

DRIVING GREEN BUILDINGS IN THE RESIDENTIAL SECTOR THROUGH RATING TOOLS

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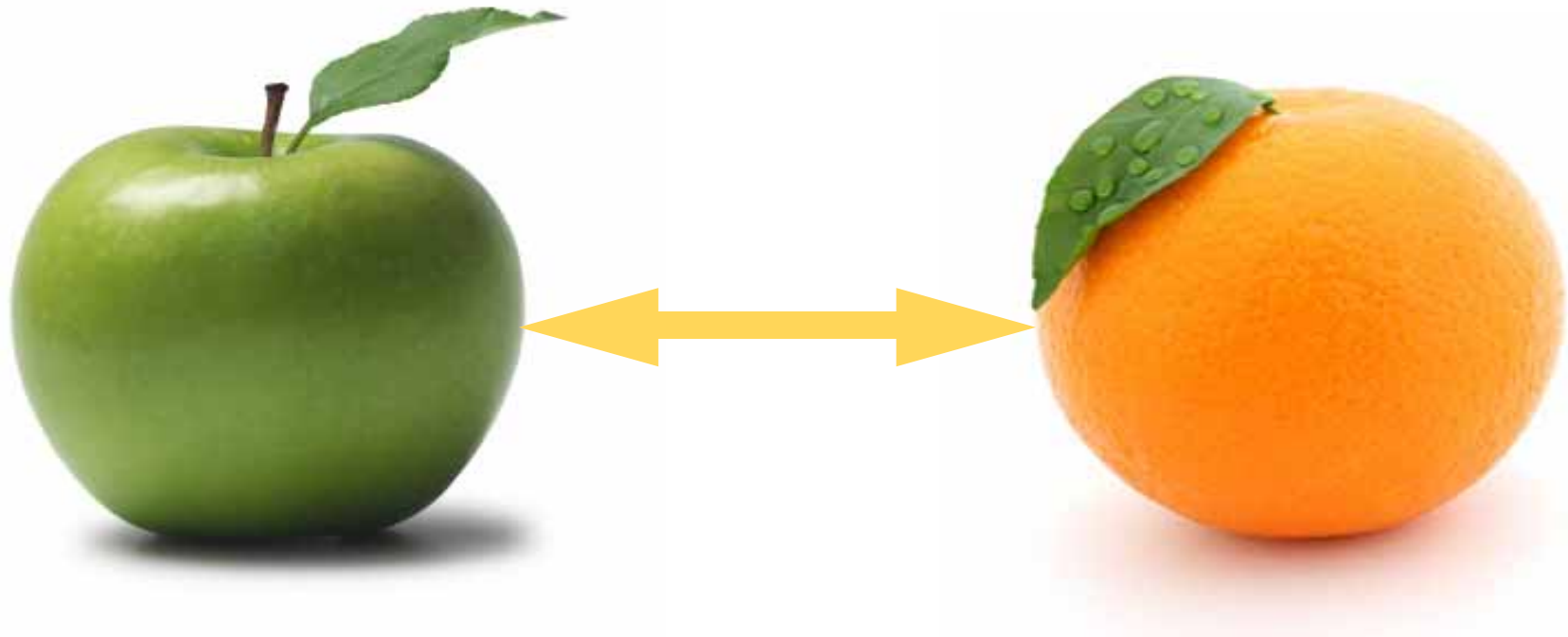


South Africa pre-2007



GREEN BUILDING?
"MY BUILDING IS THE GREENEST"
GREEN BUILDING?

HOW CAN WE AVOID these self
proclamations & green wash?



**How green is green?
How to compare buildings?**

rating tool



40 on Oak, Melrose Arch, Johannesburg



No 2 Silo, V&A, Cape Town

now we can compare (we have a standard)



Ernst & Young, Johannesburg, 4 Star

Design & As Built Rating



Interiors Rating?

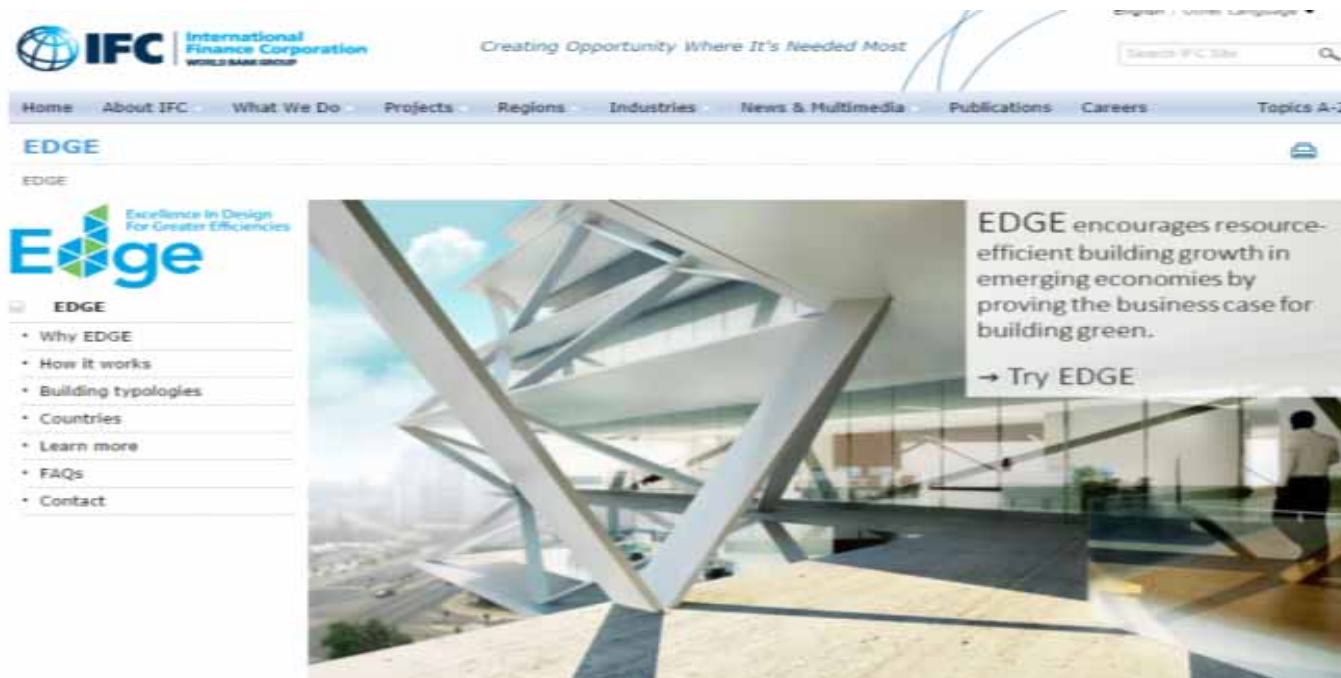


Existing Building Performance Rating?



GBCSA is launching new rating tool in residential: EDGE

GBCSA has partnered with the World Bank (IFC) and the NHBRC to offer a green building rating tool for homes – contact manfred.braune@gbcsa.org.za if you're interested.



The journey of greening your own home.



EDGE is a simple online rating tool with 3 categories:

1. Energy,
2. Water
3. Embodied energy of materials

The screenshot shows the Edge Homes online rating tool interface. It features a header with the Edge Homes logo and the RIFC (International Rating of Fabric Construction) logo. The interface is divided into several sections:

- General:** Includes fields for Type of Building, Grade of Project, Type of Work, and various checkboxes for building characteristics.
- Type and Location Data:** Includes fields for Country, City, and various location-related data points.
- Energy Efficiency Measures:** A list of measures with checkboxes, such as "Automatically shut off water in toilets or urinals after 30 seconds", "Low energy lighting (LED or CFL)", etc.
- Energy kWh/m²/year:** A bar chart showing energy consumption in kWh/m²/year. The chart compares two scenarios: "Baseline" and "Target". The Target scenario shows a significant reduction in energy consumption compared to the Baseline.

<http://www.edgebuildings.com>

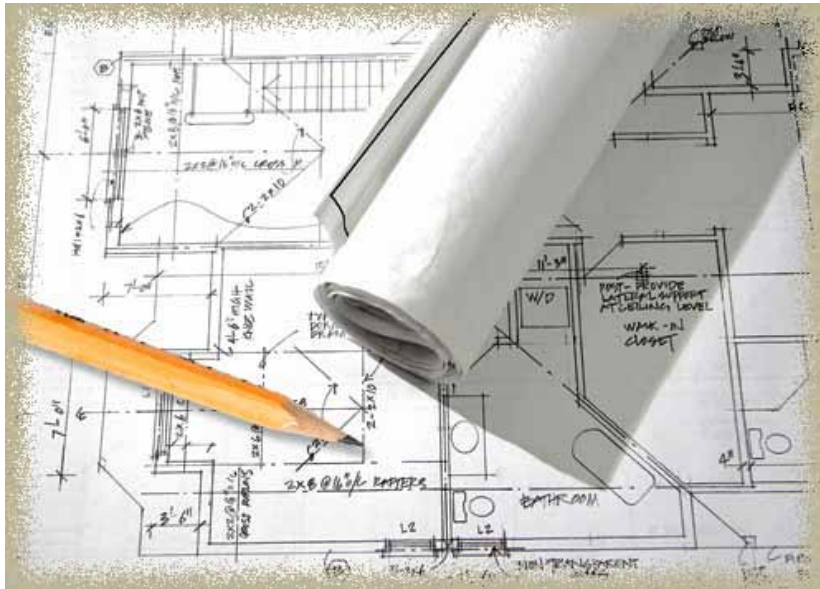
Green Star SA:

- residential projects with full professional team
- Project wanting to target leading form of certification (4, 5 or 6 Star)
- more exclusive marketing proposition
- covering more, including waste, transport, management, emissions (8 categories)

EDGE:

- residential projects with small professional team
- Project wanting to target basic form of certification – certified or not certified
- not exclusive marketing proposition
- covering only energy, water and embodied energy of materials (3 categories)

EDGE certification process :



EDGE tool launch next steps:

- IFC finance for GBCSA start-up costs
- GBCSA appoint project manager
- Final adjustments to EDGE tool: Technical Working Group – do you want to get involved?
- GBCSA board approval & final tool launch
- Pilot projects register



How do rating tools
transform the market?

1. FIND LEADERS

2. FOLLOWERS WILL COME

3. VALUE CHAIN IMPACTED

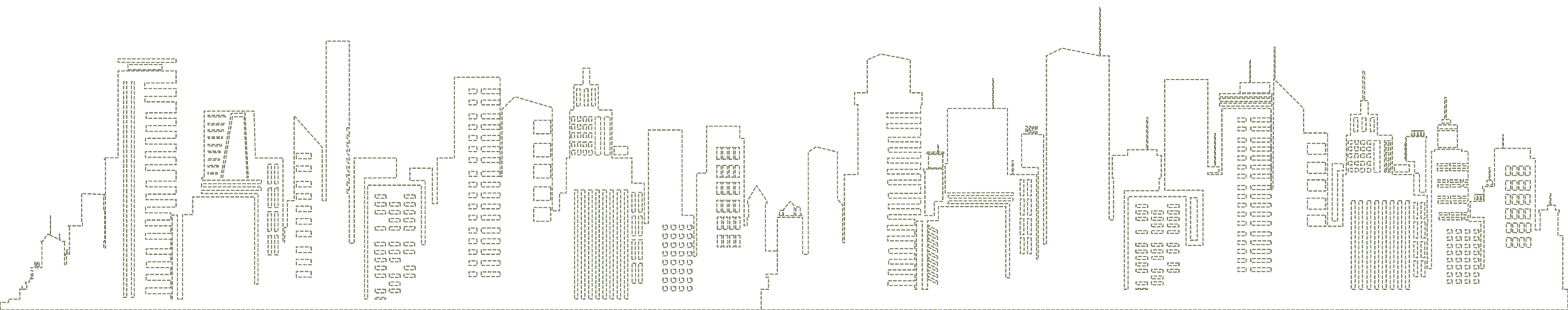


Green buildings will become standard practice.



MARKET TRANSFORMATION

CASE STUDY: PROPERTY OWNER REDEFINE



2010 – did not see value of green buildings



Redefine: 2014 Annual Report:
p86 "In the South African context sustainability has reached a stage of maturity where by few (if any) premium grade buildings are developed without seeking a benchmark green rating"

"green buildings in the Redefine portfolio are envisaged to have a positive effect on asset value while reducing multi-tenant vacancy rates"

2014 – Mike Ruttel, Executive Director for Development says:



“Redefine aims to design all our new build developments to achieve a minimum 4-Star Green Star SA rating”

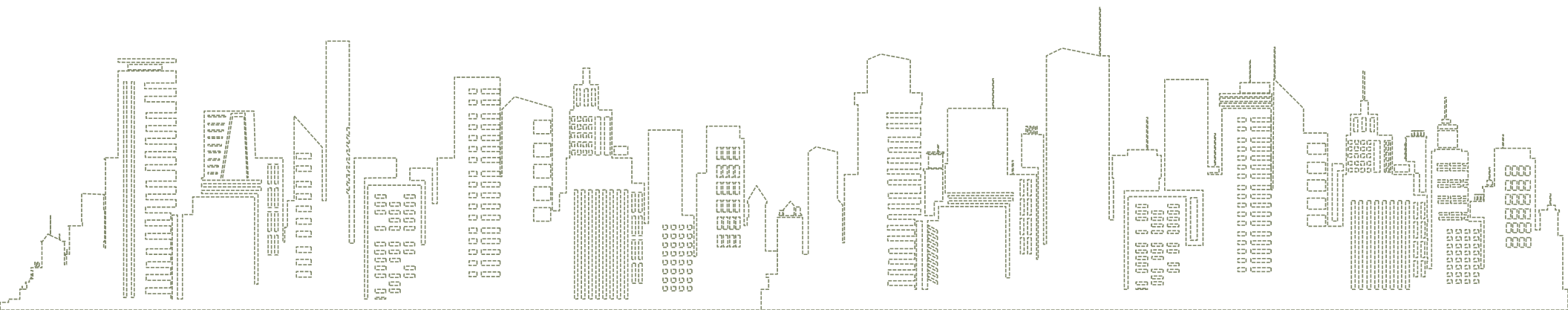
Property Wheel 2014/09/09

R 30 Billion property fund



MARKET TRANSFORMATION

CASE STUDY: PAINT INDUSTRY LOW VOC PAINTS



2008 – first Green Star SA project: in SA: Nedbank, Johannesburg



No local VOC free paint!



Dulux changed processes to produce one low VOC range locally.



2015 – multiple low VOC paints locally available, no premium



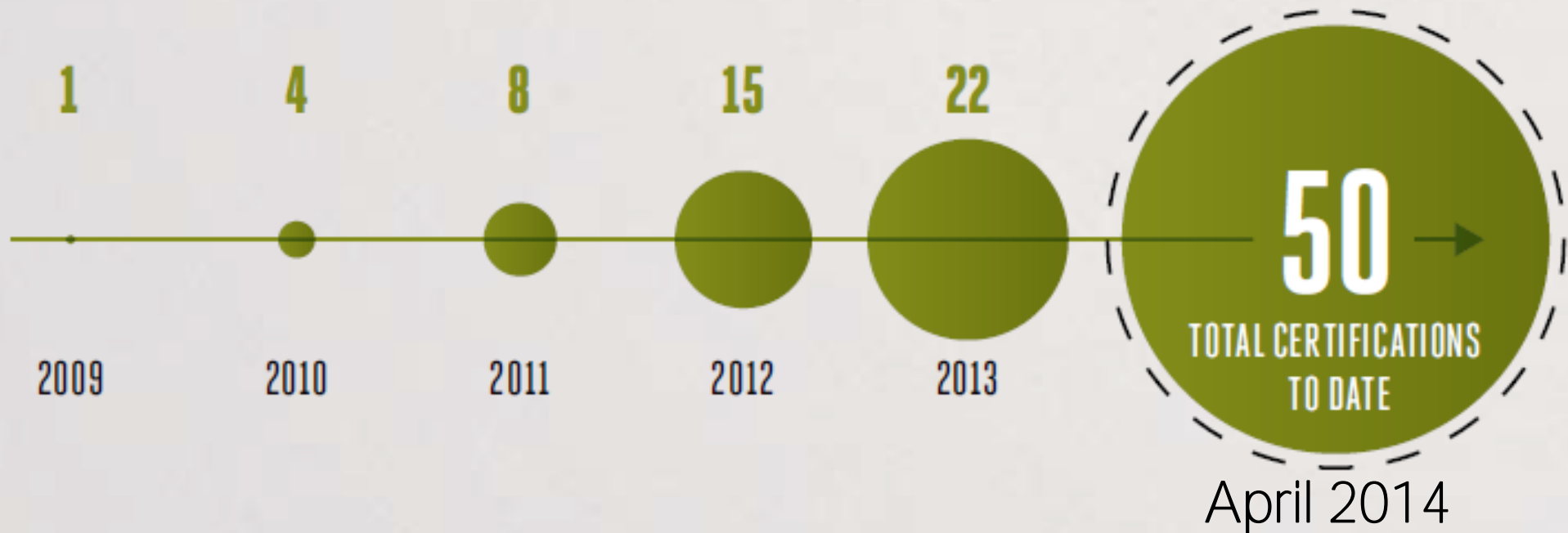
All because of one Green Star project



COUNTING THE GROWTH & IMPACT



GREEN STAR SA CERTIFICATIONS PER ANNUM



KEEP COUNTING & CELEBRATING EACH BUILDING

ENERGY SAVINGS

50 BUILDINGS

Built to the legal standards for energy efficiency
--- SANS 10400 Part XA ---

34% MORE ENERGY EFFICIENT
76 MILLION kWh ENERGY SAVED PER YEAR



WHICH IS EQUIVALENT TO
The energy needed by **5,300 homes per annum**

The energy needed to boil **1.4 million kettles of water per day for a year**

Predicted energy savings if the 50 certified projects are operated as their designs intended (numbers rounded off):

- 76 million kWh per annum of energy predicted to be saved by these buildings.
- 167 million kWh predicted to have been saved to date by these buildings since they were built.
- The average predicted energy saving of these projects is 34% more energy efficient than the reference case, which is based on SANS 10400 Part XA - the legal standard for energy use in buildings.

76 million kWh per annum of energy saved is equivalent to approximately:

- The energy needed by 5,300 households per annum.
- The energy needed to boil 1.4 million kettles of boiling water per day for a year.
- 1-2% of what a large-scale power station might produce in a year. Thus, the amount of electricity saved by 2,500-5,000 green buildings would be equivalent to the annual output of a power station.

REDUCED GHG EMISSIONS

50 BUILDINGS

Built to the legal standards for energy efficiency
--- SANS 10400 Part XA ---

57% MORE SAVINGS ON GHG EMISSIONS
115 million kgCO₂ predicted to be saved per annum

250 million kgCO₂ predicted to have been saved to date

- Approximate kgCO₂ savings from the 50 certified projects:
- 115 million kgCO₂ predicted to be saved per annum.
 - 250 million kgCO₂ predicted to have been saved to date.
 - The average predicted kgCO₂ emissions savings of these projects is 57% more than the reference case, which is based on SANS 10400 Part XA, the legal standard for energy use in buildings.

Note: The kgCO₂ numbers take renewable and on-site energy generation into account where relevant, whereas the kWh energy savings numbers exclude on-site generation.

- 115 million kgCO₂ is equivalent to approximately:
- Taking 28,000 cars off the road per annum (medium-size car with annual mileage of 15,000km).
 - 4,000 full Boeing flights from Cape Town to Johannesburg (one way).

WHICH IS EQUIVALENT TO
6,000 Full Boeing flights from Cape Town to Joburg (one way)

Taking **28,000 cars off the road per annum**



GREEN BUILDING COUNCIL SOUTH AFRICA
HOPEFUL - BETTER - BRIGHTER

April 2013

GREEN BUILDING COUNCIL SOUTH AFRICA

CERTIFICATIONS BY APRIL 2015 ??

1000





The journey of one family...



A short video of how one family did it...



SAVINGS – energy, water & waste



29% energy saving – behaviour change of



ESTIMATED SAVINGS FOR ONE YEAR



WEBSITE – www.mygreenhome.org.za



NO COST

CHANGE HABITS TO SAVE AT LEAST 10%



LOW COST

SPEND UNDER R1000 TO LIFT SAVINGS TO ABOUT 30%



INVEST TO SAVE

INVEST MORE TO TAKE SAVINGS UP TO 50% OR MORE



Install a low-flow shower head

Your shower may be so wasteful that it's actually illegal. Some municipalities ban shower heads that use more than 10 litres of water per minute. To check yours, do the "Bucket Test." Hold a bucket under the shower spray for 12 seconds and see if you collect more than 2 litres. Replacing an inefficient shower rose with a low-flow version could save you hundreds of rands a year. Modern low-flows are aerated, so you feel a blast of water, not a trickle. And replacing a shower rose is surprisingly easy. [This YouTube video](#) shows you how.

👍 Will do 1

👍 Doing this 7



Connect a timer to your geyser

A programmable timer can help your budget and the nation, by keeping your geyser off during certain periods like Eskom's peak hours of 5 to 9 pm. Timers are essential for solar geysers. Prices start at around R350 plus electrician, but consider paying for a [Geyserwise](#), for thermostat control without having to climb into the roof to adjust the temperature on the geyser.

👍 Will do 1

👍 Doing this 3

Keep your geyser and its pipes snugly insulated

Give your geyser a hand; place your palm on top of the cylinder and on adjacent pipes. If you feel heat, it's being wasted and you paid for it. Buy a geyser blanket and insulation for the first few meters of outlet pipe from one of [Eskom's approved suppliers](#). Blankets cost about R200 – R400; and pipe insulation usually less than R100.



In summary – Why a Green Rating Tool for Homes?

- **Rating Tools transform the market upstream & down**
- **Rating Tools can be used as a design guide**
- **Rating Tools provide a means for independent verification of green credentials by a trusted body**
- **Green homes will cost less to live in, and save you money**
- **Green rated homes will sell for more**
- **Banks will provide preferential finance to homes that are green rated – lower risk customer**



A black silhouette of a city skyline, likely Johannesburg, spanning the width of the page above the text.

SAVE THE DATE
GBCSA Convention
3 – 6 NOV 2015



THANK YOU

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