

POSITIVE FOOTPRINTS

- Bent St Townhouses 2011



The Bent St Project is a two townhouse development that is based around reuse and recycle of the existing building as much as creating new sustainable dwellings. With the challenge of solar access to the front of the block, and a tall disused brick factory on the east boundary, both dwellings are able to achieve 7 star house energy rating by having the living areas elevated to the top floor. With interesting play of roof pitches, they offer bright and spacious spaces inside and out.



- 1) Energy Efficiency Design with a 7 stars rating. A 7 star house uses 25% less energy to heat and cool than a 6 star house (the current standard), and only 1/3 of the energy of average existing housing stock**
 - Passive Solar design. Living to the upper floor to maximise solar gain and 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, aluminium improved casement windows to maximise ventilation
 - Recycled bricks to all brickwork.
 - Apricus Evacuated Tube Solar hot water system with instantaneous gas boost (Provides approximately 70% of the yearly hot water from the sun, and saves around 1 ½ tonnes of CO2 from entering the atmosphere per year.)
 - Highly insulated, tight building fabric. Insulation made from 80% recycled PET bottles.
 - Louver vents to all exhaust fans (eliminates unwanted air leaks)
 - Reversible ceiling fans to provide summer cooling
 - LED and compact fluorescent lighting throughout
 - 1.5 Kilowatt grid interactive Photovoltaic system (Produces enough green electricity to save approximately 2 ½ tonnes of CO2 from entering the atmosphere per year.)



- 2) Efficient use of water (~1/3 normal house use)**
 - Rainwater collected from entire roof via a charged filtered system
 - 5000-litre Rainwater tank to run laundry, flush toilets, & water garden. Waterswitch provides seamless mains backup.
 - Redwater valves to direct 'cold' hot water, normally wasted, to the watertank
 - 5 star WELS rated water efficient tapware throughout; 7.5 litre per minute shower roses; & 3/4.5 litre flush toilets
 - Greywater lines kept separate for future potential pickup and reuse.



- 3) Material Selection**
 - Low Embodied energy cladding materials.
 - Recycled brickwork and Low Embodied Energy mortar (30% cement replacement)
 - Durable Scyon Linea weatherboards
 - Fence and External timber ACQ treated pine (ie. no Arsenic unlike standard CCA).

- 4) Health**
 - Zero VOC (Volatile Organic Compounds) paint throughout
 - Low VOC tile adhesives throughout
 - E0 (minimal formaldehyde off-gassing) cabinetry and trims throughout.
 - Easy to clean surfaces to living spaces throughout
 - Bright, natural light filled living areas

