



## Home renovations and building upgrades

There are various ways to improve the thermal comfort, liveability and energy efficiency of our homes. To explore this topic further, we ran a survey through CSIRO Energise to learn more about the building changes, renovations and upgrades our citizen scientists have made to their homes.

With about 11 to 12 per cent of Australia's emissions attributed to households, the residential sector significantly contributes to our nation's carbon footprint.

But the good news is that Australians are slowly embracing more sustainable, energy efficient housing. According to CSIRO's Australian Housing Data Portal, which tracks the energy efficiency of new dwellings across the country, our homes are becoming more eco-friendly.

So, what are people doing to make their homes greener? In a CSIRO Energise survey earlier this year, we asked our citizen scientists about recent home renovations and upgrades, including changes that can impact household energy consumption and bills. Here's what we found based on a sample of about 1000 responses...



*Creating a greener, more sustainable home requires more than just a fresh lick of paint.*

### What changes have we recently made?

When asked about recent renovations and building upgrades, many of our citizen scientists reported making changes to their homes in the past two years. For example, a reasonable number of survey respondents said they had installed or replaced the following:

- energy-efficient light bulbs (46%)
- new kitchen appliances (27%)
- heating/cooling appliances (25%) or ceiling fans (16%)
- low-flow taps/shower heads (17%)
- hot water systems (17%)
- internal or external window coverings (25% and 12%, respectively)
- draught-proof seals on doors and windows (14%)
- ceiling, wall or floor insulation (12%, 7% and 5%, respectively)
- new flooring (11%).

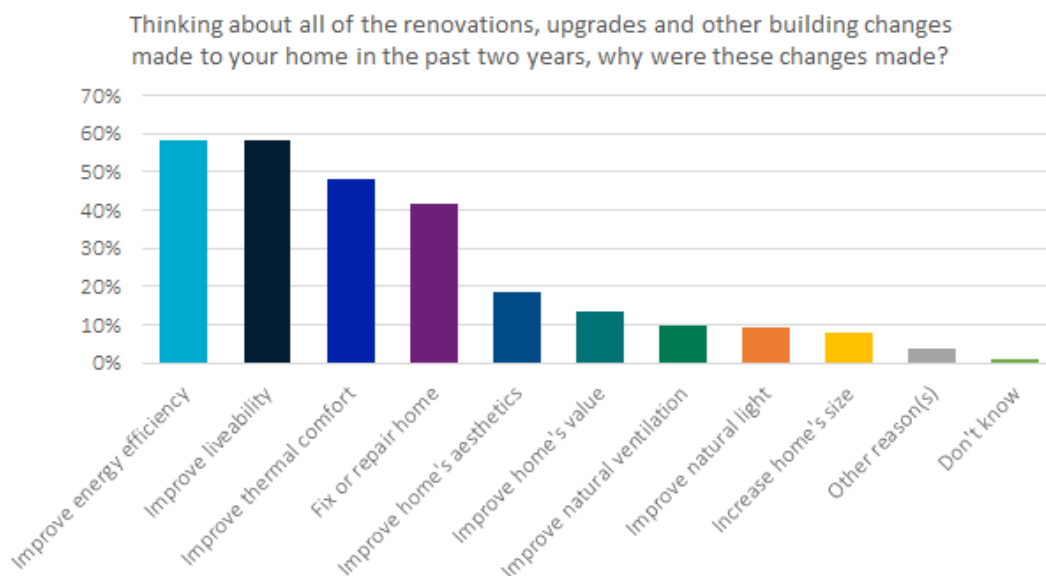
However, more than one-fifth of survey respondents said they hadn't made any changes to their home's building features, outdoor areas, windows or doors, internal features, or household appliances over the past two years. Those respondents living in rented properties were more likely to report making no changes, possibly due to having less control or choice over building modifications than those living in owner-occupied homes.

## Why the changes?

Next, we asked our citizen scientists to think about all of the renovations, upgrades and other building changes made to their homes in the past two years and tell us why these changes were made.

Among those who had made some changes, about 58% said that they aimed to improve their home's energy efficiency, with a similarly large proportion reporting a desire to improve their home's liveability.

Just under half said that improving their home's thermal comfort (48%) or fixing/repairing the home (42%) were reasons for the building changes. Less commonly cited reasons included improving the home's aesthetics, value, size, natural ventilation and/or natural light.



## Perceived impact of changes

We also asked our citizen scientists to describe what impact these home renovations and upgrades had on their household's energy consumption and thermal comfort.

In terms of energy consumption, a reasonable number of respondents (43%) felt that their usage had decreased either a little or a lot, with fewer people perceiving either no change (37%) or an increase in energy consumption (12%). The remainder were not sure what impact the renovations and upgrades had made to their household's energy use.

In terms of thermal comfort, we specifically asked people about their satisfaction with the indoor temperature over summer when cooling systems are turned off. The majority of respondents (54%) reported that their household's thermal comfort had increased either a little or a lot, with fewer reporting that comfort levels had remained about the same (38%). Only a very small number (2%) felt that their thermal comfort had decreased as a result of the home renovations or upgrades. The remainder were not sure, or always had cooling systems turned on.

## A look into the future of housing

The renovations, building upgrades and changes made to our homes can impact the overall energy-efficiency of Australia's residential sector. But exactly what's done makes a big difference.

To learn more about our nation's progress towards energy efficient, low-emission dwellings and suburbs, check out the CSIRO's Australian Housing Data (AHD) Portal: <https://ahd.csiro.au/>

Survey snapshots provide a quick look at some of the results provided so far by our citizen scientists.

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