Small footprint, carbon neutral and energy efficient living, delivering affordable density and diversity without losing the positive attributes of openness and nature within our garden suburbs.
“...delivering density and diversity without losing the positive attributes of openness and nature within our garden suburbs “
THE RIGHT TO SUN, AIR, PRIVACY, AND DELIGHT
“...quiet and full of light: designed to breathe, be warm, cool and keep dry”

KEY TO SYSTEM DIAGRAM
A: 6 KW solar panels linked to battery storage system
B: Highly insulated metal deck roof with ‘Green’ roof option
C: 100 mm EPS cladding with sarking on prefabricated timber frames. Total R value 3.54
D: Low-e glazing in thermally broken aluminium frames
E: External solar control
F: Fibre cement cladding to 100 mm EPS cladding
G: Louvre windows
H: Laser cut metal screens
J: 3000 l rainwater tank

KEY TO SITE PLAN
1: Existing house to be refurbished to minimum Energy Standards
2: New Rear Econest on minimum 180 sqm Lot
3: Minimum 2.5 m Rear setback for 2nd storey
4: New Econest Homes on 180 sqm Lots with common driveway
5: Minimum 30 sqm northern outdoor entertainment space
6: 50% reduction in front setback subject to deep planting zone
7: Minimum 2.5 m Rear setback for 2nd storey
8: Maximum overshadowing at winter solstice = 25 %
TOWARDS A CARBON NEUTRAL HOUSING FUTURE

Greenhouse Gas Emissions Avoided
The Esky (EPS) Model, Cannon Hill, Brisbane

Over its life span, it is expected the building will emit 669 tCO2e less than average or standard buildings providing the same functionality. This is equivalent to:

- 2,809 trees planted
- 123 cars taken off the road for a year
- 62 zero energy Australian homes for a year
- 14,000,000 tonnes of CO2 gas removed from the atmosphere

Sources:
- ETool LCA for Cannon Hill, Brisbane - Carbon Market Australia. 5 native trees per tCO2e. US EPA "Greenhouse Gas Emissions from a Typical Passenger Vehicle" December 2011. 1 x 0.8tCO2e / Car/year. Chief Australia's three homes. 0.1 tCO2e per household in annual energy-related emissions. One tonne of CO2 (gas) enters the atmosphere, a tonne has a volume of 0.001 m^3 and a pressure of 1.0 atmospheres.

The depictions above represent the predicted impacts of greenhouse gas pollution according to IPCC reports. A best-case scenario of rapid but green growth towards a services economy and clean energy limit temperature rise to 1.8 degrees C. Adverse effects limited to 1.4 m sea level rise, 30% of total species at risk. An 80% reduction in greenhouse gases by 2050 required to maintain this safe threshold. A business-as-usual fossil-fuel intensive development scenario leads to temperature rise of 3.5 degrees C. This would lead to 14 m sea level rise, possible runaway climate change, a mass extinction event and significant economic and social turmoil. Source: IPCC and ETool LCA of Cannon Hill, Brisbane, Certified 11 July 2017.

The above carbon emission figures are for a single ECONESTING home. There would be a greater impact if the two subject sites were developed as per our proposal with 3 x new ECONESTS and an Energy upgrade to the existing dwelling.
If the entire suburban block of 20 single detached homes were replaced by the equivalent of 60 ECONESTING homes the above carbon savings are feasible. Partial re-development (as shown on the site plan) would still result in significant reduction in Greenhouse gases over the “business as usual” scenario.
DENSITY: An ECONESTING neighbourhood can increase density in a typical block by 3 or more times resulting in an additional 40 or more family/user groups being housed in the same area as this typical neighbourhood block. At the same time, with small footprint living we can achieve 60-70% Open Space and with Planned Developments actually increase the overall tree canopy, creating a more pleasant micro-climate and offsetting the carbon footprint of the new buildings.

DIVERSITY: Econesting is highly sustainable and allows a large diversity of Types to accommodate Downsizers, Fly the Nesters, Home Office workers, Small Families and Inter-generational living - all promoting an active and inclusive Community. ECONESTS can be woven through the fabric of an existing suburb over time minimising large scale disruption and also allowing the option of keeping much of the existing housing stock which can be upgraded to minimum Energy Standards over time.

DONE WELL: With clear and logical Planning Controls the contentious issue of Infill housing could rather be sold as a way of improving the Environmental outcomes of a suburb at the same time as being a way Residents can maximise the value in their own backyard while improving their way of living. The small scale of ECONESTING allows Residents the option of developing for themselves which in turn makes it more economically feasible and promotes development with an Environmental and Social Conscience.