AHURI

RESEARCH SUMMARY

# The cost-benefit case for making homes climate-resilient




## What this research is about

This research measures the degree to which Australia's housing lacks the features needed to cope with climate change (the resiliency deficit) and assesses the costs and benefits of delivering climate-resilient retrofits. It is part of an AHURI Inquiry into achieving a climate-resilient housing stock by 2050.

## Why this research is important

The number of Australian residential buildings at very high climate risk will jump by almost 30% to more than 1.2 million as warming rises from 1.5°C to 3°C, yet most homes aren't built for current or future conditions. Climate change already costs billions a year in rebuilding, health care and insurance, and the bill will grow. Despite this, little is known about what climate-resilient housing costs to deliver, or what the cost of inaction will be. This research explores this knowledge gap and proposes ways to support the delivery of climate-resilient housing.

### Based on

Final Report No. 466: *Delivering climate-resilient housing in Australia: the costs and benefits*


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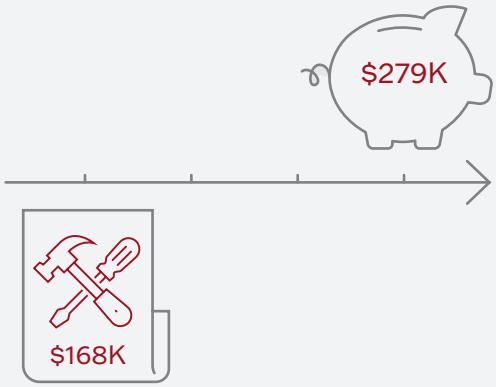
### View the report

## At a glance

A cost-benefit analysis shows retrofits to improve climate resilience make financial sense in 73% of cases.



On average, making a detached home climate resilient costs $168,000 but can save $279,000 over 30 years.




Retrofits don't always stack up. The quality of the home and level of climate risk influence whether they pay off.



Lower-income households will struggle to afford climate resilient retrofits without support.



## Key findings:

### Data and modelling are lacking

Comprehensive public data on the impacts of climate hazards on households, housing quality and condition is lacking.

The limited research exploring resiliency retrofit benefits is inconsistent, fragmented, and often focused on one-off events.

The Climate Council's flood, storm and bushfire modelling is the only dataset covering both retrofit features and resilience, but it ignores dwelling age and type, therefore missing the effect of building code changes.

## The housing resiliency deficit

Despite data gaps, the resiliency deficit can be estimated based on the changes to housing construction standards. Building codes have tightened at known points, so the date a home was built acts as a proxy for how it may cope with climate hazards.

This resiliency deficit provides a picture of the whole housing stock. It shows, despite improvements since the 1990s, there remains a significant deficit for new housing in relation to heat, floods and storms, and bushfire resiliency could be improved.

Without strengthening the National Construction Code, new homes will require retrofitting, on top of retrofit investment in existing housing.

## The costs and benefits of climate-resilient housing retrofit

To facilitate a cost-benefit analysis (CBA), net present values (NPVs) of resiliency retrofits were calculated. In this context, the NPV shows whether a retrofit is financially viable by comparing its upfront costs with the present-day value of future benefits over 30 years. A retrofit is worthwhile if its NPV is zero or above.

Conservative estimates put the NPV of climate-resilient retrofits between –$270,000 and more than $1.1 million.

Retrofits had positive NPVs for scenarios involving medium- to higher-quality housing, and for areas at medium to higher risk. Scenarios involving lower-quality housing, and housing in lower-climate-risk areas, generally had negative NPVs.

Applying a discount rate of 3% – in line with wider climate economics best practice – results in 73% of scenarios delivering a positive NPV. This suggests many households could be financially better off investing in climate-resilient retrofits.

The cost of retrofitting a detached home ranges from under $5,000 for basic storm resilience to $200,000 for comprehensive flood resilience, with the average financial benefits of retrofits significantly exceeding average costs when measured over 30 years.

Analysis of Household, Income and Labour Dynamics in Australia (HILDA) Survey data shows homes with better insulation, draught sealing and heating/cooling systems are also linked to less heat-related ill health. Benefits are likely to grow over time, and small gains for individuals could add up across the population.

‘The cost of retrofitting a detached home ranges from under $5,000 for basic storm resilience to $200,000 for comprehensive flood resilience, with the average financial benefits of retrofits significantly exceeding average costs when measured over 30 years.’

## Policy actions:

The report identifies four opportunities to support the delivery of climate-resilient housing.

### 1. Developing a climate-resilient housing pathway

The extent of the resiliency deficit calls for a clear and consistent national approach. Drawing on the climate-ready housing guidelines established by this Inquiry (Lang et al. 2026), this can be achieved by:

- indicating when requirements and standards for climate-resilient housing will be introduced/improved
- incentivising stakeholders to develop climate-resilient retrofit and construction-related businesses, products and services
- extending financial products used for energy efficiency and electrification, such as mortgage-linked and discounted loans, to resilience retrofits
- building climate resilience into existing housing quality rules, such as minimum standards or mandatory disclosure.

National Cabinet should develop this pathway, modelled on the Trajectory for Low Energy Buildings plan agreed by Australia's governments.

### 2. Improving data collection and access

This would enable more effective policy and program design and evaluation, and could be achieved by:

- adding climate resilience questions to existing surveys such as the HILDA Survey
- using the 2031 Census to collect more data on housing conditions and resilience
- expanding the Nationwide House Energy Rating Scheme to collect data on dwelling resilience
- introducing mandatory disclosure at point of sale or lease, enabling collection of information on more than 700,000 dwellings per year
- incentivising access to third-party datasets, including properties' exposure to climate hazards from insurers, mortgage lenders and the real estate industry
- tracking how homes perform after retrofits to find out what works and using this to inform future cost-benefit analyses.

'The extent of the resiliency deficit calls for a clear and consistent national approach.'

### 3. Improving householder and industry awareness

To address the resiliency deficit, households and industry need support to understand why, and how, to undertake retrofits.

This can be supported by:

- expanding support that makes retrofitting simpler for homeowners and helps turn interest into action, including via knowledge platforms and advice services
- developing tools to independently assess the resilience of existing housing and recommend cost-effective actions for homeowners and investors.

'To address the resiliency deficit, households and industry need support to understand why, and how, to undertake retrofits.'

### 4. Supporting the most vulnerable households first

Governments should support the most vulnerable households in the transition to climate-resilient housing, which could be achieved by:

- identifying excluded and high-risk groups, including low-income households and those with specific vulnerability to climate hazards
- targeting subsidies for climate-resilient retrofits
- strengthening minimum standards for private rentals.

## Research design:

This research was undertaken in two stages.

Stage 1: Mapping the resiliency deficit in Australia's housing stock, via data audit and alignment with climate-ready housing guidelines.

Stage 2: Exploring resiliency retrofit costs and benefits via HILDA Survey analysis, literature review, and cost-benefit analysis.

**To cite the AHURI research, please refer to:**

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