

What I Have Learned



By Nev Sweeney

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1.0 Introduction

For most of the last forty odd years, we have been trying to live a more resilient, self-sufficient and sustainable life and while I admit to not being the sharpest tool in the shed, that length of experience is bound to have an impact on even the dimmest.

What you are about to read through is a summary of some of that hard won knowledge.

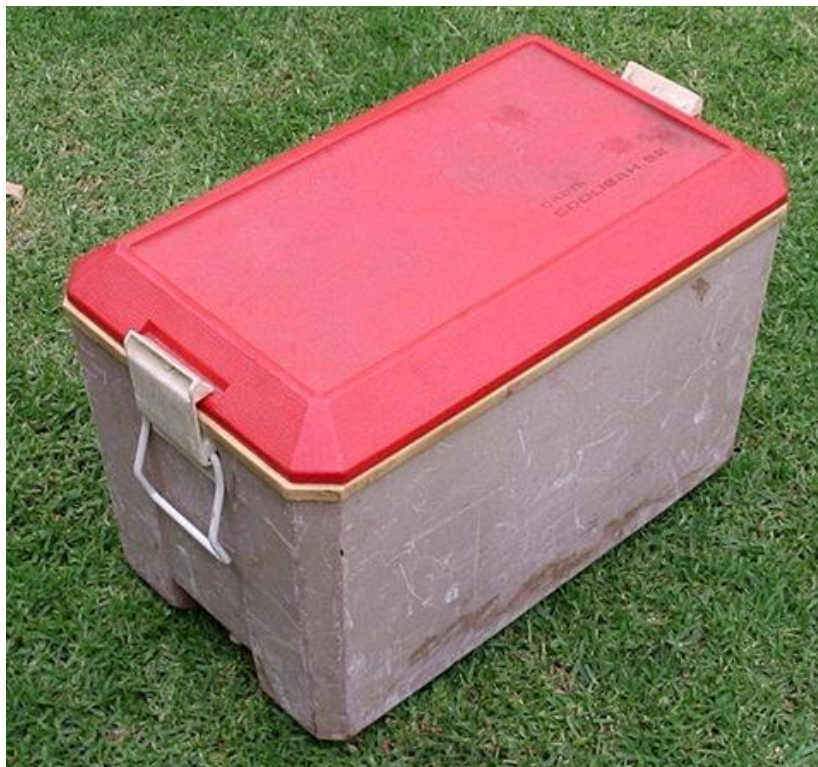
But also, in the words of my old mate Andy Hamilton, whose thoughts I found to be very applicable to this eBook. "hmm... when it comes to "life lessons" it's a fine line between sounding like a pompous git and offering something of value. I'll let you be the judge."

1.1 Convenience is King

Gentle Reader: These are my thoughts and experiences, while you may make the point that not everyone is as lazy as I am, please don't make a big thing about it, I don't want everyone else to know!

While doing some research for a previous article about [corn](#), it occurred to me that one of the confounding factors when designing sustainability (or anything else for that matter) into your garden, home or life in general is convenience. That is to say, if you are making changes to your aforementioned garden, home or life to achieve a greater level of sustainability, is the change going to be more or less convenient to carry out than the status quo?

If the change is less convenient than what you are doing now, it is much less likely that you will keep going with it. I'm not saying you won't keep it going but the odds are greater you will return to doing things the original way if the convenience factor is low.



For example – When I first found out about hay box (stored heat) cooking I wanted to make a hay box cooker, but wanted to do it cheaply. I bought a large, but fairly disreputable looking esky for \$5 from a garage sale and turned it into a hay box cooker. It was very efficient and worked well, but because it didn't look the best (despite my best attempts to tart it up) it spent most of its time in the shed where it was inconvenient to get to, thus it rarely got used. I still wanted a hay box, but it had to look good enough so that it could stay inside the house, so I bought a large ottoman and turned it into hay box cooker. Due to the fact that it looks like a piece of furniture, it sits inside the house, near our front door and close to the kitchen and gets used regularly.

Also - I made a strawberry tower out of a blue 200 litre drum by cutting some holes in the sides and filling it with growing medium. The most appropriate place for it (ie where it would fit) was near our northeast boundary in the front yard. The downside of it was that it is not an area I normally visit on a regular basis, meaning I had to go out of my way to get there. So in the end it did not get the level of attention required for it to be truly productive. Now (having learned the lesson) I am preparing a space for it beside our back steps, where it is next to a main thoroughfare.



Getting back to the corn. We have a number of ways of getting hold of it with varying degrees of “sustainability” and the two most ethical suppliers are both 30 minutes’ drive away. While I am committed to these options, the jury is still out on how much back sliding there will be because two of the other options are a lot more local (within walking distance) and therefore much more convenient!

The idea of making things convenient is built into the Permaculture concept of Zones in that the elements of your design you will most often need to access should be in zone 1 – closest to the house or even in the house itself (zone 0) so that they are easiest to get to when needed ie they are most conveniently located.

I personally had an introduction into the idea from working with a number of large Australian companies for over 20 years in the field of OHS (or WHS as it is now called). We were dealing with the capacity for people to be badly injured or killed, but if a change to plant or process was introduced which was less convenient than the original, the odds were it would be discarded by the time we had walked out of the site. This was often a challenge, but if you could design a change which saved the operator time or effort (ie it was more convenient), they were on your side and the change had a much greater chance of sticking.

So – whadda ya do about it?

Obviously the first thing to do is be aware of it! If you understand that an answer to a problem or a new plan element which increases convenience will be more likely to be used, then looking at your plans and answers through the lens of convenience can be very helpful.

Second, deliberately favouring new technology or design elements which are more convenient to use but still improve your sustainability will score points with the family or others who live in your space. For example, we have a rocket stove which we use outside to cook with, but this is not so convenient in hot weather so we use the gas stove, which uses non-renewable fuel. Although just recently we have bought a highly

efficient induction cooker which can be used inside but also makes use of excess electricity from the solar set up, which occurs during high sun/hot weather times. So it is more sustainable (in its energy usage) than the gas stove, but also more convenient to use than the rocket stove. Needless to say it is getting a work out!



So while you are still in the planning stage of a new endeavour, particularly if it is sustainability related, look at your plans through the lens of convenience and see if you can make things easier for yourself and your family, that way your improvements are much more likely to be successful!

1.2 We are Urban Peasants!

OK, it doesn't happen often but you have caught me in a philosophical mood, so I thought I would put some words down about our experience of being what I call urban peasants and what it has meant for us. If you are after the more "nuts and bolts" type articles I can't say I blame you, give this one a miss, but it might start you thinking!

Just so we all understand the terminology, our friend Wikipedia says "A peasant is an agricultural worker who generally owns or rents only a small plot of ground. The word is derived from 15th century French *paissant* meaning one from the pays, or countryside, ultimately from the Latin *pagus*, or outlying administrative district". He also says "an urban area is characterized by higher population density and vast human features in comparison to areas surrounding it. Urban areas may be cities, towns or conurbations, but the term is not commonly extended to rural settlements such as villages and hamlets".

So although I do occasional work outside the home, I consider that seeing as we work to produce our own food (and other stuff) on our own land, and we live in the suburbs of Sydney that the term urban peasant can apply not only to us but others who are setting themselves up and working towards doing what we do. "So what?" I hear you ask. Good question, but this is my website and I reserve the right to prattle on to my hearts content!

Peasant Eating Vs Supermarket Eating

One of the differences between our peasant approach to food and the dominant "supermarket" culture of food in our country is that rather than ask "what do I feel like eating?", the question is more one of "What do we have to eat and how best can I utilise it"? We as a culture have gotten very use to having whatever sort of food we want whenever we want it, but when you produce as much of your own food as you are able you learn pretty early that life isn't really like that. There are seasonal gluts and

shortages and no matter where you live there will be stuff that grows well in your locality and stuff that grows poorly or not at all. Growing your own stuff points out the huge and complex oil-fed machine that ensures this cornucopia called a supermarket is restocked, and without this machine the supermarket culture is in deep doo doo.

It can actually be a wonderful thing to eat more locally, more seasonally and more sustainably and to rediscover some of the knowledge that our ancestors (both Australian and European) had of how to make the best of what they had. To do this requires creativity and knowledge that is missing from the supermarket culture, but the reward is satisfaction in being able to say that the food on your table was not only prepared but also grown by your own fair hand. While talking about the knowledge required, this leads nicely into the next section, part of it is also being willing to give it a go and try new foods, new ways of preparing foods and growing stuff you might not have thought of trying before.

Having the Knowledge.

We have become a nation of specialists, we trade our labour in whatever specialty we are trained for in cash and then use that cash to provide for all our needs, from putting food on the table to putting a big screen TV in the lounge room, that is the way the world works. For many years I also did this, but alongside selling my labour like everyone else, I spent time not only reading to develop new skills but trying them out in practice to see what worked for us and what didn't. The original idea was to hone our skills so we could head bush but due to a whole stack of things from elderly parents to looking after kids meant the break for the bush never happened. In some respects, this has been a good thing because the challenge is greater when you only have a small amount of land, to be as creative as you can in getting the most out of it.

Can we do more to satisfy our own needs in an urban environment? The answer that comes through to us very clearly time and again is "yes", but you have to know stuff. Anyone with the cash can buy food, water, electricity, clothing etc but to produce any of these things ourselves, to a greater or lesser extent, we have to know how to do it.

The good news is that this is the age of information and there is lots of stuff out there in books, magazines, documentaries on TV and on the internet. The bad news is that although some skills can be picked up in minutes others may take a lifetime to master. The results of our journey are here on our website for anyone to see and use but the big hint is that the time to start developing some of the urban peasant skills is now. If we had put off gaining those skills until we "made the break", well, we would have missed out on lots of good information and a huge amount of fun.

Not being fussy about food

This is something that has come home to me personally. While not being a hugely fussy eater there has been stuff that I could grow but didn't because I didn't like it. I have never been a fan of green beans but grew them because the family ate them, and if I was going to grow them, then I was going to make sure that I ate 'em. We are now growing stuff that is easy to grow and nutritious but years ago I would not have touched with a barge pole, leeks, broad beans and Japanese greens to name three. There are also "weeds" that are abundant in our area like [mallow](#) and [fat hen](#) that we eat now and others that I want to try even though I would not have considered them edible let alone tasty not so long back. You can't count out a potential food source if you are an urban peasant just because your initial encounter did not prove promising. Sometimes you need to be creative to make these new foods palatable and to this end I urge you to become familiar with the concepts of "stir fry" and "curry". You can throw all manner of ingredients into either of these dishes and have them come out tasty at the end. We like Thai style curries and even in Sydney we can grow a surprising amount of the ingredients, but coconut palms do not do well here unfortunately.

The urban peasant lifestyle is not for everyone but it makes sense to us and to a growing number of others although they might not call themselves by that title. It is a lifestyle that allows us to tread lighter on the planet, it is a lifestyle which focuses less on possessions and more on experience and doing for yourself and it is a lifestyle that we find is immensely satisfying.

1.3 A goal without a plan is just a wish

In the early years of our place we wanted to be more self-sufficient, sustainable (although the word was not in vogue then) and resilient, but we were not operating to any sort of plan, so it just grew as we did things, and yeah, it shows. As an example of the fun a no-plan plan can cause – we had some friends turn up to help us put in a herb spiral (turned out to be more of a herb wedding cake, but anyway) and a banana circle. With absolutely no planning at all I determined the correct location for the banana circle was the north-east corner of the front yard – where it was too dry, shady and the soil was crappy.



They languished there for 10 years, producing nary a banana and with the plants not getting much taller than me and being very slender (unlike me). As a result of implementing a planning process (Permaculture) for our place some other friends

helped me transfer the bananas to the back yard where I was able to run waste water directly from the spa, there is no mulberry tree to shade them, and the soil is much better. Consequently they are now higher than the house and produce multiple bunches of bananas every year. All this was the result of a plan.



There is no doubt about it, if I was using a planning process from the start, the back yard in particular would look much different and we would be making much more efficient use of the land, thus allowing us to produce more. The annual veggie patches are all in the back yard, and because they developed over time they are not all together in the one spot: there are six near the southern fence, three closer to the centre of the yard, four against the western fence and one near the northern fence. This means that the chook tractor needs to be carried from one area to another. More importantly in means I need to leave considerable areas open as paths to allow the chook tractor to be

transported between each of the productive areas. (and I'm too old to go starting again from scratch!)

As the years moved on I became exposed to planning processes as a result of work, TAFE and University studies and discovering permaculture. I even developed my own planning tool the [SLAM](#) (Sustainable Lifestyle Assessment Matrix – and no, the name is NOT corny!). Even though we were well into our journey by then I still found the planning process to be very valuable, allowing me to make the best use of time and money to improve our productivity. So it is worth going through the process even if you are not just starting out on your journey!

Having put together a plan and started working our way through it, I have found it useful to review the plan on a regular (or irregular) basis, just to see how things are working out, and to take into account later researches or experience. In addition to ad hoc reviews through the year, Linda and I do a formal review once per year at our so called '[Directors Meeting](#)', usually in November. We sit down over coffee and go through the plan and assess where we are, where we are going and what (if any) changes to the plan are required. This approach might not work for everyone but it seems to work well for us.

1.4 Make it Easy, Make it Yours

There are a number of angles to this one!

The **first angle**, and it fits in well with having a plan, is that when you are putting in a new process or thing to help you achieve better sustainability is to, wherever possible, make sure that whatever you change, it makes your life easier, because then you will keep doing it. This is expanded on in 1.1 (above), but that is the principle.



As an example, to reduce our reliance on fossil fuels (eg gas for cooking, which is very convenient) I put together solar cookers and stored heat cookers. We have them and we use them, but after a long day in the fields (metaphorically speaking) they are not necessarily our go-to, because they require planning and preparation. We still use them but not as much as I would like. But also, our new solar off-grid style system gives us more electricity to play with, so we bought a super-efficient, portable induction cooker. It is very convenient, at least in the warmer months, and uses what is essentially cost free, fossil fuel free cooking. We made it easy for ourselves to do the right thing.

Another angle, is to work with nature rather than against nature, so that your costs and workload are reduced. An example of this we found is by building projects on our block that improve biodiversity (which is useful for its own sake) but they also attract beneficial animals like pollinators and predators to our garden, be they birds or insects. These projects included: a [bee/bug hotel](#), several [insect waters](#), a [bird waterer](#), [insectary flowering plants](#) and a couple of bat roosting boxes. We have noticed that there has been a reduction in the number of certain pests like cabbage white butterfly caterpillars (although then butterflies are still in evidence) and white fly infestations. Also, for the most part, pollination for fruits and vegetables is not a problem.



A third angle, is using the behaviour of your animals to make your life easier. We used to have a chook shed, which I would have to crawl into regularly to remove eggs but also to clean out all the chook poo to distribute around the veggie beds. At the same

time I was regularly double digging veggie beds and then buying in more chook poo, horse poo and cow poo to fertilise them. Then I found out about [chook tractors](#)! I proceeded to make one have never looked back, that was coming up to 15 years ago.



The chooks in the chook tractor are confined in a bottomless structure which allows them to dig over our veggie patches serially, while fertilising them at the same time, all with considerably less work on my part. The tractor does require transporting a short distance to various parts of the yard, mainly because it wasn't part of the original plan so the veggies batches are in several areas rather than adjoining one another. The chooks want to scratch, dig and eat pests/plants anyway, so by using their behaviour in this way, it makes my life easier. Once the chook tractor is moved on (every two weeks) the area is mulched and planted, so that the worms come up and till the soil at a lower depth than the chooks can reach.

So by using some of the techniques I have learned about (and am still learning about) we can make our lives easier while still achieving our goals of living more sustainably and resiliently.

1.5 Have a Go Ya Mug!

And there are several ways you can have a go!

I don't have any formal training in the manual arts, building or electrics but that notwithstanding, I have been prepared to have a go at making and doing things around our house. One of the first things I did was to develop over time a [12 volt DC electricity](#) system through our house, most of which is still operational today. I did some research and then had a go and running wiring, installing lights and 12volt power points, I set up a battery storage system and the associated electronics like fuses and regulators (all back before the internet!). I made mistakes, like killing a bank of batteries by not checking them regularly enough, but I had a go and learned from my mistakes. On one of our open days I had an electrical engineer, after looking at the 12 volt set up, enquire if I was an electrical engineer as well, on me telling him I was not he expressed surprise that a layman could have put such a system together. Very gratifying!





Another aspect of having a go is being prepared to trial new things such as crops, recipes or ways of doing things. We had been looking at reducing our waste, and a contributor to our waste was plastic milk bottles. Keeping a cow or goat was somewhat impractical so we spent some time experimenting with skim milk powder and using it to make our milk. We started out buying 1 kg bags but after we got used to it we committed to getting a bulk 25kg bag of skim milk powder. This not only eliminated waster from this source but saved us money and improved our resilience as well. An unlooked for positive was that we found we actually liked the taste of the new powdered milk better than the stuff we had been buying so it was a winner all round. Once we had a supply of the powdered milk we then started having a go at making dairy products like [cheese](#) and [yoghurt](#) based on it, and have been very pleased with the results.

‘Having a go’ can also mean having a go at thinking of things in new ways and being open to change. As an option to reduce waste and to reduce the amount of crap in our diet, I started making tortillas, based on a mix of freshly ground organic whole wheat and organic baker’s flour. I made them when we would have burritos for tea, but during No Buy July last year I wondered if we could use them more widely and started making

them a couple of times a week, as a quickly made and tasty substitute for raised bread. We have been very pleased with the results.



Of course, having a go doesn't always work out, we had a go at regularly planting Chinese cabbage (wong bok) by including it in our rotation. I did try harvesting it and integrating it into our cooking but we both came to the conclusion that we really didn't like it, so why were we growing it? In this case things didn't work out but that was a learning in itself and we had given it a go! We also had a go at [making our own vinegar](#) of various sorts (white wine, apple cider, red wine and cleaning vinegar) but after considerable work I realised that we don't actually use very much vinegar so it was a waste of time and effort. Silly, but sometimes these things happen!

We have found over the years that being prepared to have a go (ya mug!) has overall been a positive experience, taught us lots of things and contributed to both our efforts to live more sustainable and live more resiliently. So that project, process, new crop or new recipe you have been putting off trying? Have a go, ya mug!

1.6 Porque No Los Dos? (Why Can't We Have both?)

I have a tendency to move on to the next thing once I consider the current project is sorted, but sometimes it is good to recognise that there is more than one way to skin a cat (so to speak) and that you should keep you options open. We had a 12 volt solar electricity system in place which powered the lights and the fridge, with batteries so that if there was a power failure some stuff would keep running. Then some 8 to 10 years ago they came out with this idea of a system that generated power and sent it back to the grid, reimbursing you on your power bill for the power you generated. My initial response was "No, we already have solar".



Our own system?

After some consideration I decided that it did make sense seeing as we still used power from the grid to power parts of the house, why could we only have one system in

place? Porque no los dos? So we had a 1Kw back to the grid system installed, which then (on the 60c feed in tariff) paid for most of our electricity for about 6 years. Then of course they changed things and the power company now gives us much less that we have to give them per KwHr of power. (Which is why we are mostly off grid now, but that's another story).



Or 'back to the grid'

The point is – don't get hung up on one answer to a problem (such as how do we provide ourselves with power?) Keep looking around, don't stop thinking about things when there is one fix in place, a better or easier one may come up which you can implement as well. Multiple fixes mean redundancy and that means greater resilience.

1.7 Sharing is Caring

We produce our own food in our efforts to live more sustainably and there are lots of good reasons why it is a good idea. Over the years I have designed my system to reduce excesses, but we still get them occasionally and when we do we share our produce with family, friends, neighbours and even within our permaculture group. Surely when you see the phrase ‘sharing is caring’ sharing produce is probably the first thing you think of, but there is an even more important type of sharing we do – sharing information.



A bit over 10 years ago we had been living here for 30 years and growing our own food, minimising our water and energy use, reducing our waste etc, but our impact on the people in our street was negligible. It's only in the last 5 years that one neighbour has started to do a bit more of growing their own. Then I found out about Sustainable House Day (or Solar House Day, as it was at that time) and we started opening every year to share what we were doing and what we had learned with others. A couple of years after that I joined a permaculture group and we started opening for Permaculture day.

This was good, we were talking to like-minded people when we opened and within the permaculture group, but I wanted to do still more. As luck would have it, at that time my elder daughter was working as a web designer so about 8 years ago she developed the Under The Choko Tree website for us. That enabled us to reach out to people all over the world and encourage them with our experience that you don't need to move to the country to live a more sustainable lifestyle, that making the cities more sustainable was not only possible, but fun!



Then about 5 or 6 years ago I was given the opportunity to talk to people directly in the Sydney area and run workshops, funded by a number of local councils on a variety of sustainable living subjects. I even got to co-teach a permaculture course with a friend. Most of the work I do to get the word out is voluntary, but so important that we have to keep on doing it, to help people understand what it possible.

So yes, sharing food is important and a basic thing that we humans do, and we need to keep doing it, but in the longer term, sharing information is more important.

.... And then there is sharing our skills, and that is what a permablitz is for!

1.8 What you don't measure, you don't control

I have said it before, but I am a fan of the saying by Edwards Demming, darling of the quality assurance set, "what you don't measure, you don't control". I not only am a fan, but I try to put it into practice where I can.

There a number of ways where we have found where measuring something on a regular (or irregular for that matter) basis can keep us on track towards where we want to be, living more sustainably and resiliently. There is the big picture stuff which helps us monitor where we are on the large scale, like the [Sustainable Lifestyle Assessment Matrix \(SLAM\)](#) I developed and we used to kick things off. This was followed by the more detailed item specific audits for each of the sections in the SLAM eg, energy, water, waste, food, transport etc. This provided lots of detail for setting up our plans, but there is also the low level, day to day stuff which keeps us on track on the smaller scale.

Some of these things include –

Gauges – these help us to keep a handle on our energy output and consumption. We used to monitor the batteries on the old system, do monitor the batteries on the new system and the electricity consumption on the new system. We also have a gauge which monitors our consumption of electricity from the grid. It shows zero most of the time but allows us to check how much electricity we are using when we need back up for the off grid system after some cloudy days.



The one thing they all have in common is that they are not hidden away in a cupboard somewhere, they are out in the open where they can be checked on a regular basis. By checking them regularly throughout the day, just with a glance, you get used to the sorts of readings you should be getting and if something is out of the ordinary you can pick it up and action it quickly. This feature saved us from killing our 12volt lead acid batteries on a number of occasions where something had gone wrong, even a loose wire that could have caused problems when it came time to turn on the lights that night.



Our new system goes one step further and there is an ap on my phone (I know!) which I can use to monitor how much energy the panels are producing and what the battery charge levels are like from minute to minute. This was especially important when I was getting used to the new system and a mistake could mean that it shut down and we would have to switch back to the grid, but it does help us monitor how much electricity we produce vs how much we use.

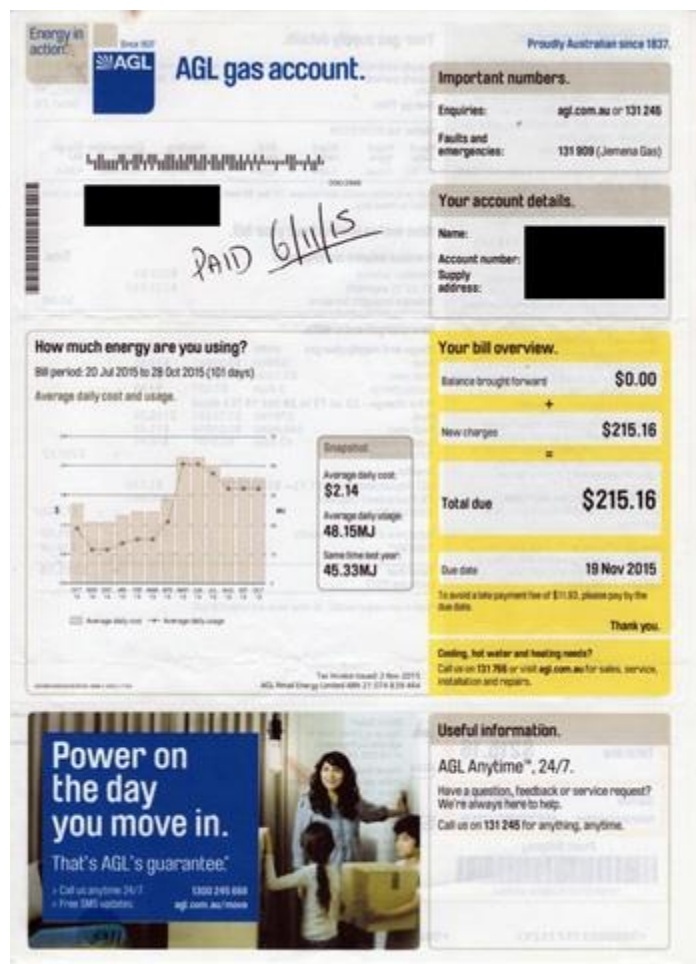


Bills – OK, so nobody likes bills, but when it comes to energy bills and water bills, as unpalatable as they may be, they also contain important information on the consumption of both commodities. If your electricity all comes from the grid and you don't want to pay for an extra monitor, the bill is your best source of information. For electricity, gas and water the bill may tell you –

- How much power/water you used over the last 3 months as an aggregate figure

- How your consumption for that quarter compares with the previous quarter and the same quarter the previous year
- How your consumption compares with other average figures for consumption, depending on the number of people in your household.

This can be hugely important information if you are working to reduce your consumption of water, power or both and is the final report card on how your efforts are coming along. It can also, particularly in terms of water, point out that you have an undiscovered leak if the numbers show a sudden and unexpected jump, or are going up when they should be coming down.



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 Faults and emergencies: 131 388 (Ausgrid)

Your account details.
 Name: [REDACTED]
 Account number: [REDACTED]
 Supply address: [REDACTED]

How much energy are you using?
 Bill period: 3 Jul 2015 to 7 Oct 2015 (97 days)
 Compare with other homes in your area.

1 person: 4kWh
 2 people: 8kWh
 3 people: 1.2kWh

Snapshot:
 Average daily cost: \$1.93
 Average daily usage: 4.96kWh
 Same time last year: 4.52kWh

Your bill overview.
 Balance brought forward: \$0.00
 New charges: \$187.25
Total due: \$187.25
 Due date: 28 Oct 2015

Useful information.
 AGL Anytime™, 24/7.
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Sydney WATER Telephone Payments 1300 246 099 (See below) Account Balance 1300 362 093 Website: sydneywater.com.au General Enquiries 13 20 92 (9.00am to 5.30pm (Mon-Fri)) Faults and Leaks 13 20 90 (24 hours)

Last bill	Payments	Balance	This bill	Total amount due
\$219.88	\$219.88	\$0.00	\$242.09	\$242.09

Please pay by **25/09/19**

Account number: [REDACTED]

Account for residential property [REDACTED]

Charge description	Period	Amount
Flood charges - GST free	1-Jul 19 - 30-Sep 19	\$
Water service		24.30
Wastewater (sewerage) service		154.76
Usage charges - GST free	31-May 19 - 4-Sep 19	
Water	31.08 - 30.06 (9 kL at \$2.2800 + kL)	16.72
	01.07 - 04.09 (21 kL at \$2.1500 + kL. See over for details)	44.31
Total amount due		\$242.09

Your average daily usage

How much water did you use?

1000 litres = 1 kilolitre

TAX INVOICE Date of issue: 4 September 2019

Sydney WATER Online ID: 1482023 Account for: [REDACTED]

BPAY® internet or phone banking. Biller code: 4020. Ref no.: 4627 089 0000

Telephone payments: WaterCard or VISA. Call **1300 12 34 58** (9a hour service)

Direct Debit: from your bank account or credit card. Visit sydneywater.com.au/directdebit

Internet payments: WaterCard, VISA or PayPal. Visit sydneywater.com.au/ipay

Card payments: 0.4% fee applies. Payment number: **4627 089 0000**

Please pay by **25/09/19**

Total amount due **\$242.09**

TRAIN CODE: 631 USER CODE: 1488819 CUSTOMER REFERENCE NUMBER: 000046270890000

<0000024209> <066859> <000046270890000>

Small scale reviews or audits – These are information gathering exercises carried out over time to provide data on a small part of our life, to highlight where we are doing well (so we can do it more) and where we are doing poorly (so we can focus on improving). An example of this is an exercise I carried out recently looking at the food we buy.

I have a fair idea of the sorts and amounts of food which we buy in general, but there is no substitute for measuring and for recording the data. We have a supermarket, greengrocer and butcher within walking distance and to save transport energy these tend to be our go-to (for more discussion on this very point, see [The Corn Conundrum](#)). I wanted to know what we were spending so I could see what opportunities there were for –

- Home production
- Bulk buying
- Substituting from other sources.

First I set the criteria for the audit. It would cover food purchases from the supermarket and green grocer and to a lesser extent, butcher which we have been using less and less as we move towards a plant based diet. It did not include: takeaway (traditional on a Friday night) or bulk purchases like a 25kg of rolled oats and skim milk powder (\$90 and \$120 respectively) which occurred during the time of the audit.

To help me record the data I was generating I put together a (very) simple Excel spreadsheet. Excel spreadsheets also have a ‘sort’ function which helps me to analyse the data by grouping together purchases of similar products over time. The headings I used for the grocery sheet was –

Date – so that I had an idea of the time that items I purchased regularly would last before they needed to be rebought.

Item – this one is important to get right and by that I mean to use the same item name each time they are entered on the spreadsheet. If an item is entered as ‘baked beans’

initially then 'beans, baked' when bought next and then as 'Fred's Baked Beans' a third time it makes sorting for analysis very difficult. Entering each item under the same name each time means they will group together when sorted. Simple I know but it easy to make a mistake..... Or so I've heard!

Size – how many grams, kilos or litres of each product is bought at a time, which can give you a feeling for how much of each product is bought over the time of the audit, and can then be extrapolated over a month, 6 months or year or whatever. Thus you can hit the high use stuff first.

Number – This is just there so that when I bought multiples of the same item, I didn't have to enter each one separately, but I would still be able to work out the total numbers of that item over the period being measured.

Total cost – how much each item (or number of items) cost all up to give me an idea of how much I was spending over time. This column could be aggregated to give me a total spend during the audit timeframe.

I then put together a similar sheet for Fruit and Veg, and meat. If you want a blank copy to model your own on, it can be downloaded [here](#).

To operate the audit was a fairly simple matter. Every time I made a purchase within the criteria I had set out I made sure to get the receipt and then as soon as I got home (mostly, alright I saved them up until the end of the week!) entered the data for each one into the spreadsheet. I did this for a period of four months, but you could do it for as long or short as you like, bearing in mind that the longer it goes on for, the more information it will yield.

After four months I sat down and did a bit of analysis, the easiest way to do that (for me) was to sort for item name so that the items were aggregated, and it turns out over that 4 months we bought –

- 9 tins of sliced beetroot, total weight 7.5kg for a bit over \$21 (could be home produced and/or preserved)

- 26 tins of sliced peaches (in juice), total weight 21.5kg for \$80.65 (no way to grow at our place but could be bought in bulk in season and home preserved)
- 16 x 750g loaves of bread for \$76 (home baking)
- All up \$746 worth of groceries, \$260 worth of F&V and \$10 worth of preserved meats for homemade pizza (we did have some meat in the freezer we were working through to use up).
- Not too bad for a family of 2 for four months I think!

It depends on what is important to you and what your big-ticket items are in your journey towards living a sustainable life, but whatever they are decide what you need to measure to control them, and then do it!

1.9 Dare to Repair

Needless to say, if you have intentions on emulating the stunt below, make sure any and all 240 volt electronics are turned off and de-energised before you advance on them with implements of destruction!

We have a decent size TV, which cost us over \$500 (it was a good deal at the time, being a superseded model) and although it was comparatively new it was outside the warranty period (of course) and all of a sudden a few weeks ago, the picture dissolved and all we got were vertical (and occasionally horizontal) lines of colour.

I tried the usual fix-all technique and turned it off and on, it lasted about 5 minutes and the lines were back. I had also had the back of the TV off and with my Son-in-law (who IS and electronics technician), we checked out what we could get at, but were unable to fix the problem. This was serious!

After some comprehensive research time spent with Dr Google (by Linda) we found out it was the T-Con board that was at fault, whatever that is.



Anyway after a considerable amount of stuffing around we were able to obtain said T-Con board (check out the pic above) for about \$60 plus postage from an electronics spare part supply company online.

While I admit I have no idea what a T-Con board looked like, the thing they sent us looked nothing like what I thought a T-con board should look like! I checked out the back of the TV and none of the obvious electronic circuit boards looked even slightly like what they had sent us, so I assumed (as you do) that they had sent me the wrong part.

I rang them and was scrupulously polite (although they were in the wrong) and did as they requested and emailed them pics of the back of the TV sans cover. The message came back "the part is correct". So I emailed back that there was nowhere for a part of that size and shape of part to go.

The technician I was emailing was also scrupulously polite and very diplomatic when he suggested I might have no idea what I was doing and should retain the services of a professional. But! He also sent me a semi-useful YouTube clip of my particular TV being disassembled.

I say the clip was semi-useful because (a) during the disassembly, it did not show how some of the parts were removed, they just disappeared as if by magic, leaving me to

wonder how on earth I could remove them without rendering the TV unserviceable, and (b) the voiceover was in Thai.

But it did show that the part I had was correct and where it was to go, in general terms. After several hours of head scratching and general mucking around I was able to pull the TV apart, remove the old T-Con board, and replace it with the new one. Things got a little testy when I had to change over a couple of the tapes which connect the T-con board to the TV and they turned out not to have push-in connectors. Fortunately the new T-con was not yet installed and I noticed the connector in question actually had a click down bit (technical term) to keep tape in place as well as forming the connection. But not until after mounting stress caused record levels of naughty words to be uttered!



Fortunately, in the end I was able to get everything nominally in place and connected to the point where I could reassemble the TV.

I then set the TV up with the power cord in place and turned on and pointed the remote at it. Nobody was less surprised than me when nothing happened. But! It turned out that the batteries in the remote were dead and once they were replaced, caused the TV to function more-or-less normally and It has continued to function as it should ever since.

It would have been a lot easier (and more expensive) to just get another TV, but we are not made of money and I would have been crapped off to have to send that mass of electronics to waste, well, at least to be recycled at our next Council electronics drop off day, but you get what I mean.

So, when things go bust, do your research and see if you can put things back together rather than replacing the item. Dare to Repair!

1.10 Believe you can, and you are halfway there

When things go wrong it is very easy to throw your hands up in the air and call for an expert, but with a little research and working through from first principles, it can be possible to work out what the problem is, and once that has been accomplished, develop a fix. I should say at this point that I am not trained in any of the electrical trades, so I am a complete amateur.

The electronics are giving me a hard time! Woke up on Friday morning and the solar system was not charging the batteries. At all!

Mass panic.

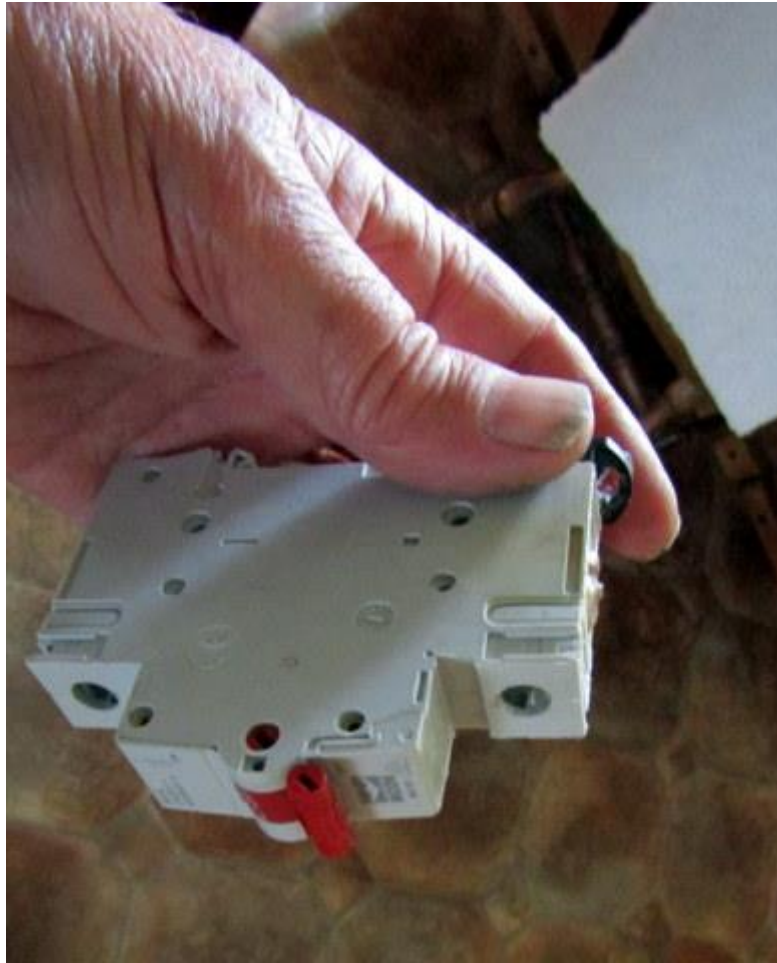
I spent most of Friday trying to find the fault, put everything back on the grid, except the lights, which run direct from the batteries, but after much hair pulling, swearing and discussions with Mike (who designed the new system) still no fix. After continued hassle I decided it was a faulty MPPT, a sort of regulator which matches the panel output with battery requirements. It is one of the more complex 'black box' type parts of the system so it was the logical one to blame.



No problems, Mike could order a new one under warranty..... from the Netherlands!!!! Not much I could do over the weekend, just sit and fume. Monday Mike says he has a spare MPPT and is sending right away. (Excellleeeent!) It arrives Tuesday arvo and I connect it up. It has exactly the same response as the original - shows voltage but no amps - no charge to battery. Which is exceedingly frustrating! Mike makes the point that there is an open circuit somewhere.

The remainder of Tuesday is spent becoming more and more frustrated doing continuity tests with the multimeter showing that everything is OK. Work through from basic principles - What am I missing?????

I am awake at 4:00am Wednesday and spend more time working through the symptoms and possible causes. I did note last night that the MPPT goes dead after sun goes down, ie it is getting no power, so quite probably the issue is the connection between the batteries and MPPT, even though I think there is only wiring between the two.



I give up trying to sleep at 5:30am and head for garage. After inspecting the wiring I realise there is an isolator there I forgot about on the positive cable. I connected multimeter on each side of the isolator and get stupid numbers. I rewired the positive cable from the batteries direct into the MPPT and so bypass the isolator.

IT WORKS!!!!!!

It seems that the isolator had burned out but it was the bottom terminal and I couldn't see it until I went to remove the wiring to isolate it. I'm glad the neighbours couldn't see me doing a happy dance in the garage at 6:00am.



This was only a workaround to get us charging again and so I got hold of a new isolator after much hassle, because it is 24 volt DC, and now we have a new isolator on both the positive and negative cables and the problem is resolved. (see below)



Please note: I was working on the 24vDC side of the system only, not the 240vAC side of the system, which does require specialised electrical training.

1.11 It's the end that matters, you can change how you get there.



I get the feeling this winter (2020) is going to be a cold one and after the summer we have just come out of that may not be a bad thing, but we still want to be comfortable. Quite often the answer to 'how can I be comfortable in the winter' is 'let's heat the whole house!' Certainly we have applied that logic, by installing an open fire when we first moved in (replaced by the more efficient slow combustion cooker/heater some years back) and the Petite Godin slow combustion up the other end of the house when Angela was born.

Lots of people do similar things using reverse cycle aircon, gas or electric heating, and this certainly makes for a comfortable house to be in on cold days and nights, but it can also burn through a lot of energy and a lot of money as well. Yes, we burn wood, which is short cycle carbon, rather than fossil fuels which produces carbon dioxide originally locked away millions of years ago, but wood burners still produce greenhouse gases. So what to do?

If our goal is to remain comfortable in cold weather (without costing a bundle and screwing up the environment), we can shift how we get there by concentrating on keeping our bodies warm directly rather than heating the air around us and allowing it to then keep us warm.

We try to do this these days, using a number of techniques. We do use the wood burner at night to give us a bit of heat and to cook on, but we use clothing layers to keep us warm during the day. One idea we have found very useful is our wearable blankets as our outer layer. These are basically warm blankets which have been modified to make them.....wearable! The detail on how to do that is accessible [here](#) but it is about applying buttons or press studs so that you can wrap the blanket around yourself and then close it up to keep you warm. We find it works very well and when teamed up with a woolly hat, warm fingerless gloves and warm socks or other footwear you can still do most inside jobs and yet remain toasty without heating up the surrounding area. We also use a heated throw rug while we are sitting down reading, watching a movie or whatever, we sit together and with the extra bit of warmth it provides we are quite comfortable. For us it makes use of the power our system generates, but even if you are using coal fired electricity it only uses 160 watts maximum whereas an electric space heater can consume ten times this much or more.

Oddly enough, we don't use electric blankets on our bed but use a number of other techniques to keep warm including microfleece sheets, sleeping together and stored heat from a hot water bottle, or wheat bag etc. More detail on this approach can be accessed [here](#).

So I have found that once we have worked out our objectives, it is a case of being open to new ideas as to how we can attain them by the most efficient, least wasteful means and at a reasonable cost!

1.12 Attitude Determines Your Altitude

For a lot of people this one will also come in under the heading of 'well, der!' but sometimes things can be a revelation to me so I thought I would share it anyway. I have been amazed in the past how a change in attitude, due to a new idea, a new viewpoint or a new learning can result in a situation which I may not have been happy with initially, becoming eminently satisfying in a very short time.

Some Examples

While I started out driving quite small cars, I graduated to larger cars as I grew older. This culminated in driving a Holden station wagon which I likened to a battleship, it was big, ungainly and heavy on petrol, but seeing as it was my choice of company car the costs weren't a big factor for me. Then I came across some new learnings as part of a Master's degree primarily about environmental issues twenty odd years ago. The result was I no longer looked on the behemoth with favour and when it came time for it to go, I replaced it with a much smaller and very fuel-efficient diesel car, and was very happy driving it.

Pest control can be a lot of fun, well OK, not really! We use environmentally friendly controls so as to minimise the impact of a naughty bug on the stuff we are trying to grow so we can eat it, while also minimising the impact of our pest control efforts on the good bugs which help us with that. We do well but one of the continuing issues we have are white cabbage butterfly caterpillars on our brassicas. I have used Dipel, and it works well, focussing only on the pest caterpillars and leaving other insect life unmolested, but it doesn't last long and requires regular spraying during the pest season, which for us these days is for most of the year.



To reduce the spraying requirements I started removing the caterpillars by hand for destruction, and that can be a drag as well. It is an interesting thing that when I recast them from 'pest' to 'chook treat' I looked forward to gathering them and feeding them to the chooks, providing an extra, high protein boost and contributing to egg production. Not to mention that the chooks loved them!

Lastly, and this has occurred just recently. When I was somewhat younger the thought of wearing repaired/patched clothing would have sent me running, but now, understanding that we need to get the most of our resources by repairing stuff it is a different matter. Linda has been doing some repair work on my stuff, I can be a bit rough on clothes, and I love it. It reduces our outgo and conserves resources and I am proud to wear the re-fixed clothing again!

So there you have it, it really can make things easier if you can find the trigger to change your attitude and make behaviour change easier!

1.13 I am Getting Too Old for this Crap!

For the past 10 years or so, the drain from our shower/spa bath has gone directly out to the banana circle. Occasionally we do get a blockage, and I usually fix that by taking the shower head off the flexible hose and applying water pressure down the drain and that clears it.



Under the house I go!

We got such a blockage recently so I applied my usual fix, but to no effect. I went out into the back yard and fought my way through a forest of bananas, arrowroot and cardamom plants, eventually finding the exit point of the drainpipe. I applied the garden hose to that end to use the water pressure to push the blockage back up into the spa. After a few unsuccessful trials there was a sort of 'pop' and there was no longer a barrier to the tap water, and at the same time all of the remaining shower water drained out of the spa.

This did not fill me with joy!



The outlet



What I had to fight through to get there!

Clearly something had come unglued, but I needed to crawl under the house to access it. (did I mention I have become somewhat claustrophobic of late?). I kitted up with an old shirt and pair of jeans and crawled under the house. As I suspected, all of the drained water had gone onto the ground and turned underneath the bathroom into a bit of a bog.

What I found when I crawled into the slop was that the top of the valve I had put in to shift discharge from the banana circle to the sewer had popped out due to the pressure and a panther sized hairball was leaning drunkenly out of the valve case. Clearly this was the source of my problems. (disgusting!)



The hairball!

I was able to fit the valve back in after considerable cursing and swearing, but the screw-on ring that secured it appears to have vanished! Anyway the system seems to work at the moment and at least some water is finding its way to the bananas, plus none is going on the ground under the bathroom. I can see that it is only temporary and

I may need to crawl back under at some stage and try and secure the valve again somehow.

As we all know, prevention is better than cure, and when I originally posted this on the Under The Choko Tree Facebook group, a friend posted that installing a filter over the drain in the spa to catch the hair before it made it as far as the valve would be a good idea. This seemed to me to be a wonderful idea as I was not aware that such a thing existed. I have since obtained and installed such filter and I await to see how well it works. (Thank you HGT)



Hairball preventer in place

1.14 It is not Always for the Reason that they Say

I have read that it is a good idea to turn appliances off at the wall when not in use to prevent 'phantom loads' from wasting electricity and costing you money. Recently I found out that this is, in fact, a really good idea, just not for the reason they say! For a bit of context: our electricity system takes power from the solar panels, channels into batteries, then draws power from the batteries through an inverter to power the house, and if there is excess demand, it switches over and draws power from the grid. There is, however, a persistent fault: if a large power draining appliance is turned when the power in the batteries is low, it will initially be OK, but then a bit later it will shut the system down. The system can also be set to be 'off grid', that is to say, not grid interactive at all.

Anyway, I woke up this morning and checked the clock by my bedside and found that the system had shut down for a short time about half an hour before I woke up. This was concerning because yesterday was a good charging day and we were not fully off grid, so what happened?

What we believe happened is this – The cat has gone foraging to see if she can find any food in the kitchen. At some stage she has accidentally trodden on the push button that activates the toaster, and the toaster has assumed we wanted to toast some bread and swung into action. Sitting over the toaster when it is not in use is a cute little fabric cover which Linda picked up many years ago. As the toaster heated up the cover started to scorch, and at that point the system shut down, cutting off all power to the toaster (and everything else), which caused the toaster to go back to sleep (fortunately). So the result is that everything is OK except for the toaster cover, which is a little scorched (see pic). The toaster is now turned off at the wall and shall remain ever so when not in use!

