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Cayman's Home & Living Magazine

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THE GREEN HOUSE

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Imagine that instead of paying a huge electricity bill every month, your home actually qualifies for a credit.

With energy costs rising almost constantly in recent times, such a scenario may seem like a dream.

But for one pioneering household, this did actually happen thanks to the property's new, green technology.

The owners built their family home on Grand Cayman specifically to be sustainable.

They describe the house as being "energy efficient with minimum carbon footprint" and it's a prototype they hope many others will follow.

"We have lower utility bills, a healthy natural environment, reduced guilt living, and long-term investment with the expectation of increased value in the building over time," they explain.

The three-bedroom house is the first of its kind in Cayman, utilising the latest in sustainable features and technologies.

The credit on the Caribbean Utility Company (CUC) electricity bill came in early 2012 due to the house's solar energy system in conjunction with insulated walls, roof and windows, as well as low-energy lighting and appliances.



Sustainable features include:

- ✦ Positioning the house on the lot, and the pitch of roof, to obtain the optimum gain for solar panels.
- ✦ Priority elements attached to the reflective white standing seam roofing including the power-generating PV panels, solar water panels, solar attic fan and solar light tube.
- ✦ Outdoor porch areas and living spaces positioned to take advantage of the shade and cross-breezes.
- ✦ Low-E insulated glass windows located to capture maximum natural light.
- ✦ Bahama hurricane shutters to minimise heat gain, add aesthetics and protection.
- ✦ The building envelope was constructed with insulated foam block and an insulated roof truss, all designed to withstand major hurricane force winds.
- ✦ The Solar PV panels generate enough energy to service the home's demand and are fed back into the grid on the CUC CORE programme.
- ✦ Propane was installed for the stove and dryer.
- ✦ Other items include LED lighting, efficient 20 SEER Trane air conditioning systems, Energy Star rated appliances and a cistern with a UV water filtering system to harvest rain water for the home's use.
- ✦ Wastewater treatment system made by Puraflo is the first of its kind to be installed in the Cayman Islands. This organic peat fiber biofilter system is a green-friendly, low energy, natural solution to manage and treat wastewater.



Other factors included using a clothes drier during the wet months only (the owners hang laundry on the washing line), no air conditioning in some rooms and keeping the temperature set at 82F or 83F in others, in addition to having a gas oven and window shutters.

As eco-friendly building technology is relatively new in Cayman, it took a fair bit of research before the design for the house was drawn up.

“We started with floor plans and basic criteria before doing research on green building in Australia where there is a similar climate,” the owners recall. “We also used common sense and looked at houses which were built prior to the economic boom in Cayman that take advantage of trade winds and shade but ensure hurricane resilience.”

The result is a cutting edge home which has not compromised on style in any way, with sleek, modern lines and contemporary fixtures and fittings.

Amazingly, once the owners had decided to build the house, it took only 12 months to complete the plans and then just six months from breaking ground to moving in.

And it’s not just the structure of the house which has been built to environmentally-friendly specifications; the interiors have been chosen to compliment the theme.

These include the upstairs carpet which is made from recycled plastic bottles, kitchen cabinet doors from forestry-certified wood and most of the furniture is from renewable sources.

The lighting design is also energy efficient with LED or CFL bulbs, which gives a huge saving on power.

The paints used were non or low VOCs (non-toxic), the taps are all low-flow and there are shallow sinks and low-flush toilets.

Other features include separate humidity control in the attic, and in the downstairs music room for when the house is opened up in winter months.

Like old-time Caymanian homes, the house is positioned to take heed of the direction of the sun and has outdoor living and cooking areas to minimise heat in the home.

Outside, the family has left the landscape well alone, preferring native flora and fauna on their 0.64-acre property to the alternative of bulldozing and replanting, which many developers and householders opt for.

“Over half of the site is still virgin dry forest and our plan is to lay a few trails through that, following natural contours and around the many trees therein,” say the owners.

As a financial services consultant who advises firms and organisations on regulatory







Local contractors and suppliers

- ◆ The Phoenix Group Design-Build Team
- ◆ Exeter Property Development
- ◆ Icon Architecture
- ◆ Phoenix Construction (main contractor)

Subcontractors:

- ◆ Mega Systems Elec
- ◆ Mac Plumbing
- ◆ Ghezzi Mechanical
- ◆ Kelly Rooney Associates (interior design and purchasing)
- ◆ Kirks (bathroom)
- ◆ A.L. Thompson (bathrooms, appliances and hardware)
- ◆ Elite (quartz/kitchen counter)
- ◆ Artistic Glass (glass for showers)



policy and compliance, one of the owners is knowledgeable and passionate about green issues.

In fact, she was the finance sector representative on the working party for a recent government White Paper on climate change strategy for the Cayman Islands.

“Everyone should read the White Paper,” she says. “Obviously there is a lot of consumption and everything including food and energy is imported into the Cayman Islands, which make us very vulnerable.”

“Our house was an experiment to test how the technologies and options available could work in Cayman. It’s great and easy to incorporate most into single family home builds, but most impact will be seen by their use in bigger developments. Anybody wanting to learn more is welcome to contact the developers.”

Phoenix Construction, the founding company of the Phoenix Group, was the main contractor for the house, with managing director Shayne Howe acting as project manager.

The firm assisted in finding the property prior to designing the home and building the residence.

“Every home we work on now has some green elements in the design and construction methods as owners look at operating costs as a growing concern,” says Shayne. “We are leading the change, promoting smaller footprints, energy-efficient building systems, alternative energy solutions, water harvesting and responsible wastewater treatment systems, to mention a few.

“However, the owners presented a unique challenge as they were looking at the project concept holistically. Everything from land selection, energy consumption and environmental impacts to life cycle costs of the selected materials were important decisions for them.

“Each element was reviewed with a genuine interest in obtaining not only a sustainable finished project but a sustainable lifestyle. Again, we advocate this way of thinking, so investing the additional time to research, analyse and value each step along the way was a no brainer for us. The result was well worth it.”

For InsideOut readers who may wish to consider building a home similar to this property, Shayne suggests researching and prioritising the areas of sustainable design, building and living which are personally important and then drawing up a wish list.

“It’s a very rewarding lifestyle which everyone should be considering.” 