

# Sustainability Action Plan

## Environmental Sustainability



### Our journey

Having read *The Big Switch Australia's Electric Future*, by Saul Griffith <https://www.blackincbooks.com.au>, alsoCAN decided to put their money where their mouth is and trial an electric vehicle (EV).

In Victoria, there did not seem much point in promoting electrifying everything, when the state used brown coal. We focussed on orientation, cross-ventilation, insulation, double glazing & energy-efficient appliances to minimise energy use.

Even so, we designed our 4-unit development containing our home office in Burnley St, Richmond as all electric with an induction hotplate and electric hot water. We used Powershop as our energy provider and enjoyed gamifying our energy use, buying green energy in advance, and checking our usage throughout the day.

By moving to Tasmania where hydroelectric and wind power are the predominant power sources, electrifying everything made more sense. Our energy provider, Aurora does not have a specific green energy product anymore because green energy is a given here.

Initially, Jane was flying back to Melbourne regularly for her projects under construction. Although she carbon offset her flights, it was not ideal. Carbon offsetting would be our last choice for how to deal with global warming; *cutting emissions is ending reliance on fossil fuel use* <https://www.climatecouncil.org.au> She was using public transport to get between construction sites, and occasionally GoGet car sharing.

Our older projects used passive solar principles, often with south-sloping roofs so that the bulk of the facade and windows were north-facing. We modelled sun studies in our Building Information Modelling (BIM) software for shading angles to minimise summer heat gain, used concrete floors and reverse masonry veneer for thermal mass to maximise winter heat gain, and high and low windows for cross ventilation to flush out the heat quickly when the fickle Melbourne weather turned from heat wave to chill.

In Melbourne, we were used to water restrictions and drought, so we prioritised rainwater in our projects. Tasmania does not yet have a water shortage, so it is not yet the norm to install rainwater tanks, except for bushfires or where not connected to mains water.

Small is beautiful. The more space-efficient we design, the fewer materials we use. alsoCAN promoted small, space-efficient design; limiting urban sprawl by designing low-energy walk-up (no lifts) multi-residential developments, advocated for retaining as much as possible in our renovations, and compact, well-designed spaces.

Adaptive reuse is more sustainable. We've been known to spend on labour, rather than materials, to straighten up a frame, add an extra insulation layer to the building, or relocate and adapt building elements to a new layout fitter for contemporary living.

### Now

Having established our practice in Tasmania, we have pivoted to working more locally and travelling to sites in our EV. We are still available for Victorian projects but work predominantly via email and Zoom. We can partner with Marc Dixon Architect in Melbourne if you require contract administration during construction.

While still using passive solar principles, we now slope roofs towards the north, northwest, and northeast to orientate the roof area for solar panels across the bulk of the day.

We installed a rainwater tank to help future-proof our own home office in Launceston.

Condensation is a particular problem in Tasmania with high humidity, better insulated/sealed buildings and a large differential between the outside temperature and the indoor temperature

clients now find comfortable to live in. The days of living in the equivalent of a tent, hugging a hot water bottle in your ugg's are over.

We have been focussing our Continuing Profession Development (CPD) on learning as much as possible about mitigating condensation for healthy homes, and have altered our design detailing to ventilated roofs and facades, and testing wall and roof systems on Speckel [www.speckel.io](http://www.speckel.io).

We reduce and reuse as much as possible. We generally don't knock down buildings unless they are completely knackered, even when they may seem past it to others. And renewing just for the sake of fashion is even worse. We want our buildings to look beautiful and be uplifting spaces but not at the expense of the planet. Adapting an existing building will have more character and patina than demolition and replacement.

## **Future**

Electrify everything -educate clients on fossil fuel free design, no new gas hot water or appliances, no new gas or wood-fired heating.

Water will become a scarce resource -design for, and educate clients on, water saving and onsite water retention.

Reduce, reuse - design for incremental change, keep and reuse as much as possible, educate clients to appreciate what they have, think of ways to adapt existing elements for new uses

Small - continue working with clients on minimising their footprint; set up an image/plan database showing clever uses of space and multi-use ideas.

Low embodied carbon materials -research, catalogue, and implement a low-embodied carbon and long-life material palette; educate ourselves and clients on material choices.

BIM modelling -educate ourselves and increase our use of BIM to also model the whole of life carbon.

Focus Continuing Profession Development (CPD) on environmental sustainability, life-cycle costing, and net zero carbon.

## **InterCultural / Social Sustainability**

### **Our journey**

Dave has spoken at the Environment, Cultural, Economic and Social Sustainability International Conferences in Mauritius, Ecuador & Japan. These conferences spanned the full gamut of sustainability from mitigating global warming to how to sustain dying languages. Dave's research focussed on Social and Cultural Sustainability.

Our clients in Melbourne come from many different backgrounds, and we have enjoyed learning from them and implementing their preferred ways of living in our designs. Having worked in Singapore we learnt to navigate some of the subtleties of South East Asian residential design. At times, it was a steep learning curve. You don't know your pre-conceptions until they are challenged.

Intercultural & Social Sustainability informs alsoCAN's architecture to work towards a deeper understanding and respect for all cultures, taking into account different ways of living when designing for our clients and the community.

Jane's interest in accessible design stems from when she was a member of an Access For All panel and designing public indoor sporting facilities. Equal access is not just important in public buildings, it is also necessary to improve the liveability of residential buildings for ageing populations. We extend the life of dwellings by enabling ambulant and wheelchair accessibility.

## **Now**

Dave is researching and mapping multi-cultural shopping streetscapes in Melbourne, and now in Tasmania in the northern suburbs of Hobart and Launceston, Moonah and Mowbray.

First Nations designed fabrics, clothing and indigenous food ingredients, plus indigenous led tours and learning experiences have been on our radar for a while. Now we are researching how we can move from personal engagement to incorporating in our business practice.

Dave will be attending the AIA Country, Culture, Community 2024 Conference

*Drawing together Indigenous and non-Indigenous architects, designers, artists and thinkers from across Australia on muwinina Country, nipaluna (Hobart), this three-day event will explore practical experiences, real world learning, and realistic action plans.*

We were made aware of the difficulty in retaining doctors in small towns, and the distance from hospitals in rural communities affecting ageing populations, when we were engaged by a client who moved from St.Helens to Devonport to be close to the hospital. We completed an accessible bathroom and kitchen design for her so she could age gracefully at home close to the medical services she required.

We have just completed renovations to an existing shoptop dwelling in Launceston for a retired couple. Access Solutions added a lift and we redesigned the areas around it.

We are currently designing alterations and additions to a holiday house in Bicheno so that is wheelchair accessible.

Designing for the visually impaired is another area we are exploring in our sleepout renovations with talking appliances from Vision Australia, a way-finding handrail and high contrast colours.

Even though it is not required for residential, we are often designing according to the AS1428 Design for Access and Mobility Standards for our residential projects.

Liveability guidelines have been introduced that will mandate some of these accessible design principles that also CAN has been implementing.

## **Future**

We will continue to work on architectural solutions that are sustainable in a holistic way, not just environmentally, but also socially and culturally. We live in a world that is changing in multiple ways.

Obviously, climate change weighs over everything we will do, but we also need to make architecture that will be adaptable to demographic change, whether that is the increasing cultural diversity of Tasmanian cities and towns, multi-generational homes, or our ageing population.

That adaptability will reduce both the embodied carbon and the operational carbon of our projects by looking to make sure that people will not need to, nor hopefully want to, tear them down and replace them before they have had a long and varied life.

Focus on inclusiveness and listening to our clients and community to understand cultural and social differences to improve design outcomes for them.

Focus learning and CPD on First Nations knowledge, connecting and designing on Country. Research and engage indigenous owned businesses and suppliers.

Continue researching Liveability and strategies for future-proofing residential design.

## alsoCAN home office Sustainability Action Plan Timeline

- 2019 relocated to Tasmania  
installed rooftop 5.75 kW Suntech photo voltaic (PV) solar panels & SMA Sunnyboy inverter, added another layer of R4 ceiling insulation, ClearComfort window insulation film to existing timber double hung windows, Raven door & window seals
- 2020 Tasmania, 100 per cent self-sufficient in renewable electricity generation  
<https://www.stategrowth.tas.gov.au>
- 2021 Convert sleepout into wheelchair accessible ancillary dwelling for visually impaired with Vision Australia talking electric induction cooktop and microwave in wheelchair accessible kitchenette  
Mitsubishi electric bulkhead reverse cycle heat pump heating/cooling  
Installed 4000 litre rainwater tank, connected to house & shed downpipes
- 2022 Existing petrol car reached end of life  
Leased MG electric vehicle (EV) to test if viable for work travel  
Plugged in to standard powerpoint at home & fast chargers on long work trips  
Discovered no need for wall charger at home for city driving, but need a longer range car to service clients more than an hour from office  
Discovered MG EV range dropped considerably in Winter, and if using heating  
Could use heated seats but can't avoid heating as need to demist windscreen  
Trialled opening roof hatch and heated seats, worked to some extent
- 2023 Bought Cupra Born EV with ~500km range, much longer range than MG  
Continued to plug in to standard powerpoint at home office  
So far have not required fast chargers for work travel as EV has 5000 km range  
Wait for bi-directional wall charger  
*Wallbox Announces its Latest Bidirectional EV Charger, Quasar 2, has Confirmed Compatibility with CUPRA BORN 77kWh*  
*Wallbox's Quasar 2 will be available for select projects in Europe in Q4 of this year. <https://wallbox.com>*
- 2024 Prioritise indigenous owned businesses in our practice. So far, Yarn'n. <https://yarnn.au/> Research, buy, engage more with First Nations suppliers / practices.
- 2025 Renovate kitchen, replace gas stove with induction cooktop and electric oven  
when available Install Wallbox bidirectional charging vehicle-to-grid (V2G) charger to use EV battery to power house at night and excess power generated to grid, being trialled overseas, not available in Australia yet  
*The current state of bidirectional charging in Australia*  
**Limited availability:** *Several EV models offer V2G (vehicle-to-grid) charging, but the necessary bidirectional chargers are scarce.*  
**Regulatory hurdles:** *Australia lacks a national standard for bidirectional charging, hindering its widespread adoption.*  
**Trial success:** *The [REVS \(Realising Electric Vehicles-to-Grid Services\)](#) trial in Canberra demonstrated the feasibility of V2G technology.*  
**Market entry:** *Bidirectional chargers like Wallbox Quasar are expected to arrive soon, offering a glimpse into the future. <https://www.energymatters.com.au>*
- at end of life replace existing instantaneous hot water service with heat pump electric hot water service
- 2040 Tasmanian Government *Tasmanian Renewable Energy Target to double our renewable energy production and reach 200 per cent of our current electricity needs by 2040 <https://www.stategrowth.tas.gov.au>*