

## Energy Efficient Homes Package

Some **twenty-five years ago I designed and built my first energy efficient home** at Eatons Hill on the north side of Brisbane. **Using** common sense – which I later learned went under the terminology '**passive solar design**' I faced the longest walls facing true north (which is a west from magnetic north) and the narrowest walls facing east and west, with the west wall having no windows.

With the design of the main house, I had the roof from south to north lowest in the south and the tallest in the north, about a metre higher than the roof that went from the centre of the house to the north side and in this section of wall, I placed clerestory windows that allowed much natural light into the house and in winter months, the Sun entered the home to heat the concrete floor which was tiled in dark grey slate; in the summer months, the Sun – having a trajectory rising from the south of east and setting to the south of west – was unable to enter the house.

The thermal mass of the floor and a feature brick wall inside, helped draw the heat out of the air, making the ambient temperature lower than outside. I specified gas cooking and hot water to decrease GHG emissions.

After talking with a bloke who became a local Councillor – Graham Ashworth – I gave a talk to the local council (Pine Rivers Shire) about how land developers should do sub-divisions to augment the design and building of energy efficient houses. Although the CEO thanked me for the presentation, the council did nothing.

Over the following years I pushed for energy efficient building practices, gave free talks to high-schools, prospective builders and even wrote a Guide to Energy Efficient House Design (now in it's second print); however, federal, state and local government largely ignored my observations; it was like 'they' wanted to re invent the wheel with taking advice or observations from the likes of people like myself with no formal education.

The fact that continued record air-conditioning sales and consumption – particularly during the 60 Hour Lights Off campaign – is at an all time high confirms beyond reasonable doubt that architects, designers, the BCA (Building Code of Australia), Councils and colleges like TAFE continue to teach outmoded building practices seems to be lost on all but a few people.

Why is there a reluctance to change a system that clearly isn't working ... why is there terminology used that suggests a physical impossibility ... and why is the term of reference of this 'energy efficient homes package' bot addressed ?

I applied as an Assessor under the Green Loans scheme, but despite meeting and – all modesty aside, surpassing the background in the building industry – are there assessors who have or work for organisations that rort the system and people suitable qualified, unable to receive accreditation ?

The reality is that an energy efficient house package must start with the single most important element in the equation, the Sun; as many people with newly fitted insulation will attest; their home is now hotter than it was before the insulation was fitted.

Naturally comfortable homes require less energy to heat, cool or provide good light; therefore an energy efficient home is a comfortable home. Instead of throwing good money after bad design - a recipe for financial disaster – Builders should be taught how to design energy efficient homes in the first place, which is a simple process.

A house that has been designed to be energy efficient addresses the weaknesses of orientation, design and building material choice. Imagine the Sun as aiming a radiation

gun at the home (53% of the Sun's spectrum is infrared heat), so it makes sense to reduce the target size does it not? Yet design after design focuses on aesthetics rather than function and then insulation is added in the hope it will address basic design flaws. Then we throw in environmentally unsafe mercury injected lights into the equation and because houses are not designed/built with the correct orientation, the addition of solar hot water systems and solar power (PV) panels are not effective; it's like picking lotto, you can be near the right numbers, but you have to be right on to obtain maximum efficiency.

If the issue of energy efficient home packages isn't addressed by whichever department is supposed to handle it, then all the money allocated to reduce energy addiction will be wasted and the government will have to pay billions of dollars in building more energy generating plants.

Emission savings will never be achieved because a growing population requiring more housing that is poorly designed will consume more energy; if insulation is making homes hotter and solar hot water and power systems are not working properly, how can there be any savings?

The first step is designing energy efficient houses correctly; if we had started back in 1997 when I first spoke in a government forum; at a rate of 120,000 new houses per annum, there would have been at least 10,560,000 tonnes less GHG emissions, saving residential electricity consumers \$1 billion + in electricity charges.

So I implore you to view my statements with open scepticism; sceptical enough to be open to challenging my statements. I know and have been invited to comment on so called 'energy efficient houses' to be built and in spite of providing free suggestions on how to improve the design, agendas have held sway over achieving a positive outcome.

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