Resilience Tested
A year and a half of ten thousand aftershocks

Erica Seville
Chris Hawker
Jacqui Lyttle
# Table of Contents

Table of Contents ............................................................................................................................................. 3  
Table of Figures .................................................................................................................................................. 5  
Foreword ............................................................................................................................................................... 7  
1. Introduction ....................................................................................................................................................... 8  
   When it all began ... 4 September 2010 ................................................................................................................ 8  
   *The importance of exercises* ........................................................................................................................... 11  
2. Our big one ... 22 February 2011 ...................................................................................................................... 12  
   Our big one ... 22 February 2011 ...................................................................................................................... 12  
   *The earthquakes keep coming...* .................................................................................................................... 15  
3. Key decision points ............................................................................................................................................. 18  
   5.1 Closing the University ................................................................................................................................. 18  
   5.2 The building assessment process ................................................................................................................... 21  
   *The 5 Step Building Assessment Process* ...................................................................................................... 24  
   *Understand building vulnerabilities in advance* .......................................................................................... 25  
   *Animals on campus* ...................................................................................................................................... 26  
   *Retrieval of personal items* ............................................................................................................................ 27  
   *Health and safety during the response* ........................................................................................................... 28  
   5.3 Communicating strategically ......................................................................................................................... 32  
   *Dealing with the media when in shock yourself* ............................................................................................ 34  
   *Today’s good PR is tomorrow’s issue that won’t go away.* ........................................................................... 37  
   *Thankfully our IT kept working...* .................................................................................................................. 39  
   5.4 Restarting teaching ....................................................................................................................................... 40  
   *The importance of clearly articulated priorities* ............................................................................................ 40  
   *Teaching in tents – a student perspective* ...................................................................................................... 43  
   *Online learning systems – panacea or Pandora’s box?* ................................................................................. 45  
   *Students did not want to study in isolation* .................................................................................................... 47  
   *Books on the floor (again)* ............................................................................................................................... 48  
   5.5 Building the villages ..................................................................................................................................... 51  
   5.6 Student engagement and retention initiatives .............................................................................................. 53  
   *Student accommodation* .................................................................................................................................. 55  
   5.7 Exchange programmes .................................................................................................................................. 56  
   5.8 Graduation ...................................................................................................................................................... 57
5.9 Commitment to the second semester start date .................................................. 58

6. Leadership, governance and management .......................................................... 59
   6.1 Emergency powers and governance ............................................................... 59
   6.2 Leadership and decision making ................................................................. 60
      Potential fracture planes .................................................................................. 62
   6.3 The transition from response to recovery ...................................................... 63
   6.4 The Recovery Manager role ......................................................................... 65
      Learning from the experience of others .......................................................... 65
   6.5 The critical role of the students’ association ................................................. 67
      Student Volunteer Army ................................................................................ 69
   6.6 It’s not just about us – providing support to others ...................................... 71

7. Impacts on people and teams ............................................................................. 71
   Develop a ‘return to work’ strategy ................................................................. 75
   Earthquake leave .............................................................................................. 76
   Having alternates mattered ............................................................................. 77

8. The process of renewal ....................................................................................... 78
   8.1 On-going risks .............................................................................................. 79
   8.2 Financial stability .......................................................................................... 79
      Keeping the financial systems working .......................................................... 84
   8.3 The need for strategic choices ..................................................................... 86
   8.4 Redevelopment of the campus .................................................................... 87
   8.5 Insurance claims and cover ......................................................................... 89
      Dealing with a large and complex claim ......................................................... 93
   8.6 Innovations and new opportunities .............................................................. 95
      CHCH101: Rebuilding Christchurch ............................................................... 95
      Researching the earthquakes ....................................................................... 96
      The CEISMIC project .................................................................................. 99

9. Still on our to-do list .......................................................................................... 101

10. Final thoughts .................................................................................................. 103

Summary of lessons learnt .................................................................................. 105
### Table of Figures

Figure 1: Shelving that collapsed in the James Hight Library during the 4 September 2010 earthquake. ................................................................................................................. 9

Figure 2: Active Shooter exercise. .................................................................................................................. 11

Figure 3: Just one example of damage within the central city........................................................................ 12

Figure 4: Map of earthquakes between 4 September 2010 and 4 June 2012 (Source GNS Science). . . . 16

Figure 5: Students with the March 2011 edition of CANTA magazine. .......................................................... 17

Figure 6: Pre-designed campus closed signs were quickly placed at all campus entrances. .................... 19

Figure 7: UC Urban Search and Rescue team during training. ................................................................. 20

Figure 8: The Commerce Building - one of our buildings whose fate is still uncertain. ......................... 23

Figure 9: The 5 Step Building Assessment Process applied by UC following the 22 February earthquake. .................................................................................................................. 24

Figure 10: UC Rescue team helping people to retrieve their personal items. ............................................. 27

Figure 11: Storyboard outside the James Hight Library describing the remediation work being undertaken on the building......................................................... 30

Figure 12: Screenshot of the UC Website on 24 February 2011. ................................................................. 33

Figure 13: Screenshot of the UC Earthquake Recovery Facebook page. ....................................................... 35

Figure 14: The Penguin Scale – the more penguins that fell off the shelf, the bigger the earthquake. .......................................................................................................................... 35

Figure 15: The penguins providing light entertainment during the response. ............................................. 36

Figure 16: Tribute on a monument at California State University Northridge remembering their response to the Northridge earthquake. ................................................................. 37

Figure 17: The 11:30am briefing.................................................................................................................... 38

Figure 18: Internal set-up of the teaching marquees. ................................................................................. 42

Figure 19: Live music in the InTENTCity 6.3 cafe. ................................................................................. 43

Figure 20: One class taking advantage of a nice summer day to teach outside. ...................................... 44

Figure 21: Books on the floor (again). ........................................................................................................ 49

Figure 22: Reshelving books in the James Hight Library. ........................................................................ 49

Figure 23: Construction underway on the Kirkwood and Dovedale Villages. ............................................ 51

Figure 24: Kirkwood Village under construction. .................................................................................... 52

Figure 25: Kirkwood village once completed............................................................................................ 52

Figure 26: Students off on exchange to Adelaide University. ................................................................. 56

Figure 27: Graduation Procession 2011. .................................................................................................... 57

Figure 28: Graduation Celebrations 2011. ............................................................................................... 58

Figure 29: UC Vice-Chancellor, Communications and External Relations Director and Deputy Vice-Chancellor discussing messaging during the response. ........................................... 61

Figure 30: The new Student’s Event Centre built following the earthquakes........................................... 68

Figure 31: Students gathering to be deployed as part of the Student Volunteer Army. ................................ 69

Figure 32: Student Volunteer Army awarded ANZAC of the Year for 2011. ............................................. 70

Figure 33: EFTS forecasts included in the draft Business Case for Support (as assessed in October 2011; the situation continues to evolve). ............................................................. 81
Figure 34: Revenue forecasts included in the draft Business Case for Support (as assessed in October 2011; the situation continues to evolve). ................................................................. 81
Figure 35: Expenses forecasts included in the draft Business Case for Support (as assessed in October 2011; the situation continues to evolve). ................................................................. 82
Figure 36: Operating surplus (deficit) forecasts included in the draft Business Case for Support (as assessed in October 2011; the situation continues to evolve). ................................................................. 82
Figure 37: Capital expenditure forecasts included in the draft Business Case for Support (as assessed in October 2011; the situation continues to evolve). ................................................................. 83
Figure 38: Funding the surplus shortfall graph included in the draft Business Case for Support (as assessed in October 2011; the situation continues to evolve). ................................................................. 83
Figure 39: The Undercroft which has been redeveloped following the earthquakes from a cold and draughty bike storage space into a social hub on campus. ................................................................. 88
Figure 40: Adjacent to the Undercroft are several new cafes and restaurants. ................................................................. 88
Figure 41: Building decision making framework. ............................................................................................................. 89
Figure 42: Replacement of heavy ceramic ceiling tiles from a lecture theatre ................................................................. 90
Figure 43: Insurance premium and deductible changes over time ....................................................................................... 91
Figure 44: Typical damage found in offices. ..................................................................................................................... 92
Figure 45: Researchers out in the field capturing perishable data on the earthquakes’ effects. ............................................ 97
Figure 46: Researchers helping to create liquefaction maps. .............................................................................................. 97
Figure 47: UC CEISMIC webpage. ................................................................................................................................. 100
Figure 48: Snow on Okeover House during the 2012 snowfall. ............................................................................................ 104
Foreword

Since its founding in 1873 with an establishment of four academic faculty members and less than 70 students, staff and students at the University of Canterbury have pursued knowledge relentlessly, passionately and successfully. Research and teaching in Christchurch had been conducted against a backdrop of tragic wars and harsh economic depressions, disruptive relocations and shortages of facilities and funds, yet the University expanded its scope and scale so that during 2010 it employed more than 2,000 full time equivalent staff, offered 60 plus programmes of study to nearly 19,000 students using 260,000 square metres of space on 87 ha of campus. It was ranked among the top 200 universities in the world overall and among the top 100 universities in a range of disciplines\(^1\).

Seismic activity in September 2010 had closed the University for two weeks but with careful planning, resourceful staff and flexible students, end of year examinations were completed as scheduled and graduation took place in the Christchurch Town Hall in December 2010 as planned.

As the University commenced the first week of its 138\(^{th}\) year, 2011, events unfolded that would reshape the City of Christchurch, its places, its people and its institutions in ways and at a pace only the passage of time will give perspective to. This is the story of how one institution in the city, the University of Canterbury, responded to the circumstances it found itself in. In part the work seeks to capture and protect the institutional knowledge of that year. It also seeks the self-analysis and reflection expected of an academic institution and in that critique we hope to create new and better insights about how to plan for, respond to and therefore mitigate the adverse impact of extraordinarily disruptive natural disasters, particularly earthquakes. The work also serves another of our primary responsibilities, to disseminate knowledge so others might benefit from our learning.

The University of Canterbury has a vision of People Prepared to Make a Difference – in the language of our indigenous people Tangata tū, tangata ora. 2011 was a year in which it was the people who made a difference and this is our story.

Rod Carr
Vice-Chancellor
University of Canterbury

\(^1\) QS World University Rankings
1. Introduction
On the second day of teaching for 2011, the University of Canterbury (UC) faced the most significant crisis of its 138-year history. After being shaken severely by a magnitude 7.1 earthquake on 4 September 2010, UC felt it was well along the pathway to getting back to ‘normal’. That all changed at 12:51pm on 22 February 2011, when Christchurch city was hit by an even more devastating event. A magnitude 6.3 (Modified Mercalli intensity ten – MM X) earthquake, just 13km south-east of the Christchurch city centre, caused vertical peak ground accelerations amongst the highest ever recorded in an urban environment, in some places more than twice the acceleration due to gravity.

The earthquake caused immediate evacuation of the UC campus and resulted in significant damage to many buildings. Thankfully there were no serious injuries or fatalities on campus, but 185 people died in the city and many more suffered serious injuries. At the time of writing, eighteen months after the first earthquake in September, Christchurch is still experiencing regular earthquakes. Seismologists warn that the region may experience heightened seismicity for a decade or more.

While writing this report we have talked with many different people from across the University. People’s experiences are different and we have not managed to talk with everyone, but we hope that by drawing together many different perspectives from across the campus that this report will serve two purposes; to retain our institutional memory of what we have learnt over the past eighteen months, and also to share our learnings with other organisations in New Zealand and around the world who, we hope, will benefit from learning about our experience.

2. When it all began ... 4 September 2010
The 4 September 2010 earthquake shook the people of Canterbury out of their beds and brought to an end a period of relative seismic quiescence that the region had enjoyed for many decades. At the time, it was the most damaging earthquake that New Zealand had experienced since the 1931 Napier Earthquake. The University of Canterbury was relatively well prepared to cope with the 4 September earthquake. We had a detailed and well-practiced Emergency Management Plan, a dedicated and well-resourced Emergency Operations Centre, and a Senior Management Team that was engaged with the emergency management planning process. Even with all this preparedness in place, the 4 September earthquake was a severe test of the University’s ability to respond.

The earthquake caused some structural building damage on campus, but most of the significant damage was to non-structural parts of buildings (cracked walls, broken windows, fallen ceiling tiles etc) and to building contents (shelving collapsing, furniture tipped over, office and laboratory supplies thrown about).
We were very lucky the 4 September earthquake happened in the middle of the night or we most likely would have had fatalities. Rows of library shelving collapsed onto each other like a line of dominos, whole lecture theatres had their heavy ceramic tile ceilings fall onto the seating below, chemicals were spilt in laboratories, and in our chemistry and physics building, pipes to a water storage tank on the roof had broken and water flooded down the stairwells. While the University had a policy of fixing all tall furniture to the wall, there were many cases of filing cabinets and shelving falling over, in some cases blocking access to the door.

![Figure 1: Shelving that collapsed in the James Hight Library during the 4 September 2010 earthquake.](image)

Across the Canterbury region, the earthquake caused significant damage to heritage and unreinforced masonry buildings but luckily, due to the timing of the earthquake, no one was killed and there were very few injuries. The Christchurch city centre was cordoned off from the public for approximately one week while structural assessments were completed, effectively ceasing all economic activity in the central business district of New Zealand’s second largest city. Throughout the eastern parts of the city, and north across the Waimakariri and Kaiapoi rivers, there was extensive liquefaction with water and sediment emerging through fissures in the ground. Many homes were damaged beyond repair and extensive damage occurred to underground water and wastewater infrastructure.

As soon as the earthquake occurred, UC’s emergency planning activated, with key personnel making their way (often along damaged roads and leaving behind badly damaged homes) to the University’s Emergency Operations Centre. By 6am, the Emergency Operations Centre was
fully activated and the process of damage assessment began. By about 10am it became clear that the ‘mess’ was bad enough that the University would not be able to open on the Monday; the decision was made to close the University for at least a week.

By the middle of that first week, significant progress had been made assessing building damage and cleaning up much of the mess, to the point where people felt confident the campus would be ready for teaching the following week. A major aftershock on the Wednesday morning however caused a rethink, and the decision was made to delay the start of teaching for a further week to give people more time to mentally process what had occurred and to prepare for the resumption of teaching and what would now be a condensed semester.

At the time, the 4 September earthquake felt like the largest event we ever expected to face, and people were rightfully proud of how we coped with it. We were also conscious of the need to learn and share our lessons with others. We prepared a detailed account of the 4 September earthquake and its impact on UC in a report which we welcome you to read:

**Shaken but not Stirred: A University’s Resilience in the Face of Adversity – the 4th September 2010 earthquake.** Written by Erica Seville, Chris Hawker and Jacqui Lyttle (April 2011). Available for free download from: [www.canterbury.ac.nz/emergency/resources.shtml](http://www.canterbury.ac.nz/emergency/resources.shtml)

**26 December 2010**

On Boxing Day, 26 December 2010, just when everyone was enjoying a long-awaited break to recuperate from the stresses of the past four months, a swarm of aftershocks almost directly below the Christchurch city centre caused power outages across the city. Several areas within Christchurch, including the retail heart of the city – the Cashel Street Mall, were evacuated causing major disruptions for retailers on one of the busiest shopping days of the year.

As UC was closed anyway over the Christmas break, the Boxing Day earthquake didn’t have a significant impact on University operations. What it did do, was to deprive already exhausted response staff of a needed holiday, as the Emergency Operations Centre was once again reactivated and all buildings were checked in time to reopen in the New Year.
The importance of exercises

Four years ago we had our Active Shooter exercise. Although prior to then we had ‘Emergency Plans’ in place, it would be fair to say that there was limited engagement at Senior Management Team level with that planning. Active Shooter became our turning point. During the exercise we put the Registrar (a member of our Senior Management Team) under significant pressure with mock media and other injects requiring urgent strategic decisions to be made. He came face to face with the realities of responding to a major incident. The following year, when a restructure saw the Registrar become jointly responsible for oversight of Emergency Management, he saw to it that the whole of the Senior Management Team had a standing meeting scheduled every quarter for doing emergency exercises.

![Figure 2: Active Shooter exercise.](image)

We have found these regular ‘what if’ scenario sessions very effective at getting people to think through the issues and to gather different perspectives on potential response options. Just the week before the September earthquake our Senior Management Team had worked through a snowstorm scenario which required them to consider, from a strategic perspective, when and how they might ‘close’ the University and what ‘closed’ actually means. Our Incident Management Team had previously looked at the same issue from the perspective of ‘how’ can you close a campus without gates. These discussions and preparation proved invaluable the following week when we had to do just that – close the University...
Following the 4 September earthquake aftershocks kept occurring and, of concern, they seemed to be migrating towards the city. UC had done some additional planning to cope with future aftershocks, however, no one was really prepared for what would happen next.

3. Our big one ... 22 February 2011
Just under six months after the first earthquake, at 12:51pm on the second day of the first semester for the new academic year, at a time when the campus was at its fullest, a major earthquake struck the heart of Christchurch. On 22 February 2011 an unmapped fault ruptured approximately 13km south-east of the Christchurch city centre causing a magnitude 6.3 earthquake. The energy released by the fault rupture was directed north-west, almost directly at the heart of Christchurch city.

The 22 February earthquake killed 185 people. The majority of these deaths occurred in two buildings that collapsed in the Christchurch city centre (the CTV and PGC buildings). Others were killed by falling masonry, collapsing parapets from older buildings and rock falls. Several thousand people were injured throughout the city.

Whilst there were no fatalities or serious injuries on campus that day, 19 people with links to the University were killed by the earthquake.

![Figure 3: Just one example of damage within the central city.](image)
Throughout Christchurch almost all unreinforced masonry buildings suffered significant damage or collapse. The central city was immediately cordoned off and access guarded by the police and the New Zealand Army. This cordon has, at the time of writing, been in place for 14 months, although the area it covers is slowly reducing as building demolitions are completed.

Residential areas were again significantly affected by liquefaction and pervasive infrastructure damage presents an on-going challenge for the city. Approximately half of the city was without water for the first days following the earthquake and more than a third of households were without water for more than a week. Most of the city immediately lost electricity following the earthquake and five days later, just under twenty per cent of the city was still without power. The cell phone network, though relatively undamaged, was quickly overloaded. It was difficult to make cell phone calls for much of the first day, and text messages became unreliable, with many not being delivered for up to five hours after they had been sent.

A boil-water notice was in place for most of the city for six weeks due to potential contamination caused by severe damage to the wastewater system. The worst damaged parts of the city are now, 14 months later, still heavily reliant on chemical and portable toilets.

At UC, the 22 February earthquake triggered an immediate evacuation of the full campus. There could have been upwards of 15,000 people on campus at the time. The earthquake caused significant structural damage to several buildings on campus. The extreme levels of shaking experienced in the central city also caused a rethink by the University of how we would assess whether buildings were safe enough to reoccupy.

The timing of the earthquake, on just the second day of a new academic year, created additional vulnerabilities for the University, with a significant risk of ‘student flight’ as other universities around New Zealand had not yet started teaching for the year. Pressure was on to quickly assess the damage, estimate how long the campus might be closed for, and to find ways to keep students and staff engaged with UC.

The 22 February earthquake was in a whole different league to the September earthquake. The earthquake occurred when people were at work and away from their families. It also caused significant loss of life and injury and there was considerable psychological trauma for the whole of the community. The severity of the shaking in the city far exceeded what most buildings were designed for, causing significant and widespread damage. Many buildings that did not collapse were damaged to such an extent that they were/are uneconomic to repair. Latest estimates are that approximately 1,300 buildings (more than 60% of commercial buildings in the Christchurch central city) will require demolition. On the UC campus, which was further away from the earthquake epicentre and experienced less severe shaking, eight...
major buildings are still unable to be used 14 months after the earthquake and a further two buildings, assessed as seismically vulnerable, have been demolished. Negotiations are ongoing with insurers over whether the remaining closed buildings will be repaired or replaced.

From our experience following the September earthquake, we knew the damage to our buildings would not be resolved quickly. Remediation of the damage following September’s earthquakes was estimated to take at least ten years, if we wanted to ensure minimal disruption to teaching and research activities. The damage to buildings following the February earthquakes was much more extensive. It was important therefore to find ways to restart teaching and research with the spaces we had left. The University essentially followed a two pronged approach to this:

1) helping students to study elsewhere for the semester if they wanted to (so they would be more likely to return) and
2) the construction of temporary facilities (large marquees and two villages of pre-fabricated buildings) for activities displaced by the damaged buildings.

Teaching for the 2011 year restarted just three weeks after the 22 February earthquake, with a commitment from the University to deliver a full academic year for 2011.

With all of our best intentions, and even after what we had learnt following September, we still found holes in our planning. One manager talks about how he made sure that he had paper copies of staff contact numbers, including a copy in his backpack in case of evacuation, but when the time came there was no time to even grab this; it was a case of getting out as fast as he could – and the numbers were left behind.

February was also different from September in that there was a lot more uncertainty for longer. In September, by the end of the first week the crisis response phase was in effect over. We had a plan for restarting teaching, it felt achievable, and though we knew it was going to be tough, we also knew we would get through it. In February, the first two weeks were spent trying to understand what had just happened to us, and when a plan was formed to restart teaching, it was teaching in such a different environment to what we normally have, that there was very little ‘normality’ in it.

All of our emergency plans focused on the ‘short term’. We were now in an event where we knew the impacts and the recovery were going to last for many years, and we felt quite underprepared for that.

Nothing really prepares you for a disaster ... you just have to use it as an opportunity for growth.
4. The earthquakes keep coming...

Unfortunately every large earthquake generates its own swarm of aftershocks and the city continued to be shaken throughout 2011. Seismologists suspect that Canterbury has entered into a period of heightened seismic activity and that this could continue for several decades.

The impact of the ongoing aftershocks is significant. Soon after the September earthquake the University set a nominal threshold of a magnitude 5.5 earthquake for when we would consider evacuating and reassessing all buildings (magnitude being only one factor to consider, with distance, depth of source, ground conditions and any damage observed in our indicator buildings also important variables). In the 18 months since the 4 September earthquake our buildings have been reassessed on 29 different occasions.

While the probability of further large earthquakes continues to decrease with time, 15 months after the 22 February earthquake, scientists estimate that we still have a 47% chance of a magnitude 5.5 or above within the next year².

13 June 2011

Aftershocks of particular note were a pair of earthquakes (magnitude 5.6 and 6.0) that occurred in quick succession on 13 June 2011. Although these earthquakes did cause damage throughout the city, it was predominantly to ‘already damaged’ building stock. At UC we had a façade collapse during the second, larger aftershock on one of our buildings, which could have caused significant injury or possibly even death had the campus not already been evacuated.

The 13 June earthquakes had a demoralising effect on the community, triggering more liquefaction across the city to be cleaned up, and reminding people that the earthquakes weren’t finished for us yet.

For the University, the 13 June earthquakes were particularly significant because they struck just the week before the Semester 1 examinations period. The University was closed again for one week to enable all buildings to be rechecked.

A decision had been made earlier in the year to draw a line in the sand and, if at all possible, start Semester 2 on time; the rationale being that we couldn’t keep pushing everything back indefinitely. At some point we had to transition back to a normal university calendar. The 13 June earthquakes put this milestone in jeopardy.


From a business continuity perspective it is important for all courses to have a minimum level of independent assessment (e.g. tests), during the course. Otherwise there is nothing to base aegrotat assessments off.
A decision was made to condense the examinations period. This was achieved using a combination of options depending on the course and whether or not an examination was required. In some cases there was no final exam as sufficient academic material had been assessed during the course to determine a final grade. In some cases the assessment was changed from an exam to a take-home test. For courses where examinations were required, they were condensed into a shorter time period, with the addition of an evening exam timeslot. All students were eligible to apply for aegrotat applications – 4,500 were received and all were accepted.

These measures protected the mid-semester break and enabled Semester 2 to start on time.

23 December 2011

In the afternoon of 23 December 2011 a magnitude 5.8 earthquake struck approximately 20km east of Christchurch. This was followed by a cluster of significant aftershocks, the strongest of which was magnitude 6.0. Once again, people’s much-needed holidays were disrupted, with liquefaction affecting the eastern suburbs and buildings all needing to be rechecked prior to re-occupation.

Figure 4: Map of earthquakes between 4 September 2010 and 4 June 2012 (Source GNS Science).

Just before the 23 December earthquake we had been interviewing people for this report. “We are so looking forward to the holidays and the new year heralding a new beginning” was a
common theme being talked about. Once again, the earthquakes demonstrated they hadn’t finished with us yet.

As we write this...

Since the 23 December earthquakes there has been a period of relative calm in seismic activity in Canterbury. It is not something talked about though; people don’t want to tempt fate, and they know that earthquakes work over geological timeframes, where the space of a few months doesn’t even really register. There is a definite sense of stoicism within the community. People are tired and over-it; but not as much as you might expect given what everyone has been through. The people of Canterbury and the staff and students of the University of Canterbury have demonstrated a remarkable resilience in the face of a sustained period of adversity. As one colleague recently said “It is tough; I wish it hadn’t have happened, but this has also been one of the most interesting periods of my life.”

Figure 5: Students with the March 2011 edition of CANTA magazine.
5. Key decision points
In a prolonged event, which the Canterbury earthquake sequence has proved to be, there are so many steps along the road to recovery that we cannot cover them all. Instead we have decided to focus on nine key decision points in UC’s response and recovery; to talk about how and why those decisions were made, and how they influenced the recovery process. As a reminder, this report focuses on the 22 February 2011 earthquake and the year following it. For more details on the response to the 4 September 2010 earthquake, please see our earlier report *Shaken but not Stirred* (reference given earlier).

5.1 Closing the University
In many ways, the decision to close the University following the February earthquake was an easy one. Given our experience following the September earthquake, we knew the campus needed to be locked down and all buildings thoroughly checked before they could be reoccupied. The severity of the 22 February earthquake left little doubt in people’s minds that it was a significant event. People mostly self evacuated from campus buildings.

Our Emergency Operations Centre was activated within four minutes of the initial shake and was fully staffed by 1:30pm, just 40 minutes after the earthquake. We quickly learned of the serious situation in the central city, including the knowledge that some buildings had collapsed and that deaths had occurred.

Following the September earthquake, our Emergency Planning team had been concerned that our evacuation and notification processes were vulnerable to multiple points of failure. They worked hard through the latter part of 2010 and early into 2011 to identify safe evacuation routes, earthquake holding areas and an earthquake mass assembly area. Once these areas were clearly defined, debated and agreed, the next major task was to educate the University community about their locations. Emergency Evacuation Boards and pamphlets were widely distributed. An education programme was rolled out, including two staff seminars that were delivered on the morning of the 22 February.

Carparks were a hazardous place to be immediately after the earthquake, as people rushed to get to their cars and get home as soon as they could. Carparks should not be considered as an evacuation assembly area.
Figure 6: Pre-designed campus closed signs were quickly placed at all campus entrances.

On paper we were prepared when the 22 February earthquake struck; in reality, we were only partially ready. This was largely because of the timing of the event. It was day two of the first semester of the academic year. There were thousands of new students on campus with little or no awareness of their environment and next to no knowledge of the evacuation procedures and we were unable to ‘speak’ to them as we had no ability to broadcast instructions.

Initially the evacuation was individually motivated, with people self evacuating buildings. Once the shaking stopped, however, some people began to return towards their offices to retrieve personal items such as keys and cell phones. To prevent this, we triggered the fire alarms to enforce the evacuation of all buildings. We had emergency management personnel on the ground quickly, directing people through safe routes to mass assembly areas; however we found that we had insufficient personnel to make this effective.

Immediately after the earthquake many people were situationally unaware of their hazardous environment; walking slowly, somewhat aimlessly, and often with eyes cast down texting. It took the second major aftershock to make individuals take evacuation instructions seriously and follow the advice being given to quickly move away from buildings and into a safe location. Since the 22 February earthquake we have now set up a Community Support Group to ensure we have enough people on the ground to direct people where to go and provide advice and support during an evacuation. We have also planned, and will shortly be installing, an integrated safety and wide area broadcast system to enable us to communicate emergency instructions across the campus when necessary.
Once we had a reasonable idea that we didn’t have any major casualties on campus, our top priority became to ensure that there was no one left in the buildings and to lock them down. Our UC Urban Search and Rescue Team worked alongside Security to effect this. At that time we did not have any real understanding of the condition of our buildings and were on a much heightened alert knowing what had occurred in the central city.

Several people were trapped in lifts, including a diabetic who did not have his medication with him. Facilities staff helped get these people out as our lift contractors were unavailable, busy working within the central city area. We have since trained and certified some of our Facilities staff to rescue people from lifts in any future events.

In the heat of the moment, we missed a significant step in our response process. We were so focused on clearing buildings and checking no one was hurt, that we forgot the thousands of people who had congregated in our Evacuation Assembly Areas. It wasn’t until several weeks later when we heard people talking about being part of a crowd, uncertain of what to do next, that we realised that we did not provide sufficient communication to people that the University was closed and that they should make their way home if at all possible.

Never assume that the things you are doing are the top priority things to be doing. Particularly in the heat of an initial response, ensure that there is a prompt to pause, breathe and re-adjust your plan if necessary.

Even if we had remembered to get an immediate message out to our campus community, we would have probably struggled to do so.
In a community of some 20,000 people, it is difficult to get a message out quickly to people on the move. The city’s cellular networks failed within minutes of the earthquake, making locating people who did not have access to the campus digital radio network, very difficult. We had known that this would always be problematic, and the 22 February experience just reinforced our concerns and elevated our awareness of how vulnerable we were.

We are currently installing a Help Point system across the campus that is to be integrated with the building fire alarm system, so that people can contact Security directly from help points scattered across campus, and to allow messages to be broadcast across the campus. This Help Point system will be a very welcome – and we believe, necessary - addition to UC’s emergency preparedness priorities.

When the buildings were empty and our campus was clear, we were able to begin a reconnaissance of the campus to try and get some understanding of the damage we may have suffered and to identify any immediate dangers.

5.2 The building assessment process
One of the most significant decisions faced during the early stages of the response was, to what standard do we now check our buildings? In many ways this was our sit-down-and take-a-deep-breath moment. We initially started off using the same approach for assessing buildings as we had used in September, when one of our team raised concerns:

“We can’t do this. It isn’t safe, it isn’t manageable, and it is simply not realistic to think that we are getting this campus back within a few days.”

A meeting was held that afternoon between key members of the Incident Management Team and the Vice-Chancellor where the issues were presented and discussed at length. This was followed by a key meeting where we heard from leading geologists about what the future
might hold for earthquakes, and a senior engineer about what had happened to buildings in the central city – and the implications for our own buildings.

Following the 4 September earthquake the University had adopted the Civil Defence building assessment process that was being applied to buildings city-wide (applying red/yellow/green tags to buildings). Even before the February earthquake, however, some in our team were questioning whether this level of assessment was sufficient and whether the University should apply a more rigorous assessment process. This thinking was triggered by several things:

- Reasonable amounts of damage had been discovered in buildings after they had been reoccupied following the September earthquake, as detailed engineering evaluations took place, floor coverings were pulled up and wall coverings removed to check structural connections. Whilst none of the damage discovered was serious enough to mean that the building should not have been occupied, it did bring home to the team how much structural damage can be ‘hidden’ behind walls and underneath carpets; unable to be seen from a rapid visual assessment.

- The February earthquake saw buildings collapse (with significant loss of life) that had received green tags after the September earthquake. This raised an immediate question in people’s mind about what a green tag actually meant and whether those buildings had been green tagged correctly or in error. This discussion brought to the fore the focus of the tagging system on whether the earthquake caused structural damage to a building, and whether this damage made the building significantly weaker than before. The assessment did not explicitly address the strength of the building prior to the earthquake. This meant the assessment only partially addressed the question of a building’s capacity to withstand future large earthquakes.

- The February earthquake was much closer to the city. It produced significantly higher ground accelerations in the city than the 4 September earthquake. This challenged everyone to re-think their assumptions of a typical aftershock pattern – with a first large earthquake, followed by a pattern of ongoing, but less damaging, aftershocks.

With these concerns in mind, the building assessment team proposed a new assessment process to be implemented for all UC buildings, which went significantly beyond that required under the Civil Defence tagging system. This process was called the 5 Step Building Assessment Process. An outline of this process is shown on the next page.
A particular feature of the assessment process used by UC was the inclusion of step 2B. This step required the engineers to evaluate the building from the perspective of its ability to withstand future very large earthquakes. This step was particularly important because it highlighted several buildings on campus that, although they had not sustained major damage, were potentially vulnerable to significant damage or even potential collapse if the campus experienced severe shaking.

The initiation of the Five Step Process was a bold move by the University, which people knew at the time would likely slow the reoccupation of key buildings, and could have significant financial implications. Our more rigorous approach to building assessment, however, has served us well over time. To date we haven’t needed to urgently de-occupy buildings that have been initially declared as safe enough to occupy; something that has happened to many other organisations around the region.

Figure 8: The Commerce Building - one of our buildings whose fate is still uncertain.

It isn’t enough to think: “get the experts in and they will tell us what to do”. It took us a while to get our heads around the need to be sure that we were asking the right questions. The questions asked dictate the approach and assessment criteria used by structural engineers for evaluating whether a building is safe to occupy.
Phase 5: Compliance (Building Warrant of Fitness)

A formal documented process of checking that all building systems are operational and the issuing of a building warrant of fitness. This is governed by a process of inspection and sign-off by independent qualified engineers.

Figure 9: The 5 Step Building Assessment Process applied by UC following the 22 February earthquake.
Understand building vulnerabilities in advance

- In the first hour after a shake, the pressure is on to develop a sense of what the situation on campus is. Identify a selection of ‘indicator buildings’ that can be looked at within that first hour to build a picture of just how extensive damage might be across the campus. This information is very important from a safety perspective, to build a picture of how safe it is to send response teams in.
- Before the event, have all buildings assessed to identify which of your building stock is likely to be most vulnerable, and which parts of the building are points of weakness. This information is invaluable for structural engineers during the rapid assessment phase to be aware of the most likely points of damage. On a large campus, don’t wear out your key resource (your engineer) by checking all buildings on the first day.
- Have both paper and electronic copies of campus maps and structural drawing for all buildings in the Emergency Operations Centre or somewhere else readily accessible in an emergency.
- Seismic vulnerabilities are not just about the structural elements of the building (what is holding the building up). Non-structural elements of the building (such as ceiling tiles and window panes), services (electricity supply, fire-safety systems etc) as well as building contents (shelving, filing cabinets etc) also present potential life-safety risks and can cause a building to be non-occupiable. Any assessment of seismic vulnerability should include a review of these elements as well.

Each time the campus receives a major shake, the building assessment process needs to start all over again. To give a sense of the scale of the task, in the 18 months since the first earthquake in September, there have been 29 earthquakes that required a recheck of buildings on campus. With more than 240 structures on campus this task is complex and time consuming.

In February the building assessment process took much longer than in September, primarily because of the much more thorough assessment process applied. Since then, with each earthquake the assessment process has sped up significantly, to the point that following the June aftershocks all buildings were assessed within just four days of the earthquakes. Much of this increase in speed is due to the amount of pre-analysis undertaken on the buildings. Engineers now have all of the required information to hand instantly, with the most likely locations of damage pre-identified. These locations constitute our ‘indicator buildings’, which are the first sites to be checked following every significant shake.

As our demand for engineering resource escalated, so too did the challenge of managing that resource and ensuring quality control and a consistent approach to the assessment process. We appointed a consulting engineer we were familiar working with to act in a management
role as a head engineer; he was able to speak the engineers’ lingo but also understood where we were coming from in our response effort.

With so much practice, UC now has a highly refined and well-practised process for assessing buildings. There are ongoing pinch points, however, with key staff being much in demand. Detailed knowledge of the campus and its building stock is critical, and this limits our ability to simply throw additional people resource at problems by bringing in more contractors. Quantity does not necessarily translate into quality and/or efficiencies.

It was not just structural issues concerning the building assessment team. It also needed to rapidly understand the internal hazardscape within each building.

Following 22 February earthquake, all UC’s buildings were locked down and, in many instances, the power was off to equipment and storage fridges and freezers which could not be left in that condition for long without the contents suffering. Working with academic and technical staff was important to try to resolve these situations as far as possible, though inevitably not all damage could be mitigated.

**A University’s actual risk profile changes daily. Close relationships with laboratory technicians and managers are important for understanding what people were doing just before the earthquake, and therefore what concoction was sitting on the laboratory bench that now needs to be dealt with.**

Two significant challenges we had to work through were:

- how to deal with animals in buildings that had not yet been structurally assessed, and the potential life-safety risks associated with going into these buildings to either shelter these animals in place or to get them out, and
- retrieving personal items for people from buildings that had not yet been cleared for re-occupation.

### Animals on campus

It is important to plan for the possibility of having animals located in a building that is damaged. This means you don’t want people having to go into these buildings on a regular basis to feed and care for animals inside.

- Pre-plan if it is possible and practical to evacuate them, and where you will evacuate them to.
- Identify what the minimum requirements (feeding/cleaning) of the animals are to enable them to shelter in place.
- Have a plan for how you would euthanase any animals that needed it, how to deal with a disease outbreak, and how to dispose of any bodies.
Retrieval of personal items

When the earthquake occurred many people evacuated their offices immediately, leaving their car and house keys, cell phones, wallets and purses, and even in some instances, passports behind.

With the buildings placed in immediate ‘lock-down’, many people had to find alternative methods of getting to their homes and contacting loved ones to let them know they were safe; this created additional stress on everyone.

As the response progressed, pressure began to mount for the retrieval of personal items and a process was developed for retrieving and cataloguing items, using members of our UC Rescue Team. The number of requests did tax the system at times and the going was slow. We needed to have undertaken initial structural checks before the team members entered any building and an extremely robust sign in / sign out system was in place throughout so that we knew exactly where people were at any given time.

Figure 10: UC Rescue team helping people to retrieve their personal items.
Health and safety during the response

- Don’t be complacent: we were surprised by February, even though we had had our September wake up call. ‘*We thought we had dealt with it, we had done well, and it was over*’
- Acknowledge that it is normal to be tired and overwhelmed by an event such as this, and to plan for that to happen.
- Know your business. We had done a lot of prior work to understand our hazard environment but there were still surprises. Your actual risk profile changes daily. It all depends what someone was doing just before the earthquake and therefore what concoction was sitting on the laboratory bench.
- Identify those people who are your best set of eyes and ears. Choose your key contacts as those who are keen, have initiative and strength (though note people will surprise you – it takes a disaster to know people’s capabilities). Also know their personal circumstances – don’t plan to rely on someone who will most likely have to go home in a disaster.
- Develop a High Risk Response Team, a subset of your usual team that deals with hazardous materials on a daily basis, to be trained and ready to undertake rapid hazard assessments during the initial response.

There can be a natural tension between operations and health and safety considerations. Operations wants naturally to move ahead and get things resolved as quickly as possible and Health and Safety want to ensure that sufficient caution and consideration is undertaken to ensure the responders are kept safe.

It is logical, and some may say simple, that the health and safety concerns must be resolved before any activity is undertaken, however, this is not always so straightforward. Over the whole response process following February, we had numerous instances of when these two priorities did not align. For example, there was significant pressure to allow staff and students to collect important belongings (phones, wallets, passports, keys etc) from buildings during the first few days. This was an issue causing significant distress, as without these items people often couldn’t get home and didn’t have the phone numbers of family and friends to tell them they were okay. Whilst we stayed firm in our stance to only allow people to enter areas that had been identified as relatively safe, we later found that some of the areas we took people into on the basis of preliminary assessments were subsequently found to have structural concerns.

*It is worthwhile for Health and Safety team members and the Operational team members, in conjunction with the Incident Controllers, to spend time pre-crisis making sure each understands and agrees protocols which will be adhered to during a crisis.*
With the building assessment process in particular, there has been a huge ‘pull’ for information, both from those directly involved in the response effort and those in the broader campus community. At times, people have complained that information about the status of buildings was being withheld, and people were only being informed on a ‘need to know’ basis. Even within the Incident Management Team, frustrations developed that some were excluded from knowing the latest information. At the end of each day during the response, the 5pm meeting became the place where the building assessment team would download what they had found and plan the next day’s work. The meetings were held quite informally at the end of the day.

An 8:30am briefing was initiated to provide an update to the full Incident Management Team, highlighting any significant issues or changes that had emerged at the previous day’s 5pm meeting. This meeting, however, was often cancelled or key personnel were unavailable to attend. So whilst this approach was a great solution in theory, it created some communication challenges. With the benefit of hindsight, a written record of the discussions and key decisions from the 5pm working group was needed.

Adding complexity, the iterative nature of the assessment process meant that a building’s status sometimes changed daily. An initial concern about a building might be dispelled the next day as engineers went inside for a closer look; or a building that looked like it was going to be one of the first able to be reoccupied, might be suddenly pulled as the detailed assessments discovered hidden damage. This made it difficult to keep people up to date with the latest information and all the nuances of the assessment process.

Within the broader UC community there was frustration at the lack of information being released on the specifics of particular buildings. It is important to see this issue from several perspectives. From the Incident Management Team’s perspective, there was a real desire to be open and transparent about the building checking process. When it came to reporting specifics about particular buildings, however, very few details were released in the early stages of the response. The response team was caught out several times in providing early estimates for the programme for assessments and when buildings might become available to reoccupy; when these timelines shifted they were strongly criticised. This contributed to a reluctance to give any dates until the response team felt comfortable in achieving them.

For example, with the Commerce building, we initially said it might be able to be reoccupied by May. The detailed investigations then turned up more and more damage and the timeframes kept stretching out. Now it is uncertain if the Commerce building will ever be repaired, or if it will need to be demolished and replaced. There were also some sensitivities that a building might be incorrectly branded as ‘unsafe’ in the minds of students and staff because of a preliminary assessment which later turned out to be unfounded. An approach was therefore taken for details about particular buildings to not be released until they had been fully investigated and confirmed by the engineering team. This created a tangible sense of frustration for many staff, who felt they were purposefully being kept in the dark.
'There was a stance of ‘don’t say it unless it is true and final’; but in the moving sands of those first few months, nothing was final. They needed to, at the very least, signal the options they were exploring.'

There was even talk about some people not believing the engineering reports. One comment (paraphrased) from an academic staff member articulates the frustration:

"We are not stupid. We know all about the uncertainties of the situation. In my field, delivering projects with large uncertainties is just an everyday reality and there are project management techniques to help us understand and articulate that uncertainty. Uncertainty isn’t a good reason for not giving us any information. I don’t see why they can’t share with us their best estimate and bounds of uncertainty for key milestones in getting the campus back."

Whether these criticisms are valid or not, they do point to the University failing to bring staff along with it during its communications around the buildings availability issue. On the flipside, however, it is important to acknowledge that the scale of the task was incredible, with more than 240 separate structures needing to be prioritised and assessed.

**Timelines are really important, but they are also challenging to provide.** Often it isn’t an exact date people are looking for, but rather orders of magnitude – whether it is likely to be days, weeks, months or years before they can get back into their building.

As the recovery progresses, and the building assessment process continues, there are still regular questions over when decisions will be made over the fate of key buildings. In particular, the complexities of insurance negotiations have slowed decisions on whether to repair, retrofit or replace key buildings; a topic which is discussed in more depth later in this report.

With regards to the safety of particular buildings, there has been a conscious decision to not have any secrets and information is available to anyone who wants it; but it would be fair to say that the information is not nicely packaged up or easy to find if you go looking for it on our intranet and this is frustrating for some people. If you walk around the campus, there are few outward signs of which buildings are closed. Whilst some buildings have had Storyboards created, this has not been rolled out consistently across campus and is something several people raised as important to do.

---

**Figure 11:** Storyboard outside the James Hight Library describing the remediation work being undertaken on the building.
Something the University has done particularly well is to communicate with affected staff and students before a building is to be reoccupied. As an example, you can see one of our YouTube videos that show our Recovery Manager talking about the buildings assessment and reoccupation process at: http://www.youtube.com/watch?v=YLMIuF4hDXM.

Once assessment and remediation near completion for a particular building, advance notice is given to the proposed occupants of the building, offering an information and Q&A session on the building assessment process, and the specifics of that building in particular. These sessions included a presentation by our senior engineer on what actually happened to that building during the earthquake (how it moved, what damage it suffered), what remediation has been undertaken and why, and how the building should perform in a future large earthquake. People are able to ask the engineer directly about any concerns they have, including similarities of their particular building to ones that performed badly in the city, the significance of cracks etc.

People find it very important to be able to ‘look the engineer in the eye’ and ask them what they want to about their building. Although our engineering resource continues to be stretched, we have found talking with staff to be a very good use of our senior engineer’s time. People have tended to feel much more confident about their building when they know more about how it responds in an earthquake and have heard that from the engineer directly.

Although many people felt some initial discomfort at the thought of going back into tall buildings, we have only had one or two people to date who felt they really could not go back into them. For these people we have found them office space in a building they did feel comfortable going into.

Moving into recovery, there is ongoing pressure on our facilities management resources as they manage and oversee remediation activities, as well as their business-as-usual activities. The UC campus is likely to have significant levels of construction works for many years to come, and balancing the need for this work to be done quickly, whilst creating minimal disruption to ongoing teaching and learning will be a balancing act. From a Health and Safety perspective there are also challenges presented by the sheer number of external organisations and contractors coming onto site. Even though contractors are responsible for managing health and safety for their site, as the owner/lessee/agent, we are still statutorily responsible.
5.3 Communicating strategically

Very early in the response process, our leadership team made a conscious decision to invest a lot of effort in communications.

Based on what we had learnt from other universities who had faced disasters, we knew that we needed to communicate early, communicate regularly, and that our leadership team needed to be visible – to be the face of the institution.

A communications cycle was created with daily messages and pre-warning of when key announcements would be made (“we will have information to you by 6pm Wednesday”). These end-of-day communications were hugely beneficial, not only for getting information out, but also as a synthesis of key decisions made during that day. The 6pm deadline for messages however created significant workload for our Communications Team, and some ask if we created our own pressure to an extent. An example was the announcement of the date that the University would reopen. That decision was made at about 4pm, but it took until 8pm to get the message out as there was such a long message wrapped around it. While from the point of view of parents, the fullness of messaging helped allay their concerns, from a student’s perspective there was some frustration at 6pm messages slipping to later. In hindsight we should probably have got a short message out by 6pm to say when the University was reopening, and that more information would be provided the next day.

When decisions are made then communications are easy; it becomes much more difficult to decide what to communicate when the decisions haven’t yet been made.

As the response progressed, the messaging also became more complex. In part this was due to dynamics emerging within the Senior Management Team, which is a very large group with 16 members. Initially, during the command and control phase of the response, most of the messaging came from and was approved by the Vice-Chancellor. As we started moving into the recovery phase the communications messages became more diverse as other leaders tailored messages to their particular stakeholder groups. This had mixed results. To ensure consistency, each message required signoff but delays meant that by the time some messages were approved, they were no longer relevant. Our academic Pro-Vice-Chancellors in particular felt frustrated that they could not communicate formally with their staff without messages being vetted, and this made their task of providing

In such an ever changing environment, keeping staff informed proved challenging.

“By the time you heard something, and relayed it to staff, half the time the information would have changed and you would have to send out another message to correct the information.

“On the other hand if you slowed the communication down a bit to improve the quality of the information, people felt you were holding back from them, and the gap inevitably got filled by rumour.”
leadership to their staff that much more difficult.

Following the event staff identified the need for more personal and less structured communications such as telephone calls. While this was a communications strategy that had been identified early on, its ability to be implemented was hampered in some areas by lack of pre-organised telephone trees.

To start with, it is important for most communications to come from the Vice-Chancellor to provide visible leadership and coherence. As time goes on though, people want to hear from different voices using diverse channels. To provide consistency of message and yet still enable multiple levels of leadership, a potential solution may be to craft core messages which can be topped and tailed by other leaders. It is important to regularly evolve communications protocols to match changing requirements during the transition from emergency response into recovery.

Figure 12: Screenshot of the UC Website on 24 February 2011.
Dealing with the media when in shock yourself

Members of our Communications Team found that some of the first calls they received on their cell phones straight after the earthquake were from journalists. They knew the journalists personally and had worked hard to foster good relationships with them over many years.

“You are stressed, in shock, and the temptation is to talk to the journalist on the other end of the phone as you would to any friend who called you at that time; but it is important to remember that although they are your friend they are still after the sound-bite.”

There was also a distinct difference in approach between local and international media:

“We share a cultural vocabulary with home media; it is easier to read them. We both know the context and often we know the journalist personally. We found international media to be far more brazen; if we had casualties on campus we would definitely need to implement more stringent media accreditation and protocol arrangements.”

There were also many comments that our daily messages were unnecessarily long (emails of several pages in length were not uncommon) and many people stopped reading them over time. Our Communications staff commented that at the time they were so fatigued that they perhaps started to confuse content and meaningful content; and wish in hindsight they had taken time to step back and reflect. It may be helpful to identify a specific professional role outside of the Communications Team to help monitor quality assurance and ensure that the right communications disciplines are being applied – this is hard to do inside when everyone is caught up in the intensity of the situation. It is also important to develop a culture within the Communications Team where those in the team feel empowered to help shape the nature of the communication.

As well as daily website and email announcements, the University also made extensive use of Facebook and Twitter, as well as more traditional media sources of radio and print. With so many sources of information operating simultaneously, the University created a policy of its website as the single source of truth.

We found social media to be very effective, particularly in keeping staff and students engaged and interested, not only in what the University was doing, but also how it was going about reopening campus. ‘Distraction’ communications, for example about our toy penguins which were used as a measurement for how big an earthquake was (the more that fell off the shelf, the bigger the earthquake) helped to pass the time. Social media though was also a noose around our necks. It is a 24/7 operation and takes a huge amount of resource and energy to sustain. Facebook lacks administration tools, making it difficult to track, categorise and sort discussion threads into a more coherent format.
We did video pod-casts from the Vice-Chancellor throughout the response which worked well, but upon reflection the video production techniques we used were quite cumbersome, with a strong focus on quality which didn’t really reflect the spirit and fast turnaround required by today’s social media.

At times we also found ourselves chasing after trivia, almost trying too hard to answer each and every question. To make it sustainable perhaps we should have focused on the F of FAQs. Another challenge that we hadn’t anticipated was responding to the many emails coming into the generic UC email address (e.g. info@canterbury.ac.nz). We had a real challenge in knowing
who to forward these emails to – not knowing if the person normally responsible for that role was accessing their emails from home or not.

Figure 15: The penguins providing light entertainment during the response.

When preparing this report we asked people how they felt about the way the University communicated with them during the event; on the whole people were happy with the approach taken, though several noted we communicated mainly with those able to access email and the internet. One comment from an interviewee sums up the general feeling:

“I felt our communications were pretty good. They certainly weren’t perfect, but under the circumstances they were something the University can be quite proud of.”

A student survey following the earthquakes ranked communications as one of the core strengths of UC’s response.
Now, a year after the earthquake, if you look on the UC website, there is very little to be found (unless you look for it) about the earthquakes and its effect on the University. This has been a deliberate strategy as the website is one of the University’s prime marketing tools. Whilst the earthquakes have been a major event for us, there is a desire for them not to define us. Not everyone agrees with this position. Several people commented that they feel uncomfortable attracting students without being upfront about earthquakes and their impacts; others feel that it misses an opportunity to celebrate how far the University has come in its recovery, and the hard work of everyone to achieve it.

UC responded extremely well to the substantial challenges presented by the earthquakes and as a community we achieved some remarkable things. Whilst we don’t want the earthquakes to define us, the earthquakes have changed all our lives. They have also left a lasting mark in the campus, some of it for the better. In time, we believe a tangible recognition on campus and on our website is needed to the resilience of the University and its people.

Figure 16: Tribute on a monument at California State University Northridge remembering their response to the Northridge earthquake.

From an internal communications perspective, when dealing with a major and complex event one of the most important things is ensuring that everyone in the team is aligned, has shared
situation awareness, and are operating in concert and in support of each other. During the response phase our method of achieving this was to hold our main daily briefing at 11:30am. This gave us the opportunity to share information, to hear how other components of the response (and subsequently recovery) operation were being handled, and for discussion and agreement to occur as to the next priorities. For some issues it was a chance to pull together key people after the briefing to work through specific issues which may not have required the full teams input.

These briefings also ensured that the Strategic Emergency Management Group, the Incident Management Team and the Communications Team did not get ‘out of step’ with each other.

The 11:30 briefing also served another purpose, to bring the teams together so that everyone could be fed. Ensuring people ate and drank regularly might seem to be an easy exercise, however, many of the team were so focused on the tasks at hand, eating became a secondary consideration. Having the teams all together allowed our welfare staff to make sure everyone was provided with lunch.

Figure 17: The 11:30am briefing.
Thankfully our IT kept working...

Our IT team was part of the Emergency Operations Centre right from the time of activation. This enabled it to be proactive in identifying issues in real-time and coming up with solutions. Only a few years ago UC had invested significantly in a brand new data centre. This investment meant that our core IT infrastructure was undamaged by the earthquakes.

Some lessons we learnt that might be relevant to others:

- Think carefully about which parts of your system need backup power supply. We lost power to our primary data centre, but we had a back-up generator so that kept working. Our network only had power protection for about an hour; it wasn’t damaged but wasn’t working until power was restored to it. We lost our secondary data centre because of power failure and no backup power supply.
- We never lost internet access. Fibre cables performed very well right across the city. We were totally reliant on a single ISP (Internet Service Provider) and are now looking to have a second ISP on standby.
- Whilst the September earthquake had left much of our IT hardware undamaged, the February earthquake caused a lot of equipment to be knocked off desks and shelves. Damaged equipment was a real issue to replace at short notice as suppliers were facing requests from all over town.
- We still had lots of key data and applications on individual PCs rather than on centralised servers. Some departments had persisted with running their own networks and servers. These departments were heavily impacted as their buildings lost power and, for some, they didn’t have access to their systems for about a month. This also created the crazy situation where rescue teams had to be sent into buildings to rescue servers and PCs.
- Voice Over IP (VOIP) telephony systems require a large percentage of the network to be running. This is a major vulnerability and you either need to invest to protect it, or accept that it will fail. Copper-based telephony systems require only one PABX to be running.
- One of the big challenges for IT was when departments started setting up in off-site locations and wanted/expected IT services to be provided.
- Remote access was not very robust. Issues included: people disconnecting and not logging off and the need for scalable remote access (we turned off the two factor token firepass system and had to scale up our licence agreements). Our webmail services worked well.
- Remote desktop (which many staff prefer as it has a similar look and feel to their normal computer) requires the computer in their office to be turned on. As buildings were without power and inaccessible, this meant they did not work. Terminal services are generally more flexible but are less user-friendly and more expensive. We now strive to have a have a better mix of the two.
• Have redundancy in your ability to communicate. We had many different forms (particularly for our Emergency Operations Centre – e.g. wireless, copper, VOIP and radio systems), but in addition we are now going to: a satellite terminal, an externally hosted version of the website which can be updated remotely (hosted by a university in another part of the country), and a more comprehensive Memorandum of Understanding with other universities in New Zealand to provide IT support in times of disaster.

• Prepare for the challenge of large numbers of people needing to work in a different environment to normal. We had high demand for notebooks and other mobile devices, needed to provide remote access for all staff (it was on a request basis prior to the earthquakes), and made wireless access to the internet free on campus.

• Some staff and postgraduate students were provided wireless internet devices so that they could work from home but there were isolated problems of people not understanding the data-caps on these plans; one person accumulated nearly $16,000 in excess data charges!

• With so much movement of equipment between buildings and people taking equipment to work from home, a staggering 10% of equipment has been ‘lost’ since the earthquake. Whilst much of this equipment has probably since been returned to campus, or is still being used for legitimate University purposes from home, it has created a significant asset management challenge to understand what equipment is where.

5.4 Restarting teaching

Once it became obvious that we weren’t going to get some of our key buildings back any time soon, we needed to find ways to keep the students engaged with the University. Two key milestones were established:

1. That we would deliver a full academic year in 2011.
2. That, if at all possible, Semester 2 would start on time and be as ‘normal’ as possible.

The importance of clearly articulated priorities

From a response perspective our priority was very clearly articulated as getting teaching back on track for students. It is amazing how important it is to keep reminding yourselves of that priority – it provides clarity on something as simple as whether contractors should be assigned staff and student car parking space.
The issues associated with restarting a university’s teaching programme, with reduced teaching space and teaching time, are immense and so a specialist task team was assembled to develop a new timetable for the semester. A four-pronged approach was used to get teaching underway, using field trips, teaching in tents, off-site teaching and online learning.

Many field trips were brought forward to the beginning of the semester so that we could deliver core course components without needing precious teaching space. It is a credit to the academics and technical staff running these field trips that they were able to be reorganised in such a short space of time, and that people were willing to leave their homes and their families at such a stressful time.

We borrowed from the experience of California State University Northridge which had started teaching in trailers following the Northridge earthquake, and thought creatively about how we could create new teaching spaces on campus. Our solution was to erect fifteen marquees on two of our largest campus car parks, ready for teaching to start three weeks after the earthquake. A considerable amount of effort was expended getting the sizes and layout of the marquees correct; they needed to be sufficiently separated from each other to reduce any potential noise interference between lectures. The initial suggestion was to use the Ilam playing fields for the ‘Canvas Campus’, however it was decided that the recreational area would be needed longer term for its intended purpose and so car parking areas were used instead.

Having an initial understanding of what courses would use what marquee was important so we could cater for their particular needs. As you can see from the photos below, the tents were relatively well set up. Some had data projectors and all had white boards. We made sure our canvas campus was well covered by wifi connection for students who wished to use their laptops or tablets. It was still very much back-to-basics teaching though, with many academics having to redesign courses and teach without being able to access anything in their offices.

Other initiatives critical to the success of the canvas campus were:

- Security fencing to screen off areas of the campus where we had the greatest safety concerns.
- Securing sufficient portable toilets (which were in short supply in post-earthquake Christchurch) so that we were able to teach in tents; without them we would have not been able to open.
- Setting up an Information Centre in a caravan on one of the car parks used for the tents.
- Developing signage to identify where people could and could not go and where the tents were located.
- A numbering system and entrance placards so lecturers and students could identify their course name.
• The development and operation of a regular shuttle bus service around the campus so that people, now no longer able to park on the central campus, could park further away and catch a shuttle.
• A Canvas Café, aptly titled InTENTcity 6.3. This large tent café was a huge success and instantly became student central on campus, with pie eating contests, singers and comedians all bringing life back to campus.

Figure 18: Internal set-up of the teaching marquees.
Teaching in tents – a student perspective

“The tents were loud – there was a hard surface on the floors which made it difficult to hear if anyone was moving about, and the wind was also a problem. In addition, they were either boiling hot or freezing cold depending on the weather outside.

“And yet, some of the best courses of my degree were from that period.

“That first semester was so hard, but it was also the most amazing. The students who stayed were the ones who really wanted to be here. A real sense of resilience and success – perhaps we achieved post traumatic growth!”

Figure 19: Live music in the InTENTCity 6.3 cafe.

Whist this was going on, concurrently several departments found their own space for teaching; in church halls, conference venues, hotels and company offices across the city. This push to identify offsite teaching opportunities was heartening in that it showed people were solutions-focused and wanting to make things happen. The students loved it. The problem, however, was that sometimes these solutions created a whole raft of downstream impacts that had not been foreseen.

In particular, the use of off-site teaching facilities created significant demands on our engineering resource to check the safety of the proposed off-site locations. As discussed earlier, the University had made a strategic decision to implement a robust Five Step Process
for assessing the safety of its buildings, and the decision had been made that we would not allow our staff or students to occupy space off-campus which had not been structurally checked and cleared. This meant that off-site teaching spaces were added to the list of buildings required to be checked and, in many cases, because teaching was to start imminently, these off-site locations took priority over campus buildings. In some instances, these building assessment checks identified problems, which meant we had to decline offers of space.

Where there is a void of information about expectations of when and where people can operate from, they will naturally seek to find their own solutions. This enthusiasm and resourcefulness is both an asset to be nurtured and a challenge to manage. Checking of temporary teaching space did slow the reoccupation of UC buildings, but it was also important to support departments in their own initiatives to get back teaching.

![Figure 20: One class taking advantage of a nice summer day to teach outside.](image)

Another approach used for getting teaching underway was to offer e-learning options for students. Prior to the earthquakes our online learning systems were relatively well set up for an increase in e-learning, but the culture wasn’t there. For many courses the online learning system was being used as a content depository, rather than as a vehicle for teaching through.

Following the earthquake, many lecturers started to video and podcast their lectures, but then we hit capacity issues. Our server that does live-streaming of videos normally would do 45 hours of video capture per week – this increased to 2,500 hours per week! Another issue that students found is that they were using up their internet account data limits watching these videos. Some classes ended up distributing CDs to their students.

Willingness to use online learning also depended on the course and stage of study. Some felt that third and fourth-year students were better able to cope with online teaching and that for
Online learning systems – panacea or Pandora’s box?

Just some of the issues that we came up against included:

- The IT system architecture on campus is designed predominantly for people accessing the network on campus, with some off-campus access, but not in large volumes. With the campus closed and students needing to utilise data-heavy online learning options, such as video streaming of lectures, the system had capacity issues.
- Many people were unfamiliar with the online learning systems and needed to get quickly up to speed. People often weren’t in a space (both physical and mental) to uptake what was available – it is hard to do new things in a stressful environment.
- People are now using online learning systems in different ways. Prior to the earthquakes, 42% of all courses had some online learning components to them; this has now increased to 58 – 60% of all courses. Most importantly though, most large, first-year courses are using at least some components of online learning.
- Online learning systems don’t negate the desire from both students and academics for face-to-face interactions. People reported a sense of isolation learning alone. Even when video pod-casts of lectures were offered online, most students still chose to attend the ‘live’ lecture whenever they could.
- It is important to retain a sense of what sort of learning institution we are and want to be – do we really want to be an online university? Students were accepting of the increased use of online learning given the situation. They may not be so accepting in other situations.
- Each course is different, and it is important to not go to lecturers with a single template or vision of what e-learning for their course should look like.

first-year courses, face-to-face contact is more important. People also noted that the quality of the online teaching was very course and lecturer dependent – some were great, others were more stilted (though there are variations in course quality during normal times as well).

Our Library Research and Information Services were well prepared to support the increase in online learning following the earthquakes, with:

- AskLive – the Library’s online enquiry service, access to electronic information resources,
- online subject guides,
- online information skills development modules embedded in online courses or via the Library website, and
- a Liaison Librarian service via email.
Processes were also in place to recommend the purchase of suitable electronic information resources, to recommend electronic information resources as alternatives to trapped print resources, and to provide links for embedding in Learn courses. Liaison Librarians were available to partner with academic staff to create alternative bibliographies for assignments based on accessible online resources, and to convert planned face-to-face information skills development modules so that they could be taught online.

Despite this capacity, the uptake of online services after the earthquakes was limited. We found that requests for information and for service from the Library were overwhelmingly to do with timelines for the re-opening of physical libraries and access to print collections. By the end of March, nearly six weeks after the February earthquake, only 11 academic staff had taken the opportunity to work with a subject specialist Liaison Librarian to create alternative bibliographies or assignments based on online information resources that could be accessed. Efforts to promote available resources, such as the eResources Expose, were also not well attended.

From a quality control and accreditation perspective, the Tertiary Education Commission required significant documentation on all changes to course content and method of delivery. Departments were also encouraged to engage in early and open communication with professional accreditation organisations (such as the Institute of Professional Engineers and the Council of Legal Education) to explain to them the changes being made and any impacts these might have on graduating student competencies. The University also included a statement about the earthquakes and their impacts in its graduating year review to the Committee on University Academic Programmes. Feedback was that confidence was gained by how open the University was about the challenges it faced.

Looking at the silver lining of all this upheaval, the condensed semester required academics to think about their curriculum and the best way to deliver it. Whilst the situation was not ideal, it is possible that many courses will have benefited from this.

Whilst we did deliver a full academic year from a teaching perspective, for research it was an abbreviated year. Staff and students missed out on months of research effort and some will argue that they will never be able to catch that up. Thesis students were offered loans of laptop computers and a data-plan for accessing the internet over the cell-phone network so that they could work from home.

Where there was to be a reasonable delay before a student would be able to resume their thesis research (e.g. due to damage to equipment, delayed access to resources) the student could apply (with support from their senior supervisor) for temporary relocation to an alternative institution. In the main the re-locations were to institutions where supervisors had colleagues/collaborators, especially within the bench sciences. In approving relocation, the following conditions had to be met:
Students did not want to study in isolation

Most people learn better when they are talking or communicating about what they are learning. Our experience was that students didn’t want to study in isolation and informal study groups popped up all around Riccarton, the main student area of the city.

There were lots of students though who didn’t know their peers and so didn’t get the same social support. Some enterprising students matched course lists with Facebook to create online communities to invite students to join. If we had our time again, this is something the University could help with.

- Suitable facilities (e.g. labs/equipment/library resources) were available.
- Somebody in the new location was able to offer day-to-day supervision/mentorship to the student while in the new location.
- There was a plan for the nature (e.g. skype, telephone, visits) and frequency of supervision sessions. Supervisory meetings over the period of relocation were to be documented.

Where a relocation was granted UC covered the costs of relocation (airfares or equivalent) and a weekly stipend (within New Zealand: $200; in Australia: $300; other locations: $400). A postgraduate village was established comprising of work rooms (including wifi, networked computers, printer) and a common room to provide PG students with both a place to work on campus while many buildings remained closed and a place to meet with peers and with supervisors. The village was a success, especially in providing an opportunity for networking amongst postgraduate students, and has remained in place.

All postgraduate students were granted an automatic two month extension (with the ability to apply for longer if they needed it). Fees waivers and extensions to UC scholarships were also granted for this period. If you take 2011 to be a 14 month year, then our postgraduate completions were very similar to that of previous years.
Books on the floor (again)

The UC Libraries had already suffered significantly at the hands of the 4 September earthquake though, with reflection, this was a blessing in disguise. The 4 September earthquake exposed major vulnerabilities in some of the older shelving systems used for the books and several bays of shelving collapsed in the earthquake. The pattern of shelving collapse was sporadic throughout the Library – some floors were more affected than others, and on the same floor, one stack collapsed whilst another nearby (with exactly the same bracing) stood up well. We were lucky that the libraries were closed at the time of the September earthquake.

The February earthquake occurred at lunchtime on the second day of semester – meaning there were many people in the libraries. A policy implemented following September to replace shelving with additional seismic strengthening specifications paid off, with no further collapses of shelving (although there were still tens of thousands of books on the floor).

Some of our learnings that are likely to be relevant to other libraries include:

- Prior to the earthquakes it had become custom to not put any books on the bottom shelf so that library users and staff didn't have to bend down so far. In an earthquake this made the stacks less stable, as there was no weight on the bottom 30cm.
- We had also not balanced the stacks. A stack could be full of books on one side and empty on the other.
- Within a stack there were different width shelves. The oldest shelving was only 15cm wide so most books on these shelves were wider than the shelves.
- Book ends were in use but the majority of the shelves had book ends which were only 12 cm high and therefore less effective at keeping books on shelves. One of the libraries had previously used plastic shelf clips, but shelving staff had found these to be annoying – most had been removed and placed in the storeroom.

We have found there are no magic solutions for keeping books on the shelves in an earthquake. We have looked into using wider shelves, but they take up more floor space as the shelving stacks take up more room; book stops (which help hold the books on the shelves) are possible but then makes it more difficult to take books from shelves, particularly for people with disabilities; larger book-ends are more expensive; and bookshelves with an uptilt bottom shelf cost three times more. Whilst insurance will pay to pick the books up off the floor, it doesn’t cover preventative measures to stop them falling off again in the next shake. What we have implanted now is that our bottom shelf is used, our new shelving has an uptilt bottom shelf, we have improved the bracing on our older shelving, we now work to balance books on both sides of shelving, we have increased use of book stops and book ends, and our new layouts increase options for access to stairwells.
Figure 21: Books on the floor (again).

Figure 22: Reshelving books in the James Hight Library.
Following the earthquakes we needed to move books around to allow building checks and repairs (and we also planned to use the opportunity to change shelving layouts and to RFID tag books) and this in itself became a significant task. It is important to note that packing books into boxes can be done one of two ways – with the expectation that books will be retrievable, or not. When we packed books into boxes following the September quakes it was for short-term storage. They were therefore simply picked up off the floor and put into boxes, sometimes by construction workers. Unfortunately our short-term storage became longer-term storage after the February earthquake and it was very difficult locating specific books.

Academics and students found it difficult to understand why it takes so long to pick books up off the floor. To give a sense of the scale of the task, from just one level of our Central Library there were 10,000 boxes of books. Shifting them from Level 4 to the ground floor of the Library took three weeks of manual labour!

Following the September earthquake, with the main James Hight Library closed for at least five months, the University had been generously provided free access to online journals from major publishers. For a time, UC had the largest online journal collection in all of Australasia. This facility was very well received by many staff and students, though some deeply missed the ability to be able to go into the Library to research. Sadly, the James Hight had only been reopened a day and a half when the February earthquake struck.

Once again, we got so many offers of support from external vendors and other libraries that it was just incredible. We did find that it took time however, for people to understand the nature of our problem. Even internally, people had little appreciation for the time it would take to implement alternative solutions. We had literally just ‘given back’ a lot of the electronic resources that had been granted to us following the September earthquake. Many thought that we could just turn it all back on with the flick of a switch, but it took a lot more work than that.

The following initiatives were implemented to facilitate staff and students to use the library services we still had available:

- We adjusted library opening times.
- Fines were removed.
- Interloans became free (trebling the number of interloan requests).

Pressure came on the libraries in unexpected places. For example our Macmillan Brown Library staff were busy retrieving art works from UC buildings, finding spaces for them to be safely stored (and finding artworks not previously known about!). Additional storage for art works needed to be created as the normal storage was full to overflowing. The architectural drawing collection has been heavily used by the greater Canterbury community, as Macmillan Brown hold original architectural drawings for a number of heritage commercial buildings and private residences. The original drawings have helped owners to truly understand their buildings and in some cases save them from demolition. The number of enquiries handled by the Macmillan Brown library since the February earthquake has trebled, from approximately 8,000 per year to over 26,000 enquiries.
5.5 **Building the villages**

We knew we were down on space and that we needed more than just lecture theatres – we needed offices, study areas, teaching rooms and laboratories. One of our Incident Management Team members approached an architect to see what they could come up with. A day later we had the rough outline of a plan to create a pre-fabricated village with 8000m$^2$ space on the Kirkwood oval sports field.

The decision to create the villages was made quickly – within a few days of the earthquake. We knew that pre-fabricated buildings would be in limited supply, and if we delayed by even a few days, we would most likely miss out. The early estimates of cost were very raw and we needed to negotiate with the insurers about the need to ‘spend a dollar to save many more’. Two villages were eventually created, at a cost of close to $26 million. The early decision meant that planning approval was given while the Civil Defence Emergency was still in place, which inevitably sped the approvals process.

The critical factor which enabled this decision to be made quickly (and with confidence) is that we knew from our analysis following the September earthquake how long remediation of buildings would take. Following the September earthquake, without the use of overflow buildings (meaning that the majority of repairs would need to be conducted out of term time, over university breaks) our analysis showed it would take at least 10 years to do all of the building remediation work. Following February we had a much bigger task, and so decant-space options were an absolute necessity.

![Figure 23: Construction underway on the Kirkwood and Dovedale Villages.](image-url)
Figure 24: Kirkwood Village under construction.

Figure 25: Kirkwood village once completed.
We anticipate our temporary pre-fabricated villages being invaluable for this process, though are wary of becoming a ‘pre-fab campus’, if the intended five-year lifespans for structures stretch longer.

5.6 Student engagement and retention initiatives

Our recovery focus on students took on several sub-themes:

- Minimising disruption to student’s study.
- Creating options for students to leave so that they could come back.
- Making contact with international and other particularly vulnerable students to check on their welfare.
- Being flexible for students and their changing circumstances.

Seven million dollars was spent in the immediate aftermath of the earthquake on refunds for students. These refunds included a $500 compensation grant for all students in recognition of the fact that although a full academic year would be delivered for 2011, it wouldn’t be the same as the students had originally signed up for. We found this gesture to be important and it took a lot of the angst out of students about the fact that we had to deliver courses in different ways to what had originally been proposed.

Graduates that have gone through 2011 at UC will be our best students – they performed academically on par with students of other years, but not only that, they have personally grown from the experience.

International students were also paid an additional grant-in-aid of $500. Students who had paid for membership to the Recreation Centre and all parking permits were also refunded.

One of the biggest challenges presented by the time of year of the earthquake (being the second day of term of a new semester) is that many students had not yet completed their enrolment process. This meant that there were significant uncertainties over who the student population actually included. Some students who had pre-enrolled may not have been planning to actually enrol with the University; others might not have yet started the enrolment process, or have finalised their courses.

We knew we needed to make contact with all of our international students in particular – many were here with no family support and there were high levels of parental concern. The collapse of the CTV building in the city centre, which housed an international language school, created significant shock in the international student community. We decided to do the simple things first and then follow up exceptions – creating a webpage with a simple form for international students to let us know whether they were okay, where they were and what was the best way to contact them. Within an hour we had information back from 300 students, and within a day two-thirds of all international students had been in contact.
There were situations where international students couldn’t access their scholarship money and so hardship grant applications to UCSA (the Students’ Association) were made on their behalf. We did have some high and complex needs cases and these took a lot of time, energy and specialist skills to resolve. For example, we had one student who hadn’t left her room for five days since the earthquake and it was necessary to evacuate her out of the city. Many of our international students did not have existing connections to a health provider. In addition we found a significantly increased need for people fluent in multiple languages to interpret. Stress impacts people’s ability to use a second language and people’s English skills (and our skills to speak a second language) declined markedly.

**Personal interventions were key to retaining international students.** Something as simple as a 30-second interview, personalising the response and asking them how they were getting on was critical to finding out about individual situations.

Study abroad students presented a real challenge for the University. Generally these students are only in New Zealand for a term, and with the University likely to be closed for at least three weeks, there was a real risk for these students of them not fulfilling pre-requisite requirements for their full-time courses back in their home country. The University made a conscious decision to not just ‘let’ these students go of their own accord, but to ‘help’ them move to other universities to complete their study abroad term. Whilst this cost the University financially, feedback from home universities and agents for the study abroad programme is that our long-term reputation as a study abroad partner has been significantly enhanced.

UC Guarantees were offered for 2012, with $6 million worth of undergraduate scholarships available, including automatic eligibility scholarships worth between $1000 and $3000 for all new first year undergraduate students enrolling with a merit or excellence NCEA qualification. In addition, students were guaranteed a place at one of the University’s Halls of Residence if they wanted it for 2012. The earthquakes have impacted our international student numbers (exacerbating an already decreasing global trend), but the impacts have been quite country specific. Chinese student visa applications for New Zealand as a whole fell by 8% in 2011, and 25% for the Christchurch area. It wasn’t just a Christchurch problem though, with numbers of Chinese students declined for all South Island tertiary institutions. Indonesian student numbers were not impacted at all, while all Saudi Arabian students were evacuated by their cultural mission and told they could not return to UC on government scholarships.

The fall in student numbers has not been uniform across the University. Certain disciplines, such as the Arts have been hard hit by declining student numbers. Courses with high proportions of Maori/Pacific Island students, mature students, second chance students (who have been to University previously and not performed well) have fared particularly badly.
Student accommodation

The University has a variety of student accommodation options, with students living in halls of residence and apartments near the campus, living with families or living in independent flats across the city. Whilst three of the halls of residence are independent and the others are run under contract by an external provider, it was well understood that if there was a problem with any of the campus accommodation, it would reflect badly on us all. In line with our principle of ensuring safety first, the University offered each of the campus accommodation providers first use of its teams of engineers to check the structural soundness of their buildings. University staff visited each of the halls to ask if they were able to continue to support their students in residence.

Each of the providers took a different approach to students changing their study plans as a direct consequence of the earthquakes, and had to make independent assessments as to whether or not to shut down and send students home while the University wasn’t open. In general though, the water and sewerage situation in the city meant that most campus accommodation providers encouraged students to return home if they could while the University was closed. A number went to stay with friends in undamaged flats and joined the Student Volunteer Army to help clean up and assist in parts of Christchurch city. One provider also made its space available for out of town police, who had come to support the response operation in the city.

The shifting timetable for the academic year did create some problems for out of town students who had to change travel arrangements. Many students return home soon after their final exam, and so changes to the examinations timetable were particularly disruptive. Air New Zealand offered students discounted fares to fly home after the 22 February earthquake, and the compensation grant would have offset some of these costs, but for many students it would still have been an unbudgeted cost.

We were fortunate that with the campus being on the western (least affected) side of the city, most campus accommodation and student flats suffered only minor damage and there were few problems in terms of student housing in 2011. With the rebuild of Christchurch ramping up however, severe shortages of rental properties and escalating rents are starting to become a major issue in Christchurch. Over the coming years, students may find it more difficult to find a flat, and rents may increase significantly as the Christchurch rental market suffers from increasing demand and decreased availability.
5.7 Exchange programmes

The University put significant efforts into setting up student exchange opportunities with other universities, to help students to go if they wanted to, through a managed process. A total of 277 students went on exchange for Semester 1. Although the exchange programmes only catered for very small number of students, it was an important aspect of our response in that they demonstrated to students the willingness and intent of the University to do right by them.

The most high profile exchange opportunity offered was for UC students to fly to Australia to spend a semester at Adelaide University. UC chartered a plane to fly the students over there, and Adelaide University offered these students tuition free of charge (the students remained enrolled as UC students), and an offer of accommodation through their homestay programme or in a hall of residence.

Forty three senior students (third and fourth year honours students and postgraduates) went to the University of Oxford in England to study for a term. UC gave these students a special scholarship of $2000 to cover international travel, taxes and insurance. The University of Oxford and its Colleges waived tuition fees for all participants and also provided residential accommodation.

Figure 26: Students off on exchange to Adelaide University.
Sixty-seven students also went on exchange to other New Zealand universities, with exchange agreements set up with Auckland, AUT, Massey, Victoria, Waikato and Otago universities. All of the universities involved in the exchange programme agreed not to charge fees for students.

Some in the tertiary sector around New Zealand have expressed discomfort at the high profile use of international exchanges for students, and the message this potentially sends internationally about the ability of New Zealand universities to cope. Whilst UC acknowledges that some may have perceived the exchange programmes in this way, we believe many others will have seen it as a positive message that we were looking after our students, and offering significant opportunities for them to study abroad for a semester.

If students want to leave it is important to ‘help’ them through planned initiatives so they are then able to readily return. Student exchange programmes with other universities, where the student remained enrolled with UC, were important for retaining a student’s ongoing relationship with the University. Negotiating these exchange agreements in the midst of a response however was very time consuming and complex. Our advice for other universities is to develop Memoranda of Understandings in advance with a suite of other universities, for how to utilise student exchange programmes following a major disaster.

5.8 Graduation

Many people have asked if there were any wrong decisions that we made, and in hindsight of course there were, but one that stands out is the initial decision to cancel the April Graduation. Graduation ceremonies for UC are typically held in the city centre, with a procession from the Arts Centre (which is the historic UC campus) to the Town Hall. Both the Arts Centre and the Town Hall were badly damaged and located within the completely cordoned off Red Zone. All graduation gowns were stored in the Arts Centre and therefore inaccessible, and accommodation options in the city for out-of-town guests were limited.

In early March a decision needed to be made about whether April Graduation would proceed. At the time many people were feeling exhausted, overwhelmed and the thought of holding such a major event as Graduation was a burden. The decision was made to cancel the event.
Almost as soon as the announcement was made it needed to be revised. We discovered that we really hadn’t consulted the students sufficiently. The UCSA (our students’ association) felt very strongly that Graduation is such a significant event for graduating students, and a cause for celebration for the University as a whole, that it would be a huge psychological blow if graduation was cancelled. They felt that if Graduation didn’t go ahead, then what else might be put in the ‘too hard basket’ for the year? An offer was made by Auckland University to host a celebration for our graduates based in Auckland. This sparked the idea to also host a celebration in Christchurch.

To the UCSA’s credit, it not only pushed for Graduation to be held, but it also did a lot of work to organise the Graduation Ball. On Wednesday, 20 April 2011, UC held a very special graduation celebration. The celebration was similar in format to a normal ceremony, but did have some procedural differences, as degrees had been conferred in absentia and the ceremony was a celebration rather than a conferral.

The celebrations were held on campus in the Super Top, the largest marquee in New Zealand, fitting 800 people. The 2011 Graduation Ball, also held in the Super Top, stands out as a really special event, with many people talking about how they needed something to look forward to.

5.9 Commitment to the second semester start date

The concept of setting a date for when we would try to get back to the normal academic year worked very well for us following the September earthquake. Following the September earthquake, our target was that we would aim to release final grades on time.

In February we decided that while Semester 1 was going to be messy, we would do whatever we could to make Semester 2 as normal as possible. Students wanted to know when to come back for Semester 2 and, from our learnings throughout this event, we now listened to them far more closely. There are some however who believe that the decision to start Semester 2 on time created unnecessary stress and pressure, particularly for academics who lost preparation time while the University was closed for building checks.
You have to draw a line in the sand. With an ongoing crisis there is the temptation to just let everything slide, but with a university year being cyclical, at some point you have to transition back to a ‘normal’ timetable.

6. Leadership, governance and management

6.1 Emergency powers and governance
During a major emergency, decisions need to be made quickly, often with little time for consultation. It is worth however pre-thinking how that transition will be effected from a governance perspective. Prior to all of the earthquakes, UC had an Emergency Statute in place that enabled an Executive Committee, made up of the Chancellor, Pro-Chancellor and Vice-Chancellor (Chair of the Board, Deputy Chair of the Board and CEO equivalents) to wield emergency powers and/or delegate them to the Vice-Chancellor in the event of an emergency. In addition we also had draft wording for a resolution ready to go, which the Executive Committee passed on 23 February with just a few minor edits.

“That in light of the earthquake of 22 February 2011, the Executive Committee of the Council of the University of Canterbury, acting on the advice of the Vice-Chancellor, note and confirm the decision of the Vice-Chancellor to close the University and delegate to him the authority to waive or suspend any University regulation or statute and enter into any contracts and make such commitments, financial and otherwise, in order to manage the University and its staff, students and resources within the law until revoked by resolution of this Committee or Council.”

Perhaps the more difficult decision regarding emergency powers, is not when to give them, but when they should be taken back. Unfortunately you never know how long is too long to hold onto emergency powers except in hindsight. There is a strong incentive to retain them in order to achieve fast and decisive decision making, but there is a price for holding onto them for too long as it becomes branded in institutional memory.

Even well into the recovery period there are still major strategic decisions that need to be made quickly, but there is also a desire to move out from a crisis mentality and get back to business-as-usual ways of doing things, which in a university is more consultative and consensus driven.

Our original draft emergency resolution did not set any initial timeframes for when emergency powers would default, requiring a Council Executive meeting to withdraw the emergency powers. A better approach might be to have emergency powers defaulting after a particular time period, with an option to extend them as required.
The Council (Board equivalent) was kept informed of the situation at the University and major decisions being made via daily emails throughout the response. The Chancellor (Chair of the Board equivalent) talked with the Vice-Chancellor on the phone daily, and also made several visits to the Emergency Operations Centre to provide moral support and acknowledge the hard work going into the response. He was very careful to ensure that his presence was seen in support of the Vice-Chancellor’s leadership, and for it to be clear he was not a decision maker at an operational level.

Our Chancellor had a strong health and safety focus and, prior to the earthquakes, had asked about the University’s crisis plan and had visited the Emergency Operations Centre and met with the Incident Controller.

**It is important for the Council to have an understanding, going into an event, of how the organisation is prepared to respond.**

At an operational level, emergency powers also exist for the Incident Controller. The Emergency Management Policy provides authority for the Incident Controller to make immediate operational decisions necessary to preserve the safety and security of the University, without the need for prior approval from the Vice-Chancellor. In each event we have experienced so far, the ability to make urgent decisions without referral to senior leadership (such as the decision to evacuate the campus) has allowed for a rapid decision making process.

For the emergency powers provisions to work effectively however there must be a very clear understanding and high degree of trust between the Incident Controller and the Chair of the Strategic Emergency Management Group (generally the Vice-Chancellor). Each must fully understand the role of the other and support needs to flow in both directions.

### 6.2 Leadership and decision making

An organisation needs strong leadership and a cohesive leadership team during times of crisis. Leadership is more than about making key decisions and charting the direction for the recovery, it is also about inspiring hope and confidence that recovery is not only achievable, but will also be an opportunity for renewal. Our Vice-Chancellor played a critical role in the University’s response and recovery, with a presence that was tangible to all those directly involved in the response, to staff and students through daily communications, and through his role as a community leader.

A real strength for the University throughout this response and recovery effort has also been the communication and relationship between the Vice-Chancellor and Deputy Vice-Chancellor. This bi-lateral relationship has worked extremely well, primarily because they shared an office.
for much of the early part of the response. Following the September earthquake there were some divergences between the two, due to minor misunderstandings and surprises, so the Deputy Vice-Chancellor suggested, following February, they should share an office. This was very successful - they both knew what was going on as it was going on. Working very much as a team, they presented a united public face. They also both attended the Incident Management Team briefings at the EOC together, so that they had the same information to hand, and then together they thrashed out decisions by the end of the day to be given to the Communications team to disseminate.

Figure 29: UC Vice-Chancellor, Communications and External Relations Director and Deputy Vice-Chancellor discussing messaging during the response.

What didn’t work as effectively this time around was retaining cohesion within the full Senior Management Team. With sixteen members on the Senior Management Team, it is a very large group. This not only made it quite an unwieldy decision making unit in a fast paced response, but it also made keeping them all sufficiently informed a more challenging task. For example, the logistics of having all Senior Management Team members attend the daily briefings at the Emergency Operations Centre soon became too crowded, and after a few days it was decided that only a subset of the Senior Management Team would attend.
Potential fracture planes

We weren’t a perfect organisation beforehand. Existing tensions and potential fracture planes, which occur in any organisation, tend to be smoothed over during the early stages of a response effort. They re-emerge however during the later stages of the response and into the recovery effort.

One person commented that when threatened, you protect your family. In the case of a University, many people see their Department, Service Unit or College as their family. Silo mentality can emerge as people prioritise the needs of their group above that of the broader institution. Within a team, this can be expressed as a ‘hunkering down’ and the creation of an inner circle of trusted colleagues, to the exclusion of those outside it.

Whilst almost inevitable, it is important to mitigate the effects of this natural tendency to draw inwards during a response; not only does it reduce the perspectives informing key decisions, but it also creates a legacy of distrust that can linger long into the recovery period.

Whilst this was a practical move, it did create issues as the recovery progressed, with parts of the Senior Management Team having access to more current information than others, and a sense of ‘us and them’ developing. There were also situations where members were not adequately consulted or involved in decisions that, with hindsight, they probably should have. In many ways, such frustrations and evolving team dynamics are symptomatic of working in an incredibly stressful situation. All of this occurred without malicious intent, in a context of having to make significant decisions under pressure, but we were lucky that these frustrations did not escalate further. In retrospect, we should have found ways to ensure that Senior Management Team members did not feel disempowered from key decisions.

Moving forward, we plan to install cameras and microphones into the Emergency Operations Centre so that briefings can be recorded and streamed live within the closed University network. This will allow a wider approved audience to ‘attend’ a briefing and to see and hear the information first hand.

Always keep an eye on the long-game. It isn’t just the decisions made during the response, but also the way those decisions are made and the way relationships are maintained that sets the context for the hard road of recovery ahead.

You are better to make decisions and have them wrong, than to be indecisive. The reality of the situation is that there will be wrong decisions. The key is to not get too precious about them and for everyone to be a little bit forgiving.
The format of briefings and meetings had a significant influence on the nature of discussions around key decisions. For example, the daily briefing in the Emergency Operations Centre started to fall into a ‘reporting back’ mode. This meant that most of the discussions were around what had or was about to be decided. A future focus on issues over the horizon and forward planning did not emerge nearly as strongly as it needed to. Within the Strategic Emergency Management Group, the meeting format was designed around reports back from sub-committees. The Academic PVCs however did not chair any of these sub-committees and so they suddenly found they had lost their voice, when normally they would be an instrumental part of the Senior Management Team.

‘Command and control’ decision making can sometimes seem an anathema to the usual consultative and consensus style of management approach most often adopted within universities. One of the potential downsides of command and control decision making (and emergency powers to effect them) is that decisions are made so quickly that sometimes they haven’t been sufficiently tested. The devil is always in the detail and inevitably some unintended consequences emerge as the recovery progresses.

We spent a lot of time and effort on some things when the answer was already there for us. For example, when the June earthquakes disrupted exams and large numbers of aegrotat applications were anticipated, a lot of work went into developing a streamlined process for processing aegrotat applications. Then someone pulled out a plan that had already been developed in response to the H1N1 Swine Flu pandemic in 2009, which only required minor tweaking to fit the situation perfectly.

When making decisions, pause and look for parallels to other situations you may have dealt with before. At other times expect to have to make decisions without all of the facts, and expect to have to some clean-up afterwards. Most importantly though, make a decision and move on.

6.3 The transition from response to recovery
One of the biggest challenges perhaps is managing the transitions between emergency response, restart and recovery.

When it comes to emergency response, the adrenalin rush can be addictive. There is a temptation to remain in a command and control style of management for too long, because the consultative and collegiate style of management, typical for a university, feels too unresponsive for the new context.

Following the September earthquake we transitioned from response to recovery quite quickly. Following the February earthquake, this transition was far more blurred because the issues we
were dealing with were far more complex. It felt like we spent a period of almost two months with response, restart and recovery going all at the same time.

Some of the indicators we used for understanding when we needed to transition out of response mode included:

- Once we were reassured that we could do things safely and it was possible to bring larger numbers of staff and students onto campus.
- Once we had done the urgent and necessary.
- Once we had a handle on how many staff and buildings were available, and we had a sense of just how much business as usual was possible.

Six weeks after the 22 February our Emergency Operations Centre was stood down. Special operations continued unabated, however meetings and activity became spread out over a number of different locations.

The transition from response to recovery was marked by a shift in language to one of participation and engagement. Even once we had transitioned however, we were still far from any sense of normality. It was often a reality check to see how people from outside of Canterbury perceived our event. People would call a month or two afterwards and say, ‘wow that must have been terrible, hope things are getting back to normal’ - when we were so far from normal it wasn’t even funny.

Come the June earthquakes, there were some emotions of anger that we were back in response mode; some people described feeling sick at just the thought of having to go back into the Emergency Operations Centre and do it all again.

**We need to keep reminding ourselves that recovery is a marathon and not a sprint – the process of renewal will take decades, both for the University and for Christchurch.**
6.4 The Recovery Manager role

We debated over the best way to manage the recovery process. A Recovery Manager was appointed in April, but the position was disestablished six months later.

The Recovery Manager’s role, as set up, was essentially about space utilisation; looking at the repair/rebuilding timeline, and seeing how that could be shuffled to make the University as functional as possible throughout the process. The Recovery Manager reported to the Deputy Vice-Chancellor, but was not a member of the Senior Management Team and several people commented that this potentially limited the effectiveness of the role.

Of course, it is hard to know in hindsight whether a different remit for the Recovery Manager would have been more effective or not. When setting the position up, there had been discomfort at the thought of two reporting structures developing; one focused on business as usual and the other on recovery. The review from Sue Curzon from California State University Northridge supported this view. She felt it was important to trust in your existing team to do the work; it can be quite normal for up to half of a Senior Management Team to leave during the early recovery and efforts are needed to prevent this haemorrhaging from occurring.

Some, however, believe that the Recovery Manager role was not given sufficient mandate to look at the broader recovery issues facing the University. They feel that rather than just briefing the Senior Management Team weekly on recovery issues, the Recovery Manager needed to be an active participant in Senior Management Team discussions about initiatives going on around the University and how they might influence the recovery.

Within the scope of the role, the Recovery Manager was very effective in improving utilisation of available space right across the campus; a significant achievement. Prior to the earthquakes, improving space utilisation had seemed like an insurmountable challenge (for example, the...
planned Sciences Lecture Block retrofit and refurbishment project had been delayed by years as agreement could not be obtained over how the loss of such large lecture spaces could be accommodated). Necessity, however, is a very good motivator, and we managed to deliver a full academic teaching year in 2011, despite the loss of a great deal of teaching space.

Managing the loss of space on campus is as much about people as it is about buildings. For example, we had to shift perceptions from departments ‘owning’ building space, to ‘occupying’ space. There were the odd challenging moments encouraging a less affected department to give up some of its undamaged space for a department that had been displaced. When it comes to space allocation – while you ‘can’ commandeer space, you don’t.

Space allocation is an art. We found that what looked good on paper sometimes didn’t always translate into a good outcome once implemented; and it was often the little things that were frustrating people.

Recovery isn’t a desk-top exercise. You have to get out there, walk around campus and talk to people to see what really isn’t working for them. Often it is the little things, which if you can fix, make a big difference for those directly affected.

Looking forward, our approach to timetabling in 2012 has been transformed to cope with the reduction in available teaching space. Lecture times are now set just before the beginning of each semester, once enrolments are complete, to minimise the number of clashes for students and allow them to take the courses they want to take. The push for a new approach to timetabling has come about due to:

- The significant risks created by our very limited capability to make rapid changes to the timetable. (The timetable used to take weeks to develop and there were few mechanisms for changing and communicating changes at short notice).
- Safety concerns and the need to know what classes are where, at all times on campus. (Previous timetables were primarily managed at a departmental level so there was limited visibility at a central level of what was happening where on campus at any time).
- Our former reliance on a sole staff member involved in the detailed decision making around timetabling.
- The need for better space utilisation, with reduced teaching space foreseeable for the near future.
- A change in University culture to be more student-focused (the new timetable is designed to minimise course clashes for students) and also to garner more cross-campus interaction (students and academics now find themselves in lectures theatres all over campus).

This was a fundamental change in approach and was not a simple transition to make. Many struggled to work timetabling changes around other commitments such as childcare arrangements. Whilst the change in timetabling approach is seen by many as a success, to fast-
track the implementation of a long-term plan, there are also sceptics that feel the earthquakes have been used as an excuse for enforcing an unpopular initiative.

6.5 The critical role of the students’ association

The UCSA (University of Canterbury Students’ Association) representatives have unrestricted access to our Emergency Operations Centre and were regular visitors at our briefings. They also had significant input into decision making around redesigning the 2011 academic year and were instrumental in the holding of Graduation Celebrations just a month and a half after the earthquakes (the role of the UCSA in the decision to hold Graduation Celebrations was discussed earlier in this report).

Although it sounds self-evident, we can’t emphasise enough the importance of really engaging in a partnership with the students’ association to make recovery a reality. Students are what universities are all about and they need to be part of the decision making process.

One of UCSA’s real strength is its ability to communicate with students – they just ‘talk student’. UCSA purposefully didn’t just forward UC communications, but told students how they thought it should be told, with jokes, comment and critique. Their Facebook page has the highest traffic of any students association in the country and they say achieving this is all about getting the right balance of humour and controversy. There is also close collaboration, including weekly meetings, between the UC and UCSA communications teams.

Get to know the student president well and support them to be effective. That means supporting them to provide the voice of students at your decision making table – not expecting them to be the voice of management to the students.

With the campus closed, and inner city bars shut down for the foreseeable future, providing students with opportunities to congregate with their friends became a priority. This was important not just for students, but also for the University as the attractiveness of Christchurch as a study destination and the vibrancy of its campus are both important to student recruitment.

Closure of the Student Union building had a significant impact on UCSA’s commercial activities. Up until April 2012, there wasn’t a student bar on campus since the earthquake (except for temporary bars created especially for Orientation week), and cafes were closed or operating at reduced capacity. Financially, the UCSA is funded by a combination of a student levy and commercial operations. The ongoing student levy funding meant that the

Advice for a student president: make sure every decision you make is concerned with the good of the students; think about how the students are feeling and let that guide you.
Students’ Association was still about to provide services to students (such as hardship grants and food parcels etc), and business interruption insurance covered losses from the commercial operations for the year.

Student numbers are not only impacted by the academic programme offered, but also perceptions of the student experience on campus and in town. Students’ associations are all about enriching the student experience. Closure of the UCSA building (the hub of many student social activities on campus), the loss of social spaces on campus (cafes, study areas etc) and the closure of the central city (where many bars, restaurants and cafes were located) have all created a significant impact on normal student life. To combat this UC and UCSA have worked in partnership (UC funding and UCSA organising) to host several large scale events, promoting activities and bringing vendors onto campus with the goal of re-energising the campus atmosphere.

Figure 30: The new Student’s Event Centre built following the earthquakes.
Student Volunteer Army

A real highlight of the earthquake response and recovery from the earthquake has been the contribution of students and other young people across the city to help those in need.

On 4 September 2010, the morning of our first earthquake, the idea for the Student Volunteer Army (SVA) was formed via a Facebook page, rallying students to help volunteer across the city. Over the next two weeks the SVA organised volunteer placements, transport, food and support for more than 2500 students, helping clear i 65,000 tonnes of liquefaction.

Following the 22 February earthquake, the SVA stepped up again; this time with their previous learnings and experience behind them to become even more efficient and effective. One of the greatest challenges was to locate the areas where volunteers were most needed. SVA used mobile management technology and created systems whereby residents could register their need for assistance via a free call number, text message service or website. Each job was examined and prioritised by a call centre. Delegating team leaders to guide small crews to each site, the SVA helped clear an incredible 360,000 tonnes of liquefaction, providing more 75,000 volunteer working hours. The Facebook page had 26,000 plus followers at its peak.

Figure 31: Students gathering to be deployed as part of the Student Volunteer Army.
While the SVA’s central task was the mass-deployment of volunteers to shovel liquefaction from properties, a strong focus was put on the wellbeing of residents; showing a presence in the streets offering hot meals, clean water and guidance to professional assistance. The SVA also supplied and managed operations for various organisations including multiple government departments, Civil Defence, and city council, such as helping the delivery of chemical toilets and information pamphlets, laying sandbags, staffing data entry and manning call centres.

The SVA continues to organise and coordinate volunteers and non-skilled labourers in Christchurch communities and is now an incorporated society and governed by a new committee. It is an affiliated club to the University of Canterbury Students’ Association, though it is not exclusively for UC students. A Volunteer Army Foundation Trust has been set up to support the SVA and provide continuity to the club, seeking to develop volunteering in New Zealand, and youth involvement in natural disasters.

SVA wasn't a University-led initiative. The idea came from students, it was student led and student organised. The SVA founder Sam Johnson, was named the 2012 Young New Zealander of the Year. In recognition of its significant contribution to the Christchurch community following the earthquakes of 2010 and 2011, the greater Student Volunteer Army was awarded the Royal New Zealand RSA’s Anzac of the Year Award 2012; the first time the award has been given to non-military personnel or to more than one person.
6.6  It’s not just about us – providing support to others
All of our emergency preparedness work undertaken prior to the earthquakes had been done on the understanding that in a widespread emergency, the University must be in a position to look after itself. In addition, being able to contribute to the welfare of the city was important to us.

On the 22 February the Regional Civil Defence Group called, advising that their headquarters and Emergency Operations Centre were being threatened by collapse hazard from an adjacent multi-storey hotel. We immediately made a level of our NZi3 building available to them and resourced it to the best of our ability. The Regional Group, followed shortly afterwards by staff from National Civil Defence Headquarters, resided on campus for the following week until they relocated into the City’s temporary Emergency Operations Centre at the City Art Gallery, from which they could all work. Also during the response phase of the emergency, our UC Rescue team joined the International Urban Search and Rescue response in the city.

As the University considered its options for restarting teaching, our Vice-Chancellor and Deputy Vice-Chancellor met with the Civil Defence National Controller to discuss how and when a restart at the University might impact on the city and how we could mitigate any detrimental effects. Over the longer term, the University sees itself as an important contributor of ideas, expertise, leadership and energy to support the city’s recovery and we will be strong supporters during the rebuilding of the ‘new’ Christchurch.

7. Impacts on people and teams
The 22 February earthquake had a significant physiological and emotional impact on our people. The impact, however, was very diverse and managers came to find people’s personal experiences had a big influence on their ability to cope and function.

With a large number of people missing, injured and killed across the city, the immediate concern for most people was making contact with family and friends to see if they were okay. This wasn’t easy, however, as phone lines were almost instantly overloaded across the city. Traffic immediately jammed across the city as everyone simultaneously tried to get home. Many roads were flooded with liquefaction and blocked by fallen rubble. A 15-minute journey from town to the University, took close to four hours. Service stations that still had electricity were run dry of fuel, as people rushed to fill their cars before supplies ran out.

The University immediately set up a Welfare Centre to, in the first instance, provide support for those staff and students who were unable to get home. In the first few hours the welfare centre became a holding space for a large number of young Japanese teenagers who had just arrived in Christchurch to do an English Language course, and who were due to be collected by
private billets. Remarkably, most of the billets were able to pick up their charges over the ensuing hours despite their personal circumstances!

In addition, the Welfare Centre supported pre-schoolers from the early childhood centres on campus, distressed and displaced students, and individuals who were seeking information about the University closure and/or access to their personal belongings. We also discovered that a number of individuals – staff and students – had personal emergency plans in place that recognised the NZi3 location as their meeting point.

There were a number of very memorable and poignant moments when family members and friends reconected with each other, often after hours of walking.

Upon reflection, one of the things we could have done better, was to think about who should be at the door to the welfare centre. Given these people might be the first point of contact for a potentially traumatised person, with hindsight we should have better utilised our campus psychology, social work and counselling expertise.

Beyond the first day, the Welfare Centre morphed into a gateway for the University but continued to offer support, information, a meeting space, food, water and shower facilities as required.

As news began to filter out of the central city, people were confronted with the fact that in a city of only 400,000, it was inevitable that many people would know someone hurt or killed by the earthquake. To provide just one example of how this impacted our response was the loss of our Sydney-based insurance claims preparer, who died in the collapsed PGC Building. His sole purpose for being in Christchurch was to support clients such as UC and our insurance team were shocked by news of his death.

Once staff and students made it home, the challenge for the University was then in re-establishing contact, to find out whether people were okay and what their situations were.

The next few days for many managers, in addition to sorting out their own personal issues, were spent making contact with staff. This process worked pretty well, though there were some gaps later identified with staff who had had no personal contact from their manager. We soon learnt that we needed to sharpen our phone-tree system. A traditional phone tree has managers having to contact their direct reports, who contact their direct reports etc. With people being so displaced and problems with the phone lines it became much easier to implement a reverse phone tree – asking people to regularly check in with their manager. This meant managers could then spend their time just chasing up the exceptions who they hadn’t heard from.

It is worth establishing reverse telephone trees and easy mechanisms for people to update contact details during an event.
In hindsight we could possibly have used our employee information database to identify those living in postcodes most badly affected.

**Whilst it is important to get information up on the website at least daily, recognise that you rely on your second, third and fourth tier managers to provide the more personal connections for staff. Coaching these leaders is really important.**

With a Civil Defence Emergency declared across the city, many families displaced, and all schools and childcare centres across the city under mandatory closure for at least a week, some of our response team had problems organising childcare so they could come back to work. Many children were traumatised by the earthquakes, and so flexible working arrangements were often required. In the case of our response staff we provided a child-minding service at the childcare centre next door to the Emergency Operations Centre (owned by the University). This enabled response staff to focus on getting the campus back open, with regular visits to their kids next door to see how they were doing.

**Do whatever you can do to get key staff back at work.**

For us this included providing temporary child-minding for key response staff, near the Emergency Operations Centre, at a time when all childcare centres across the city were closed.

Over the next two weeks the emphasis shifted to a need to bring teams together. Teams were dispersed, working remotely or helping out in other aspects of the University’s response. Working remotely works, but it doesn’t bring people together to share their experiences and to create a sense of team-work; something that is so needed following an event such as this. With few buildings open on campus, teams met at people’s homes or in nearby cafes. Many people reported the need to talk and ‘download’ their experiences with colleagues before any real work could start.

**There is a point where people need to re-engage with the university for their own purposes, to re-establish normal routines and to support their own personal recoveries.**

Catering throughout the response effort proved to be a very good investment; providing a focal point for bringing people together, enabling people to focus on the task at hand while their basic needs were catered for, and demonstrated that the University really did care and was...
appreciative of everyone’s hard effort.

It isn’t just the earthquakes and their immediate aftermath that created stresses for staff. In the midst of the response and recovery effort some staff had to cope with heart attacks, miscarriages and other life-shocks. These were both a reflection of, and compounded, the stress everyone was under.

There is no doubt that our people suffered wear and tear from the earthquakes and there is a definite sense of emotional exhaustion. Twenty-two months on, this exhaustion is still evident.

Surprisingly in March, the month after the earthquake, we actually found that staff usage of our Employee Assistance Programme (EAP) was down on the same time the previous year. It is possible though that we may see a delayed response.

Now we are finding that different people are striking problems at different times. Anecdotally, people report a loss of productivity, forgetting things (the term ‘earthquake-brain’ has been coined) reacting badly to loud noises, and the smallest of things setting people off. Some teams ended up buddying people up to work in pairs and found this helped significantly.

It is important to recognise that your team will now know instantly where they are at. Asking them four days after the earthquake if they are okay is just a snap-shot. You need to keep asking the question over time to see how people are tracking.

Whilst being very accommodating of people it is also necessary to set expectations of behaviour. Following the earthquakes it was normal for people to act out of character and sometimes people were at their worst. Front-line staff on help-desks, in particular, were often confronted by people who were angry and frustrated. Even now, people still seem to have a much shorter fuse than they normally would, and working in cramped offices can exacerbate tensions.

There is a real challenge for staff that are victims at the same time as having to respond professionally. It would be valuable to have more advice around recognising shock in yourself and colleagues.
While staff were generally very keen to return to work, we couldn’t always give them the same ‘familiar’ stable work environment. Some staff were very well set up to work from home – others weren’t. This created inequities in workload, with some doing well above their normal workloads while others were able to do little.

For many teams, the lack of available workspace on campus presented real challenges for getting key functions back up and operation. For example, over the first eight weeks, the libraries only had space for half of their staff so they ended up working in two shifts. This was proposed as an interim solution but ended up lasting much longer than expected. Setting up and constantly adjusting rosters, working with unions and factoring all of the other variables (such as disrupted childcare, the traffic congestion etc) meant this was an extremely time consuming process.

There were pinch points on key staff, particularly response staff and staff expertise in great demand in post-earthquake Christchurch (such as our geologists, structural engineers, and geotechnical academics). There were few options for relieving the teaching loads of these academics in the short term (as nearly everyone with expertise in that field had been drawn into supporting the response effort) and these academics also had huge pressure to meet community needs. Some departments also had key staff seconded into recovery roles, exacerbating already stretched resources.

Some staff who were not able to get on with other work volunteered to help campus security by staffing the barricades at campus entrances. Not everyone wanted to get involved however.

Develop a ‘return to work’ strategy

Ours included:

- Employee Assistance Programme (EAP) forums.
- Setting the date for return well in advance so people have time to both mentally and logistically prepare for it.
- Track who is available/unavailable for work.
- Establish and communicate timeframes for transitioning back to business as usual.
- Plan for those who are not returning to a ‘normal’ working life (e.g. those whose offices are inaccessible or those expected to do quite different roles).
- Ensure you know what people’s situations are, and then be very accommodating of their situation.
- A commitment made to the unions to not make any change proposals (which could result in redundancies) for at least five months after the earthquake.
- Set expectations and manage expectations.
Earthquake leave
With such a lot of stress and disruption created for staff, the University initiated a new earthquake leave provision of 15 days over three years for all permanent staff. This leave isn’t an entitlement; staff must apply for it and it be signed off by a manager. The theory behind the earthquake leave is that:

- we didn’t want people taking annual leave for stressful activities (dealing with insurers, moving home etc),
- we wanted to create some equity for staff in that it was available for all staff who needed it, and
- so the University has the ability to track the amount of leave taken due to the effects of the earthquake rather than just being hidden in annual leave and sick leave entitlements.

An ongoing risk for UC is the potential loss of intellectual capital as staff feel alienated or exhausted. To date this hasn’t proved to be a problem, with voluntary staff turnover in 2011 at 3.8%, compared to an average annual turnover of 4%; but we are still vulnerable to this rising as the recovery grinds on. Levels of sick leave have been down by half of what they would normally be. This could be because people are already taking a lot of time off under other leave provisions, but we are not sure about this yet.

Most staff feel that the University has been fantastic in its provision of earthquake leave etc, but many staff have been so busy with earthquake recovery as well as business-as-usual work and dealing with their own personal issues, they haven’t had the opportunity to take annual leave.

Many teams commented that things that threw them were not so much the volume of the response work, but the volume of response plus business as usual work combined. As soon as a date for restarting teaching was given, this created a whole downstream tranche of work for everyone.

At the time of the earthquakes, the University was part way through Project STAR, which had restructured some staff positions. For some groups there was a new structure with new managers and some vacant positions. This meant that there was a compounding environment of major change and uncertainty.

**Do a roster right from the start.**

The problem is that people want to work; they felt driven to not let their team down - and they actually need someone to tell them to stop.

One challenge with designing shifts is if you only have two people with a particular skill set, then these people are never on shift together. They can achieve a good handover between the morning and afternoon shifts, but the handover between the afternoon and morning shift is much more difficult.
Having alternates mattered

Experience during and after the September events had clearly shown us that having backup personnel was extremely important. We knew this well in advance of the first earthquakes, however in a relatively small university with high expectations of the work output of its staff, getting people to volunteer for additional duties, undergo training and then participate in exercises, was often not an easy task. As is the human condition, the feeling that ‘It won’t happen here’ was also to the fore at times, and being part of an emergency team was seen by some as not core activity.

September and the several thousand aftershocks which followed taught everyone that preparedness is not a game and that if an institution is serious about protecting its people, property and business, effort and commitment are required.

By February a number of alternates had been identified and ‘agreements’ reached, however some of the additional team members had not been given the benefit of any form of training before February. An example of this was the alternate Incident Controller whose training began ‘on the job’ on 22 February! By 13 June though, his new found experience became invaluable when we had to reactivate the Emergency Operations Centre as our primary Incident Controller was overseas.

Additional staff were hired over the course of the year to help with the additional workload – but just hiring additional staff was not necessarily the answer as new staff take a lot of resources to supervise. While seconding staff to manage the increased workload is great if you can manage it, it isn’t always possible. We did have a couple of examples where seconding staff worked very well, including Campus Watch staff from Otago University who came to support our Security team, and also the Communications Director from Massey University who came to support our Communications and External Relations Director.

Thanking everyone for all of their hard work throughout the response and recovery effort has proven to be a surprisingly difficult challenge. There are so many people doing so much that everyone deserves thanks. But general expressions of thanks to everyone don’t work. People really want thanks and recognition to be individualised and relevant to them. Singling out specific individuals, however, for special thanks and recognition is fraught with difficulty, as those not receiving the special recognition are left wondering if their contributions went unnoticed and unappreciated.

One of the remarkable things that we personally will take away from the writing of this report was just how much people in every part of the University put into getting the University back up and running.
When you are in the midst of a response it is so easy to think that it is just those in your immediate circle of contacts who are working the long hours and giving their all. The reality is, in an organisation as large and diverse as a university, that people across the campus are working just as hard, doing things you hadn’t even thought of, but which are equally as important to the future of the organisation.

8. The process of renewal

Every crisis also presents opportunities and the test of an organisation’s resilience is not just its ability to survive through times of adversity, but its ability to also thrive in the aftermath. Within UC, there was a conscious decision to move away from the term ‘Recovery’, which implies ‘bouncing back’ to where we were before, and instead to focus on ‘Renewal’ and using the earthquakes as a springboard to ‘bounce forward’ to where we want to go.

“What will the University become? We need to communicate the opportunity and to use this event as an energy boost.”

Within four months of the earthquake, the Vice-Chancellor and Deputy Vice-Chancellor released a draft of the University’s Renewal Plan. This plan is a living document, setting out the direction and tone of the recovery, but also with the intention of being regularly updated as it is debated and discussed. Version 16 of the Renewal Plan was released in November 2011.

Whilst the Renewal Plan was very successful in getting feedback and discussion from people initially, that feedback slowed significantly as fatigue set in and people didn’t have the energy to think about what a new institution would look like.

In April 2012, as this report was nearing completion, a new project, UC Futures, was launched. This project, led by the Deputy Vice-Chancellor, is specifically tasked to articulate a bold, compelling statement of the value UC adds to the national tertiary system and to the Canterbury region and recovery. It is intended for this statement to help underpin our case for support from the Government.

Opportunities alone are no good without a clear plan/vision going forward. Over time we have realised that a more substantive discussion is needed on what ‘Renewal’ means for our institution.
8.1 On-going risks

UC is now operating in a heightened risk environment. Following the 4 September earthquake our first Earthquake Risk Register was developed. At the time it was intended to be a companion document to the UC Strategic Risk Register and to reflect short-term earthquake specific risks. Then 22 February came along and we realised that we were in this for the long haul. A Recovery Risk Register was created, focusing on the medium and longer term strategic issues that are now challenging UC post-earthquakes. There are nine risks currently sitting in our highest risk category:

- Business interruption has enrolment, budget and external funding implications.
- Efforts to maximise student enrolment are not successful in mitigating loss of revenue in short to medium term.
- Lag between remediation costs and recovery through insurance claim places strain on cash-flow.
- Prolonged insurance discussions about individual buildings negatively impact recovery initiatives.
- Recruitment of students is negatively impacted by our changed environment.
- Significant strain on cash flows in short to medium term negatively impact business as usual, remediation not covered by insurance, and capital investment.
- The constrained fiscal environment necessitates careful cost control and may restrict our ability to recover revenue streams quickly.
- Accounting statements in the post-earthquake environment artificially represent UC's financial position in the medium term.
- Annual insurance renewal not guaranteed and will inevitably result in substantial premium increases and/or reduced cover.

8.2 Financial stability

There has been a lot of publicity about the financial impact on the University and the loss of student enrolments. The overall impact of the earthquakes on the University is generally in the order of 5 – 10%, in terms of percentage of students lost, financial loss, and building space made unavailable. While this level of impact is not crippling and we have some time to figure out how to deal with it, University leaders warn that unless this level of impact is addressed, we will run into longer term financial problems.

There are few options for retracting expenditure as quickly as the loss in revenue had been felt. Even from early within the response phase, it was recognised that for UC to recover fully, it would need the support of Government. To provide some background, universities within New Zealand are not-for-profit public institutions. They receive significant public funding but are
not Government owned. A case therefore needed to be made to the Government as to why it should partner with the University to support its recovery. The following graphs, which were included in the University Business Case for Support to Government, illustrate the issues at hand.

For 2011 and 2012 the Government honoured its commitment under the 2011-2013 Investment Plan to fund the government portion of student funding, based on pre-earthquake student number forecasts. The University is asking for this funding guarantee to be extended for several years as well as providing access to interest-free suspensory loans.

At the time of writing, the business case for support was still being developed and the numbers below are now quite out of date, but to provide a sense of the scale of support being requested, as at October 2011, the draft package requested included $130 million for operational support, $25 million in capital support, and a yet to be determined amount for building remediation and code compliance not covered by insurance. In return, the University committed to achieve $134 million savings in operating expenses, to reduce planned capital expenditure by $20 million, and to increase its borrowings by up to $100 million.

The Government has recently asked the University to update its business case for support to:

- better reflect a desire for a different UC more aligned with Government strategy and priorities,
- provide an assessment of opportunities for better collaboration and coordination between the Canterbury tertiary providers to improve pathways and learning outcomes, reduce duplication in provision and gain efficiencies in delivery,
- include an analysis of the unique and distinctive contribution UC makes to the tertiary sector in New Zealand, and
- show how UC’s plans integrate with the education strategy developed by the Canterbury Earthquake Recovery Authority (CERA).

It would be fair to say that there is significant nervousness within the University community about the price of Government support.
Figure 33: EFTS forecasts included in the draft Business Case for Support (as assessed in October 2011; the situation continues to evolve).

Figure 34: Revenue forecasts included in the draft Business Case for Support (as assessed in October 2011; the situation continues to evolve).
Figure 35: Expenses forecasts included in the draft Business Case for Support (as assessed in October 2011; the situation continues to evolve).

Figure 36: Operating surplus (deficit) forecasts included in the draft Business Case for Support (as assessed in October 2011; the situation continues to evolve).
Figure 37: Capital expenditure forecasts included in the draft Business Case for Support (as assessed in October 2011; the situation continues to evolve).

Figure 38: Funding the surplus shortfall graph included in the draft Business Case for Support (as assessed in October 2011; the situation continues to evolve).
Keeping the financial systems working

At the time of the earthquakes the University was in a very strong cash-flow position, with nearly $100,000,000 in the bank. This was very beneficial as it meant that the University did not have to go to external sources for immediate funding. We did have delays however in paying invoices to suppliers due to operational reasons and this made some suppliers very nervous given the media reporting.

One of the biggest challenges from a financial planning perspective has been trying to estimate the impact of the earthquakes on student enrolments, with previous patterns for enrolment no longer a suitable guide. This was complicated by the timing of the earthquake on the second day of term – when many students had only partially completed their enrolment process. To allow students to access course materials, email, wireless internet etc, all students that had started the enrolment process were automatically enrolled. This later created a bad-debt issue as students were enrolled who had not intended to complete the enrolment process. Overall, 25% of our first-year intake that we enrolled for 2011 either discontinued or did not complete their enrolment.

From an accounting perspective it is worth noting that an event such as this does funny things to a set of accounts. Insurance shows up on the accounts as income – regardless of what it is spent on. So for insurance relating to repairs on a building, this money actually registers as a profit. For example, in the 2011 financial year the University’s accounts show as a $40 million dollar surplus. Not only is this misleading, but it also creates a public relations challenge to explain to people that this surplus is not ‘real’. There is little flexibility with international accounting rules to adjust the financial report to more accurately reflect reality.

Our top priorities from a finance operations perspective were:

- Paying staff
- Paying creditors
- Getting students enrolled (and payment of fees)
- Paying students

Whilst it is okay from a business continuity perspective to simply focus on the highest priorities for response, in a long-running event such as this, day-to-day operational activities soon build up and there is a need to get staff back doing their daily work as soon as possible. One of the major problems for the finance team was the payment of invoices.
There were several issues to contend with:

- Our cheque printer and safe were both inaccessible in the Registry building. We have now essentially moved to a cashless University, with all transactions now done via electronic banking.
- There was a large backlog of invoices in the mail – which was sitting unsorted in the University mailroom throughout the initial response period.
- Suppliers were happy to wait for a month or so, but beyond this there was pressure to ensure all suppliers were paid so that the University did not create cash-flow issues for other impacted businesses in Canterbury.
- On top of this there was a spike in the volume of invoices to pay. Normally there would be between 5000 and 6000 per month – this increased to 8000 per month following the earthquake.
- Although there was an increase in workload it wasn’t really possible to take on more staff to deal with this as there was nowhere for people to work from.
- We had to drop some payment controls (for example, having college staff pre-processing payments) to enable the backlog to be processed. To ensure that this did not to lead to increased fraud, all staff were advised of a planned internal audit review of payments during the emergency period (there were no frauds identified).
- The standard reporting process to the Tertiary Education Commission is quite automated (push a button and various monthly reports are produced), but not only was it not possible to produce these standard reports, but groups also wanted different reports developed (for example ‘with earthquake’ vs. ‘without earthquake’ comparisons etc). This significantly increased the workload for reporting.
- Paperwork in an emergency is time consuming but also necessary. Our auditors started raising concerns about a lack of paperwork to support key procurements and a lot of subsequent work was required to document things retrospectively. If we had our time again, we would wrap more support around key people to help with ensuring things were fully documented as we went.
8.3 The need for strategic choices

As the renewal process gets underway, it is now that the really hard decisions start for our leadership team. While during the response there were lots of key decisions being made, they were generally decisions forced by the earthquakes. The decisions being made now, particularly regarding change proposals and the potential for redundancies, are seen as decisions that our leadership are making.

The earthquakes did create equity issues. In the early response phase, we triaged various functions and prioritised undergraduate teaching. This was the right thing to do, but it had the potential to send a message to some members of the UC community that they were less important; as time goes on, some are beginning to wonder if the pendulum has been at that end for too long. Now is the time to step back and see which of those things that were lower priority before, now need some focus.

There are also equity issues associated with loss of building space, with some departments displaced from their offices and working in open-plan offices, whilst other departments are back to their normal offices. It is hard to know how to resolve this however, as equitable suffering isn’t really in anyone’s interest, and our focus therefore has been instead on ameliorating the impacts on displaced departments as much as possible.

In addition the impact of the earthquake on student enrolments was also uneven across the different colleges within the University. Whilst the overall drop in student numbers for the University for 2011 was approximately 12%, the College of Arts experienced a 25% decline in student enrolments.

With a commitment to the Government to make $134 million worth of operational savings over the next eight years, strategic decisions are imminent as to which parts of the University should receive investment and which parts will need to be cut back.

Already the University has reduced staff numbers by approximately 170 staff, through less use of casual staff, letting fixed-term contracts lapse and through voluntary redundancies. There is a desire to consolidate course options, particularly courses catering for small student numbers, and this move will most likely result in some compulsory redundancies.

It is too early to say at this point in time what the end result will be for the University as we are still in process of making these decisions. The next few years will undoubtedly be very difficult for all those involved. Now, more than ever, clarity of purpose and a vision for the future are critical to help the University navigate these strategic choices.
8.4 Redevelopment of the campus

Our building remediation issue is like a small microcosm of the issues currently being experienced right across the city as the rebuilding process slowly gets underway. There is a significant amount of construction work on campus to come; but a year on, except for a few buildings, most demolition or remediation work has yet to get underway. Whilst the insurance discussions have been complex, they have not been the cause of delays. What is taking the time is getting technical assessments completed, and the gap between what insurance is prepared to pay for (reinstatement) and the desire to improve our building stock and rectify identified hazards (betterment) as the campus is remediated.

The opportunity to transform the campus at the same time as rebuilding it is very alluring. Sometimes however the financial costs of doing this can be eye-watering. For example, it made perfect sense following the September earthquake to not simply replace the windows in the James Hight Library (which presented an ongoing hazard), but to use the opportunity to double-glaze the whole building. Little decisions like this compound however, and the millions spent on betterment for the James Hight building, multiplied across all buildings on campus, essentially brings forward the University’s Asset Management Plan. There are decisions to be made over how much betterment we can afford given the University, in recovery mode, is likely to be running a balance sheet deficit for some years to come.

It is always important to consider building remediation and betterment activities within the context of the longer-term strategic vision for the campus. Although UC had a Campus Master Plan in draft at the time of the earthquakes, it hadn’t been widely debated across the campus. This limited its usefulness for immediate post-earthquake decision making. Many of the key principles within that draft plan however now provide a useful backdrop to decisions on the fate of key buildings. These principles include:

- **Campus Heart and Gateway**: To consolidate student amenities and services in the physical centre of the Ilam campus, providing a vibrant campus atmosphere and to attract and orient visitors and first-time campus users.
- **Way Finding**: to open up the campus visually and improve the ability for people to get around the campus.
- **Precincts**: a campus where academic and non-academic departments and key facilities, are located in proximity to other departments and precincts where there are common interests and objectives, clustered around hubs that provide shared amenities.
- **Service Hubs**: service hubs containing food services, social spaces and learning and teaching amenities (laboratories, seminar rooms, lecture theatres, libraries, etc) that are jointly accessed and shared by the surrounding academic precincts.
Figure 39: The Undercroft which has been redeveloped following the earthquakes from a cold and draughty bike storage space into a social hub on campus.

Figure 40: Adjacent to the Undercroft are several new cafes and restaurants.
With a large portfolio of buildings to be considered, it was identified early in the recovery process that we needed a structured framework for making building repair, retrofit or replace decisions, and prioritising work across the portfolio of buildings. These decisions are very complex, with many different variables likely to influence the decision. Council in particular needed confidence that a comprehensive, transparent and consistent approach was being taken to the decisions, so that decisions made are more likely to endure. An outline of the framework developed to help inform these decisions is shown below.

**Building Repair/ Retrofit/ Replace Decisions**

<table>
<thead>
<tr>
<th>Repair and Retrofit Feasibility</th>
<th>Operational Importance</th>
<th>Longer-term Suitability</th>
<th>Financials</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Damage sustained and ease of repair</td>
<td>• Nature of pre-existing use and availability of alternate space</td>
<td>• Current functionality</td>
<td>• Age and value</td>
</tr>
<tr>
<td>• Expected performance in maximum credible event and ease of retrofit</td>
<td>• Duration of disruption before long-term impacts experienced</td>
<td>• Future heritage/character values</td>
<td>• Operating and maintenance costs</td>
</tr>
<tr>
<td>• Compliance with minimum performance requirements</td>
<td>• Importance of use to overall University recovery and operations</td>
<td>• Fit with longer term campus vision</td>
<td>• Cost of earthquake strengthening</td>
</tr>
<tr>
<td>• Perceptions of safety by staff and students</td>
<td></td>
<td>• Alternative configuration options</td>
<td>• Cost to demolish</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Alternative uses</td>
<td>• Cost of replacement options</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Relocation of current occupants</td>
<td>• Ability to fund</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Probability for regret</td>
</tr>
</tbody>
</table>

*Figure 41: Building decision making framework.*

### 8.5 Insurance claims and cover

This has been a challenging time in the insurance space. The University of Canterbury had comprehensive material damage and business insurance cover prior to the earthquakes and has and continues to be well served by its broker and claims preparation team. It is the case however, that interim claim submissions initially lagged behind the remediation spend. The University has worked hard with its insurers to redress this situation and now has regular forward payments to smooth cash-flow pressures.

There have been a number of challenges along this journey, dating from the first significant earthquake in September 2010 and there will no doubt be many more obstacles. As has been commented many times, this is a marathon and not a sprint!
Policy coverage is in place for 87 hectares, spread across two sites; 240 separate structures; a student population of 18,175 (headcount) and 1568 (FTE) staff in September 2011; five Colleges – Arts, Business and Economics, Education, Engineering, Science and a School of Law – four remote field stations and one remote observatory.

To date, the University has three active earthquake claims – one responding to the September 2010 event, one responding to the February 2011 event, and one responding to site specific damage to a building in the June 2011 event. During that period there have been two insurance renewals and significant changes to premiums, excesses, site definitions, and the insurers underwriting UC’s material damage and business interruption (MDBI) policy.

Insurers are also seeking to change the rules partway through the claim on what they will cover. Parties differ on whether the policy will only pay to bring a building up to 33%, whereas the Christchurch City Council target is for any buildings needing a building consent for repair to be brought up to 67%.

Figure 42: Replacement of heavy ceramic ceiling tiles from a lecture theatre.

An unanticipated major financial impact from the earthquakes has come in the form of escalating insurance premiums. Premiums have increased in the order of 500% in just two renewal periods (as shown in the table below, UC’s premiums have grown from $1.1million in 2009 to $6.5 million in 2011). And it is not just that the premiums have sky-rocketed, but also the cover for natural perils in the Canterbury region has effectively reduced. Whereas previously the University had an excess of $250,000 per event which covered the whole of the campus, this excess is now $20 million per site (defined as a building or collection of buildings connected by walkways). For a campus-wide event, the University is now exposed to hundreds
of millions of dollars if multiple buildings are impacted. Effectively UC is now self-insuring for smaller events. To give an example, the 23 December 2011 event is estimated to have caused $925,000 of uninsured damage.

The uninsured costs of damage, excesses and increased premiums represent outright costs to UC of more than $12 million in 2010 and 2011.

<table>
<thead>
<tr>
<th>Renewal Date</th>
<th>Annual Premium</th>
<th>Policy Excess</th>
</tr>
</thead>
<tbody>
<tr>
<td>December 2009</td>
<td>$1.1 million</td>
<td>$250,000 for whole of campus</td>
</tr>
<tr>
<td>December 2010</td>
<td>$2.5 million</td>
<td>$10 million per building or complex of buildings</td>
</tr>
<tr>
<td>December 2011</td>
<td>$6.2 million</td>
<td>$20 million per building or complex of buildings</td>
</tr>
</tbody>
</table>

Figure 43: Insurance premium and deductible changes over time.

Following the 4 September earthquake, the University established an Insurance Steering Group, made up of both internal and external members of the University community, to support what was clearly going to be a complex and protracted insurance claim (or claims, as it has turned out). Members of the Insurance Governance Group include internal representatives from our risk, insurance, finance and facilities teams, together with external advisors including our insurance broker, claims preparer, internal auditor, and legal advisor.

UC also engaged the services of a specialist claims preparation team to assist with the preparation of our insurance claims. While it was understood that the remediation of material damage would run to many millions and require careful forensic accounting management, our business interruption claim was anticipated to be the largest – and most complex – business interruption claim in the tertiary sector in New Zealand. It was readily apparent that maximising the claim would require ongoing expert advice.

Internally we have found it important to work closely with staff to ensure they understand the minutiae of the world of insurance through regular emails, face-to-face sessions (including the loss adjustor and claims preparer as appropriate) and a web link for FAQs.

The value of established relationships – both internal and external – cannot be overstated in a crisis. People are much more likely to respond in a way that supports your objectives if they are known to you and you to them. Using in-house resource is crucial in this regard, as is having a single point of contact for all insurance issues as far as practicable.

It is easy to lose sight in a regional or national event of the fact that others are similarly impacted by the critical incident. It is not just about the institution itself but also the wider
community. The University is not the only client of the broker, the loss adjustor, the claims preparer and while all matters are urgent from the perspective of the client (UC), they must be seen in perspective and in context. Our insurance team and broker were also rocked by the death of our claims preparer in the PGC Building during the February earthquake.

There is still a great deal of uncertainty about the insurance challenges ahead. Legislative changes to building codes (should they eventuate), the preliminary report of the Royal Commission (due mid 2012) and future seismic activity are just some of the issues that will materially impact the insurance journey ahead for the University of Canterbury.

Figure 44: Typical damage found in offices.
Dealing with a large and complex claim

1. Early reserve estimates were significantly impacted by the timing of renewal
   The timing of annual renewals in December has been a critical issue. The first one, just three months after the September event, was too early to know the results of invasive checks on buildings and the extent of damage. The obvious damage was easy; what was far more problematic was what the invasive checking might reveal! There were significant consequences, as initial reserves were considerably underestimated and the insurers later asked for additional premium when the extent of the September damage started to become apparent.

2. It’s not over until the shaking stops
   There have been multiple earthquake events over the last 18 months. In the wording of our policy an ‘event’ is defined as an event or series of events arising from any one cause or related causes during any period of 72 consecutive hours; clearly not appropriate in an earthquake sequence but the question remains where does one event finish and the other begin!

3. The devil is in the detail
   It is not until a major event occurs that the details of an insurance policy become paramount. It is important to know your policy well and understand what is covered and what is not before it is too late to influence the response to a critical incident.

4. Insurance issues continue long after the event and make BAU problematic
   It is difficult to move on from insurance issues and return to business-as-usual activities in the middle of a response, and yet business as usual does – and should – continue. Dedicated resourcing is required which cannot easily be outsourced as institutional knowledge and established relationships are critical. It is not as straightforward as hiring new staff to ‘backfill’; it is more likely that one person will simply increase his/her workload.

5. When is the right time to repair or replace?
   Since September 2010, there have been more than 10,000 quakes and aftershocks. In the midst of such prolific ongoing seismic activity, it is very difficult to know when to proceed with repairs and/or replacement of facilities. Waiting until the shaking stops needs to be balanced against the business interruption caused by compromised or unavailable buildings and the time limits of the business interruption cover.
6. **Charge it to the earthquake insurance code!**

There has been an interesting ethos that has emerged that the earthquake insurance will pay for all expenses post-earthquakes, no matter how reasonable or appropriate, or even if they relate to material damage or not. Rigour needs to be applied by the claims team to ensure integrity is maintained.

7. **Business interruption insurance coverage is specific and must be clearly linked to damage**

Business Interruption (BI) insurance cover responds to increased costs and loss of revenue as a direct result of damage to UC property or property for which UC has responsibility. BI cover will respond, for example, to disruption to a thesis student’s research where a critical piece of lab equipment has been damaged. It does not respond, however, to loss of students because there are no longer any fun places in Christchurch to socialise or because parents think that it would be safer to go elsewhere.

8. **There are many players involved**

Those involved in the University of Canterbury’s claim include the various Insurers (originally locally based but now a mix of local and off-shore), the broker, the loss adjustors (separate ones for material damage, business interruption, and fine arts), and the claims preparation team. In addition, there are peer reviewers brought in from time to time by the various parties to comment on progress and policy interpretation. Managing the various interests and communications between and amongst them is, understandably, demanding.

9. **There’s remediation and then there’s betterment**

At the time that remediation is occurring to repair damage it often makes sense to make improvements at the same time. This is particularly pertinent in the presence of ‘new knowledge’. For example, the damage caused by seismic activity convinced the University that it was necessary to replace all heavy ceiling tiles on campus. Where there was earthquake damage, the insurance claim has responded; where there was no damage but the tiles were replaced, the University has paid the betterment costs. Another example relates to the repair of damaged windows in the James Hight where all glass and fixings have had to be removed to be checked for damage. Where damage has been proven, the insurance claim has responded by replacing with double glazed, safety glass and aluminium frames. Where no damage has been found, new framing and double glazed, safety glass is being inserted at the University’s cost. With such an arrangement, absolute transparency and clear parameters are critical from the outset.
Innovations and new opportunities

Necessity is a good incentive for finding new ways for doing things and there are many examples from right across the campus where people found new ways to do old things or discovered new priorities in our changed environment. In this section we describe three examples: CHCH101, researching the earthquakes, and UC CEISMIC.

At a more general level, when talking with people about opportunities that arose in the aftermath of the earthquakes, a common theme emerged. Whilst ‘thinking outside the square’ and bright ideas are great for quick-wins, where fundamental changes to processes are required, these things are not really helped by completely new innovations.

The innovations that worked for us were ones for which a lot of the pre-work had already been done (i.e. they were initiatives that were already planned and the earthquake simply sped implementation).

CHCH101: Rebuilding Christchurch

With the significant involvement of the student community in volunteer efforts across the city, an opportunity emerged to offer these students a new course to integrate their field experience of the Student Volunteer Army, with academic perspectives on community engagement. The course was designed around the concept of service learning, whereby students get to see theory in practice through some form of community service.

The concept of service learning courses to encourage students to play an active role in the recovery of their community had been used before by Tulane University in New Orleans. We borrowed from Tulane’s experience, tailored it to our context, and have since shared our experience with other US universities based in communities affected by Hurricane Irene.

The CHCH101 course not only provides students with a tangible recognition (on their university transcript) of their efforts to support Christchurch’s recovery, but also prompts these students to critically reflect on their motivations, to critique the effectiveness of their contribution, and how they might take their learnings and apply them next time.

The course has been run four times so far, with 285 students participating. Students who completed the course successfully in that first year received a refund from the University of the course’s enrolment fees.

CHCH101 is planned to be an ongoing offering, with the curriculum evolving to offer new students opportunities to participate in the community recovery effort as part of the course. In addition, the University is now looking at opportunities to offer further service learning courses, whereby students have an opportunity to link their course work to real world problems. UC hopes to offer students an opportunity to both contribute to the community recovery effort and to transform it into a learning opportunity.
Researching the earthquakes

The earthquakes have led to nearly 170 earthquake-related research projects involving UC researchers. In this section we discuss the challenges presented to researchers in those frantic first few months after the earthquake.

**Funding:** Prior to the 4 September earthquake, a gap in the research funding regime in New Zealand is that we had no pre-established quick response funding mechanisms for researchers to capture time-sensitive data in the aftermath of a disaster. Following the September earthquake, researchers funded via the Natural Hazards Research Platform (the Government’s major funding mechanism for natural hazards focused research) was instructed to redirect its existing funding to any Canterbury earthquake work it felt was important to do. Whilst this approach worked to a certain extent, there were significant limitations in that only a proportion of all researchers interested in conducting post-disaster research work were currently funded via the Natural Hazards Platform, and its existing funding had been committed to pre-existing work programmes and so was not always available for re-purposing. In addition, many researchers have only small portions of their time funded via the Natural Hazards Platform, and many found themselves committing large portions of unfunded time working intensively to capture time sensitive data that would have been lost otherwise. Much of this unfunded work was reimbursed over time, but it did create significant uncertainties for many researchers. By the time of the February earthquake, funding issues were more quickly resolved with the Government setting aside funding for short-term research needs, to be managed by the Natural Hazards Platform.

**Coordination:** There were significant efforts to ensure collaboration and coordination within the research community, including fortnightly conference calls between social science researchers, and debrief meetings (attended by both researchers and practitioners) on the engineering and geotechnical response. The Natural Hazards Platform provided a good mechanism for supporting coordination between researchers.

Local researchers play an important role in coordinating the broader research effort, acting as liaison to enable access to key people involved in the response and recovery effort, providing incoming researchers with briefings on the context of the event and coordinating between different research teams to ensure their efforts are complementary and do not overlap. There is also a need to ensure that access to data is managed effectively (particularly where some data is sensitive), that contributions are recognised via co-authorship on publications (there were isolated examples of research teams wanting to publish data without due recognition) and, perhaps most importantly, that relevant research findings feedback into supporting the ongoing response and recovery effort.
Figure 45: Researchers out in the field capturing perishable data on the earthquakes’ effects.

Figure 46: Researchers helping to create liquefaction maps.
Even though the University campus was closed, requests from researchers to access necessary equipment and resources to support the response effort were accommodated wherever possible. In some instances, however, this was either not possible, or the equipment was damaged, requiring the researchers to coordinate with incoming researchers or source replacement equipment from elsewhere.

**Ethics:** During the first month after the February earthquake there were increasing concerns about the number of uncontrolled research surveys being deployed on an already traumatised community, sometimes without the necessary ethics approvals in place. In response to this, a moratorium was issued by the National Controller for Civil Defence and Emergency Management, on social research to the affected community until 1 May 2011. The moratorium also requested research teams, not directly supporting the response effort, to delay their visits.

For researchers, there has been the added challenge of communicating with an already traumatised community about the risks facing them. Researchers have had to walk a fine line to firstly manage the expectations of media and then to present their research as part of a broader national strategy, with research that is credible and robust, and does not pit organisations or research teams against each other (much to the disappointment of media outlets). Some researchers talked of the need to control the style and tone of communications to where the public are at – citing that in the first few weeks after the September earthquake, the community was traumatised and didn’t necessarily want, or had the ability, to absorb information about further potential aftershocks.

**Hosting International Teams:** Another important factor for researchers to think about is how to manage the added workload created by international research teams coming on reconnaissance and data collection tours. Disasters create both risks and opportunities. There is a risk of local researchers missing out on the opportunity to research their own disaster, due to the impacts of the event on their own lives. For local researchers there can also be an opportunity to collaborate with leading researchers from around the world who are suddenly interested in their home town.

It should not be under-estimated however the on-the-ground effort required to host such visits, with local researchers often asked to assist with advice on travel arrangements (transport and hotel options), using their local networks to organise meetings, field trips and access to datasets, as well as arranging for research assistants to assist collecting research data – all at a time when the local researcher is already overwhelmed by the events that have just occurred in their community, and setting up their own forward research agendas.

Few local researchers begrudge this effort, as they all recognise the importance of being part of a broader international research effort to learn from the event, but there are many who remember the near exhaustion of those first few months when it felt like there were so many international research teams in Christchurch.
The CEISMIC project

What can a professor of English literature do to support the community in times of crisis? Modelled on the digital archive created following 9/11, CEISMIC is a comprehensive digital archive of video, audio, documents and images related to the Canterbury earthquakes. It is designed to preserve the memories and experiences of people of the Canterbury region; to build a record of changes to our communities, our commercial and public organisations, our culture and our environment; and to provide a free resource for both researchers and the community.


Initial thoughts were to develop a modest server-under-the-desk solution to collect earthquake stories, images and media, but recognition quickly developed of the potential for a wide-ranging programme of work and the need to establish good governance and management.

The University of Canterbury provided initial funding for the project and a consortium was formed involving the National Library of New Zealand, Ministry for Culture and Heritage, NZ on Screen, Christchurch City Libraries, Canterbury Earthquake Recovery Authority, Canterbury Museum, Te Papa, Archives New Zealand, the New Zealand Film Archive and the Ngai Tahu Research Centre. Founding sponsors to the project included *Sysdoc, and The Press* (which is the local Canterbury newspaper) which provided 200 gigabytes of content in its first delivery, including unpublished photos and files. Environment Canterbury (ECan) and NZ Historic Places Trust later came on-board as primary content providers, and a long list of other providers, both inside and outside UC, are waiting in the wings.

Critical to the success of the project has been strong representation of the programme locally, nationally and internationally, and a focus on good governance, clear principles of collaboration and building a positive team culture. Experience with designing and managing complex enterprise-scale IT projects, coupled with commitment to a digital humanities ethos of openness and sharing, has also been crucial. In order to avoid the fragmentation that often results when a variety of organisations build repositories that can’t share with each other, UC CEISMIC was promoted as a federated archive, spread across several different ‘nodes’. Each node looks after its own content, but agrees to share its content with everyone in the federation. A simple analogy is that the archive is like a Google search engine, focused on the Canterbury earthquakes.

The programme is now run from the UC CEISMIC Programme Office and includes a team of business analysts, interns and an administrator. The team is fortunate to have the assistance and advice of a Research Committee of highly experienced academics from a range of disciplines and a high-level Advisory Board to help assure the long-term sustainability of the programme.
The basic principles underpinning UC CEISMIC are:

- Free public access, using open source software.
- Wherever possible, data is made publically available for non-commercial repurposing.
- The programme is set up with longevity in mind, supported by longstanding institutions, with good governance practices and controls (such as policies on copyright, ethics and consultation) designed into the archive.
- For the content to be highly searchable, with significant effort going into human metadata curation, so that items are tagged according to geo-location, address, time, earthquake events, and themes the item relates to.
- For the programme to be tightly integrated into the UC and broader Canterbury communities, for the benefit of those communities.
- For the programme to be tightly integrated into UC teaching, learning and research.

Figure 47: UC CEISMIC webpage.
9. Still on our to-do list

Unfortunately, the adage of ‘too much to do and too little time’ is even more applicable in an organisation recovering from a major crisis. It is important however that we take time to reflect on those things that are still on our to-do list and make the time to do those that are most important.

Throughout this review it has been incredible to see the effort and sense of ownership that is now taken across the University to be prepared to manage future crises. We are better prepared and more capable now than we ever have been before. Things still concerning people are around:

- **Alternates for all key roles:** This was identified as an issue following the September earthquake, but other than a few exceptions, people felt too exhausted to do much about it. February rolled around and we scrambled to get some backup for certain roles, but there are still gaps. If we want to make our response sustainable, then this priority needs to be resolved.

- **Memorandums of Understandings (MOUs) for Evacuating Students:** As highlighted earlier in the report, we believe that every University should have exchange MOUs in place for evacuating students for a semester if needed. As most universities would only be able to handle a small number of students, that means you might need MOUs in place with multiple universities. Whilst we now have a template for how we might approach these MOUs, we haven’t yet got them in place and see this as a priority.

- **Preparedness for a Mass Casualty Event:** Nearly everyone talked with on campus felt an underlying concern about how we would deal with a mass casualty event on campus. Although we have a Health Centre on campus, and all Health Centre doctors have a wheelie bag with first aid supplies we do not have the resources available, nor the planning in place, for triaging large numbers of patients. An event of that nature would also put significant strain on our welfare arrangements and communications which we need to think through. Future emergency exercises on campus will fully practice and test these arrangements.

- **Emergency help points and wide area broadcast system on campus:** Shortly we will begin installing an integrated emergency help point and wide area broadcast system across the campus to better support safety on campus and to aid us in the event another evacuation is required.

- **Information boards on the remediation of all key buildings:** There are poster boards around the Library telling people what we are doing to the building; we probably should be doing the same for our other major buildings, but it just hasn’t happened yet and remains on our to-do list.

- **Ongoing improvements in our Emergency Response arrangements:** We are assessing and developing better record keeping processes in our EOC and ongoing training is still
high on our agenda. We also need to continue running mock exercises so that team members can maintain close working relationships and continue to polish already practiced skills. We are finding this a challenge as we continue to deal with real events, reducing the appetite for spending time exercising.

- **Live streaming capability for EOC briefings:** We need to install cameras and microphones in the EOC so that briefings can be recorded and streamed live within the closed University network. This will allow a wider approved audience to ‘attend’ a briefing and to see and hear the information first hand.

- **Review of the secondary data-centre:** The resounding view from across campus was ‘thank goodness our IT kept working’. Investment in a new primary data-centre had paid dividends, with only minor disruptions to our IT services through the earthquake. Although our primary data-centre is robust, there are no guarantees that it will come through every potential scenarios as well. We do need to relook at our secondary data-centre to ensure that it is providing a sufficient level of redundancy.

- **IT disaster recovery plan:** We also need to do more work around an IT disaster recovery plan, and thinking about our priorities for what should get restored first.

- **Business Continuity Plans:** Despite beginning the process prior to September 2010, we still do not have Business Continuity plans in place for the all key areas of the University. Several departments have developed their own business continuity plans in response to the earthquakes, but coverage is not complete (and in some cases may not have an all-hazards focus) and so this remains an on-going source of vulnerability.

- **Supporting Student Study Groups:** Students didn’t want to study in isolation and informal study groups popped up all around Riccarton, the main student area of the city. There were lots of students though who didn’t know their peers and so didn’t get the same social support. Some enterprising students matched course lists with Facebook to create online communities to invite students to join. We need to think about and plan for how the University can support these initiatives in future events.

- **Remembering:** Whist we don’t want the earthquakes to define us, the earthquakes have changed all our lives. They have also left a lasting mark in the campus, some of it for the better. In time we believe a tangible recognition on campus and on our website is needed to the resilience of the University and its people.
10. Final thoughts
The last 18 months has presented the greatest challenges this institution has faced since its creation as Canterbury College in 1873. Responding to those challenges took people who were prepared to make a difference. All across the campus, in every area, people rose to the challenge and we wish to acknowledge their efforts, their courage and their determination.

It was striking to us, as we prepared this report, how open and reflective people have been in wanting to share their experiences and learnings with others, and their willingness to talk openly not just about our successes, but also about the things that require improvement.

UC can be justifiably proud of how it responded to the earthquakes. To be teaching again, just three weeks after the 22 February earthquake and to deliver a full academic year in 2011 took a huge amount of creativity, skill and sheer hard work. It wouldn’t have been possible, however, without the significant amount of prior preparation UC had done as part of its emergency management programme.

Since the earthquake, UC’s response has been recognised by several awards, including winning the 2011 Business and Industry Preparedness Award by the International Association of Emergency Managers, and also winning the Not for Profit Public Relations Category at the Public Relations Institute of New Zealand Awards. Perhaps the most important recognition however is that 90% of our students say they would recommend UC to others.

So where to from here? We know that we are still not 100% ready for everything that might happen. Partly that is financial, because few institutions can simply buy what they think they need without concern, and partly because there will always be something different to consider or react to. Over the past 22 months we have considered what would have been required had we had to deal with serious injuries or fatalities on our campus. Operationally we had plans for such events, but would they have been sufficient and would we have coped with the realities of that scenario? This is something we must do more to prepare and practice for.

Even with this planning, however, it is important to recognise that no one can anticipate every possible scenario. In the 22 months, in addition to the earthquakes, the University has also had to respond to three snow storm events, the risk of an armed offender on campus, a bomb threat and an explosion within a laboratory. We need to continue to improve the resilience of our University, our people and our community so that we are ready, whatever comes.
Understand that crisis events do not care what is on your desk at that moment. Everything that was important a moment before, now isn’t. You can’t and won’t be prepared for everything so you need to develop your management style to cope when everything changes in an instant. This is the reality so don’t try to fight it... find a way to work through it.

Figure 48: Snow on Okeover House during the 2012 snowfall.

On behalf of all the key responders across the University of Canterbury, we hope that our experience is of help to you, that you do use it to review and improve your own preparedness and response plans, and that you never need to use them.

Erica Seville – erica.seville@rsr.co.nz
Chris Hawker – chris.hawker@canterbury.ac.nz
Jacqui Lyttle – jacqui.lyttle@canterbury.ac.nz
Summary of lessons learnt

For those of you who are reading this report who have responsibilities within your organisation which require you to take a leading role during a critical incident, we strongly encourage you to make the effort to be prepared and to invest sufficient time and resources towards planning and practicing for a major event. The investment might seem superfluous to some people when it is put up against ‘business-as-normal’ priorities; however when a critical incident occurs and you are not prepared, your inability to respond will be most obvious to the person who is generally your harshest critic, yourself.

1. Immediately after the earthquake many people were situationally unaware of their hazardous environment; walking slowly, somewhat aimlessly, and often with eyes cast down texting. It took the second major aftershock to make individuals take evacuation instructions seriously and follow the advice being given to quickly move away from buildings and into a safe location. Since the 22 February earthquake we have now set up a Community Support Group to ensure we have enough people on the ground to direct people where to go and provide advice and support during an evacuation. We have also planned, and will shortly be installing, an integrated safety and wide area broadcast system to enable us to communicate emergency instructions across the campus when necessary.

2. Never assume that the things you are doing are the top priority things to be doing. Particularly in the heat of an initial response, ensure that there is a prompt to pause, breathe and re-adjust your plan if necessary.

3. It isn’t enough to think: ‘get the experts in and they will tell us what to do’. It took us a while to get our heads around the need to be sure that we were asking the right questions. The questions asked dictate the approach and assessment criteria used by structural engineers for evaluating whether a building is safe to occupy.

4. A university’s actual risk profile changes daily. Close relationships with laboratory technicians and managers are important for understanding what people were doing just before the earthquake, and therefore what concoction was sitting on the laboratory bench that now needs to be dealt with.

5. It is worthwhile for Health and Safety team members and the Operational team members, in conjunction with the Incident Controllers, to spend time pre-crisis making sure each understands and agrees protocols which will be adhered to during a crisis.

6. Timelines are really important, but they are also challenging to provide. Often it isn’t an exact date people are looking for, but rather orders of magnitude – whether it is likely to be days, weeks, months or years before they can get back into their building.
7. People find it very important to be able to ‘look the engineer in the eye’ and ask them what they want to about their building. Although our engineering resource continues to be stretched, we have found talking with staff to be a very good use of our senior engineer’s time. People have tended to feel much more confident about their building when they know more about how it responds in an earthquake and have heard that from the engineer directly.

8. Based on what we had learnt from other universities who had faced disasters, we knew that we needed to communicate early, communicate regularly, and that our leadership team needed to be visible – to be the face of the institution.

9. To start with it is important for most communications to come from the Vice-Chancellor to provide visible leadership and coherence. As time goes on though, people want to hear from different voices using diverse channels. To provide consistency of message and yet still enable multiple levels of leadership, a potential solution may be to craft core messages which can be topped and tailed by other leaders. It is important to regularly evolve communications protocols to match changing requirements during the transition from emergency response into recovery.

10. Where there is a void of information about expectations of when and where people can operate from, they will naturally seek to find their own solutions. This enthusiasm and resourcefulness is both an asset to be nurtured and a challenge to manage. Checking of temporary teaching space did slow the reoccupation of UC buildings, but it was also important to support departments in their own initiatives to get back teaching.

11. Personal interventions were key to retaining international students. Something as simple as a 30-second interview, personalising the response and asking them how they were getting on was critical to finding out about individual situations.

12. If students want to leave it is important to ‘help’ them through planned initiatives so they are then able to readily return. Student exchange programmes with other universities, where the student remained enrolled with UC, were important for retaining a student’s on-going relationship with the University. Negotiating these exchange agreements in the midst of a response however was very time consuming and complex. Our advice for other universities is to develop Memoranda of Understandings in advance with a suite of other universities, for how to utilise student exchange programmes following a major disaster.

13. You have to draw a line in the sand. With an ongoing crisis there is the temptation to just let everything slide, but with a university year being cyclical, at some point you have to transition back to a ‘normal’ timetable.

14. Our original draft emergency resolution did not set any initial timeframes for when emergency powers would default, requiring a Council Executive meeting to withdraw the emergency powers. A better approach might be to have emergency powers defaulting after a particular time period, with an option to extend them as required.

15. It is important for the Council to have an understanding, going into an event, of how the organisation is prepared to respond.
16. Always keep an eye on the long-game. It isn’t just the decisions made during the response, but also the way those decisions are made and the way relationships are maintained that sets the context for the hard road of recovery ahead.

17. When making decisions, pause and look for parallels to other situations you may have dealt with before. At other times expect to have to make decisions without all of the facts, and expect to have to some clean-up afterwards. Most importantly though, make a decision and move on.

18. We need to keep reminding ourselves that recovery is a marathon and not a sprint – the process of renewal will take decades, both for the University and Christchurch.

19. Recovery isn’t a desk-top exercise. You have to get out there, walk around campus and talk to people to see what really isn’t working for them. Often it is the little things, which if you can fix, make a big difference for those directly affected.

20. Although it sounds self-evident, we can’t emphasise enough the importance of really engaging in a partnership with the students’ association to make recovery a reality. Students are what universities are all about and they need to be part of the decision making process.

21. Get to know the student president well and support them to be effective. That means supporting them to provide the voice of students at your decision making table – not expecting them to be the voice of management to the students.

22. It is worth establishing reverse telephone trees and easy mechanisms for people to update contact details during an event.

23. Whilst it is important to get information up on the website at least daily, recognise that you rely on your second, third and fourth tier managers to provide the more personal connections for staff. Coaching these leaders is really important.

24. Do whatever you can do to get key staff back at work. For us this included providing temporary child-minding for key response staff, near the Emergency Operations Centre, at a time when all childcare centres across the city were closed.

25. There is a point where people need to re-engage with the university for their own purposes, to re-establish normal routines and to support their own personal recoveries.

26. There is no doubt that our people suffered wear and tear from the earthquakes and there is a definite sense of emotional exhaustion. Twenty-two months on, this exhaustion is still evident.

27. It is important to recognise that your team will now know instantly where they are at. Asking them four days after the earthquake if they are okay is just a snap-shot. You need to keep asking the question over time to see how people are tracking.

28. There is a real challenge for staff that are victims at the same time as having to respond professionally. It would be valuable to have more advice around recognising shock in yourself and colleagues.

29. When you are in the midst of a response it is so easy to think that it is just those in your immediate circle of contacts who are working the long hours and giving their all. The reality is, in an organisation as large and diverse as a university, that people across the
campus are working just as hard, doing things you hadn’t even thought of, but which are equally as important to the future of the organisation.

30. Opportunities alone are no good without a clear plan/vision going forward. Over time we have realised that a more substantive discussion is needed on what ‘Renewal’ means for our institution.

31. The innovations that worked for us were ones for which a lot of the pre-work had already been done (i.e. they were initiatives that were already planned, and the earthquake simply sped implementation).

32. Understand that crisis events do not care what is on your desk at that moment. Everything that was important a moment before, now isn’t. You can’t and won’t be prepared for everything so you need to develop your management style to cope when everything changes in an instant. This is the reality so don’t try to fight it – find a way to work through it.

There are a further 40 lessons learnt contained within our earlier report, *Shaken but not Stirred: A University’s Resilience in the Face of Adversity – the 4th September 2010 earthquake*, available from: [www.canterbury.ac.nz/emergency/resources.shtml](http://www.canterbury.ac.nz/emergency/resources.shtml).