



## THE BURSTALL HOUSE

An early Eltham mudbrick home, built by Tim and Betty Burstall in 1948, the house has expanded over the years from a modest cottage to substantial home. Dan and Liz and young daughters have lived here since 2016 and have been working in alignment with the essence of the place to bring more life and comfort in ways which consider the world as a whole. Sustainability informed by history, permaculture, downshifting, appropriate technology and behavioural approaches.







#### ENERGY EFFICIENT FEATURES

- Draught proofing
- Passive heating cooling
- Thermal mass
- Cross/thermal ventilation
- Curtains with pelmets
- retrofitted double glazing
- draught seals on doors and windows
- Shading, plantings
- grape-covered pergola

#### HEATING/COOLING

- Nectre wood heater with oven and cooktop
- Evaporative cooling, split system airconditioner
- Water heating: Evacuated tubes + gas booster

#### WATER HARVESTING AND SAVING FEATURES

- Rainwater storage 25,000L
- passive grey water system
- Drip irrigation
- wicking beds
- Measured irrigation controller

#### BUILDING MATERIALS

- Mud brick + weatherboard
- Mixture of single and retrofitted double glazing
- timber deck of cypress (reclaimed hedge row)
- Insulation under floor, walls, ceilings

#### ELECTRICITY

- 3kW solar system on roof with grid connect / standalone options
- small nickel-iron battery system with Selectronic inverter (4.8kWh nominal / 1.5kWh usable)
- Average daily electricity consumption 5kWh total (1.25kWh per person)
- Average 3.3kWh from grid

#### MAINS GAS

- Average annual consumption 8.77 MJ/day (equivalent to 2.45 kWh)

#### MAINS WATER

- Average 250L/day (62L/person)



## STAYING WARM

Generously proportioned rooms with large areas of glazing and mudbrick walls make thermal efficiency a challenge here. A Nectre wood heater and oven, thermal mass, northern orientation of living areas, and careful management of window coverings and internal spaces help to make (most) areas of the home comfortable over winter.





## STAYING COOL

An easterly aspect and mudbrick thermal mass help to keep the home relatively comfortable through hot Melbourne summers. Current strategies include a grape-covered pergola, plantings and pruning surrounding the home, careful management of curtains and ventilation and regular splashes in the river!

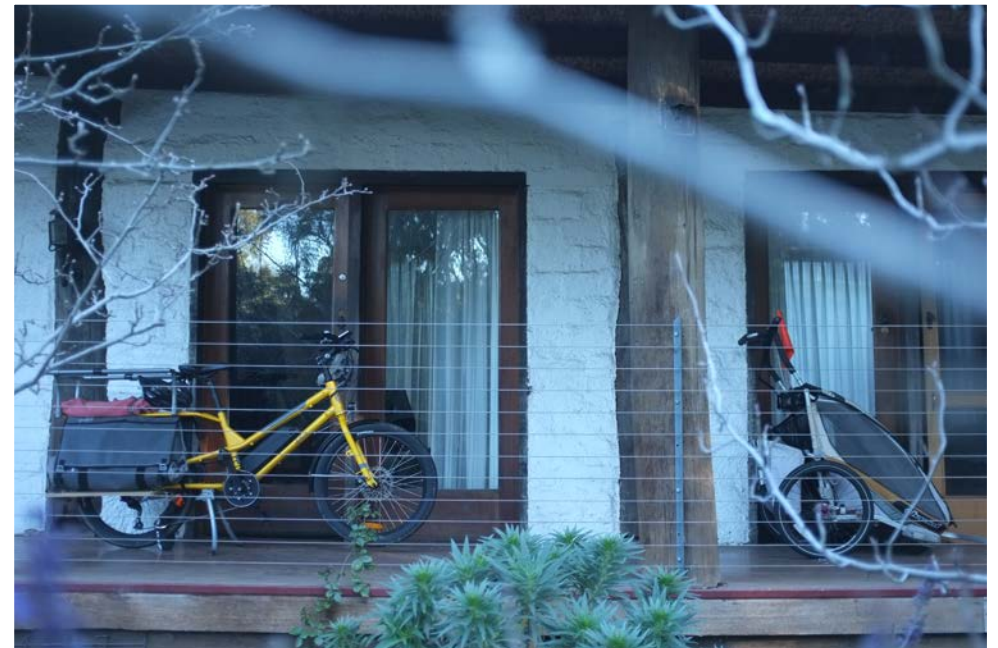






## APPROPRIATE TECHNOLOGY

Suburban households nested within modern industrial culture have to consciously work to avoid the traps of increasing consumption. If all technology requires violence against the natural world, where do we stand with electric transport, battery storage, wood heaters and rocket stoves?





## EFFICIENCY

A mudbrick home built over several generations of owner-builders calls for many unconventional approaches to retrofitting. Lots to discuss about floor and ceiling insulation, pelmets, vent covers and sealing of draughts. With so much glazing in the home, our most recent upgrades have focussed on retro-fitted double-glazing and other approaches to management.







## HARVESTING ENERGY

Nillumbik's ubiquitous Yellow Box *Eucalyptus Melliodora* is vital for the sugar glider, the lorikeet, the local light and the air we breathe, however it does little for one's solar curve. We'll share our experiences with solar panels, evacuated tubes and other ways to harvest flows of energy including wood, water and nutrients.





## STORAGE

The modern suburbanite likes to have lights on at night, heating in winter, water for the garden and food in the hallows of spring. We'll share some of the ways we store energy including rainwater tanks, food preserving, firewood and a modest battery backup system.

