



## Josh's House – Star Performers Australian Zero Emission House

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Living Key: enhancing prosperity and quality of living



# property certificate

project Australian Zero Emission House  
client Star Performers Project  
address Melbourne, Victoria  
date 30 October 2014



## About this Report:

This report has been provided at the request of and is solely for the client Josh Byrne & Associates as supporting information for the Josh's House Star Performers Project.

It is an independent assessment based entirely on published information, including site and house plans, brochures and fact-sheets as well as information provided by the client. Living Key did not visit the property as part of undertaking this assessment.

The Living Key categories assessed are relevant to property and building performance only. It does not include an assessment of the broader locational categories of Community, Transport and Nature.

### summary result



67%

This property is a very good example of and model for sustainable living in the suburban context. Best practice in climate responsive and environmental sustainable design ensure the property achieves a good result across the ABODE assessment categories.

The 7 star rating for Energy, strongly supported by a large photovoltaic renewable energy generation system, and the 'Very Good' 7 star rating for Water and smart design ensure this property is very economical to run and can achieve a longer than average design-life.

The climate responsive – solar passive – design with, open plan living, natural ventilation, solid timber flooring and outdoor living spaces are all supportive of a more Liveable home.

The inherent design features and materials used in construction and landscaping result in a dwelling with a lower than average embodied energy.

Overall this property, its design, fitout and finishing ensure the occupants can achieve a healthy, highly liveable and a very economical quality of life.

### detailed results by category



61%

This property achieves a better than average result and therefore will have a lower than average energy use. The key features which contribute to this rating include:

- Very good 8 star NatHERS thermal performance rating and excellence in climate responsive – solar passive - design features ensure the dwelling is very efficient to run, but may require some cooling during hot summer periods and/or heating in cold winter periods.
- Large photovoltaic renewable energy generation system combined with an efficient solar water heating system, efficient appliances and lighting and a well-ventilated fridge space means this dwelling should be exceeding household energy demands and feeding energy back into the network. This however, as with all buildings, is highly dependent on occupant behaviour.

There are some inclusions which adversely impact on the energy demand and therefore the overall rating:

- The large sized ducted air-conditioning system, albeit one that is very efficient, has a significant energy demand, although as stated, this can be highly influenced by occupant behavior in terms of how often it is used. (Note: In the context of the 8 star NatHERS thermal performance rating and excellence in climate responsive design, the installation of ceiling fans throughout, which are a very efficient means of cooling, may well have negated any need for an air-conditioning system.)

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- The internal thermal heating benefit during winter gained from the concrete floor is significantly mitigated due to the installation of timber floor over the slab.
  - The compact fluorescent globes, which at the time of construction were best-practice in lighting efficiency, could be replaced with the more efficient LED globes.
  - Installation of ultrasonic sensors to external and selected internal lighting.

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This property achieves a very good result and significantly reduces overall water consumption and potable water demand. Overall the property has a very low water use due to a combination of rainwater harvesting and reuse within the home and garden, greywater reuse to the garden, efficient fixtures and appliances and waterwise plants and irrigation system. The key features which contribute to this rating include:

- Rainwater harvesting and reuse.
- Greywater system installed, sourced from laundry and bathroom, and reused.
- Efficient dishwasher installed.
- Native and drought-tolerant waterwise garden, no lawn, and an efficient controlled irrigation system.

While the significant efficiencies already achieved do not warrant changes to the design or fitout, additional efficiencies could be made through increasing the rainwater storage and extending the reuse to additional internal outlets such as shower, laundry and hot water.



84%

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This property achieves a reasonable result for liveability. The key features which contribute to this include:

- The dwelling has excellent climate responsive design features which means it will be thermally comfortable year-around, that is it will remain naturally warm in the cold winter months and naturally cool during the hot summer months.
- Reasonable universal access including a level entry (via the garage), open movement and circulation through the main open-plan living areas, and reasonable access to the bathroom and toilet.
- Good natural cross-flow ventilation, external openings to the bathrooms and laundry, and low dust collecting surfaces which support a healthy indoor environment quality.



58%

There are a number of inclusions and features, which if included would improve the overall liveability of the property and therefore the overall rating:

- Productive food producing garden – install vegetable beds and fruit trees, as well as compost bins and/or worm farm.
- Shade providing trees – deciduous trees to the main outdoor living area on the north side and evergreen varieties to the front garden would improve shade, comfort and amenity for occupants and support an improved thermal performance for the dwelling

Wider doorways with a minimum 850mm opening, especially to the main entry, and toilet and bathroom will greatly improve accessibility and usability for people with limited mobility.

The 7 star rating is a good result for a near new dwelling constructed as a detached single residential property in a green-field development area.

The dwelling has a number of features which support an increased design-life and reduce the overall embodied energy and carbon intensity of materials and construction:

- The waffle-pod floor slab uses significantly less concrete than a traditional poured concrete slab.
- The brick veneer construction and plantation softwood pine for the framed construction (walls and roof).
- The use of natural stone crushed stone and recycled timbers products in the garden landscaping.
- Reduced recurrent energy impacts through the use of natural finishes.

The internal layout with open-plan living and reasonable sized bedrooms means the home is reasonably adaptable to changing uses and occupant needs.



66%

Living Key Star Ratings and Percentage Scores:

1 Star = 0-10%; 2 Stars = 10.01-20%; 3 Stars = 20.01-30%; 4 Stars = 30.01-40%; 5 Stars = 40.01-50%;

6 Stars = 50.01-60%; 7 Stars = 60.01-70%; 8 Stars = 70.01-80%; 9 Stars = 80.01-90%; 10 Stars = 90.01-100%

### About Living Key

Living Key is a suite of rating tools, services and resources for industry and consumers to assess and certify the liveability and sustainability of properties. Its core objective is to address the market need for an easy to understand 'rating assessment' of the key liveability and sustainability features and attributes of new or existing properties.

### Living Key Categories and Descriptions



ENERGY

Design features and fixtures of the property that optimise good design and conserve and produce energy



WATER

Design features of the garden, and fixtures and appliances that conserve and re-use water



MATERIALS

Well located and long life buildings with low energy content and are from sustainable sources



LIVEABILITY

Design features, materials and finishes, and location, which enhance human and environmental health



NATURE

Type, amount and diversity of vegetation on the lot, on street verges and in open space, and proximity to bushland



MOVEMENT

Proximity of the property to public transport, walking and cycling paths, and bicycle storage



COMMUNITY

Proximity of the property to local amenities and services such as shops, schools, day care, community centers and parks



Summary average of ALL assessment categories to indicate the average benefits and potential of the property

### The Disclaimers:

This report is valid for 12 months from the date of issue. Whilst this report has been formulated from sources we deem to be reliable and is tendered in good faith, no warranty, expressed or implied is made by Living Key as to the accuracy or completeness and it does not accept any responsibility for matters arising there from.

Living Key has provided these recommendations in good faith. Any estimates or budgets relating to recommendations or improvements are purely to provide an estimation of costs and are relevant only at the time of report. The figures provided are not a quotation or fee proposal to carry out any works and cannot be relied upon for this purpose. All estimates and budgets which are provided are done so only on this basis, and no liability, with the client or any third party, whatsoever will be accepted in relation to budgets and estimates provided unless otherwise stated. The property owner or recipient of this report will need to contact a building industry professional or building contractor to undertake any design or fit-out improvements, and/ or a product supplier and/or retailer for details and terms of supply and installation and accurate quotations.

Note: This report was originally issued under the name of ARCAActive, which has since been superseded by Living Key.