Sustainable landscape

The great thing about sustainable landscaping is that it can simultaneously influence aesthetics, air quality and climate modification.

There are literally hundreds of definitions for 'sustainable' but the basic idea is that if something is sustainable it can keep going indefinitely. Natural systems have been operating successfully for millions of years. Nothing made by humans can do that.

Growing native and indigenous plants

What is the difference? In general terms, native plants are all plants from Australia. Indigenous plants are those specifically native to particular places in Australia.

Sustainable landscape is an approach to designing and constructing the artificial landscapes that surround our buildings. These landscapes should maintain themselves and survive by being part of the natural cycles of the local environment.

In many cases this means finding out what the original local environment was like. This is often difficult, as in our cities and even in rural areas the landscape was significantly changed after European settlement.

Sustainable landscape means putting back much of what was in place before development. It may also mean introducing things that were not there before.

SITE

Sustainable landscaping is about more than planting Australian natives, it is about designing landscapes to fit the new ecology created when buildings are constructed. It can include food producing gardens irrigated by captured stormwater and landscaping practices like 'Permaculture' ([1]).

Sustainable landscaping includes such diverse approaches as restoring creeks where development has trammelled or annihilated their previous course, or creating roof gardens to replace the productive capacity of the land taken up by a new building.

Sustainable landscape may be used to control salination, help take up carbon dioxide and contribute to restoring and maintaining biodiversity.

When choosing a site, take account of existing vegetation for windbreaks, shading and views.

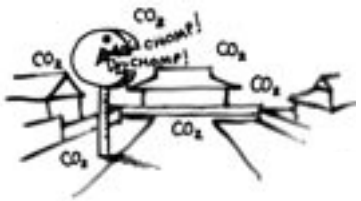
The location of vegetation can influence choices about building orientation: a tree may shade part of a site and limit solar access but be an essential part of retaining soil, providing habitat and creating shelter.

Design landscaping to be experienced inside and out. Sustainable landscaping can be employed to create shade, or to enhance or frame views. It can be attractive to look at and also provide privacy from surrounding buildings. It can also supply food and help create pleasant areas for recreation. [See: Choosing a Site; Biodiversity On-site]

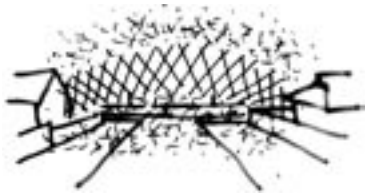
This street needs ...

A pump to take up stormwater

An airconditioner to improve the climate



A device to capture carbon dioxide



A dust catcher and air filter

Shade from ultraviolet radiation

WATER

A house covers ground that was once productive natural landscape where rain soaked into the soil to support vegetation. Its roof can be used to capture rainwater that can then be used to irrigate new vegetation, perhaps even on a roof garden or balcony. Capturing water this way also reduces the release of stormwater to the street.

Low water-use vegetation or 'xeriscape' can greatly reduce the need for supplementary garden watering. Indigenous species are usually the best for the low rainfall conditions found in much of Australia.

Vegetation can even take up effluent via sub-surface irrigation, especially in outer urban and rural sites. [See: Rainwater; Outdoor Water Use]

AIR

In a healthy house the inside and outside are designed to work together. Sustainable landscaping helps to maintain a healthy internal and external environment. Vegetation can be used to filter air from outside whilst indoor air quality is improved by selection of appropriate plants - some are able to take toxins like formaldehyde out of the air.
[See: Indoor Air Quality]

Vegetation can create buffers and filters for noise, wind and dust control.

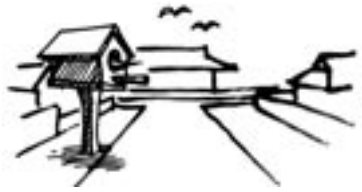
A new science of 'biophilia' (love of nature) is developing from the recognition that vegetation and 'natural' environments have a measurable impact on our psychological health.

ENERGY

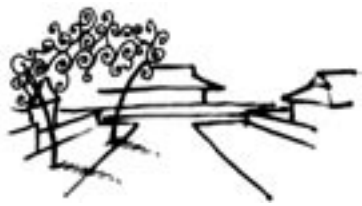
Appropriate landscaping can enhance passive heating and cooling. Used as an integral part of passive design strategies, windbreaks can reduce wind chill or the impact of hot winds. Vegetation can cool and filter air as part of a passive cooling strategy. [See: Medium Density - Adelaide; Passive Solar Heating; Passive Cooling; Shading]

Shading needs to be seasonal and is best provided by deciduous plants. Australia has few deciduous native trees (the Toona australis or so called Red Cedar is one). Other "deciduous" natives such as Brachychiton lose their leaves in summer and therefore can not moderate solar penetration. It is best to assume that most native vegetation will give permanent or semi-permanent shade. [See: Biodiversity On-site; Outdoor Water Use]

Sustainable landscaping favours native and indigenous species but sometimes, for the purposes of growing food or providing seasonal shade, it is reasonable to use non-native vegetation. In these circumstances landscaping should be designed as part of an inter-related system. For instance, captured rainwater is used to irrigate deciduous plants that contribute directly to a building's passive solar performance.



Wildlife habitat



Something decorative?

And low maintenance!

This street needs trees!

ADDITIONAL KEY REFERENCES

(1) Permaculture - A Designer's Manual by Bill Mollison, Tagari 1988.

A Field Guide to Melaleucas by Ivan Holliday, Hamlyn Australia 1989.

Australian Native Gardening Made Easy by Dick Chadwick, Little Hills Press 1999.

EcoFriendly House Plants – 50 indoor plants that purify the air in homes and offices by B.C.Wolverton, Weidenfeld & Nicolson 1996.

Gardener's Companion to Eucalypts by Ivan Holliday and Geoffrey Watton, Lansdowne Publishing 1997.

The Australian Gardener's Wildflower Catalogue by Denise Greig, Angus and Robertson, latest edition.

Introduction to Permaculture by Bill Mollison, Tagari 1991.

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