 **Landcare Broken Hill Inc**

***Greening the Hill Mk2***

ABC Radio interview No.31 – 26 November 2019

**SUSTAINABLE HOUSE DESIGN**

Today I’d like to talk about sustainable house design.

What is it? It generally refers to buildings that are designed to produce less waste, more re-use and recycling, together with lower life-cycle environmental impacts and costs, better reliability, less maintenance and greater user satisfaction.

“Life-cycle environmental impacts” refers to the impacts of the building over its whole existence or life. For example, a building that requires less heating and cooling has a lower environmental impact than a building the frequently needs to be heated and cooled using power guzzelling equipment. Measured over the life of a building, designing to be more sustainable can have a really positive impact, not only saving the owner much money, but producing a lesser environmental footprint.

So sustainable design seeks to reduce or completely eliminate negative environmental impacts through thoughtful design. The concept is applied across all field of design from the way you build a building, to the materials and products you use, to the way the building assists you to manage your life sustainably.

There are lots of simple design features which can make a building/house more sustainable.

**Temperature moderation**

* A house with big verandas, providing shade preventing direct sun access to the inside
* A house with solid stone walls, which prevents a house heating or cooling quickly
* A house with insulation in its roof space can greatly reduce temperature variations and so save on heating & cooling
* A house with double glazing, or with pull down awnings, to moderate the effect of the sun
* Positioning the house well: the old timers used to design houses well in the Bush so as to capture a flow-through breeze. You could open the front and back doors and the breeze would flow through, freshening the air in the house.
* So building orientation is important
* Tall ceilings can be good at keeping rooms cool in hot climates, as hot air rises. The down side is that tall ceilings means it is harder to warm in the cool months.

**Using the house to produce power**

* Many Broken Hill people already use their roof for power generation – solar panels – which is great for daytime power usage
* There are also small domestic scale wind turbines – producing power whenever it is windy
* Reducing our power usage is important as it conserves our energy, reduces the cost to the owner and helps protect the environment
* Many people produce their hot water passing water through rooftop pipes which are exposed to sunlight.
* Some people have battery storage, a power bank, so that they can store up excess daytime generated power and then use it at night when the sun’s not shining
* Another way to reduce power usage is to incorporate smart power switches, which turn themselves off, being on a timer, when a person is not in a room.
* Then there is energy efficient LED lighting which most of us are well aware of, especially as there have been government schemes changing over our lightbulbs

**Using the house’s roof to catch water**

* Some people wisely catch rainwater that falls on their roof, channelling it into rainwater tanks
* Others use a system that directs water directly into garden. A really clever modern design I’ve seen is to attach a large chain or a very thick rope to your gutter outlet. The chain or rope is then anchored into a garden bed and when it rains, the rain runs down the chain or rope
* A sustainable house also has built great water capture and storage for re-use.
* We’ve come a long way with tank design now, so one can choose from many different designs. If space is scare, then a large bladder tank, somewhat like an inflatable balloon, can be installed under the floor of a house. There are other styles of water tanks designed like large suitcases, they’re flat and rectangular and can stand vertically against a wall under the eaves of a house.
* The other side of catching water is the saving of water – using water wisely. Ensuring you waste less water. Installing water efficient devices is a common practice. Most of our homes have adopted many such features: like water efficient shower heads and duel flush toilets.

**Choosing your building materials wisely**

* There’s an interesting term called “embedded energy” that relates to pre-existing building materials. Pre-existing building materials have already had energy spent on their production in the past. If such materials are re-used, you avoid expending more energy that would be required if you were to create use new materials
* Retaining heritage buildings, rather than knocking them down, is often argued on the basis that they can be reused. Not only is one retaining the heritage values and character, but you are also re-using the embedded energy in the old building
* Looking for and using recycled building materials is a really worthwhile practice
* Another point is to ensure that any new materials come from sustainable sources. So rather than choose wood that’s been cutdown in a tropical rainforest, insist on your wood being obtained from plantation timber sources. Adopting this approach your environmental footprint is significantly less. (At the same time, by avoiding rainforest timber, you most probably will be protecting the habitat of some endangered species of animal or bird).

**Waste management**

* Another key component of a sustainable house, is one that produces little waste.
* I’ve often spoken of ways to reduce waste, utilising composting. People can also maintain a worm farm to eat kitchen scraps whilst producing really rich fertiliser from the ‘worm tea’ liquid they produce.
* Recycling as much as you is important. This will require separating out the different streams of waste. Plastics, cans, paper/cardboard, bottles are all recyclable at the Broken Hill waste depot.
* A lot of other things are recyclable: batteries, smoke alarms, paints, oils, fluorescent light bulbs

**More information**

Community based not-for-profit organisation **RENEW – the Alternative Technology Association** produces two magazines: “Renew – technology for a sustainable future” and “Sanctuary – Modern Green Homes” – [www.ata.org.au](http://www.ata.org.au) 03.9639.1500

**The LAST public meeting of Landcare Broken Hill will be**

**at the Centre for Community, 200 Beryl Street, Thursday 28 November 7.00pm**

**when we will discussing the plans for *GREENING THE HILL MK2* in 2020**

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