

## Revamping homes in a changing climate

By Harry Johnson, HOPE member NSW (March 2022)

After the latest natural disaster, many people will be thinking more carefully before moving into a different home. I have put some ideas together in straightforward language in case some teachers may now consider it to be a relevant topic for discussion with school students during their final year at school and also to be readily accessible to recent migrants for whom English is their second language.

If you see value in the idea that more homes in Australia now do need to be revamped until we adequately address global heating, any additional ideas you come up with would be most useful.

Some thoughts to consider for adults, parents, their children or grandchildren about choosing to buy, rent or build a home or flat in a changing climate to help cut energy, other costs and worries before the next climate change-enhanced disaster arrives.

**POSITION** - Close to shops, schools, basic services and public transport. In flat "feeder" areas, can you safely walk it or bike it? Free-range or battery-reared travel?

**OPTIMUM ORIENTATION** - Check out a possible home on a hot summer afternoon. If it's baking hot inside, forget it. Ideally the long side of a home faces north, short sides east to west, with a garage or car port along the western side for protection from the afternoon heat.

Until we choose to adequately address global heating, homes on flood plains in semi-tropical climates will continue to be genuine "bottom-of-the-harbour schemes." Do your Local Councils and Real Estate agents provide you with transparent, up-to-date, accurate flood maps? If not, why not? Does the Council or government now have improved, mandated Development Laws that prohibit all new housing developments on flood plains in your region? If not, why not?

<https://www.coastalrisk.com.au/home> - "Coastal Adaption Risk" (IPCC 6<sup>th</sup> Assessment) is an excellent, up-to-date resource that is well worth looking at if you are thinking of moving to another home.

Does the street have large, safe trees to shade footpaths and to enhance the scenic amenity? 50% of household water is used in the garden and yard, so does the house block have access and space for a large water tank? If a large water tank is already in place, is it already plumbed to the washing machine?

If the land is flat and well-drained, does it have the minimum area of concrete or other hard surfaces to service your needs, as concrete contains a lot of embedded energy and like other hard surfaces, it retains a lot of heat? Does the land have a large, green surface area-grass, ground covers, shrubs, small trees and a vegie patch? Local native plants have a far lower water demand than exotic plants and they are particularly attractive to native wildlife.

Large trees are great in the bush, parks and on flood plains but should not be too close to any home. Their leaves clog gutters and until the world votes to adequately address global heating, any large trees too close to homes can cause considerable damage in future more frequent, more severe and "unprecedented" storms. Already today our 1 degree+ higher than normal temperatures now send 7 degrees more moisture into the atmosphere than is normal. And now "unprecedented" rainfall events. Who knows why? Why not demand that those we elect now provide us with basic "Community Education" about Barry Commoner's "Laws of Ecology" from the 1960s, the "heat island effect" of rainfall on large cities, reasons why excessive rainfall causes more damage if we choose to live in ever larger cities. Why today there are more excessive rainfall events than in the past.

How could we pay for better "Community Education" to help us make better housing choices? Do we choose the added security such "Community Education" would provide us or do we choose to pay for a future foreign-built, foreign-maintained nuclear submarine due to arrive here in the 2040s?

We are now experiencing tropical weather further south than in the past, so is the home now built or reinforced with cyclone-resilient features?

**HOME FEATURES** - A home with a light-coloured roof, a large roof overhang, with a roof pitch of 30 degrees+ and a well-insulated and well-ventilated roof space is a cooler home. If the home already has a rooftop solar p.v. system and a solar water heater, are both systems facing north, with the solar water heater storage tank as close as possible to the kitchen, where small quantities of hot water are used throughout the day? 35% of household electricity is used to heat water. If the home does not have a solar water heater, does it have a heat pump, another economical way to heat water? Any p.v. or solar heater panels on a roof provide additional insulation to the home as a bonus. Does the home have a north facing veranda? Is the home lowset or highset? If you intend to live independently at home for as long as possible, lugging a week's load of shopping up a steep flight of steps loses its romance when you're 70+.

**INTERNAL FEATURES** - Does the home have most living areas to the north and services and most bedrooms along the southern wall? Does the home have a higher than average ceiling height, flow-through ventilation to benefit from the prevailing southerly breeze, inexpensive ceiling fans in all living areas and bedrooms and all floors as much as possible constructed at one level to help minimise the likelihood of tripping and the possibility of a broken leg spoiling your day? A home with timber, tiled or cement floors and loose carpets are more cost-effective and far easier to clean after a flood than a home with lino or fitted carpets. If an older home has a single-flush toilet with a large cistern, place a brick or a plastic bottle in the cistern to decrease the volume of water it uses. Children in Japan learn the value of water from the very first day at school, as their school toilets are flushed with the water children use to wash their hands.

Water is one of our 4 vital needs, so if you want to use less water and you're not a vegetarian, why not eat a few more vegies and a little less meat? To grow 1 kg of potatoes requires 100 litres of water, chicken 3,500 litres, beef 20,000 litres. And if you really value water, eat less almonds for 1 kg of almonds require 16,000 litres of water.

Another thought .If you choose a home with plenty of green space or enjoy local community tree plantings on flood plains, plant 17 native trees of mixed species to offset 1 year's greenhouse gas emissions from your petrol or diesel car.

Every day 1 large tree draws 1,200 litres of water from the soil and back up into the air as part of the water cycle.

Trees planted towards the west of a home protect a home from the hot afternoon sun, so try to site any solar p.v. panels towards the eastern end of the roof.

In our changing climate, how long will it be before those we choose to elect produce legislation that will no longer allow homes to be built and communities to live on flood plains that now receive extreme flooding on a more frequent basis than in the past? When we accept that such floodplains are no longer suitable for housing, how long will it be before those we choose to vote for design a nationwide program to revegetate such floodplains with native vegetation- groundcover, shrubs and towering gum trees to help replace our native forests lost in the Black Summer bushfires, to provide more natural habitat for our native wild life and for their scenic amenity and for low-impact recreational activities and tourism? We still have no shortage of people of all ages who have no employment, or not enough work or who would be interested in volunteering at such a national tree planting initiative to help revegetate a designated suitable flood plain area closest to their home.

*As a world citizen, the future is what you choose for the world's grandchildren and any other ideas that don't cost the Earth would be greatly appreciated by those still too young to vote for their future!*