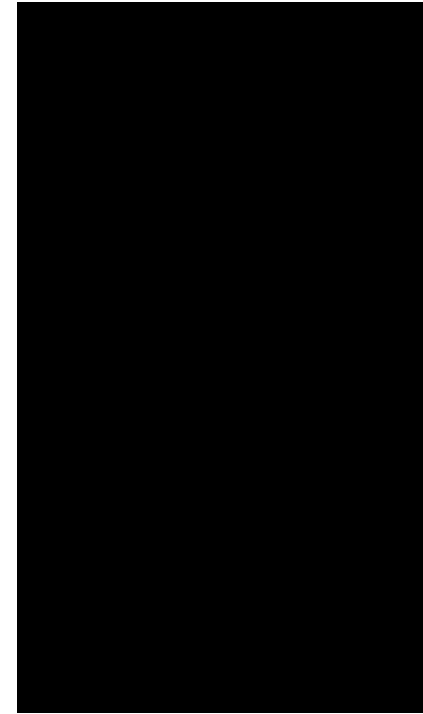


Building a Sustainable House from Scratch



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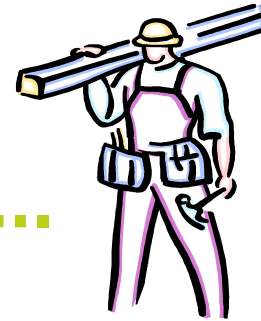
ABN: 51 109 217 138



REGISTERED
Building Practitioner
plus CPD



Definitions



Building:

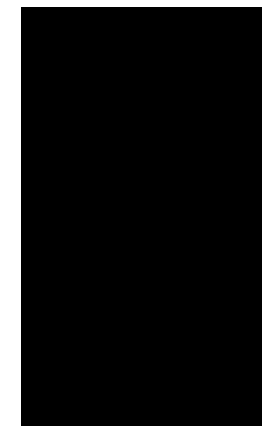
Sustainable: .. Capable of being continued with minimal long-term effect on the environment

House:



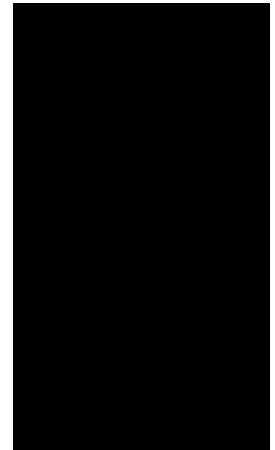
Scratch:

... Hmm... Could it be a dog-kennel??



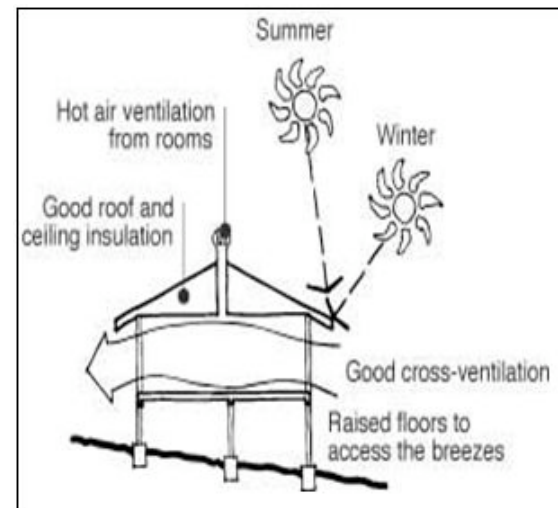
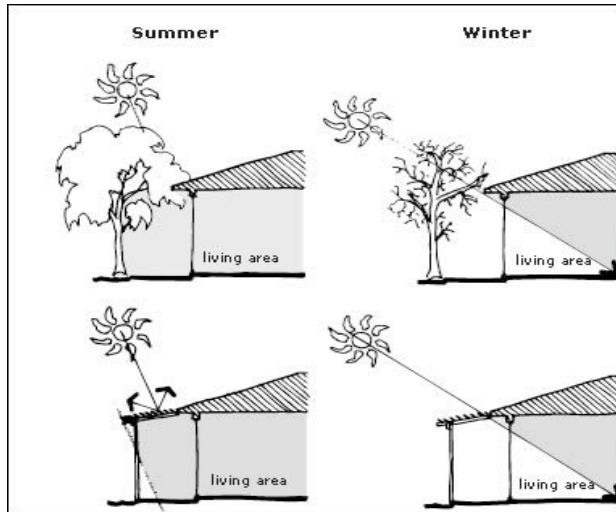
THE BIG 4 (not a holiday park)

- **Passive Design**
- **Water**
- **Materials**
- **Energy**



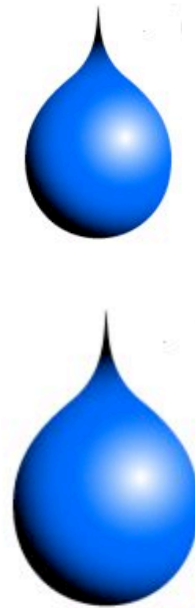
Passive Design

- Design that does not require mechanical heating or cooling but instead uses the natural environment to heat and cool the home
- **Climate Responsive – e.g. Cairns verses Melbourne**
- Orientation
- Insulation
- Thermal Mass



Water

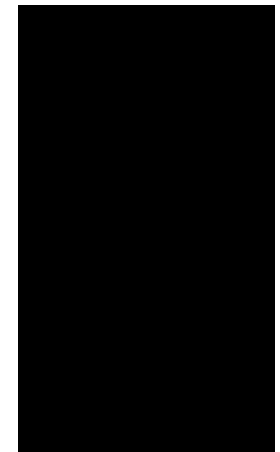
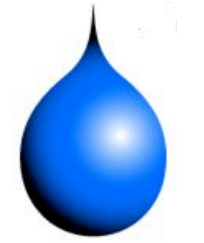
- The average Melbourne household uses about 200,000 litres of water each year.... Target 155 x average 2.5 people per house = 140,000 litres!



Water

Opportunities for water Conservation:

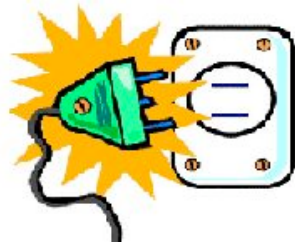
- Flow Regulators
- Water Tanks
- Grey Water Systems
- Appliance Selection - WELS



Materials

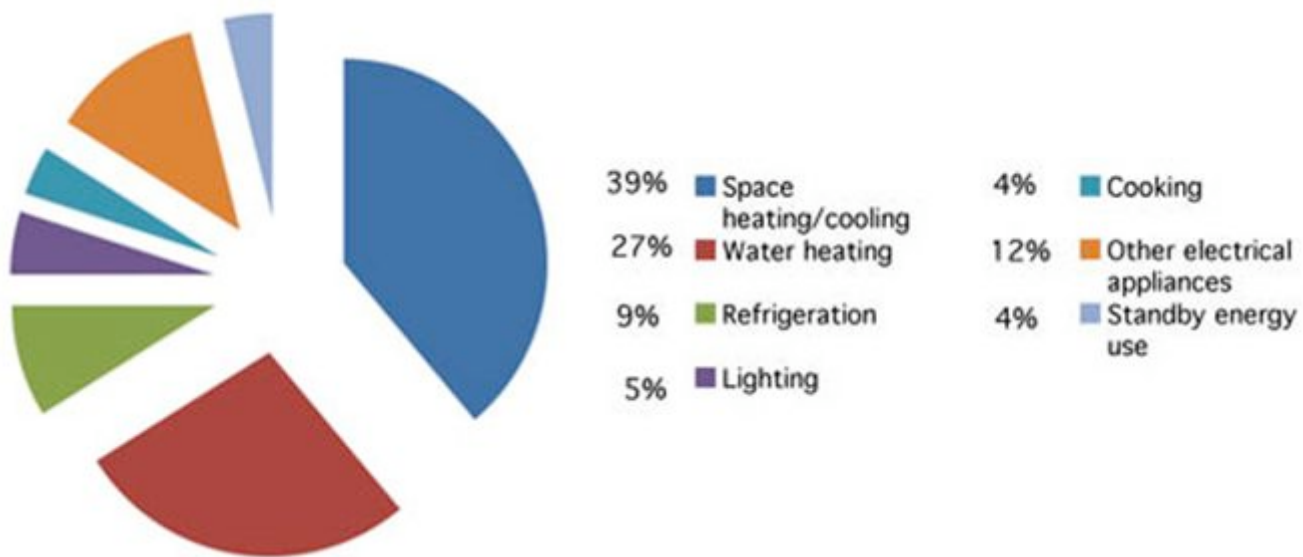
- Efficient use of materials
- Minimise waste
- Re-use existing materials
- **Consider life-span of materials**
- **Embodied energy (Aluminium = 170 MJ/Kg Verses Air-dried hardwood 0.5 MJ/Kg)**
- Chemicals & off-gassing

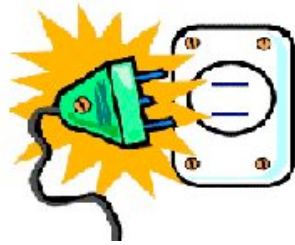




Energy

- The use of energy in the home is the largest source of greenhouse gas emissions from Australian households... **HABITS!**
- The average household's energy use is responsible for about 8 tonnes of carbon dioxide per year.
- **Space heating/cooling & water heating account for nearly 70% of household energy use... SOLAR HOT WATER & PASSIVE DESIGN!!**





Energy

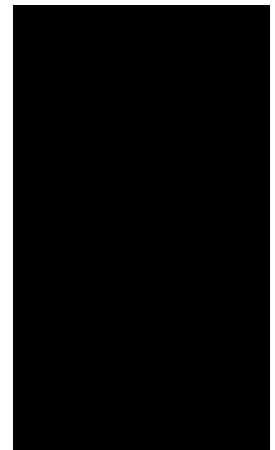
Energy Saving opportunities:

Space Heating:

- Ground-source heat pump
- Hydronic
- Solar Hydronic?

Water heating:

- Heat pump
- Solar





So...lets do it...