



notable

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IMAGES SUPPLIED

RWANDA'S FIRST GREEN STAR

As Green Star SA certification reaches further into Africa, the first 6-Star Green Star SA Office Design rating awarded in Rwanda went to the Nobel building designed by Carlos Arroyo Architects.

Eloshan Naicker, sustainability consultant at WSP Green by Design who worked on the project, says the unusual facade is a combination polycarbonate and steel mesh structure. It will allow vegetation to grow on the facade, providing natural shading. The building will feature solar PV for energy generation and use LED fittings for efficiency. For HVAC, fresh air will be dehumidified and provided to air handling units through hollow core slabs. There will be an on-site water treatment system to treat grey and black water, while an on-site composting facility will improve soil for plant growth and biodiversity. The aim is also to substitute at least 35% of the cement requirement (usually imported into Rwanda) with locally available volcanic ash. (See Rwanda's country profile on p.49) www.carlosarroyo.net

Denmark and South Africa have agreed to co-operate on water policy, technology development and knowledge exchange issues. A Memorandum of Understanding signed by Danish Minister for Environment and Food, Eva Kjer Hansen, and South African Water Affairs and Sanitation Minister, Nomvula Mokonyane, outlines six areas for collaboration:

- Integrated water resources management
- Water treatment technologies and management
- Water and resource efficiency
- Groundwater protection and management
- Water governance and science
- Capacity building and institutional strengthening



SOLAR BREW

The Cape Brewing Company (CBC) now boasts the country's first 'green' beer crafted using solar thermal power. Installed by E3 Energy Group, the 84kW system is powered by 12, 10m² flat-plate solar collectors on the roof of the brewery in Paarl. The system heats 10 000 l/day of mountain spring water to 85°C, which is the temperature required for brewing. Previously this was done with a paraffin boiler, which now remains the backup.

At a cost of R1.5 million and with a 15-20-year lifespan, the system received R150 000 in funding from the Austrian Development Cooperation's Soltrain initiative. The system's return on investment is expected to be about 4.5 years.

E3 Heating has committed to managing the system, ensuring it runs optimally over the first 24 months.

CBC is determined to meet the burgeoning demand for craft beer nationwide, while simultaneously lowering its carbon footprint, energy consumption and sustainably managing wastewater. This reduces production costs and gives the company a competitive advantage.

www.e3energy.co.za

LARGEST WINELANDS SOLAR SYSTEM

Terra Firma Solutions is installing an 800kWp solar PV system in Wellington at DGB, South Africa's largest private wine and spirit producer known for brands such as Boschendal, Douglas Green and Bellingham. The installation is set for completion in March 2016, comprises almost 2 600 solar panels and will sit atop four different roofs at the facility in the Boland, covering over 6200m². At a total project cost of about R14million, the return on investment is expected to be about seven years at the current electricity price.

Feedback into the local Drakenstein Municipality grid is possible as it is one of the few municipalities in South Africa with a net metering embedded generation tariff available to the public.

The installation lowers the company's emissions by about 1 265 tonnes of CO₂ a year, bringing it closer to carbon neutrality. This gives DGB an edge in the fiercely competitive global wine industry.

www.dgb.co.za



Cape Town's V&A Waterfront has switched on 900kW of solar PV power, which was installed over three months by Sustainable Power Solutions with no delays and within budget. The system's capacity will be increased to 1.4MW, to be completed early in 2016. SolarWorld solar panels and SMA inverters were installed on the roofs of six buildings.

www.waterfront.co.za



POWER TO THE PEOPLE

Making a dent in the 3.4 million homes in South Africa awaiting electrification, Powermode has completed the installation of a 90W solar panel, inverter and battery for each of 1700 homes in Dutywa near Mthatha in the Eastern Cape. The homes are located in remote areas, unlikely to receive grid electrification in the next two or three years. Paid for through a government funded electricity grant previously earmarked to help homeowners pay for Eskom generated electricity, the project also trains community members to maintain the installations.

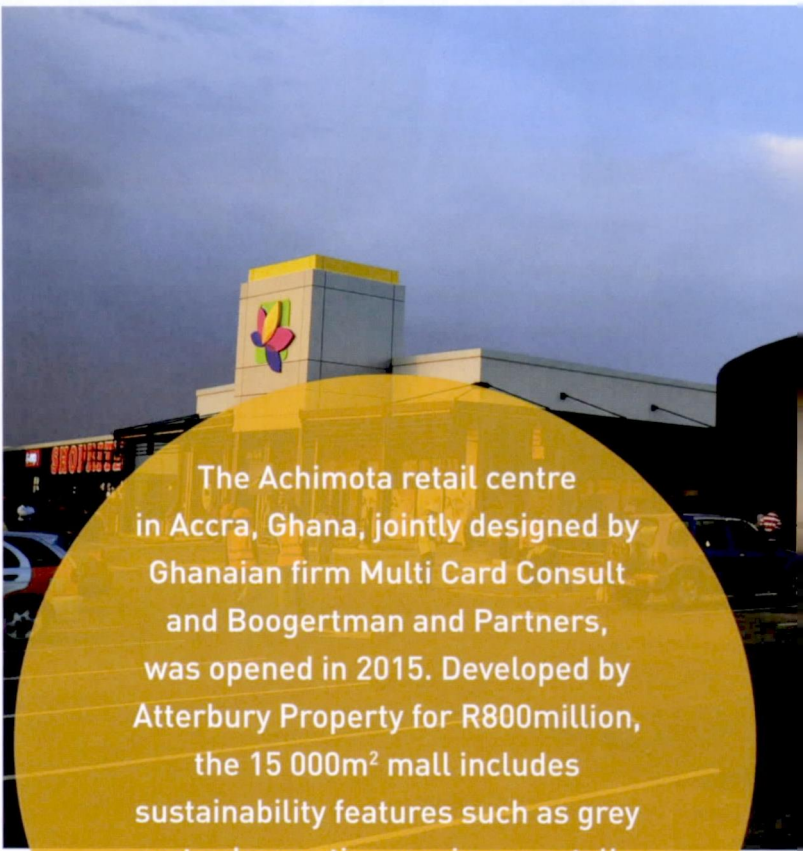
www.powermode.co.za

GBCSA'S 2020 VISION

The Green Building Council South Africa (GBCSA) made ambitious commitments at the COP21 (See p.94 for more on COP21) climate change negotiations in Paris in December 2015. These are:

- To introduce a net zero/positive building certification scheme by 2020
- To secure statements of commitment in respect of green building principles and practices for 60% of 50 of SA's leading and largest property owners
- To target 2500 commercial green building certifications, representing around 10 million m² of gross building area
- A target of 10 000 residential green building certified homes
- A target of 12 000 professionals to be trained in green building principles and practices
- 10% of local government staff to be trained in green building principles and practices
- Inspiring and helping fellow African nations to establish green building councils in their own countries by providing support with rating tools and training, with a target of five more established African GBCs.

See p. 94 for more on COP21

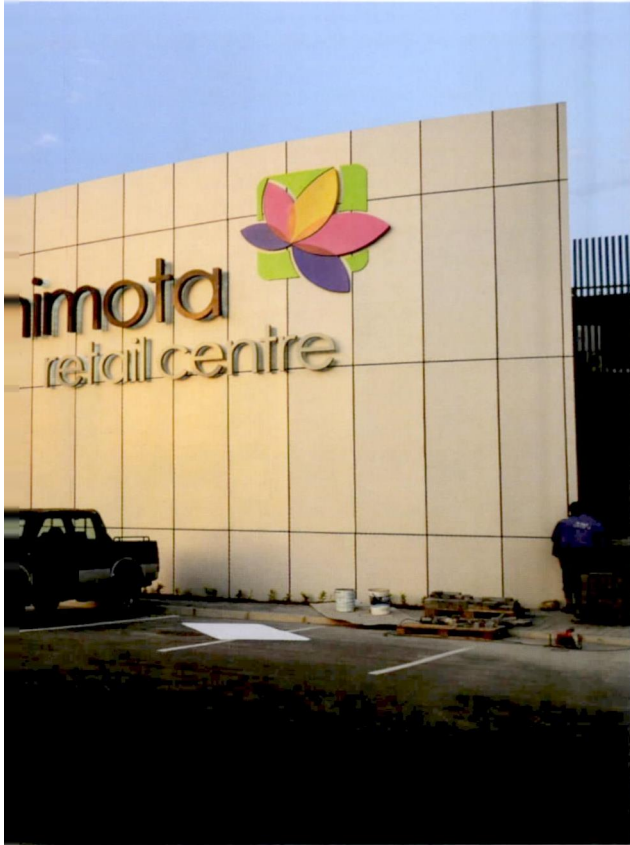


The Achimota retail centre in Accra, Ghana, jointly designed by Ghanaian firm Multi Card Consult and Boogertman and Partners, was opened in 2015. Developed by Atterbury Property for R800million, the 15 000m² mall includes sustainability features such as grey water harvesting, environmentally conscious landscaping and a Building Management System to ensure water and energy efficiency.

The new board members of the Green Building Council South Africa (GBCSA) are: **Anthony Stroebel**, marketing manager at Pam Golding Properties; **Nkosinathi Manzana**, head of professional and technical services Group Real Estate at Standard Bank; and **Colin Devenish**, executive manager operations at the V&A Waterfront.

GREENOVATION

The inaugural Growthpoint Greenovate Awards recognise innovation dealing with environmental challenges, and the 2015 winners were the University of Cape Town team comprising Rowan McKenzie, Dijon Ross and Mieke van der Merwe, along with supervisor Saul Nurick. The focus of their research was the role of the IPD Green Property Indicator in the South African Property market. The prize includes R30 000 and attendance at the Green Building Council SA convention in 2016, where they will present their research.



EFFICIENCY WINS

The Bayside Mall in Cape Town, owned by Growthpoint Properties, came out tops in the Large Building Retrofit Category in the Energy Efficiency Forum Awards, which is a partnership between the City of Cape Town, Eskom and the South African Property Owners' Association. Energy efficiency interventions at Bayside Mall include upgrading to LED lighting and improvements in the heating, ventilation and air-conditioning system. The flagship project is a 500kWp pilot rooftop solar PV plant.

The winner of the Small Building Retrofit Category was the Cape Town French School, which has replaced all fluorescent lights with LED technology, and installed a heat pump for hot water. A rooftop solar PV system provides about 20% of the school's energy requirements.
<http://bit.ly/1MVVCKE>

HOME RUN

The Ravenswood affordable housing development in Gauteng, developed by International Housing Solutions (IHS), is the first residential project in Africa to achieve an Excellence in Design for Greater Efficiencies (EDGE) design certification.

This online system was developed by the International Finance Corporation (IFC) for emerging economies, with the Green Building Council South Africa (GBCSA) as the local implementing agent and certification body. It takes green building rating beyond the commercial property sector and into the home.

The 188 two-bedroom units at Ravenswood emphasise efficient energy use through solar hot water collectors and efficient water use through the installation of smart meters and low-flow bathroom and kitchen fittings. Reduced window-to-wall ratios and roof insulation also ensure optimal energy efficiency.

EDGE-certified homes will attract prospective buyers who understand the long-term value of their investment in a green home, with its lower utility bills and higher re-sale price, says GBCSA CEO Brian Wilkinson.
www.edgebuildings.com



The Green Fund (managed by the Development Bank of Southern Africa for the Department of Environmental Affairs) and Nedbank Corporate and Investment Banking **will jointly fund the development of 400 affordable green housing units** in the Western Cape and Gauteng through a R120million concessionary loan funding pool administered by Nedbank.

Belgotex was the first South African flooring manufacturer to earn GreenTag eco-label certification. The company's products were subjected to GreenTag's assessment process and achieved maximum compliance against their sustainability criteria, which include health and eco-toxicity, life-cycle analysis, product emissions, and social responsibility.

www.belgotexfloors.co.za

NOTABLE



HOT OFF THE PRESS

Renewable energy company Sustainable Heating has opened its third biomass steam plant in South Africa, this one at JSE-listed Novus Holdings' Paarl Media Cape printing press. The plant is completely owned and operated by Sustainable Heating, which sells the steam to Paarl Media Cape for their manufacturing processes. Temperatures in the furnace reach up to 1000°C.

The R42million plant was financed through the Industrial Development Corporation, the German Development Bank (KfW) and Mergence Investment Managers. It replaces a paraffin boiler and results in cost savings of about 30%, while also decreasing fuel and electricity consumption and lowering carbon emissions. Sustainable Heating founder Paul Gorremans says the company has long-term agreements with nearby sawmills, pallet factories and manufacturers with wood offcuts, which diverts waste from landfill in many cases.

www.sustainableheating.weebly.com



CR(VI)-FREE ALUMINIUM POWDER COATING PRE-TREATMENT

Blue Willow Aluminium in Atlantis in the Western Cape has built sub-Saharan Africa's first automated processing plant with environmentally friendly pre-treatment of architectural aluminium, prior to powder coating. In line with international best practice, the process is hexavalent chromium-free [Cr(VI)]. This chemical compound is recognised as a human carcinogen if inhaled, and was made famous as the chemical that contaminated the groundwater in Hinkley in the movie *Erin Brokovich*.

Blue Willow Aluminium GM Schalk Pretorius says the pre-treatment process begins with the production of ultra-pure water, used throughout the process to provide a transitional medium from one chemical process to the next. All water fed into the system is used in the process, including the reverse osmosis waste stream. Once the water has fulfilled its function, it is treated and re-used in the garden irrigation system.

The aluminium is deoxidised, removing all contamination contained in the microstructure, and then goes through a reaction layer to provide galvanic protection and a layer for powder paint to adhere to, before the final powder coating process.

www.alu.bwg.co.za

