

Case 03.

Occupants:

A couple living with 2 young children.



Table 01.

Key upgrades (beyond the minimum 6star NatHERS) and Costs

The following are the upgrades and outcomes of a 29 square home recently built in Clyde North. Please refer to the SECCCA Toolkit for further details of the key upgrades and rating systems.

NUMBER	KEY UPGRADES	TYPE OF ACTION	COST EXTRA	POINTS
1	Maximised orientation of living spaces north	Passive	N/A	0
2	An appropriate Shading Strategy (including eaves, awnings, pergolas, reducing window sizes, block out blinds etc)	Passive	N/A	0
3	Upgrade insulation in roof and walls	Building Fabric	\$500	1
4	Double Glazing	Building Fabric	N/A	0
5	Good - Excellent Air Tightness	Building Fabric	N/A	0
6	Efficient Solar Hot Water or Heat Pump (ie. not a Water Tank)	Appliance	N/A	1
7	Fully Electric	Appliance	N/A	0
8	Efficient electric reverse cycle heating and cooling system	Appliance	\$4000	1
9	Solar PV System	Generate Power	N/A	0
10	Battery Storage System	Store Power	N/A	0
TOTAL POINTS			\$4,500	3
PAYBACK: 6.7 YEARS*				
SAVINGS AFTER PAYBACK BETWEEN 6.7 AND 15 YEARS			\$10,491	

*Notes: additional \$4000 to meet minimum 6 star requirement = Total \$8,500. Assumes typical bill saving of \$400-\$300 = \$100 quarter or \$400 annual electricity and gas \$316 -\$100 quarter = \$216 or \$864 annually. Total \$400 + \$864 saving = \$1264 annual electricity and gas saving.

Additional upgrades:

- Internal Shutters.

Table 02.

Energy Ratings and Power Bills

RATING / TEST / OUTCOMES	OUTCOME
NatHERS	TBC
Victorian Residential Efficiency Scorecard	7
Blower Door Test	7.74 ACH50 < Good
Energy Bills	Electricity: \$300 a quarter Gas: \$100 approx a quarter



Benefits

as reported by the homeowner:

- Bills are a lot lower than previous houses.

Barriers

as reported by the homeowner:

- Builder was not receptive to changes, we did what we could.

Conclusion

This townhouse achieved 3 out of the 10 key recommendations through the program at a cost of \$4,500.

The house was rated 7 stars under the Residential Efficiency Scorecard however this did not move the NatHERS rating. The RES rating is quite high and is likely due to the smaller size of the home comparable to other homes on which the rating system compares. There were some attempts made at better shading and orientation however the owner found it difficult to get these accepted by the builder.

The home was just within the air tightness recommendations. Upgrading the insulation to R6 in the roof will have helped increase the internal comfort of the home on hotter days and coupled with an efficient reverse cycle split system result in lower heating and cooling bills.

Had the home installed a solar system their electricity bill would have close to zero. As gas is still used for boosting hot water heating and gas cooking a gas bill of \$100 a quarter still occurred.

The owner complained of dust in the upper bathroom. This was investigated and found to be due to the bathroom fan venting straight into the ceiling space without a draft stopper. An exhaust fan with built in backdraft shutter can be installed at very little additional cost, saving on cleaning and heating and cooling bills.

Thermography testing showed that there were approximately 6 places where batts were missing or displaced. It also showed up areas where there were air leakages around window architraves, fans and heating and cooling units.

