

Project Overview

The Where We Build, What We Build Project

As natural hazards intensify, living expenses like energy, mortgages and insurance will get more expensive for climate vulnerable homes – that is, homes that are in high-risk areas and have not been built to mitigate those risks. This project aims to encourage building or retrofitting of homes that are climate-ready, by demonstrating that the benefits of doing so outweigh the costs.

The Where We Build, What We Build project was undertaken in the Adelaide Hills and Fleurieu Peninsula region. One of the goals of the region is to remain liveable, affordable and resilient in the changing climate, by better managing climate risks.

To help achieve this, the project explored:

1. Where We Build – the exposure of the region's existing housing to flood, heat and bushfire risks
2. What We Build – the sensitivity of the region's existing housing to those risks
3. Climate-Ready Home – the ideal specification for a climate-ready home in the region
4. Economic Analysis – the costs and benefits of building or retrofitting to climate-ready specifications, compared with existing housing stock and standards.

The project is an initiative of Resilient Hills & Coasts, delivered by Edge Environment. It was jointly funded by the Commonwealth and South Australian Governments under the South Australian Disaster Resilience Grant Program, and the Insurance Council of Australia. The scope covers Adelaide Hills Council, Alexandrina Council, Mount Barker District Council, City of Victor Harbor and District Council of Yankalilla.

Key findings

Key findings of the project were that:

- The economic benefits of climate-ready homes outweigh the costs for both new builds and retrofits.
- Over a 50-year period, the net present value of immediately retrofitting the region's housing stock to a climate-ready standard is estimated at over \$72 million. Over \$46 million of this value is in the Mount Barker District Council area.
- Vulnerable housing leads to higher living costs and lower community resilience.
- The building stock in the region varies significantly in terms of its resilience to natural hazards. Overall, 70% of the homes in regional climate hazard hotspots had a resilience rating of less than 3 out of 5.
- There is already information available to know how to build or retrofit climate-ready homes, but current baseline building compliance needs to be further improved to provide climate resilience.
- The changing cost of insurance will influence how we build and retrofit homes.
- Poor quality natural hazard data impacts insurance premiums. South Australians pay an estimated 18% too much for home insurance premiums because of data uncertainties.
- A climate ready home standard should be developed with the support of the insurance industry.

This project has also demonstrated the need for a centrally coordinated, jointly resourced hazard mapping framework in South Australia, to overcome knowledge gaps and encourage climate resilient decision-making.

Where we build. What we build.

Project approach

The project consisted of four main stages:

1. Housing archetypes

Five housing archetypes were identified that represent at least 80 per cent of the housing stock in the region (see 'Archetypes' factsheet). In order of prevalence, they are: Modern House, Contemporary House, Brick Veneer House, Lightweight 50s House, and Victorian House. The Insurance Council of Australia's Resilience Program was used to rank the resilience of each archetype to flood, bushfire and extreme heat.

2. Resilience maps

Climate hazard hotspots identified in the Insurance Council of Australia's DataGlobe were combined with distribution maps of the housing archetypes. By overlaying the archetype resilience ratings, this provided an overview of the resilience of existing housing stock in high risk areas.

3. Climate-ready home specification

A climate-ready home specification was developed to provide guidance on the materials, finishes and fixtures needed to build or retrofit houses in high bushfire, flood and extreme heat areas (see 'Homeowners' factsheet).

4. Economic analysis

A detailed analysis was undertaken of the costs and benefits associated with transitioning the housing stock to climate-ready specifications. The aim is to inform decision-making by homeowners, developers and planners on how they can reduce costs while increasing the climate resilience of homes.

Insurance perspective

The insurance industry uses maps on natural hazard risk, and information on construction materials and design, to judge the probability and size of an insurance claim arising from climate hazards. This information is used to set insurance premiums.

It is expected that insurance premiums will rise as hazard exposure increases under climate change. In climate exposed areas, the increase can be significant enough to help justify greater use of climate resilient materials in new or retrofitted homes.

Economic benefits of building or retrofitting climate ready homes

Benefits of climate ready homes outweigh the costs for both new builds and retrofits in all scenarios tested.

On average, the greatest value is achieved through a retrofit that is staggered as materials need to be replaced.

Over a 50-year period, the net present value of immediately retrofitting the region's housing stock is estimated at over \$72 million. Over \$46 million of this value is in the Mount Barker District Council area.

The economic analysis goes beyond the costs of housing, to also include the costs of living across the expected lifespan of the house. This included costs of energy, insurance premiums and excess, average underinsurance, and disruptions to the homeowner following exposure to a bushfire or flood.