



Set up by the construction & property sector to verify the quality of buildings and reduce impacts

New Zealanders in healthy and comfortable homes & buildings

Better places, proven

Andrew Eagles

Thank you for the opportunity to speak



Thank you to Peter, sponsors & organisers

Agenda

- 1) Who we are
- 2) Context
- 3) Homes & buildings
- 4) A question for you



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NZ is part of a global movement



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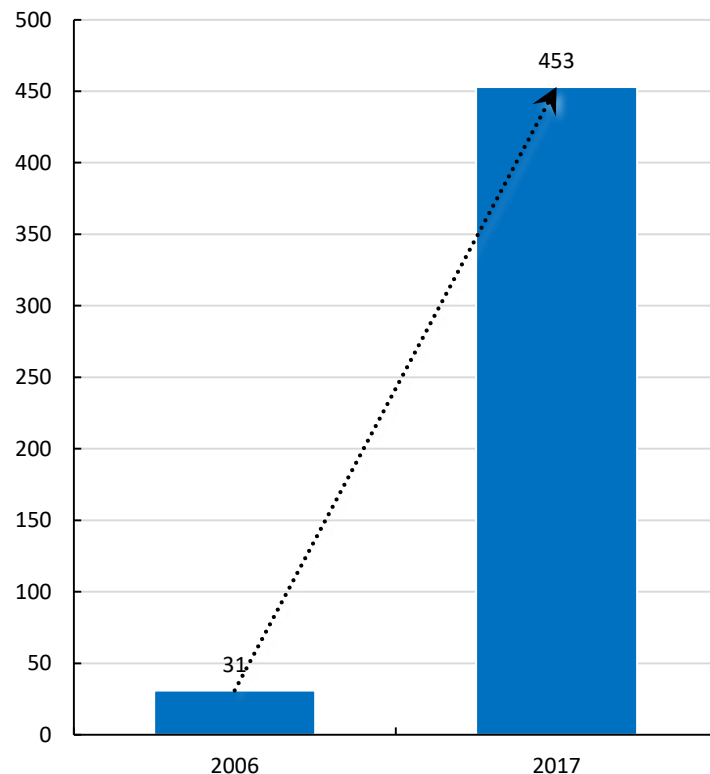


Collaborate with 74 countries UN, EU, others

Our members



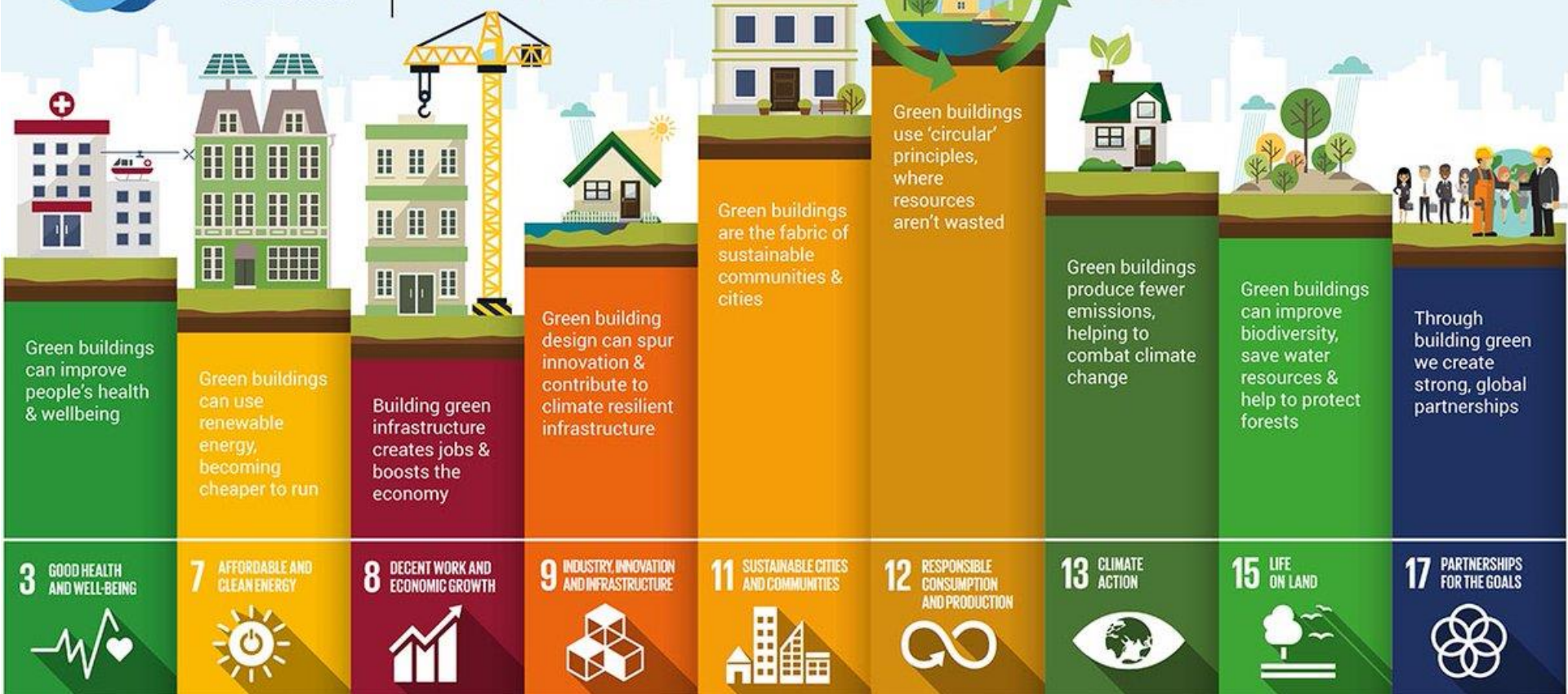
From 31 members to 453





WORLD
GREEN
BUILDING
COUNCIL

SUSTAINABLE DEVELOPMENT GOALS



Green buildings help deliver 9 SDGs

NZGBC RATING TOOLS



- New buildings
- Fit outs Rise of 67% in one year
- Existing buildings



Five fold rise in a year



Doubled

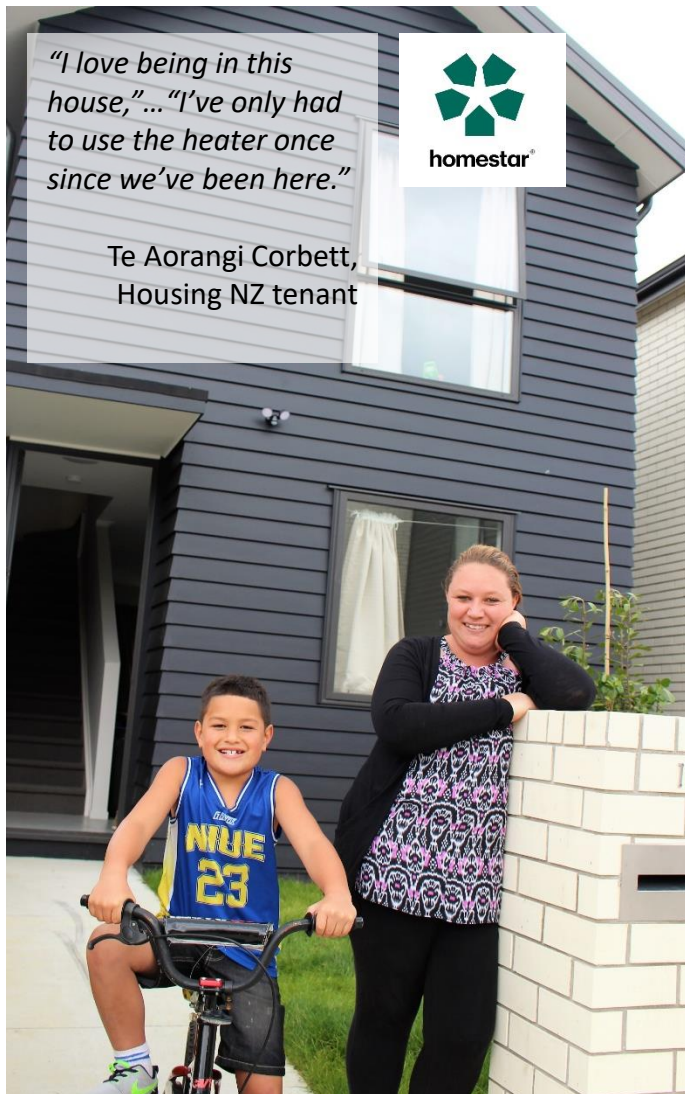
Results for New Zealanders

"I love being in this house,"... "I've only had to use the heater once since we've been here."

Te Aorangi Corbett,
Housing NZ tenant



homestar®



"After the Te Puni Kokiri upgrade, the management team saved the occupier \$80,000 per year and also reduced their carbon footprint."

Saatyesh Bhana, Argosy
Property



Building occupiers want assurance around sustainability and workplace effectiveness.

From our perspective, it's an absolute given."

Scott Pritchard, CEO,
Precinct Property



Corporate sponsors



the paint the professionals use



A year long relationship to drive change



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WHY BUILD GREEN?

Kaitiakitanga: Guardianship

The process and practices of protecting and looking after the environment - the sky, the sea, and the land.



WHY BUILD GREEN?

He aha te mea nui o te ao?
He tāngata, he tāngata, he tāngata

What is the most important thing in the world? It is people, it is people, it is people

The why – verified buildings deliver

OUTSIDE VIEWS



Mental Function
& Memory

10-25%
BETTER



Call
Processing

6-12%
FASTER



Hospital
Stays

8.5%
SHORTER



DAYLIGHT



Students achieve

5-14%
HIGHER TEST SCORES
and learn **20-26%**
FASTER

Workers are

18%
MORE PRODUCTIVE



15-40%
INCREASE
in Retail Sales

SYSTEMS



Productivity Increases by

23%
from better lighting



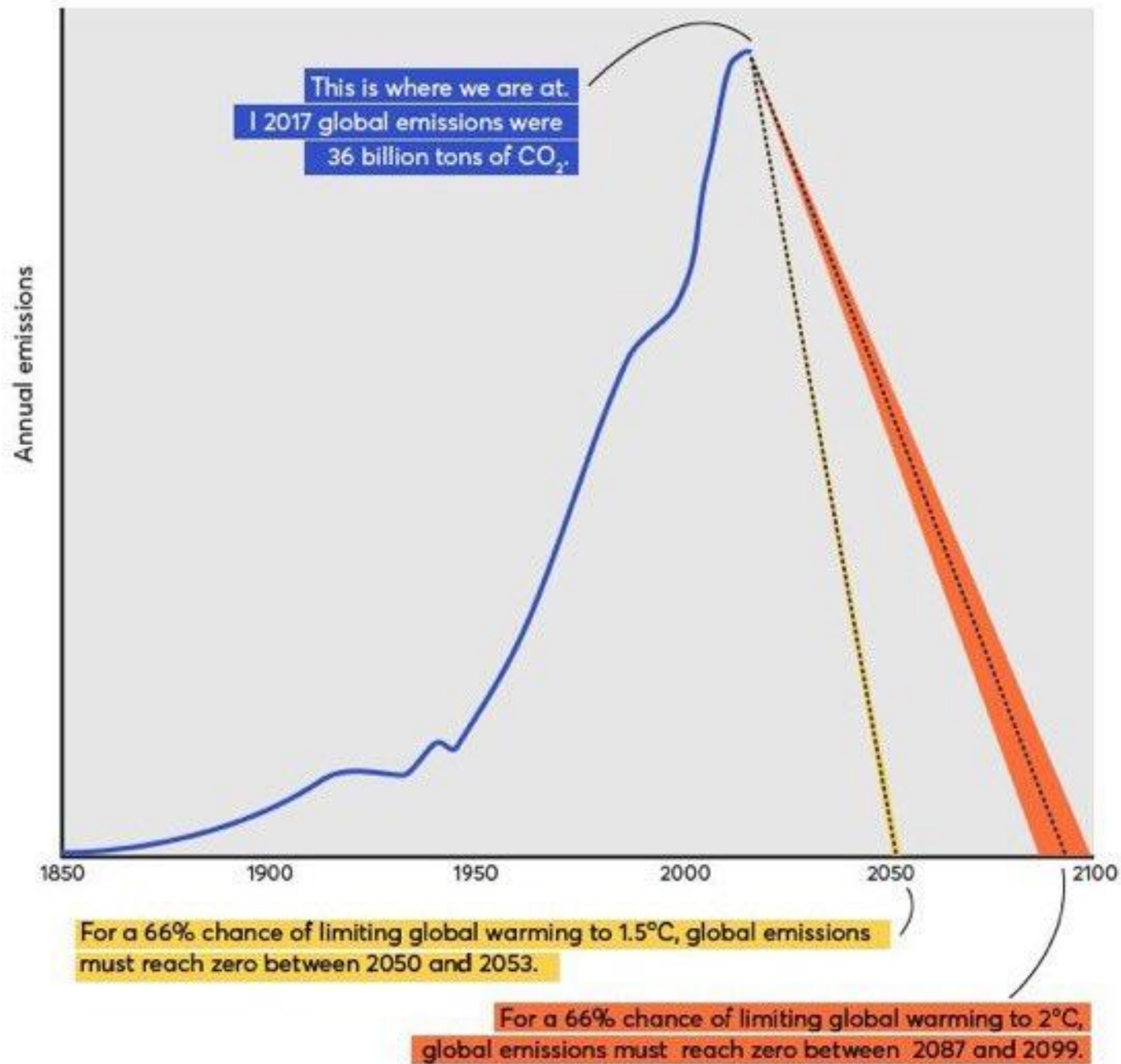
11%
from better ventilation



3%
from individual temperature control

Drivers for change

- Well being and health
- Living Standards Framework & Zero Carbon Act
- Reducing peak electricity load- EECA 2018 research
- Green Bonds and Climate Bond Initiatives
- Adaptation to climate change
- Corporate Social Responsibility
 - Sustainable Development Goals
 - 60 Climate Coalition



Government goals

- New Zealand needs a built environment designed and constructed according to principles of sustainability.
- Inadequate building quality and sustainability objectives in the Building Code contribute to poor quality housing.
- Hundreds of thousands of houses cost too much to heat.
- It is time for a fresh approach to make our homes healthy to live in.
- Labour will promote sustainable practice, and establish measurable standards, across the public sector.



The building code?

An inadequate building code means:



Low levels of insulation required



No requirement to reduce thermal bridges



Little provision for good ventilation



No requirement for efficient heating



No control of overheating



Nothing on water efficiency or lighting efficiency



*“The New Zealand Building Code is **below the standards required** of most IEA countries with comparable climates”*

-- International Energy Agency, Energy Policies of IEA Countries 2017 Review, 2017

*“Government should consider modernising the Building Code; it’s **standards are less stringent** than those of many OECD countries”*

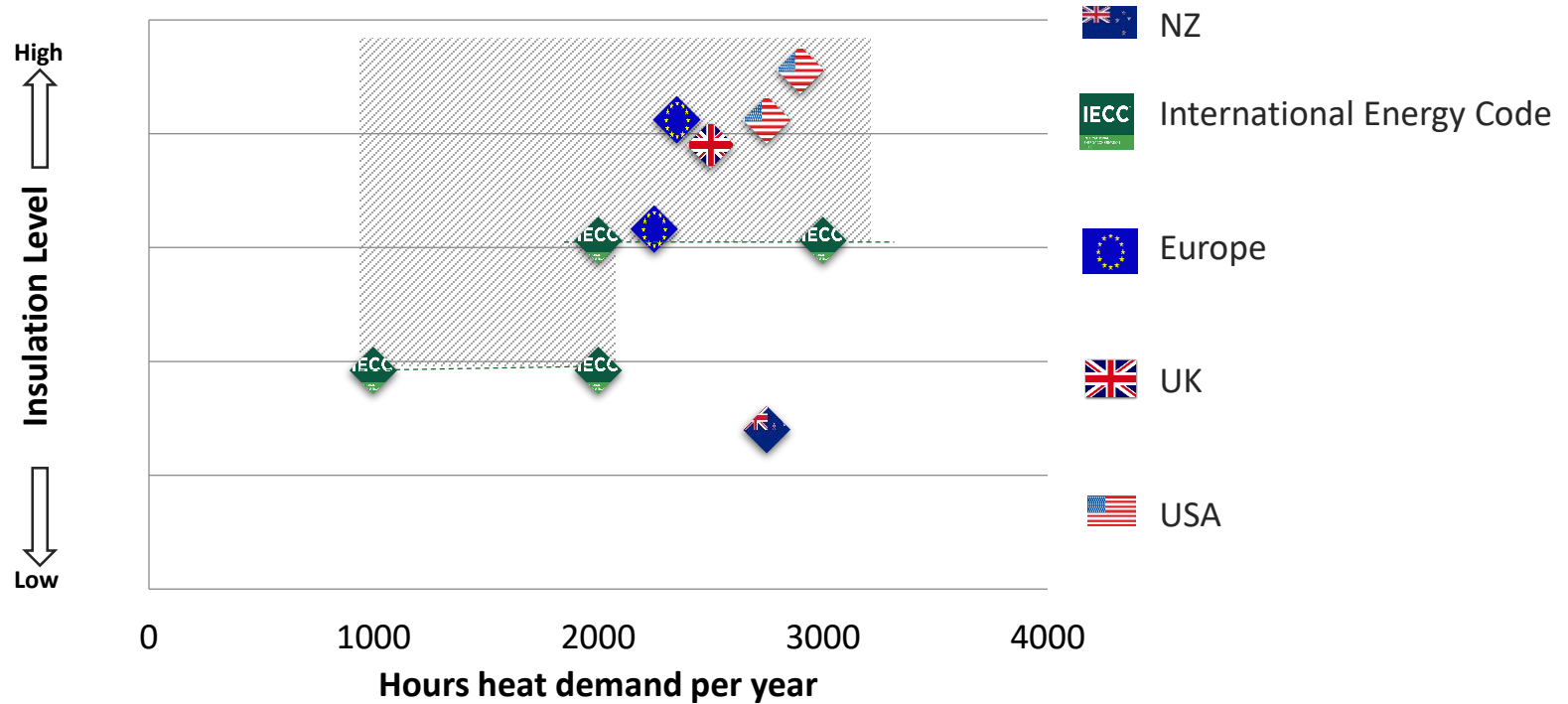
-- OECD, Environmental Performance Review of New Zealand 2017, 2017

*“R values required in the NZ building code are **twice as bad** as the R values required in the UK or Irish Building Codes”*

-- NZ’s Building Performance, 2017,
Ara Institute, Canterbury



Insulation – an example

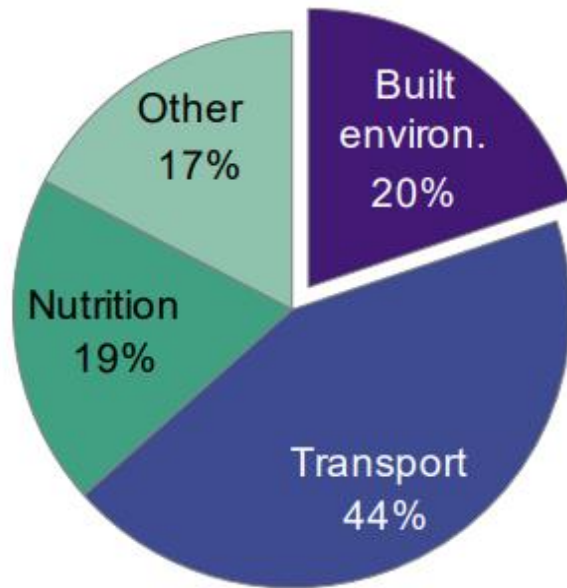


International Energy Agency Paper:

Energy Efficiency Requirements In Building Codes, Energy Efficiency Policies For New Buildings in support of the G8 plan of action

The building code matters for many reasons

(c) Consumption-oriented view (including international trade)



60,000 kt CO₂e
NZ's total footprint

13 t CO₂e
per person

- Buildings account for 20% of emissions
- Households and businesses stand to save millions
- Is it more sustainable to generate low carbon energy or just... use less
- There are considerable co benefits
 - Less construction waste
 - Healthier rivers
 - Sustainable materials
 - Health

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CELEBRATING
10 YEARS
Promoting the Sustainable
Built Environment



GREEN STAR ENVIRONMENTAL IMPACT CATEGORIES

								
Management	Indoor Environment Quality	Energy	Transport	Water	Materials	Land use and ecology	Emissions	Innovation
CREDITS	CREDITS	CREDITS	CREDITS	CREDITS	CREDITS	CREDITS	CREDITS	CREDITS
POINTS	POINTS	POINTS	POINTS	POINTS	POINTS	POINTS	POINTS	POINTS

Verified buildings - Lower costs, increase productivity, improve well being /create a better place to work & align with Govt goals of lower carbon

Been effective in driving change – more tools

New buildings

Design and as built

Fit outs

Green Star Interiors

Existing operations

Green Star Performance

Discussion points

Reach out to say – change is happening

Would welcome your input

With the sector Homestar created six years ago – for any home

Warm, dry, and efficient

To the individual

- Comfort
- Save on operating costs
- Save on healthcare costs
- Emotional well-being
- Higher resale value
- Long term liveability /resilience

To New Zealand

- Low build footprint
- Low operating footprint
- Increased productivity
- Less strain on grid



Dramatic changes to Homestar

- Volume certification
- Short form – certainty & less modelling
- Simplify manual – separate existing
- Simpler evidence
- Align with specifiers



Homestar delivers

- Created by sector - Rewritten in 2017 to be faster & simpler. Just as robust
- 25,000 homes confirmed
- Each family saves \$450- \$500 / year
- Health benefits, reduced flooding damage, less construction waste
- Costs – 1.7% over building code in Auckland. Reality – 0.8%
- Reduces likelihood of mould (leaky buildings syndrome two)



Meanwhile, in other parts of the world...



**In the EU: nearly-zero energy homes
by 2020**



In California: net zero homes by 2020

New homes – building code

2006 - energy efficiency up 20%

2010 - energy efficiency up 25%

2013 - energy efficiency up 6 %

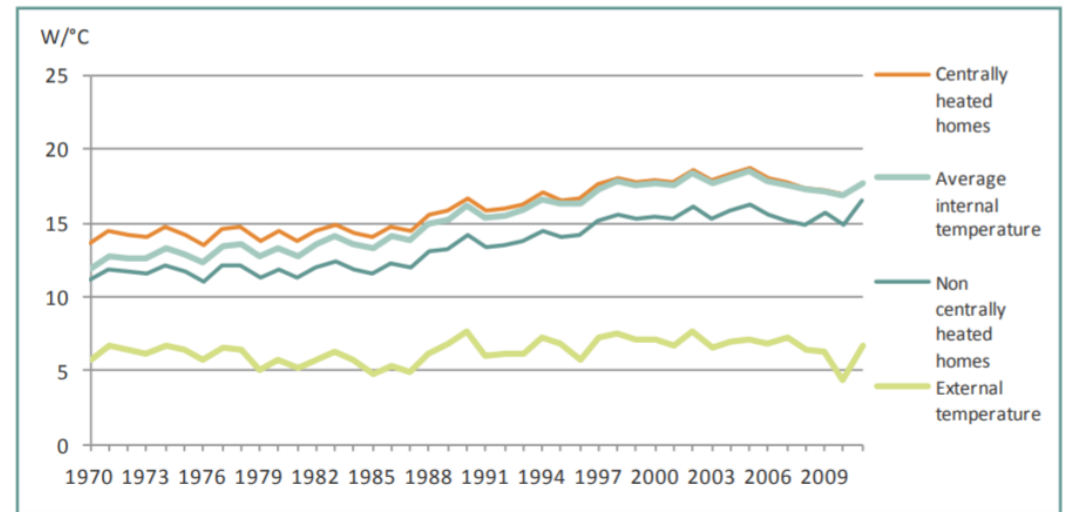
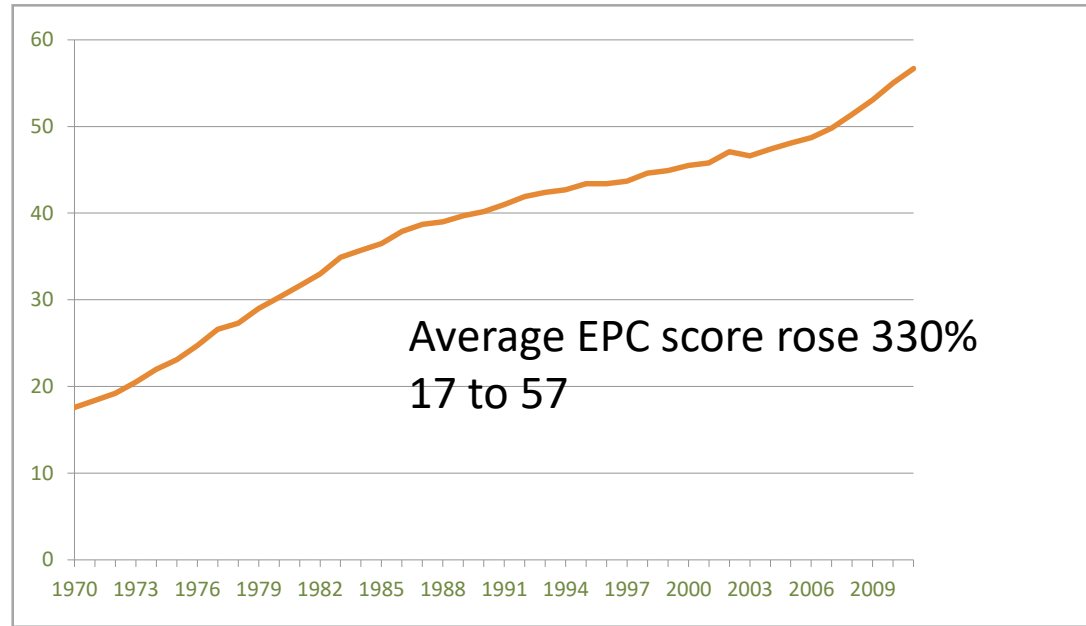
2017 - review

2021 – EU Building Performance
Directive to build to near zero energy

Existing homes

2002 - higher insulation & window
efficiency standards

2005 - high efficiency boilers &
Energy Performance Certificate **in all
27 countries** of the EU



Decreasing NZ residential energy demand by 50 percent, will save 31.5 PJ's energy,
or \$6 billion, annually (EECA, 2015)

Why verify?

Would you employ somebody
that read books for four years?



Or a person that had a degree
verifying they HAVE the knowledge

Rating tools provide an
independent, third-party
verified, **badge of quality**

They also ensure buildings
deliver as expected...

...and can be marketed as
high performing

Other positives from better homes

Warmer, drier, healthier living environments

- Provide a better quality of life and comfort for the occupants.
- Reduce the risk of health problems due to unhealthy living conditions.

Better indoor air quality and good natural daylight

- Promote occupant well-being and productivity.
- Reduces exposure to harmful indoor air pollutants.



Construction waste

Surface water run off

Sustainable materials

Deferred investment in infrastructure

**THE PHYSICAL
ENVIRONMENT**



**HEALTH & WELLBEING
OUTCOMES**



ECONOMIC VALUE



“People always comment on the pleasant feeling in the house and are surprised to know how little we have to heat the house.”

Graham Queenstown



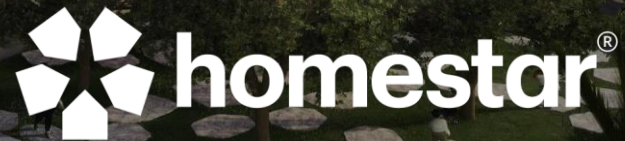
“NZGBC is making sustainable healthy homes the norm, Homestar is required on all our sites, roughly 10,000 homes”

Roger Donaldson Panuku



“All homes built for the Ted Manson Foundation will be Homestar certified. The Ted Manson Foundation wants sustainable communities.”

Ted Manson The Ted Manson Foundation





“There's a freshness from the ventilation that makes you feel good in the morning.”

Zane & Suzanne Greenhithe



**“6 Homestar ratings will be used
on all 2,500 social homes and
encouraged on private sector homes.”**

Tamaki Regeneration Company Auckland



“We’ve built 4 multi-unit dwellings to Homestar. We will be doing this more and more.”

Mitchell Jefferson Legacy Property



“

The following support Homestar

”



Homestar sponsors



marmoleum®



ARCHITECTURENOW



Gas - needs to be unflued.

The future – many parties are driving hard at decarbonization agenda

Passivhaus – a growing and strong movement. Build without any heating system

Local authorities - advocating for less fossil fuels

Investors, Green Bonds, global ANZ initiative

Members – asking us for certification to zero carbon

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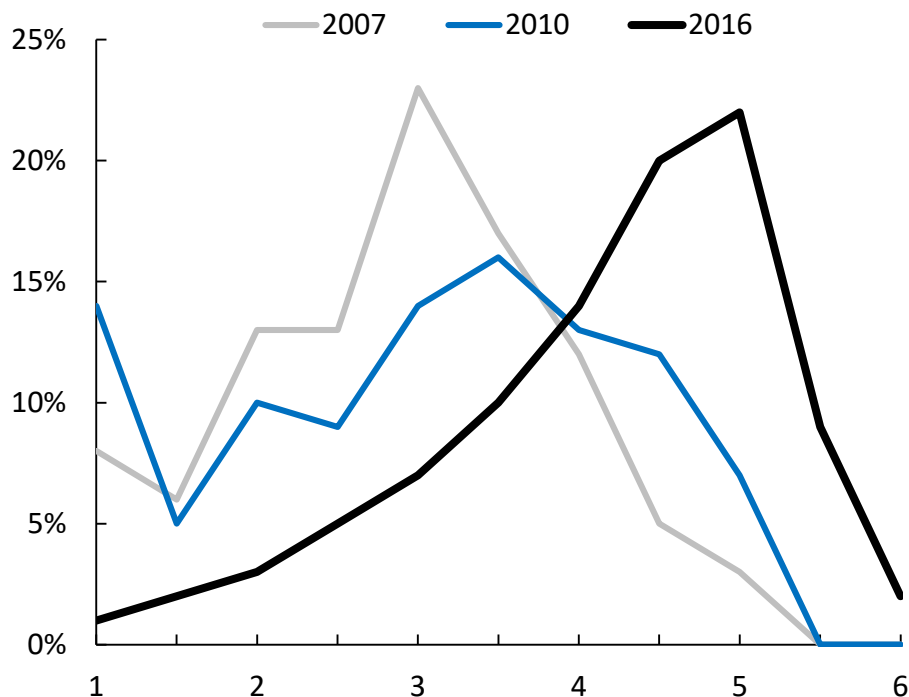


How can we collectively get more done and deliver better homes & buildings for kiwis

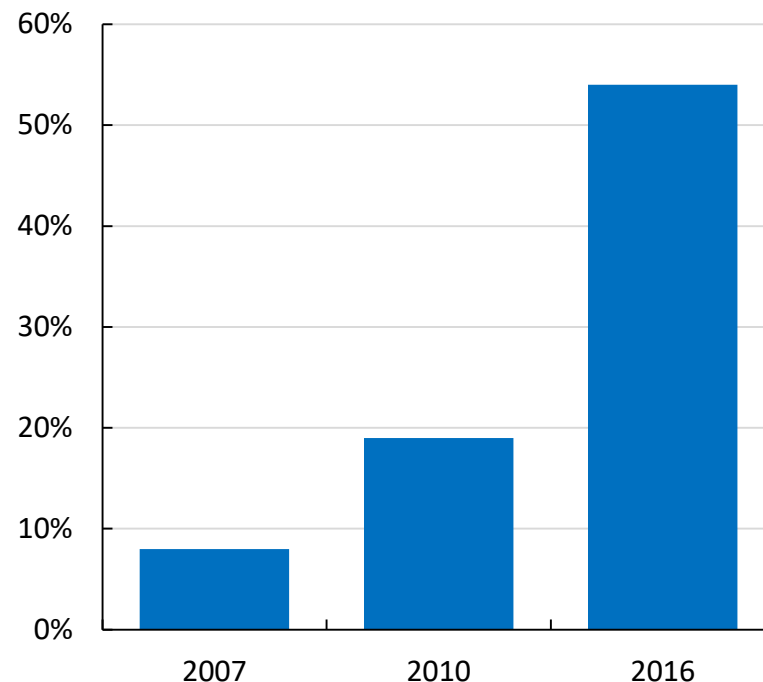


Certification works

Australia office distribution of energy ratings



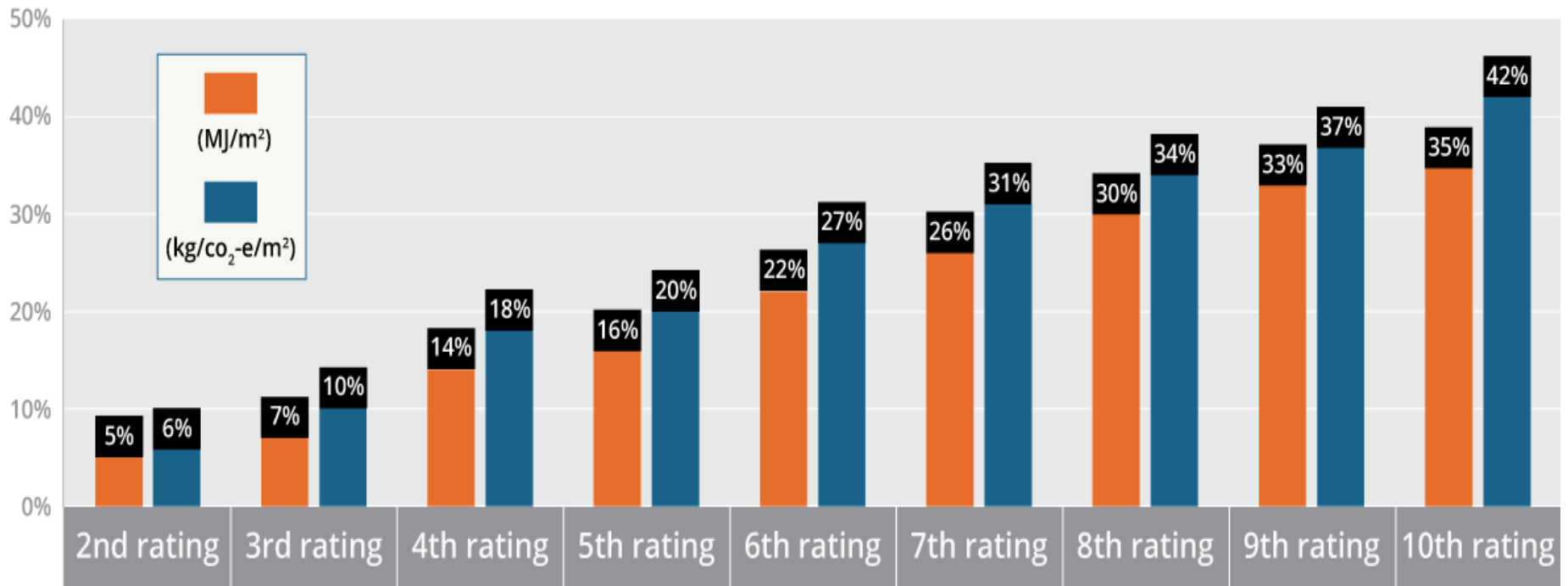
Australia office share of 4+ energy ratings



Independent research in 2015 found that NABERS delivered;

- benefits to Australia of **\$44 million**
- productivity gains of **\$168 million**
- energy savings of **10,020 TJ**

Average improvement over time



How can we collectively get more done and deliver better homes & buildings for kiwis



Thank you for your time

Look forward to working together