

Lessons learned from one of New Zealand's most challenging civil engineering projects: rebuilding the earthquake damaged pipes, roads, bridges and retaining walls in the city of Christchurch 2011 - 2016.

## Bill Perry Safety Award winners

**Story:** Bill Perry Safety Awards

**Theme:** Programme Management

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A document which summarises each winning Bill Perry Safety Award submission.

This document has been provided as an example of a tool that might be useful for other organisations undertaking complex disaster recovery or infrastructure rebuild programmes.

For more information about this document, visit [www.scirtlearninglegacy.org.nz](http://www.scirtlearninglegacy.org.nz)



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## BILL PERRY SAFETY AWARD WINNERS

Quarter Issued	Winner	Summary of Nomination
December 2011	City Care's Traffic Management Team	The award was based on the large number of recorded safety conversations the team was able to demonstrate an increased number of conversations corresponded to reducing the rate of injuries over a six month period.
1 <sup>st</sup> Quarter 2012	MacDow Fletcher	Awarded for the development of the "permit to excavate" process. Last year contractors and SCIRT (Stronger Christchurch Infrastructure Rebuild Team) agreed that there was room to improve after a number of excavations inadvertently struck key services. The MacDow Fletcher team was dedicated to revising this process and the results have been excellent with a big reduction in strikes.
2 <sup>nd</sup> Quarter 2012	Barrs Ltd Subcontracting to Fulton Hogan	<p>The centerpiece of Barrs' safety innovation package is a method of pressure-testing sewer main renewals from ground level. Specially-designed and resourced pneumatic plugs are lowered into manholes and inserted with a custom-made tool. The pressure test is controlled from ground level and the plug removed. Plugs are available to cover pipes from 100mm to 600mm diameter.</p> <p>This means that there's no need for workers to have to go into confined spaces and sewers. This new system developed by Barrs avoids the hazard, improves safety, saves time and eliminates any temptation for crews to short-cut tedious processes. Productivity is improved by cutting out lengthy preparation for confined space work.</p>
3 <sup>rd</sup> Quarter 2012	Geotechnics Pipe Monitoring Team Subcontracting to City Care CCTV	<p>Geotechnics trailer has eliminated the need to lift the pressure machine on and off the truck for each pipe assessment. It covers the manhole and provides protection to technicians from surrounding traffic as well as weather-proofing for work in all conditions. The team also designed an ingenious manhole hatch in the trailer's floor which eliminated the risk of slipping or falling down an open manhole. The handrails and non-slip floor surface are additional safety features.</p> <p>At the water-jetting end of the operation, the nozzle extension was redesigned to reduce the instance of "blowback" for a property owner. By designing a rigid extension, the nozzle is unable to bend into a private property lateral pipe, creating havoc as well as health risks.</p>
4 <sup>th</sup> Quarter 2012	Drain Surgeons – Subcontracting to City Care CCTV	The award recognises Drain Surgeons' focus on SCIRT safety targets and building a positive safety culture. Additionally, Drain Surgeons has

		introduced a number of safety innovations to eliminate or isolate workers from hazards – including a modified snowboard.
<b>1<sup>st</sup> Quarter 2013</b>	<b>Barrs Limited – subcontracting to Fulton Hogan</b>	Has received it for their continued effort of innovation in safety and staff health and wellbeing. They are influencing other subcontractors for example Ryan Contracting openly admit their work habits and attitude to safety has been improved as a result of Barrs mentoring. In a similar way they have supported a new one person operation company Enviroclean in buying new machinery for hydro excavation and pumping.
<b>2<sup>nd</sup> Quarter 2013</b>	<b>Fletcher Ltd</b>	Has received it for the program that they initiated after an ICAM investigation with Frank McCutcheon to understand and eliminate service strikes for their operations. They have developed a number of corrective actions from this process in particular they have a new electronic permit to excavate that will not allow you to continue until all steps have been completed – this can be used by other Delivery Teams who operate SharePoint or InfoPass 2010.
<b>3<sup>rd</sup> &amp; 4<sup>th</sup> Quarter of 2013: Awards not held</b>		
<b>1<sup>st</sup> Quarter 2014</b>	<b>Fulton Hogan – Bridge Street Bridge</b>	This challenging site to date has succeeded in achieving “Zero Harm – 20 months” this has resulted by demonstrating safety performance and embedding of the policy and procedures on site, contractor selection process included not just value for money but their commitment to safety. Open communication with their contractors working on site agreeing on the methodologies to be carried out inclusive of inspecting the pier head and piles for damage working with the river/estuary tidal conditions, jacking of the bridge and demolition of the western abutment (bridge deck).
<b>2<sup>nd</sup> Quarter 2014</b>	<b>Downer 11104 &amp; 11061 CBD Catchment South</b>	The teams on this site have spent a lot of time and energy focusing on “working around services”. Key areas to their progress has been improving and developing new processes, implementing new initiatives, tracking performance and sharing their lessons learnt.
<b>3<sup>rd</sup> Quarter 2014</b>		
<b>4<sup>th</sup> Quarter 2014</b>	<b>Downer – Telescopic Leg Edge Protection Device</b>	the team worked together to come up with a cost effective solution to improve safety and awareness around excavated trenches in terms of fall and edge protection.

1 <sup>st</sup> Quarter 2015	No Nominations received	
2 <sup>nd</sup> Quarter 2015	City Care Ltd	<p>Training and Development Facility - An obstacle course about safety Crews can learn about potential risks on a construction site in a safe and controlled environment at the City Care training facility. City Care developed a range of training modules in consultation with experts and from lessons learnt in previous events to help improve safety.</p> <p>The training facility balances theoretical and practical hands-on learning. First, safe practice is taught in a classroom environment. Then trainees go out on the physical course, a series of mock construction sites, to put what they've learnt into practice.</p>
3 <sup>rd</sup> Quarter 2015	No Nominations received	
4 <sup>th</sup> Quarter 2015	McConnell Dowell	<p>An initiative from this project has been the use of an automated (robotic) hydro excavation tool to replace hand held lancing within a confined space. The robots hydraulic and articulated arm, can reach as far as three metres into horizontal, vertical and overhead areas and its use has enabled a significantly safer working environment for the team.</p>
1 <sup>st</sup> Quarter 2016	City Care	<p><b>City Care Delivery Team</b> for winning the March 2016 SCIRT Bill Perry Safety Award for their 'Good to Go - Working Safely Around Services' video and supporting reference guide developed for their internal teams and sub-contractors.</p> <p>Service strikes are a critical risk across the SCIRT program and City Care identified a need for a better communication medium in this important area. Field teams worked with management to develop the idea of a video and guidance material which was deployed across City Care teams and subcontractors.</p> <p><b>Improving processes</b></p> <p>A professional film company was engaged and City Care sites, crews and equipment were used for the filming. The video was based on the working around services guide, using the same sequence of steps on a real task in the field. The video and presented via supervision to each site with the Guide provided to supplement the video content.</p>

2<sup>nd</sup> Quarter 2016

Fletchers

### ***Sustainability***

The material developed has been shared with the other SCIRT Delivery Teams and the video is to be put on line in the ECan Builders Pocketbook Guide site. The video can also be viewed on You Tube

<https://www.youtube.com/watch?v=2maRcxFQ0go>

### **Self-Performing Team – Gloucester Street Bridge**

Mobile work platforms developed for work on the Gloucester Street Bridge. Initially traditional scaffolding was intended to be used for access under the bridge however work was to involve removing lead based paint and repainting plus the risk assessment process also identified the risk of flooding.

It was decided to create four mobile work platforms to slide together under the bridge for people to safely work upon.

The platforms had built in kick boards as well as safety rails around the edges; and to remove the risk of flooding in areas of the city the platforms can be removed each day or in bad weather. They were designed to collect any environmental contamination from entering the river, which has been identified through risk analysis as a high risk in this area. Initially the mobile platforms were built on wheels, however after tests they became problematic when the tyres lost air and were time consuming to reflate. The second platform was built on rails this made it quicker to move the platforms and more efficient for work to be performed. Regular inspection of the bolts holding the platforms together is a part of the crew's daily maintenance checks via plywood box outs.

### ***Improving processes***

The use of these mobile work platforms allows work to be undertaken in a safe and environmentally friendly manner in areas of the city and the platforms can easily be removed each day or in bad weather.

### ***Sustainability***

These mobile platforms on rails would be beneficial for any work in flood risk areas as on a time test, taking 20 minutes to be removed out of the

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Avon River at the Gloucester Street Bridge, and also have proven to be safer to remove than traditional scaffolding.

**3<sup>rd</sup> Quarter 2016**

McConnell Dowell

They have developed a Guide for Managing Risks From High Pressure Water Jetting / Hydro-Excavating and subsequently led the tactical group representing hydro excavation companies to develop the SCIRT Delivery Guideline for Working Safely at Heights during Hydro Excavation.

Key areas covered in the SCIRT Guidelines are:

1. Pre-Service and Operational Checklist
2. Risk Assessment Controls for Working at Heights during Hydro Excavating
3. Processes for Potholes, Service Slot Trench, Trench, Excavations

**Improving processes**

There were not current best practice guidelines available from WorkSafe or Industry for the critical risk area of hydro excavation. Initially ownership was taken by McConnell Dowell to develop their guidelines and this was used as a basis for the SCIRT document with the latter being developed by a working group, led by McConnell Dowell with engagement with support from the SCIRT Safety Leadership Group and hydro excavating companies

**Sustainability**

These are now SCIRT and national McConnell Dowell Guidelines and now each SCIRT site completes a customised pre-service and operational checklist prior to hydro excavation commencing.