All essential list of 12 for a carbon zero lifestyle

Green up your home for a brighter future. ALEX BRUCE

1. Life cycle design philosophy
   - What’s this “Life Cycle Assessment” or LCA thing about? Life Cycle Assessment can be used to calculate all the impacts of your design choices in terms of carbon, cost, green-house gas emissions, water, toxicity and more. Quantify and compare to improve your design and don’t forget to question everything.

2. Make it financially attractive
   - There isn’t much point making a house carbon neutral if it costs the earth, so invest in areas that are going to give you the best return financially and maximise your positive impact on the planet. Before you commit to any design decision, ensure you understand the capital outlay, cost savings and important-ly the resulting carbon footprint.

3. Design for the future
   - Is your design a fashion fad or a timeless classic?
   - Unfortunately, most houses in Australia are lucky to hit their 40th birthday before they are knocked down, so it’s important to consider the following:
     • Planning and density – don’t build a detached house in a high density suburb or it will just get knocked over and replaced with townhouses.
     • Future proof it – think ahead to what people might want after you’ve finished living there.
     • Quality build – a house that is energy effi cient, comfortable, functional, well built and well finished is going to last a lot longer than a dated, impractical, energy guzzling beast.
     • Durability – if you are aiming for the house to live to a ripe old age, use durable materials.

4. Make it functional
   - The more people a house can house, the less impact per person that house will have on the environment – it’s that simple. Plus, the more functional a building is, the more likely it will live to retirement instead of retrofitment.

5. Quality not quantity
   - In Australia, our dwellings have grown 40% in size in the past 20 years, with 10% less people living in them. That means a house built in 1990 is 40% smaller than what we are building now and pretty much has 40% more impact on energy bills and the environment. So, build a smarter, smaller house with the architecture that works well and feels comfortable.

6. Low embodied energy materials
   - Try to use materials that aren’t responsible for too much – or zero – environmental dam-age in their manufacture. Think about where and how that product started its life and how it got here. As we transition towards renew-able energy, the carbon impact of operating a house (like air-conditioning) will be reduced.

7. Reduce, reuse, recycle materials
   - Yep, this old chestnut again.
   - Reduce – redundant materials and use raw or natural finishes that don’t require ongoing maintenance.
   - Reuse – whatever you can from the last building or other local “retrenched” (knocked down) buildings.
   - Recycle – materials from the last building and incorporate recycled and recyclable materials into the design.

8. Local, local, local but sometimes not
   - It makes sense to use locally produced materials and trades as less transport usual-ly means less carbon. However, sometimes you’ll be looking at a compro-mise between a material that is local but with a high embodied energy versus an imported product that might be recycled. And when you’re consid-ering transportation, investigate effi ciency could shipping from China be less than trucking from Perth to Mel-bourne?

9. Make it “climate sensible”
   - After embodied energy, “heating and cooling” are big factors when it comes to your home’s carbon footprint. We are getting better at this impact and Australia now has “six star” regulations that ensure that any new home build will have a fairly good level of thermal performance. It’s good to aim higher than this, but make sure you’re not compro-mising other aspects of your carbon footprint or return on investment. Consider how much energy and cost went into making that con-crete slab you’ve used to get thermal mass and star rating up.

10. Hot water (don’t land in it)
   - When it comes to running your home, hot water and appliances will impact your energy bills the most, so consider them right from the start. Hot water systems such as solar hot water shouldn’t be viewed as a “built on” or “wait and see if we’ve got the budget” item. Make an informed decision on capital outlay versus ongoing savings.

11. Renewable energy
   - We all love renewables. They can provide a great return on investment and at the same time lower your overall carbon footprint. That said, try not to fall into the trap of thinking “no dramas, I’ll just add a few more solar panels to deal with that”. The embodied energy that goes into making things can never be recovered so make sure you always go back to where did it come from?

12. Low carbon doesn’t always mean sustainable
   - Reducing your home’s carbon footprint is only one metric of sus-tainability and it’s just as important to consider the way we behave in our own homes. Tech-nology like real time energy monitor-ing has shown to reduce energy con-sumption by around 10% by affecting occupant behaviour. That’s a bigger impact than increasing star rating from six to seven stars.

Alex Bruce is a renewable energy engi-neer and co-founder of Etool, a life cycle assessment software company that helps homeowners understand and lower the envi-ronmental impact of new and renovated home designs. Go to: www.etool.net.au

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