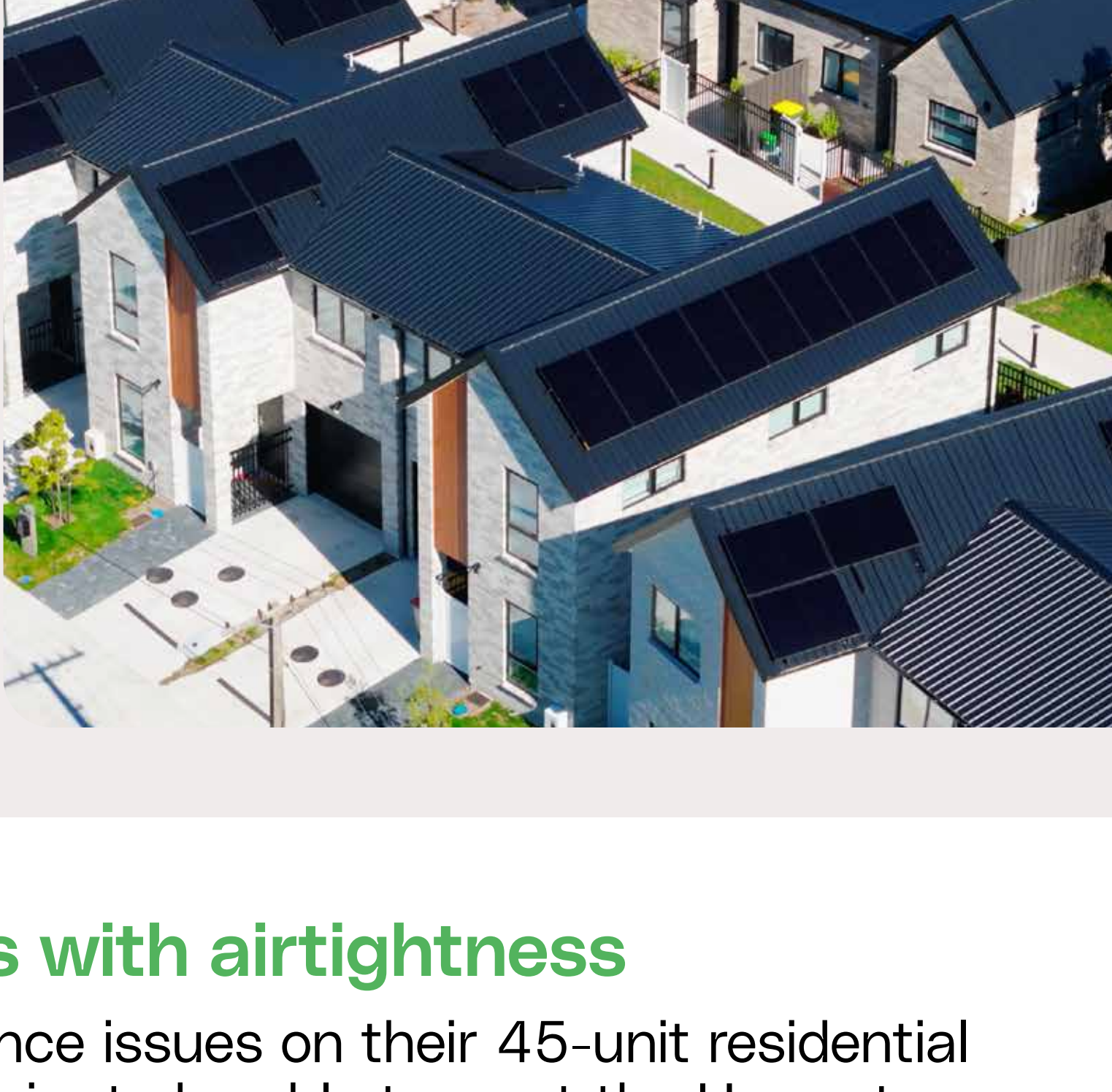


Case Study:

Meeting Homestar targets with airtightness

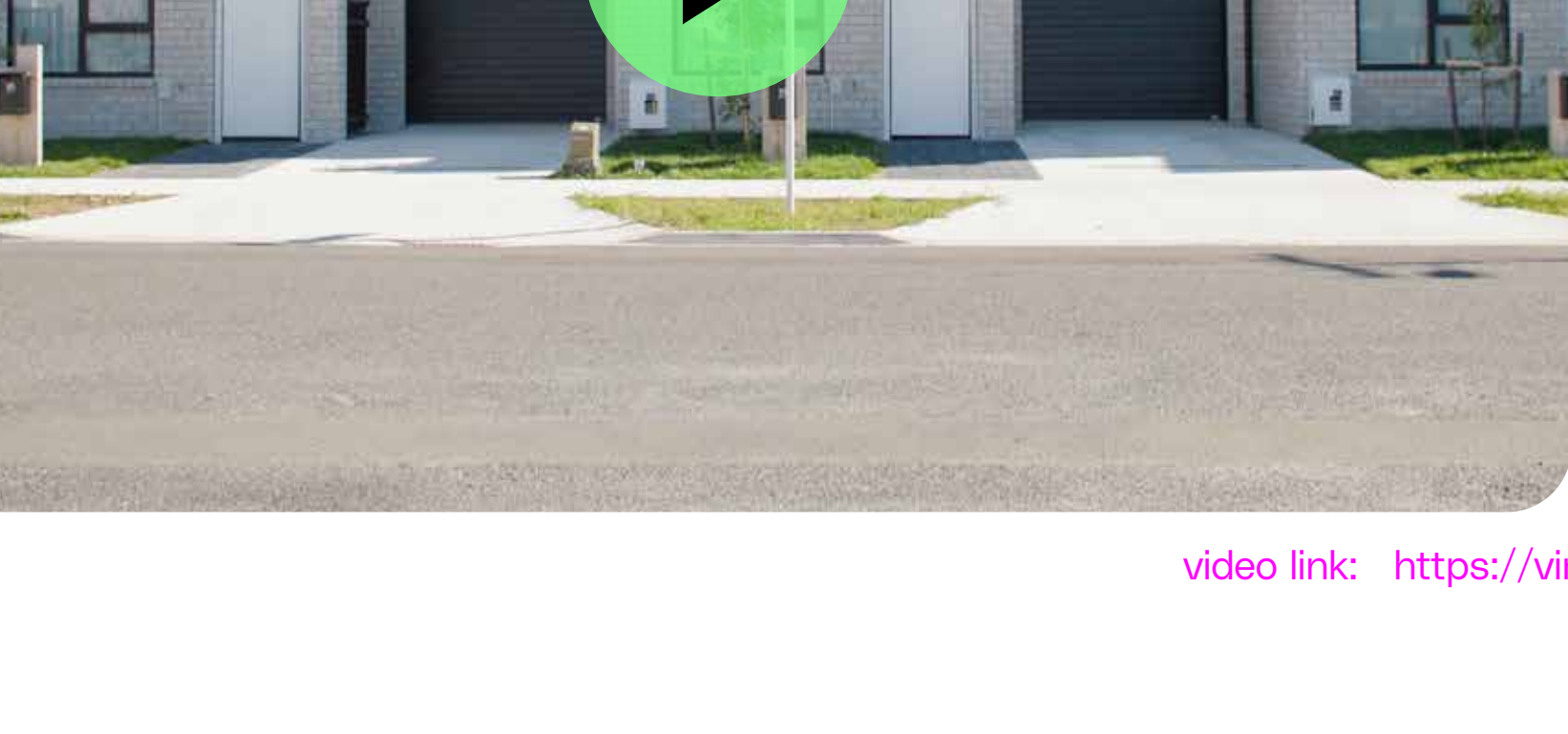
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Meeting Homestar targets with airtightness

When Pragma Homes ran into thermal performance issues on their 45-unit residential development in the Waikato, they used AeroBarrier to be able to meet the Homestar targets they needed – without delaying construction.



video link: <https://vimeo.com/1197870105?fl-1p&fe=ec>

Retrofitting airtightness upgrades mid-construction

Building work was fully underway on a residential development with 45 dwellings, when the Pragma Homes project team discovered issues around meeting the required thermal performance for the desired Homestar rating. Kent Morgan, Project Manager at Pragma, says: *“When a job is not tracking to meet Homestar onsite, it creates pressures in regards to schedule. And on a multi-unit build like we were doing, it affects the entire build programme.”*

A redesign and change to the construction method was not an option. There was only one solution that could easily and cost-effectively be retrofitted, avoiding redesign work and costly delays: airtightness sealing with AeroBarrier. Kent explains: *“Given the progression of the job – we were 50 to 60% interior lined over a 45-unit development – there was no other option than to use Aero to get the results that we required.”*

Watch Video

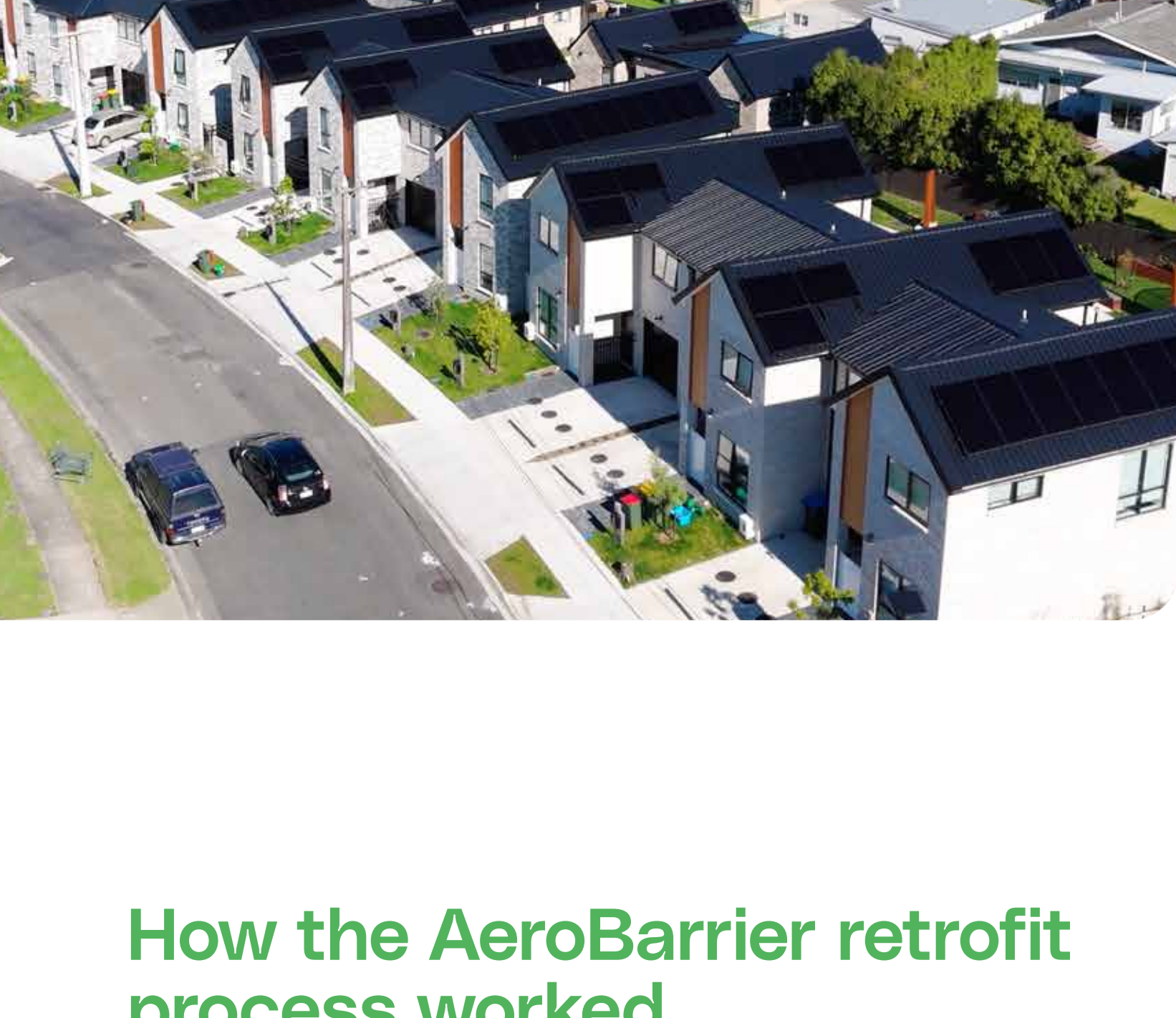


Traditional pathways to improve thermal performance

When it became obvious that the required thermal performance targets would not be met as expected, the team started looking at different upgrade pathways. Traditional improvements could have included upgrades to insulation, thicker SIP panels, uPVC joinery, special glazing and slab edge insulation.

However, all of these upgrades would have required redesign work and construction was already well underway. Airtightness was the only feasible option this late in the construction process.

Scott Bristow, Homestar Consultant with The Building Excellence Group, who was brought in to support the retrofit, says: *“For projects like this I would definitely recommend AeroBarrier. I think if [Pragma] had gone down any other pathway they would have ended up with major time delays and they would have ended up spending more money as well. This was a really good solution for this project.”*



Why AeroBarrier was the best solution for Pragma

“For this project, AeroBarrier was the most feasible solution because it was able to be retrofit really easily into these homes,” says Scott. “It didn’t require any redesign or anything like that.”

Pragma’s Design Team Manager, Karin Santhesson explains: “The main challenge was that we were dealing with a live construction programme. The design had been signed off by the clients, construction was underway and the trades were onsite. We could simply not break that momentum by redesigning.”

AeroBarrier was able to address the performance gap without requiring the team to revisit any exterior or the interior layouts. Karin says: *“We’ve seen quick results with AeroBarrier without disruption to the construction programme, and that is a great result.”*



How the AeroBarrier retrofit process worked

“The AeroBarrier team fitted into the programme nicely,” says Kent. “They were able to do two units per day, so the impact was no more than half a day per unit.” There was virtually no disruption to the trades.

Once the units were prepared, the AeroBarrier sealing process itself took less than an hour per unit. Watch this video to learn how the technology works and how it was applied in the Pragma Homes development.

Watch Video

<https://vimeo.com/1170134632?fl-pl&fe=sh>



Validated results across the 45-unit development

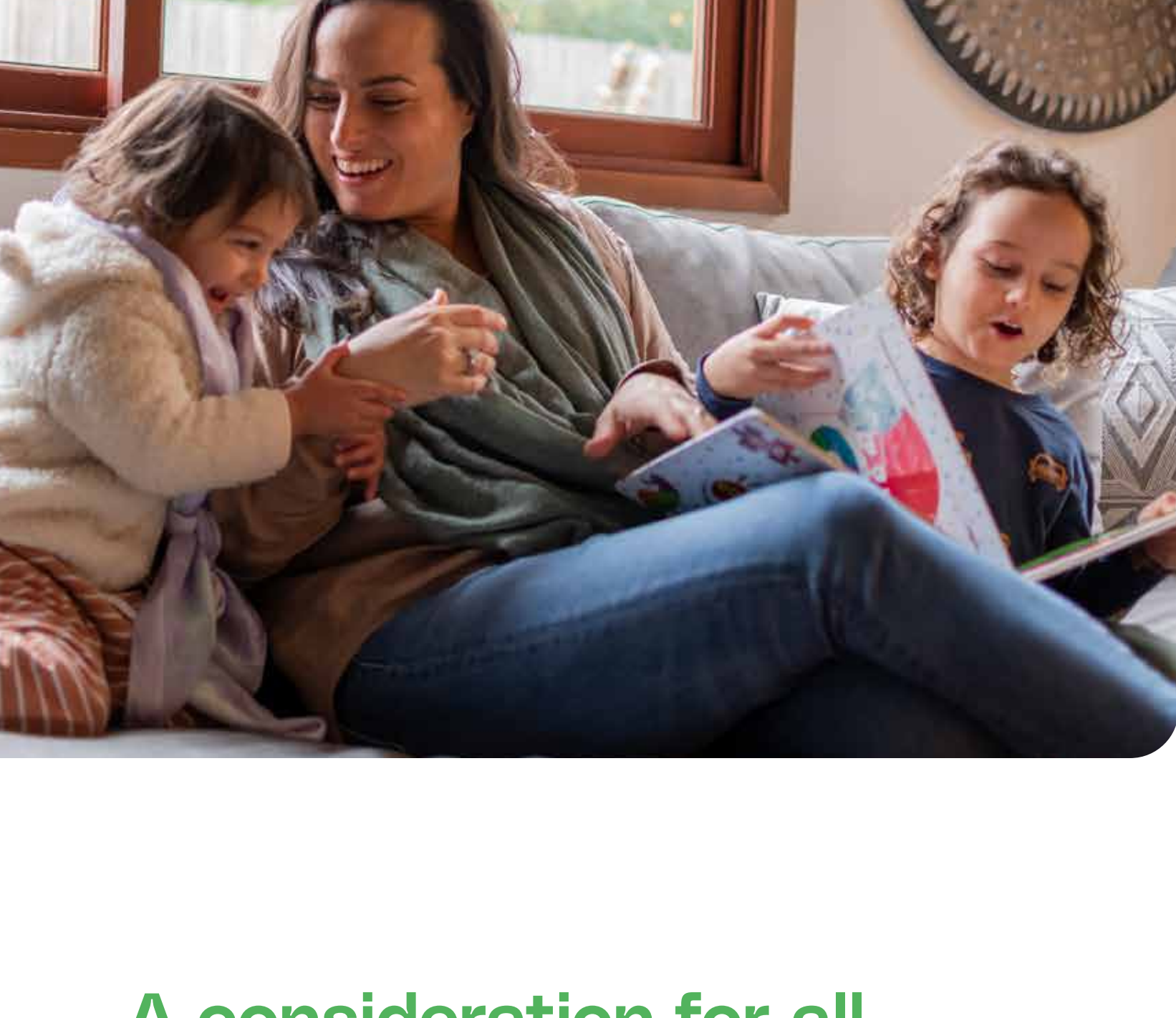
Blower door tests were conducted for a representative sample of the 45 dwellings. Initial testing, completed before any airtightness improvements were made, showed that on average the units achieved a rating of 5.47 ACH50.

A final test was conducted after construction was completed, recording a final average result of 1.97 ACH50 and allowing the development to be Homestar certified.

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KARIN SANTHESSON, DESIGN TEAM MANAGER, PRAGMA

“We’ve seen quick results with AeroBarrier without disruption to the construction programme, and that is a great result.”

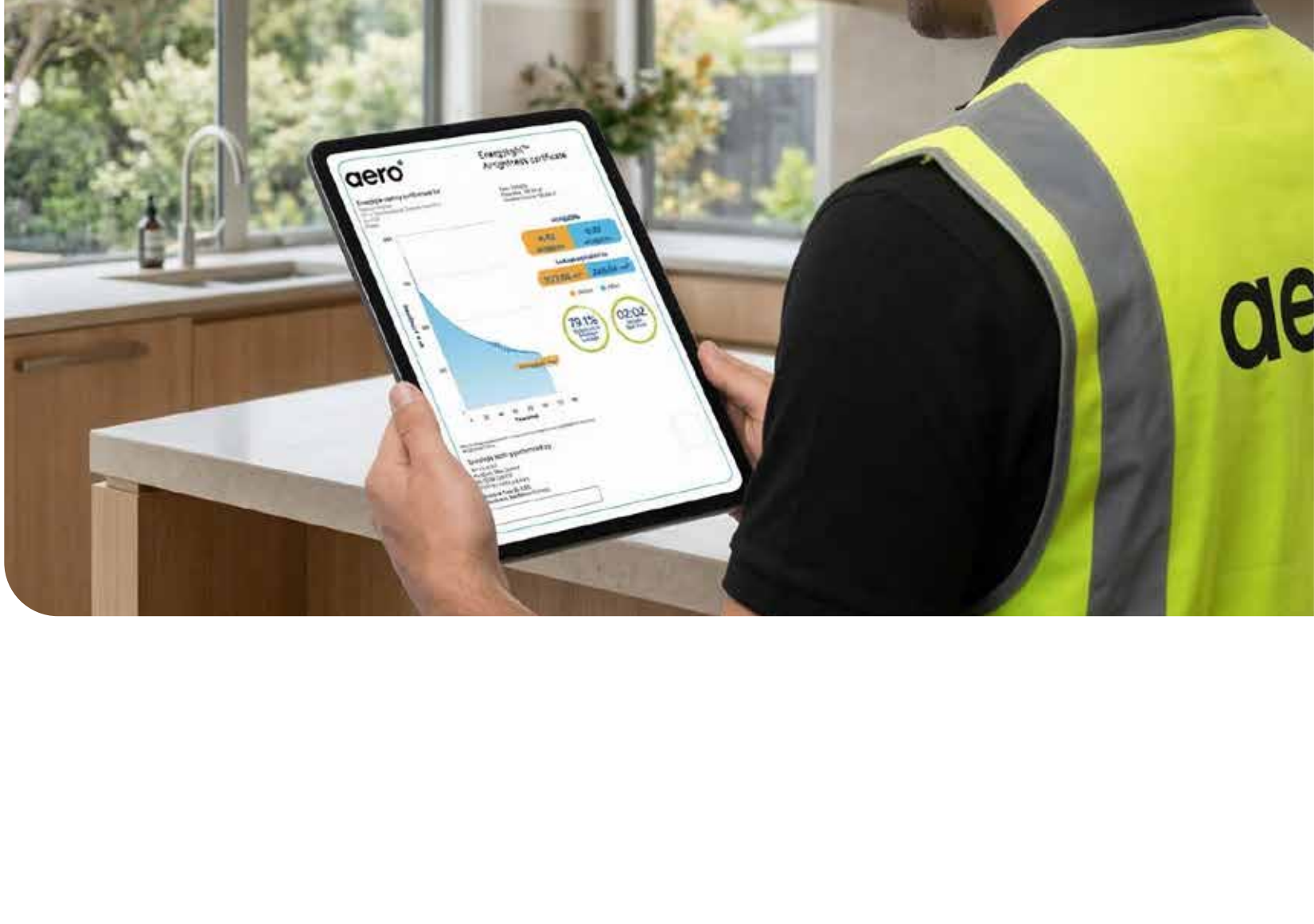


How airtightness can take cost out of Homestar projects

Airtightness isn’t a compulsory Homestar credit, but setting a target early means the rest of the specification doesn’t have to work as hard – reducing reliance on higher-spec, more expensive, glazing, insulation or thermal breaks to hit the same rating.

Airtightness also earns a secondary credit by cutting interstitial moisture, moisture trapped within the building envelope, lowering long-term risk to the building. AeroBarrier delivers this in a targeted, certified way, with results measured rather than assumed.

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A consideration for all New Zealand homes

“It’s clear to see that all homes need to be considering airtightness, regardless of whether they’re targeting green building ratings like Homestar or Greenstar,” says Scott. “All homes need to comply with New Zealand building code clause H1, which is energy-efficiency. But adding more insulation to your building envelope isn’t going to do much if all of your hot air is being leaked out through gaps in the envelope.”

This is where airtightness sealing can offer real benefits. When airtightness is designed into a home from the outset, insulation performs better and heating and cooling systems can generally have a lower capacity. It is important, however, to have a robust mechanical ventilation heat recovery (MVHR) system to ensure a continuous and controlled airflow.

Find out more about [AeroBarrier](#) and the [EnergyTight™](#) solution.

Want to achieve results like this in your next project?

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