




# The Landscape Contractors' Association of NSW Limited



ACN 002 644 920 ABN 37 116 532 957

 8 French Avenue BANKSTOWN NSW 2200

 P O Box 1226 BANKSTOWN NSW 1885

 (02) 9790 5151  (02) 9796 2726 Toll Free  1800 043 571

 [lca@lcansw.com.au](mailto:lca@lcansw.com.au)

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Chairman  
Standing Committee of Public Works  
Parliament House  
Macquarie Street,  
Sydney NSW 2000

**RE: Inquiry into Energy consumption in Residential Buildings -  
LANDSCAPING**

The NSW Landscape Contractors Association are pleased to respond to the request received to offer comments in regards to energy consumption and the ways it can be reduced through good design and practice in the landscape field.

The Association in conjunction with other industry bodies and the EPA has for the last 3 years been working actively to provide and promote better environmental and energy efficient standards and practice. We welcome the opportunity to make this submission and look forward to any government sponsored initiatives or assistance to achieve energy efficiency and long term sustainability which we are sure, the committee would like to see implemented.

The following is a brief summary of methods and some current industry references to reduce energy consumption through efficient landscape design and installation.

Yours Faithfully,

David Bambridge

Director of Education and Training L.C.A NSW

**LANDSCAPE DESIGN  
APPROACHES TO REDUCE ENERGY USE**

- **Plant species selection and layout** – should be carefully planned to minimise on-going maintenance and address solar access. Thermal considerations of heating and cooling and the costs associated with heater, air conditioners, clothes dryers and other high energy appliances can be reduced by appropriate species selection and layout. Trees, rooftop gardens and trellis plantings to walls of buildings can also reduce the heat absorbed and reflected by hard surfaces in summer whilst contributing to biodiversity.

*“One mature tree potentially provides as much cooling as five, three-kilowatt air conditioners. Landscape can help cool a building through trees that intercept most of the solar radiation arriving at the top of the leaf canopy. The extent is determined by the leaf area index (LAI) and most plants have at least 36 times as much surface area for energy interception as a canvas awning. A large tree is able to reduce the surface temperature of a roof by nearly 30 degrees Celsius”.*  
(Johnson. C ,2003)

- **Lawn-** Excluded where inappropriate. Selected for durability and mowing characteristics that minimise energy inputs. Large lawn areas should be discouraged as the energy requirements are significantly higher than planted zones or native grass areas in establishment and long term maintenance. Where used lawns should be in situations of full sun and orientation to optimal growth conditions.
- **Site disturbance** - Retention of existing levels and mature vegetation significantly reduces the energy inputs in all phases of landscaping. Cut and fill associated with concrete slab on ground building construction should be discouraged. The cost savings initially achieved over alternatives forms of residential dwelling construction are lost in the need to implement high energy solutions for drainage and the retention of cut / fill areas. Termite protection barriers can in slab on ground be expensive to install and costly to maintain as well as environmentally unacceptable.
- **Lighting design** – Solar lighting, timers, sensors, low voltage lighting. All should be encouraged as methods of reducing energy use.

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- **Irrigation design** - Rainwater tanks should be compulsory for the collection of water for irrigation. Drip irrigation systems encouraged to reduce water consumption. Large lawn areas should be discouraged as generally they consume disproportionate volumes of water and energy in their establishment and maintenance
- **Maintenance** – Low maintenance gardens which minimise fertiliser and pesticide use should be promoted. Mowing (fossil fuel consumption ) and the use of chemicals and fertilisers excessively degrades the environment and contributes to excessive energy inputs .
- **Council Codes** - Landscape requirements for new developments are a necessary part of the approvals process of many Sydney local councils. The requirements of local councils Landscape DCP's is proving to be an effective method of ensuring appropriate trees and shrubs are being planted and protected in new developments whilst encouraging environmentally sound and energy efficient construction methods and solutions. More can be achieved All local councils should be encouraged to implement effective Landscape codes and Vegetation Management plans.

### **OPERATIONAL METHODS TO REDUCE ENERGY USE IN THE LANDSCAPE FIELD**

- **Reuse of site soil.** Retain and amend site soils wherever possible. Use of composted green waste should be encouraged as a soil additive and improver in lieu of soil replacement which is still current common practice.
- **Minimise site disturbance** - Fenced exclusion zones on site should be encouraged to ensure that the existing vegetation can be retained and protected, cut and fill minimised.
- **Waste minimisation** - waste materials separated for recycling. Inducements need to be substantial to foster research into further recycling of landscape waste materials.
- **Materials** - sourced from local suppliers. Use of recycled building materials is to be encouraged.
- **Landscape plans which conform to Clear Codes should be produced for all new developments.**

### **POTENTIAL RESEARCH & EDUCATION METHODS TO IMPROVE EDUCATION AND CONSUMER AWARENESS**

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- **Course modules** – Introduction and funding for course modules at university and Tafe level which encourage energy efficient / environmentally sensitive methods in the landscape field.
- **Consumer attitudes and Consumer educational programs.** – Awards and community education programs should be directed to highlight the community and individual cost benefits in energy efficient landscape design.
- **Industry Level-** promote the training and best practice methods by industry based programs in conjunction with consumer education.
- **Government initiated best practice** – a good example of the failure of this is in the current method of high energy road verge maintenance where the regenerating, surrounding or in many instances, existing natural vegetation is supplanted by mowing or slashing over a period of two to five years to promote a grassed surface with ultimately higher energy inputs required to maintain it in the amended state. Progression and encouragement of natural vegetation systems in these instances could be presented as a model of energy efficiency and reduced costs over a longer budget term.

**There are of course many other significant areas where best practice can achieve substantial energy savings of all forms of resources and in the limited time available for comment and discussion we have attempted to outline only a few.**

The NSW Landscape Contractors Association would encourage the committee to especially refer to the detailed work done in the documents referenced following. In particular the Draft Model DCP and the Environmental Management Plan and attached literature.

## **References**

- Marrickville Council DCP No. 32 Energy Smart Water Wise (2001).
- Parramatta City Council DCP No. (2001) - Section 4.1 Environmental performance
- Johnson C (2003) Greening Sydney. Government Architecture Publications, Sydney.
- Draft Model Landscape Development Control Plan (August 2001) Landscape Industry Environmental Management Project
- EPA (August 2002) - Model EMP Environmental Management Plan for Landscaping Works. NSW Environmental Protection Authority, Sydney