

# POSITIVE FOOTPRINTS



## - Plow House

**On a tight site with compromised Solar Access, the Plow House shows what is possible with clever sustainable design in this renovation of an original cold double brick Federation house.**



### 1) Energy Efficiency

- Passive Solar design – Modern reinterpretation of the existing roof angle to harness the clear solar access over the northern neighbour's roof line whilst providing privacy screening to the new balcony above.
- Double glazed casement windows & bifolds to maximise ventilation to new section.
- Windows allow direct light onto the thermally massive internal double brick wall.
- Apricus Evacuated Tube Solar hot water system with instantaneous gas boost
- Highly insulated, tight building fabric
- Glazed dividing door between new and existing areas to control thermal flow whilst maintaining visual connection.
- Heat shifting fans to bring heat from new upper rooms built into the old roofspace, to the cooler existing bedrooms.
- 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
- LED and compact fluorescent lighting throughout.
- Greenswitch to turn off standby loads before going to bed/ leaving the house.
- Electrical northern external venetian, fully adjustable to give ultimate solar control to the large northern windows.
- 1.5kW grid interactive Photovoltaic system.

### 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, normally wasted, to the watertank.
- Nylex greywater gravity diversion system to underground garden distribution.
- Water efficient Hansa friction point tapware throughout; 7.5 litre per minute shower roses; and 3/4.5 litre flush toilets.

### 3) Material Selection

- Polished Concrete floor made from Ecoblend concrete (60% cement replacement) with recycled aggregate and steel.
- Recycled, Plantation or Salvaged timber used throughout.
- Plantation hoop pine timber windows, with recycled Karri door frames.
- Recycled kitchen with re-claimed benchtops from fallen Botanical Gardens trees. Upstairs vanity bench constructed from the seats of the demolished MCG stand.
- Recycled spotted gum stairs and upper floor.
- Recycled brickwork and paving
- Low Embodied energy, low maintenance cladding materials.

### 4) Health

- Easy to clean surfaces throughout – no carpeting.
- Bright, natural light filled extension.
- Low VOC cabinetry, trims, and paint.
- Radiant hydronic heating (minimises circulation of dust & dry air)

