Caravan Site Upgrade, Nieuwoudtville, South Africa

Project data

Type of project: Public utilities
Start of construction: July 2005

Author

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Organization: ECO Design – Architects & Consultants
City, Country: Cape Town, Western Cape, South Africa

Relevance to target issues (by author)

The work is highly commended for its systematic approach to addressing the target issues in a non-invasive manner that maximizes social and economic benefits. The authors applied a well-considered balance between locally available materials and construction technologies, with strict environmental controls. The project promotes the use of renewable energy and ecological sanitation systems, running costs can be minimized by efficient energy use. APPROPRIATE TECHNOLOGIES TO INCLUDE LOCAL COM- MUNITY INVOLVEMENT: transfers ideas into community via training. APPROPRIATE TECH: local material & simple construction improves accessibility. ECO-BUDDO precedent for region, improved marketability. NON-TOXIC materials.

Quantum change and transferability

The project description by author

LOCATION: Near the edge of the escarpment in the Northern Cape. The area is a biodiversity hotspot and is known as the bulb capital of the world. The dry High Veld climate is exposed to extremes of weather.

BACKGROUND: In March 2004, Conservation International organized a week-long community participation. "Banking on Bulbs – design charrette" which set out to conserve biodiversity through the holistic development of tourism on the Bokkeveld Plateau. This resulted in a regional development strategy. A further outcome was to halt the ongoing municipal caravan site upgrade so as to realign it with the broader objectives of the chalette. Community task teams were set up to carry forward specific objectives of the strategy and Eco-Design was appointed to the project.

BRIEF: The architectural brief included the development of a gatehouse, 6 chalets and renovations to the existing ablutions. The aim was to create an environmental showcase in concert with the chalette while increasing the resort’s marketability. DESIGN STRATEGY: The design strategy makes use of locally available natural materials to minimize environmental impacts while maximizing community involvement and local job creation. By utilizing a range of renewable energy and ecological sanitation systems, running costs can be minimized. Furthermore, this helps to safeguard environmental sustainability and increases the site's marketability.

GATE HOUSE & CHALETS: These buildings are to be built using an innovative straw bale building technique recently tested by Icsa-Design on another project. This involves first dipping straw bales in a clay slip prior to their being stacked while still saturated between a timber pole and stone structure. The walls with the planted roof help create incredibly thermally efficient structures, particularly suited to the local climate. The chalets are to be serviced by dry composting toilets and their greywater is to be recycled to irrigate the landscape. Closed coupled solar water heaters located above the stone cones showcase environment friendly domestic water heating. The shape of the chalet A with views of the dam, helps the veranda from the hot western sun.

ABLUPTION ALTERATIONS: Alterations to existing ablutions involve the safe removal of hazardous asbestos roofs, turning the center space into change rooms under an open pergola structure so as to break the scale and reuse the maximum space and material. The circulation is redirected using screens of timber slats sourced from local alien vegetation. The services are retro fitted with super efficient solar water heating evacuated tube collectors, water efficient flushing devices, rainwater tanks which double up as screens and a biogas methane digester which will supply gas to the chalets.

Further authors

Flavio Todeschi, Anne Marie Moore
Evacuated Tube drawing of side B courtesy APLUS SOLAR

Integrating energy, economic and social performance

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Quantum change and transferability

Economic performance and compatibility

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