

POSITIVE FOOTPRINTS



- Junction House 2012

On a tight block with north to the street, raising both the mass and the living to the upper floor, and using cleverly placed voids to bring light to ground floor made the most of this tricky site.

1) Energy Efficiency. 8 ½ stars out of possible 10.

This house uses 2/3rd less energy to heat and cool than a 6 star house (the current standard), and 1/10 of the energy of average existing housing stock

- Passive Solar design. House orientation, layout, clerestories and voids to bring sunlight deep into all living spaces
- Eaves designed to let in the winter sun, and keep out the summer rays
- Double glazed low emissivity coated casement windows & bifolds to maximise ventilation
- Thermal mass provided by polished suspended concrete upper floor and recycled & bagged Reverse Brick Veneer walls to store the heat in winter and cool in summer
- Upper and lower alfresco decks for inside/outside living encouraging opening up and venting of house whenever conditions are congenial
- Apricus Evacuated Tube Solar hot water system with instantaneous gas boost
- Highly insulated, tight building fabric
- Stairwell door to control thermal flow whilst maintaining visual connection.
- Louver vents to all exhaust fans (eliminates unwanted air leaks)
- Reversible ceiling fans to counter temperature stratification over vaulted ceilings and provide summer cooling
- Ventilation pathways designed to take advantage of sea breeze
- LED and compact fluorescent lighting throughout
- Greenswitches to turn off standby loads before going to bed/leaving the house
- Hydronic heating throughout. No cooling other than sea breeze, fans and mass

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

- Rainwater collected from entire roof via a charged filtered system
- Rounded gutters to enhance self cleaning
- 2x5000-litre Rainwater tank to run laundry, flush toilets, and water garden
- Redwater valves to direct 'cold' hot water, normally wasted, to the watertank
- 5 star wells rated Hansa tapware with waterbreak throughout; 7.5 litre per minute shower roses; and 3/4.5 litre flush toilets
- Greywater lines kept separate for future potential pickup and reuse.

3) Material Selection

- Low Embodied Energy Polished Concrete floor made from Ecoblend concrete (60% cement replacement) with recycled aggregate and steel
- FSC European Redwood timber windows and door frames
- Plantation or Salvaged timber used throughout
- Low VOC GECA certified Bamboo flooring to ground floor
- Bamboo staircase
- Recycled brickwork to bring mass to upper floor, and show off the beauty of recycled brick
- Low Embodied energy, low maintenance cladding materials. Fibre cement weatherboards (doubles the length of time between painting vis-a-vis timber) , and Colorbond
- Fence, Raised Garden Beds and External timber Tanelith E treated pine (ie. no Arsenic, unlike standard CCA)

4) Health

- Zero VOC (Volatile Organic Compounds) paint throughout
- E0 (minimal formaldehyde offgassing) cabinetry and trims throughout
- Easy to clean surfaces to living spaces throughout
- Bright, natural light filled
- Light colours throughout to keep light levels high postponing the need for any lighting until dark
- House follows asthma foundation recommendations for a healthy house. (ie. Low offgassing paints, cabinetry, trims and glues; no carpet; non-convective heating; and plenty of natural light)
- Radiant hydronic heating (minimises circulation of dust & dry air)

