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Sustainable City Finance

The New York Academy of Sciences

Opportunities & Importance of Green Buildings in a Low-Carbon Economy

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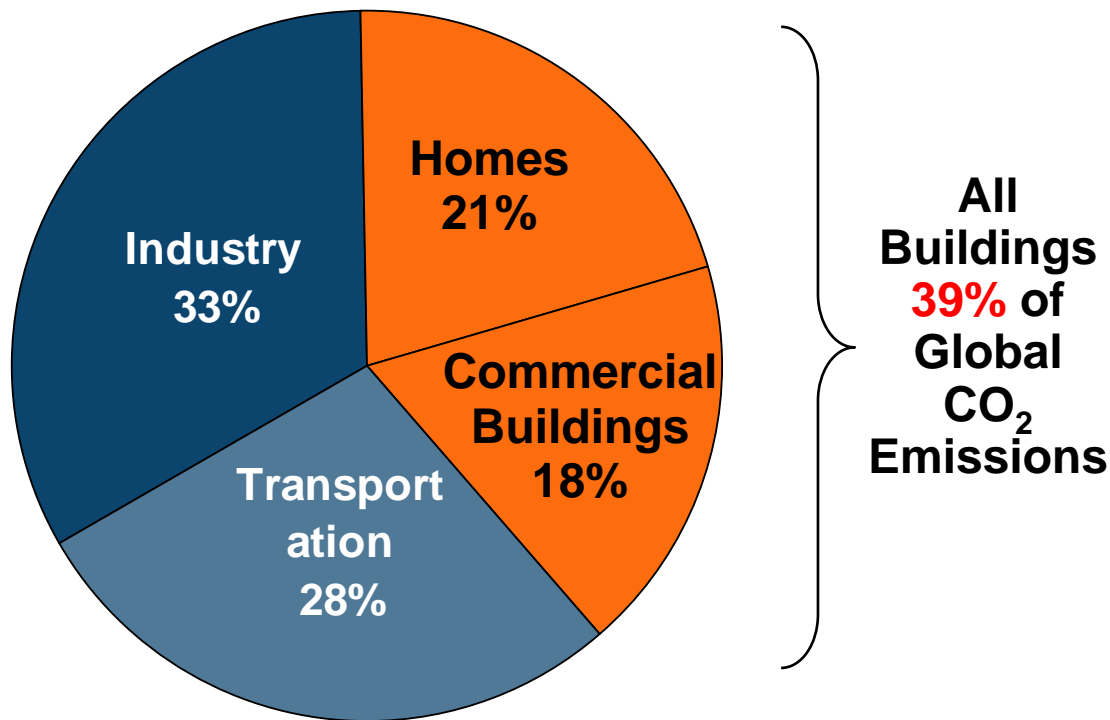
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Global Thought Leadership & Business Development

McGraw-Hill Construction

Buildings: The Largest CO₂ Emitter

Global CO₂ Emissions by Sector



Electricity Use in U.S.

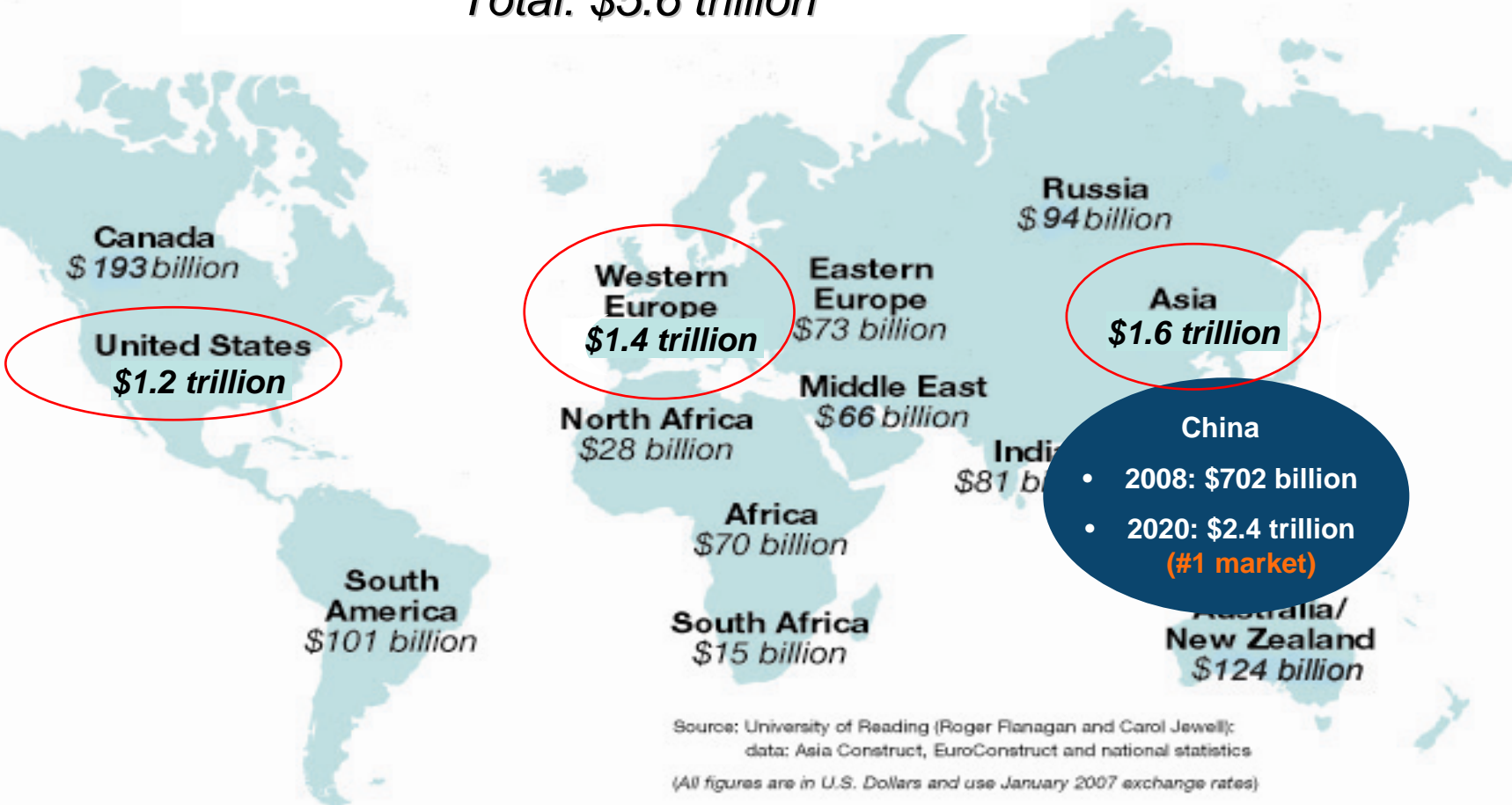
70% Used by
All Buildings,
of which 43%
is commercial

Source: U.S. Department of Energy, Building Energy Databook, 2008

Construction = 10% of Global GDP

Global Construction Output (2008)

Total: \$5.6 trillion



Opportunity in Existing Nonresidential Buildings

According to MHC Building Stock Database & Construction Forecast, in '08/'09:

→ **Total building stock (nonresidential) in 2008:**

- 4.4 million+ buildings¹
- **New:** 1.4 billion sq. ft. (1.8% of total)
- **Existing:** 75+ billion sq.ft. (98.2%)

→ **2009 Construction Spending:**

- **New:** \$196 billion
- **Major renovation:** \$60-80 billion – only a small percentage of buildings

→ **Green Market Size:**

- **Today:** \$34 billion (5-10% all nonresidential buildings)
- **Five Years:** \$85 billion (20% new; 30% existing)
- **To meet Kyoto standards, approximately two-thirds of existing commercial buildings would need to be retrofit**

¹ U.S. Department of Energy, Energy Information Administration

Business Benefits of Green Building Are Increasing

	<u>2005</u>	<u>2008</u>
→ Decreased Operating Costs:	8-9%	13.6%
→ Increased Building Values:	7.5%	10.9%
→ Improvement in ROI:	6.6%	9.9%
→ Increased Occupancy:	3.5%	6.4%
→ Rent Rise:	3.0%	6.1%

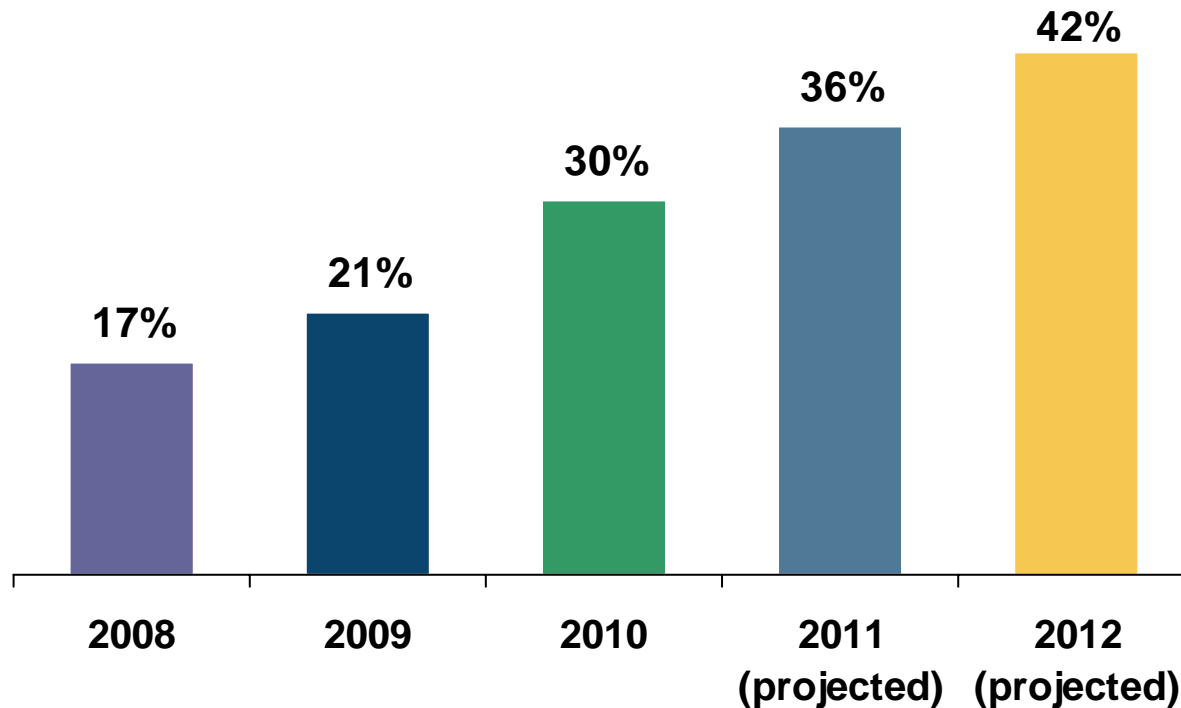
Green Building saves up to 50% in energy costs, leading to 33%-39% reduction in CO₂ emissions

Green Building Also Makes Cities Healthier & People More Productive

Source: Commercial & Institutional Green Building SmartMarket Report, McGraw-Hill Construction, 2008

Corporations Increasing Investment in Green Building

Growth in Corporate Green Building Over Time
Firms with Over 60% of Building Portfolio Green



Source: 2009 Greening of Corporate America, Siemens/McGraw-Hill Construction, 2009

Buildings Are Critical in U.S. Climate Action Plans

- Obama Administration climate control strategy has focus on energy efficiency in buildings
- Drive to net-zero energy buildings key priority of the U.S. Department of Energy
- U.S. states & local governments driving CO₂ emission reduction through green buildings:
 - Policy explosion from 2005 → 2009*:
 - **State: 13 → 31**
 - **Local: 57 → 253**

* Through 11/1/09

Green Wins in Stimulus Legislation: *Renovation Gets a Boost in Green*

→ Much of Public Building \$\$ to **Green Renovation** Projects

- GSA → \$4.5 billion
- DOD → \$4.2 billion
- VA → \$1 billion

→ Tax breaks for **Residential Energy Efficiency** expanded & extended

However,
Time for Funding
Allocation is Slow

75% (\$1.5 billion)
of GSA's 2009 \$\$
has been allocated

Only \$89 million
paid out

Concluding Observation

Mandates on Utilities Will Place Burden on Building Owners

- **Because buildings use so much electricity and energy (70%), they will be at the forefront of any U.S. climate reduction strategy that emerges**
- **Utilities will pass costs on to building and home owners**

