

# greenhome

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magazine

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## Cradle to Grave

rethinking product lifecycles

## Passivhaus Aspirations

klein kastanjes

## Thaba Ya Batswana

highveld hideaway

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## What the Frack?

shale gas exploration in SA



# GREEN

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As the year draws to its close everyone who has been working too hard is looking forward to a Christmas holiday and some down time with their friends and family. But underlying the festive season is the constant call to buy stuff and in particular expensive gifts as a way of honouring the relationships we have with one another.

Last year I nearly skipped Christmas altogether because I had not bought any gifts and my family was in disarray; to say the festive cheer was lacking would be an understatement. But on Christmas morning I was told to "pull myself together" and in the end I had a happy day spent sharing time and humour with some good friends who cooked a feast and displayed their love and affection for their guests via their acts of service.

This got me thinking about the concept of gifting and what could be given that would last longer than a store bought gift. The value of friendship, of time taken to do what you love doing, or fixing something that was broken (relationship or appliance) all add up to something longer lasting. Small gifts like plants or delicious home-made biscuits or preserves or useful items made by craftsmen who sell their wares at markets are great tokens of appreciation for those you love.

By supporting local markets and people who have taken time to create from their heart you will be partaking in supporting a whole new gift economy; one that keeps on giving. This is why you won't see any splashy Christmas gift section in the magazine. Instead you will find consumer awareness information, summer planting guidelines and inspiring stories from young people doing their best for their communities.

However you choose to spend your downtime this year, think of what you can do to give back to those in need and in this country there are still too many to count. So begin with one, and make a world of difference in their unlikely festive season.

Happy holidays.

## Melissa

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## Subscribe and Win

Summer is a perfect time to be more water-wise. Heavy phosphates in conventional soap powder are not good for the waterways. To the rescue is the rather clever Biowashball which cleans and cleans and cleans without the use of any soap. New subscribers to Green Home magazine have the chance of winning one of three Biowashball's with the Eco brightener and Aleppo Soap spot and stain remover as prizes, each valued at R 500.00. There are also Aleppo body soaps (125 g) to be given away. The give-aways will be awarded to the first 12 new subscribers via the website:

[www.alive2green.com/ghm-subscriptions/](http://www.alive2green.com/ghm-subscriptions/)





*by Stuart Thompson  
Pics by Johann Lourens*

*The living room opens up onto a spectacular view of the vineyards and mountains.*



# Passivhaus Aspirations

*Klein Kastanjes, House Broens,  
Constantia, Cape Town*



*The modern windows contrast with the old stonewall of the pool pavilion*

**K**lein Kastanjes, home to the Brosens family of four, is located in a unique position in the suburbs of Cape Town – between two wine farms with backdrops of the Constantiaberg Mountains to the West and False Bay to the East. The original old house with a poorly thatched roof was freezing in winter - with the cold North Westerly's coming in down off the mountains and squeezing in through the old thatch.

The owners were therefore looking for improved thermal performance to make the house warmer and more energy efficient and wanted to open up and modernise the house with minimal extension to its height and footprint. Numerous different layouts were investigated including at one point the complete demolition of the house to test the feasibility of building a whole new structure. The client was actively involved in an iterative design process which took near 2 years before getting building plan approvals and the builder on site. Then at the first site meeting, upon contact with the contractors the initial technical aspects of the design were revisited by the client - and the whole scheme changed. The proposed timber first floor was exchanged for a precast concrete slab system to increase spans internally - which in turn led to the steel frame changing to load bearing brick work! The whole building process became adaptive as detail designs were explored with subcontractors in-situ to achieve integrated solutions.

Although the old house was not a heritage resource it had great character as a result of previous work done by the client and there was a strong sense that this should be taken through into the new work. The recycling of these special elements, such as wood doors and sashes with stained glass from the old house, became challenging when placing them in new facades together with large modern openings and aluminium double glazed sliding doors. Stone and slate were chosen as external finishes to the house and roof with metal cladding for the flat roofs and dormers. This allowed for a separation between the modern and the traditional elements resulting in a radical new look for the house. The older original parts of the house were clad in karoo stone, and roofed with the new slate, while the new bedroom dormers, were expressed with bold zinc frames that hold the bedroom balconies. These frames then drop to ground - concealing the plumbing reticulation while providing vertical elements to order the facade.


This reinforces the narrative for the buildings reincarnation – an eclectic mix of contemporary zinc dormers that push out through the traditional slate and stone. The recycled wood doors and windows are more comfortably located within the deep stone reveals while the aluminium sliders and louvers track within the dormer frames. Extensive recycling of all the old materials on site; timber into new trusses and of all salvageable fittings carry the spirit of the old house through into the new.

The house responds to all seasons with terraces on the north, west and south sides with entrance from the east. Dappled north light filters in through the koi pond to a cellar beneath the TV room with views of the lazy fish. A water course from this pond circulates around the house via small planted channels to smaller ponds at each terrace before filtering through a reed bed filter into the natural pool. Overlooking the pool on the upper garden terrace is a double volume stone clad pool pavilion. The tennis court finishes off the lower garden terrace.

The home owner was involved in every aspect of the design process and allowed time for research into the various home systems that were chosen to improve the living environment, although once on site the pressure to complete the project mounted.

The house is fully automated and energy efficient in line with Passivhaus aspirations. Floors, walls and roof are well insulated, new windows and doors are double glazed while existing sashes are re-glazed with low

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E glass. In summer evaporative cooling is brought in through the roof at high levels to drop down through the double volumes into the living areas. In winter - primary warming is driven by the two large fireplaces situated in the double volumes and a hydronic underfloor heating system. Warm air rising into the volumes is drawn through fans into the bedrooms. Here it is exhausted via a heat recovery ventilation system and warmed fresh air is ducted back down to the lower levels ensuring fresh air exchange with minimal heat loss. A scalable solar photovoltaic system generates around two thirds of the electricity consumption for immediate use within the house with battery storage for back up power trickle fed by the grid.

Rain water is harvested for irrigation and grey water is recycled back to the house for

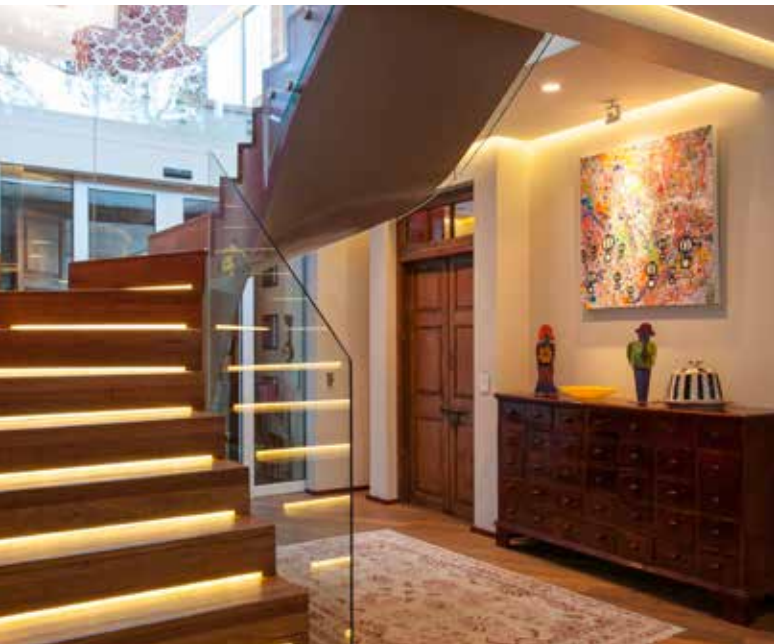
flushing WC's and for washing laundry. An insulated hot water ring main feeds bathrooms and hydronic towel rails, ensuring hot water on demand and eliminating cold water wastage. The Hydronic under floor heating is fed by a hybrid solar thermal & heat pump combination. Heat exchangers transfer required heat into the floor in winter and discharge excess heat into the swimming pool in summer. In addition, the two large fireplaces are fitted with custom made stainless steel hot water manifolds which at high temperatures circulate hot water to the heat exchangers to boost their efficiency.

The complexity of these systems required an extensive commissioning period and has been a learning process for all involved. Now that the house is operating optimally the Client has reported fantastic

living conditions, liveability of layout and connection with the outdoors. The project has served as a case study for the application of an integrated approach to designing and solution finding from all involved in the process.

The result is a range of elegant and sophisticated energy efficient solutions in combination with passive design principles.

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*The contemporary staircase becomes a feature in the entrance hall.*



*Heat pumps*



*Solar PV panels*



*Pump room and water filters*