

# Building better, Together.

Sustainability report  
January 2015





Fletcher Building’s annual sustainability report records some of our progress as we work to improve our economic, environmental, social and governance performance.

Visit our website [www.fbu.com](http://www.fbu.com) for updates on our sustainability initiatives throughout the year.

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# Highlights

FBUnite programme is on track to deliver savings of \$100 million per year

2014 has been a year of excellent progress. Fletcher Building heads into 2015 with good momentum, a strong management team and a clear view of priorities

Health and Safety performance during the financial year and saw a further improvement in performance metrics

Our senior leaders' programme, Leaders Edge, won a silver award in the executive development category, of the 2014 European Foundation for Management Development Excellence in Practice Awards

Fletcher Construction wins the AWF Group Safety Innovation Award (Large Businesses) for the MacKays to Peka Peka Expressway's health and safety awareness and engagement programme

Canterbury EQR housing repair programme is on track for completion in April 2015

# Key Financial Achievements

**Revenue of**

**\$8.4b**

**Reported EBIT**

**\$592m (+4%)**

**Reported EBIT**

before significant items

**\$624m (+10%)**

# From the CEO, Mark Adamson



Building, smarter and with more consideration for sustainable options has been a key driver in Fletcher Building's business in 2014. It has been a year of excellent progress, both in terms of financial and operating performance and in the delivery of our business transformation initiatives. We head into 2015 with a clear view of our priorities.

Health and Safety and people development is at the heart of our business. Whether through reducing carbon emissions, using smart technology to avoid workplace incidents or creating diverse, engaging and people-enhancing workplaces so we hold onto, and further educate and inspire our valued employees and through excellent leadership. The case studies featured in this report make me proud of the commitment, passion and drive I see every day in Fletcher Building teams. We honestly strive to "be better every day."

This report should give you an idea of our philosophy and commitment to sustainability. We invest heavily in efficient manufacturing and construction practices. We operate with the environment as a key consideration, from sourcing raw materials to the eventual end-of-life and disposal.

More examples of the ways we continue to raise the bar for sustainable performance in the construction industry are outlined in this report, and recognised in the various milestones, including industry awards we have celebrated this year.

- FBUnite, our major business transformation project, is on track to deliver savings of \$100 million per year
- We continued to lift our Health and Safety performance during the year and saw a further improvement in performance metrics
- Our senior leaders' programme, Leaders Edge, won a silver award in the executive development category, of the 2014 European Foundation for Management Development Excellence in Practice Awards

# From the CEO, Mark Adamson

- Fletcher Construction won the AWF (Allied Workforce) Construction Group Safety Innovation Award for Large Businesses
- Canterbury (EQR) home rebuild programme on track for completion in April 2015
- Our energy audits have identified potential cost savings of approximately \$9m per annum and 75,000 tonnes of emissions
- Key Financial Achievements: Revenue of \$8.4b, Reported EBIT \$592m (+4%), Reported EBIT before significant items \$624m (+10%)

As a largely manufacturing-based business, sustainability is at the centre of our operations and Fletcher Building is focused on reducing our energy use and carbon emissions.

A key development for this year was the implementation of a new software system to record, analyse and report on the energy use and emissions of all facilities worldwide. The implementation and associated training programme has led to a more robust collection of data.

The Fletcher Building Carbon Disclosure Project 2014 disclosure score was 75 out of 100, well ahead of the NZX50 average of 65.

People are at the core of our business and their safety is paramount. The Total Recordable Injury Frequency Rate reduced by 57% over the past five years, 12%

## Sustainability is at the heart of our business.

this year, from 6.8 to 6.0. While the company has made excellent progress in recent years, we must maintain the philosophy of continuous improvement to ensure our people get home safe every day.

The M2PP Alliance, which is building the MacKays to Peka Peka Expressway, took out the AWF Group Safety Innovation Award for Large Businesses for their health and safety awareness and engagement programme. The initiative makes clever use of smartphones, tablets, YouTube and QR codes to access animated videos that engage workers in various health and safety protocols.

Developing a strong leadership pipeline, attracting and retaining high-performers and creating a highly engaged and diverse workforce is core to our people strategy. We employ a diverse workforce of 18,800 people, based in 40 countries. While we recognise the need to supplement our skills base through external recruitment, as a significant employer, we are committed to building core leadership capability from within. Fletcher Building was recognised globally this year with our Leaders' Edge programme winning a silver award in the Executive Development Foundation for Management Development (EFMD) Excellence in Practice Awards. Our employees can say that the development programme we offer is truly global best practice.

Our businesses are also proud to sponsor a range of community, industry and charitable organisations. That investment in the community is diverse, ranging from environmental initiatives to educational institutions and industry events.

For the coming year Fletcher Building is focussing on driving a much sharper customer and consumer focus, lifting our operational excellence and implementing its growth strategy. From a sustainability perspective our long-term vision is to become a leader in sustainable solutions and as always, safety of our people will be our number one priority.

**Mark Adamson**  
Chief Executive Officer

# Overview of Fletcher Building

Fletcher Building is an iconic New Zealand-headquartered company with more than 100 years' experience in the building sector. Fletcher Building has grown to become an integrated manufacturer and distributor of infrastructure and building products, as well as a construction company. A global organisation with a strong New Zealand heritage, we are a market leader with a solid platform in Australasian building products and construction materials.

With over 45 businesses in over 40 countries Fletcher Building provides proven expertise and local knowledge to deliver both successful outcomes to customers and value to shareholders.

Fletcher Building is committed to creating superior shareholder value by providing outstanding products and services that enhance built environments and improves quality of life. Whether we're manufacturing infrastructure or building products, constructing large scale projects, or supplying building materials through our various distribution channels, we leverage our size and scale to drive efficiencies and invest in world-class capabilities.

From Australasia to Asia, the UK to North America, Europe to the South Pacific, our diverse workforce is made up of approximately 18,800 people.

**Fletcher Building is comprised of five divisions supported by an active corporate center:**

**Heavy Building Products** division is a manufacturer, distributor and marketer of heavy construction materials in New Zealand and Australia, typically used in the early stages of the construction cycle. Products manufactured include: cement, concrete and aggregates, concrete pipes and products.

**Light Building Products** division manufactures a broad range of building products for residential markets in New Zealand, Australia, USA, Europe and Asia. These products include: plasterboard, insulation, roof tiles, coated steel, plastic pipes, aluminium windows and doors and sinkware.

**Laminates & Panels** division includes the global Formica business and the Laminex business in New Zealand and Australia. Formica manufactures and distributes decorative surface laminates in North America, Europe and Asia.

The **Distribution** divisions consist of building, plumbing and pipeline businesses in Australia and New Zealand. PlaceMakers, Forman and Mico operate in New Zealand and Tradelink operates a national chain of stores throughout Australia.

**Fletcher Construction** division is a leading general contractor in New Zealand and the South Pacific and a builder of residential homes in New Zealand. The division's business units are: Building + Interiors, Infrastructure, South Pacific and Fletcher Residential, now known as Fletcher Living.

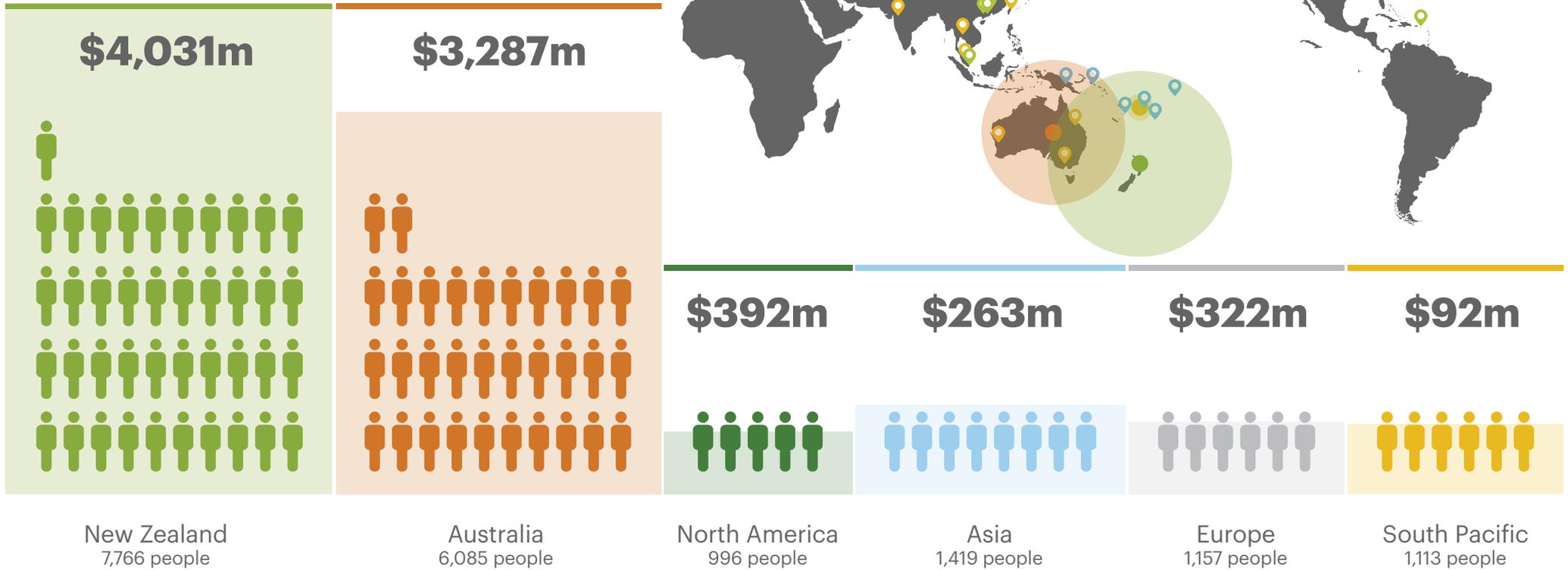
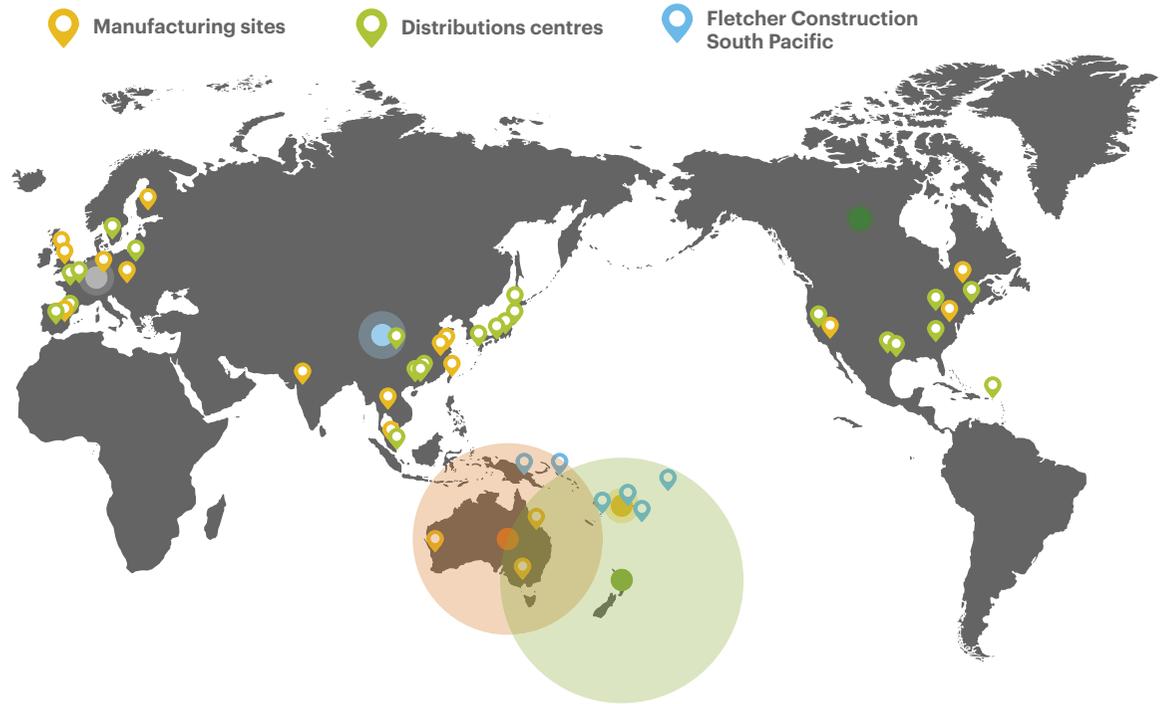


# Revenue: \$8.7billion

## People: 18,800

 Full time worker equivalent  
1 = 1% of total #

 External revenue  
FY14 (\$m)



74% of total workers are from Australasia

# Our Approach to Sustainability

Fletcher Building's approach to sustainability is guided by the belief that by working with all of our stakeholders: our people, customers, communities and shareholders we can achieve more. Sustainability is about resource efficiency, improving the way the business is run, innovating or improving economically and environmentally responsible products and managing environmental impacts. Fletcher Building believes sustainability is important to the customer, delivers real value and is crucial to the life of our business.

Acting with integrity, honesty and transparency, Fletcher Building staff treat others with dignity and respect, work best as a team, and help each other succeed. The environment is a key consideration in everything Fletcher Building does. Fletcher Building leaders value work-life balance and believe that all injuries can be prevented.

Fletcher Building creates safe workplaces where people are encouraged to work together, help each other succeed and achieve excellence through continuous improvement and innovation. We give our people opportunities for development, and provide advancement on merit, competitive rewards, and recognition for work well done.

Fletcher Building businesses aim to be customers' supplier of choice, by providing outstanding products, excellent service, and mutually beneficial business partnerships.

As a leading international building and construction company, Fletcher Building activities touch people in all corners of the world. Operations, products and services should have a positive impact on the environment, and on the communities within which Fletcher businesses operate. This brings both opportunity and responsibility. Fletcher Building are committed to providing outstanding products and services that enhance built environments and improve quality of life, while also honouring and protecting the natural environments.

By maximising the societal, environmental and economic benefits of business activities while also managing impacts, Fletcher Building can create greater business value and further strengthen trust with stakeholders.

Fletcher Building is committed to:

- Working together to protect the environment
- Reducing the impacts associated with our manufacturing, construction and extraction operations

- Reducing the impacts associated with the distribution and use of our building materials
- Building leadership capability
- Supporting and investing in the communities in which we operate
- Managing health and safety risks across our business
- Working collaboratively with central and local government stakeholders to facilitate employment or training opportunities for disadvantaged youth
- Workplaces that strive to provide development opportunities for our people, focused on high engagement and high performance

# Our People

Developing a strong leadership pipeline, attracting and retaining high-performers and creating a highly engaged and diverse workforce are core to our people strategy.

Fletcher Building employs a diverse workforce of approximately 18,800 people, based in 40 countries. The three pillars of our people strategy – leadership, talent and culture – have been developed to create a high performance and high engagement workplace across our global footprint.

In 2014, Fletcher Building completed the implementation of a leadership development framework and has also developed a talent management programme that has provided career opportunities for leaders across divisions and internationally.

The Fletcher Building Learning Academy has delivered programmes to more than 6899 employees globally over the past 12 months. While the focus is primarily on creating a high performance and high engagement workplace culture, the technology and internal communications teams are also rolling out a global intranet to create a stronger sense of connection and collaboration for employees across the globe.

## Diversity

Fletcher Building is committed to creating a diverse and

inclusive working environment at all levels, including senior management and the board of directors.

Over the past two years we have provided employment opportunities, particularly to young people through alliances with Te Puni Kōkiri, Limited Services Volunteers, Work and Income and the Department of Corrections. As the premiere sponsor of the First Foundation, we have funded 21 scholarships to date for high achievers from low decile schools.

The company is working to increase the percentage of women, ethnic and other minorities working in our businesses. A Diversity Council has been established and is chaired by CEO, Mark Adamson. The council will sponsor, drive and monitor future diversity programmes and help formulate the company's longer term diversity strategy. The council is global and diverse in itself – it is made up of senior leaders representing all divisions. We measure diversity and inclusion in our Engagement Survey and will continue to highlight what's working well and what needs to be improved to make Fletcher Building a great place for everyone to grow and thrive.



Fletcher Building employs a diverse workforce of approximately 18,800 people, based across 40 countries.



▲ 2014 Leaders Edge participants.

Also, Fletcher Building is working with the engineering industry to promote engineering as a career choice for women and to assist with newly created employment targets for women.

The company has strong relationships with organisations that provide employment opportunities for New Zealanders living with disabilities including the Equal Employment Opportunities Trust.

### Developing leaders

Focussing on growing internal key talent, Fletcher Building has increased the number of internal senior appointments. In the last 12 months, through the Leaders Edge programme, Fletcher Building has provided in-depth development and coaching for almost thirty aspiring leaders – continuing to build a strong leadership pipeline.

### Women in Leadership

A Women's Leadership Series has also been launched this year. This is designed to connect with and develop women in or aspiring to be in leadership roles. Fletcher Building is in the third year of participation and sponsors the Global Women programme. CEO, Mark Adamson is a member of the 25 Percent Group which aims to have female board membership in New Zealand up to 25% by 2015. Fletcher Building has seen women in leadership rise by over 100% this year.

### Engaged staff

This year 93% of Fletcher Building staff took part in FBU Say, our engagement survey. As an outcome of this Fletcher Building will be launching in 2015 the Fletcher Building Regional Forums. These are forums in 12 different locations around the globe for our leaders across all levels to share learnings, network and have opportunities to develop with other leaders in their region.

## CASE STUDY

### ► Creating diverse employment opportunities

Jayne Hamilton has been with Canterbury Concrete for a couple of years. She is one of seven female concrete truck drivers working in the Canterbury region for a Fletcher Building company. She came into the business through a family history of being involved in the trucking profession. Her Dad was a concrete truck driver, so in many ways the role was in her blood. If Jane decided to move on from driving, she has all the usual opportunities available to Fletcher Building employees to progress her career including the pathway from driver to batcher, despatcher, lab work, or eventually plant manager. Jayne is really happy and comfortable in her chosen career which currently involves driving an 8-wheeler truck carrying approximately 6 m<sup>3</sup> of concrete.



# Health and Safety

Strategic direction, hazard prevention in the workplace and health and safety measures being integrated into our Operational Excellence programme are all mapped out on the road ahead for Fletcher Building.

Health and Safety is a number one priority in our workforce. Strategic direction and priorities are developed by our executive Environment, Health and Safety Council, which is chaired by Fletcher Building CEO, Mark Adamson. The correlation between productivity and improved health and safety, and the high human cost of injuries, make health and safety a key issue.

Fletcher Building has recognised the need to increase our focus on hazards that could result in serious injury or death. A continuing focus is to more effectively manage the risk of fires and explosions in our major, high-temperature manufacturing processes. We have a programme that improves our competencies and our management systems for process safety in these plants. This remains one of our top safety priorities.

During the last year, we completed new group standards for on-site traffic management, surveying and managing asbestos-containing materials where they exist in our buildings.

We have substantially completed further standards on machine guarding, isolation, and work journeys in light vehicles.

Health and Safety management is being integrated into our operational excellence programme. Our operations will be regularly assessed against a common set of criteria, enabling better benchmarking.

Despite our progress, serious injuries still occur and we always aim to do better. Twenty employees and contractors suffered serious injuries during the last financial year. That is twenty too many. The hazards that resulted in these injuries included fixed plant and

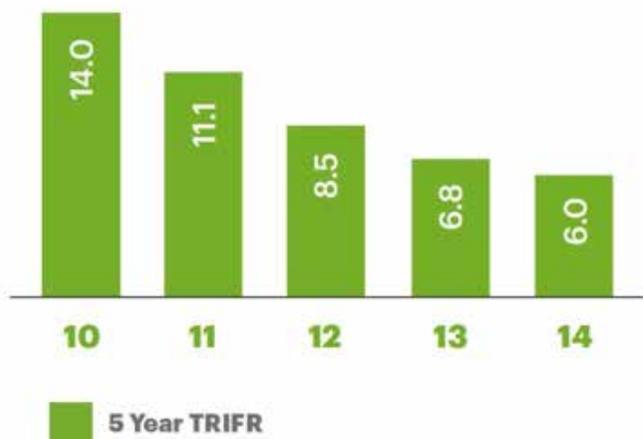
equipment, movement and storage of products, work at height and mobile equipment. Incidents like this inform us that further effort is required to actively manage these hazards.

Over the last year we have further reduced our recordable injury rates. We continue to report our 12-month rolling average Total Recordable Injury Frequency Rate per million employee and contractor hours (TRIFR), with total injuries being the sum of lost-time and medical treatment injuries. In the last year, this rate has dropped from 6.80 to 6.00. By comparison in June 2006, this rate was over 60.



Health and Safety is a number one priority in our workplace.

## 5 year rolling total recordable injury frequency rate



### CASE STUDY

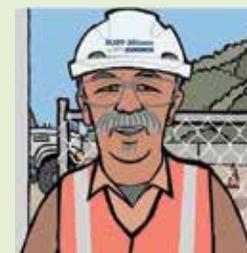
#### ► Safety initiative award sees Winstone Wallboard's reach new heights

The winner of our annual Workplace Safety Initiative Award 2014 was Winstone Wallboards for the resources and support it has provided for safe site delivery and handling of GIB® plasterboard. It took ownership of this process and a Safe Work Practices Guide. A significant improvement gained in the development of this guide is the collation of comprehensive delivered-to-site processes and procedures into a singular document. This has enabled its contractors to drive improvement in the training, assessment and behaviours of its delivery teams. Winstone Wallboards specifically addressed safe work methods for work at height. It also developed the Vertical Plasterboard Stack Restraint System. The danger of vertically stacked plasterboard toppling is a real risk. The system comprises a purpose-designed anchor bracket, fastening clip, poly-woven strapping and a warning sticker. It essentially holds the board against a wall, removing the potential for the vertically-stacked board to topple.

◀ *Taua Papalii won the Outstanding Individual Contribution to Safety or Workplace Health Improvement Award in the 2014 Fletcher Building Excellence Awards.*

### CASE STUDY

#### ► Technology helps Construction advance winning ways



Superb efforts being undertaken by the expressway construction team to protect the wellbeing of every worker, visitor, and members of the public were recognised at the Construction Health and Safety Awards, NZ.

The M2PP Alliance, which is building the MacKays to Peka Peka Expressway, took out the AWF Group Safety Innovation Award for Large Businesses for their health and safety awareness and engagement programme. The initiative makes clever use of smartphones, tablets, YouTube and QR codes to access animated videos and images of staff (pictured) that engage workers in various health and safety protocol.

“I’m delighted with the result for the team and the Kapiti Community – the smart technology we’re using is really just the tip of the iceberg and the success of this is the result of great collaboration between Health and Safety, Communications, Construction and local creative talent,” says Tim Barry, Health, Safety and Wellbeing Manager for Fletcher Construction.

The Construction Health and Safety Awards help to improve health and safety in the construction industry by promoting great ideas and giving national recognition to those making a real difference. The awards acknowledge people, sites and businesses that demonstrate excellence in the areas of leadership, and innovation in organisations of all sizes.

# Sourcing Raw Materials

Making sure we source and manage our materials sustainably is a crucial first-step in the manufacturing process.

## Rehabilitation and restoration:

Two of our businesses are involved in extracting raw materials from the ground: Winstone Aggregates - New Zealand's largest manufacturer and distributor of aggregates and sands, and Australian sand mining business, Rocla Quarry Products. When a quarry site is vacated, Winstone and Rocla both take steps to restore the site so wildlife and vegetation can regenerate.

Attitudes to the environment in the quarrying industry, as in society in general, have changed radically in recent years. It is well understood that quarrying must supply the needs of the present without compromising the needs of the future. Quarrying is temporary use of the land, and this use may span a generation or more, but eventually extraction ends and the land is restored to its former use, or converted to another activity which best suits the needs of the community. Considerable research and investment are put into ensuring the restoration is carried out to the highest possible standards.



## CASE STUDY

### ► Rocla is doing its bit with Fly Ash:



Rocla is reducing the effects on the environment by using fly ash in the manufacture of concrete products. In the past power station fly ash, a waste product from the burning of coal to make electricity, was sent to landfill. Now it is being used as a partial replacement for cement in the manufacture of concrete products, indirectly reducing CO<sub>2</sub> emissions through the re-use of waste.

Rocla Pipeline Products used approximately 10,000 tonnes fly ash (+/- a few hundred tonnes) in the period July13 – June14.

Fly ash improves hardened concrete durability (improved density and strength; lower permeability; better resistance to reinforcement corrosion, chemical penetration). Fly ash also improves wet concrete workability.

◀ *Campbellfield pipe factory in Melbourne, with the weighing hoppers in the background.*

It is well understood that quarrying must supply the needs of the present without compromising the needs of the future.

## CASE STUDY

► **Banksia restoration at Gaskell Avenue Quarry, WA**



An example of Rocla's environmental efforts is the work being done at Gaskell Avenue Quarry. This is Rocla's largest sand

pit in Western Australia, and is located 25 km north-east of Perth in the state forest. Set on 530 hectares of Banksia woodland, Rocla's extractive industry license is dependent upon a successful rehabilitation performance.

Previous attempts to re-establish this woodland have been unsuccessful, and so Rocla sponsored the Kings Park Plant Science Division to conduct a programme to research and develop restoration of Banksia woodland species after sand extraction. The Plant Science Division is one of the premier revegetation research organisations in Australia.

The research study has focused on all aspects of the rehabilitation programme from topsoil movement and compaction, to seed and seedling survival rates after final planting. Progressive reports have resulted in changes to the rehabilitation process which has effected major improvements over subsequent years.

Rocla has become the Perth leader in rehabilitation techniques with Banksia woodland. The positive results are being used by Kings Park as an example of best practice for urban woodland regeneration throughout the Perth region.

## CASE STUDY

► **Hunua Auckland green gecko relocation project**



Winstone Aggregates has developed, implemented and monitored a programme for the rare and at risk Auckland green gecko at the Hunua Quarry south of Auckland.

Auckland green geckos are a taonga species to local iwi, in particular Ngati te Ata and Ngati Tamaoho, both of which were represented on the Papakura Kaitiaki Group, a group representing Iwi that have interests in the Hunua Quarry site. In addition to this, the local council, Department of Conservation, and residents of the surrounding area see the geckos as an important part of the local ecosystem that has existed for generations. All groups came together for the gecko relocation project.

In total 39 green geckos were relocated from the proposed quarry site to an area of native bush also on the quarry site.

Winstone Aggregates is also undertaking a wider range of restoration initiatives to compensate for habitat which will be lost through works associated with the development of the new Symonds Hill pit. These include planting an indigenous forest (over 39.9ha of retired pasture in the Hay paddock and Friedman blocks), and the control of predatory pests over 100ha of surrounding regenerating forest adjoining the proposed pit. This has focused on rats, possums, stoats and feral cats. These species are widely implicated in the decline of lizard populations on the mainland including arboreal geckos such as the Auckland green gecko.

Pest control has increased the abundance of invertebrates (some of which may be prey for lizards) and native birds; and increased the availability of fruits and seeds (which may also be eaten by lizards).

When a quarry site is vacated, Winstone and Rocla both take steps to restore the site so wildlife and vegetation can regenerate ... Considerable research and investment are put into ensuring the restoration is carried out to the highest possible standards.

# Designing Sustainable Products

Sustainable manufacturing begins with sustainable design.

Sustainable design aims to minimise negative environmental impact through skilful and innovative means. Both innovation and sustainable design is encouraged throughout Fletcher Building with a global innovation award celebrated at the Annual Fletcher Building Excellence Awards.

## CASE STUDY

### ► Firth permeable concrete

Firth's EcoPave System is a complete permeable paving system that helps maintain the natural water balance as part of a property development.

Traditionally, land development has had a negative impact on the natural flow of rain, stormwater and nutrients. Runoff from impermeable surfaces not only increases demand on drainage systems during rain, but also starves adjacent vegetation and subsoil of water and nutrients and increases the rate of erosion.



▲ *Firth permeable paver and Firth EnviroBlend.*



### ► Firth permeable concrete:

- Reduces rainfall runoff from hard surfaces, decreasing the demand on drainage systems.
- Reduces the need for retention structures (e.g. ground sumps, ponds or dams) and maximises land use by retaining water within the Permeable Paving System.
- Improves hydrological response of stormwater peak flow by holding and releasing in a controlled manner.
- Filters the run-off water by removing heavy metals such as zinc and copper through cationic exchange when using greywacke sub base drainage aggregates.

"EnviroBlend™ concrete was specified for this along with other environmentally certified products," explains Adaleen Griffith, Sales & Certified Supply Manager for Firth Residential.

Firth Permeable Concrete was recently used in a ground breaking project to design a residential energy efficient home with an 8-10 Homestar rating.

## CASE STUDY

## ► Formica keeps it clean with breakthrough product to tackle germs

Germs on public surfaces may well be a thing of the past thanks to a new Formica product recently introduced throughout Asia.

Protec+, a high performance antimicrobial laminate surface product, has been introduced throughout Asia, following collaborative development by Formica and BioCote.

The breakthrough product has been used so far in new-builds across Asia and is suited to a variety of germ-heavy application areas including medical and dental, transportation, furniture, education, residential blocks, construction and healthcare. With

health hazards and the spread of bacteria continuing to threaten public health, an increased awareness of microbes on surfaces prompted Formica to introduce a more hygienic product.

Protec+ uses silver ions generated from elemental silver. They are known to bind key proteins in micro-organisms. The surface prevents the growth of bacteria and fungi, leaving areas cleaner and less prone to germ gathering.

President of Formica Asia, Peter Wilson, says Formica Asia strives to adhere to the highest environmental

standards as well as advancing the design and manufacturing of products.

“With sustainability a concern for the global community, Formica group makes it a priority to offer architects, designers and consumers a full range of environmentally-friendly surfacing products. The launch of Protec+ provides consumers with a safer, cleaner and visually pleasant environment.”

With health hazards and the spread of bacteria continuing to threaten public health, an increased awareness of microbes on surfaces prompted Formica to introduce a more hygienic product.



# Manufacturing Sustainably

Continually improving the way we manufacture our products, with a focus on minimal environmental impact.

Fletcher Building's operational excellence programme seeks to increase and standardise the quality of manufacturing and supply chain across the group. Using a multi-faceted approach we aim to lift the bar on manufacturing excellence. Our three year programme has 10 pillars of success and focuses on being highly efficient and effective in delivering to our customers.

## Key areas

- Improving manufacturing productivity.
- Building highly efficient manufacturing operations.
- Improving workforce capability and skills

Step Up is a leadership programme developed to support supervisors across the globe, with a key focus on communication, leading a team, business excellence and the delivery of our operational excellence programme. Step Up is being offered in Australia and NZ and has also been started in Evendale, Cincinatti.



## CASE STUDY

## ► Taurean strength designed to outmatch cyclonic forces

Taurean's WINDSTRONG® garage door range specifically designed for use in the cyclonic areas of Australia, is starting to be rolled out Queensland-wide following its successful introduction throughout the north of the state last year.

Strict Australian compliance codes issued in the wake of Cyclone Yasi in 2011 have meant that roller garage systems need to carry wind locks. Severe tropical Cyclone Yasi was a very powerful and destructive tropical cyclone that made landfall in northern Queensland, Australia, in February 2011. It caused one fatality and severe damage to northern parts of the state with wind gusts of 285km/h recorded.

One of the common failures observed in Cyclone Yasi was the disengagement of garage roller doors from their tracks. This left the door free to flap open and allowed wind and water to enter the garage and in some cases, the house itself. On some buildings, the change in internal pressure caused additional damage to the structure. Buckling of sectional doors was also observed.

Since last year, it is now embedded in Australian construction law that doors in the cyclone regions C and D (see graphic map) are specified to resist the design wind speed for your house location. The wind locks transfer additional load from the ends of the roller doors into the tracks and then into the wall.

So the crowd at Taurean Door Systems, owned by Fletcher Building's Stramit company, devised

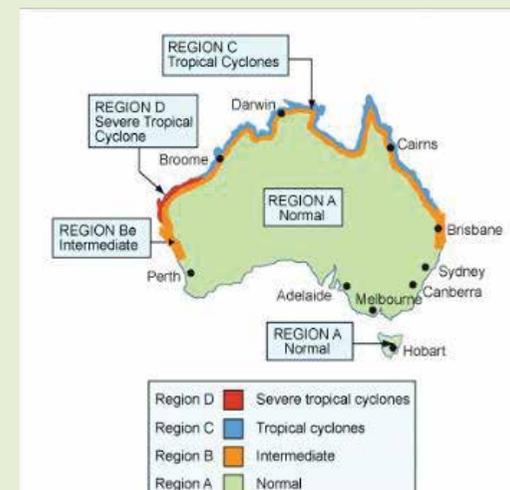


▲ The Taurean crew. From left: Bruce Ward (Operations Supervisor), Clint Olsen (Operations), Nathan Tinning (Operations), Aaron McKeon (Stramit Operations), Mick Wilkinson (Operations), Geoff Ross (Taurean General Manager), Sean Marceddo, Grant Bishell (Taurean Business Development Manager).

a stronger door in their WINDSTRONG® range to adjust to these climate-ravaged regions.

"It's different to a standard roller door as it has additional clips riveted into the curtain that act as 'hooks' to keep the door in a special track when there is a strong wind; these clips and track system prevent the roller door from blowing in" according to Taurean's Sales and Marketing manager, Sean Marceddo.

Other manufacturers of roller doors in Australia have their own version of a windlocked door but use a steel



▲ Australian Storm Zone

hook, making them comparatively noisier and rough running. "From a sales perspective, we are gaining market share due to the quality of our door. In some instances we are hearing that builders are turning away from choosing sectional doors and opting instead for these to these roller doors, due to cost and quality," said Sean Marceddo.

# Reducing CO<sub>2</sub> Emissions

As a largely manufacturing-based business, Fletcher Building is focused on reducing energy use and carbon emissions.

Fletcher Building has an eight-year target, which began in 2012 to reduce our overall group carbon emissions intensity by 10 percent. Some plants have made significant gains, with up to 15% efficiency improvement, while others have suffered from the inefficiency of stop-start operations to meet subdued market demand. As a result of this mix our composite intensity index has reduced marginally to 99.4 from 100. Overall production volumes have increased significantly which has meant that our overall CO<sub>2</sub> emissions have correspondingly increased.

## Key achievements

A key development for this year was the implementation of a new software system to record, analyse and report on the energy use and emissions of all facilities worldwide. The implementation and associated training programme has led to a far more thorough collection of data. The new system provides much improved reporting oriented to our Operational Excellence programme, and giving business and divisional managers greater oversight of our energy efficiency performance and total emissions. An example is the capability to compare factories making the same products, month by month.

Our high pressure laminating plants throughout the world have achieved an average 5.2 per cent reduction in emissions intensity (per area of laminate) as has our MDF facility in Gympie, Australia.

## Group performance

Our Energy and CO<sub>2</sub> inventory is updated every six months, and figures for the 2014 financial year reveal total CO<sub>2</sub> emissions of 1,337,950 tonnes – an increase of 53,591 tonnes on the same period last year. This includes the CO<sub>2</sub> emitted during the generation of electricity used by Fletcher Building.

Emissions from New Zealand operations amounted to 739,580 tonnes this year, an increase of 5.6 per cent, reflecting the rise in production volumes as the economy strengthens. In Australian operations emissions were



down marginally, 0.2 per cent at 422,806 tonnes. International operations emissions increased by 8.9 per cent and totalled 175,564 tonnes for the year.

The nine most emissions-intensive products contribute 83 per cent of all group emissions, as illustrated on the next page.

Fletcher Building continues to participate in the Carbon Disclosure Project, requiring us to report how we manage the risks and opportunities of climate change and provide a complete inventory of annual energy use and CO<sub>2</sub> emissions.

The Fletcher Building 2014 carbon disclosure score was 75 out of 100, recognizing Fletcher Building's high-quality disclosure programme, well ahead of the NZX50 average of 65.

Fletcher Building has an eight-year target, which began in 2012 to reduce our overall group carbon emissions intensity by 10 percent.

# Smarter Energy Use

Investigating behind the scenes and making our energy use smarter has revealed potential savings of \$9.5m.

Energy efficiency auditing in Australia and New Zealand over the past two years has identified 450 opportunities for improvement with a total potential to save approximately \$9.5m p.a. of energy costs, 562,000GJ of energy and 75,000 tonnes of emissions.

Of these opportunities approximately 40% are to be implemented with another 37% undergoing further investigation.

Lighting upgrades to LED or high-efficiency fluorescent lights are being carried out at a number of facilities. Other more process-specific opportunities include implementing improved software control of the refineries at Gympie MDF plant and pelletising sander dust for use as a fuel in place of natural gas at the Dardanup Particleboard plant.

The EECA programme carried out in New Zealand included development of energy efficiency auditing manuals and training workshops. The manuals are now being circulated throughout the Fletcher Building Group.

## Fletcher Building's nine most emissions-intensive products (manufacturing process)

Product		FY13 emissions	FY14 emissions
<b>Cement</b>	Total (tCO <sub>2</sub> e)	486,930	549,893
	Efficiency (tCO <sub>2</sub> e/t)	0.738	0.737
<b>Steel</b>	Total (tCO <sub>2</sub> e)	69,242	70,665
	Efficiency (tCO <sub>2</sub> e/t)	0.290	0.278
<b>MDF</b>	Total (tCO <sub>2</sub> e)	77,578	77,133
	Efficiency (tCO <sub>2</sub> e/m <sup>3</sup> )	0.270	0.259
<b>Decorative laminates</b>	Total (tCO <sub>2</sub> e)	156,037	135,579
	Efficiency (kgCO <sub>2</sub> e/m <sup>2</sup> )	1.64	1.55
<b>Fibreglass insulation</b>	Total (tCO <sub>2</sub> e)	66,584	66,392
	Efficiency (tCO <sub>2</sub> e/t)	1.84	1.93
<b>Plasterboard</b>	Total (tCO <sub>2</sub> e)	27,676	30,615
	Efficiency (tCO <sub>2</sub> e/t)	163	163
<b>Particleboard</b>	Total (tCO <sub>2</sub> e)	32,093	32,175
	Efficiency (tCO <sub>2</sub> e/m <sup>3</sup> )	0.107	0.103
<b>Concrete Pipes</b>	Total (tCO <sub>2</sub> e)	35,286	33,685
	Efficiency (tCO <sub>2</sub> e/t)	0.054	0.055
<b>Plastic Pipes</b>	Total (tCO <sub>2</sub> e)	79,206	76,363
	Efficiency (tCO <sub>2</sub> e/t)	0.479	0.499

## CASE STUDY

## ► Iplex Pipelines pumps up the savings

Iplex Pipelines is New Zealand's leading manufacturer of plastic piping, supplying product for a wide range of rural, infrastructure and civil applications. The company has manufacturing sites in Christchurch and Palmerston North.

Iplex Pipelines is committed to the group-wide target to cut CO<sub>2</sub> emissions by 10% by 2020.

To support this, Iplex Pipelines' Palmerston North site commissioned an energy audit from Energy NZ. The plant has eight polyethylene and six PVC extrusion machines, all cooled via a centralised chilled water system. This system accounted for a significant amount of total energy consumption on site, with the pumping system a particularly energy-intensive component.

Improving the efficiency of pumping systems is frequently the most cost-effective way to reduce energy use in manufacturing plants such as Iplex.

After the audit, Energy NZ recommended variable speed drives (VSDs) on two parts of the water system to stop water being pumped unnecessarily. The annual reduction in energy use was calculated at around 276,500 kWh for the sump pumps and 66,802 kWh for the process water pump. Combined, this would reduce energy costs by \$33,000 a year, and cut annual CO<sub>2</sub> emissions by around 79 tonnes.

An added benefit of reducing power consumption of the sump pumps was to reduce the load on the water compressors, bringing further energy savings.

Since completing the pumping systems improvement at Palmerston North, Iplex Pipelines has extended its energy focus into other areas. They recently installed energy metering at both the Christchurch and Palmerston North sites, with data from this being used to inform further energy-saving projects.

**Key benefits:**

- Over 343,000 kWh pa energy savings
- \$33,000 pa energy cost savings
- CO<sub>2</sub> emissions down by 79 tonnes / year
- Savings verified using electrical logging
- Accurate control of chilled water pressure to extrusion machines

**Iplex Pipelines' pumping efficiency improvements: projected savings**

	Efficiency improvement recommended	Annual energy use reduction (kWh)	Demand reduction (kW)	Annual CO <sub>2</sub> emission savings (tonnes)	Annual cost savings
Sump pumps	A single 37kW VSD to speed control pumps (avoids water returning to sump through balance pipe)	276,464	33.53	63.6	\$26,600
Process water pump	VSD to speed-control one pump; lead-lag system to turn other pumps on and off as required	66,802	6.28	15.4	\$6,400

## CASE STUDY

### ► Stellar savings through lighting efficiency

Lighting improvements at Laminex New Zealand's Hamilton Plant have seen energy use reduced by 80%.

The Laminex New Zealand plant in Hamilton produces over 70,000 sheets of the market-leading Melteca and Trade Essentials Whiteboard decorated surface and panel products familiar in New Zealand homes.

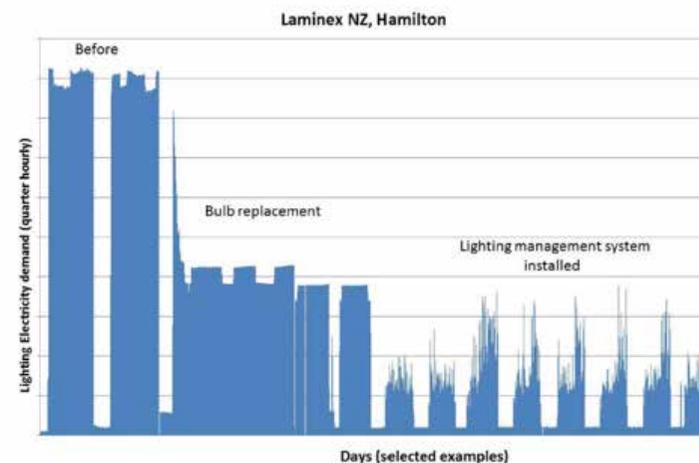
A base-level audit looked at all areas of plant production and energy use. This confirmed lighting in the plant accounted for a third of electricity use and 21% of energy spend. The metal halide lighting throughout the 13,000sq m site was outdated and inefficient. In areas such as the loading canopy, lights remained on all day unnecessarily. There was no automation and little control over lights.

With existing skylights, Laminex NZ already had the benefit of good levels of natural daylight. Many areas, such as storage bays were used only intermittently.

It was clear the best energy and cost-saving solution would involve LEDs with in-built daylight and occupancy sensors in certain zones so lights would only be activated when needed.

The project involved replacing 216 existing light fittings with 242 energy-efficient LED fittings. When enough

natural light is available, the lights dim or switch off. In those zones not in constant use, motion sensors activate lights when people or forklifts enter. Total light energy use is expected to reduce from 660,000 kWh to 140,000 kWh a year — an incredible 80% saving. Initial results are very encouraging that this will be achieved.



“This is an energy efficiency project that ticks all the boxes. It's reduced carbon emissions in line with group strategy and brought significant savings for the business unit.”

**John McArthur, Carbon Reporting Manager**

# Distribution of Products

Thinking smarter about how we store and transport our products.

Performing smarter operations at our Fletcher Building's plants and improving our supply chain has helped us reduce our carbon footprint and also the amount of waste we transfer to landfill.

▼ *Roof Tile Group Hungary from left: Zoltan Bagi, Peter Kulin, Geoff Allan, Laszlo Szabo, David Painter & Attila Bogar with the first tile off the press.*



## CASE STUDY

### ► Roof Tile Group helping to reduce our physical footprint and distribution

Roof Tile Group has commissioned a new tile press in its Hungary operation. Since our plant was built in Hungary in 2008/9, we have imported blank tiles (i.e. uncoated) from New Zealand and then coated them with basecoat and stonecoating in Hungary. From the end of 2014, Roof Tile Group will be pressing steel from Korea and will no longer be importing tiles from New Zealand. This will give a small reduction in the environmental footprint.

The Malaysian Roof Tile Group plant is the most economical for supply to East Africa and Japan. Partly because it is the closest. This year a new record was set for production as the group are supplying more and more to Japan and East Africa from this plant. This results in a lower environmental footprint.

Over the past two years Roof Tile Group has also introduced new products in Africa, Europe and the US that use 0.35mm steel instead of 0.39mm steel. This is a value product, as well as a lower environmental footprint than that of 0.39mm steel, saving 9% of the steel.

## CASE STUDY

### ► Laminex NZ – Supply Chain: reclaim, reuse, recycle

Born from the desire to aid our customers in reducing waste to landfill, the Auckland Laminex Distribution Centre began a take-back scheme on the bearers, coversheets and pallets used to package and transport the orders of decorative surfaces and panel products. This take-back scheme is now available nationwide. In the first 10 months of operation the scheme removed over 350,000 kgs of waste from landfill, as well as cut down on the raw materials needed to replace these items which are now being re-used. In FY14 the scheme created savings of \$51k.

# Design of Buildings

We believe all our customers deserve the best-designed, constructed and operated buildings to make the best of resources and the investment that has been made in the built environment.

Fletcher Building uses an integrated whole building design process when looking into building design and efficient use.

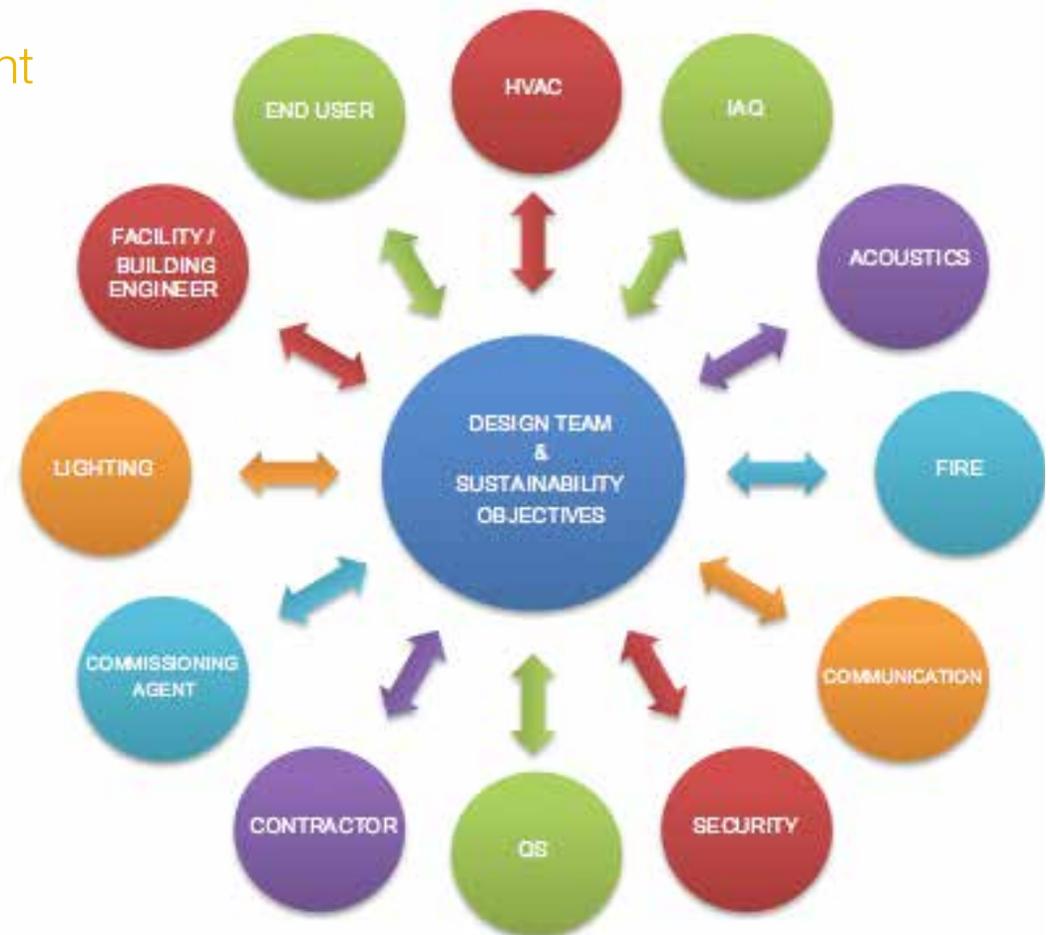
Benefits of using this approach include:

- Reduced operation and maintenance costs
- Reduced energy consumption
- Reduced water use and waste water production
- Reduced waste production
- Improved comfort levels for occupants
- Improved productivity of occupants
- A healthier environment for occupants



## Did you know

PlaceMakers stores are now capturing rain water for use in toilets and have had lights replaced with new energy efficient bulbs.



## CASE STUDY

## ► Design of buildings

InsideOut, a member of the Fletcher Building Group, advises, scopes, guides and provides evidence on buildings to ensure that new and refurbished buildings can perform better. InsideOut works across the commercial construction sector in a wide range of building types. An example of this is Fletcher Aluminium office at Bowden Road, Auckland.

The 1970's building provided administration and support staff offices for Fletcher Aluminium's Auckland-based manufacturing plant. The building faced issues with functionality and was not well placed to cater to future growth of the business.

Fletcher Aluminium was seeking to reduce operating costs and energy used, while promoting a more comfortable and productive internal environment. Making the project more challenging from a construction perspective was a tight budget, and the building's upgrade would be implemented while it was fully occupied.

The team's task was to help engineer a solution that would reduce energy requirements, enhance acoustics, improve occupant comfort and pave the way for future enhancements using daylight and natural ventilation.

**Integrated solution:**

After consulting with all stakeholders in the project, from client to contractor, and a review of the proposed building products, the team made a range of recommendations, including:

- A strip window system for the building envelope to reduce construction times
- LED lighting to minimise energy requirements
- Glazing with excellent light transmission to better utilise daylight
- Opening sashes to allow for natural ventilation
- A combination of acoustic ceiling tiles and hard ceilings for different environments
- Extensive use of light colours to enhance brightness of work areas



InsideOut, a member of the Fletcher Building Group, advises, scopes, guides and provides evidence on buildings to ensure that new and refurbished buildings can perform better.

# Construction and Installation

Efforts are focused on waste reduction, recycling, energy-efficiency and sustainable construction.

Fletcher Construction is committed to minimising impacts to the environment and biodiversity across infrastructure and construction works.

Fletcher Construction recognises the significance and sensitivity of the environment and is committed to:

- Managing the business in an environmentally responsible manner and provide leadership in the construction industry
- Continually seek practical and innovative ways to reduce Fletcher Construction's footprint with a commitment to continual improvement
- Foster a culture of environmental awareness to promote sustainable work practices – including material selection and methodologies
- Implement initiatives to reduce, reuse and recycle waste, and prevent pollution
- Comply with applicable legal and other requirements related to the environmental aspects of Fletcher Construction work

## CASE STUDY

### ► Fletcher Construction – Infrastructure - Waikato Expressway

*Mudfish graduate to a purpose-built home provided by Fletcher Construction*



More than 100 rare black mudfish have spent a few months of 2014 housed at the University of Waikato, after being captured in a drain before Fletcher Construction started work on the

Rangiriri arm of the Waikato Expressway.

The large population of freshwater fish were transferred via truck and have lived in dedicated fish-holding facilities at the close-by university. They have been cared for by a Kessels Ecology team until Fletcher Construction site workers finished creating a new habitat near the original swampland home.

A Fletcher Construction Infrastructure Project Manager, Charles Stokes, said the opportunity for his site team to build a natural looking habitat

had seen them hone in on their creative talents.

“To minimise the effect on the mudfish we programmed our works around this area to minimise the duration that the fish would have to be relocated.”

The habitat measures approximately 500 square metres, more than three times the size of the wetlands the mudfish were originally found in.

Kessels Ecology senior freshwater ecologist Jennifer Price said the new home was better than the previous habitat as it's been converted into a winding channel. This incorporates shallower areas, which have been planted with native wetland species.

Black mudfish are rare and only found in New Zealand. Jennifer said they are a vital cog in New Zealand's wetland food chain and ecosystem: “They are just like our Kiwi, but not quite as cuddly.”

*Mud fish release: Local children from Rangiriri School assist ecologists with the release of native black mudfish into a new, Fletcher-built habitat in Rangiriri*

## CASE STUDY

## ► Fletcher Construction - Well-Connected Alliance – Waterview, Auckland

*Introduction of lean construction and waste reporting*

Lean Construction is a cultural engagement tool that gives the ability for anyone on site to make a positive contribution. Supported by an appropriate recognition programme and leadership drive, it has the potential to have a profound effect on the company's culture and the bottom line.

Following observations of regular small day-to-day wastes, a simple solution was sought that could be driven by the people on site and give everyone their part to play in achieving high performance and continuous improvement on the project.

Training sessions were organized for key site leaders and engineers to raise their awareness of the principles of Lean Construction. Lean Construction focuses on six principles and the philosophy is to raise awareness of these so quick action can be taken to address them.

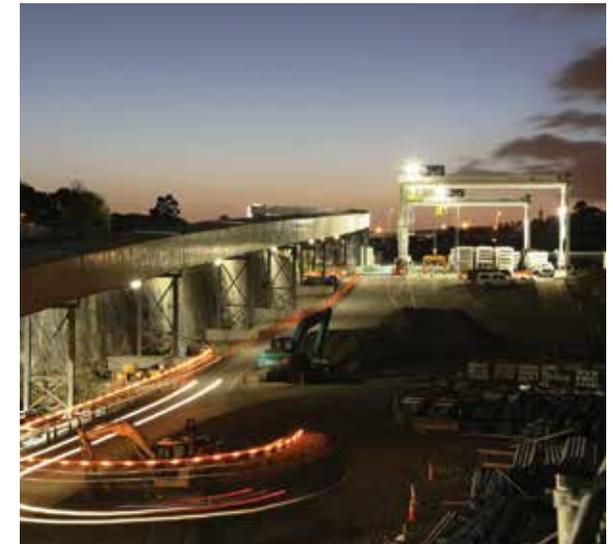
Passionate advocates were selected to form a Lean Focus Group. This group developed the principles

of operation going forward and the supporting collateral requirements.

Site leaders were then encouraged to spend five minutes of each daily briefing reviewing the previous day's work against the principles of Lean. Any ideas or observations made were captured on Blue Cards, the group recording tool.

From this, waste was able to be tracked and issues could be identified by filtering each type of waste from a database and taking corrective action. The value for each type of waste could also be tracked. Every month the site was then briefed on where issues lay and what improvements had been made. The key was focussing on lessons learned and not repeating mistakes.

The initiative has changed the culture in how the site is viewed to the point where even the person sweeping is recycling bolts and other low value items rather than throwing them in the skip. There has also been a massive improvement in sub-contractor awareness around waste and the need to improve. Since implementation \$177,000 of waste has been identified and managed, along with \$1,400,000 improvements (both figures to the end of April 2014).



“Our environment is dear to the heart of all New Zealanders so of course our construction methods must emphasise a sustainable approach to ensure risk to the environment is mitigated.”

**Graham Darlow, Chief Executive Construction Group**

# End of life: Reducing and Managing Waste

When it comes to the end-of-life of our products, we endeavour to find ways to treat waste as a resource that can be used.



## CASE STUDY

### ► Plasterboard waste recycling

From the disaster of the Christchurch earthquakes of 2010 and 2011 has come a story of enterprise and cooperation in recycling waste plasterboard. The unprecedented volumes of demolition waste attracted the attention of a group of organisations including Fletcher building's Winstone Wallboards, Holcim Cement, Christchurch City Council, BRANZ and 5R Solutions, to the possibilities of recycling waste particleboard. Holcim's testing confirmed they could use the recovered gypsum in their cement manufacture, and the team progressed with setting up the necessary recovery processes for both demolition and installation wastes. This year the equivalent of 1,400 tonnes has been diverted from landfill.

## CASE STUDY

### ► Building green buildings: 135 Albert Street

Fletcher Construction used their integrated, whole building design process to access opportunities for sustainable design and implement best practice at a recent building on Auckland's Albert Street. Innovative ways to reuse, recycle and reduce waste were used throughout the project to meet sustainability targets. The project involved rigorous waste management training with all staff participating and able to achieve the goals set.

As part of our deconstruction Fletcher Construction removed the existing glass partitions which were later reused as glass writing surfaces as shown.

▼ Before



▼ After



# Our Communities

Fletcher Building businesses perform a variety of valuable work in their communities across the globe

Fletcher Building businesses work in vastly different and unique communities across the world, supporting those communities through sponsorship, volunteering and other initiatives.

Fletcher Building recognise the obligation to support the communities in which operations take place and to the people who call those communities home.

We act honestly, in good faith and in the best interests of the company, to ensure that all stakeholders are treated fairly.

As a company comprising of 45 business, business units are responsible for implementing their own local community involvement initiatives. This approach encourages diversity in community initiatives and ensures support is relevant to both the stakeholder group and the business unit involved.

## Sponsorship and support

Fletcher Building businesses are proud to sponsor a range of community, industry and charitable organisations.



▲ First Foundation students with Fletcher Building mentors.

That sponsorship ranges from environmental initiatives to educational institutions, sports and industry events.

One initiative which Fletcher Building, as a group, are very proud to support since its beginning is First Foundation. Fletcher Building are the principal sponsor of First Foundation - a unique educational trust founded to give teenagers with plenty of talent, but few financial resources, a pathway through university study. Fletcher Building assists them through university while also providing work experience and mentoring opportunities across the Fletcher Building businesses.



## CASE STUDY

► **Fletcher Building is the first employer to sign a pledge to help Youth Employment in conjunction with Auckland Council.**

The council's Youth Connections network aims to confront youth unemployment in Auckland head-on by working with business to employ youth and design other initiatives to address youth unemployment.

Auckland Mayor, Len Brown thanked Fletcher Building for its commitment the initiative. "Youth unemployment is not just a social issue; it's an economic and workforce development issue. By becoming our first employer to sign the pledge, Fletcher Building clearly understands the importance of youth employment."

## CASE STUDY

► **Aotea Track**

A team effort coordinated by Fletcher Construction has delivered a new set of bridges for a walkway on Great Barrier Island, in Auckland's Hauraki Gulf.

Great Barrier Island is the largest and furthestmost offshore island of the Hauraki Gulf, lying 90km northeast of Auckland. Managed by the Department of Conservation, the island's Aotea track spans 30km around the central mountainous area of Great Barrier, through native bush, tranquil wetlands and forests of native kauri and rimu. The popular track did not contain bridges over its river crossings, so while it was easy to hike through in summer months, the swollen rivers made it more difficult in winter.

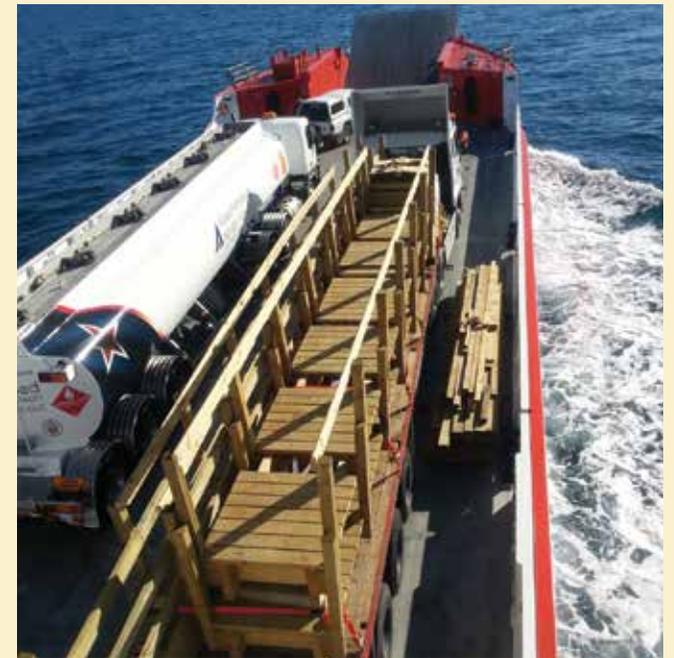
- ▼ Minister of Conservation Nick Smith and Auckland MP Nikki Kaye with some of the Fletcher Construction team on the Aotea Track.



The project involved delivering a 5 metre boardwalk and three bridges to the site, one at 15 metres and two at 9 metres. Each was pre-fabricated and helicoptered to the site and meticulous planning and accurate construction allowed all bridges to be placed in under 1.5 hours of helicopter time.

"The attention to detail and effort in making the bridges look natural in the environment such as the rock retaining walls on approaches is a real testament to their character and a great reflection on Fletcher", said Mike Abbott, Piletech's Engineering Manager.

The final inspection of the track was performed in May. It passed with flying colours and was opened to the public immediately.



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