

Trafalgar House – 2006

The Trafalgar House is space, light and warmth on a small footprint that captures all the benefits of Solar Passive Design.



1) Energy Efficiency

- Passive Solar design - FirstRate 7 Star. (Uses ~1/3 of the energy of a standard house for heating/cooling)
- Greenheat hydronic heating and hot water system with instantaneous gas boost
- Double glazed plantation timber windows throughout
- Highly insulated, tight building fabric
- Mechanical clerestory window to purge hot air
- North facing windows to bring the sun deep into the house
- Ventilation designed to take advantage of sea breeze and natural energy flows
- Airlock entry to buffer unwanted heat loss
- Louver vents to all exhaust fans (eliminates unwanted air leaks)
- Reversible ceiling fans to counter temperature stratification over vaulted 4m ceiling and provide summer cooling
- Low energy lighting throughout
- Electrical northern awning, fully adjustable out to 4 metres to give ultimate solar control



2) Efficient use of water (~1/3 normal house use)

- 9000-litre Rainwater tank to run laundry, flush toilets, and water garden. Automatic mains backup
- Enviro Save Water valves to direct 'cold' hot water to the watertank.
- Australian native garden leading to a backyard food forest with espaliered fruit trees and raised garden beds. No lawn on site.
- Water efficient tank supplied zoned drip irrigation throughout



3) Material Selection

- Recycled, Plantation or Salvaged timber used throughout. No virgin forest timbers used.
- Bamboo floors (renewable, fast-growing resource) to bedrooms
- Tile floors to the rest of the house (maximises ability of the slab to act as a thermal regulator and heat store/sink)



4) Health

- Easy to clean surfaces throughout – no carpeting.
- Bright, natural light filled house.
- Ducted vacuum system
- Ramps access, grab handles and no strain garden.
- Automatic extraction fans to control moisture build-up and associated mould spores
- Radiant hydronic heating (minimises circulation of dust & dry air)

