

Strategy Review as at December 2017

Energy Goal: Our energy requirements will be, captured, developed or generated on the property.

Our Energy Strategy to deliver the goal

- Conduct energy audit

This is first on the list for good reason, it helped us determine our position regarding energy consumption – how much of what energy source we used – which then enabled informed decision making so we could tackle the greatest area of energy consumption first. We did it a few years ago and found it very enlightening! **(Completed)**

- Research ways to reduce energy consumption

Our greatest area of energy consumption (as I expected) was electricity, followed by gas, followed by wood. A lot of reducing energy consumption can be behavioural. No cost involved but habits can be challenging, especially the habits of other family members! There are other strategies we implemented, like building and using low energy/alternative energy appliances such as a stored heat cooker, solar oven or rocket stove which we have and use. **(Ongoing)**

- Replace grid supplied with renewable energy generated on site

This is an expensive one, and it took a while to get it working efficiently, but it all seems to be working well. There have been a number of unforeseen impacts, one of them being that some electrical appliances which we got rid of have been re-acquired, like a slow cooker and rice cooker. They can use excess electricity production and reduce our reliance on gas for cooking. **(Completed)**

- Provide electricity storage

This has been done in the form of two, 24 volt, nickel iron battery banks which will see us out and probably be still in use by our grandkids. **(Completed)**

- Investigate biomass energy options

During winter we heat and cook with a Nectre bakers oven slow combustion stove, some of the fuel we are able to source from local and more or less sustainable sources (trees being cleared, dropped limbs etc.) but the majority we have to buy in from a commercial seller. There is considerable work to be done to allow us to reduce our reliance on this type of firewood. **(Ongoing)**

- Find ways of ameliorating high summer temperatures

With the rear of our house facing west, the Western Sydney summer sun bakes us, and it is getting worse with temperatures in excess of 45°C last (2016/17) summer. By working out ways to combat this it will make our lives less frazzled in summer and reduce our reliance on air conditioning, which is NOT powered by the photovoltaic system, but powered directly from the grid. **(Ongoing)**

- Install solar hot water

This is another high expense investment, but it has the best payback period of the big energy stuff. We have had solar hot water in place for over 35 years, originally using a thermosiphon flat plate collector system, which has since been replaced with a more “intelligent” active solar evacuated tube system. **(Completed)**

- Introduce Low Energy Cooking

Various techniques have been developed and are used as required including, solar oven, rocket stove and stored heat cookers. With the development of the solar power focus on energy saving has changed from electricity to gas, resulting in the re-introduction of a rice cooker and several slow cookers to take advantage of extra solar electricity available. **(Completed)**

- Investigate options for active heating and cooling

Currently heating is biomass, with a small amount of passive solar heating, cooling is provided by pulling in cold air through the windows and, when it gets too much, air conditioning. Strategies to be investigated include a means of pulling cool air from under the house into selected rooms and heating by dragging air through a solar heater into the house. **(Ongoing)**

Water Goal: All rainwater falling on the property will be captured, we will reduce our consumption of town water to as low a level as possible.

Our Water Strategy to Deliver the Goal

- Conduct a water audit

In the same way that the energy audit let us work out and address the energy hogs in our home, a water audit let us know the big water consumption areas so we could address them first. We had already done quite a bit of water demand reduction when we did our first water audit but it showed fairly conclusively that the productive garden areas (back and front yard) were the big water users. This needs to be redone to confirm any new findings **(Ongoing)**

- Install water efficient irrigation for fruit and vegetables

This was a big action coming out of the water audit, so that we installed various types of water efficient irrigation (ollas, buried capsules, buried pipe and) in all veggie patches and deep tube, buried pipe and a little bit of porous pipe for the perennials (herbs and fruits etc). **(Completed)**

- Install water tanks

Our first water tanks were installed over 35 years ago, but all up we still have only about 11,000 litres of rainwater tank storage and I would like more. Another 5,000 litre tank is to be installed soon, but if I can work out how to store 20,000 litres or more I would be happy. A connection between the downpipe on the southern side of the house needs to be made with the roof of the carport so that water can be channelled from the stormwater drains to the new tank. **(Ongoing)**

- Install rain chimneys, swales, permeable paths to store rainwater in the soil

In heavy rain we get some runoff into adjoining properties in the backyard and towards the road in the front yard. With a goal of keeping stormwater on the property, as well as using water tanks we are implementing some measures to store water in the soil. One experimental drain chimney has been completed and more will be installed. **(Ongoing)**

- Rain garden

The concept has been developed but there is still design work to be done and a location to be determined, plants have not yet been worked out. **(Ongoing)**

- Introduce behavioural changes to reduce consumption

The usual behaviours (short showers, filling up the dishwasher, washing full loads etc.) are in place but a review of effectiveness would be valuable. **(Ongoing)**

Food Goal: Our food will be produced organically sufficient to contribute to two meals a day for the two of us.

Food Strategy to Deliver this Goal

Sub – Strategy 1: Grow Edible Plants Year ‘Round

- Rotating annual vegetable beds

The basic vegetable production using 14 vegetable beds planted and harvested serially has been developed and implemented. **(Completed)**

- Perennial vegetable beds

Perennial beds for chokoes, Jerusalem artichoke, rhubarb and asparagus beds are completed and in production. A review of the possibility of other perennial vegetable crops would be valuable. **(Ongoing)**

- Herb spiral

The herb spiral (wedding cake) is in place and yielding well **(Completed)**

- Fruit trees (including fruit tree circle, banana circle)

Fruit tree circle, banana circle and other fruit trees are in place and yielding, but a fruit harvest calendar needs to be revised to ensure coverage for the year **(Ongoing)**

- Water Gardens

Two water gardens are in place, yielding arrow leaf and water chestnuts, pickerel rush and acting as water sources for wildlife. **(Completed)**

- Edible “Weeds”

Edible weeds growing in the area have been identified and integrated into recipes regularly in use. **(Completed)**

- Fungi

Commercial mushroom boxes have been used with variable success. Mushroom box home made with commercial spawn got to the “pinhead” stage and then stopped growing. More research and trials required. **(Ongoing)**

- Develop and Utilise Pollination & Predator Services

Self-watering bird bath and insect waterer are in place and the bug hotel is in place and in use. The insectary bed in the front yard needs replanting. Vegetables allowed to go to seed in vegetable patch to attract pollinators/predators. Native garden is in place and growing slowly. Plan for insectary plantings not yet developed. Native bee hive to be installed, one microbat roost in place, one more to be sourced. **(Ongoing)**

- Grow food off site

We are nearing saturation levels for food growing on the site, and there are some crops such as oil and grain crops which require more land than we can commit to, to get a meaningful yield. While some initial work has been done, this is some way away from realisation. **(Ongoing)**

Sub – Strategy 2: Develop Protein Sources

- Chickens

Chook tractor has been implemented for many years and is on its 4th generation, it is functioning well providing eggs as well as fertilisation and cultivation of the annual veggie beds. Aging chickens are placed in the retirement village where they break down and manure straw ready for use as mulch. Some eggs are provided in spring and where there is a need they can be placed inside a moveable fence and used for cultivation as well. They're not used for meat. **(Completed)**

- Quail

Quail house has been completed. There is more study and construction required to bring the area into production. **(Ongoing)**

- Farming Non-traditional protein sources (snails/insects) for consumption

Initial study and gathering of materials has been completed but no real progress beyond that point. Black soldier fly larvae setup (biopod) is not currently in use. **(Ongoing)**

- Aquaponics

This idea was discarded after initial work (construction of fish area and grow beds) due to high (I calculated an increase of 46% on the electricity requirements at the time) energy requirements. With the new energy system being implemented this needs to be revisited. **(Ongoing)**

Waste Goal: No waste shall leave the property

Waste Strategy to Deliver the Waste Goal

- Conduct waste audit

A waste audit was originally conducted years ago but needs to be revisited in the light of new behaviours to determine if any opportunities have been missed **(Ongoing)**

Sub- Strategy 1: Organic Waste

- Composters

Two Aerobins in place to accept organic waste and are working but breakdown of organic matter is slow and cockroach infestation is a problem. Review required. **(Ongoing)**

- Worm farms/towers

The worm bath (worm farm), worm tower in the centre of the fruit tree circle and chooks (tractor and retirement village) can accept organic waste not placed in the Aerobins. Both in place and working. **(Completed)**

- Tree trimmings

Tree trimmings and some other organic waste is sent off site via green bin. This needs to be reviewed to see if they can be treated (eg by electric shredding with current or new shredder) and used on site. **(Ongoing)**

Sub-Strategy 2: Waste Water

- Composting toilet

The toilet has been constructed and sited and a material sourced to be added to assist in composting, but the system is not used at the moment. A design for a solar toilet has also been sourced and this needs to be reviewed for feasibility. **(Ongoing)**

- Banana circle

Banana circle is in place and currently used to treat greywater, compost organic matter and produce bananas, in place and working well **(Completed)**

- Constructed wetland

The constructed wetland is used to treat greywater for the washing machine and provide water for two trees, also papyrus has been removed and added to rot down in the banana circle. **(Completed)**

Sub-Strategy 3: Other Waste

- Use re-usable carry bags

In most cases reusable bags are taken when buying materials not able to be produced, bags are left in the car for the same reason. Performance could be a bit better but is improving with time. **(Completed)**

- Use re-usable containers to replace other plastic bags

Re-usable bags for buying of produce and other things need to be sewn and used. Containers/reusable bags for buying meat etc which are usually provided in plastic bags need to be made/sourced and used. **(Ongoing)**

- Introduce bulk/ethical buying

Some materials are bought in bulk but there has been no comprehensive review or plan put in place to identify materials which suit bulk buying. Ethical buying of bulk meats still needs to be addressed. **(Ongoing)**

- Provide unwanted items to salvation army/PSW/ friends & neighbours

In place and working well. **(Completed)**

Community Goal: We will work within our community to help others live more sustainably.

Community Strategy to Deliver the Community Goal

- Permaculture Sydney West membership

We are both members and are on the committee for PSW, and are very active in providing information and instruction to members. **(Completed)**

- Open Days

We currently open for International Permaculture Day and Sustainable House day every year and have become skilled in preparing and running tours for these open days **(Completed)**

- Web presence

The website has been up and running for almost 10 years, an article is added every week along with freely downloadable resources where appropriate. There is also a Facebook page and YouTube channel dedicated to providing sustainable living information. **(Completed)**

- Start a monthly Street BBQ

No work done on this yet. **(Ongoing)**

- Establish a community newsletter

No work done on this yet. **(Ongoing)**

- St Clair sustainability group

The group has been active for 6 years, with varying attendance, some attendees being local but some drawn from greater western Sydney area. **(Completed)**

- Street library

The street library has been designed and built, and has been functioning for over 6 months. Usage has been weekly at least from locals and others. **(Completed)**

- Offer low cost sustainable living courses to the local community

Courses have been established for use and we have all the equipment to run them but more work needs to be done to develop a venue then publicise them. **(Ongoing)**

Livelihood Goal: We will generate our income ethically.

Livelihood Strategy to Deliver the Livelihood Goal

- Workshops for PSW

Currently programs are developed and run with 5 local councils through PSW to provide income as the councils require it. **(Completed)**

- Workshops at home

Courses have been established for use and we have all the equipment to run them but more work needs to be done to develop a venue then publicise them. **(Ongoing)**

- Sale of E-books on the Internet

One E-book is completed, several others in preparation, there has been no attempt to sell them on the net **(Ongoing)**

- Sale of Advertising on YouTube Channel

YouTube channel and been activated and videos are being added each week. Currently less than 60 subscribers. **(Ongoing)**

- Manufacture and sale of ethical products in-house

Work needed to identify products and determine their economic feasibility for sale. **(Ongoing)**