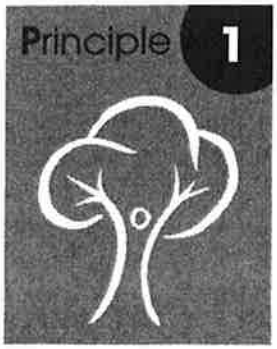
Observe and Interact

Beauty is in the eye of the beholder



Good design depends on a free and harmonious relationship to nature and people, in which careful observation and thoughtful interaction provide the design inspiration, repertoire and patterns. It is not something that is generated in isolation, but through continuous and reciprocal interaction with the subject.

Permaculture uses these conditions to consciously design our energy descent pathway.

In hunter-gatherer and low-density agricultural societies, the natural environment provided all material needs, with human effort mainly required for harvesting. In pre-industrial societies with high population densities, agricultural productivity depended on large and continuous input of human labour.[1] Industrial society depends on large and continuous inputs of fossil fuel energy to provide its food and other goods and services. Permaculture designers use careful observation and thoughtful interaction to reduce the need for both repetitive manual labour and for non-renewable energy and high technology. Thus, traditional agriculture was labour intensive, industrial agriculture is energy intensive, and permaculture-designed systems are information and design intensive.

In a world where the quantity of secondary (mediated) observation and interpretation threatens to drown us, the imperative to renew and expand our observation skills (in all forms) is at least as important as the need to sift and make sense of the flood of mediated information. Improved skills of observation and thoughtful interaction are also more likely sources of creative solutions than brave conquests in new fields of specialised knowledge by the armies of science and technology.

The icon for this principle is a person as a tree, emphasising ourselves in nature and transformed by it. It can also be envisaged as the keyhole in nature through which one sees the solution.

The proverb "beauty is in the eye of the beholder" reminds us that the process of observing influences reality and that we must always be circumspect about absolute truths and values.

Observe, Recognise Patterns and Appreciate Details

A process of continuous observation in order to recognise patterns and appreciate details is the foundation of all understanding. Those observed patterns and details are the source for art, science and design. The natural and especially the biological world, provides by far the greatest diversity of patterns and details observable without the aid of complex or expensive technology. Those patterns and details provide us with a great repertoire of models and possibilities for the design of low energy human support systems.

While good observation is the source of new insight and creativity, it is also the foundation for renewing the most basic abilities that we appear to be losing as fast as technology finds substitutes. For example, observation of a baby's pattern of bowel movements and early action to hold them over the potty at the right time can lead to easy and early toilet training,[2] saving endless work, water and energy.

Computerised Geographical Information Systems, while very useful, often substitute for, or cover up, a deficit in simple skills of reading the landscape.

Interact with Care, Creativity and Efficiency

There is little value in continuous observation and interpretation unless we interact with the subject of our observations. Interaction reveals new and dynamic aspects of our subject and draws attention to our own beliefs and behaviour as instrumental to understanding. The interplay between observer and subject can be thought of as the precursor to design. The accumulation of the experiences of observation and interaction build the skill and the wisdom needed both to intervene sensitively in existing systems and to creatively design new ones.

The Thinking and Design Revolution

Everyone knows about the breathtaking emergence of the information economy. The information and knowledge systems that direct and organise the physical economy of goods now have the greatest value and power. Computers are the most obvious feature of the information economy, but changes in the way we think, especially the emergence of design thinking, are more fundamental to the information economy than the hardware and software we use. Permaculture itself is part of this thinking revolution.[3]

A large part of the thinking revolution involves the emergence of design as a universal skill alongside those of literacy and numeracy. It is not so much that we are just beginning to design; rather, we are becoming more conscious of the power of our individual and collective design processes and how to improve them. Design is fundamental to humanity and nature, and yet it is so difficult to define.

Victor Papanek defines design as "the conscious and intuitive effort to impose meaningful order"[4]. This emphasises that design is not simply the result of rational, analytical and reductionist thinking, but also depends on our intuitive and integrative capabilities.

To design requires that we are familiar with models generated by nature and humanity (past and current solutions and options) as well as having an ability to visualise some new adaption, variation or possibility. The capacity to imagine other possibilities is another important aspect of design thinking. The most creative design involves the promiscuous hybridisation of possibilities from apparently disconnected, or even discordant sources to create a new harmony.

Papanek's "imposition of meaningful order" recognises the powerful nature of designing. The dangers of "playing god" inherent in this definition remind us of the potent nature of design. As Stewart Brand said in the original *Whole Earth Catalogue* (1968), "We are as gods so might as well get good at it."

From a systems ecology perspective, "design by nature" is not simply a metaphor but a result of the forces of self-organisation which can be observed everywhere in the living and wider universe. This imposition of meaningful order is a counter-flow to the prevailing

entropic forces of disorder within nature and the wider universe. (For entropy, see **Principle 2: *Catch and Store Energy*.**) Self-organisation occurs wherever energy flows are sufficient to generate storages. *Designing is as natural as breathing and, like breathing, most of us can learn to do it better.*

Observation and interaction involve a two-way process between subject and object: the designer and the system. Perhaps because of the bias built into our culture by Cartesian dualism, we need constant reminding and examples of the true nature and consequences of this two-way process if we are to improve the quality of our design thinking and practical actions.

The maxim "everything works both ways" is a useful general reminder that finds expression in many diverse examples. The following more specific maxims provide the concrete guidelines and reminders which can help prevent us as designers from falling back into dualistic thinking.

- All observations are relative.
- Top-down thinking, bottom-up action.
- The landscape is the textbook.
- Failure is useful so long as we learn.
- Elegant solutions are simple, even invisible.
- Make the smallest intervention necessary.
- Avoid too much of a good thing.
- The problem is the solution.
- Recognise and break out of design cul-de-sacs.

Design thinking guidelines

All observations are relative

Observation can be a reflection of an internal state rather than objective fact. Even the concept of objective fact in science is now acknowledged as flawed; scientists know that observation, directly and indirectly, influences reality.

Given the limits to objectivity, it is better to be clear and articulate about our assumptions, preconceptions and values, and to acknowledge how these influence and structure how we see. Ethics and ideology act as filters that determine what and how we see. These filters are unavoidable — in fact, essential — but the rush to judgment of right and wrong frequently clouds our observation and prevents understanding. This commonly occurs in our attitude to pest plants and animals.

Top-down thinking, bottom-up action

In considering any subject it is always useful to step back and look for the connections and contexts which can reveal our subject as part of large-scale systems. This assists us to identify important inputs to the system that are outside system control or feedback effects and also to see outputs and losses that larger-scale systems are absorbing.

This "top-down"[5] systems thinking is a useful balance to "bottom-up" reductionist perspectives that seek to understand a subject by looking for its fundamental parts. On the other hand, bottom-up action focuses on the leverage points that are available for small-scale elements or individuals to influence large-scale systems in which they