

SUSTAINABLE COASTAL CITIES

GREEN, RESILIENT AND COMPETITIVE



SUSTAINABLE DEVELOPMENT GOALS

This agreement marks an important milestone in putting our world on an inclusive and sustainable course. If we all work together, we have a chance of meeting citizens' aspirations for peace, prosperity, and wellbeing, and to preserve our planet.



SUSTAINABLE CITIES

GOAL



PLANNING: INTEGRATED AND
NATIONAL/REGIONAL

TARGETS 2030



INCLUSIVE URBANIZATION AND
POSITIVE ECONOMIC, SOCIAL AND
ENVIRONMENTAL LINKS

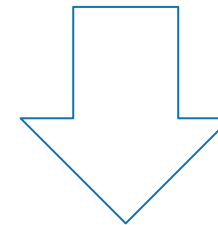
SUSTAINABLE COASTAL CITIES

SUSTAINABLE DEVELOPMENT: Social, economic and environmental development that meets the needs of the present without compromising the ability of future generations to meet their own needs (WCED)

COASTAL AREA: interface or transition areas between land and sea, including large inland lakes (FAO); management area from the coastline that extends landward and seaward up to the point where activities impact on land and sea (PEMSEA)

CITIES: political subdivision of at least 100 km² and a minimum population of 150,000 and a generated income of Php 100,000,000 (Philippine)

Sea Level Rise
Extreme weather events
CO₂
waves
Coastal Erosion
storms



**DRR, MITIGATION,
ADAPTATION**

Sustainable cities

Social development

- ♦ Education and health
- ♦ Food and nutrition
- ★ Green housing and buildings
- ★ Water and sanitation
 - ♦ Green public transportation
- ★ Green energy access
 - ♦ Recreation areas and community support

Economic development

- ★ Green productive growth
 - ♦ Creation of decent employment
- ★ Production and distribution of renewable energy
- ★ Technology and innovation (R&D)

Environmental management

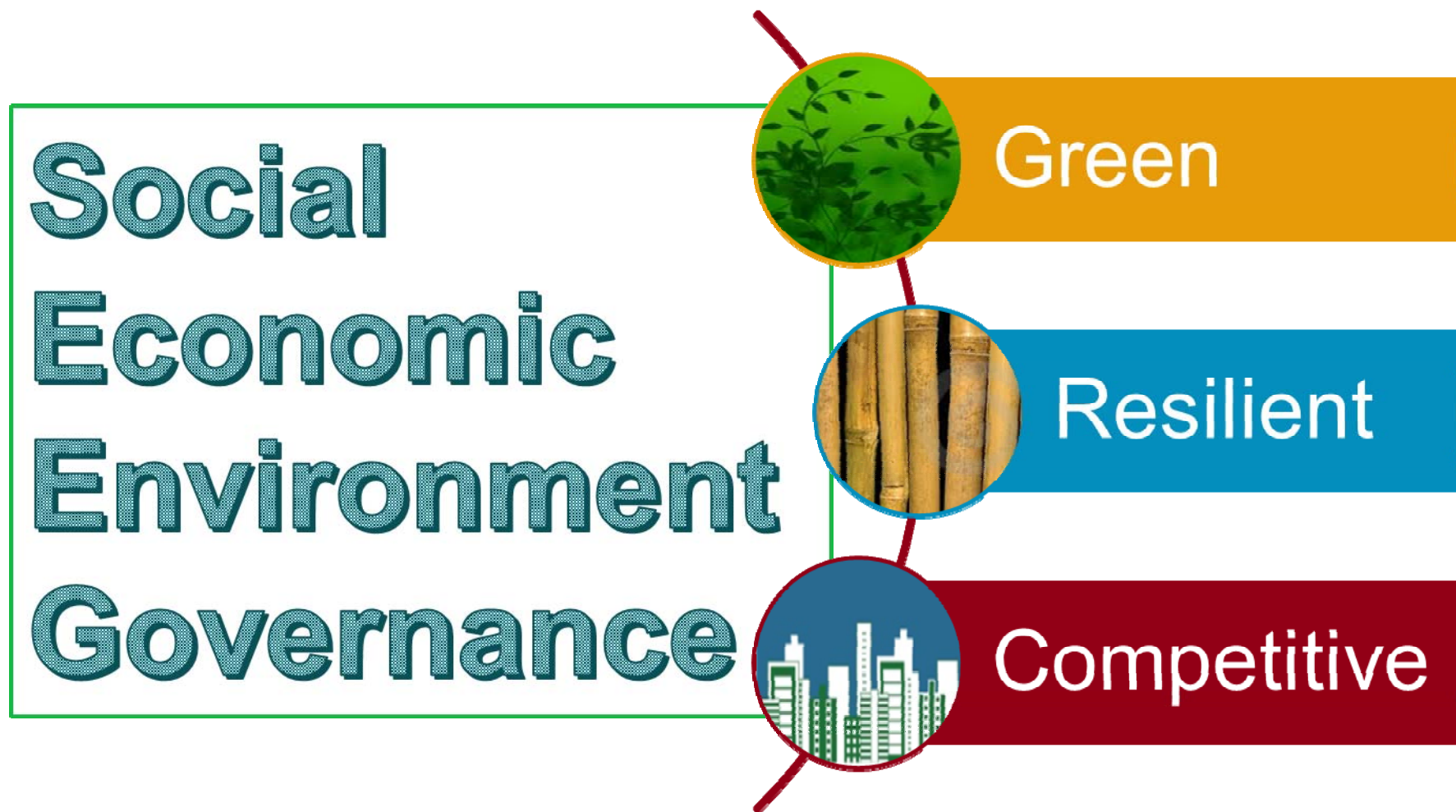
- ♦ Forest and soil management
- ★ Waste and recycling management
- ★ Energy efficiency
 - ♦ Water management (including freshwater)
 - ♦ Air quality conservation
- ★ Adaptation to and mitigation of climate change

Urban governance

- ♦ Planning and decentralization
- ♦ Reduction of inequities
- ♦ Strengthening of civil and political rights
- ♦ Support of local, national, regional and global links

Source: UN/DESA, Development Policy and Analysis Division.

SUSTAINABLE COASTAL CITIES

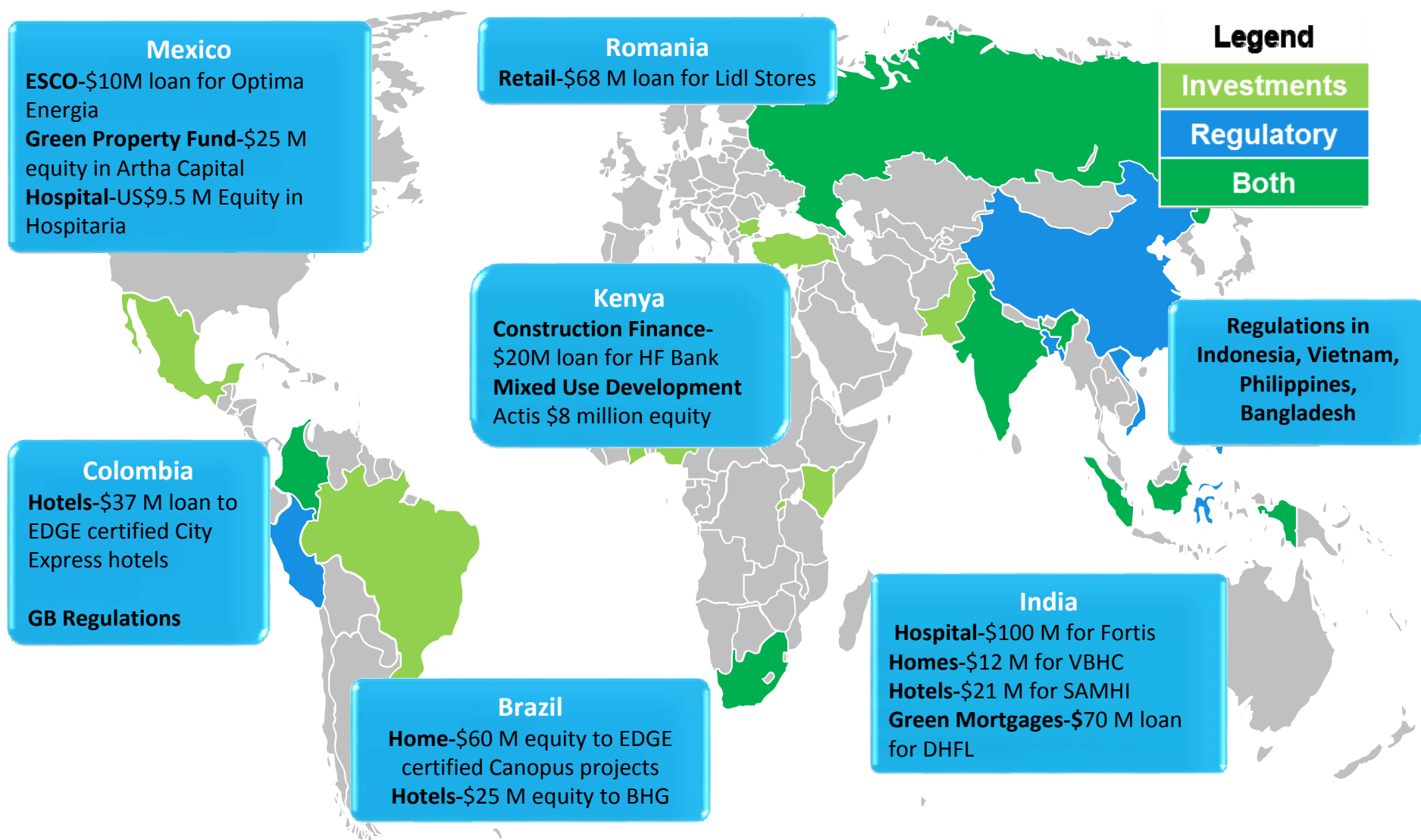




PHILIPPINES

1. Green buildings and green housing
2. Green energy, resource efficiency
3. Resilient buildings

IFC's green buildings footprint is world-wide



OVERVIEW

Green Building

practice of increasing **efficiency** with which buildings use resources such as energy, water and materials

while also reducing the buildings' **impact** on human health and the environment



PHILIPPINES



- **Energy efficiency**
- **Water efficiency**
- **Materials and waste**
- **IEQ**
- **Sustainable sites**

Aims at reducing GHG emission and improving water and energy efficiency

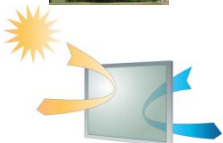
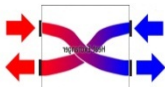


Philippine Green Building Code:
June 2015



GB Ordinance:
March 2014

Top Energy Saving Measures - for the Philippines

	Office	Hospital	School	Residential	Retail	Hotel
 Window to Wall Ratio	8%	3%	7%	7%	4%	5%
 External Shading	5%	2%	6%	6%	3%	3%
 Glass Performance	4%	2%	6%	6%	2%	2%
 Natural Ventilation	6%	8%	5%	9%	12%	4%
 Efficient Chillers	32%	32%	39%	45%	28%	24%
 Total Energy Recovery	4%	11%	N/A	N/A	2%	3%
 Lighting Power Density	8%	6%	13%	4%	23%	7%

Note: This is the percentage reduction on the total building energy consumption

Top Water Saving Measures - for the Philippines

	Office	Hospital	School	Residential	Retail	Hotel
 Grey/Black Water recycling for cooling towers	N/A	39%	N/A	N/A	14%	N/A
 Efficient Washing Machines	N/A	7%	N/A	N/A	N/A	8%
 Low Flow Shower Heads	N/A	7%	N/A	27%	N/A	13%
 Low flush WCs	31%	3%	31%	5%	8%	6%
 Rain Water collection for irrigation	9%	1%	8%	2%	1%	2%
 Low Flow Taps (Kitchen/Bathrooms)	3%	1%	3%	1%	1%	2%
 Efficient Dishwashers	N/A	2%	N/A	2%	N/A	2%

Note: This is the percentage reduction on the **total** building energy consumption

TARGETS



POTENTIAL IMPACT (2030)

USD 864 Million

Costs expected to be avoided

**1.87 Million
Metric tons**

Reduction in CO₂e emissions

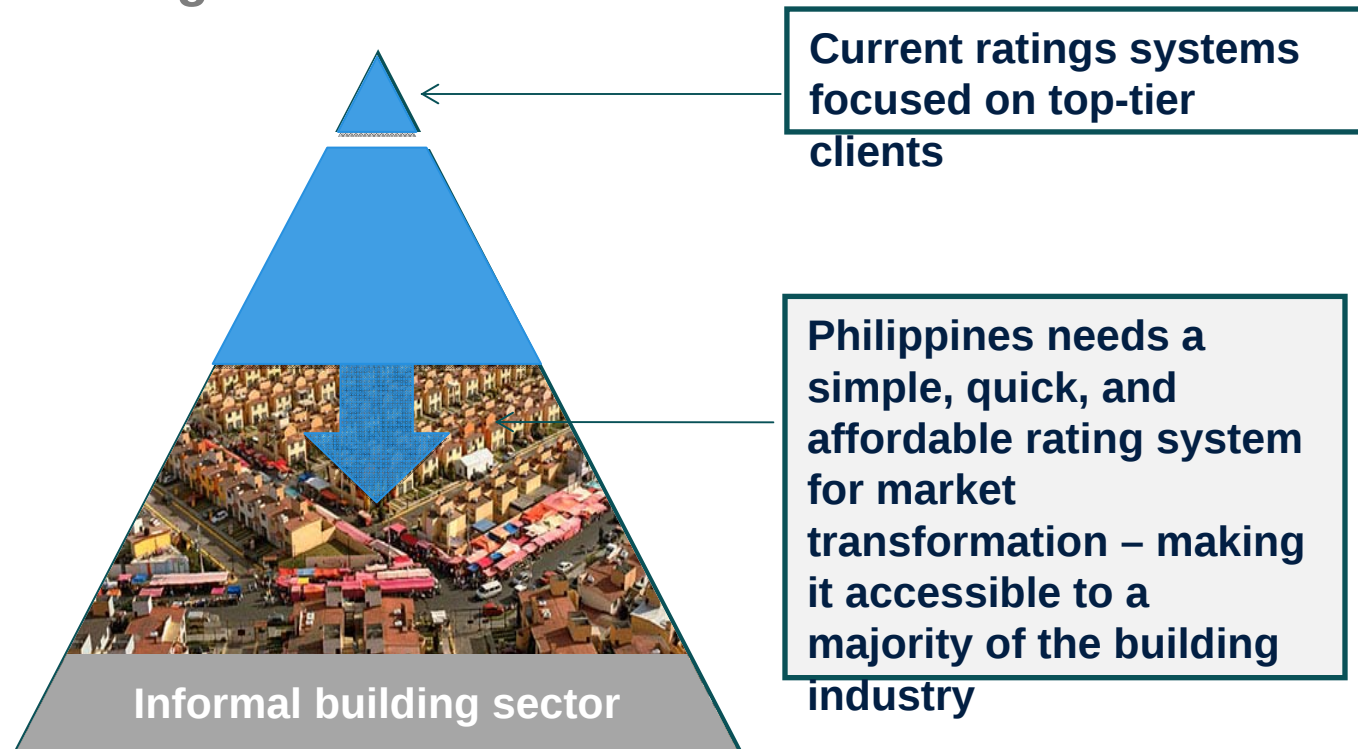
3.9 Million KWH

Energy use avoided



What will it take to transform the building sector?

There is a clear opportunity to engage much more of the market to focus on green buildings.



The mass market needs a simple, quick, and affordable rating system for market transformation.

EDGE Priorities



Energy



Water



Materials

(Embodied Energy)

Aim

**Reducing energy use &
CO₂ Emissions -
Building Operation**

**Reducing Water
Consumption**

**Reducing Energy while
production of Materials**

How?

- Building Envelope
- Efficient equipment
- Energy Management
- Renewable energy

- Water conserving fixtures
- Water Recycling
- Controls

- Recycled Materials
- Reducing the Impact of Material
- Key Building Elements

EDGE Building types

- EDGE only applies to new buildings with 5 building types



Homes



Retail



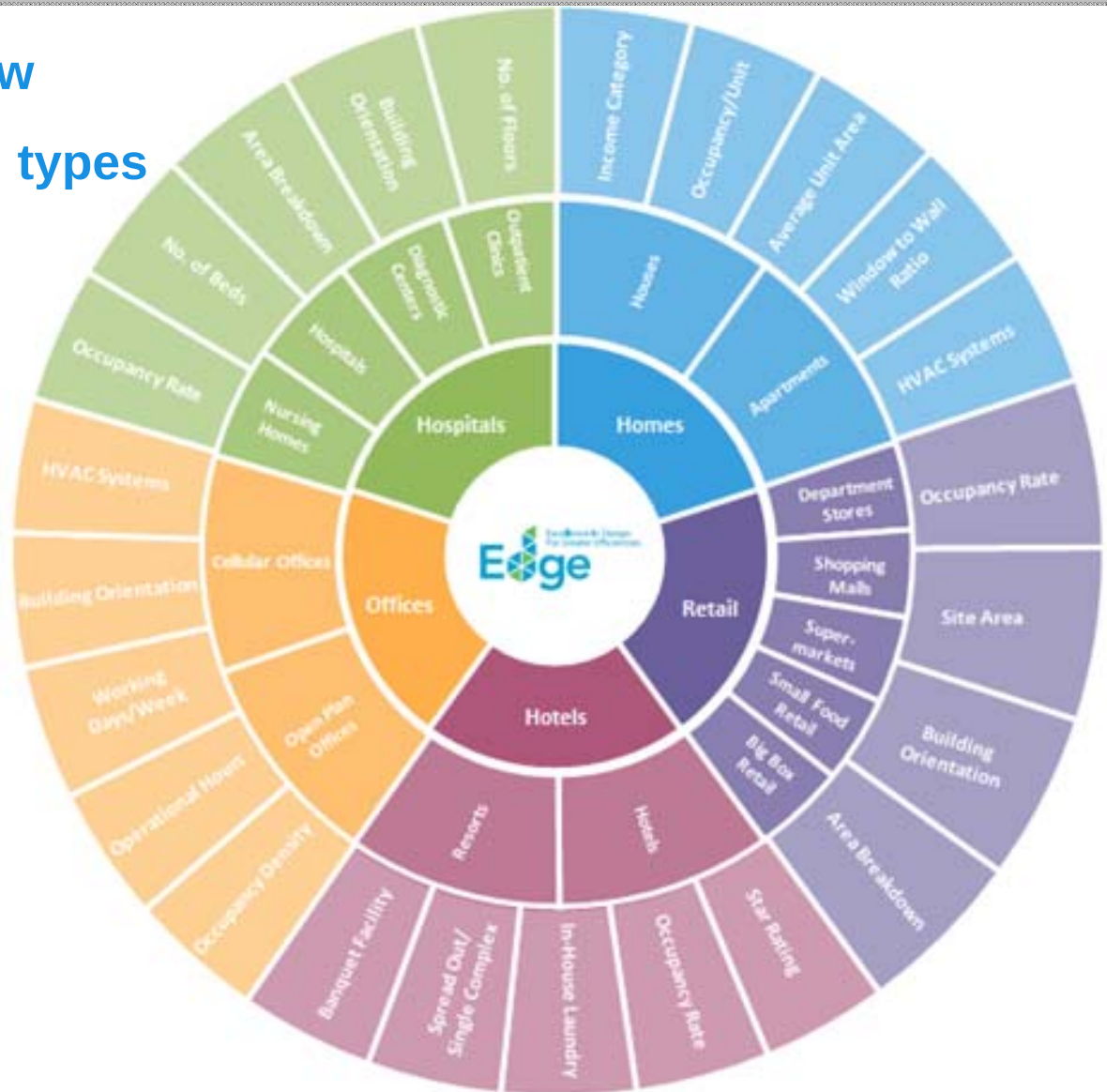
Hotels



Offices



Hospitals



Why EDGE?

-  **Fast** – discover the ideal measures for the best return on your investment within minutes.
-  **Simple** – beneath the intuitive interface is a powerful engine that understands the climatic conditions of your location and how your building will be used by occupants.
-  **Free** – EDGE is available to anyone who registers (only certification carries a cost).
-  **Smart** – view capital costs and the payback period for commercial buildings.

GREEN HOUSING & MID-RISE



RETROFIT THROUGH SUSTAINABLE ENERGY FINANCE



Philippines Sustainable Energy Finance (PhilSEF)

Expert financing for sustainable energy and climate solutions
that make business sense

The Sustainable Energy Finance (SEF) program of International Finance Corporation aims at increasing private sector investments in energy efficiency (EE) and renewable energy (RE) projects through building private banks' capacity and confidence to lend to such projects.

SEF Advisory Program Components



Capacity Building for FIs



Engaging with End-Users, Vendors,
Service Providers



Raising Market Awareness

Key Results from 2009 to date (Advisory)

AS Client Banks	4 (3 completed; 1 ongoing)
Loans	176 projects , USD 846.3 Million
Value of energy savings for the private sector	USD 461.8 Million
GHG Emissions Avoided	2 Million tons CO2/ year
Related Investment	Risk Sharing Facilities for up to USD 168 Million EE/RE portfolio

Manuela Corporation Starmall Alabang



- HVAC Retrofit
- Savings: Php 3 Million/month
- Increased foot traffic and higher tenant satisfaction

Jeco Development Corporation Puerto Princesa, Palawan



- EE measures for Sheridan Beach Resort and Convention Center
- Savings: Php 397,440/month
- Also introduced wind and solar energy



Energy Efficiency



Glacier Refrigerated Services, Inc.

- Energy Efficient Cold Storage Facility
- Non-ozone depleting system
- Savings: Php 1.08 Million / month



Renewable Energy

San Jose iPower Corporation



- 12 MW rice husk-fired power plant
- Collaboration between 26 rice millers
- Power to be sold to the grid
- Improved energy security & addressed waste disposal problem

Sunwest Water and Electric Co. 2



- 8MW run of river hydroelectric power plant
- Power to be sold to the grid
- Watershed maintenance program



BPI

Make the best happen.

Renewable Energy

Venve Development Corporation Ilocos Norte



- Biogas system for modern piggyery
- Efficient, climate-controlled, tunnel ventilation system for piggyery
- Energy generated for own use
- Over Php 19 M value of energy generated

San Carlos Energy, Inc San Carlos City, Negros Oriental

- 22 MW Solar Energy Plant
- Largest energy plant in the country to date
- Provides energy for 80,000 households



WORLD BANK GROUP

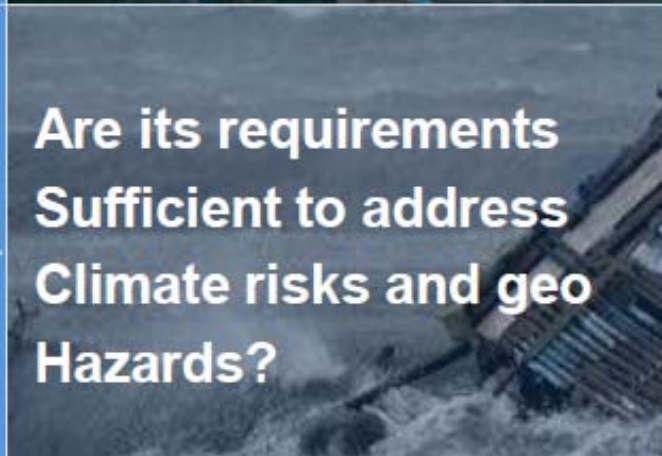
RESILIENT BUILDINGS

Dateline: 8 Nov 2013

DAMAGES



RESILIENT BUILDINGS

 PD 1096 THE NATIONAL BUILDING CODE Revised Implementing Rules & Regulations	 Is it properly enforced?	 Concrete columns and beams, though looks undersize withstand the devastation while the roof, walls and ceilings was Completely blown off.
	 Are its requirements Sufficient to address Climate risks and geo Hazards?	 Extreme wind of 315kph gustiness and a storm surge of 5-6m leave scores of fatalities and 90% of damage to properties.

RESILIENT BUILDINGS

Recommendations

- 1. Revise the NBC**
- 2. Stricter monitoring and inspections**
- 3. Clear accountabilities**
- 4. Automated permitting system and data management**
- 5. Build technical skills and capacity**
- 6. zoning**

STRENGTHENING THE NBC

The *New* National Building Code



Green



Resilient



Competitive

Key Take-away

The “green, resilient and competitive” agenda should always be mainstreamed in all activities to achieved sustainable cities and communities.

END

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www.worldbank.org;

www.ifc.org