

**Reducing risks,
improving returns,
living our values.**

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Purpose

This document is for you & your teams to support your business case for healthier, lower carbon homes.

In the following pages we outline the benefits of independent, third-party certification for new homes designed or built by your organisation - elevating your brand, delivering unique selling points and ensuring quality for your clients, including lower bills, better health and wellbeing.

It is well known that support for healthier, better educated, productive New Zealanders begins at home.

The New Zealand Green Building Council is committed to all homes being green and sustainable for healthier, happier New Zealanders.

Introduction

The benefits of a well-designed, healthy, low carbon homes are numerous and far reaching. Healthier homes have both immediate and long-term impacts on occupants' health and well-being, as well as education and earning outcomes¹. Efficient homes leave more money in our pockets and reduce demand on our energy and water infrastructure. They will also play a vital role in our national efforts to reduce carbon emissions.

The standard we choose to build to is exceptionally important. A commitment to using an independent rating system for your projects sends a clear message to industry and the community that achieving real sustainability outcomes is important. Your leadership will help 'raise the bar' for New Zealand's residential construction, while delivering benefits to homeowners, occupiers, and the wider community.

Recommendation

It is recommended that we certify our homes to minimum 6 Homestar rating.

Read on for the rationale behind this recommendation with additional commentary and references.



8 Homestar Woodford Grace Homestead, Christchurch

Context

Homestar provides a guide to best-practice design and construction for all types of homes across New Zealand.

Homestar is an independent, holistic rating tool for assessing the health, efficiency, environmental impact and sustainability of homes across Aotearoa. Since launching 14 years ago, it has been continuously improved to stay in touch with advances in the building and construction sector.

The top rating of 10 Homestar recognises world leading standards for design, construction and efficiency in operation. A 6 Homestar rating recognises a home that has been designed and built above the building code.

See Appendix A for more detail about the Homestar scale.

Demonstrate your leadership with strong brand alignment

Certification under a credible and recognised third-party rating system has long been acknowledged as valuable for the commercial sector.² The residential property and construction sector can also draw on the benefits, symbolising quality, and demonstrate industry leadership. Tens of thousands of homes are being built to Homestar standards.

Over 14 years, the New Zealand Green Building Council has trained and accredited a large network of Homestar designers and assessors. With over 10000 homes now built and certified, the network of developers, designer and trades are also increasingly familiar with Homestar.

Appendix D outlines other home building certification systems and tools available in New Zealand.

Healthy housing is a basic human right.

**New Zealanders deserve better.
Industry leaders can act now.
Demonstrate your commitment
to deliver drier, healthier, more
efficient homes.**



The NZBC is well known to be inadequate

Even with changes to the energy efficiency clause (H1) fully implemented in 2023, it's only the first in a long list of improvements.

The NZBC is an inadequate benchmark upon which to base design and decision-making relating to the quality, efficient, future-fit homes. This has been identified in several domestic and international reports.

There are very few, if any requirements set for assessing the operational performance of the home, heating or ventilation. There is no requirement to control overheating, no measurement of waste to landfill or embodied carbon. Energy modelling is currently not required in the design of homes.

This means consideration has not been given as to how to best improve warmth and lower costs for the home's users.

Thinking smarter about energy

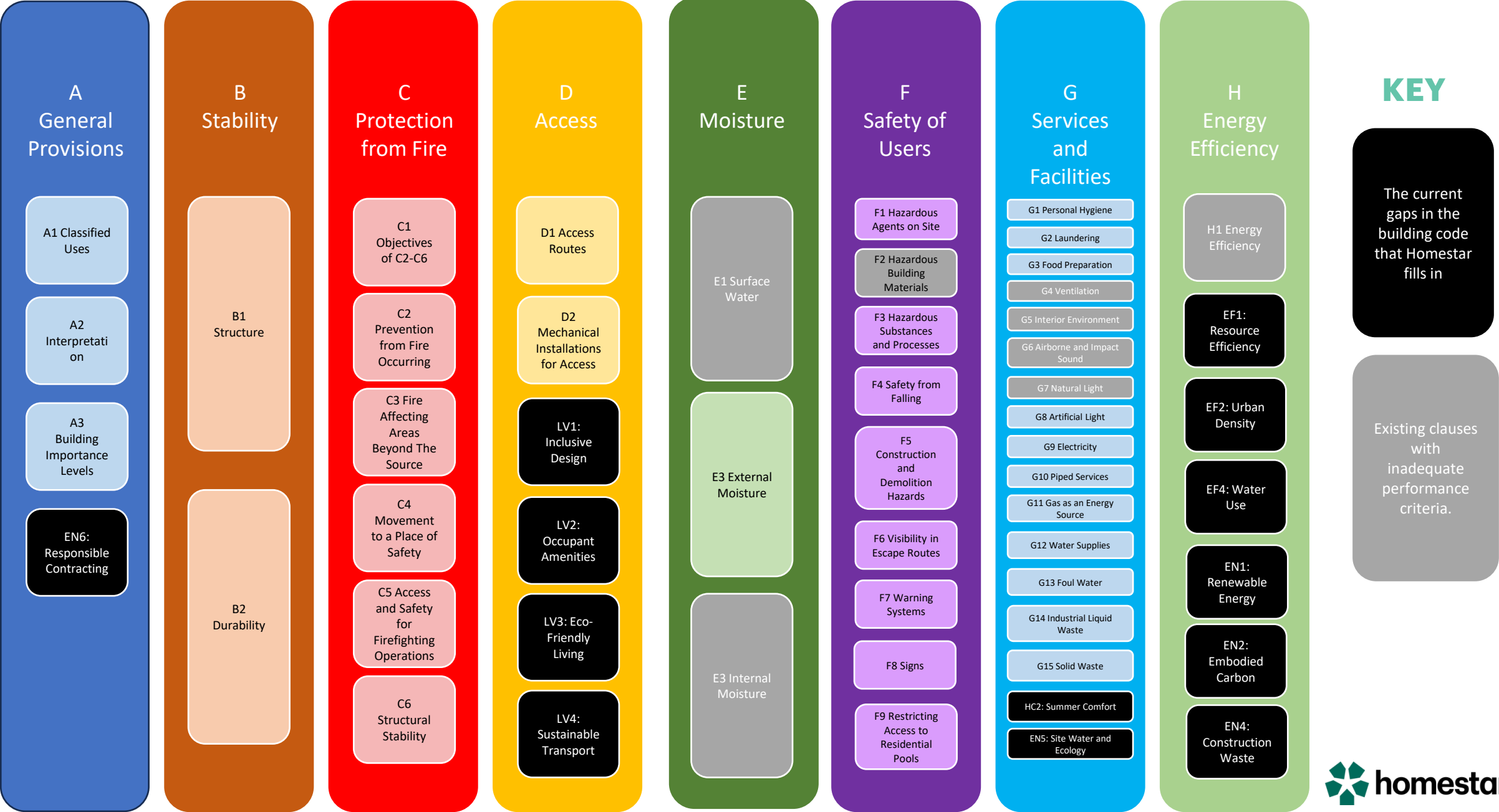
There is a huge opportunity to design and build better quality, future-fit communities for New Zealanders.

The built environment is responsible for around 20% of New Zealand's domestic emissions³. About half is from the construction of buildings and infrastructure (embodied carbon), and half is from the operation of buildings.

We know that energy demand is growing beyond our ability to supply from New Zealand's green grid.⁴ Compared to investing in new energy generation, designing-in measures for energy efficiency is a more cost-effective way to meet the challenges of easing peak grid demands, decarbonising the grid, and avoiding those winter blackouts.

³ Thinkstep ANZ. 2019. *Hotspot or not? The carbon footprint of NZ's built environment* <https://www.thinkstep-anz.com/resic/reports/the-carbon-footprint-of-new-zealands-built-environment/>

⁴ EECA. 2019. *Energy Efficiency First: The Electricity Story*. <https://www.eeca.govt.nz/assets/EECA-Resources/Research-papers-guides/EECA-Energy-Efficiency-First-Overview.pdf>



Building lasting legacies

Homes in New Zealand last for more than 50 years so we cannot lock in poor performance and poor outcomes for households or New Zealand for decades to come.

Homestar helps deliver more comfortable, healthy homes with better design and material choices, greater energy and water efficiency and lower carbon emissions. Homeowners benefit through lower operating costs and knowing they have made a better choice for the environment.

Happier customers

Most homeowners expect that a modern home built to the NZBC should be energy efficient, free from draughts, a comfortable temperature year-round, free of mould and internal moisture. Evidence shows that even new homes that comply with the building code are inadequate with problems due to poor ventilation and overheating.

Homestar helps close the gap between homes delivered under the building code and their expectations for a new warm, dry, healthy home.



What's not in the Building Code?

A Homestar 6-7 Star rated home addresses what's currently missing from the NZ Building Code, specifically:

- Operational and embodied carbon assessment
- Continuous, reliable ventilation
- Summer comfort

Reducing the financial cost of developer + lower mortgage costs

Many New Zealand banks offer lower interest development finance for developers that build to Homestar. Some also offer discounted mortgage rates for people buying in to Homestar certified homes. This is marketable benefit for clients. Lenders are keen to see independently certified developments that are lower in carbon emissions and delivering sustainable benefits for customers.

"In New Zealand, we've seen a significant pick up in interest in sustainable finance over the medium term, driven by changing attitudes of investors. It means borrowers in the industry who can demonstrate they have a strong sustainability strategy in place will be well supported by investors. Likewise, those who lag behind run the risk of finding access to capital constrained, or the cost of capital significantly more expensive."

Dean Spicer. Head of Sustainable Finance



Prepare for regulatory change

Similar to others around the world, the NZ Government has signaled they intend to amend the building code to require measurement of operational and embodied carbon at the consenting stage. Homestar helps teams prepare for this change.

Resilience to climate change

In early 2023, tens of thousands of New Zealanders were impacted by cyclone Gabriel and widespread flooding. Extreme weather events along with sea level rise are forecast to become an increasing risk for much of Aotearoa. Homestar provides a framework for identifying relevant natural hazards and considering resilience to our changing climate with more floods, overheating and droughts expected.

Delivering sustainability targets

New Zealand is committed to the Paris Agreement - halving carbon emissions by 2030. This will only be achievable if everyone plays their part. A commitment to Homestar can help contribute to national targets, demonstrate compliance with the UN Sustainable Development Goals and alignment with Science Based Target Initiatives (SBTi) – demonstrating your commitment to environmental, social and governments goals to your investors and bankers.

Aotearoa's commitment

- The building and construction sector is responsible for 15% of NZ's carbon emissions
- Our national commitment to reduce net emissions of all greenhouse gases to zero by 2050 is legislated in the Climate Change Response (Zero Carbon) Amendment Act (2019)
- The 15% from construction could go a long way to NZ achieving our commitment (see chart opposite).

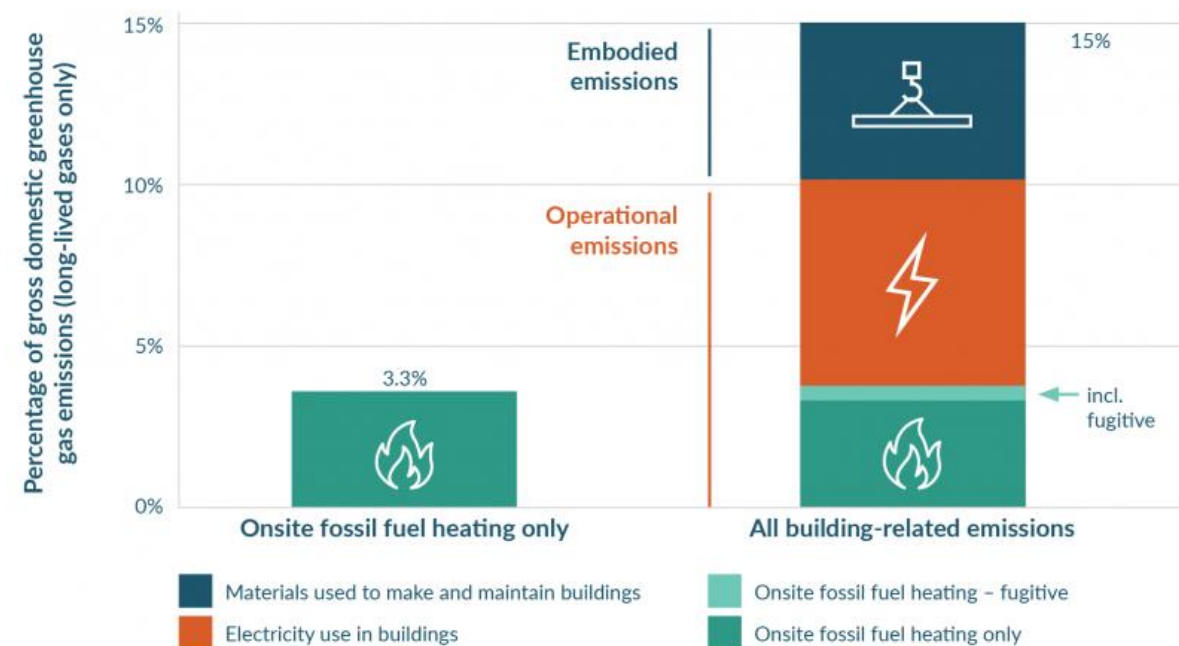
"We are committed to reducing our greenhouse emissions and environmental footprint, and to creating homes that reimagine the retirement living and aged care living experience in New Zealand. The NZGBC's Homestar standard helps us demonstrate our commitment to sustainable homes to our stakeholders. We support the NZGBC's leadership in advocating for green, sustainable and healthier homes for all New Zealanders."

Brent Pattison, CEO, Oceania Healthcare



Prepare for regulatory change

Figure 12.1. Building- and construction-related emissions as a proportion of Aotearoa New Zealand's gross greenhouse gas emissions (excluding biogenic methane) in 2018



Note: Figures in AR4 terms, based on the New Zealand's Greenhouse Gas Inventory 1990-2018 published in 2020 as opposed to the most recent inventory published 2022.



Costs to implement as % of project budgets

The cost of implementation of green initiatives will vary dependent on the project's ambitions. Including Homestar upfront in the design stage can reap rewards. Experience shows, the earlier it is incorporated, the lower the costs. Research shows that a 6 Homestar home required additional investment of around 0-0.5% of total building costs.⁵

Confidence for your customers

As interest in sustainability increases, so to do marketing claims made about the sustainability of products, services and systems. Homestar is a well-established mark of quality provided by an independent not-for-profit organization. The achievement of a Homestar rating provides customers with a third-party verification of a sustainable, efficient home. The process verifies a project's achievement against criteria and benchmarks agreed in consultation with industry experts from the New Zealand property and construction sectors.

Establishing a position of leadership

Third party certification is an opportunity to demonstrate leadership. It can be a strong signal supporting the securing of contracts and tenders. The New Zealand Government's Construction Procurement Guidelines⁶ prioritise sustainability, requiring whole of life considerations for projects and prioritising of sustainable materials. Kāinga Ora is committed to Homestar.⁷ Developers tendering for government-led housing projects can leverage their commitment to Homestar as a potential competitive advantage.

Commitment from public and private developers

There is a steady uptake in developers recognising the benefit of building to Homestar. Ōtautahi Community Housing Trust certify to minimum 6 Homestar. In the fast moving Build-to-Rent sector, developers stating their commitment include Kiwi Property, New Ground Capital and Simplicity Living. Across the public and private sector, Eke Panuku⁸, Ockham Residential, Willis and Bond, Mansons, Metlifecare, Arvida and many others are designing and delivering developments drawing on the benefits of Homestar. Proving their commitment to customer wellbeing.



⁵ Rawlinsons. 2018. *Cost of Homestar report*. https://12253-console.memberconnex.com/Attachment?Action=Download&Attachment_id=1751

⁶ New Zealand Government Procurement. 2019. Construction procurement guidelines. <https://www.procurement.govt.nz/procurement/specialised-procurement/construction-procurement/construction-procurement-guidelines/>

⁷ NZGBC. 2020. Kāinga Ora commits to 6 Homestar. <https://nzgbc.org.nz/news-and-media/k-inga-ora-commits-to-6-homestar>

⁸ Eke Panuku Development Auckland. 2017. Panuku adopts Homestar rating to deliver healthier, more energy efficient homes for Auckland. <https://www.panuku.co.nz/news-and-blogs/panuku-adopts-homestar-rating-to-deliver-healthier-more-energy-efficient-homes-for-auckland>

Demonstrating alignment with central and local government concerns on climate

Central and local government are taking action on climate change in a range of ways. In future, this may mean that builders and developers are called on to meet the challenge. Discussions on development incentives indicate consideration of benefits for demonstrating a commitment to achieving independent sustainability ratings.

A commitment to Homestar puts your organisation in the best position to meet changes to come, take advantage of opportunities, as well as aligning with government key policies and frameworks.



8 Homestar Clark Residence Manawatu. Image courtesy of Andy Spain.

Homestar certified homes deliver healthier places to live, work and play.

On average we spend 90% of our time indoors, much of that at home.⁹ Our homes should be comfortable, well-ventilated, oriented for optimal daylight, and with minimal use of harmful, emitting materials. Dozens of international studies have shown that better indoor air quality leads to better health, allowing families to get to school and work for better learning and productivity outcomes.

Through 2023 and 2024, we saw an increase in reports of homes overheating making for uncomfortable living. Homestar supports modelling and controls on overheating guiding designers through methodologies and calculators for better results.



7 Homestar Bowenvale House Christchurch. Image courtesy of Sarah Rowlands.

Supporting customers with savings through lower running costs.

Research by Kantar & the Sustainable Business Network in 2023 showed the cost of living to be among the top concerns for New Zealanders.¹⁰ Energy costs are rising with no sign of easing in the short term. Savings on energy costs depend on the size of a home and household behaviours, modelling on Homestar homes relative to building code homes shows a saving of \$400 to \$700 per year.

⁹ KLEPEIS, N., NELSON, W., OTT, W. et al. The National Human Activity Pattern Survey (NHAPS): a resource for assessing exposure to environmental pollutants. J Expo Sci Environ Epidemiol 11, 231-252 (2001). <https://www.nature.com/articles/7500165>

¹⁰ Kantar, Sustainable Business Network. 2023. Better Futures 2023. <https://www.kantarnewzealand.com/better-futures-2023/>

Helping customers play their part in acting on climate

Climate change is one of our top concerns but knowing where and how to respond is often not so easy. 86% of New Zealanders felt that climate change should have been a part of the national covid-19 economic recovery plan.¹¹

The 2023 Ipsos poll found that despite the economic fallout of covid-19 and living costs dominating the concerns of New Zealanders, 8 out of 10 New Zealanders say they are concerned about the impact of climate change in New Zealand.



Evidence supporting increased resale and investment value

International evidence suggests that certified sustainable or green homes attract a price premium over otherwise similar houses. Certified rental properties also attract a higher rent.¹² As awareness of, and demand for Homestar grows, many buyers and investors will be attracted to the added value a Homestar certification can bring.

Evidence shows that an energy rating makes 'green' simple to understand, encourages people to improve their homes, supports other energy efficiency programs and improves residential stock.¹³

An Australian survey showed that 92% of housing consumers considered it important to have information on the energy efficiency of a homes when buying or renting¹⁴ (similar to the star rating on home appliances).

¹¹ IAG. 2020. IAG climate change poll 2020. <https://www.iag.co.nz/latest-news/articles/Climate-poll-2020.html>

¹² Victoria Ormond, Knight Frank. 2021. Green building value: do green-rated buildings add a premium to sales price? <https://www.knightfrank.com/research/article/2021-09-29-green-building-value-do-green-rated-buildings-add-a-premium-to-sales-price>

¹³ Builders Base. Energy efficient homes - do they sell for more? <https://buildersbase.co.nz/blog/energy-efficient-homes-do-they-sell-for-more/>

¹⁴ Low Carbon Living CRC. 2016. Enhancing the market for energy efficient homes: Implementing a national voluntary disclosure system for the energy performance of existing homes. <https://apo.org.au/sites/default/files/resource-files/2016-07/apo-nid70145.pdf>

Committing to ratings higher than 6 Homestar

A 6 Homestar rating is the minimum standard that can be certified. At 6 Homestar, a home will be easier to keep warm and healthy, more cost effective to run, and more environmentally friendly than a home built to the NZBC.

There are **mandatory minimum requirements** focused on keeping the home warm, dry, well ventilated and operating efficiently regardless of the rating targeted. Otherwise the tool is flexible. The credits are open to various combinations to reach the points required to achieve the desired rating. A home needs at least 60 points to achieve a 6 Homestar rating.

Clients that desire a **higher level of performance** and sustainability may wish to target a higher rating. Given the flexibility of the tool, there are plenty of options for aiming higher.



Work with complimentary tools and standards

Appendix D covers the range of rating systems and standards available in New Zealand. Many of these are complementary to Homestar.



10 Homestar 26 Aroha Auckland.

**Build your whānau
a better home.
Build to Homestar.**

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What is Homestar?

Homestar is a holistic tool to rate a home's performance and environmental impact.

A 10 Homestar rating recognises world leading standards for design, construction and efficiency in operation. A 6 Homestar rating recognizes a home that has been built at or above the current standards set by the NZBC, depending on location across Aotearoa.



Homestar is an independent rating tool for assessing the health, efficiency, and sustainability of homes across Aotearoa.

The NZGBC is committed to our vision of all homes and buildings in Aotearoa being green and sustainable for healthier, happier New Zealanders.

To do this, we have an established Homestar Advisory Committee and Expert Reference Panels with representatives from across the property and construction sector. It is with their support that we continue to work with experts across industry and government to ensure we're supporting New Zealanders in the design, construction and liveability of resilient homes for the long term.



Certification Costs

There is often a ‘perception gap’ between the perceived and actual costs of building green. Some of the confusion around the cost of certifying a building relates to what costs are associated with the certification. To provide clarification on the costs of certifying, they can be separated into 3 buckets

The new Homestar version 5 (released August 2021) includes a raft of updates and improvements that offer further opportunities for maximising the value of a Homestar certification.



Engaging a Homestar Assessor

Assessments are carried out by an accredited Homestar Assessor, independent of the NZGBC. They provide design advice, compile evidence to submit, and liaise between the NZGBC and the developer. To preserve independence and maintain high standards, assessments are audited. Many builders train their own assessors to offer this service inhouse.

Certification fees

The certification fee payable to the NZGBC covers the cost of the independent audit.

2024/25 Pricing	Volume Discount	Standard Pricing Member	Standard Pricing Non-member
Fee per dwelling	\$190	\$245	\$380
Audit fee (per typology)	\$705	\$970	\$1055

Managing costs down

Developers, builders and housing providers taking a leadership position and commit to offering Homestar ratings for new homes can reduce costs in several ways.

Using the typology approach, we can assess multiple projects of the same type (eg multiple standalone homes, terrace homes or apartments). Builders and developers may also find ways to achieve various economies of scale across multiple projects. As experience builds, teams will almost certainly streamline internal processes for addressing Homestar requirements.

Green Building Capital Costs¹⁵

There is a significant and growing body of international evidence that shows sustainable projects can be achieved for the same, or similar, capital cost as conventional buildings through:

- An integrated project approach is fundamental to minimising capital cost – i.e. incorporating green thinking and solutions at the very earliest stages of the project – making it part of the brief rather than ‘bolted on’.
- The relative capital cost of green buildings is declining progressively as the industry matures, and capability and technology improve.
- Additional capital costs can be offset by improved resale value, decreased operating costs (energy & water use), and the value of positive benefits to occupant health (though this is difficult to quantify).



Capital cost – New Zealand evidence

Research undertaken by Aurecon and Kwanto, the cost consultants, assessed the additional costs of building to 6 Homestar ratings relative to building to the building code. The research analysed a used two building types, in Auckland, Wellington and Christchurch. You can [see the full report here](#).

Kwanto and Aurecon found that for most homes the uplift was on average 0 - 0.5% additional cost. For the four-bed detached home in Christchurch there was an additional 1.3% to achieve 6 Homestar.¹⁶ See the full figures following.

Table 3 Estimated Construction Cost of Specification

Plan	Location	Estimated Cost (H1)	Estimated Cost (6 Homestar)	Cost uplift (for 6 Homestar)	% Uptick
4 Bed Standalone	Auckland	\$ 1,127,936	\$ 1,133,407	\$ 5,471	0.5%
	Wellington	\$ 1,135,431	\$ 1,140,766	\$ 5,335	0.5%
	Christchurch	\$ 1,163,346	\$ 1,178,796	\$ 15,450	1.3%
	Queenstown	\$ 1,164,834	\$ 1,166,511	\$ 1,677	0.1%
2 Bed Terrace	Auckland	\$ 508,626	\$ 510,315	\$ 1,689	0.3%
	Wellington	\$ 511,598	\$ 511,598	-	0.0%
	Christchurch	\$ 522,311	\$ 522,311	-	0.0%
	Queenstown	\$ 529,749	\$ 529,879	\$ 130	0.02%

¹⁵ Note that this text is largely taken from a discussion paper prepared by Panuku Development Auckland in December 2016 to establish green building requirements for development partners.

¹⁶ Aurecon, Kwanto. 2022. Homestar v5 Review. <https://23159811.fs1.hubspotusercontent-na1.net/hubfs/23159811/522113%20-%20W00001-REP-BU-0002%20Homestar%20v5%20Specification%20Review%20Report.pdf>

Rating tools and when to apply them

Residential rating schemes

Rating	Typology	Rates	Managed by
<p>Homestar</p> <p>Strict criteria based on science. Certifies homes on a scale from 6 to 10 Homestar according to environmental criterial. Applied at design or build stage. Minimum criterial for energy, health, carbon and water efficiency.</p>	Residential	Design & construction, retrofits	New Zealand Green Building Council
<p>Passive House (Passivhaus)</p> <p>Strict European-designed system focused on airflow, ventilation, comfort and energy use. Examines heating, cooling airtightness energy and indoor temperatures. Around 50 certified homes in New Zealand.</p>	All	Built standard	Passive House Institute of New Zealand (PHINZ) on behalf of the Passive House Institute (Darmstadt, Germany)
<p>Lifemark Homescore</p> <p>Examines accessibility, safety and useability. Rates on a scale from 3 to 5 stars.</p>	Residential	Built performance	Lifemark NZ



Masterplanning Communities

Green Star – Communities
for commercial or residential,
or both.



Examines liveability, economic prosperity, environment, governance and innovation of large scale commercial or residential projects. Jointly administered by the New Zealand Green Building Council and Green Building Council of Australia.

In use across Aotearoa by Kiwi Property (Drury), Hamilton City Council (Peacock), Metlifecare (Ōtau Ridge).

85 communities certified in Australia since its release. Green Star – Communities provides a framework of what a sustainable precinct development needs to consider. The certification process means developers can celebrate their leadership, aspiration and project outcomes.