



# Green Building Certification

DoE/IEA Energy Efficiency Training,  
October 2019

Presented by:  
Hlompho Vivian  
Green Building Council South Africa  
[Hlompho.Vivian@gbcsa.org.za](mailto:Hlompho.Vivian@gbcsa.org.za)



1. Introduction to GBCSA

2. SA Green Building Policy Drivers

3. GBCSA Green Building Certification Tools

## ABOUT GBCSA

- 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



**WORLD  
GREEN  
BUILDING  
COUNCIL**





**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)



# National Policy Framework

## 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

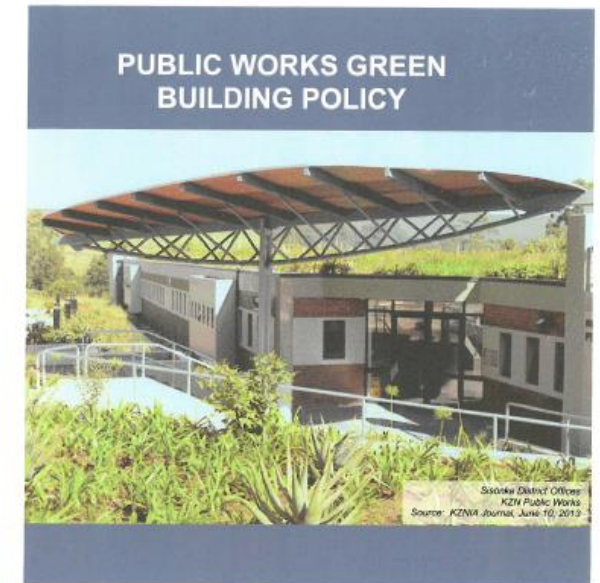
- ☐ Develop norms and stds to improve integrated development and spatial planning of human settlements
- ☐ Develop Net zero building standards
- ☐ SANS 204 compliance
- ☐ Improvement of municipal retrofit stds
- ☐ Waste diversion
- ☐ Generation of 20 000MW of RE
- ☐ Reduction of water demand by 15%



- ❑ SPLUMA (Spatial Planning and Land Use Management Act, 2013) addresses sustainability, , uniformity, equity and inclusivity (social and economic).
- ❑ National Spatial Development Framework (draft 2019)



- ❑ Infrastructure Development Act, 2014
- ❑ National Framework for Green building in South Africa (2011)
- ❑ Public Works Green Building Policy (2018)



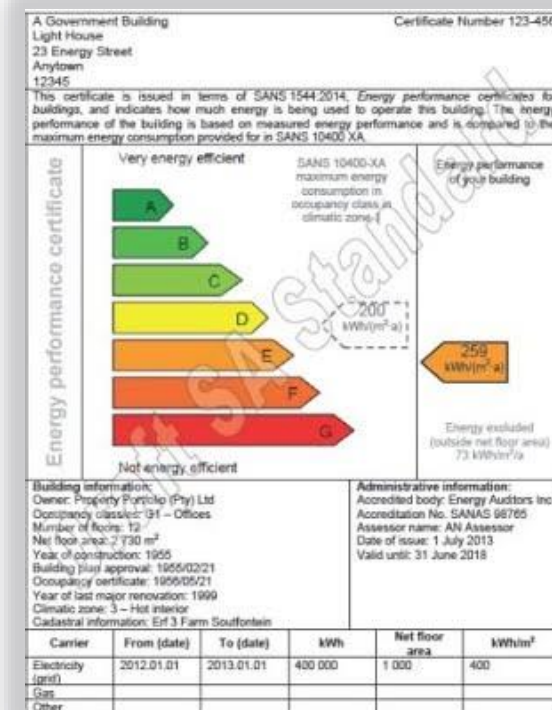


## Draft Post 2015 National Energy Efficiency Strategy

- 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)

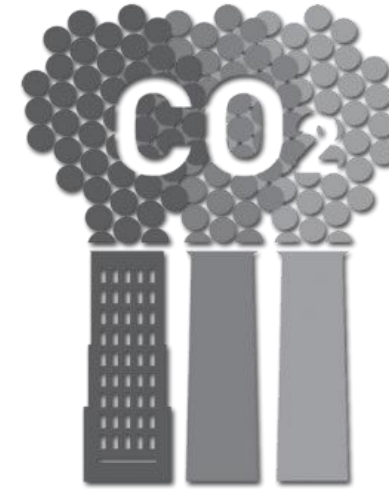
## Integrated Resource Management Plan 2018 (Draft)

- 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

- ❑ National Climate Change Response White Paper, 2011
- ❑ Draft Climate Change Bill, 2018
- ❑ Carbon Tax Bill and Offsets (R120 per tonne of CO<sub>2</sub>), effective June 2019



## Buildings

Globally generate 1 in  
3 tons of CO<sub>2</sub>



## **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.

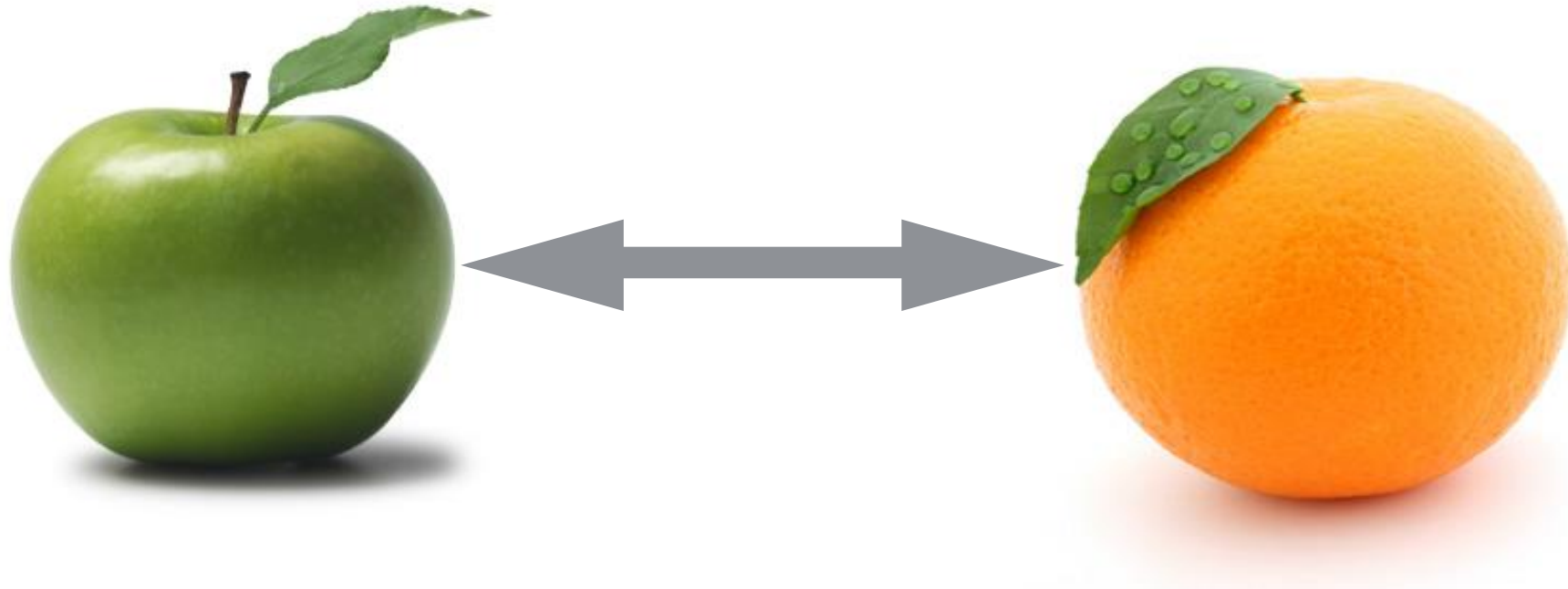
An aerial photograph of Cape Town, South Africa, showing the city's coastal location, the harbor, and the prominent Table Mountain in the background. The foreground features a large, modern, circular stadium and surrounding green spaces.

**Participating Cities are:**  
Tshwane  
eThekweni  
Johannesburg  
Cape Town

### 3. GBCSA Green Building Certification Tools







What defines a green building?  
How do you compare?  
Who says it's a green building?



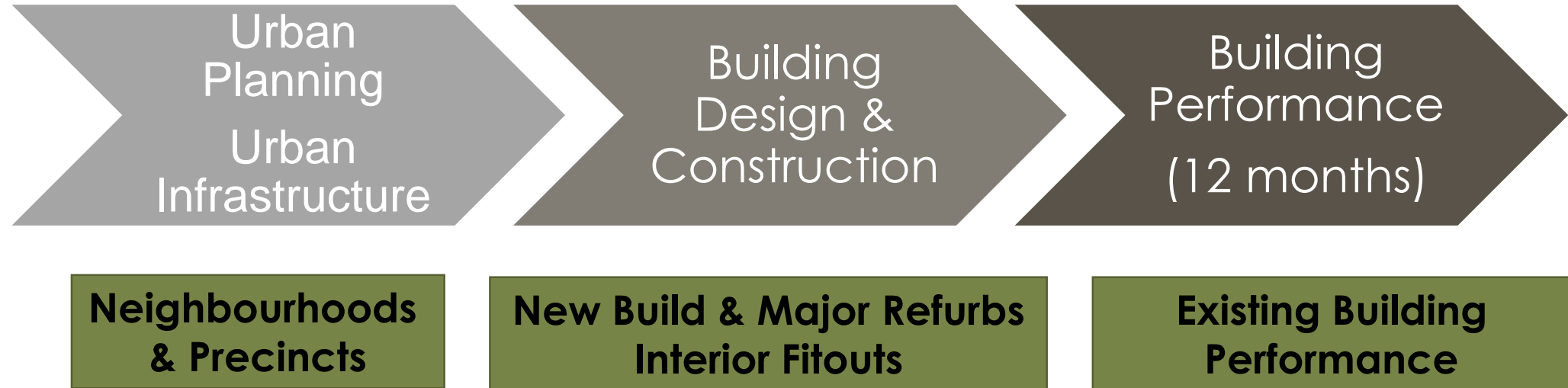
With a standard you can compare & benchmark developments:



**4 Star Retail EBP: Cape Quarter**



**4 Star Retail EBP: V&A Shopping Centre**





New Build and Major Refurbishments/  
Existing Building Performance/  
Interiors/ Sustainable Precincts

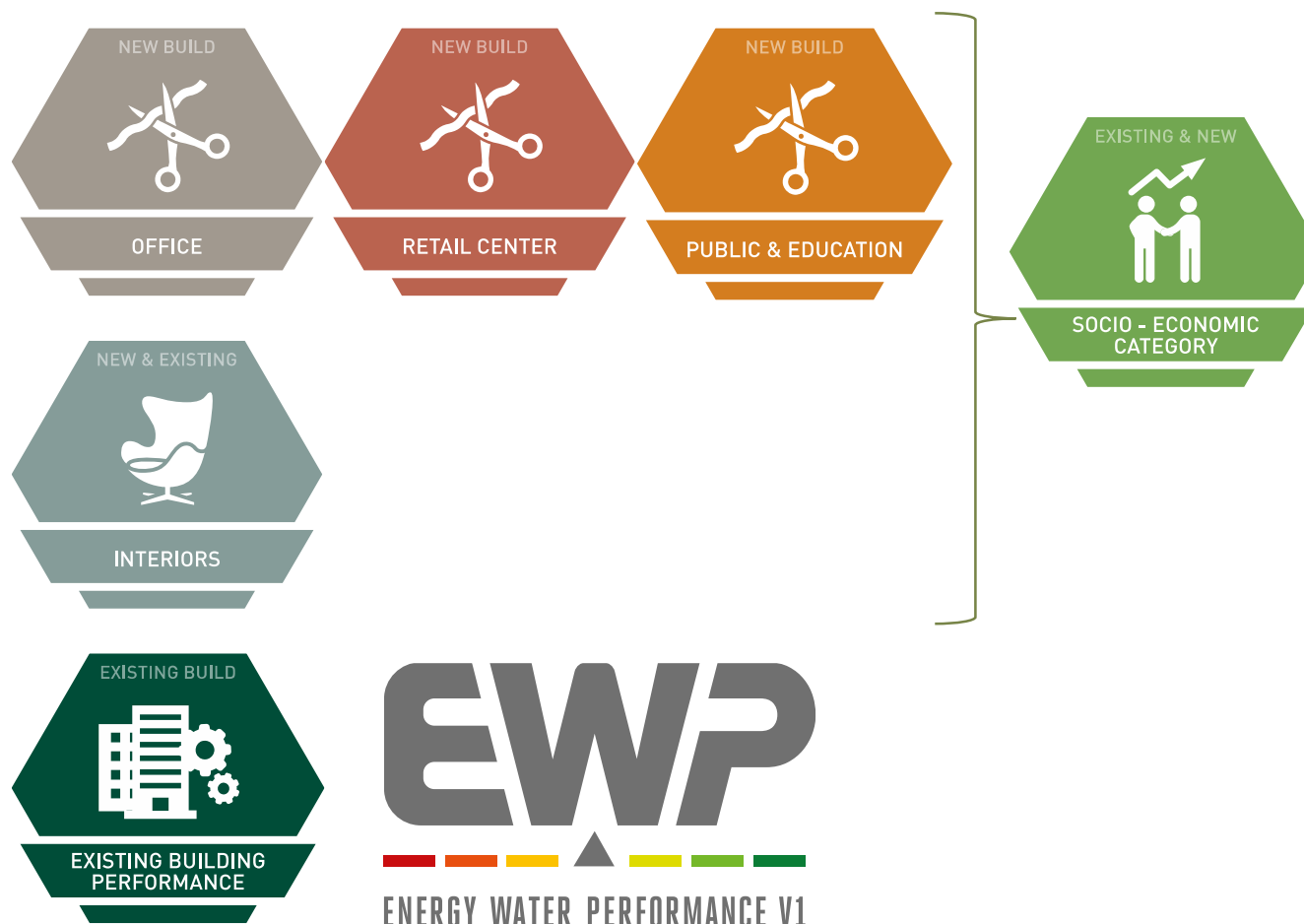


**NET ZERO**  
carbon

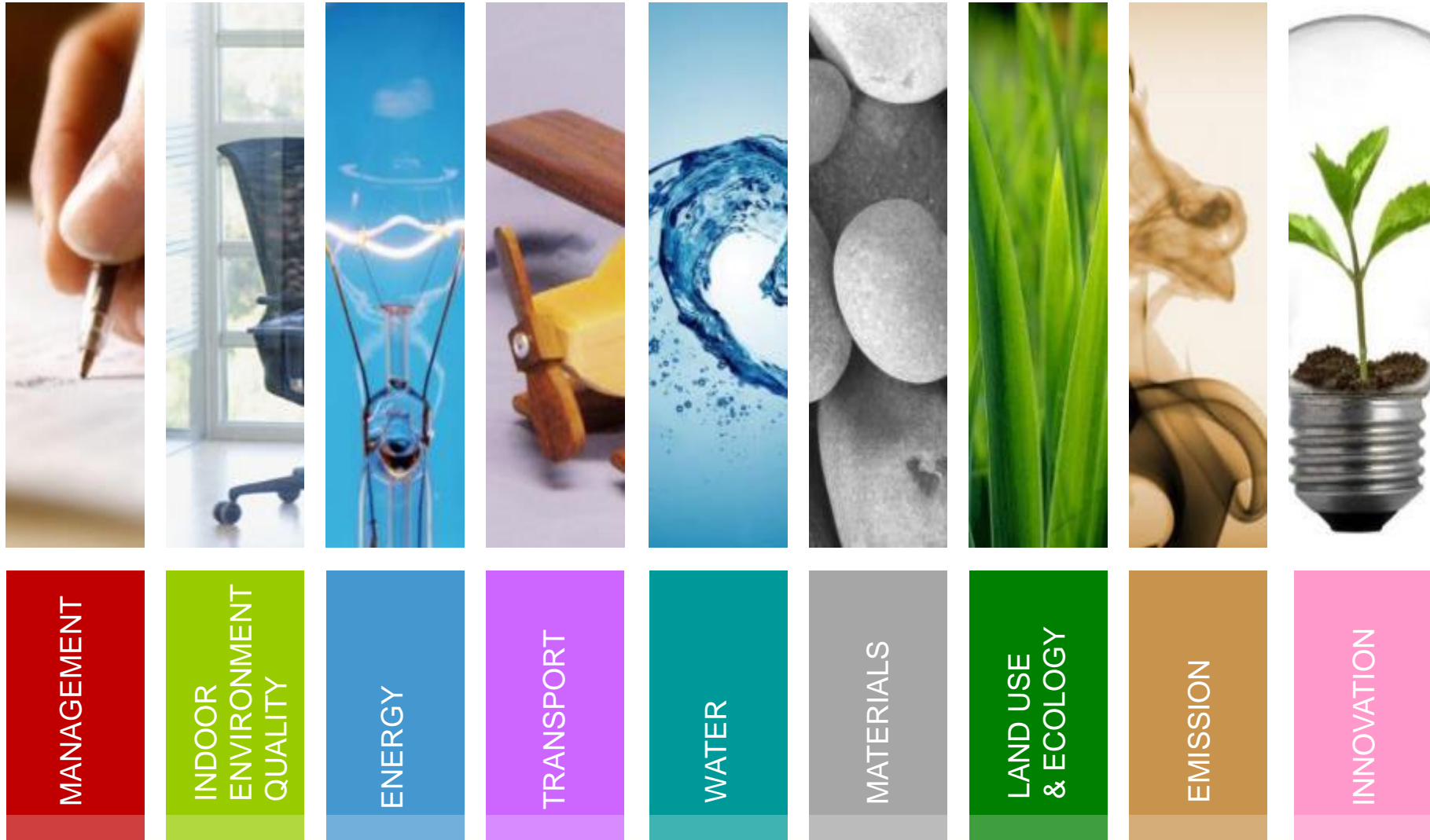
**NET ZERO**  
water

**NET ZERO**  
waste

**NET ZERO**  
ecology







## Energy

Conditional Requirement	Ene -
Greenhouse Gas Emissions	Ene - 1
Energy Sub-metering	Ene - 2
Lighting Power Density	Ene - 3
Lighting Zoning	Ene - 4
Peak Energy Demand Reduction	Ene - 5



New Build Rating  
Tool

ENERGY	
<b>EB-ENE-1</b>	Energy consumption (GHCE)
<b>EB-ENE-2</b>	Peak electricity demand



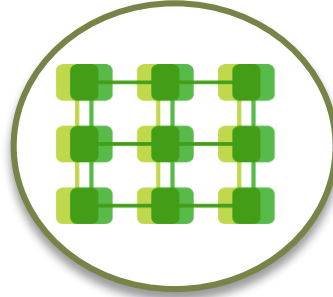
Existing Building  
performance  
rating tool

## 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

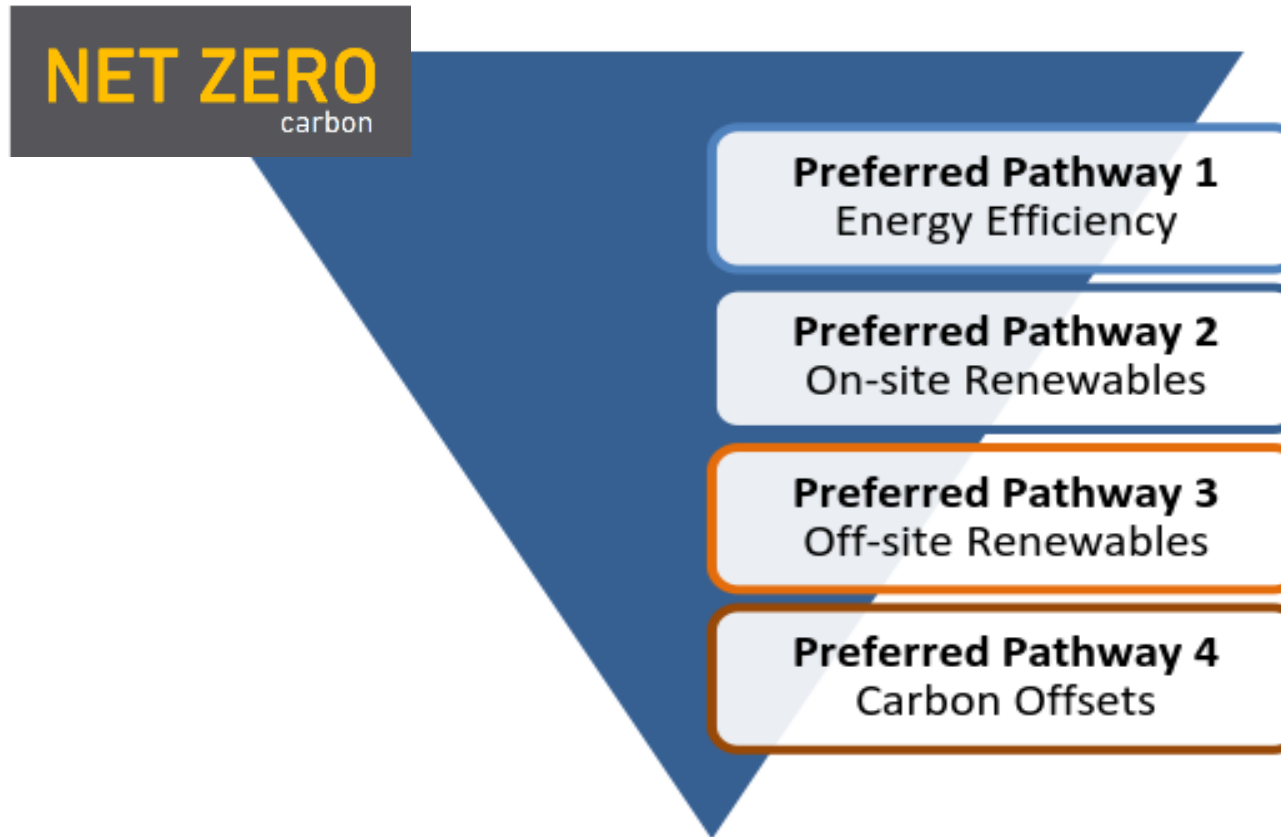
## Environment



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







**20%**

ENERGY USE



**20%**

WATER USE



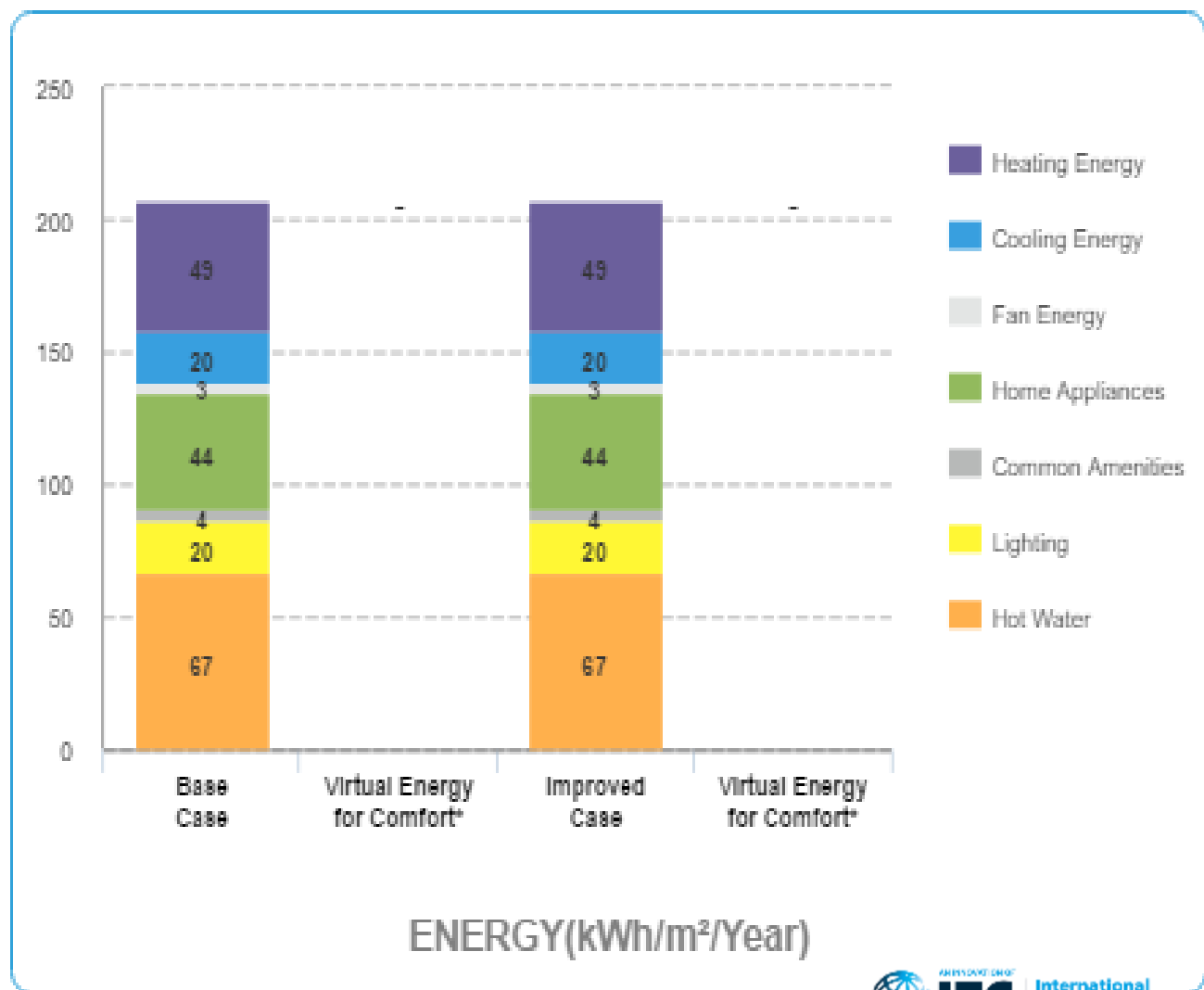
**20%**

EMBODIED ENERGY IN  
MATERIALS

‘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

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

Tool	Count	
New Build	223	
EBP	205	
EWP	25	
Interiors	28	
Net Zero	11	
EDGE Post construction	9	1960 Homes
<b>Total Certification Count: (all tools)</b>	<b>504</b>	

- ❑ 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

