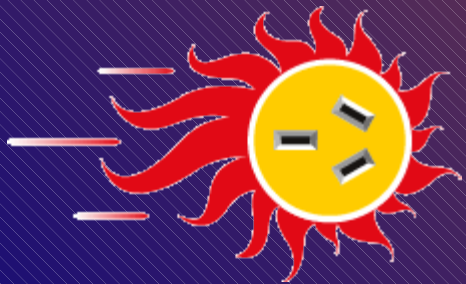


Energy Efficient Bayside Home



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SOLAR CHARGE

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Bayside Solar Home



Aim for a quality modern home using:

- Solar Efficient Design
- Solar Grid System for Electricity
- Solar Hot Water
- Double Glaze Windows
- Rainwater tanks



Solar Charge

Solar Efficient Design

Orientation on suburban block

Thermal mass INSIDE

- Slab with tiles and Internal Brick walls

Lightweight walls OUTSIDE

- Hebel and Linear weatherboards

Living Areas to North side

- Utility areas to south

Double glazing all round

- Lots of NORTH glass
- Minimal WEST & SOUTH glass

Result: 42 points = 6 +++ STARS



Solar Charge

Completed Home



Solar Charge

Thermal mass INSIDE

To help maintain stable temperatures inside:

- Tiles on Slab to ABSORB Winter sun
- Rendered brick walls



Solar Charge

Lightweight walls OUTSIDE



- Minimise heat absorbed by external walls (avoid that late summer afternoon bake)
- Hebel (aerated concrete) has low thermal mass
- Linear weatherboards add contrast



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Double glazing all round

- Lots of NORTH glass
- Minimal WEST & SOUTH glass

Aim for:

- Maximum WINTER sun
- Minimum SUMMER sun



Winter penetration



Summer penetration



Solar Charge

Attention to INSULATION

- Use a quality house wrap
- Fill all gaps, *including* around window frames
- Staple insulation in place



When combined with double glazing this means house is almost soundproof too!



Solar Charge



Solar Charge Power System

- Recently increased from 1.6 to 3.0 kW
- BP Solar panels (9 x 160W, 9 x 170W)
- Mounted on 15 degree roof pitch
- SunnyBoy 2500 Grid Connect Inverter
- PFiT excess CREDIT should more than cover Gas, Water and Sewerage
- NET metering, single rate tariff



Energy efficient lighting minimises power requirements

Provides up to 20kWh per day during Summer.



Solar Charge

Solar Hot Water and Rainwater

RAINWATER TANKS

- Flooded rainwater catchment
- 8000L+ storage in two “slimline tanks”.
- Recently added 22,000L tank to carry dry period
- Plumbed to supply all water for home except kitchen and bathroom cold taps (drinking)



SOLAR HOT WATER

- 3 x Solar Edwards Titan panels on roof
- 330L tank on ground with pump
- Provides 95% + of our hot water over summer
- Instant gas heater backup for cloudy weather and winter



Solar Charge

Ventilation Systems



- Fans exhaust roof space when over 40 degrees
- All kitchen & bathroom exhaust fans vent directly to outside



- Window placement for cross-ventilation
- Staircase has door at bottom to prevent heat-loss upstairs
- Venmar Ventilation system provides fresh air without losing much heat when house “clamped down” for winter



A Solar Success Story

from concept....



to completion...



SED achieved 42 points
(6 ++ star)

Interior lighting usually
only required at night

Mostly a comfortable
17 - 25 degrees day/night

100% Solar Electricity
with PFiT

60% of Hot Water

97% Rainwater usage

and a joy to live in



Solar Charge

Bright, Cheery and Practical living



Federal Government Incentive

Solar Credits

- 5 x REC's up to 1.5kW, 1 x REC's above this.
- Homes, commercial buildings, schools and community buildings.
- Number of REC's vary by Postcode and value currently varies.
- PV REC's to be fixed \$ in Jan 2011.



Solar Charge

State Government Incentive

Premium Feed in Tariff (Vic Gov)

- 15 years program by Vic Government
- Min. 60 cents PFiT on “net exported” power.
- Install appropriate size, quality system. Min 1.5kW. Maximum size allowed is 5kW
- Encourages load management during daylight
- Will affect on those with slab heat, hot water, climate saver tariffs. May be better to stay with 1:1 rate



Solar Charge