



Global Advances in Green and Eco-Cities

**Mark Ginsberg,
USGBC Senior Fellow
Principal, Ginsberg Green Strategies**

April 25, 2013



Guiding Principles

- ★ Leave a Place Better Than You Found It
- ★ One Person (YOU) Can Make a Difference
- ★ Green is good:
 - 3Es: Energy, Environment, Economy
 - Triple Bottom Line: People, Planet, and yes, Profit



Economic Development
is a guarantee for today...

Advanced Technologies
are a guarantee for
tomorrow....

The Green Economy and
Green and Eco-Cities are
a guarantee forever



Cities of the Future...

Will be
successful....

only if they are
GREEN

To be Competitive in the 21st Century, Cities Must Be:

- **Efficient**
- **Affordable**
- **Resilient**

They Must Depend On:

- **Energy Efficiency**
- **Renewable Energy**
- **Smart Grid**
- **Integrated Urban Design**

Cities are built:

- Building by building
- Districts and Neighborhoods
- City-wide policies and design
- With transportation, municipal services, industry and buildings all integrated

Green and Eco-Cities embrace all these elements

Leading to The Concept of Zero Energy Communities and Eco-Cities

“Everything is a resource...nothing is waste.”

Bill McDonough

1. Integrating Energy Technologies

Municipal “waste” is a resource → Biofuels and Power

Buildings as Power Plants → Solar, Geothermal Heat Pumps

2. Applying Advanced Technologies

Zero or Positive Energy Buildings, Zero Water

Industrial Processes, Municipal Operations

Smart Transportation

Global Enthusiasm Grows



WORLD **GREEN** BUILDING COUNCIL

21 Associated Groups

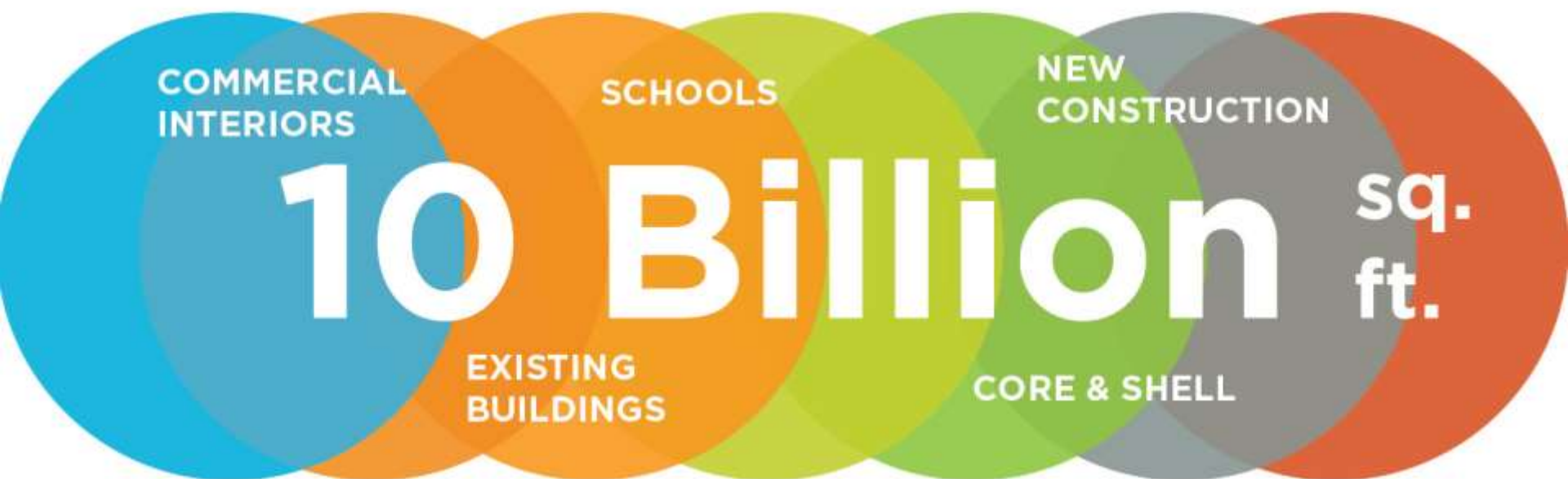
**Conversations with 45
countries to develop
GBCs**

26 MEMBER COUNCILS

Argentina	South Africa
Australia	Spain
Brazil	Sweden
Canada	Taiwan
Colombia	Turkey
France	United Arab Emirates
Germany	United Kingdom
India	United States
Israel	
Japan	
Jordan	
Mexico	
Netherlands	
New Zealand	
Peru	
Poland	
Romania	
Singapore	



LEED CERTIFIED & REGISTERED COMMERCIAL PROJECTS





BREEAM Communities

- Certified projects
- Ongoing bespoke-projects

BREEAM-NL Area Development

- Ongoing projects

BREEAM-ES Urbanisimo

- Ongoing projects

LEED Neighborhood Development

- Certified projects
- Registered projects

Green Star Communities

- Certified projects and ongoing projects

Living Building Challenge

- Certified projects and ongoing projects

DGNB New Urban Districts

- Certified projects and ongoing projects

Casbee for Cities

- Certified projects and ongoing projects

Casbee Urban Development

- Certified projects and ongoing projects

IGBC Green Townships Rating System

- Certified projects and ongoing projects

Smart Growth

- Certified projects and ongoing projects

Pearl community rating system

- Certified projects and ongoing projects

Star Communities

- Certified projects and ongoing projects

One Planet Communities

- Certified projects
- Registered projects

Global Focus on Green Cities

Clinton C40 CITIES: CLIMATE LEADERSHIP GROUP

- **Bill Clinton and
NY Mayor Michael Bloomberg**
- **World Bank, ICLEI, ARUP, WGBC**
- **Beijing, Shanghai, Delhi and Mumbai have been
participants**
- **IGBC Green Cities and Townships
April 25-26 2013 – Mumbai**
- **China Urban Planning Conference
July 17-18 – Zhuhai**
- **U.S. Green Building Council's Greenbuild 2013 –
November 20-23 – Philadelphia**



BILL CLINTON



**NY MAYOR
MICHAEL BLOOMBERG**

US Eco-City Council

- To work collaboratively with the CSUS Eco-City Council
- To help assure quality and “no greenwash”
- To serve as a forum for discussion
- To provide technical support such as model guidelines, policies, incentives
- To create a database of Eco-City projects
- To focus on 1-2 Eco-City pilot projects

ADVANCED TECHNOLOGIES LEAD TO GREENER BUILDINGS



ADVANCED TECHNOLOGIES LEAD TO GREENER BUILDINGS

- **Advances in Lighting, Sensors, Controls, Windows, Insulation, Appliances**
- **Exciting Developments in Zero Energy Buildings**
- **Systems Integration and Smart Grid**

***All Leading to Zero Energy Buildings,
Green Cities and Eco-Cities***

4 Times Square in New York City

With thin film technology, photovoltaic power panels were integrated in the outer layer of the building. The 48-floor skyscraper has a layer of photovoltaic “skin”-- thin film photovoltaic panels from the 35th to the 48th floor on the south and east side, constituting a photovoltaic curtain wall.

There is a Fuel Cell on the 4th Floor and dozens of energy efficiency features.



Empire State Building

- Built in 1930
- 102 stories tall
- Starred in the King Kong Movie
- Renovated in 2010
- Saves \$4 million per year
- A model of energy efficiency in existing buildings



Solar on DOE's Roof



2008 Olympic Village in Beijing

First LEED-ND Gold in China



Micro-Energy Welcome Center at the 2008 Olympic Village



CII-IGBC Green Business Center

First LEED Platinum in India



**Beautiful Eco-Cities of the Future are
Built on Eco-City Guidelines**

Eco-cities Guidelines

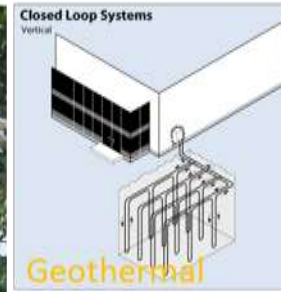
1. Integrate existing stock, future availability and accessibility of all resources, sectors, components and subsystems and their interconnection for **comprehensive energy planning** for the city and surrounding communities
2. Develop efficient, ecologically responsible and **compact mixed-use communities** with walkable, bikeable and transit oriented transport reducing vehicle miles travelled
3. Design and maintain residential, commercial and public buildings with gradually improving **green building standards**
 - Construct all new government buildings showcasing green guidelines
 - Designate and incentivize near-zero energy townships and development zones
 - Progressively incorporate improving green guidelines in development regulations



Eco-cities Guidelines

4. Promote city and customer utilized **renewable energy** based on local resource availability, including;

- photovoltaics,
- solar thermal,
- wind,
- geothermal,
- biofuels
- co-generation,
- landfill gas or waste-water methane
- local smart grid for integration

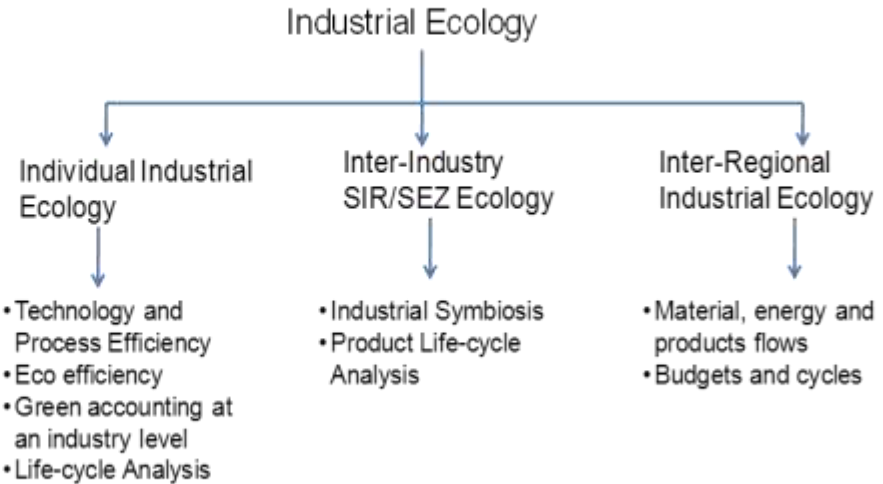


5. Establish **clean and efficient public/private transportation** services interconnected with neighborhood no-emission pooled vehicles using locally produced renewable fuels



Eco-cities Guidelines

6. Encourage **industrial symbiosis**, energy efficiency and green accounting at firm/industry/zone/regional level



7. Promote energy efficiency and distributed energy/electricity/heat generation from **water supply, waste water and solid waste systems**; including maximum water and waste recycling



Solidwaste methane to energy



Waste-water methane to energy

8. Establish management frameworks for **effective operation** of urban infrastructure and services and develop frameworks for **continuous improvements** in the plans based on the performance of actual systems

Eco-City Projects in San Francisco



Candlestick Point
Hunters Point Shipyard
Treasure Island

**San Francisco's Newest Sustainable
Neighborhoods**



Clean Energy & Green Buildings

Goals:

- ***Renewable Energy: 100% Renewable by 2020***
- ***Energy Efficiency: Reduce 400,000 tons CO₂/year***
- **Municipal electricity (170 MW) = 100% renewable**
- **20 MW solar PV (2500 installations, incl. 5 MW Sunset Res.)**
- **3 MW methane from wastewater treatment**
- **8,200 small/med businesses & multifamily buildings**
- **Reduced energy consumption by 45 MW**
- **Saved SF residents & businesses \$30 M on utility bills/yr**
- **LEED Gold required for all new construction, lg. retrofits**

Treasure Island (CCI) & Hunters Point Developments



Clean Transportation

Goals:

- Carbon neutral transportation system by 2030
- 20% trips by bicycle by 2020
- 100% of public transit is electric or B20 biodiesel
- Largest municipal electric fleet in country
- Largest municipal biodiesel (B20) fleet in country
- 78% taxis run on alternative fuels
- 7% trips by bike





Benefits to Cities

- Reduce energy costs for the government...and citizens
- Reduce urban pollution and resulting improved health
- Mitigate global climate change
- Assistance in achieving the National and City Energy Goals
- Reduce power grid congestion
- Help assure reliable energy supplies
- Foster economic development
- Produce jobs in new and emerging technologies
- Increase community pride and reputation



Successful Cities of the Future Will Be Built On...

- **Eco-City Guidelines**
- **Policies that Advance Clean
Energy and Green Development**
- **Leaders Who Embrace Eco-City
Policies and Practices**



Will Your City Succeed?

It's Up To YOU !

**Working together, we can create
the successful cities of the future.**

And All of Us Working Together.
We Can Achieve a Better World



Indian Green Building Council
Greening India since 2001





Points of Contact and Resources

U.S. Green Building Council www.usgbc.org

India Green Building Council www.igbc.in

C40 Cities www.c40cities.org

Sister Cities International www.sci.org

U.S. Department of Energy www.energy.gov

Mark Ginsberg mark.ginsberg35@gmail.com