Capitalising on Energy Efficiency in the Built Environment, the Singapore journey

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Capitalising on Energy Efficiency in the Built Environment

Long-Term Planning for Environmental Sustainability

Singapore’s Sustainability Blueprint & Green Building Masterplan

BCA Green Mark Scheme

80% of buildings Green Mark certified by 2030

Energy Conservation (ETTV, CP24:1999)
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Green Mark Scheme

- **Certification** scheme
  - Emphasis on **Energy Efficiency**
  - Tailored to **tropical climate**
  - Heat gain and cooling of spaces
  - High standards of **verification** controls & measurement

- Energy and water efficient
- High quality and healthy indoor environment
- Integrated with green spaces;
- Constructed from eco-friendly materials.

**BCA Green Mark Scheme**
- **BCA Green Mark for New & for Existing Buildings**
- **BCA Green Mark beyond Buildings: Parks, Rail Transit Systems**
- **BCA Green Mark for Districts**
- **BCA Green Mark for Occupant-Centric Spaces**

17 Green Mark schemes

www.greenmark.sg
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Green Mark Scheme

![Graph showing Green GFA (%) with targets and achievements from FY2005 to FY2029. The graph indicates that by end FY14, >25% target has been achieved.](image)
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Singapore, leading the way in Green Buildings in the Tropics

Green Building Rating Systems Around the World

15 countries
71 cities
233 applications
GFA 1 billion sqf
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**Mandating Minimum Standards**

- **Building Control Act**
- **Environmental Sustainability Regulations**

**Raising Minimum Energy Efficiency Levels**

![Graph showing improvement in energy efficiency](image)

- **New Buildings In Apr 2008**: 18%
- **New Buildings In Dec 2010**: 28%
- **Existing Buildings 2013**: 25%

**Mandating Periodic Energy Audit & Compliance of Building Cooling Systems**

- **Regular maintenance and optimisation of the cooling system is critical to ensure that it continues to operate efficiently.**

**Energy Consumptions in Buildings**

- **Cooling System**: 50%
- **Lighting**: 20%
- **Lift**: 12%
- **Equipment**: 13%
- **Others**: 05%

**Continued operations at optimum levels**
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Public Sector Taking the Lead

- **New public sector buildings [>5000sqm of A/C area]** to attain **Green Mark Platinum rating**

- **All large existing public sector buildings to attain > Green Mark Gold plus rating by 2020** [75% certified/on-going]

### New Public Platinum Building Projects (Cumulative)

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<th>Year</th>
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<th>PSTLES Projects</th>
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GM Platinum National University of Singapore

GM Platinum Ng Teng Fong Community Hospital
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Spurring the Private Sector - Incentives

- **S$20 million Green Mark Incentive Scheme for New Buildings** [101 projects]  
  - Fully Committed

- **S$5 million Green Mark Incentive Scheme for Design Prototype**  
  - $1.6M Committed

- **Bonus Gross Floor Area for Higher Tier Green Mark ratings**  
  - 47,000 sqm Committed

- **S$100 million Green Mark Incentive Scheme for Existing Buildings** [83 projects]  
  - Fully Committed

- **Building Retrofit Energy Efficiency Financing (BREEF) Scheme**  
  - 5 Pilot Projects
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International Partnerships

BCA Centre for Sustainable Buildings, Singapore
A Centre Collaborating with UNEP

Policy Development & Capacity Building

Policy Collaboration

Strategic Alliance

Collaborations amongst SEA countries on SB initiatives

Connectivity into International Network

Information Sharing & Outreach

Mr Harvey Bernstein
VP Industry Insights & Alliances
McGraw Hill Construction

International Green Building Conference 2013
Singapore
Key Takeaways

- **Long-term planning** for Environmental Sustainability
- Tailored **Certification Scheme** to assess performance
- Mandating minimum standards
- Public Sector taking the lead
- Incentives to spur Private Sector
- International **Partnerships**

Thank you...