GreenSmart®
build green build smart

SUSTAINABLE BUILDING v1.2

Do you want a home that is affordable, cheaper to run, more resource-efficient, healthier to live in – and kinder to our environment? Great, you're in the right place. As a GreenSmart® partner we can help you to build green and build smart. Here are some useful tips to get you started…

1. **Use the Sun for Natural Light and Heating.**
   Good passive solar design, uses increased glazing on the north facing side of your home to allow natural sunlight to heat and light those rooms that are used most often during the day, such as the kitchen in the mornings (NE side) and main living areas (N side). Using passive solar heating and lighting will significantly reduce your home heating and lighting needs.

2. **Insulate More than the Minimum Required.**
   Better insulation is perhaps the single biggest thing you can do to create a more comfortable home which requires less heating and cooling. A small investment upfront can save thousands of dollars over the life of your home, not to mention less condensation and moisture damage. Better insulation means lower power bills and better health and comfort for you and your family.

3. **Use CA Rated Downlights.**
   CA (closed abutted) rated downlights allow insulation to be fitted snugly against the light enclosure. This way valuable heat remains in your home.

4. **Efficient Home Heating Systems – About 34% of Home Energy Use!**
   Installing an efficient home heating system is money well spent. Heat pumps and modern wood and pellet burners have excellent heating efficiency. Electric heaters, Condensing gas, electric hot water radiators and electric underfloor cables have above average heating efficiency (source: BRANZ level website www.level.org.nz).

5. **Efficient Hot Water Systems – About 29% of Home Energy Use**
   Consider an efficient hot water system such as a heat pump hot water cylinder or solar hot water system. They will cost more upfront but will cost less than half the running costs of an electric hot water cylinder. Locate cylinders as close as possible to the kitchen and bathrooms to reduce the need for pipework and heat loss. Set to 60º to deliver hot water at 55ºC - for safety, as well as energy savings. Insulate your hot water pipes where possible to minimise heat loss. $1000 government subsidies may also apply for using specified heat pump and solar systems - visit www.eeca.govt.nz for details.

6. **Use Energy Efficient Appliances – About 29% of Home Energy Use.**
   Use Energy rating labels when comparing new appliances. The labels display energy use (usually kilowatt hours per year) and star ratings. Each star represents an extra 10% or more savings in running costs. You can also look for ENERGYSTAR® labels which are only awarded to the most energy efficient appliances in each class.

7. **Use Energy Efficient Lighting – About 8% of Home Energy Use.**
   Consider compact fluorescent lights (CFL's) which use up to 80% less energy than standard incandescent bulbs. Alternatively, consider halogen, fluorescent tubes or super efficient LED lighting.

8. **Conserve Water.**
   Use low flow shower heads and taps (9 litres or less per minute) and dual flush water efficient toilets (6/3 litres or less). Visit www.waterrating.gov.au to search for water efficient plumbing fixtures and appliances. Did you know front-loading clothes washers use much less water, electricity and laundry detergent than top-loaders? Use a rainwater tank to store water for the garden and/or use in the laundry and toilet. Consider a greywater system which processes waste water from the laundry, shower, bath and vanities for re-use flushing toilets and/or for subsurface garden irrigation.

9. **Choose Environmentally Preferable Materials**

   Use only wood from renewable resources, preferably NZ plantation grown timber or timber managed by the Forest Stewardship Council (FSC) or a similar recognised certification. Use non-toxic materials as much as possible with zero or low volatile organic compounds. Use sustainable building products which are sourced, produced, used and disposed of in an environmentally and socially responsible way – refer to recognised environmental product labels if available. Use products which can be recycled or have recycled content.

10. **Build to Last.**
    A well-made house can last for many years, and it should. Remember, there is little point in using sustainable materials if they don't perform well, aren't durable or affordable. A simple rule is to choose sustainable products which do not significantly compromise the homes performance or add considerable hidden transport or manufacturing costs.

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Want more information? Visit www.greensmart.org.nz

References

Beacon Pathway – www.beaconpathway.org.nz
BRANZ – Study reports SR155 (2006), SR 159 (2007), level book series and website www.level.org.nz
Comparing energy efficient appliances – www.energyrating.com.au
Comparing water efficient plumbing and appliances – www.waterrating.gov.au
Efficient home energy and water use – www.smarterhomes.org.nz
Energy Efficiency and Conservation Authority – www.eeca.govt.nz

