



Introducing the **BRANZ portfolio**

Inspiring the industry to provide
better buildings for New Zealanders



January 2019

About **BRANZ**



around
110
highly trained
specialist staff

invest in
30+
external
research
partners
each year

We are an independent research organisation providing impartial evidence-based advice to industry and government on building and construction in New Zealand. We undertake research addressing current and emerging challenges of our built environment. Our portfolio consists of activities by BRANZ science teams, and external research agencies, to unlock new knowledge and make it accessible and actionable. We invest in assets to support this research.



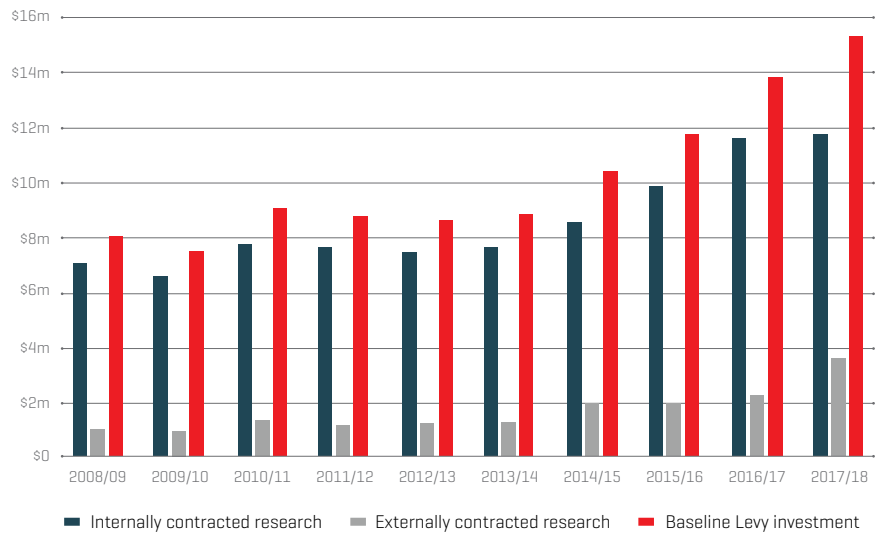
Wise **Levy Stewardship** underpins our portfolio

Income from the Building Research Levy, government science funds and commercial services make up BRANZ's annual income.

Total income for 2017/18 was \$35.66 million:

- \$19.83 million from the Building Research Levy to fund industry research and knowledge transfer
- \$7.57 million from commercial services
- \$7.21 million to fund Building Better Homes, Towns and Cities: National Science Challenge research
- \$1.06 million of other income.

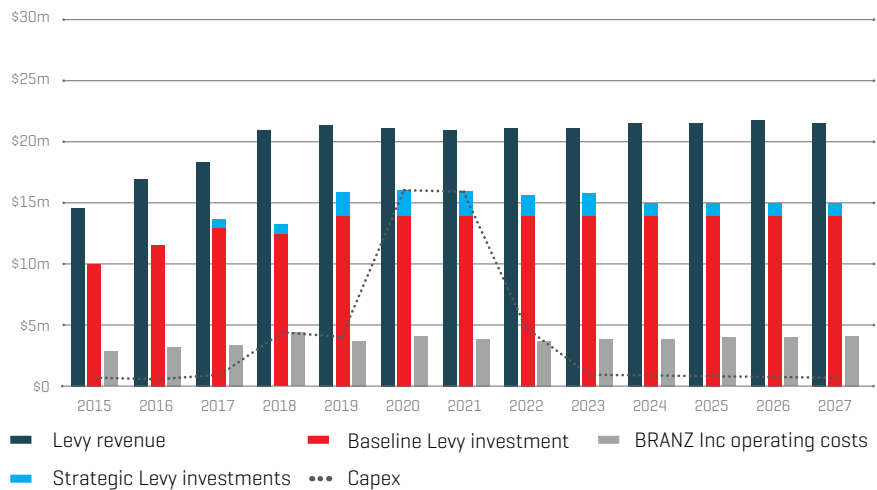
Wise stewardship of the Building Research Levy is a core responsibility of BRANZ. With the steady increase in Levy receipts since 2010/11 we have been able to lift investment in research from \$8 million 10 years ago to over \$15 million in 2017/18.



Long term **investment** planning

BRANZ has a long-term Levy utilisation policy in place to manage the cyclical nature of Levy income. We use a 10-year model to create a stable, sustainable platform for BRANZ to invest effectively. This means when Levy income increases, BRANZ is prudent around expanding its investment. Consequently when Levy income decreases, we do not have to make drastic cuts to significant research programmes.

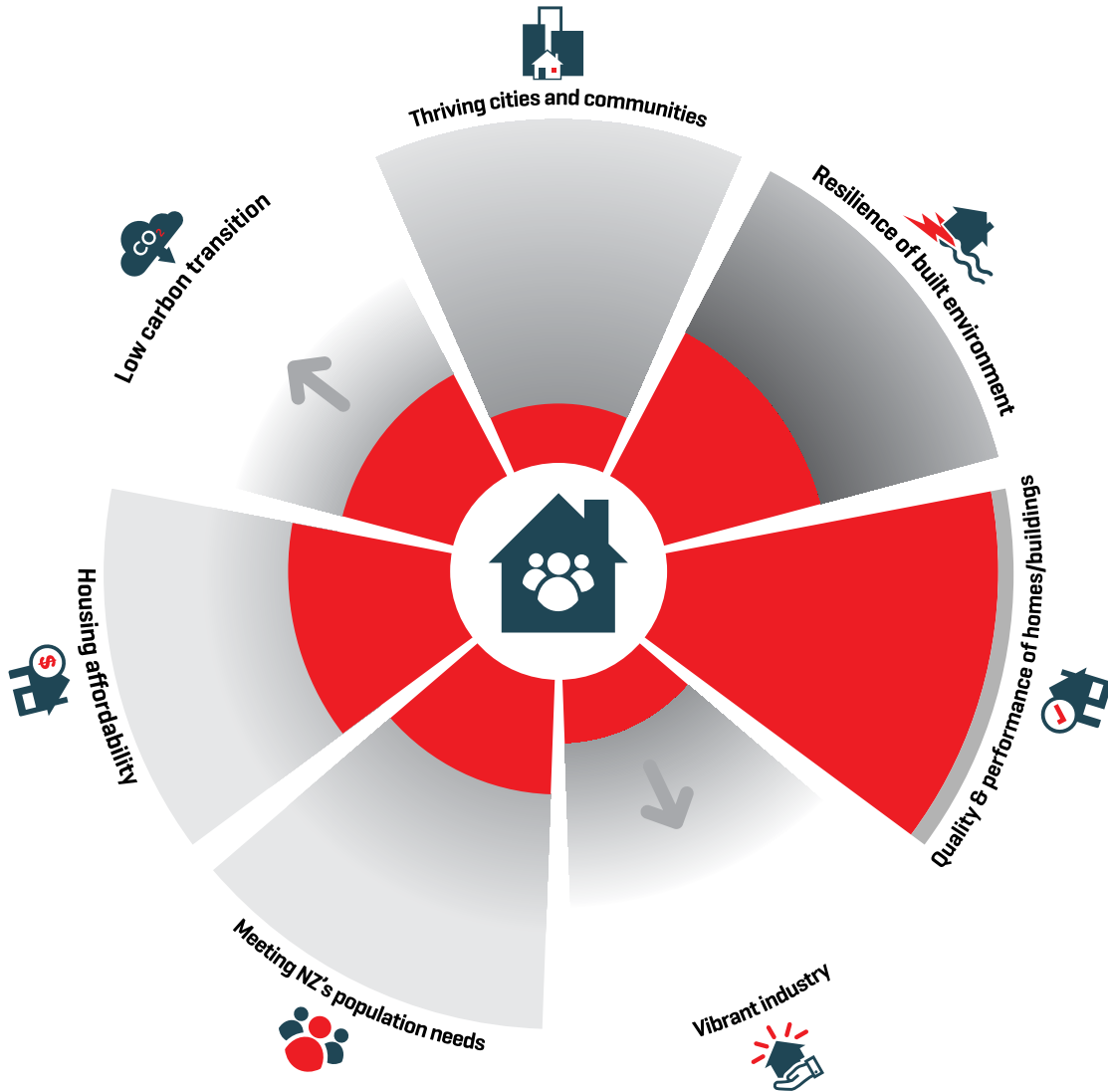
A Campus and Asset Management Plan has been adopted to ensure our facilities will meet industry research and testing needs for the future. In the next two to five years, around \$40-45 million of investment in this plan will be required.



NZ's issues, research and **our contribution**

Building and construction impact New Zealand's economy, environment and people's wellbeing. BRANZ, along with other research organisations, carry out research to better understand the nature of particular issues and how they interact in order to inspire the industry to provide better buildings for New Zealanders.

The graphic below sets out key areas in which BRANZ undertakes research and its relative strengths (red shading), the depth of research effort across New Zealand (red and grey shading) and areas where research has opportunity for increased effort.













Other significant key built environment science investments 2018/19

- He Kainga Oranga: Translating housing research to practice for children's health [\$4.9m, University of Otago, HRC] 🧑🏠
- Quake Centre of Research Excellence [QuakeCORE] [\$4.1m, University of Canterbury, TEC] 🏠
- Building Innovation: Infrastructure Systems Engineered for Improved Value and Resilience [\$5m, QuakeCentre, University of Canterbury, MBIE] 🏠
- Building Damage-Avoidance Seismic Technology Using a Novel Resilient Slip Friction Joint [\$3.95m, University of Auckland, MBIE] 🏠
- Ending homelessness in NZ: Housing First [\$2.91m, University of Otago, MBIE] 🧑🏠
- Building Better Homes, Towns and Cities: National Science Challenge [\$47.9m to 2024, BRANZ, MBIE] 🏠
- Resilience to Nature's Challenges: National Science Challenge [contains some built environment research, GNS, MBIE] 🏠
- Ageing Well: National Science Challenge [contains some built environment research, University of Otago, MBIE] 🧑🏠
- Deep South: National Science Challenge [contains some built environment research, NIWA, MBIE] 🏠

HRC: Health Research Council, TEC: Tertiary Education Commission, MBIE: Ministry of Business, Innovation and Employment

Our portfolio overview

COMPONENTS SHAPED BY LEVY INVESTMENT PORTFOLIO STATEMENT (LIPS)

| (Indicative examples) | 2018/19 | 2019/20 | 2020/21 | 2021/2022+ |
|--|--|--|---|--|
| MEDIUM-DENSITY HOUSING  | Acoustics information improves building quality | Weather-tightness solutions developed | Quality of MDH buildings is on the rise | New Zealand is benefiting from high quality, affordable, medium density housing as part of our market |
| EXCEEDING THE MINIMUM  | New insight about whole-of-life costs | Better-informed consumers | Research leads to improvements in Code and standards | New Zealand is benefiting from a lift in the performance of our building stock from pre-programme levels |
| ELIMINATING QUALITY ISSUES  | Priority problems tackled through new focus and tools | New types of knowledge transfer leading to a lift in performance | Research provides evidence that quality problems are being addressed | Quality issues are being addressed as new information around quality issues are taken up and as new tools around quality assurance take hold |
| WARMER, DRIER, HEALTHIER BUILDINGS  | New verification method for internal moisture developed | New solutions around retrofitting existing housing rolled out | Solutions to lift the quality of indoor environments in apartments in place | Evidence from this programme has led to policy changes lifting the quality of both new and existing housing stock |
| LOW-CARBON TRANSITION  | Key partners brought together to map out action required | Gaps in baseline information are being addressed, new solutions being scoped and piloted | Tools to support low carbon building are becoming mainstreamed | Low carbon construction has become mainstreamed as a core element of New Zealand's building system |
| KEEPING SAFE FROM FIRES  | Key partners brought together to map out action required | Key partners brought together to map out action required | First projects from new programme begin | Shift in construction practices around fire safety begin on back of new insights driven by the programme |
| INVESTMENT ON EMERGING ISSUES  | Urgent work to address retrofit gap around pre-cast concrete flooring systems | BRANZ is able to act quickly and decisively on urgent issues as they emerge | | |
| DISTINCT, STANDALONE PROJECTS  | eg: House foundations on sloping sites, materials performance in geothermal areas | Projects initiated by both researchers and end users | | |
| SCHOLARSHIPS  | Helping ensure that New Zealand has strong research capability in core STEM and building science areas | | | |
| INDUSTRY TRANSFORMATION  | Industry Transformation Agenda developed and launched | Projects developed that tackle root cause challenges faced by building system | Project solutions trialled, refined and rolled out | Shift in industry performance can be measured against baseline established at start of Industry Transformation Agenda |

Core activities that make our research and knowledge accessible and actionable

| Publications | Services | Long term studies | Tools |
|---|---|--|--|
| <ul style="list-style-type: none"> Build Builder's Mate Guideline Bulletins | <ul style="list-style-type: none"> Seminars Live webinars E-Learning modules Building controls Information management Advisory services | <ul style="list-style-type: none"> Durability verification database Weathering site Levy forecast House condition survey | <ul style="list-style-type: none"> BRANZ Find B-RISK User Support Level |

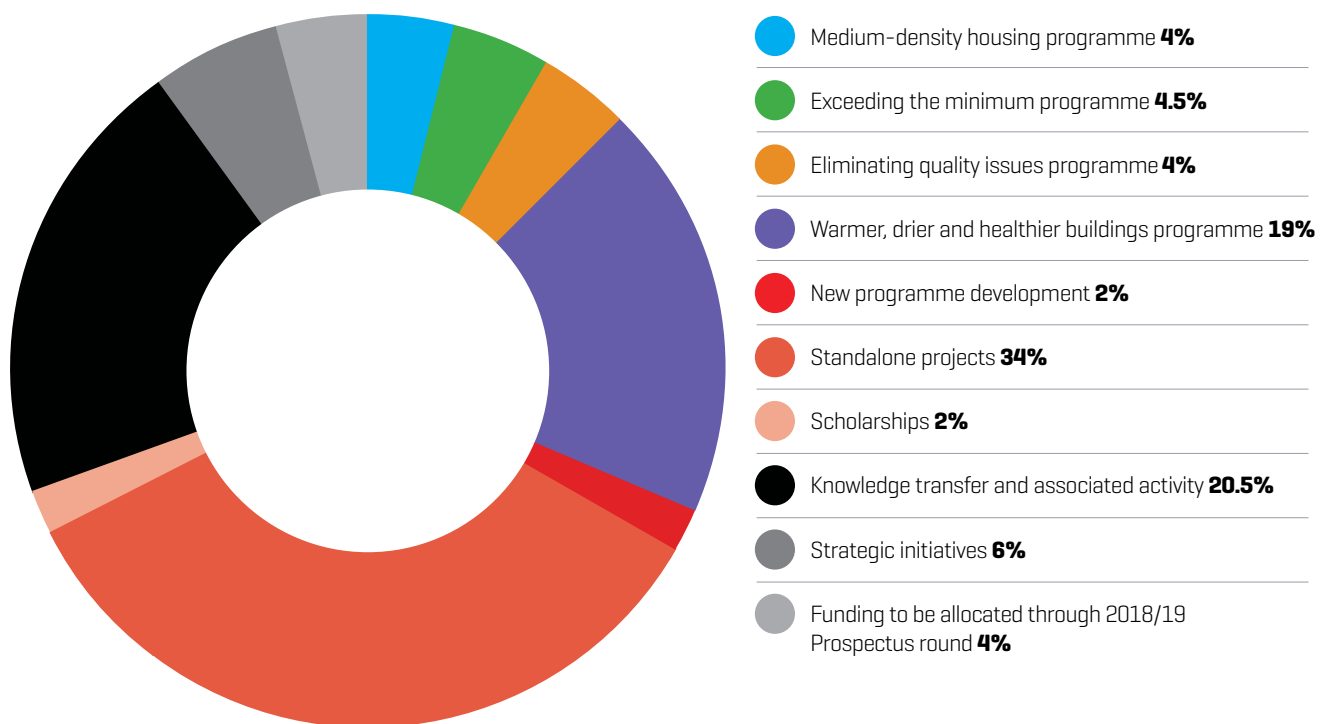
Details on all BRANZ projects are published annually in our [Levy in Action](#).

Our portfolio investments 2018/19

This represents the total Levy investment for the year at the time of publication. It includes new research investments as well as budgeted expenditure for existing research commitments planned during this 12-month period.

The distribution is subject to change due to project variations and new investments made in response to emerging issues.

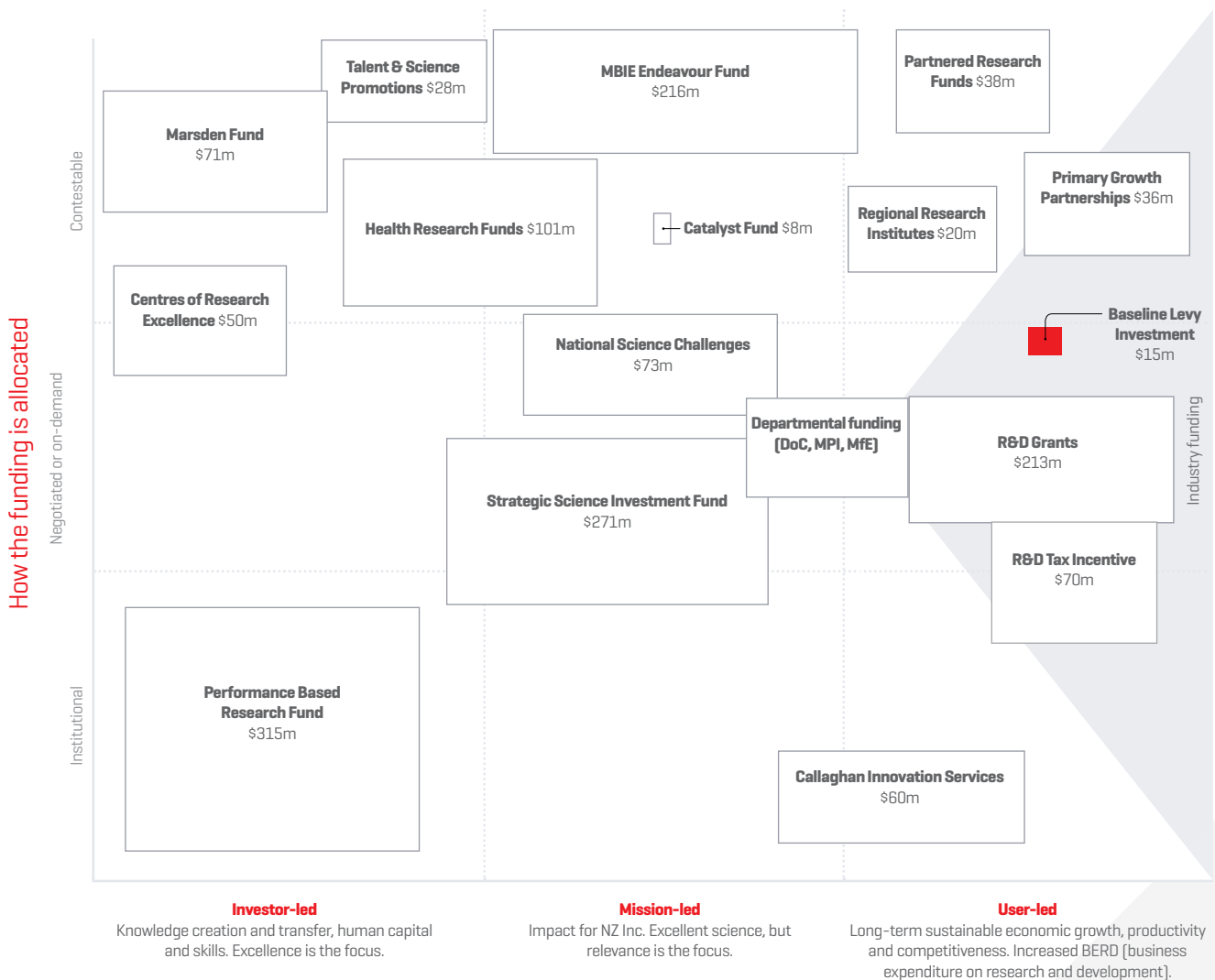
The total figure of \$16,685,000 comprises \$14,862,000 of operational expenses and \$1,823,000 of capital expenses. The capital expenses exclude investments in the campus and other infrastructure assets.



Full details on projects supported in BRANZ's portfolio can be found in Levy in Action www.branz.nz/LIA

The **Building Research Levy** in the science funding system








The Building Research Levy is the largest dedicated research fund in New Zealand focussed on built environment. The diagram below shows how the Building Research Levy compares to the size of government-related science and innovation investments. It also shows how it is situated, by allocation method and type of investment.




Adapted from MBIE, National Statement of Science Intent, 2018

NZ built environment provider* landscape, snapshot of capabilities and focus

TERTIARY INSTITUTIONS

- Engineering [Canterbury, Auckland] 
- Built environment and earthquakes [Canterbury, Auckland] 
- Health and housing [Otago] 
- Fire research [Canterbury] 
- Architecture and design, including BIM [Auckland, Unitec, Victoria] 
- Urbanisation, cities [Auckland, AUT, Lincoln, Otago, Waikato] 
- Building science [Victoria, Massey] 

INDUSTRY RESEARCH ORGANISATIONS

- BRANZ [fire, structural engineering, materials science, building physics, sustainability, energy, social science, economics, building performance, NZ building system expertise] 
- Motu [economics, productivity, labour markets] 
- HERA [heavy engineering, metals] 
- WSP Opus 

* This is a list of providers however it is not intended to be exhaustive. All providers are listed in our Levy in Action.

| | | | |
|---|--|---|---|
|  Low carbon transition |  Quality and performance of homes/buildings |  Thriving cities and communities |  Resilience of built environment |
|  Vibrant industry |  Meeting NZ's population needs |  Housing affordability | |

CROWN RESEARCH INSTITUTES

- NIWA [air, water] 
- GNS [resilience, natural hazards, geotech] 
- Scion [timber products, materials and buildings] 
- Callaghan [innovation, new technologies] 

CONSULTANTS

- Livingston and Associates [economics, housing markets] 
- Beacon [sustainability, communities] 
- BERL [economics] 
- NZIER [economics] 
- CRESA [social science, housing, ageing population] 

NATIONAL SCIENCE CHALLENGES

- Building Better Homes, Towns and Cities [BRANZ, MBIE] 
- Resilience to Nature's Challenges [GNS, MBIE] 
- Ageing Well [University of Otago, MBIE] 
- Deep South [NIWA, GNS, University of Canterbury] 

Publicly available research outputs over the last five years



Where the Levy goes



Snapshot of built environment research outputs 2013-2018 by provider type (reference National Science Challenge report 2018)

Making a difference for NZ

BRANZ research makes a difference to NZ society by inspiring industry to provide better buildings for New Zealanders. One of BRANZ's core activities is turning research into accessible actionable knowledge. Like many research organisations and funders BRANZ is looking at how that knowledge makes impact and how that impact is measured.

| RESEARCH IMPACT | | ECONOMIC | ENVIRONMENTAL | SOCIETY |
|-----------------------|------------------|---|---|---|
| PROTECT AND ADD VALUE | IMMEDIATE IMPACT | <ul style="list-style-type: none"> Improved products and services, or New products or services which fit in existing categories, or Improved or more sustainable production and other business processes. <p>e.g. Medium Density Housing (MDH) programme supports the growth of this key housing typology in New Zealand cities</p> | <ul style="list-style-type: none"> Better environmental management, regulation, conservation or restoration activity. <p>e.g. New guidance around managing asbestos and building sites has been developed</p> | <ul style="list-style-type: none"> Improved techniques for delivery of public services, or Better evidence for public policy design, or Better understanding of and resilience to risk. <p>e.g. BRANZ's House Condition Survey is providing critical evidence that underpins steps to implement a new approach to Healthy Homes in New Zealand</p> |
| | ULTIMATE IMPACT | <p>leading to...</p> <ul style="list-style-type: none"> Growth of existing sectors, or Greater value derived from natural resources, or Less pollution. <p>e.g. MDH becomes a key part of the solution to meeting demand for housing. It makes better use of limited land and changes the way that the needs of both residents and wider communities are being met</p> | <p>leading to...</p> <ul style="list-style-type: none"> Better environmental quality or reduced risks to the environment, or Less pollution. <p>e.g. This guidance leads to new ways to manage asbestos in soils, improving environmental quality and managing health risks</p> | <p>leading to...</p> <ul style="list-style-type: none"> More effective or efficient public service delivery, or Better life outcomes for individuals <p>e.g. The living standards of New Zealanders living in rental housing is lifted, leading to better health, educational and social outcomes</p> |

| | | | | |
|-----------|------------------|--|---|--|
| TRANSFORM | IMMEDIATE IMPACT | <ul style="list-style-type: none"> Entirely new category of good or service, or Technology or practice with order of magnitude improvement in performance or entirely new capability(ies). <p>e.g. Artisan digital quality assurance model</p> | <ul style="list-style-type: none"> New technique for environmental management, conservation or restoration. <p>e.g. BRANZ has developed a world-leading approach to Life Cycle Assessment (an LCA toolbox)</p> | <ul style="list-style-type: none"> New ways of living or organising communities and society, or New mode of delivering public services or new category of policy intervention. <p>e.g. BRANZ worked with Massey University to produce a ground breaking national report on the changing role of the private rented sector in New Zealand society</p> |
| | ULTIMATE IMPACT | <p>leading to...</p> <ul style="list-style-type: none"> Creation of, or growth in, an economic activity which is new for New Zealand, or Disruption of an economic sector, or Entering or creating new market, or New types of work, or New sustainable use or eliminated use of a natural resource. <p>e.g. Artisan disrupts the traditional approach to quality assurance in the building industry. It transforms the sector, delivering a shift in the quality of work, leading to better homes and improving productivity</p> | <p>leading to...</p> <ul style="list-style-type: none"> Elimination (virtual or complete) of a pest or the damage it causes, or Dramatic improvement in state of the environment, or Elimination of a pollution stream. <p>e.g. Use of the LCA tools is underpinning the transition taking place in New Zealand to shift to a low carbon built environment</p> | <p>leading to...</p> <ul style="list-style-type: none"> Total change in the character and magnitude of risks or opportunities people face, or Order of magnitude improvement in policy efficiency or effectiveness. <p>e.g. This report has played a key role in a shift in policy thinking and practice around the nature of housing provision in New Zealand and the role of private renting as a significant tenure for many people</p> |



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