprising the Project Control Group (PCG), EQC's CEO and Leadership Team and the Board and its Health and Safety Board Committee (HSBC)

PCG

A Project Control Group (PCG) comprising senior managers from EQC and FCC plus a representative from the Ministry of Economic Development (MED, later MBIE) met monthly from late 2010 to manage all aspects of the contract.

We have been unable to find the agreed Terms of Reference but in November 2010 a draft framework document proposed that the functions of a best practice project governance group should include:

1. A PCG made up of key decision makers focus on the important matters
2. Robust reporting
3. Clearly defined delegated authorities
4. Checks and balances such as independent audits and reviews.

It recommended that the PCG provide strategic direction and oversight and provide a forum where EQC and EQR can interact at the highest level, where FCC can report progress and the PCG can make strategic and policy decisions necessary to ensure the smooth running of the project.

Health and safety became increasingly important in the PCG's work. In May 2011 it was not mentioned, by August it was item 7 but from December 2011 it was item 2 after the report from the EQR GM.

In the early stages the PCG seems to have been primarily focussed on production and responding to the needs of FCC with limited ability to independently monitor or audit performance standards, including against the Expectations Schedule.

It took some time before the performance standards, key dates and milestones and underlying data collection and analysis mechanisms were put in place to enable most of these KPIs to be monitored with any degree of reliability.

The PCG minutes for August 2011 note, for example, '*EQR working on systems and procedures for health and safety. Aspirational and explicit expectations better aligned. Focus with contractors will be direction not detailed instruction in respect to applying H&S policies*'.

In March 2012 they note '*EQC is working with EQR on H&S protocols and this is progressing well. Investigations are starting to reveal underlying trends particularly around ladders. It was queried whether a global view is being taken of hazard identification. Recording of contractor*

incidents is underway, when accidents come to attention action is taken. Lot of discussion about trend analysis -trying to get contractors to report what they see as a negative.' (abridged)

There is evidence of substantial discussion by the PCG on a wide range of health and safety issues with increased levels of performance data being reported to them from early 2012 onwards. However interviewees report that the PCG was more an advisory than a governance group and tended to accept the information it was given by EQR rather than setting out clearly what its expectations were and exercising a challenge function.

By the end of this period the PCG was starting to review its own effectiveness. It noted some broader concerns about its performance and determined to change: '*To remove roadblocks; work at a strategic level; make effective decisions; avoid drifting into details; Board style construct with standing agenda items; Governance model not operational.*' The impact of these changes would be felt on health and safety as much as on other aspects of the PCG's role.

Executive Leadership Team (ELT)

We understand that health and safety was not routinely discussed by the ELT at its meetings until at least late 2011. As noted earlier there was a lack of full appreciation of the nature of the legal liabilities associated with managing health and safety in a major construction programme for some time after September 2010 whilst the respective roles of the PCG, ELT and Board in providing safety governance and strategic leadership were unclear leading, in some instances, to gaps and overlaps.

We heard comments from a number of interviewees that health and safety was not seen as a priority in the early days and that the production focus and political and media pressure overwhelmed senior management capacity to focus on 'non-core' issues.

The ELT was reported as being largely reactive on health and safety viewing it more as an HR and ACC issue rather than a key part of its operational management responsibility. This was reflected in the decision to position the National Health and Safety Manager role within Organisational Development rather than reporting directly to the CEO or to the Chief Operating Officer.

The ELT was largely lacking in commercial construction and project management expertise, other than the GM Customer and Claims. This may have inhibited its ability to take more of a leadership role in relation to safety early on and to appreciate the significance of the associated legal risk it was carrying.

In more recent times the amount of time spent on health and safety by the ELT has significantly increased, but in many instances, apart from issues associated with the asbestos

investigation and specific cases, this appears to have been a report back on discussions that had taken place at the PCG with no obvious value add.

Whilst overt leadership actions, such as safety tours, attendance at safety committee meetings and participating at key events are all positive our impression is that senior leaders in EQC have been open to initiatives suggested elsewhere rather than having an innate sense of what good safety leadership looks like. EQC has joined the Business Leaders Health and Safety Forum but its senior managers are not yet active participants in any of its programmes.

EQC Board and Health and Safety Board Committee (HSBC)

We have only seen a small number of papers or extracts from minutes relating to the EQC Board and the HSBC however interviewees report that health and safety was not a key focus for it until late 2011 and that its level of engagement increased as a result of the Pike River Royal Commission and the issue of guidance by MBIE/Institute of Directors in May 2013. As noted above there appears to have been a clack of clarity of its role viz a viz the PCG and EQC senior management.

There are a number of references to health and safety in the CE's report to the board however these are intermittent (nothing between March and October 2011) and appear to simply note what is going on without comment on what is being done about it. For example in October and November it was reported '*The CE noted that about a third of Fletcher's contractors will receive notice that they will not be given more work by Fletchers until they have an acceptable Health and safety strategy*' despite the requirmeent for a health and safety policy being a minimum requirement of the agreed prequalifcation process.

In December 2011 it was reported '*In terms of compliance, basic systems and processes are in place and all new staff and contractors are trained in their responsibilities. We are more vulnerable in the field and much more work needs to be done in this area, particularly in the monitoring of our PMO to ensure they are working to our expectations'.* This was followed by a note that a Safety and Wellbeing Manager was being recruited to help in this area.

However as late as June 2012 there still seemed to be some surprises as to the extent of EQC's legal liability with the board report noting '*It was confirmed that while the contractor is undertaking repair work in a private home for EQR, the home in effect becomes a work site and EQC is responsible for health and safety issues (not the homeowner).* '

The HSBC was established in 2013 as a consequence of the perception that health and safety needed a more strategic focus at Board level. Its Terms of Reference state that

The principal responsibility of the HSBC is to review and make recommendations to the Board on the appropriateness and effectiveness of EQC's Health & Safety strategy, performance and governance. The scope of this Committee includes (as Principal) the monitoring of health and safety performance in the Canterbury Home Repair Programme (CHRP)

For avoidance of doubt, the HSBC will have principal accountability for the oversight of all risks, audits and associated actions related to Health and Safety at EQC.

Whilst the HSBC did have oversight of what activity was taking place within the CHRP programme, and made a point of visiting EQC offices and worksites, our understanding is that it was primarily the recipient of information rather than having a strong governance role-for example commissioning its own external advice or reviews. Moving forward the verification role of boards and officers of a PCBU described in the new Health and Safety Reform Bill will encourage a more proactive approach.

Risk Management

Health and safety is not currently part of the overall EQC strategic risk register, other than by inference under the heading Legislative/Regulatory Exposure. This impact is strongly linked to reputational risk and loss of confidence in EQC's management of the programme. The description of the risk is around the magnitude of the breach rather than by reference to the actual or potential severity of injury to a worker or member of the public. Whilst a separate Health and Safety Risk Heat Map has been developed and is reported on in detail to the HSBC this seems to sit on its own with no explicit recognition of the inter-relationship between health and safety and wider organisational performance.

We note that in the most recent report the risk descriptors are still predominantly focussed on EQC staff and customers with the one reference to EQR and its network of contractors under the Workplace Safety risk stating simply 'Managed by EQR'. This confirms our concern that there despite legal advice there is still some uncertainty over who is actually responsible and accountable for the most significant area of operational risk management.

Internationally there is a move to adopt a more holistic, enterprise wide approach to risk management (based on ISO31000) which views the impacts of business decisions across the spectrum (people, product, process, profit, reputation, customers, environment, etc.) rather than looking at each in isolation.

We **recommend** that EQC Incorporates health and safety as a specific element of its strategic risk matrix.

Risk Description		Current Risk	Overall Control Status	Overall Treatment Status
Failure to provide adequate safety arrangements on the job could cause fatal risk accidents and injuries which may result in loss of life, or serious illness requiring hospitalisation, medium to long term effects, increase in EQC costs/fines and damage reputation.		High	Effective	Ontrack to meet plan
Control Description	**Control Owner**	**Comments**		**Control Effectiveness**
Safety leadership	Ian Simpson	Pending confirmation of new legislation to ensure managers and leaders are aware of the requirements and leading change.		Qualified
EQC H&S team of skilled and experienced H&S Practitioners supported by H&S Committees at each site made up of business unit reps	[redacted]			Effective
H&S Management Systems Framework	[redacted]			Effective
Staff H&S / Induction Programme	[redacted]			Effective
Hazard Management incorporating identification, assessment & management of hazards and Standard Operating Procedures	[redacted]			Effective
Comprehensive incident (and hazard) reporting and investigation system	[redacted]			Effective
Selected staff (including H&S team) trained in advanced investigation techniques	[redacted]			Effective
Injury Prevention Initiatives (eg OfficeSafe and Safe6)	[redacted]			Effective
EQC employee participation programme	Lynda Jelbert			Effective
Monitoring of major projects (CHRP and T&T Land Improvement Trials)	[redacted]			Effective
Contractor Management Procedures	[redacted]	Managed by EQR		Effective
Hazard control strategies for high risk health hazards	[redacted]			Effective
H&S Site Compliance audits for CHRP	[redacted]			Effective

Figure 6: HSBC Report April 2015

Relationships with WorkSafe NZ

The role of the health and safety regulator in helping to shape and influence EQC's health and safety performance has been somewhat turbulent. Over the last 4 years the regulator has undergone major changes in its structure and personnel as it moved from Department of Labour, through Ministry of Business Innovation and Employment until it became a standalone Crown Agency, WorkSafe New Zealand, in late 2013. It established a dedicated Canterbury Rebuild Team in 2012 and progressively increased its frontline resources, including through secondments of inspectors from New South Wales.

Our enquiries suggest that at an operational management level there was a reasonable amount of engagement between senior safety and business leaders in EQC and EQR and the WorkSafe NZ Canterbury Programme Manager including with a series of trade breakfasts. All three parties were also represented on the Canterbury Rebuild Safety Charter group. WorkSafe sector leadership staff from Wellington worked closely with EQC and EQR on the Working at Heights policy in 2012 but as far as we are aware WorkSafe has never systematically reviewed the health and safety management approach of EQC and EQR in order to provide guidance and direction of their efforts. Instead seemingly random inspection and investigation visits took place and there was a major regulatory investigation launched from WorkSafe NZ's Head Office in Wellington into possible asbestos contamination of homes and risks to householders as a result of a concern raised at a public meeting.

This investigation and the threat of prosecution went on for well over a year with several senior staff members from EQC (including the CEO and National Health and Safety Manager) being interviewed under caution. Inevitably this coloured the relationship and made if problematic to engage openly with WorkSafe NZ and to work in a more collaborative manner. There was also some mistrust and confusion as to when and how WorkSafe NZ were engaging, educating or enforcing and some blurring of the lines between who was doing what.

In our view this piecemeal approach was a missed (or at least underutilised) opportunity by WorkSafe NZ that in turn probably led to a more defensive attitude on the part of EQC to the regulator than was optimal.

We **recommend** that as a precursor to any future event EQC seeks to establish an on-going strategic relationship with WorkSafe NZ (CEO to CEO) so that there is much greater clarity around expectations and an agreed mechanism for issues to be raised and resolved in a non-confrontational manner during critical phases of a post-event response.

Relationship with other Insurers/Clients and PMOs

As far as we have been able to establish, other than a meeting between the HSBC and the Chair and CEO of Southern Response in May 2014, there has, until recently, been little contact between EQC and other clients –whether residential property owners such as Housing NZ, other social housing providers, private insurers and their PMOs to establish common approaches to working in the residential sector. Given that all these groups are engaging with the same cohort of contractors it would make sense, in our view, to have attempted to develop common health and safety standards that were applicable across the residential rebuild and which would make it easier and reduce compliance costs for contractors working with more than one client or PMO.

EQC/EQR have put considerable effort into accreditation of asbestos surveyors and removalists and raising the standards of control. However we understand that few if any other clients/PMOs have utilised this approved list and hence either there is duplication of effort or, more likely, contractors not willing or able to meet the CHRP standard end up working for others. We were told that other PMOs were happy for EQC/EQR to have been the centre of WorkSafe NZ's attention as it 'took the flak off them".

Ideally the regulator would have a role in creating such connections, however their limited resources have been directed at the Charter group that covers all aspects of construction in Canterbury. We were told that CERA attempted to set up a whole of government working group on health and safety in Canterbury about 18 months ago however this never got off the ground.

We **recommend** that EQC as the 'lead insurer' involved in most domestic properties takes the initiative to develop collaborative arrangements with the other stakeholders in the residential sector.

A whole of Government approach?

CERA was set up to exercise a whole of Government function in relation to the Canterbury rebuild. SCIRT was a consortium of infrastructure providers set up to manage complex remediation work involving multiple services.

A radical suggestion that we think is worthy of consideration is that for a future major event public sector agencies involved in residential property work together to form a standalone client body to act as a single purchaser to contract one or more PMOs to deliver the whole residential repair and remediation programme. Construction project management skills could be drawn from the public and private sector and draw on the expertise of other agencies such as NZTA or Transpower who are used to managing multi $m projects and have the required procurement and project management expertise and systems. Such an approach would allow

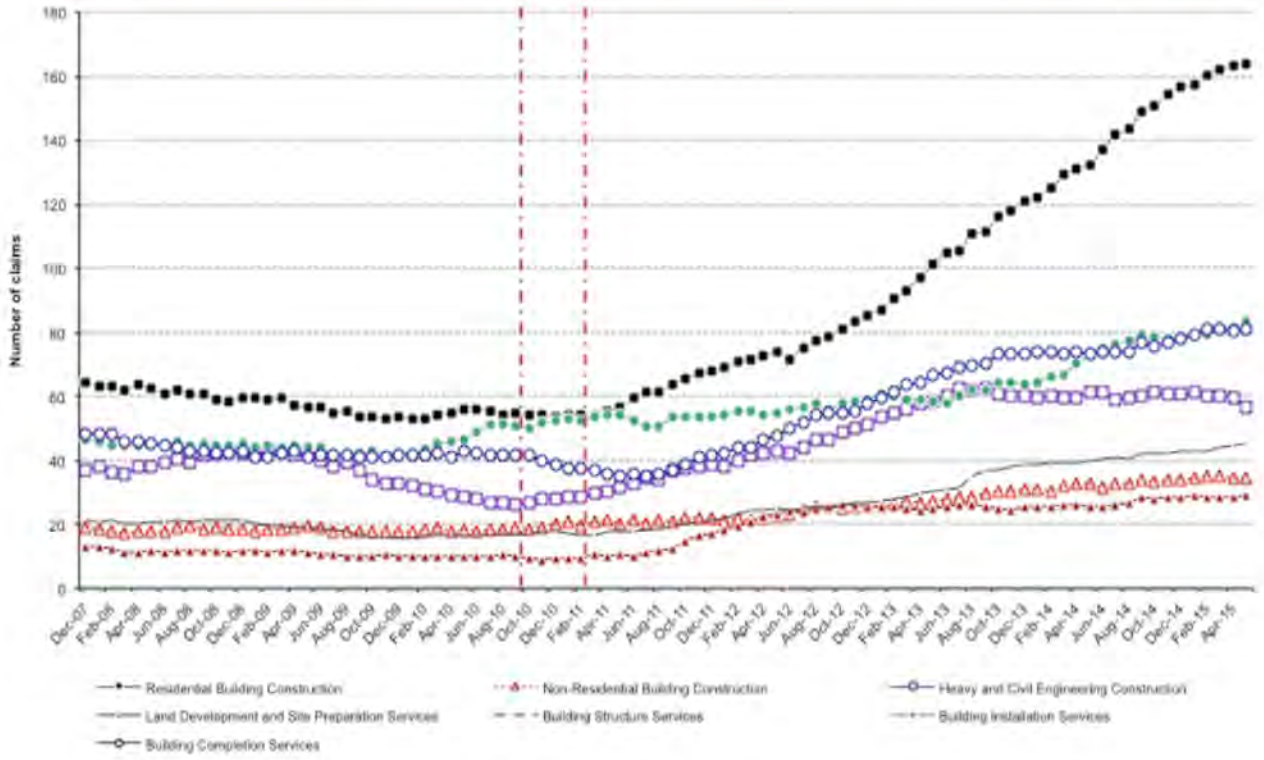
EQC to focus on its core role as an insurer and claims manager and further distance itself from the delivery of repair work.

We understand a wider review of EQC's future operating model is currently underway and trust that the issues discussed in this report will be considered along with the emerging findings from that review.

How well did the programme perform?

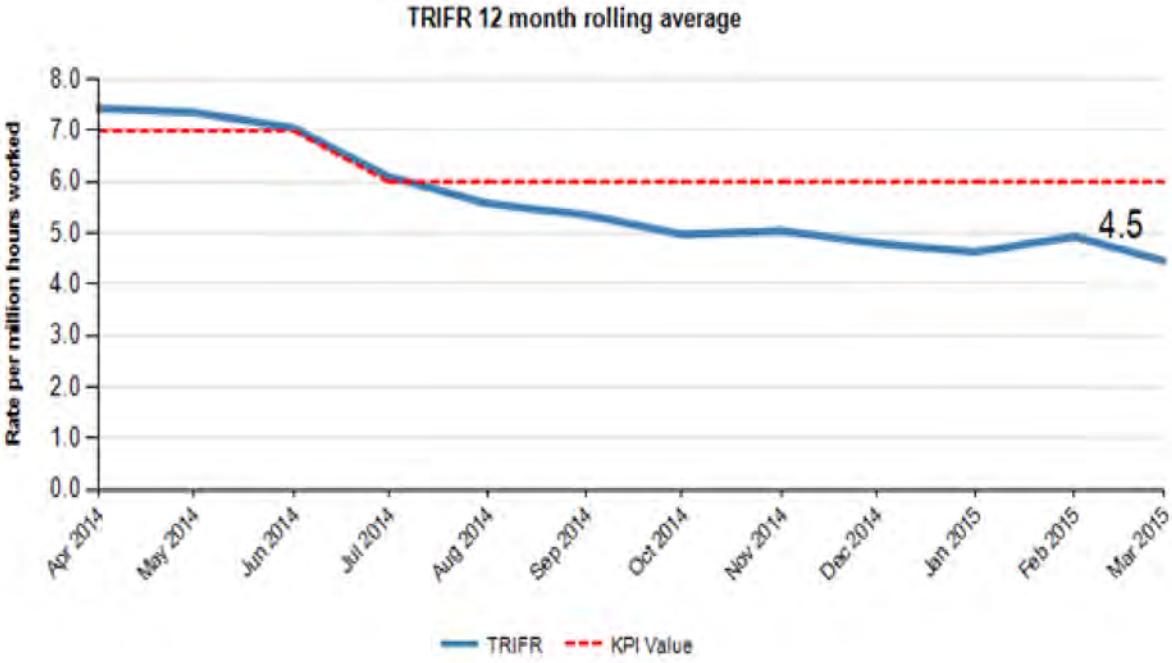
The residential construction sector is notoriously poor at reporting injuries to WorkSafe unless they are particularly serious; therefore historic data are of limited value. ACC claims data is more reliable and as can be seen in the graph below shows a significant and sustained increase in new claims from those working in the residential construction sector in Canterbury from the time of the second earthquake onwards. Whilst ACC does not report claims rate data, Statistics NZ indicate that the number of construction workers in Christchurch has increased 50% from 2006 to 2013 whilst the number of claims has risen >150%.[11]

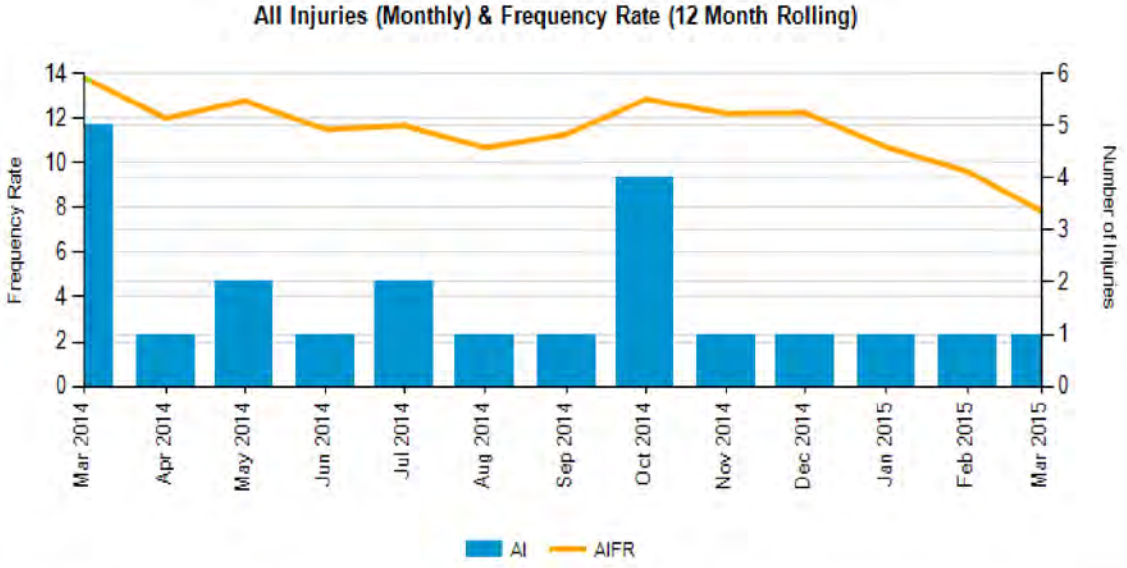
NUMBER OF NEW CONSTRUCTION CLAIMS
(12 MTHS MOVING AVG) IN CANTERBURY BY INDUSTRIAL SUBGROUP: DEC 2007 – MAY 2015



Against this backdrop the performance of EQC/EQR is quite startling with a 40% decrease in total recordable injury frequency rate in the 12 months to March 2015 and only 3 serious harm injuries in the past 2 years with no fatalities. The latest TRIFR rate is down to 3.8/1,000,000 hours worked.

[11] http://www.acc.co.nz/PRD_EXT_CSMP/groups/external_ip/documents/reports_results/wpc138177.pdf, http://www.stats.govt.nz/Census/2013-census/profile-and-summary-reports/quickstats-about-greater-chch/work.aspx





AIFR = All injury frequency rate which includes First Aid Injuries and above;

These figures, while impressive, disguise the real successes achieved on CHRP. As one person put it *"I'm proud of what we achieved. We made safety real for small builders and watched them improve over time. More importantly we saw them get the connection between good safety and overall business performance. That will be the greatest legacy that they will hopefully take away from CHRP."*

Conclusion –What we learnt

The events in Canterbury were exceptional, sudden and at the very limit of what a small country like New Zealand could respond to with an estimated final cost of 10-15% of GDP. EQC was responsible for paying out about 25% of the total cost but far and away the greatest number of individual claims and properties. The complexity of managing such a volume of small claims and mobilising a workforce over such a distributed number of worksites was unlike any other similar project.

Mistakes were made and the project had to learn quickly as it went along. By and large it did so and fortunately from a health and safety perspective the initial casualty toll from the February 2011 earthquake was not added to, to the extent that had been forecast. We noted at the outset that this was due in part to a measure of good fortune, however on reflection it was probably more than that. Builders who were used to working in a particular way and had learnt coping strategies continued doing what they had always done. Progressively they were coached into inherently safer ways and with more structure around planning and risk assessment. In effect making explicit what was implicit. In areas such as asbestos the learning curve was steep.

What worked well was the adoption of a practical hands on supportive approach that sought to educate and inform –most obviously through the excellent presentation of the Safe6 resources and training sessions. EQR advisors worked from the hubs and had the opportunity to build relationships with the contractors rather than just coming in and waving a big stick.

The biggest single benefit of CHRP was that safety was no longer uncompetitive. Contractors could use scaffolding or purchase podium steps without having to worry about losing a job for a few $$. The perceived stigma or barriers to changing long established working practices were progressively removed to the extent that for some (many?) contractors a new 'normal' has been established that will go with them on future jobs outside of CHRP.

Safety has been highly visible across Canterbury and on almost every street corner so that public consciousness of good practice is higher and aberrations stand out more clearly and hence are easier for the regulator to spot and target.

The purpose of this report is not to apply 'a counsel of hindsight perfection' but to provide insights that in another time and place and for a different type of event may help avoid

"He pai te tirohanga ki nga mahara mo nga raa pahemo engari ka puta te maaramatanga i runga i te titiro whakamua."

It's fine to have recollections of the past but wisdom comes from being able to prepare opportunities for the future.

repeating some of the same mistakes.

Appendices

Interviewees

- Sir Maarten Wevers, Chair EQC
- Russell Black, Chair HSBC, EQC
- Ian Simpson, CEO, EQC
- Heather Stewart former GM Organisational Development, EQC
- [redacted], Health and Safety Manager, EQC
- [redacted], former HR Manager, EQC
- [redacted], Compliance Systems Manager Fletcher Construction and EQR
- [redacted] former Health and Safety Manager, EQR
- [redacted], CHRP Programme Manager, EQC
- Shamus Wallace, Tonkin and Taylor
- John Leeves, EQC Client Manager, Tonkin and Taylor
- [redacted], Project Manager Tonkin and Taylor
- [redacted], Field Team Leader, Tonkin and Taylor
- [redacted], Land Damage Assessment Manager, Tonkin and Taylor
- Reid Stiven, former Canterbury Event Manager, EQC
- Bruce Emson, former GM Customer and Claims, EQC
- David Petersen, former GM, EQR
- [redacted], GM Legal, EQC