Green Building Certification

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Presentation Outline

1. Introduction to GBCSA

2. SA Green Building Policy Drivers

3. GBCSA Green Building Certification Tools
• Formed in 2007
• Independent Non-Profit
• Member of the World Green Building Council
• South Africa’s authority on green building
• Over 800 member organisations
• Current Chair: Africa Regional Network
• Offer support to other African GBCs and certification in other countries
INSPIRE A BUILT ENVIRONMENT IN WHICH PEOPLE AND PLANET THRIVE
2. Green Building Policy Drivers
- Sustainable Development Goals 2030

- United Nations Framework Convention on Climate Change COP 21 Paris Agreement and Nationally Determined Contributions (NDCs): ratified by 186 Countries

- Global Alliance for Buildings and Construction: Global and Regional Roadmaps for low carbon and resilient development

- World GBC Net Zero Carbon Buildings Declaration (2030 NB and 2050 EB targets)
Constitution Bill of Rights, Chapter 2 section 24 (a,b), 27 (1b):
Preservation of the environment for current and future generations, access to sufficient water and food, the avoidance of an environment that is detrimental to the health and well-being of citizens.

National Development Plan 2030:
Eradication of poverty and inequality

Medium Term Strategic Framework 2014-2019

- Develop norms and standards to improve integrated development and spatial planning of human settlements
- Develop Net zero building standards
- SANS 204 compliance
- Improvement of municipal retrofit standards
- Waste diversion
- Generation of 20 000MW of RE
- Reduction of water demand by 15%
• SPLUMA (Spatial Planning and Land Use Management Act, 2013) addresses sustainability, uniformity, equity and inclusivity (social and economic).

• National Spatial Development Framework (draft 2019)
National Public Infrastructure Policy Landscape

- Infrastructure Development Act, 2014
Draft Post 2015 National Energy Efficiency Strategy

- 15 Year national EE pathways, efficiency per m² for public buildings by 2030 off 2015 baseline: Public buildings (50%), residential (20%) and commercial buildings (37%)
- SANS 1544 Energy Performance Certificates for non-residential buildings by 2020 over 1000 m² (gov) and 2000 m² (private sector)

Integrated Resource Management Plan 2018 (Draft)

- Energy resourcing roadmap, with the aim to diversify energy mix (renewables, energy and gas)
- Decommissioning of 35 GW (of 42 GW currently operating) of coal-fired power

SANS 1544 – EPC Standard
Climate Change Policy Landscape

- National Climate Change Response White Paper, 2011
- Draft Climate Change Bill, 2018
- Carbon Tax Bill and Offsets (R120 per tonne of CO2), effective June 2019

Buildings
Globally generate 1 in 3 tons of CO₂
SANS 10400

- **SANS 10400 XA**: Energy Efficiency in Buildings (Review process)
- **SANS 10400XB**: Water Efficiency in Buildings (to be developed)
- **SANS 204**: Voluntary standard for energy efficiency in buildings
South Africa Buildings Programme
– launched April 2018
The programme aspires to make Zero Carbon buildings **standard practice** across South African cities.

Participating Cities are:
- Tshwane
- eThekwini
- Johannesburg
- Cape Town
3. GBCSA Green Building Certification Tools
Purpose of Certification

What defines a green building?
How do you compare?
Who says it’s a green building?
With a standard you can compare & benchmark developments:

4 Star Retail EBP: Cape Quarter

4 Star Retail EBP: V&A Shopping Centre
Certification Rating Tools Available

New Build and Major Refurbishments/
Existing Building Performance/
Interiors/ Sustainable Precincts
Green star: New Build, Interiors, Existing Building Ratings
Energy Criteria Examples: New and Existing Buildings

New Build Rating Tool

- Conditional Requirement
- Greenhouse Gas Emissions
- Energy Sub-metering
- Lighting Power Density
- Lighting Zoning
- Peak Energy Demand Reduction

Existing Building performance rating tool

<table>
<thead>
<tr>
<th>ENERGY</th>
<th>EB-ENE-1</th>
<th>EB-ENE-2</th>
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</thead>
<tbody>
<tr>
<td>Energy consumption (GHCE)</td>
<td></td>
<td>Peak electricity demand</td>
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</tbody>
</table>
Green Star: Sustainable Precincts Rating Tool

**Governance**
1. GOV-1 Accredited Professional
2. GOV-2 Design Review
3. GOV-3 Engagement
4. GOV-4 Adaptation and Resilience
5. GOV-5 Corporate Responsibility
6. GOV-6 Sustainability Awareness
7. GOV-7 Community Participation and Governance
8. GOV-8 Environmental Management

**Liveability**
1. LIV-9 Healthy and Active Living
2. LIV-10 Community Development
3. LIV-11 Sustainable Buildings
4. LIV-12 Culture, Heritage, and Identity
5. LIV-13 Walkable Access to Amenities
6. LIV-14 Access to Fresh Food
7. LIV-15 Safe Places

**Economic Prosperity**
1. ECON-16 Community Investment
2. ECON-17 Affordability
3. ECON-18 Employment and Economic Resilience
4. ECON-19 Education and Skills Development
5. ECON-20 Return on Investment
6. ECON-21 Incentive Programs
7. ECON-22 Digital Infrastructure
8. ECON-23 Peak Electricity Demand Reduction

**Environment**
1. ENV-24 Integrated Water Cycle
2. ENV-25 Greenhouse Gas Strategy
3. ENV-26 Materials
4. ENV-27 Sustainable Transport and Movement
5. ENV-28 Sustainable Sites
6. ENV-29 Ecological Value
7. ENV-30 Waste Management
8. ENV-31 Heat Island Effect
9. ENV-32 Light Pollution

**Innovation**
Net Zero: Pathway

Preferred Pathway 1
Energy Efficiency

Preferred Pathway 2
On-site Renewables

Preferred Pathway 3
Off-site Renewables

Preferred Pathway 4
Carbon Offsets
‘A building that has **20% less energy, water and material consumption** compared to an equivalent local benchmark.’

The standard provides a performance assurance to buyers and

[www.edgebuildings.com](http://www.edgebuildings.com)
The EDGE software compares an improved (project specific) case relative to a local base case:

- % reduction in energy consumption;
- % reduction in water consumption;
- % reduction in embodied energy in materials;
- utilities cost savings relative to base case.
## Certification Trends

<table>
<thead>
<tr>
<th>Tool</th>
<th>Count</th>
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<tbody>
<tr>
<td>New Build</td>
<td>223</td>
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<tr>
<td>EBP</td>
<td>205</td>
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<tr>
<td>EWP</td>
<td>25</td>
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<tr>
<td>Interiors</td>
<td>28</td>
</tr>
<tr>
<td>Net Zero</td>
<td>11</td>
</tr>
<tr>
<td>EDGE Post construction</td>
<td>9</td>
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**Total Certification Count: (all tools)** 504
Certification as an EE Investment Driver

- Green building standards can drive uniform implementation of sustainability in the built environment.
- Verifiable data generated through the certification process demonstrates benefits e.g. through sub-metering.
- Rating tools place an emphasis on EE and RE interventions.
- Green buildings are associated with higher returns on investment, lower operating costs, higher tenancy rates etc.
Thank You