



Inspiring better buildings

ANNUAL REVIEW 2016





Our guiding principles

Industry good: Improving industry's ability to provide better buildings.

Independence: We will always maintain our independence and impartiality.

Transparency: We will always be accountable and transparent about our Levy work.

Capability: We will systematically review our technical capability to make sure it is fit for purpose and aligned to our strategy.

Levy allocation: All Levy funds will be invested to ensure effective knowledge transfer.

Industry issues: Our role is to provide the evidence base for past, present and future industry issues.

Innovation: We will support early stage industry-led innovation.

Commercial work: Consultancy services will be undertaken on a commercial basis.

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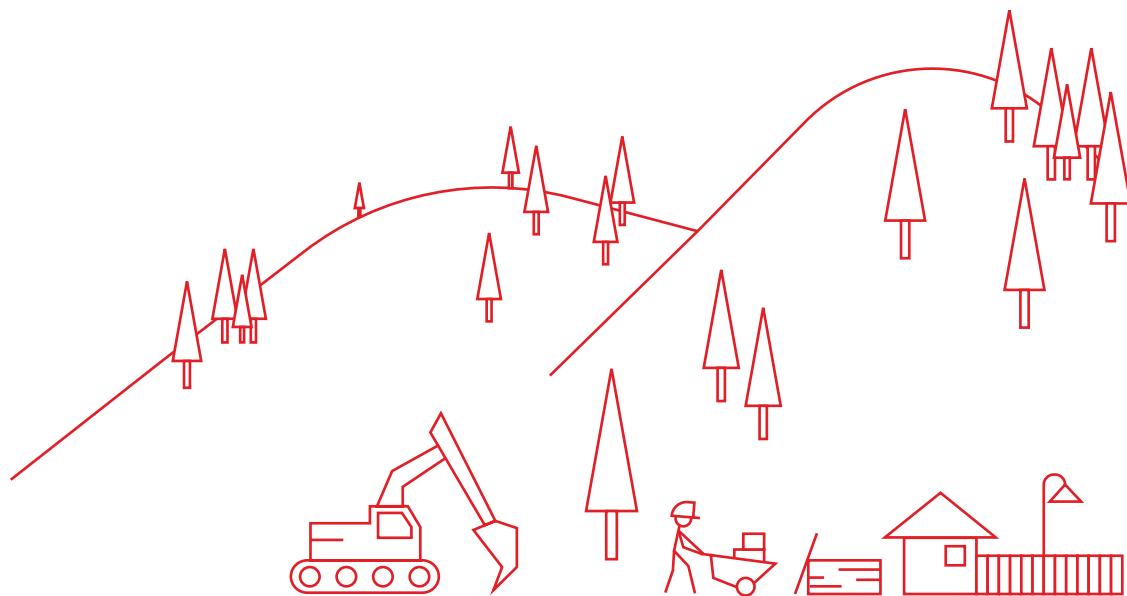
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The year in review



Inspiring the industry to
provide better buildings
for New Zealanders



A message from the Chair and Chief Executive

Our context

The value of building and construction activity in New Zealand will hit an all-time annual high this year, exceeding the \$36 billion we forecast in the third National Construction Pipeline Report.

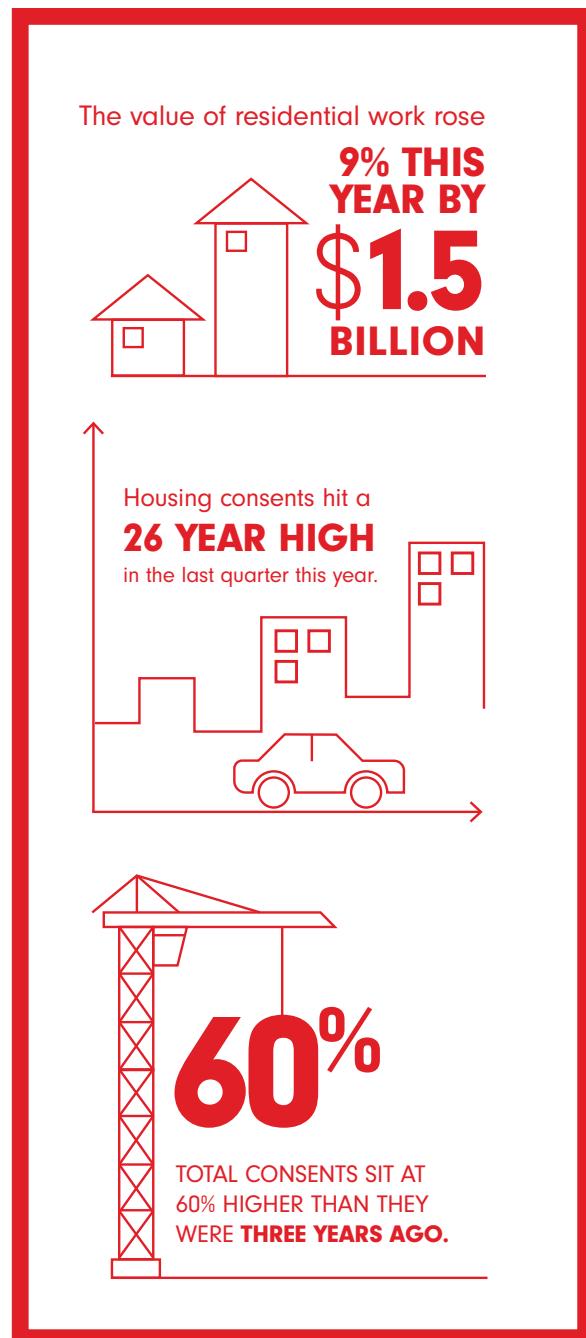
The 2015 report, produced by BRANZ and Pacifecon (NZ) for the Ministry of Business, Innovation and Employment (MBIE), shows construction sector workloads over the next five years continuing to expand.

Construction levels in Christchurch look unlikely to drop significantly for several years.

Building activity in Auckland for the year end to March 2016 has just topped a high of \$6 billion.

And whilst housing consents sit at 60 percent higher than three years ago, housing shortages continue to grow in all major urban centres. Unmet demand is now a contentious topic in the arena of political and public debate. It is seen to exacerbate issues of rental costs, unhealthy homes, overcrowding and homelessness.

Such issues resonate for all New Zealanders. They sit at the heart of the nation's sense of future wellbeing and challenge fundamental values New Zealanders hold dear. Testing how these issues intersect with the building sector, and focusing on how BRANZ best supports the sector to deliver for New Zealanders, has driven our work this year.



Our call

In this environment, the challenge for BRANZ is focus – focus on what we do best and continued focus on achieving benefits for New Zealanders.

Relative to the rapidly expanding size of the construction sector and its economic value, our resources are modest. The income for BRANZ Inc. from Levy receipts this year totalled just under \$17 million. This income is unlikely to rise much further. We are committed to investing this resource wisely.

The building and construction sector forms a complex system with competing pressures from changing technology, construction practices, skill requirements, product development, sustainability, the regulatory environment and clients. For BRANZ to make a difference as an organisation we must focus.

Last year we sharpened the BRANZ strategy and vision.

We said our vision is – *Inspiring the industry to provide better buildings for New Zealanders.*

Twelve months on we find this vision still holds true for us.

It drives the complementary business models we operate, traversing Levy investment, industry-good research, knowledge dissemination and consultancy services.

It also anchors the eight guiding principles we use to help us turn strategy into reality.

This year we have embedded these principles to guide adjustments we are making to sharpen our focus. We are shifting strategically, just as the industry is being called to shift, to address the changing landscape.

Patterns of living are changing in New Zealand. The status quo no longer delivers the range of living solutions required. This year we have purposefully toolled up to better focus on what we will deliver.



Our people

We have toolled up within BRANZ. Appointments to the Executive team were completed with all senior roles in place by the new year in 2016. We now have a talented and high performing executive with members bringing a fresh suite of experience and skills to BRANZ.

With their arrival, we launched a leadership development programme across the organisation. This will continue through the coming 12 months to enable our leaders to better support our teams across BRANZ and our focus on increasing the impact of BRANZ's work.

We have invested in Health and Safety practices at BRANZ, with our people winning the ACC Workplace Safety Award at the 17th Annual Wellington Gold Awards in July 2015. We have added new capability within research teams to help address emerging priorities, including expertise in the social sciences.

We have also developed a Campus and Asset Management Plan to ensure that our facilities meet the industry's research and testing needs for the future. The Plan focuses on replacing, and refurbishing aging property, plant, and equipment over the next five to eight years. It will require \$10-\$15 million of investment over the next three years. By utilising the cash reserves of BRANZ, the plan can be implemented without additional funding from industry or the government.

Our research

This year we increased our investment in research to \$12.4 million, focusing on where Levy funds can leverage the greatest benefit.

We invested in 134 projects, paying particular attention to industry issues that directly impact on people, alongside seeding innovative projects that promise significant long-term payoffs. In total, 60 projects have been funded externally, involving partnerships and collaboration with 28 research and government agencies.

Just over half of the projects funded by the Building Research Levy are progressed by BRANZ's specialist research teams and in-house experts in knowledge transfer. These teams focus on improving the capacity in New Zealand to provide buildings that are safer, healthier, warmer and more resilient. This is work that our teams hold authoritative knowledge on. It is work the industry and building occupiers have brought to our attention. It is work that helps to improve the quality of lives.

Listening to our stakeholders and key players across the construction sector has also made us rethink how our research funds can deliver better results for New Zealanders.



We have asked ourselves how to get greater additionality from the research we do at a system level. We have asked who must we connect with, what new partnerships and synergies we must forge, and how we can better catalyse transformative change.

This year we have reviewed our research priorities to formulate a refreshed framework for multi-year and multi-disciplinary investments. This is the first step in a multi-year approach to develop a balanced portfolio of investment in research and knowledge dissemination work, well aligned to other research investments.

The refreshed framework encompasses the following research priorities:

- › giving the industry tools to deliver medium density housing that meets the needs of New Zealanders.
- › helping consumers understand what the minimum standard means and the benefits of exceeding it.
- › eliminating quality issues.
- › creating warmer, drier and healthier buildings.

These priorities will drive the focus for BRANZ's investments and research delivery over the next three to five years while we further develop the balanced portfolio approach.

Our knowledge

BRANZ is passionate about turning research findings into actionable knowledge. We are committed to ensuring this knowledge is widely accessible.

This year we made *build* magazine available to all licensed building practitioners (LBPs) in New Zealand, free of charge. This decision extends the reach of *build* to over 40,000 building practitioners. It complements the launch of *build* online, as a mobile resource, accessible at the tap of a finger.

BRANZ's Maintenance Schedule tool is also being made freely available. It enables builders to provide consumers with an in-depth maintenance guide for their home.

No year at BRANZ sharing industry know-how would be complete without our work through seminars, presentations and workshops.

Our research findings on critical moisture issues in buildings have been in hot demand. In all, 500 architects and designers participated in BRANZ presentations in Auckland, Christchurch, Wellington and Dunedin during July, given at the invitation of the New Zealand Institute of Architects.

BRANZ researchers also provided core modules, for the New Zealand Institute of Building Surveyors training programme on tactics for managing moisture. In addition, BRANZ presented key findings to researchers at Otago University and advised the Ministry of Education further on addressing internal moisture issues in school buildings.

Listening to our stakeholders and key players across the construction sector has also made us rethink how our research funds can deliver better for New Zealanders.

Our assurance services

At a time when the industry is stretched, and working harder to meet escalating demand, a trustworthy quality and product assurance regime is critical.

The rigour, independence and impartiality of BRANZ's testing and assurance services are important. Our experience and integrity help keep the industry and New Zealanders safe. We see this acknowledged in the increasing demand for our technical expertise, information resources and testing capability this year.

A rigorous and coherent assurance services system is essential for industry and New Zealanders. This year we have been taking the necessary steps to become a fully accredited product certification body. If successful, we will extend BRANZ's services across all elements of the government's product assurance framework, including CodeMark. This will strengthen the government's framework and help the industry consistently deliver Building Code compliance to a standard that can be trusted and is transparent.

Our leadership

During times of rapid change, when growth is unprecedented, the call for leadership can be amplified. All too readily the leadership response can be seen as being able to provide all the answers.

At BRANZ we don't have all the answers. We have knowledge and evidence-based insight. We have confidence in what we do and in our capacity and continuous commitment to deliver value. We are well placed to connect the players across industry, research, government and the community.

We see our leadership being less about answers and more about asking challenging questions with the confidence to invite others to explore these questions with us.

This year BRANZ shaped the proposal to deliver the final National Science Challenge. We readily took up the role of contract holder and host organisation of the National Science Challenge 11, Building Better Homes, Towns and Cities. Over 200 researchers from 25 research organisations will now collaborate on this Challenge. The team we brought together includes all our universities, four Crown Research Institutes and 11 independent research organisations. This team will explore, over the next decade, issues around housing supply, quality and urban development. It will share knowledge, find and foster innovation and technology, and explore new ways of thinking across the sector. We are proud of our contribution to this important collaboration.

To further ramp up new ways of thinking, we also initiated a series of discussions with leaders during the year to explore ideas on transformative change across the building and construction sector. BRANZ hosted 25 thought leaders from across the country to kick start an exploration of potential disruptive trends and transformative futures within the building and construction industry in New Zealand. The theme for these discussions, *Behind the Seen*, invited participants to relinquish the comfort of known certainties and explore a range of extreme scenarios for the sector. Participants included leaders from within the industry who were joined by innovation leaders in technology, urban design, demographics, social development, business and investment. We agreed to continue to pursue further exploration of alternative business models, customer and community insights and opportunities for large system change.

This year we stretched ourselves to create the space for some very different conversations about the building and construction sector, about changes and about the future. We found the willingness to connect, reflect and explore new ways of thinking was shared across many of our networks. We intend to continue to invite our colleagues and partners to participate in imagining and making possible a better future for the sector and how it can better serve New Zealanders.

Finally, at the heart of our explorations around our leadership role and increasing our impact, is a new initiative we have just begun work on. Our virtual 'clerk of works' project is exploring how mobile technologies can be used to improve the build quality of residential buildings. The project aims to improve visibility of the critical elements of a build, in real time, allowing client, architect, builder, sub-contractors, product suppliers and building consenting officials to verify quality. It will enable early intervention that can prevent problems appearing down the track and create an enduring record of build quality. It is a compelling project pushing BRANZ into new and exciting territory. It is not without risk, but as John F Kennedy said, "We set sail on this sea because there is new knowledge to be gained... for the progress of all people".

As the year ends, we look forward to the journey that beckons us, across new frontiers of discovery, in the year ahead.

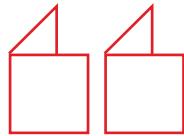


Dr Helen Anderson, QSO
Chair



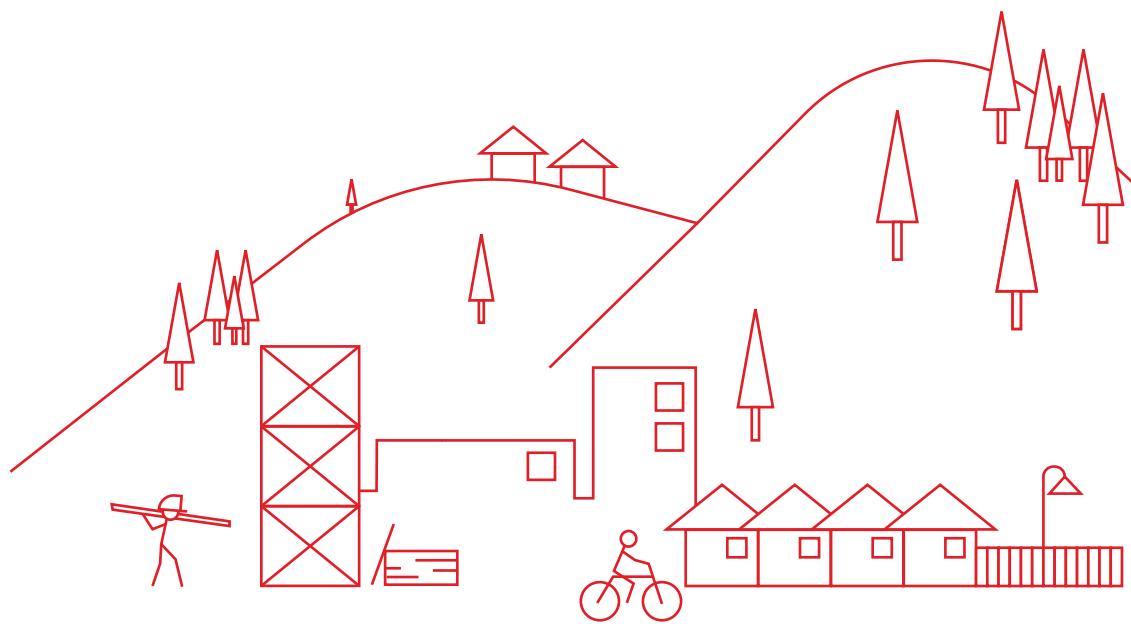
Chelydra Percy
Chief Executive Officer

CHAPTER
02**BRANZ**
at work



Chelydra Percy
BRANZ CEO

Great ideas, pragmatic solutions and improved performance are needed and expected of the industry as demand for new and better buildings continues to grow across New Zealand. BRANZ's effective stewardship of the Building Research Levy means our investment in research and education can play a significant role in supporting this.



Levy stewardship

Wise stewardship of the Building Research Levy is a core responsibility of BRANZ. We take this role seriously. We are committed to robust decision-making processes, transparency and disciplined management of Levy investments.

This year BRANZ invested \$12.4 million in research and knowledge dissemination projects across a total of 134 projects. Just over half of these projects are being progressed by BRANZ's specialist research teams and knowledge transfer experts. Sixty external projects have been funded involving partnerships and collaboration with 28 research and government agencies.

Levy investment spans a wide arc of project areas. It includes work in areas that have the immediate potential to save lives, such as the provision of guidance on passive fire protection. It includes research on ventilation and information on how buildings in New Zealand can be made warmer, drier and healthier. It includes unlocking new insights around productivity in our economy. And it supports pockets of pure

experimentation and collaboration, such as the premiere event for young architects, and engineering students each year, known as ARCHENG.

To ensure investments are targeted and high quality, internal and external Levy investment proposals undergo scrutiny through annual contestable funding processes. Partners are informed by the Research Prospectus publication available on the BRANZ website that outlines investment priorities and portfolio research themes.

BRANZ also retains the flexibility to be able to respond to emerging industry issues and research opportunities that arise out-of-cycle. Eighteen out-of-cycle projects have been supported in 2015/16. These include external research initiatives on topical issues such as:

- › the New Zealand rental sector
- › likely changes to construction businesses in Christchurch post earthquakes recovery phase
- › the case for urban development authorities in urban regeneration.

LEVY STEWARDSHIP

Translate industry needs into investment priorities

Seek research proposals and allocate Levy

Ensure research results are achieved

INDUSTRY-GOOD RESEARCH AND KNOWLEDGE DISSEMINATION

Propose projects aligned to investment priorities

Undertake research and evaluate benefits

Transfer knowledge obtained through research

CONSULTANCY SERVICES

Seek new consultancy work from existing and new clients

Undertake consultancy work and evaluate benefits

Transfer knowledge to client

Industry-good research and knowledge dissemination

BRANZ provides independent, impartial evidence and advice based on robust science. Our scientists and engineers undertake research to meet the demands and challenges of a rapidly changing building industry. This research provides scientific knowledge and solutions for both current and emerging issues.

As a research provider, we work hard to understand the issues and challenges of both the built environment and the industry. We work hard at maintaining strong connections with the industry and we use our international links to ensure that our research reflects developments globally.

BRANZ is passionate about unlocking research results into actionable accessible knowledge. This commitment means transforming research findings into information, advice, techniques and tools that can be used to make an impact immediately and over the long-term.

A dedicated team, skilled in architecture, design, publishing and web development, commissions and develops material to transform insightful research into real nuggets for the industry. These skills complement our highly qualified research teams who are experts in a wide range of disciplines.

BRANZ staff also contribute to the development of New Zealand, Australian and international standards.

Consultancy services

BRANZ Consultancy services provides commercial testing and assessment services alongside expert advice to industry clients. This impartial and independent assessment and testing of products and technologies supports clients in demonstrating compliance with the New Zealand Building Code.

With the sector stretched to meet increased demands and with product assurance in the spotlight, BRANZ's work has become critical in this area.

To ensure assessments are robust, BRANZ undergoes a range of regular audits by internationally recognised accreditation organisations such as International Accreditation New Zealand. These audits cover BRANZ's testing methods and equipment, ensuring industry and consumers can be confident about the rigour of BRANZ's work and the results provided to clients.

The range of services offered by BRANZ includes:

- › fire safety assessment
- › fire testing
- › materials durability and performance
- › product and system assurance
- › structural performance – expertise in engineering
- › thermal performance
- › ventilation and energy efficiency
- › weather tightness.

BRANZ Consultancy services is committed to ensuring clients are able to successfully apply the knowledge gained from working with BRANZ to their own business. This, along with the development of some new service offerings, has been a key focus for the team during 2015/16.

Quality is at the heart of what we do

Quality is a constant challenge and core commitment for the building industry. However, in a complex system, improving build quality is a complex problem requiring a multi-pronged approach. It is a pivotal issue for all players across the sector, and addressing quality is what drives BRANZ. Supporting the industry to deliver quality sits at the heart of everything we do.

A small slice of the work we have done this year is captured in the suite of stories that follow. These snapshots spotlight our focus on quality that supports:

- › **Healthy homes, healthy lives**
- › **Safety at home and work**
- › **Fit for purpose innovative products and systems**
- › **Staying connected to new knowledge and industry know-how**
- › **Investing in our future research leaders**



John Ruskin

“Quality is never an accident. It is always the result of intelligent effort. There must be the will to produce a superior thing.”

Focus on quality

our work on Healthy homes and healthy lives includes:

- > Managing moisture better
- > Better ventilation in roof cavities
- > Better use of heat pumps
- > Warmer drier apartments



Managing moisture better



Useful information on mitigating the impact of moisture and mould in New Zealand homes formed the basis of a series of seminars held in eight centres around the country this year.

Based on BRANZ research findings, the seminars explained the science behind the generation and movement of moisture and included information on the control of water vapour and advice on good ventilation practice.

More than 800 industry practitioners attended the seminars, about 250 more than expected. Attendees included builders, building owners, designers, engineers, building officials, manufacturers, trades contractors and scientists. ■



Better ventilation in roof cavities

This year BRANZ's long-standing research on weather tightness, air quality and ventilation engineering (WAVE) produced useful insights on the importance of roof ventilation in controlling dampness.

BRANZ researchers studied the effects of extra ventilation in homes with traditional gable roofs and skillion-type roofs (flat roofs with a steep pitch). They found that extra ventilation channels reduced overall condensation in both roof types compared with roofs with few or no vents. They also found that reducing moisture in living spaces through extra ventilation can reduce condensation in the roof space.

These findings have been shared widely through special bulletins, videos and a series of seminars.

BRANZ's overall WAVE research programme, has produced a number of practical solutions to problems around weather tightness and indoor mould that are common in many existing buildings in New Zealand. Whilst the WAVE programme wrapped up this year it forms the foundation of a new portfolio of research unfolding at BRANZ that will focus specifically on drier, warmer, healthier homes. ■

Better use of heat pumps

The past 15 years have seen a dramatic increase in the use of heat pumps in New Zealand homes. Heat pumps are now accepted technology used to generate warmth and reduce humidity in our homes.

However, a random sample of 160 New Zealand households has revealed that some simple changes could be made to improve the quality of heat pump performance. This work, a partnership between BRANZ, the Energy Efficiency and Conservation Authority and Transpower, found that:

- › Consumers need clearer guidance on operating costs and measures
- › More information on best practice for heat pump installation is required
- › Choosing the right location for a heat pump and the right sized heat pump is critical for good heat pump performance
- › Heat pumps do not replace the need for insulation in homes
- › Information on the maintenance of heat pumps is needed.

There are lessons for both the industry and for householders from this study. Consumer New Zealand has already incorporated advice based on these findings on its website and further uptake on the learnings is under way within the industry. ■

Warmer drier apartments

BRANZ research means the occupants of one of Wellington City Council's ageing suburban rental housing blocks are now enjoying drier, warmer and healthier apartments.

When Wellington City Council decided to refurbish its Kotuku Apartments complex near Wellington airport, it agreed to let BRANZ researchers use the project as a case study.

The Kotuku complex was built in the late 1960s, when building insulation was not the norm. As the refurbishments were planned, BRANZ modelled the impact of the proposed renovations in comparison with the original state of the buildings. These models showed the upgrades would, in theory, make a massive improvement.

During the refurbishment, BRANZ researchers used the opportunity to explore how renovations such as double-glazed windows and insulation can provide healthy, comfortable living, even when finances are limited.

Now that the Kotuku refurbishment is completed, the tenants are back home in the 73 upgraded apartments. However, the BRANZ research will continue throughout the winter months. Researchers are collecting hard data on actual thermal performance now that the complex is inhabited and monitoring temperatures and energy use to track how heat flows in and out of apartments.

Once the project is finished, the research findings will help other low to medium-income housing providers such as councils, Housing New Zealand and community housing groups. They will have access to information that will help them carry out successful upgrades and deliver better quality accommodation. ■



Focus on quality

our work on Safety at home and work includes:

- > Improving seismic performance in New Zealand
- > Safer suspended ceilings
- > Saving lives in a fire
- > Safer school halls and gyms

Improving seismic performance in New Zealand

BRANZ released a new online resource for the construction industry to support better earthquake-resilient design and raise the seismic performance of New Zealand's building stock this year.

The resource provides good technical information on how to better incorporate earthquake resilience into buildings. It also includes learnings from the Canterbury earthquakes and from other seismic events in New Zealand and around the world, providing a unique central source of this specialist information.

Topics cover the following areas:

- > seismic science and site influences
- > planning for resilience
- > superstructure
- > foundations
- > building envelope
- > strengthening strategies
- > non-structural systems.



Safer suspended ceilings

Poor performance by suspended ceilings in recent big earthquakes led to BRANZ working with industry to produce a new code of practice this year.

The code, drawn up in conjunction with the Association of Wall and Ceiling Industries (AWCI), covers best practice in the design, installation and seismic restraint of suspended ceilings.

Poor design and installation of these elements caused suspended ceilings to collapse in the two major Christchurch earthquakes. Ceilings and associated fittings also failed in Wellington in the 2013 earthquake that was centred near Seddon in Marlborough.

There were no fatalities in the Wellington earthquakes. However, lives could have been lost because of ceiling collapses. The use of the code will ensure costly and potentially lethal damage can be prevented or minimised in future.

The code was launched at the AWCI national conference in October 2015. BRANZ and AWCI are now working with major installation and supply companies to ensure it is implemented in the sector. The code is also being promoted through seminars and conferences.

The code of practice is available at www.awci.org.nz ■

Saving lives in a fire

Sixty delegates to the Fire Protection Association New Zealand (FPANZ) annual conference this year witnessed a sobering demonstration at BRANZ of how passive fire protection saves lives.

Passive fire protection encompasses how to design, install, inspect, certify and maintain resilient joinery, building materials, sealants and related features to support more effective fire protection in New Zealand buildings. When installed properly, such features can buy time for people trapped inside buildings during a fire event.

During the demonstration, the Fire Lab furnace was stoked to temperatures of 900°C. Contrasting sets of test samples — a light socket, door frame installation and pipes passing through walls — were subjected to the extreme heat.

The test demonstrated the impact of correctly versus incorrectly installed passive fire protection features and made an immediate and unforgettable impression on the delegates. Most had not visited the Fire Lab before nor witnessed first-hand the dangers created by poor passive fire protection.



These delegates, people who play a key role in protection against the damaging, and sometimes fatal, consequences of fire, found the experience sobering. The test reinforced how vigilant the industry must remain in ensuring passive fire protection is always provided properly. The FPANZ delegates left with considerable appreciation of the fire testing resources and skills at BRANZ and, more importantly, the value of quality passive fire protection for people. ■

Safer school halls and gyms

BRANZ research this year has provided science-based assurance on safe school buildings and also saved the Ministry of Education considerable money.

BRANZ was commissioned by the Ministry of Education and MBIE to investigate the strength and stiffness of walls in typical school gyms and halls.

The project involved building a full-scale section of a gymnasium side wall in the BRANZ structures laboratory, which was then subjected to racking tests. These tests allowed the researchers to find out the extent to which the various elements of the wall contributed to deflecting loads.

The results delivered good news. The testing proved there is more resilience capacity in the walls than originally thought – meaning strengthening work may not always be necessary.

Engineers had suspected the walls of school halls and gyms might be stronger than thought. They believed that elements such as cladding, linings and framing – in addition to the cross-braced steel framing between portals – offered protection during shaking. The BRANZ tests now provide the scientific evidence needed for engineers to accurately, and more confidently, assess the quality and strength of existing school halls and gyms.



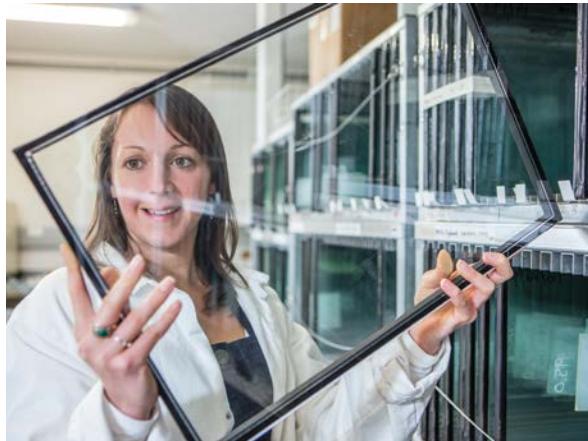
The results are being incorporated in a revised version of the engineering profession's 'bible' – the New Zealand Society for Earthquake Engineering's *Assessment and Improvement of the Structural Performance of Buildings in Earthquakes*.

Together with earlier work done by BRANZ on the strength of timber-framed school classroom buildings, these findings could save an estimated \$500 million over the lifetime of the buildings. The results mean that the costs of strengthening school halls and gyms will be much less than anticipated. ■

Focus on quality

our work on Fit for purpose includes:

- > Quality innovation to meet new consumer demands
- > Supporting industry standards for insulating glass panels
- > Extending our product assurance services
- > Testing the use of light timber framing



Quality innovation to meet new consumer demands

BRANZ was faced with a novel request during the year.

Waterproofing sealants manufacturer Sika asked BRANZ to appraise a system for a green roof that could support grasses and trees.

BRANZ has been undertaking appraisals for Sika since 2005, but this request was a first.

It catalysed a steep but positive learning curve for both Sika and BRANZ.

In BRANZ's case, it has meant coming up with robust and effective technical evaluation criteria to assess the reliability and durability of a green roof. ■

Supporting industry standards for insulating glass panels

Manufacturers of double-glazed glass units that are members of the Insulating Glass Unit Manufacturers Association (IGUMA) must meet rigorous standards.

BRANZ supports IGUMA members to meet these standards by providing the testing that ensures all IGUMA systems are up to the mark.

Currently, there are 27 members of IGUMA and four manufacturers seeking membership. Between them, they produce 38 different double-glazing systems. All of these systems undergo testing by BRANZ.

The BRANZ regime consists of tests for long-term durability. Each distinct double-glazing system must meet the internationally recognised European Standard EN 1279 *Glass in building. Insulating glass units*.

In the past year, 62 separate tests were carried out on insulating glass units at BRANZ. Manufacturers are also subject to an independent audit of their quality management systems on the factory floor. ■

Extending our product assurance services

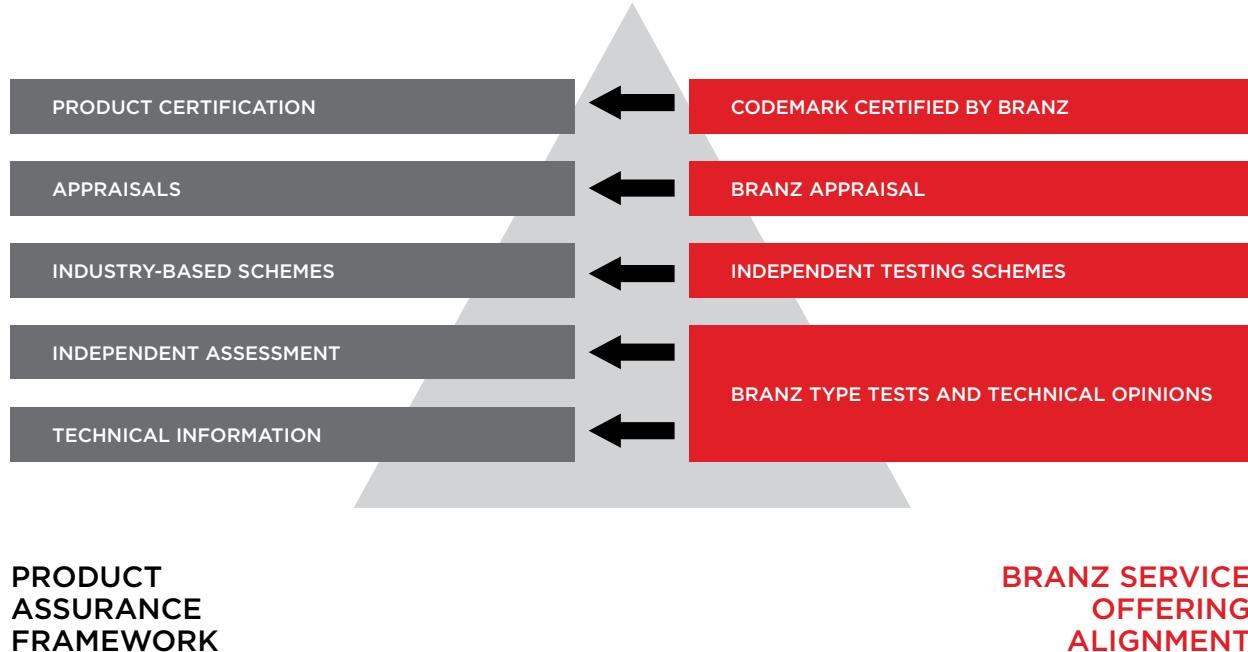
Continued concerns about substandard products and untested materials being used in new housing builds has beamed the spotlight on New Zealand's product assurance regime this year.

The industry requires a rigorous, coherent and integrated approach to product assurance to ensure it can deliver high-quality building work to clients. The need for independent impartial advice has been felt by BRANZ too, with demand increasing for access to our technical expertise, independent testing capability and information resources.

To help strengthen the government's product assurance framework, BRANZ is now taking steps to become a fully accredited product certification body that provides CodeMark certification. This will extend BRANZ's services across all elements of the framework.

Becoming an accredited certification body will help BRANZ ensure that owners and occupiers can be confident that the products used in their buildings are compliant with the Building Code.

A full service offering will also help manufacturers and suppliers choose the best and most cost-effective ways to deliver Building Code compliance. ■





Testing the use of light timber framing

BRANZ research this year could extend the use of timber into multi-storey buildings.

There is worldwide interest in using light timber framing for larger buildings. This interest reflects the advantages of timber environmentally, the time it takes for construction and its good performance in earthquakes.

Light timber-framed low-rise buildings are common in New Zealand but New Zealand Standards limit this method. New Zealand Standard NZS 3604:2011 *Timber-framed buildings* stipulates the height of light timber-framed buildings should not exceed 10 metres or 2.5 storeys.

BRANZ has been researching methods that would allow light timber framing to be used safely in taller structures. The aim is to develop guidelines that structural engineers can use to verify the compliance of these buildings.

Guidelines will also help builders and architects to know what they need to consider in the design and construction of taller structures with timber framing. ■



Focus on quality

our work on Staying connected includes:

- > The 0800 BRANZ technical helpline
- > Learning from what new house owners have to say about quality
- > Learning from research on construction quality
- > BRANZ uses multiple channels to share research and industry know how
- > A digital helpline - BRANZ Find
- > ArchEng
- > 150th edition of *build*

The 0800 BRANZ technical helpline

The 0800 BRANZ technical helpline (0800 80 80 85) is the frontline for inquiries about industry issues. It is available free to those who work within the New Zealand building and construction industry. On an average day, between 15 and 25 calls can be made to the line while, on a busy day, there could be more than 30.

Inquiries often relate to finding documents and reports or seeking clarification. Callers are often confused over wording in the Building Code or have heard of changes and want to check exactly what they are required to do.

The helpline provides an individualised service. It also provides an important resource for BRANZ staff in planning events and other publications. It generates ideas for industry seminars, and the helpline team alerts the editors of *build* and *Guideline* to issues that deserve a wider audience. The result is that *build* often carries content addressing helpline inquiries. ■

Learning from what new house owners have to say about quality

Each year for the past five years BRANZ has undertaken a survey of new house owners to measure how they rate their builder.

The feedback from the survey helps the industry better meet client expectations when building a new house.

This year's survey contained both bouquets and brickbats for building practitioners.

The survey showed 66 percent of respondents rated their builder highly and that the overall average satisfaction score was 82 percent.

Compared with the 2014 survey, fewer new house owners reported having a dispute with their builder over the final price and having to call back their builder.

Most positively, it tracked a rise of three percent in satisfaction with the overall performance of their builder compared with the year before.

However, some problem areas that were reported in previous surveys remain. New house owners were most dissatisfied with the fixing of defects after first occupancy, the quality of the project management and communication with their builder. ■



Learning from research on construction quality

BRANZ used findings from two BRANZ research projects that focused on assessing building quality in a series of 22 'Key to Quality' seminars around the country. The aim of the seminar series was to support the industry to improve construction quality.

The seminar material drew on information from BRANZ's regular survey of new house owners about satisfaction levels with their builders alongside the New House Construction Quality survey by BRANZ.

This latter survey involved the inspection of 225 houses for defects at various stages of construction. The study found 81 percent of houses had performance defects and 95 percent had an identified quality defect.

The seminar content also used information from additional industry reports of poor design and construction practice.

The seminar focused on real-life issues to guide attendees through topics such as: how defects arise; what factors might contribute to the defects; and how problems might be avoided.

Around 800 sector representatives attended the seminars. The series was particularly popular with architects and designers but was also attended by builders and building officials.

In addition, BRANZ presented at two Speaker Science Forums for parliamentarians in late 2015. Graeme Beattie shared research insights on how houses can be made more resilient and withstand liquefaction in New Zealand. Greg Overton provided information on what the research can tell us about airtightness and ventilation in New Zealand and how to build better for the New Zealand environment. These presentations led to requests for further information from a number of parliamentarians who attended the forums. ■

BRANZ uses multiple channels to share research and industry know how



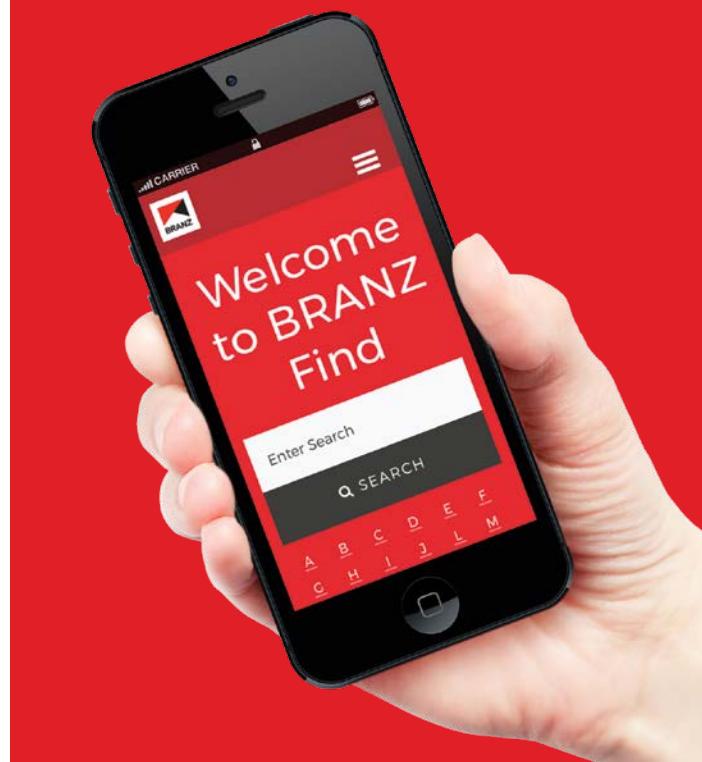
These channels complement each other. Information is adapted and disseminated through each of the various channels, according to the audience that needs to be reached. ■

A digital helpline – BRANZ Find

In 2015, BRANZ launched BRANZ Find, a new channel to provide easier access for the industry and clients to useful information.

BRANZ Find is a digital helpline designed as a complementary resource to the BRANZ helplines. It offers a directory of more than 6,000 documents with valuable building and construction information for New Zealand.

In the nine months since its launch, BRANZ Find has been accessed by 6,000 users. More than 30 percent of these users came back for more information. ■



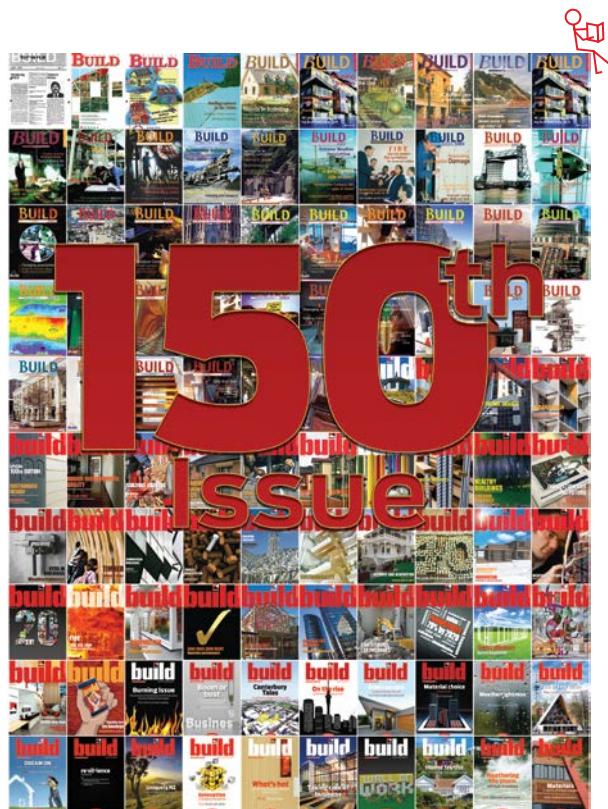
ArchEng

The Outcrop, an extraordinary movable floating walkway designed to extend 150 metres into Wellington Harbour, won top prize in the annual ArchEng workshop competition in 2015. The winning collaborators were Simon Gouley (Architecture, Victoria University of Wellington) and Ashley Jones (Engineering, University of Auckland).

Sponsored by BRANZ, the genesis of ArchEng hinges on the concept that “good design is good engineering”. It brings together the best final-year students from New Zealand’s architecture and engineering schools to experience three days of intense cross-disciplinary collaboration. The students work in cross-disciplinary pairs on a design challenge. A cash prize of \$5,000 is awarded by a judging panel for the winning result.

ArchEng was initiated in 2011 by the Cement and Concrete Association of New Zealand. It will evolve into ArchEngBuild in 2016, involving all three major building materials – concrete, steel and timber. ■





150th edition of *build*

Build is the most widely read and used magazine across the building industry. Born in May 1978 as a newsletter, before emerging as the magazine in 1990, *build* celebrated its 150th edition this year.

Now that *build* is being made available to all LBP's, it is good to note what our *build* readers tell us.

"An excellent mag, eagerly awaited in my office."

"Always a good read."

"I have been a big fan of build for many years – long may you continue. The 3D watercolour construction diagrams are terrific and very useful."

"A must-read mag. I keep all build mags for my own reference."

"build is well-nigh perfect and the staff most helpful and enthusiastic."

"Keep up the good work. The best tech literature in New Zealand rebuilding."

Investing in future leaders

BRANZ invests the Levy in the future research capability of the sector. Each year we make \$250,000 available for outstanding postgraduate scholars in New Zealand tertiary institutions.



Elzine Braasch

Victoria University, Master's

Elzine's research, now completed, looked at improving the thermal and daylight performance of commercial office buildings. During the early stages of design, passive design decisions that affect the energy performance of a building are often made based on a rule of thumb. This approach to design can lead to unwanted performance. The idea behind this research was to look at how simulation can improve design. Simulation could allow for the ability to assess the performance of the building specific to its location and function rather than relying upon assumptions that may be based upon different climate situations. Through her research Elzine created a conceptual workflow that could enable the architect and engineer to work collaboratively together in an integrated design process approach. ■

Ethan Duff

Victoria University, Master's

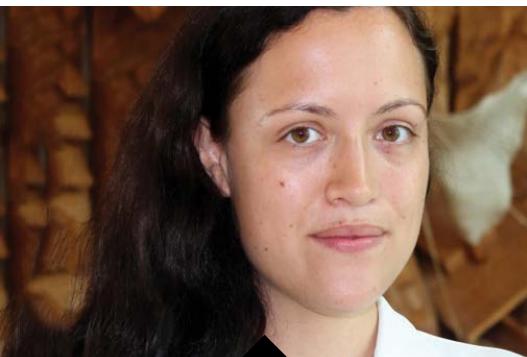
Ethan's research, now completed, looked at the current use of Building Energy Modelling and calibration techniques in the industry. Building Energy Modelling tests different energy saving strategies and internal environmental improvements for buildings such as offices and institutional buildings. While calibration techniques grow more and more sophisticated, the uptake of model calibration in industry is slow. Building Energy Modelling allows building energy experts and engineers to assess, recommend, measure and verify potential savings through modelling different energy use scenarios. ■

Karn Henning-Hansen

Victoria University, PhD

Karn's research focuses on meeting the housing needs of New Zealand's ageing population. She is looking at how we can deliver better and more varied types of housing for an ageing population. She is focusing on sustainable models while addressing the need for increased urban density and infrastructural re-purposing. In particular, she is looking at how better design could add value and create solutions. ■

Young scholars with outstanding academic credentials and early stage researchers pursuing innovative projects can apply for scholarships of up to \$25,000 per annum for three years. Currently BRANZ supports a cohort of 18 postgraduate scholars. The cohort includes six scholarship recipients who successfully bid for BRANZ scholarship funds commencing in the 2015/16 year.

**Jade Kake****UNITEC, Master's**

Many Māori families face difficulties attaining home ownership (and inter-generational equity), yet are unable to leverage their ownership interests in Māori land to secure home ownership. In addition, culturally appropriate housing that is sensitive to Māori whānau dynamics and responsive to the relationship Māori have with their whenua is scarce. Jade's research has explored these complex issues to help better meet the housing needs of Māori. Jade's design concept is now being further developed by Pehiāweri Marae as a real built project. ■

**Phoebe Taptiklis****Massey University, PhD**

Phoebe's project contributes to on-going investigation about the contribution that small improvements to the housing stock make to reducing dampness and mould in New Zealand houses. This project builds on the work of the BRANZ House Condition Surveys and the research of the Household Injury Prevention Study. These respectively showed the poor condition of claddings and the contribution this has to dampness and poor health. This project aims to identify ways to reduce mould and dampness and hence improve the health of occupants and durability of the housing stock. ■

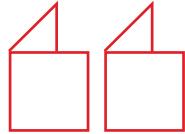
**Julia Thompson****Victoria University, PhD**

Julia's research looks at natural ventilation and how to design fresh air systems for spaces that cater for large audiences. The Opera House in Wellington has been selected as the primary case study for this research due to its impending seismic renovation as well as its original naturally ventilated design. This includes a sliding ceiling and sliding roof system. This case study aims to understand the principles used in the design of the original natural ventilation and their performance in practice. Research in this area has the potential to create solutions to improve building performance during seismic retrofit of unreinforced masonry buildings and also restore their functional heritage. ■

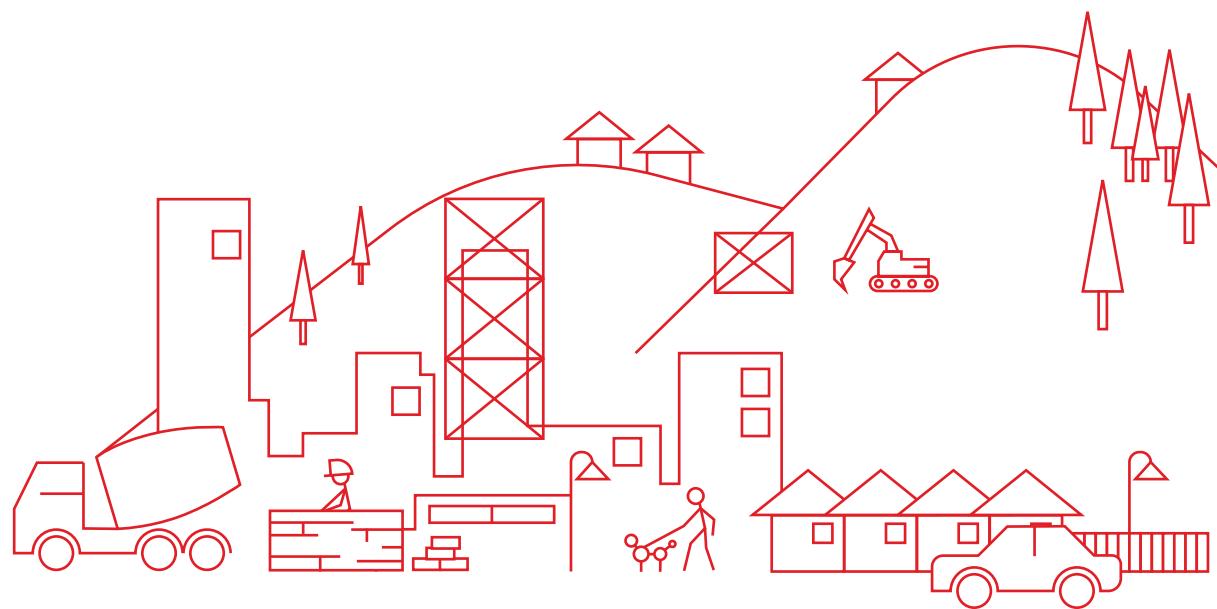
CHAPTER

03

BRANZ governance and executive



Governing boards have real work to do. It is inspired work that helps ensure an effective present but, even more importantly, leads an organisation into its preferred future.



BRANZ directors

BRANZ Incorporated and BRANZ Limited are governed by directors with extensive building and construction, science, business and senior public sector expertise.

Five directors of both BRANZ Incorporated and BRANZ Limited are elected by the Building Research Advisory Council. The elected Board can, in turn, appoint up to three independent directors.

As at 31 March 2016 the BRANZ Group has seven directors.



Dr Helen Anderson, QSO

Dr Helen Anderson (Chair) is an independent director of several organisations and former Chief Executive of the Ministry of Research, Science and Technology. She is a Chartered Fellow of the Institute of Directors New Zealand. She joined BRANZ in 2011.

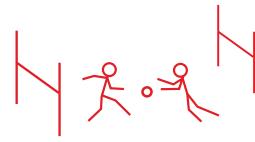
Kevin Stanley Deputy Chair

Kevin Stanley has more than 25 years' experience in the construction industry and is currently Managing Director of the Stanley Group. He joined BRANZ in 2012.

Richard Merrifield,

Richard Merrifield is former Chair of the Certified Builders Association of New Zealand and former Chair of the Building Research Advisory Council. Richard is the Deputy Chair of the Licensed Building Practitioners Board. He joined BRANZ in 2011.





Alan Bickers MNZM, JP

Alan Bickers has had a lengthy career in civil engineering, management, consulting and governance. He is very experienced with regulatory functions including building consents and compliance. He is a Chartered Fellow of the Institute of Directors and a past President and Distinguished Fellow of the Institution of Professional Engineers NZ. He joined BRANZ in 2015.



Richard Carver

Richard Carver has a background in business management and governance and is co-owner of Jennian Homes and Construction Marketing Services Ltd. He is also a Chartered Member of the Institute of Directors New Zealand. He joined BRANZ in 2013.



Lesley Haines

Lesley Haines is a former Deputy Chief Executive of the Ministry of Business, Innovation and Employment with an extensive public sector and client-focus background. She joined BRANZ in 2014.

Stephen Titter

Stephen Titter combines many years of practical financial and investment experience. Formerly a senior partner and Board member for Ernst & Young, he currently holds a number of independent directorships. He joined BRANZ in 2014.



This year BRANZ farewelled Ken Stanton from the BRANZ Board and welcomed Alan Bickers to the Board table.

BRANZ directors – register of interests

Name	Directorships with	* Shareholdings in	Other relevant interests
Helen Anderson	<ul style="list-style-type: none"> › Dairy NZ Ltd › Dexcel Holdings Ltd › Dairy NZ Inc › Fulbright NZ › Anderson Associates NZ Ltd › NIWA › Massey University Council › Antarctica NZ › Chair, Wellington Branch of Institute of Directors › Member, National Council of Institute of Directors › Wellington Regional Economic Development Agency (WREDA) 		<ul style="list-style-type: none"> › Chair, Dept of Internal Affairs External Advisory Committee › NZ Police Assurance and Risk Committee › Helen Anderson Family Trust › Clearpoint Ltd, Advisory Board
Alan Bickers	<ul style="list-style-type: none"> › Jayal Enterprises Ltd › Trustpower Ltd › Trustpower Insurance Ltd 	<ul style="list-style-type: none"> › Cavotec SA (Sweden) › Infratil Ltd (including various subsidiaries) › Jayal Enterprises Ltd › Metlifecare Ltd › SmartFONZ (Portfolio investment) › Trustpower Ltd (including 16 subsidiaries in NZ & Australia) › WW Health GBP PLC (UK) 	<ul style="list-style-type: none"> › Trustee, Jayal Trust
Richard Carver	<ul style="list-style-type: none"> › Construction Marketing Services Ltd › Jennian Holdings Ltd and other associated Jennian Companies › Milestone Holdings Ltd and other associated Milestone Companies › Productspec Ltd › Renovation Masters Ltd 	<ul style="list-style-type: none"> › Construction Marketing Services Ltd via a Trust › Jennian Holdings Ltd via a Trust › Mstone Holdings Ltd via a Trust › Construction Marketing Services Ltd has a 27.5% shareholding in Productspec Ltd › 50% Shareholding in Renovation Masters with Kevin Stanley 	<ul style="list-style-type: none"> › Master Builders Residential Working Group
Lesley Haines			<ul style="list-style-type: none"> › Contractor to MBIE, Building Sector Regulatory
Richard Merrifield	<ul style="list-style-type: none"> › Plumbers, Gasfitters and Drainlayers Board › Building Practitioners Board (Deputy Chair) 	<ul style="list-style-type: none"> › R.J. Merrifield Ltd › Double M Holdings Ltd 	<ul style="list-style-type: none"> › Construction Strategy Group › Contractor to RMBA › Project Manager for new home for Minister Smith
Kevin Stanley	<ul style="list-style-type: none"> › Ruapehu Alpine Lifts Ltd › Stanley Group Ltd & subsidiary companies › Renovation Masters Ltd 	<ul style="list-style-type: none"> › Nivek Holdings Ltd › Ruapehu Alpine Lifts Ltd › Renovation Masters Ltd 	<ul style="list-style-type: none"> › PrefabNZ – Levers for PreFab › Matamata Futures Inc › Master Builders Commercial Awards Management Committee › MD of Stanley Group of companies › Matamata Ski Club
Stephen Titter	<ul style="list-style-type: none"> › American Chamber of Commerce in NZ, Inc › Guilford Investments Ltd › Hahei Consulting Ltd › Real Estate Institute of NZ Inc › Realestate.co.nz Ltd › REINZ Member Services Ltd 	<ul style="list-style-type: none"> › Hahei Consulting Ltd 	<ul style="list-style-type: none"> › The Woolstore Group: Business Mentor › Great Grandkid's Trust: Trustee › Hahei Beach Trust: Trustee

Standard disclosure statement that is affirmed at the beginning of every Board meeting:

It is recognised that some members of the BRANZ Board represent companies or organisations or interests that are, or may be, in competition with those of other Board members. Meetings of the BRANZ Board and communications between members of the Board will not be used as a forum for unlawful collusion or anti-competitive conduct.

*Disclosure of significant shareholdings only, e.g. not shares held by Family Trusts.

Board remuneration

Directors Fees for the BRANZ Group are reviewed on an annual basis and in accordance with rules of the Association. Independent advice is sought by the Board to assist this process. In 2014/15, the Board fees were benchmarked against information provided by Strategic Pay. This resulted in a recommendation to members at the Annual General Meeting in July 2015 on fees which are now set at:

BRANZ Director fees

Board roles	Fees (P/A)
Chair	52,000
Deputy Chair	32,240
Director	26,000
Chair of Board subcommittee	6,000
Representative on external Board	6,000

Building Research Advisory Council

The Building Research Advisory Council (BRAC) meets twice a year to elect the BRANZ Board, and advise on industry issues for BRANZ consideration.

BRAC membership is made up of 11 national bodies who nominate representatives to BRAC. BRAC members serve up to three two year periods. As a consequence the Council welcomed three new members this year.

In addition, Victoria Troake stood down from her long association with BRANZ in March 2016. Her contribution included almost seven years as a New Zealand Specialist Trade Contractors Federation representative on BRAC, and four years as BRAC Chair.

BRANZ has benefited greatly from Victoria Troake's industry experience and knowledge, both at the strategic level and as a valued member of a number of specialist committees.

John Melhuish replaced Victoria as Chair in July 2015.

Name	Nominee of
Simon Barber	Registered Master Builders Association
David Brown	Certified Builders Association of New Zealand
John Coop	Property Council of New Zealand
Michael Davis	New Zealand Institute of Architects
Renelle Gronert	Housing New Zealand Corporation
Marshall Hudson	Business New Zealand
John Macdonald, Deputy Chair	Registered Master Builders Association
Ian McCormick	Local Government New Zealand
John Melhuish, Chair	New Zealand Institute of Architects
Grant Price	New Zealand Specialist Trade Contractors Federation
Debbie Scott	Institute of Professional Engineers New Zealand
Richard Sharpe	Institute of Professional Engineers New Zealand
Stephen Walker	Building Industry Federation
Bill Whitley	Consumer New Zealand

Executive team

BRANZ now has a high performing executive in place who are bringing to the organisation a fresh suite of experience and skills.



Chelydra Percy *Chief Executive*

Chelydra joined BRANZ in 2013. Prior to starting with BRANZ Chelydra held a range of leadership roles with science and innovation organisations such as Callaghan Innovation, KiwiStar Optics, and Scion. Chelydra has also worked in the electricity supply and telecommunication industries. She is a graduate of Victoria University of Wellington and a Companion of the Institution of Professional Engineers New Zealand.



Laurel Lee Berkett *PA to CEO and Company Secretary*

Laurel Lee joined BRANZ in 1999 as Assistant to the CEO and Board. During her tenure, the role has developed to include Company Secretary to the BRANZ Group. Laurel Lee also provided secretariat support to the Construction Industry Council (10 years) and the Construction Strategy Group (five years).



Kaetrin Stephenson *General Manager, Corporate Services*

Kaetrin joined BRANZ in November 2015 from Optimisation where she was Chief Financial Officer. Originally hailing from Scotland, Kaetrin has a strong professional services background spanning the motor, IT, health and brewing industries. At BRANZ, she leads the Finance, IT, Marketing and Communications, Property, Quality and Environment and Support Services teams.



Richard Capie *General Manager,
Levy Stewardship*

Richard joined BRANZ in October 2011. Prior to that he had been living and working in the United Kingdom for 11 years. Richard started his career in the Treasury in Wellington before moving on to a number of senior housing roles in the United Kingdom. He was head of corporate policy at the Housing Corporation before joining the Chartered Institute of Housing where he was Director of Policy and Practice.



Janet Geritzlehner *Human
Resources Manager*

Janet started at BRANZ in September 2015. Prior to this she worked in IBM New Zealand where she held a number of HR leadership positions over 15 years. She has a strong people and culture focus. At BRANZ she leads HR and Health and Safety. She is a graduate of Massey University.



David Johnson *General Manager,
Consultancy Services*

David joined BRANZ in November 2015. He has held several management roles spanning the manufacturing and property data and analytics sectors. He also has experience with Industrial Research Ltd in the commercialisation of new technologies. He is a graduate of Victoria University of Wellington.



Chris Litten *General Manager,
Industry Research*

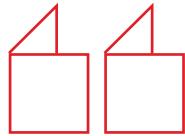
Chris started at BRANZ in November 2015 from the Crown research institute, ESR, where he was a group manager. As a scientist by training, he has spent the past 15 years leading and managing research, research investment and business development in a variety of organisations in New Zealand. It is the breadth and expertise of science BRANZ carries out that attracted him here.

CHAPTER

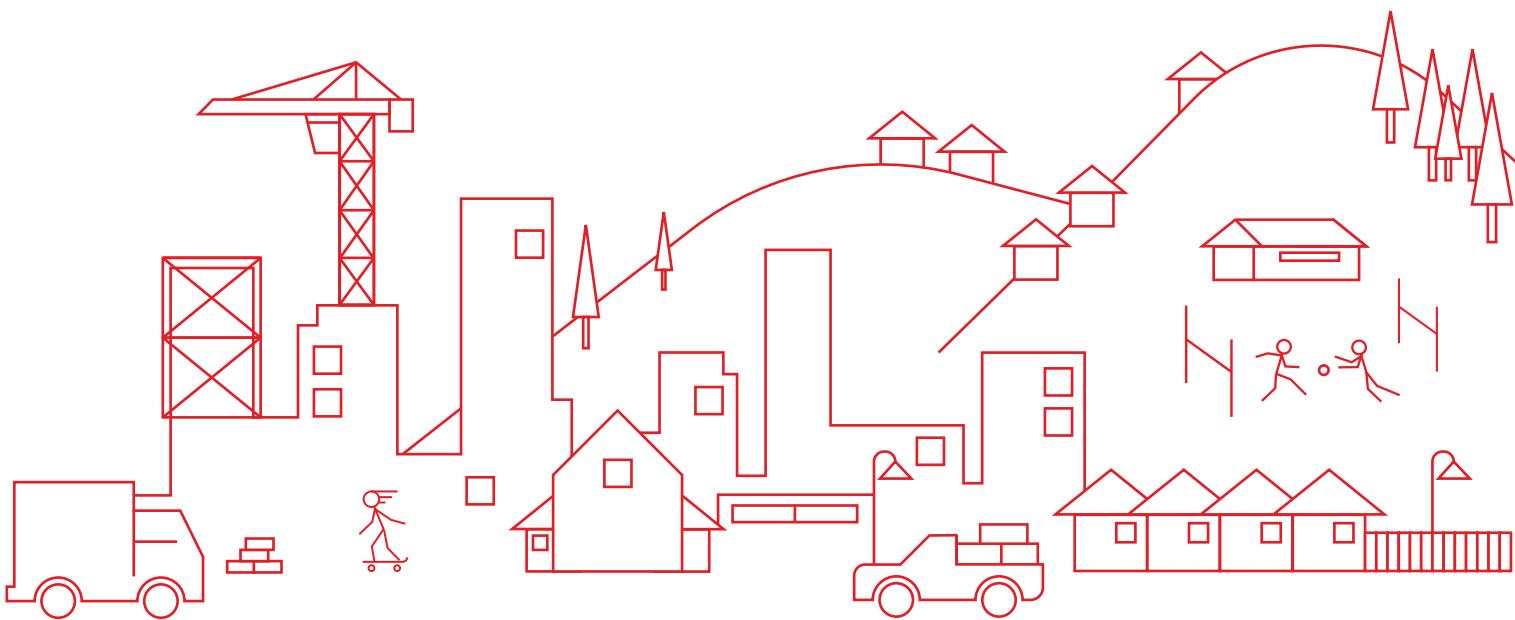
04

Financial performance





The BRANZ Group derives its total income from a combination of the Building Research Levy, government science funding and commercial services.



Financial performance

The BRANZ Group derives its total income from a combination of the Building Research Levy, government science funding and commercial services.

Total income for 2015/16 was \$25.06 million. This consisted of \$16.99 million from the Building Research Levy to fund industry research and knowledge transfer, \$6.78 million from commercial services and \$1.29 million of other income. This compares with \$22.43 million for the previous year.

Expenses were directly managed, which resulted in spending \$21.37 million for the 2015/16 financial year. This was used to operate the business, directly deliver research outcomes, inform the industry and invest with other research providers. Expenditure in the previous year amounted to \$19.94 million.

During the year BRANZ embarked on the Establishment Phase of the 11th National Science Challenge Building Better Homes, Towns and Cities. Subsequently, BRANZ was appointed as the host to implement the whole Challenge, valued at \$23.58 million over the next three years.

A breakdown of the BRANZ Group financial results can be viewed on subsequent pages.

Long-term Levy utilisation policy

BRANZ gets its research income from Building Research Levy receipts, which are directly linked to the levels and values of building consents. This means Levy income is subject to the same boom-bust cycles as the industry.

BRANZ has a long-term Levy utilisation policy in place that helps manage these ups and downs in Levy income. It uses a 10-year model to create a stable, sustainable platform for BRANZ to invest the Building Research Levy effectively. In practice, this means when Levy income increases, BRANZ is prudent around expanding its investment so that when Levy income decreases BRANZ doesn't have to make unnecessary or drastic cuts.

The policy sets out how BRANZ will effectively manage the Levy by:

- › determining a Baseline Levy Investment Sum using the 10-year model. This is incorporated into the annual BRANZ Group budget for investment in Levy-funded activities
- › investing the Baseline Levy Investment Sum in internal and external research and knowledge dissemination
- › investing the Levy in an open, transparent and contestable way
- › ensuring that any investment in core internal capability is linked to BRANZ's long-term strategic priorities
- › investing so as to avoid unnecessary duplication of capability and facilities across New Zealand
- › ensuring availability of funding for maintenance and investment in property, plant and equipment
- › maintaining appropriate cash reserves.

The long-term Levy utilisation policy is reviewed annually.

Cash reserves

The BRANZ Group had cash reserves of \$22.52 million as at 31 March 2016. These funds are held in accordance with the BRANZ Group investment policy. The level of cash reserves is determined as part of the long-term Levy utilisation policy.

Funding for investment in property, plant and equipment

BRANZ funds the maintenance and development of facilities, at Judgeford and elsewhere in New Zealand. A Campus and Asset Management Plan has been adopted by the Board to ensure that our facilities meet the industry's research and testing needs for the future. The plan has identified over 20 projects that are required to retire, replace and refurbish ageing property, plant and equipment over the next five to eight years.

In the next three to five years, around \$10–\$15 million of investment in this plan will be required. A detailed investment case will be developed for each project. The current level of cash reserves ensures that this work can be undertaken without seeking additional funding from industry or the government.

Critical and industry issues

BRANZ also needs the ability to respond to critical issues affecting the industry. Provision of \$1 million is made in the cash reserves for this. For example, in the aftermath of the Canterbury earthquakes, BRANZ was able to draw on its reserves for critical issue funding even during a time when the Group was running a deficit. BRANZ has also initiated a project to invest in a multi-year transformative initiative to consider a modern technology solution to perform the traditional "Clerk of Works" function. This initiative is supported from cash reserves.

Emergency operating costs

BRANZ also ensures that it holds enough cash in reserve to be able to have access to a minimum of three months of operating costs in the case of an emergency. This provision is currently \$5 million. Should the need arise, the cash reserves would help to cover these funding requirements.

Cash float to fund day-to-day operations

BRANZ has cash float reserves in keeping with normal business practices. This currently stands at \$2.5 million. These funds are used to cover day-to-day activities.

Independent review

An independent review of our approach to reserves was commissioned in 2014 to ensure that the levels held are appropriate. The review noted that our approach is consistent and in line with other organisations that are similar to BRANZ.

Building Research Association of New Zealand Inc.

Summary statements of comprehensive income

For the year ended 31 March 2016

	Group		Parent	
	2016 \$	2015 \$	2016 \$	2015 \$
Operating income				
Building Research Levy Act levies	16,985,547	14,572,305	16,985,547	14,572,305
Commercial work fees	6,776,767	6,532,989	0	0
Government grants	546,350	355,563	0	0
Charges to BRANZ Ltd	0	0	1,758,050	1,445,000
	24,308,664	21,460,857	18,743,597	16,017,305
Other income				
Interest received	743,607	684,099	672,247	621,986
Dividend received	0	278,000	0	278,000
Other income	8,365	4,522	8,365	4,522
	751,972	966,621	680,612	904,508
Total Income	25,060,636	22,427,478	19,424,209	16,921,813
Expenditure				
Personnel costs	9,923,936	9,995,865	1,217,121	977,415
Contracts - BRANZ Limited	0	0	9,745,284	8,450,814
Other operating costs	11,449,724	9,940,906	5,435,422	5,031,876
Total expenditure	21,373,660	19,936,771	16,397,827	14,460,105
Operating surplus	3,686,976	2,490,707	3,026,382	2,461,708
Share of (deficit) of equity accounted investment	0	(260,213)	0	0
Surplus before income tax	3,686,976	2,230,494	3,026,382	2,461,708
Income tax (expense)/benefit	195,007	0	0	0
Surplus for the year	3,881,983	2,230,494	3,026,382	2,461,708
Total comprehensive income for the year	3,881,983	2,230,494	3,026,382	2,461,708

Building Research Association of New Zealand Inc.

Summary statements of changes in equity

For the year ended 31 March 2016

	Group	Parent			
	Foreign Currency Translation Reserve \$	Retained Earnings \$	Total Equity \$	Retained Earnings \$	Total Equity \$
Balance at 1 April 2014	26,819	28,616,080	28,642,899	26,912,832	26,912,832
Movement for year	(4,688)	2,230,494	2,225,806	2,461,708	2,461,708
Balance at 31 March 2015	22,131	30,846,574	30,868,705	29,374,540	29,374,540
Balance at 1 April 2015	22,131	30,846,574	30,868,705	29,374,540	29,374,540
Movement for year	9,430	3,881,983	3,891,413	3,026,382	3,026,382
Balance at 31 March 2016	31,561	34,728,557	34,760,118	32,400,922	32,400,922

Building Research Association of New Zealand Inc.

Summary statements of financial position

As at 31 March 2016

	Group		Parent	
	2016 \$	2015 \$	2016 \$	2015 \$
Assets				
Current assets				
Term deposits	16,000,000	14,271,500	15,000,000	13,521,500
Other current assets	9,115,922	6,352,636	4,781,374	2,720,433
Total current assets	25,115,922	20,624,136	19,781,374	16,241,933
Non-current assets				
Property, plant and equipment	12,226,505	12,960,714	12,226,505	12,960,714
Investment in subsidiaries	0	0	1,000,000	1,000,000
Deferred tax assets	195,007	0	0	0
Other non-current assets	85,910	165,295	85,910	165,295
Total non-current assets	12,507,422	13,126,009	13,312,415	14,126,009
Total assets	37,623,344	33,750,145	33,093,789	30,367,942
Liabilities				
Current liabilities				
Trade and other payables	1,622,737	1,630,506	638,422	941,284
Other current liabilities	1,144,362	1,146,553	51,860	51,837
Total current liabilities	2,767,099	2,777,059	690,282	993,121
Non-current liabilities				
Non-current liabilities	96,127	104,381	2,585	281
Total non-current liabilities	96,127	104,381	2,585	281
Total liabilities	2,863,226	2,881,440	692,867	993,402
Equity				
Retained earnings	34,760,118	30,868,705	32,400,922	29,374,540
Total equity	34,760,118	30,868,705	32,400,922	29,374,540
Total equity and liabilities	37,623,344	33,750,145	33,093,789	30,367,942

Building Research Association of New Zealand Inc.

Summary statements of cash flows

For the year ended 31 March 2016

	Group		Parent	
	2016 \$	2015 \$	2016 \$	2015 \$
Net cash from/(used in) operating activities	3,931,564	3,750,506	3,297,772	2,863,603
Net cash from/(used in) investing activities	(1,627,258)	(2,185,839)	(1,443,896)	(2,096,697)
Net cash from/(used in) financing activities	0	0	0	0
Increase/(decrease) in cash and cash equivalents	2,304,306	1,564,667	1,853,876	766,906
Cash and cash equivalents at 1 April	4,210,725	2,646,058	2,263,862	1,496,956
Cash and cash equivalents at 31 March	6,515,031	4,210,725	4,117,738	2,263,862

Building Research Association of New Zealand Inc.

Notes to the summary financial statements

For the year ended 31 March 2016

1. REPORTING ENTITY

Building Research Association of New Zealand Inc. ("the Parent") is an incorporated society registered under the Incorporated Societies Act 1908. The address of the Parent's registered office is 1222 Moonshine Road, Judgeford, Porirua.

Summary financial statements for the Parent and consolidated summary financial statements are presented. The consolidated summary financial statements for Building Research Association of New Zealand Inc. as at and for the year ended 31 March 2016 comprise the Parent and its subsidiaries (together referred to as the "Group").

The Building Research Association of New Zealand Inc's primary purpose is promoting scientific or industrial research for the building and construction industry.

These summary financial statements and the full special purpose financial statements were authorised for issue by the Board of Directors on 29 June 2016.

2. BASIS OF PREPARATION

Statement of compliance

The summary financial statements are an abridged version of the full special purpose financial statements. Their purpose is to provide an overview and as such do not provide an understanding as complete as the full special purpose financial statements. The disclosures included in these summary financial statements have been extracted from the full special purpose financial statements. The full special purpose financial statements are available on our website at www.branz.co.nz.

The full special purpose financial statements have been prepared in accordance with the accounting policies set out within the full special purpose financial statements. The full special purpose financial statements have been audited and the auditor has issued an unqualified audit report.

Basis of measurement

The summary financial statements are prepared on the historical cost basis. The accounts are prepared on a going concern basis.

Presentation currency

These summary financial statements are presented in New Zealand dollars (\$), which is the functional currency of the Parent and BRANZ Limited. BRANZ Pty Limited's functional currency is Australian dollars.

Comparative restatement

Where necessary, comparative figures may have been restated to facilitate comparison and to comply with current year classifications.

3. CONTINGENCIES

The Group had no contingent liabilities as at 31 March 2016.

4. RELATED PARTIES

Group entities	Country of incorporation	Ownership interest	2016	2015
BRANZ Limited	New Zealand	100%	100%	
BRANZ Pty Limited	Australia	100%	100%	

The Building Research Association of New Zealand Inc. charges rent to BRANZ Limited for the use of property, plant and equipment and its share of the Group CEO remuneration costs and other advisory services.

BRANZ Limited charges fees for research work and administration services carried out on behalf of The Building Research Association of New Zealand Inc. BRANZ Limited also charges The Building Research Association of New Zealand Inc. for its share of the Group Executive Management Team costs, provision of accounting and IT services, and its share of insurance and marketing costs.

5. SEGMENTAL REPORTING

To provide greater transparency to the reader, we have presented an analysis of the Group's core business and the National Science Challenge 11 (NSC 11) below:

	Group		
	NSC 11 2016	BRANZ 2016	Total 2016
Revenue	368,579	24,692,057	25,060,636
Expenses	368,579	21,005,081	21,373,660
Profit/(loss) before income tax	0	3,686,976	3,686,976
Net assets/(liabilities)	(120,921)	34,881,039	34,760,118

6. SUBSEQUENT EVENTS

No significant subsequent events have occurred after balance date.

These summary financial statements are approved for and on behalf of the Board of Directors by:




Helen Anderson

Board Chair
29 June 2016

Richard Carver

Chair Audit and Risk
Management Committee
29 June 2016



Independent auditor's report

To the Members of Building Research Association of New Zealand Incorporated and Group

The summary financial statements on pages 44 to 49, which comprise the summary statement of financial position as at 31 March 2016, the summary statement of comprehensive income, summary statement of changes in equity and summary cash flow statement for the year then ended, and related notes, are derived from the audited financial statements of Building Research Association of New Zealand Incorporated ("Incorporated Society") and Group for the year ended 31 March 2016. We expressed an unmodified audit opinion on those financial statements in our report dated 29 June 2016. Those financial statements, and the summary financial statements, do not reflect the effects of events that occurred subsequent to the date of our report on those financial statements.

The summary financial statements do not contain all the disclosures required for full financial statements under generally accepted accounting practice in New Zealand. Reading the summary financial statements, therefore, is not a substitute for reading the audited financial statements of Building Research Association of New Zealand Incorporated ("Incorporated Society") and Group.

This report is made solely to the Incorporated Society's members, as a body. Our engagement has been undertaken so that we might state to the Incorporated Society's members those matters we are required to state to them in our report and for no other purpose. To the fullest extent permitted by law, we do not accept or assume responsibility to anyone other than the Incorporated Society and the Incorporated Society's members as a body, for our work, for this report, or for the opinions we have formed.

Directors' Responsibilities / Responsibilities of the Members of the Governing Body

The directors are responsible for the preparation of summary financial statements in accordance with FRS-43: *Summary Financial Statements*.

Auditor's Responsibilities

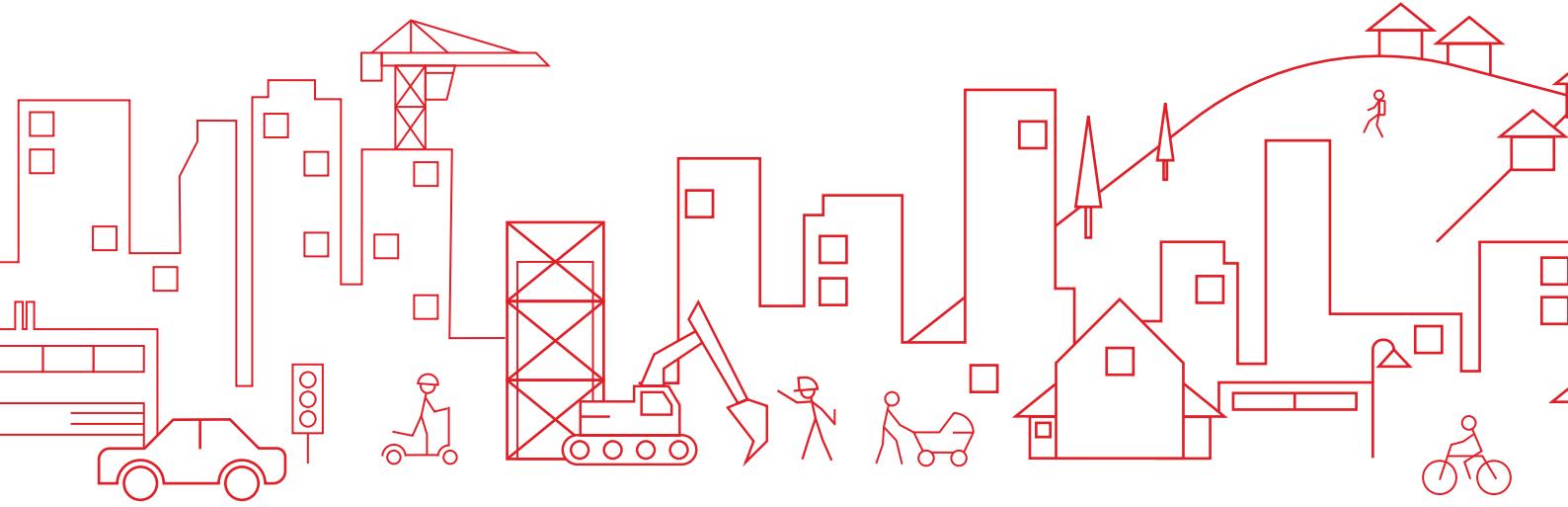
Our responsibility is to express an opinion on the summary financial statements based on our procedures, which were conducted in accordance with International Standard on Auditing (New Zealand) (ISA(NZ)) 810, "Engagements to Report on Summary Financial Statements."

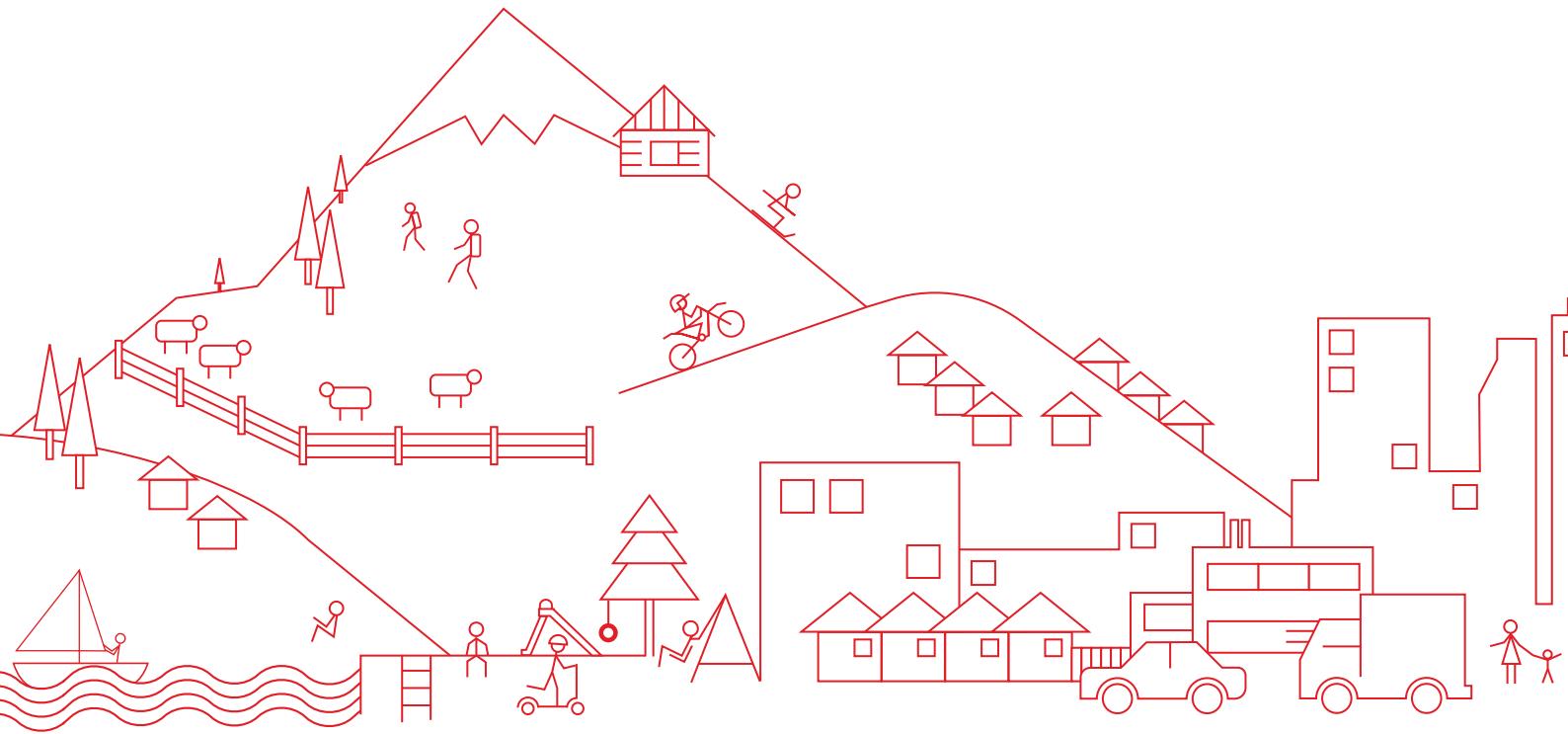
Other than in our capacity as auditor we have no relationship with, or interests in, the Incorporated Society.

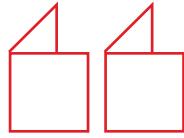
Opinion

In our opinion, the summary financial statements derived from the audited financial statements of Building Research Association of New Zealand Incorporated and Group for the year ended 31 March 2016 are consistent, in all material respects, with those financial statements, in accordance with FRS-43.

29 June 2016
Wellington







Chelydra Percy
BRANZ CEO

Our thanks

Thanks to our directors, our BRAC colleagues and our staff of BRANZ for their hard work and commitment during 2015/16.

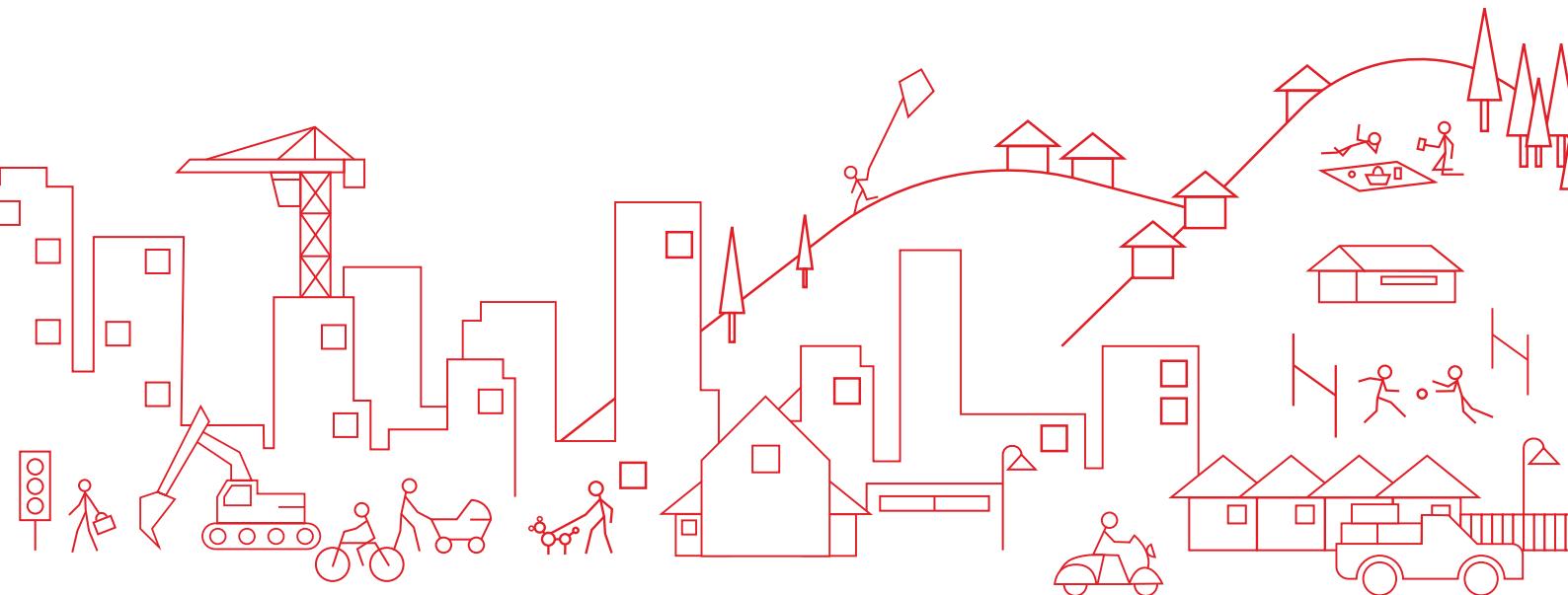
Thanks also, to our many partners, clients and colleagues within industry, government, academia and our diverse New Zealand communities.

We are grateful for the collegiality we have enjoyed, the challenges we have experienced and the contribution we have been able to make.

It has been an inspiring, demanding and incredibly busy year.

We look forward to another stimulating, challenging and productive year ahead.

Inspiring the industry to provide better buildings for New Zealanders.





BRANZ Incorporated

Address: 1222 Moonshine Road, Judgeford, Porirua City 5381, New Zealand

Phone: +64 4 237 1170 **Fax:** +64 4 237 1171 **Email:** branz@branz.nz

www.branz.nz