

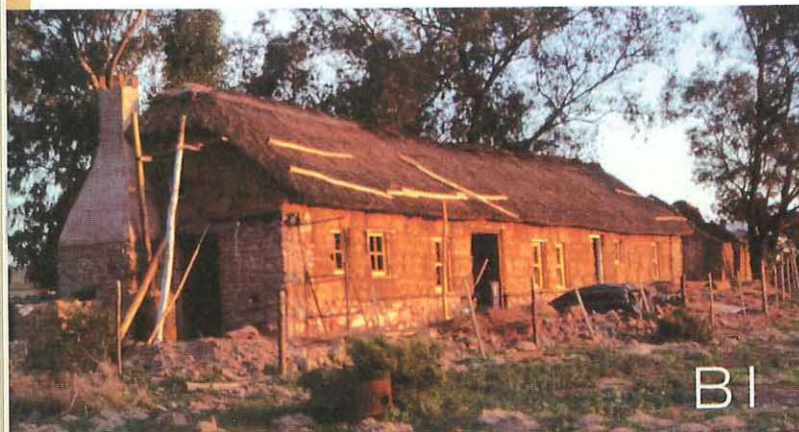
# Green Design

■ Andy Horn

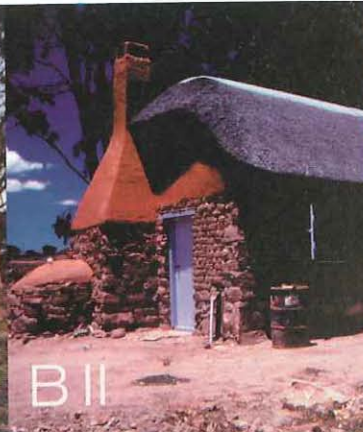
## Practicing Green Architecture

In nature, life depends upon a constant cycle of decay and rebirth. Essential elements and nutrients are continually being recycled, and the waste product of one life form is simply the resource for another. The very concept of waste - a word symbolising sin to the greens - is manmade and ignores this cyclical law of nature. Inherent to our consumer-based world order, waste and pollution is slowly turning our planet into a wasteland and architecture is no exception. It has been estimated that about 50% of the world's energy and resources go into the construction and maintenance of buildings. Most buildings in South Africa are still locked into this linear pattern of consumption and waste. To ensure a sustainable future, our design and construction industry need a serious wake-up call.

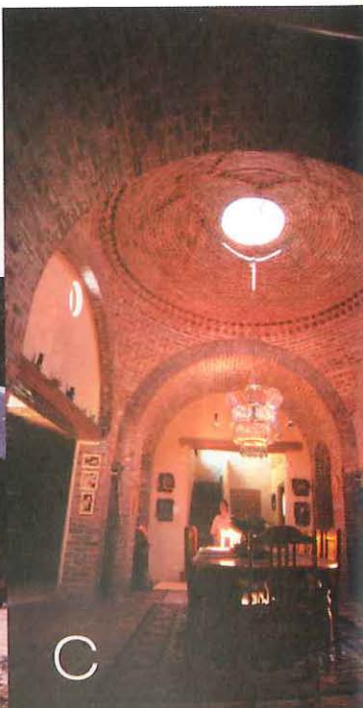
**G**reen Design is not a trend, but rather something like the industrial revolution. It will make standard building and architectural practice look obsolete and unsustainable. The key benefits are reduced operating-costs for buildings and their landscapes, improved occupancy rates, health and productivity for building inhabitants (US case studies have shown a decrease of 15-45% in absenteeism after buildings were refurbished as green buildings); higher property values and sustainable development (a future for our children). What is green architecture essentially? Green architecture is not a style, fad or vernacular; neither is it new. It is a climatcally, geographically and culturally appropriate way of architecture and building. It combines the best of both old and new technology. Green architecture treads lightly on this planet and respects and cares for the earth in a sustainable manner.



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In my 'Manifesto For Green Architecture' (presented at South Africa's first conference on Sustainability in the Built Environment, which forms part of Earthlife Africa's website known as Green Living and Development), the following six broad principles for a greener approach to architecture were proposed. Firstly, the socio economic factor - linking of human factors for socio-economic upliftment. The site principle - responsiveness to local environments and its resources. Thirdly, the water factor - protecting sources and promoting conservation, efficiency and recycling of water. The energy principle - conservation, efficiency, and the renewable use of energy. Then the health factor - non-polluting environments and healthy materials. And lastly, holism - a holistic synergism of all the elements.

In terms of social, economic and environmental sustainability, we as developers, architects and builders have a simple choice to make. Either the buildings we create are going to be part of the problem or part of the solution. By adhering to the principles of Green Design, my experience has been that it is possible to achieve multiple benefits for the developer, investors and occupants, creating beautiful buildings of a high quality while helping to restore harmony between the natural and built environments. ○

For further information, contact Andy Horn at Eco Design on (021) 4621614 or at [ecodesign@mweb.co.za](mailto:ecodesign@mweb.co.za) and [www.earthlife.org.za](http://www.earthlife.org.za).

PHOTO A Eco Design is an architectural practice that has been implementing these principles. In House Prinsloo, on a farm near Elands Bay, the stone walled remains of an old ruin were reused to form the plinth for the super-insulative straw bale walls.

PHOTO BI & BII In the rural town of Teslaarsdal, the majority of the materials used to build House Salters were natural, locally sourced materials. All the stone and timber poles used were gathered from within 100 m of the site and the straw and clay came from neighboring farms. The poles were treated on-site with local labour using non-toxic wood treatment methods and the windows and doors were either second-hand or else made of recycled Oregon pine. Rainwater tanks and a compost toilet help save water, and used bath water helps nourish a grove of fruit trees. Energy is saved with the use of a solar hot-water heating panel, which is backed up for cloudy winter days, with a heat-exchanger that circulates waste heat from the fireplace chimney to the geyser.

PHOTO C In the alterations to House Lijnes in Noordhoek Valley, ancient Egyptian methods of construction were used to build an inspiring domed space, without the need of supporting formwork. Non-toxic paints were used extensively, and glass bottles were used in the creation of the central chandelier and colourful patterned fanlight above the front door.

PHOTO D Straw bale and cob construction techniques used for House Patience in Greyton, enabled three generations, the grandfather, father, and his wife and children, to work side by side to build their family home.

PHOTO E After alterations to 'The Backpack' in Cape Town, users can now enjoy the health benefits of a non-toxically treated and insulated timber pole roof, coupled with non-toxic timber finishes. Water and energy efficiency has increased greatly since retrofitting with water-efficient showerheads and multi-flush toilets.



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