Case studies

"Knowledge is power."

Catherine

HOUSE	
Type	Brick veneer
Era	Post war
Location	Castlemaine

HOUSEHOLD	
Residential status	Owned
Lived here	17 years
Number of people	2 adults and Mavis the dog

Catherine is a visual artist and arts educator who works from home, her son is studying. Catherine aims for a richness of lifestyle, rather than consumption.

Catherine has made several upgrades progressively over time to improve the energy efficiency of her home. Changes in our environment have led to her growing interest in climate resilience. Catherine had a general understanding of bushfire risk for the Shire, however she was not aware of the level of risk for her own property. Through thinking about resilience, energy efficiency and sustainability, Catherine is trying to do the right thing for her property and neighbourhood.

Cost guide
$ 0-5K
$$ 10-15K
$$$ 20-30K
$$$$ 30K+

Performance and key recommendations

(R) Recommendations that can be undertaken by tenants

Hazard	Rating	Key recommendations	Cost
BUSHFIRE Rating out of 5	1 	Install fire rated door seals and draught stoppers to the bottom and sides of the doors. Remove combustible materials from the underfloor space and/or enclose with ember mesh. (R) External vents, chimneys, flues, lights, roof fixtures, walls, window frames, and services should use non-combustible materials and be sealed with fire-rated silicone and protected with ember mesh. Seal any gaps that are greater than 2mm. Maintain a fire resilient, managed landscape around the home. Move any combustible items more than 5 metres away from the home. (R)	$$
STORM Rating out of 5	3 	Seal any gaps around walls, windows and gable ends. Have the roof condition, flashings, fixings, gutters/downpipe and roof attached items assessed for structural integrity and make repairs as needed. Seal off any gaps >2mm.	$
ENERGY EFFICIENCY Rating out of 10	10 	Install weatherstrips to any unsealed windows. Upgrade the window furnishings to lined curtains with pelmets where not already in place.	$
THERMAL COMFORT Hot weather Rating out of 5	1 	Upgrade window treatments to curtains with pelmets or honeycomb blinds. Install weather strips to unsealed windows. Consider installing external shading to prevent the sun hitting windows.	$
THERMAL COMFORT Cold weather Rating out of 5	2 	Install weather strips to unsealed windows. Install double glazed windows. Seal vents, door edges, and unused chimney to prevent heat loss. Replace or top up ceiling insulation to R5.0 rating. Add rugs or carpets over floorboards to improve insulation.	$$$

What will you do with your recommendations?

Following her assessment, Catherine is considering suggestions and intends to work through them over time. The assessment provided good motivation to continue with maintenance, like checking the condition of the roof, and address a recent leak following a severe storm. She is thinking about simple recommendations in the garden, and keeping on top of loose items around the house that may be flammable.

What considerations will you need to make to take action?

- Finding trusted and reliable people to offer packaged services.
- Finding trades that consider the climate and energy efficiency in recommendations and understand Catherine's values, for example, longevity of materials and quality.

What would help you take action to be more resilient/energy efficient?

- Neighbourhood bulk-by and collective action.
- Improving standards of trades for better outcomes.

What value would you place on a combined assessment?

The professional knowledge brought to the assessment is highly valuable in understanding and aligning recommendations to my priorities.

Top priority

Add more insulation to the ceiling.

"It is time to address inequity in housing."

Derry, Patrick, Marlena & Delphine

HOUSE	
Type	**Weatherboard (lightweight)**
Era	**Post war**
Location	**Campbells Creek**
HOUSEHOLD	
Residential status	**Rented**
Lived here	**Up to 14 months**
Number of people	**4 adults**

This is a multi-generational share house with people in their 30s through 50s. Their home is centred around the garden and food. They embrace the 'share' in share house. The household has a good understanding of heat and bushfire risk as well as energy efficiency and thermal performance. They have a direct relationship with their property manager who is approachable, responsive, but not always timely with non-urgent work. As tenants, they are very limited to make or request changes to the property that would make their home safer, more comfortable and energy efficient.

Cost guide
$ 0-5K
$$ 10-15K
$$$ 20-30K
$$$$ 30K +

Hazard	Rating	Key recommendations	Cost
BUSHFIRE Rating out of 5	1 	Move any flammable items away from the home and clear under subfloor during the fire danger period. (R) Remove overhanging tree branches to prevent debris accumulation in gutters, decks and on roofs. Install a metal kick-plate on the timber door. Maintain a fire resilient, managed landscape around the home. Seal any gaps in the vents, roof fixtures, walls, window frames etc that are greater than 2mm. Install metal covers over horizontal timber window sills. Consider upgrading windows to metal framed, toughened glass. Consider replacing combustible decking and fascia boards with non-combustible materials Consider replacing combustible materials with non-combustible to cladding, decking fascia boards.	$$$
STORM Rating out of 5	3 	Remove any loose items from the yard that could impact the home in heavy winds. (R) Repair any cladding that is damaged. Have the roof condition, flashings, fixings, gutters/downpipe and roof attached items assessed for structural integrity and make repairs as needed. Seal any gaps >2mm. Check that downpipes are discharging to stormwater systems and not allowing water to accumulate near the home	$
ENERGY EFFICIENCY Rating out of 10	3 	Install seals on all windows and doors. Install external shading devices to west facing windows. Consider installing solar panels. Replace shower head with min Star WELS rated head (R) Replace the hot water system with a heat pump	$$
THERMAL COMFORT: **Hot weather** Rating out of 5	1 	Upgrade insulation in ceilings and walls Upgrade window treatments to lined curtains with pelmets.(R) Seal any holes or gaps that allow air to leak into or out of the house.	$$
THERMAL COMFORT: **Cold weather** Rating out of 5	3 	Upgrade insulation in ceilings and walls Install double glazed windows or Install temporary film (R) or secondary glazing to all windows. Seal any holes or gaps that allow air to leak into or out of the house.	$$$

What will you do with your recommendations?

The household already adjust their behaviour to improve thermal comfort like wearing long pants, slippers and jumpers. The assessment has drawn their attention to the need to stop draughts, and may make curtains which they can take with them when they move.

What considerations will you need to make to take action?

- Aside from having limited rights to make physical changes to a property, they would weigh up what is the investment required verses the benefit to them. Are there upgrades that would improve their comfort and safety now, but could be taken with them when they leave.
- They are in the hands of the property owner as to what is upgraded and imagine that cost and effort would be their main considerations.
- As tenants they can only change what they have control of and this introduces conflict. For example they could move their planters off the deck to reduce bushfire risk, but the deck itself is a hazard, and would need to be upgraded by the property owner.

What would help you take action to be more resilient/energy efficient?

- Compulsory ratings when properties are sold or rented
- Rebates and free, cheap, or low effort actions
- Improving mandatory standards
- Collective action - bulk buys
- Financial assistance, that could be tied to energy bill savings.

What value would you place on a combined assessment?

The assessment was empowering. There is enormous value in considering the context.

An assessment specific to a house should lead to least cost and most effective recommendations.

Top priority

Make curtains and provide the report to the property owner.

"It is so important to start thinking about resilience."

Sophie & Matthew

HOUSE	
Type	Weatherboard (lightweight)
Era	Post war
Location	Maldon

HOUSEHOLD	
Residential status	Owned
Lived here	8 months
Number of people	2 adults, Paris the dog and a cat

Sophie and Matthew are professionals working locally. They like to spend time at home and entertain. Sophie and Matthew moved from a very high bushfire risk property to this home in Maldon which has a lower risk. They are well educated in sustainability and climate resilience with experience working on solar projects, with the CFA, and through prior leadership of a community emergency resilience group. They have renovated before and are quite handy.

Cost guide
$ 0-5K
$$ 10-15K
$$$ 20-30K
$$$$ 30K +

Hazard	Rating	Key recommendations	Cost
BUSHFIRE Rating out of 5	1 	Install 40cm high steel guards around the base of the softwood vertical posts. Install fire rated door seals and draught stoppers to the bottom and sides of the doors. Consider a metal kick plate to timber doors. External vents, chimneys, flues, lights, roof fixtures, walls, window frames, and services should use non-combustible materials and be sealed with fire-rated silicone and protected with ember mesh. Seal any gaps that are greater than 2mm. Remove any combustible items from the roof space. (R) Maintain a fire resilient, managed landscape around the home. Move any combustible items more than 5 metres away from the home. (R) Remove timber fencing, gates, trellis and lattice that are connected to your home, or within 5 metres of the home. Replace with non-combustible materials. Consider replacing combustible materials with non-combustible to cladding, decking, fascia boards.	$$$
STORM Rating out of 5	3 	Seal gaps and check doors and windows seal appropriately against wind driven rain. Repair any outbuildings that may be in need of repair. Have the roof condition, flashings, fixings, gutters/downpipe and roof attached items assessed for structural integrity and make repairs as needed. Seal off any gaps >2mm. Install overflows in box gutters at the opposite end to the downpipe.	$
ENERGY EFFICIENCY Rating out of 10	6.5 	Install weatherstrips to any unsealed windows. Upgrade the insulation in the ceilings and walls. Upgrade the window furnishings to lined curtains with pelmets where not already in place. (R) Upgrade heating and cooling systems to high efficiency air conditioners. Upgrade hot water system to high efficiency electric heat pump and replace shower heads with wells 3 Star heads.	$$$
THERMAL COMFORT: Hot weather Rating out of 5	1 	Upgrade insulation in ceilings and walls. Upgrade window treatments to lined curtains with pelmets where not already in place. Install weatherstrips to any unsealed windows.	$$
THERMAL COMFORT: Cold weather Rating out of 5	2 	Upgrade insulation in ceilings and walls. Install double glazed windows Install weather strips to unsealed windows	$$$

What will you do with your recommendations?
Sophie has already taken on advice from the home assessment, closing off the hot back room to keep the rest of the house cool and getting draught seals for the doors. The house requires drainage and structural works as a priority, some recommendations could be actioned at the same time, such as inspecting and doing necessary gap sealing, and repairs to the roof, gutters and down pipes.

What considerations will you need to make to take action?

- How to tie recommendations into other work that is being undertaken
- Budget
- What items can be completed ourselves
- How much research is required.

What would help you take action to be more resilient/energy efficient?

- Clear and reliable information to complete recommendations without much research
- Neighbourhood bulk-by and collective action.

What value would you place on a combined assessment?
The assessment was fantastic and so important, sustainability and resilience solutions need to be seen holistically. It would be great if this were combined with a pre-purchase building inspection to provide confidence when considering a house purchase.

Top priority
Installing draught seals on the doors, making curtains, installing a watering system to keep plants watered where close to the house.

"Connect with and strengthen your relationship with your neighbours ."

Pauline

HOUSE	
Type	**Fibre cement boards - lightweight**
Era	**Contemporary**
Location	**Campbells Creek**
HOUSEHOLD	
Residential status	**Owned**
Lived here	**15 years**
Number of people	**1 adult, with extended family in a second dwelling out the back**

Pauline has lived in the community for 35 years, with her kids and now grandchildren growing up here. Pauline's connection with her community make Campbells Creek feel like home. Pauline has experienced flood twice in this house. She sees a connected community as less vulnerable, particularly when faced with extreme events.

Cost guide
$ 0-5K
$$ 10-15K
$$$ 20-30K
$$$$ 30K +

Following the 2022 flood, Pauline and her neighbours formed a resident's group who can lean on each other through the lasting effects of the traumatic event. These relationships were the silver lining of the flood for Pauline. The group continue to advocate for improvements that will reduce the impact of flood and extreme events by advising and working along-side council on anything from improving communications through to assessing drainage and building a levee.

Hazard	Rating	Key recommendations	Cost
BUSHFIRE Rating out of 5	1 	Install 40cm high steel guards around the base of the softwood vertical posts. Remove combustible materials from the underfloor space and/or enclose with ember mesh. External vents, chimneys, flues, lights, roof fixtures, walls, window frames, and services should use non-combustible materials and be sealed with fire-rated silicone and protected with ember mesh. Seal any gaps that are greater than 2mm. Trim or remove overhanging tree branches to prevent debris accumulation on decks, gutters and on roofs. Maintain a fire resilient, managed landscape around the home. Ensure that any further plantings near the house are species that are fire resilient. Move any combustible items more than 5 metres away from the home. (R) Remove timber fencing, gates, trellis and lattice that are connected to your home, or within 5 metres of the home. Replace with non-combustible materials.	$$$
STORM Rating out of 5	3 	Some of the gutters and downpipes are blocked, keep gutters clear. Consider overflows to existing gutters. Seal any gaps around doors and windows. Repair any cladding that is damaged and any outbuildings that may be in need of repair. Have the roof condition, flashings, fixings, gutters/downpipe and roof attached items assessed for structural integrity and make repairs as needed. Seal off any gaps >2mm. Remove trees that could impact the home if fallen. Remove any loose items from the yard that could impact the home in heavy winds.	$$
FLOOD Rating out of 5 Environmental risk: Extreme	2 	Prioritise installing vents and flaps (such as pet doors) to enable automatic two-way water flow to balance internal and external water pressures during a flood. This can help reduce structural damage to the home. Prioritise installation of removeable access panels at the base of cavity walls to enable quick drying and access for cleaning inside walls after a flood. Prioritise retrofitting cavity wall systems below potential flood levels with water resilient materials and as few layers as possible.	$$$$
ENERGY EFFICIENCY Rating out of 5	6.8 	Install weatherstrips to any unsealed windows. Upgrade the insulation in the ceilings and walls. Upgrade the window furnishings to lined curtains with pelmets where not already in place Upgrade old air condition systems to high efficiency modern air conditioners. Replace shower heads with wells 3 Star heads.	$$$
THERMAL COMFORT: Hot weather Rating out of 5	1	Upgrade the insulation in the ceilings and walls Upgrade window treatments to curtains with pelmets or honeycomb blinds. Install weather strips to unsealed windows	$$
THERMAL COMFORT: Cold weather		Upgrade the insulation in the ceilings and walls Install double glazed windows	$$

Cost guide
$ 0-5K
$$ 10-15K
$$$ 20-30K
$$$$ 30K +

What will you do with your recommendations?
Pauline has installed roof ventilation which has helped to reduce heat in summer. Pauline has plans to chip away at the recommendations with a focus on improving thermal comfort and improving bushfire resilience, while balancing the need to consider flood.

What considerations will you need to make to take action?
- Finding trusted and reliable trades who could undertake the recommendations including small jobs
- Finding time and energy to seek quotes and chat to people to find good and capable trades
- Understand what items can work in with the household budget

What would help you take action to be more resilient/energy efficient?
- Making it easy to engage good people to complete small jobs
- Neighbourhood bulk-by and collective action
- Contacting her assessor to offer guidance when necessary

What value would you place on a combined assessment?
It was very valuable to have the expertise of the assessor to identify previously unnoticed issues and provide solutions for things that were accepted as just needing to be lived with. It was an opportunity to learn how to make the home more resilient, information that can be shared with neighbours and the community. The assessment was a very positive experience and has helped to prioritise actions.

Top priorities
- Install ember mesh around subfloor, replace timber with fire resistant decking and install a solid front door with seals
- Add insulation to the ceiling