

Josh's House Living Lab A 10 year solar journey

Professor Josh Byrne









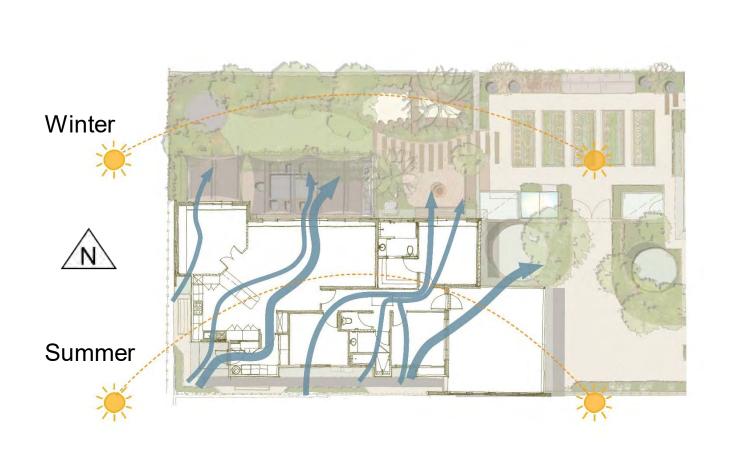


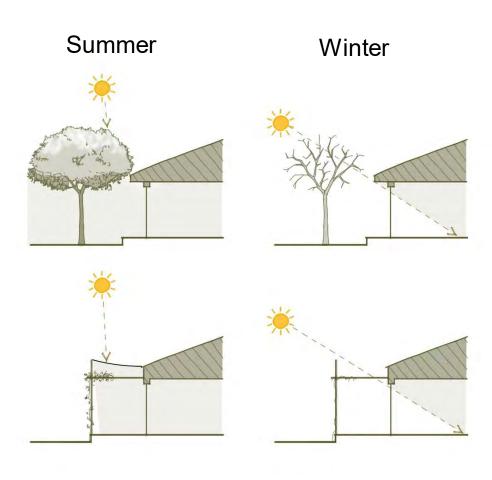




CLIMATE RESPONSIVE DESIGN

Solar Gain & Cross Ventilation





THERMAL SHELL

Internal Thermal Mass & Wall Insulation

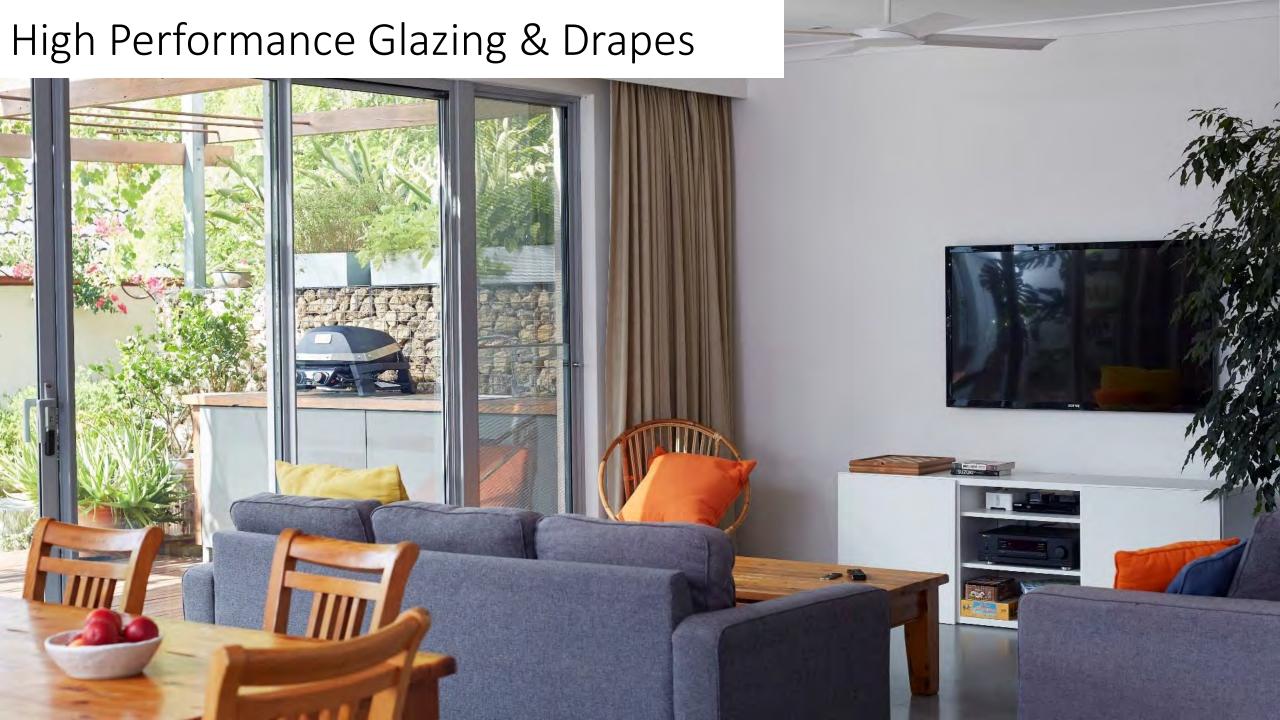




Light Coloured Roof + Roof & Ceiling Insulation

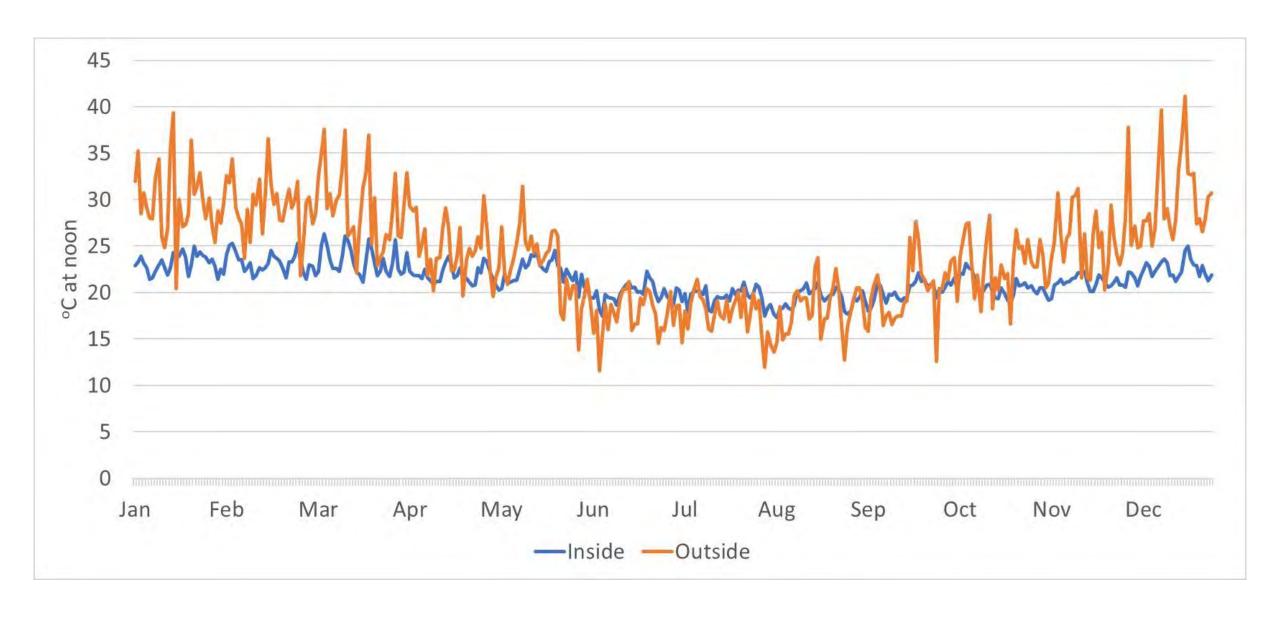








Annual Temperature Profile



ENERGY SYSTEM – STAGE 1: 2013

Net Zero Emissions (Dual Fuel)



Gas Cooktop + Electric Oven

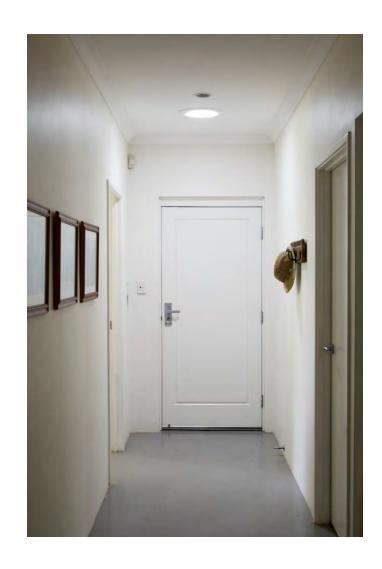


Efficient Fixtures Appliances





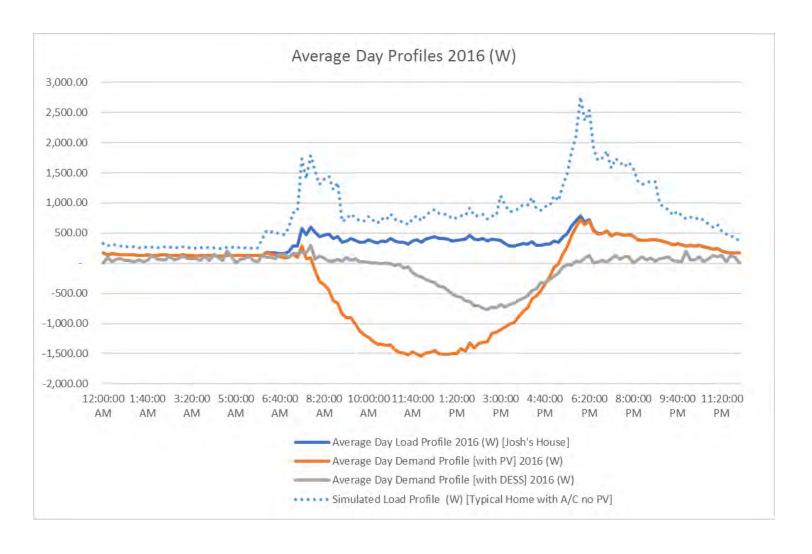
Efficient Lighting





Battery Added to Increase Utilisation of Solar Energy





Heat Pump Hot Water System





Induction Cooktop





PV + Battery Upgraded



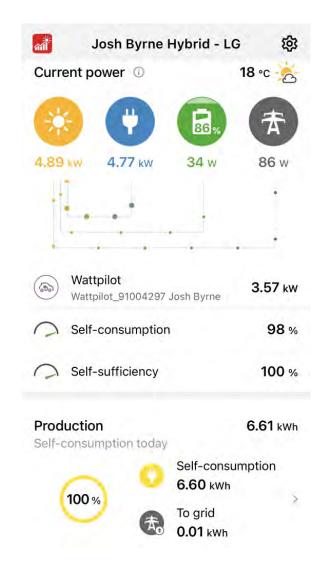




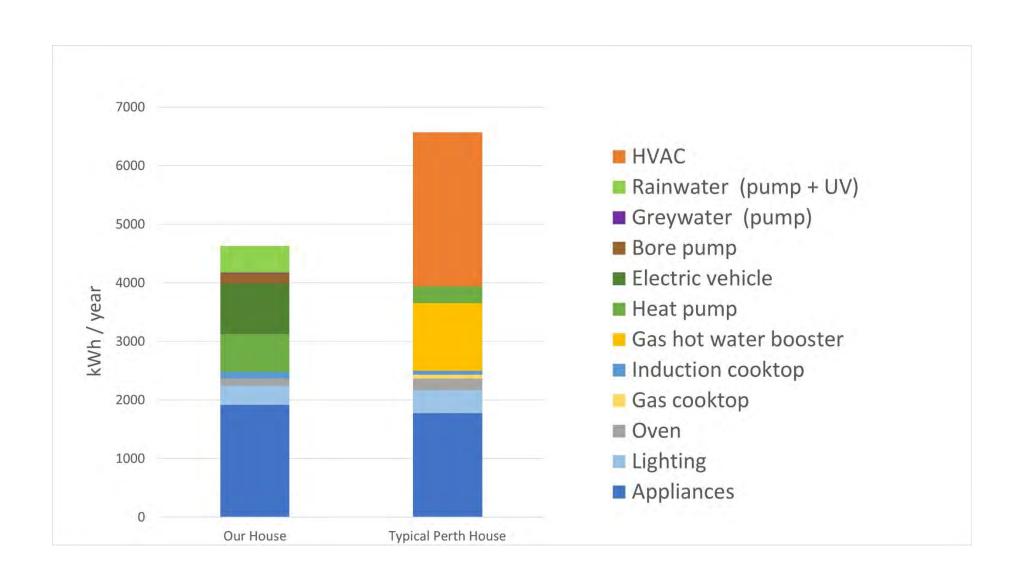
Electric Vehicle Charging



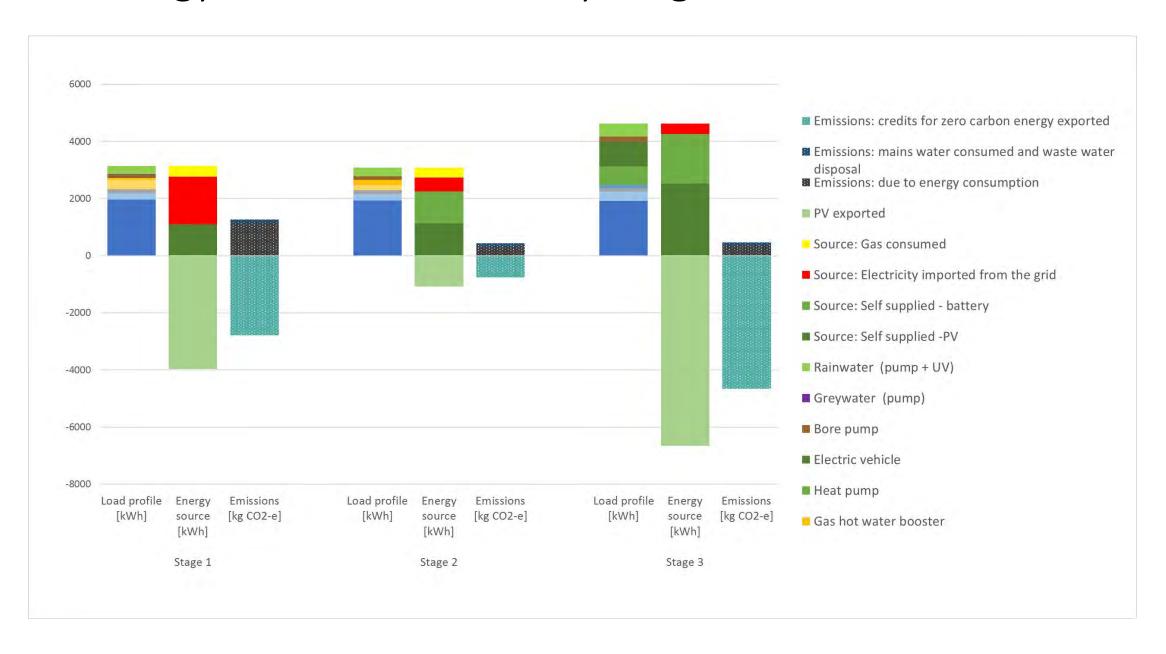




Annual Energy Use by Load



Annual Energy Use & Emissions by Stage



COMMUNICATION & ENGAGEMENT







NET ZERO HOUSING GUIDANCE

- No fossil gas
- Min. 7 star NatHERS rating
- Heat pump hot water service
- Induction cooking
- Min. 4 star AC rating
- Min. 3.5 kW PV system
- Battery storage ready
- EV ready



PATHWAYS TO NET ZERO PRECINCTS





- Investigate how to achieve net zero emissions outcomes.
- Embed research within live case study precincts at different stages of maturity.
- Share learnings in quick time to accelerate adoption and rapid scaling nationally.

NET ZERO INNOVATION ACADEMIA RESIDENTIA, RESEARCH ACTIVITIES m INNOVATION **NET ZERO ECOSYSTEM PRECINCTS** GOVERNMENT INDUSTRY LIGHT INDUSTRIAL KNOWLEDGE SHARING CITIZENS

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