

November 14, 2011

Congressional Briefing

# Implications of Green Building & Energy Efficiency on the Construction Workforce

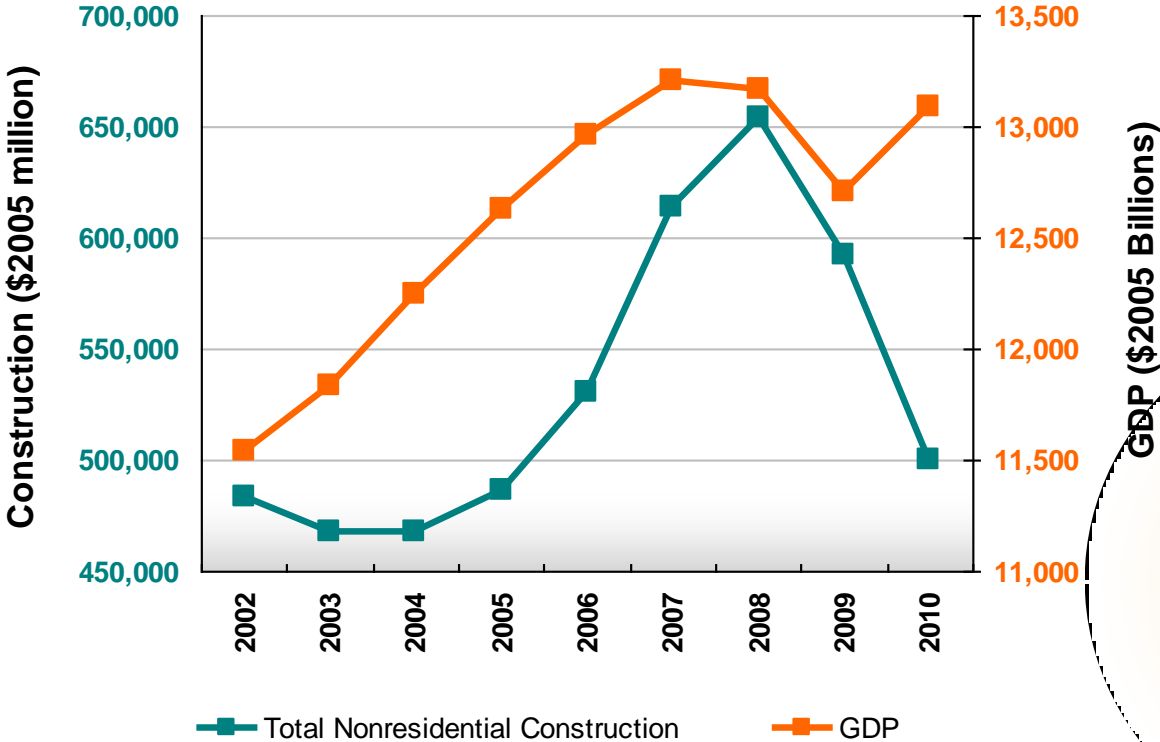
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# Total U.S. Construction = 5.5% of US GDP in 2010

Value of Nonresidential Building Construction



**Construction is the second largest contributor to GDP**

Source: U.S. Department of Commerce, Bureau of the Census, Value of Constructoin Put in Place, 2002-2010 (Construction Value); U.S. Department of Commerce, Bureau of Economic Analysis [<http://bea.gov/national/index.htm#gdp>] (GDP). 2005 deflator U.S. Department of Commerce, Bureau of Economic Analysis

# U.S. Total Construction Starts

Billions of Dollars	<u>2007</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>
<b>Total Construction</b>	<b>641.0</b> -7%	<b>428.6</b> +1%	<b>409.8</b> -4%	<b>411.8</b> -0-
<b>Commercial Bldgs.</b>	<b>100.8</b> +9%	<b>41.3</b> -12%	<b>43.9</b> +6%	<b>47.4</b> +8%
<b>Institutional Bldgs.</b>	<b>117.7</b> +6%	<b>109.7</b> -2%	<b>93.6</b> -15%	<b>92.1</b> -2%
<b>Manufacturing Bldgs.</b>	<b>20.8</b> +51%	<b>9.2</b> -5%	<b>12.4</b> +35%	<b>12.9</b> +4%
<b>Single Family Housing</b>	<b>201.2</b> -26%	<b>100.0</b> +6%	<b>94.7</b> -5%	<b>104.6</b> +10%
<b>Multifamily Housing</b>	<b>60.3</b> -13%	<b>21.0</b> +17%	<b>23.6</b> +13%	<b>28.0</b> +18%
<b>Public Works</b>	<b>121.3</b> +8%	<b>119.0</b> -4%	<b>99.6</b> -16%	<b>94.8</b> -5%
<b>Electric Utilities</b>	<b>19.0</b> +7%	<b>28.5</b> +34%	<b>42.0</b> +48%	<b>32.0</b> -24%

Source: McGraw-Hill Construction Market Forecasting Service/ Construction Industry Outlook (construction.com), October 2011

# McGraw-Hill Construction Definition

A **Green Building Project** is...

→ One built to LEED or other green building standard

**OR**

→ Is Energy-efficient and Water-efficient as well as...

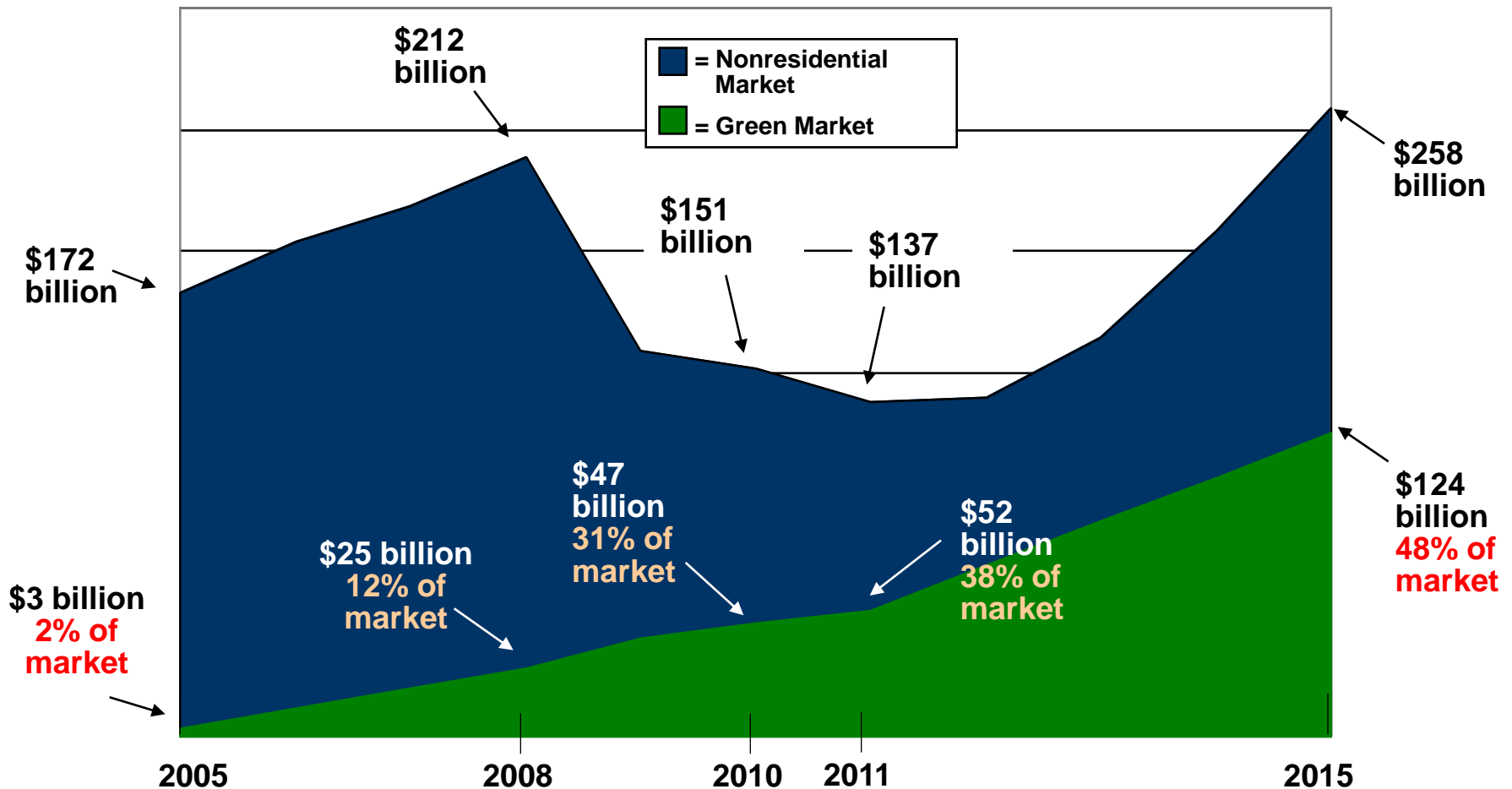
– Resource-efficient (e.g., recycling, reuse, rapidly renewable materials)

**AND/OR**

– Improves indoor air quality

All green building projects are energy-efficient projects

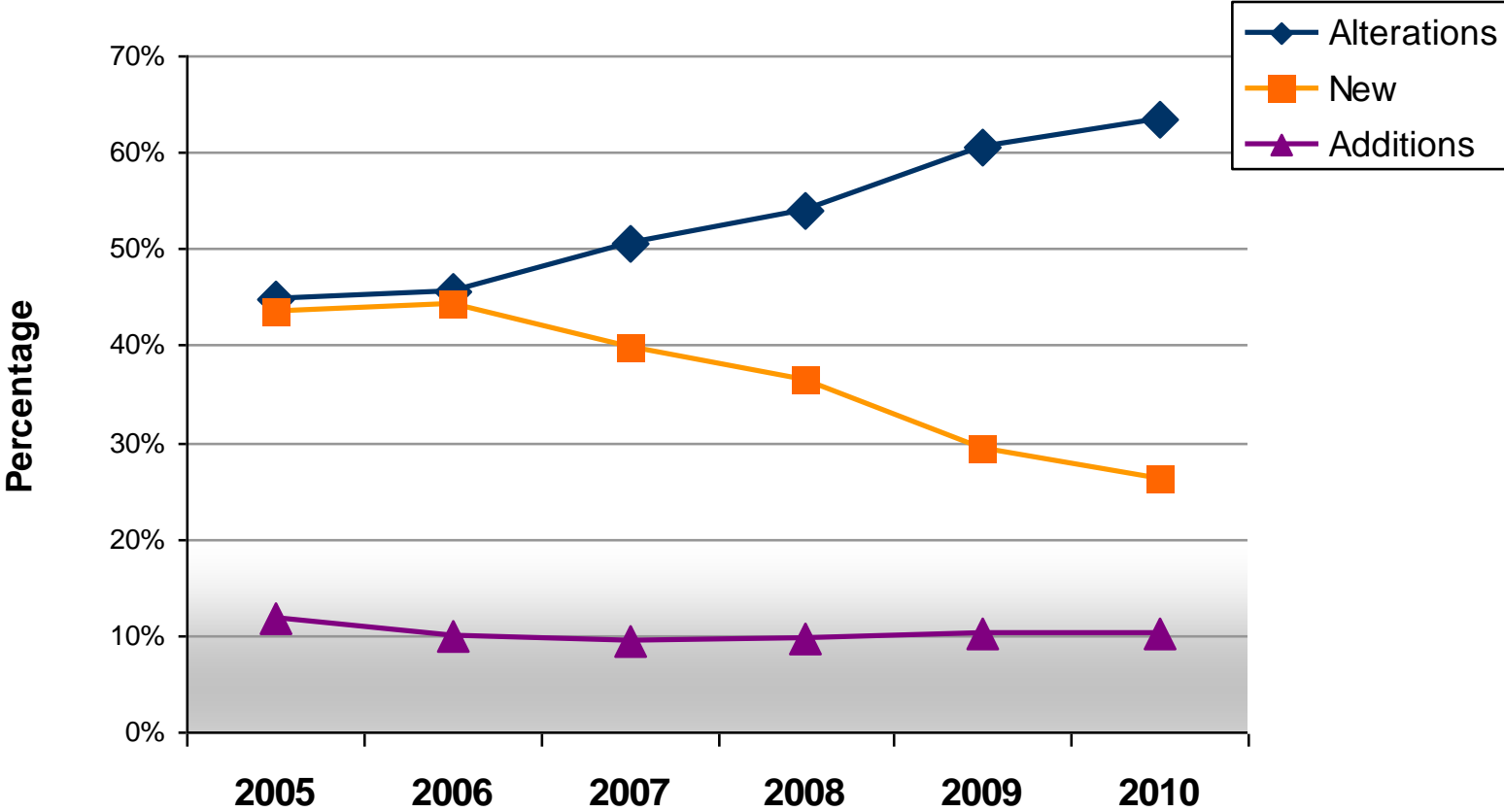
# 2015 Offers Significant Opportunity for Green Building in **Nonresidential Starts**



Source: Green Market Size: 2011Green Outlook Report, McGraw-Hill Construction; base value of construction market from McGraw-Hill Construction Market Forecasting Service, updated October 2011

# Most Commercial Projects Are Retrofit & Renovation

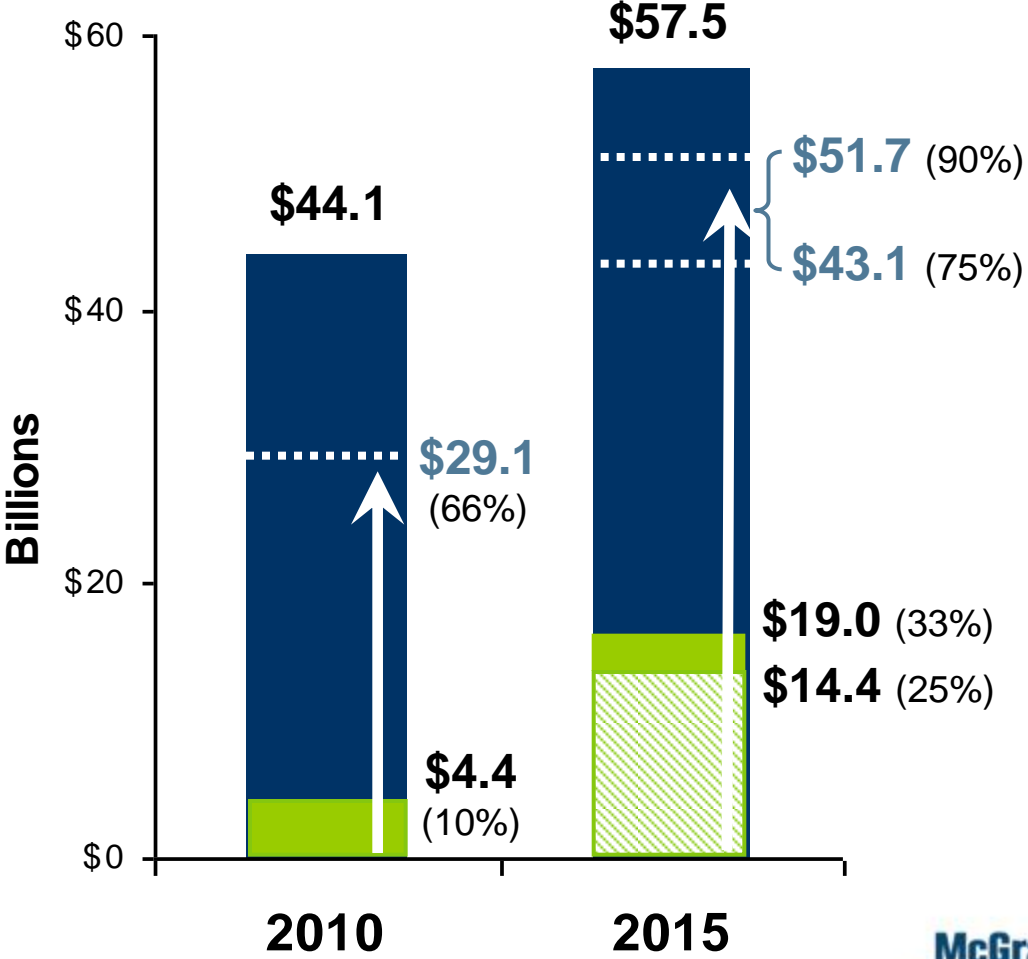
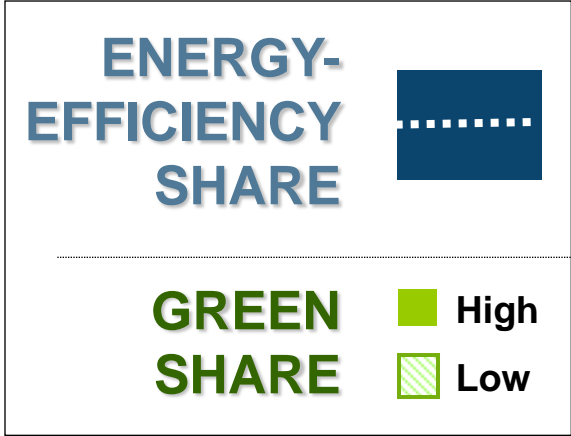
Commercial Construction Based on Number of Projects Started (2005-2010)



Source: McGraw-Hill Construction, Construction Starts Database, 2005-2010



# Projected Major Renovation/Retrofit Market Size for Energy Efficiency & Green

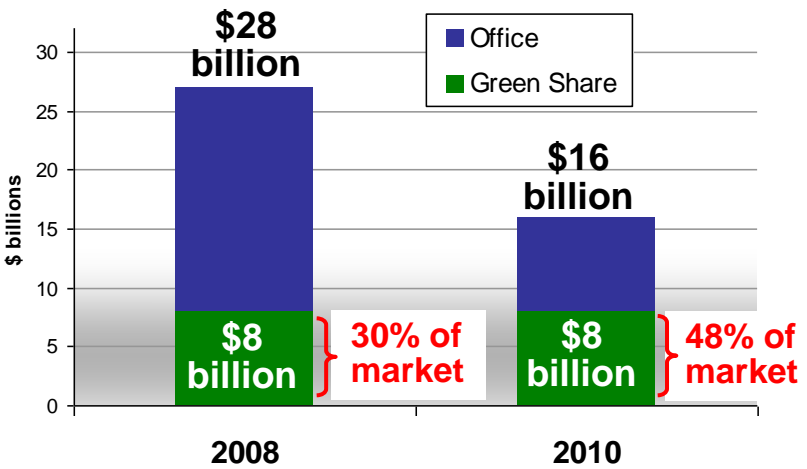


Source: Green Outlook 2011, McGraw-Hill Construction Dodge Analytics, 2010

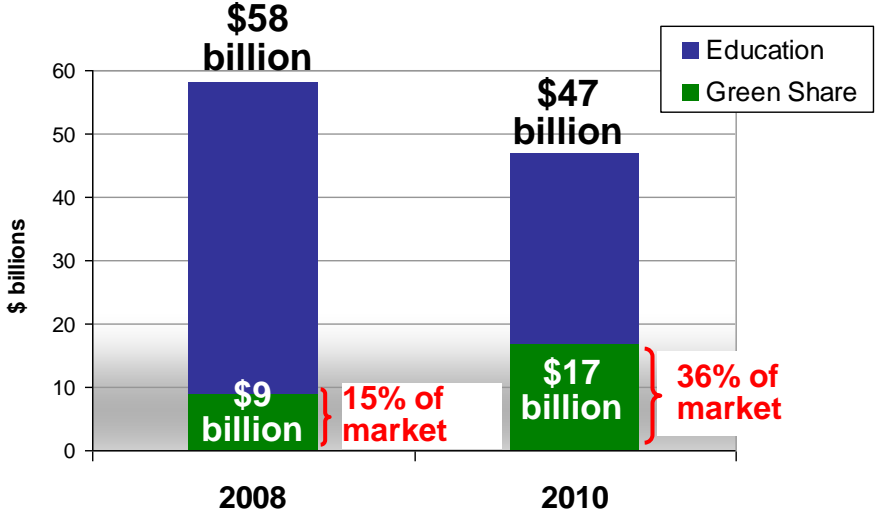


# Green Share of U.S. Nonresidential Buildings

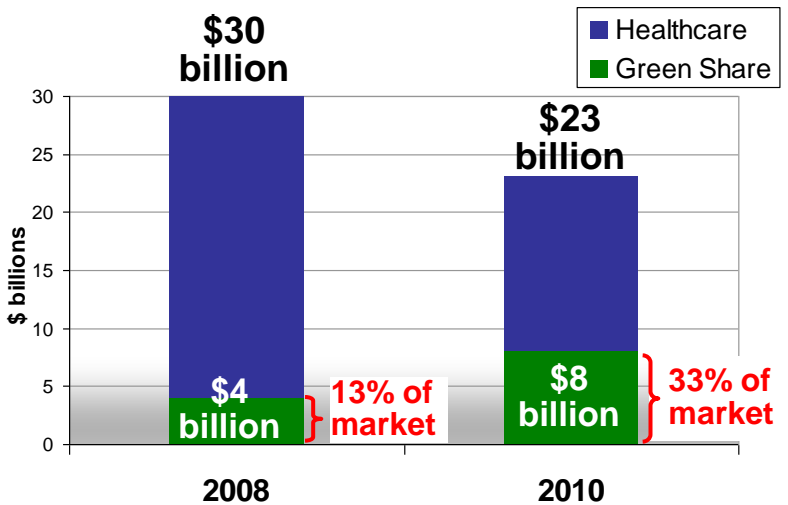
Green Building Share of **Office** Starts



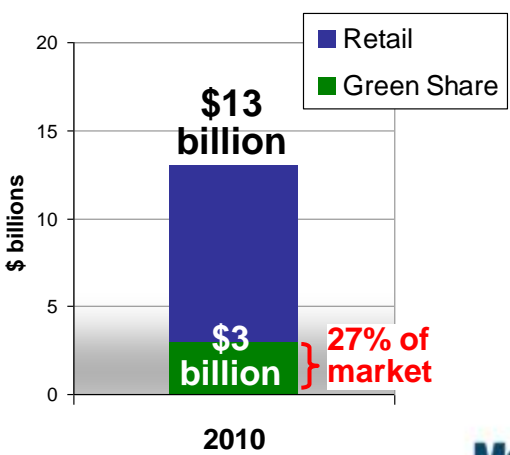
Green Building Share of **Education** Starts



Green Building Share of **Healthcare** Starts



Green Building Share of **Retail** Starts



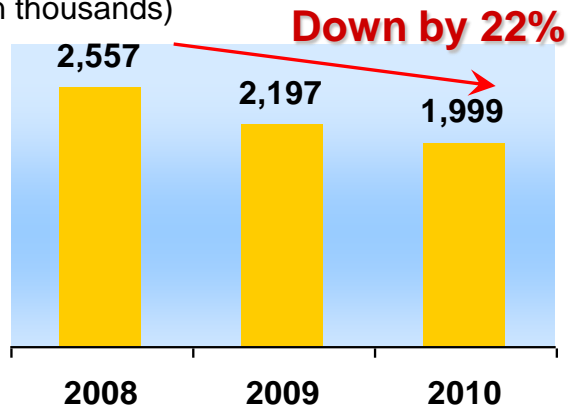
Source: McGraw-Hill Construction, October 2011



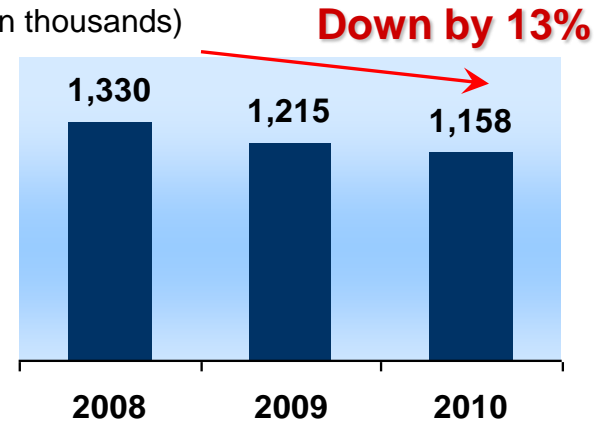


# Reduction in U.S. Non-Residential Construction Labor Force since 2008

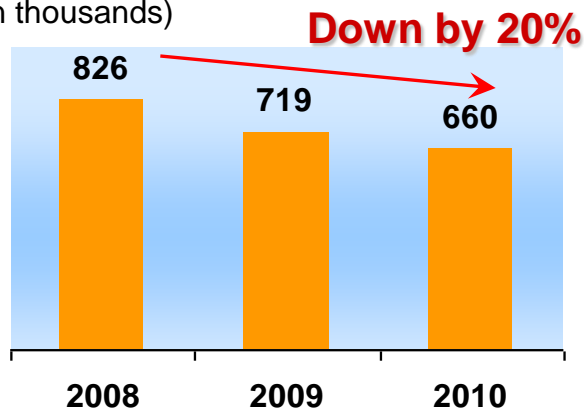
TRADES  
(in thousands)



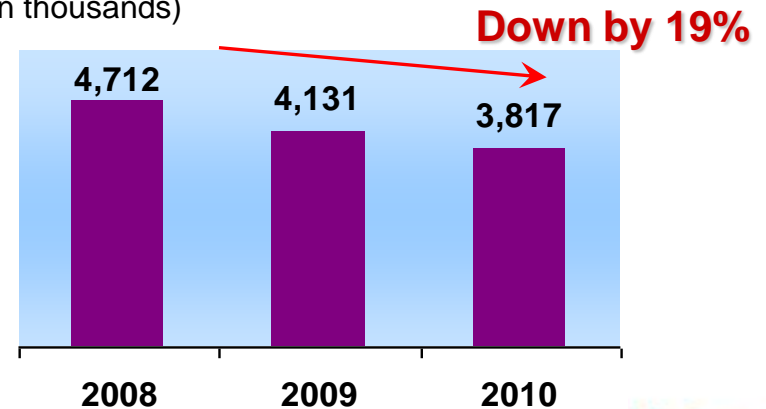
A/E FIRMS  
(in thousands)



CONTRACTORS  
(in thousands)



ALL NON-RESIDENTIAL  
(in thousands)



Source: Bureau of Labor Statistics

# Looking Forward: U.S. Construction Facing a Workforce Shortage

- 69% of AEC firms expect workforce shortages in next three years
- Key Areas of Concern in Filling Shortage:
  - Retirement of Senior Staff: 62%
  - Shortage of current students in pipeline: 54%
  - Lack of interest by next generation: 60%



# 45% of GCs Expect Workforce Shortages in the Trades

**Top Trades with Major Shortage of Skilled Workers  
Expected by 2014**  
(According to General Contractors)

- 1. Carpentry & Millwork**
- 2. Electricians**
- 3. Concrete Finisher / Cement Mason**
- 4. HVAC / Boilermakers**

# McGraw-Hill Construction Definition

## A **Green Construction Job**...

→ Comprises more than 50% of green building project work (for architects, engineers and general contractors)

**OR**

→ Requires significant training or different skills to meet green goals (for craft workers and subcontractors)

**OR**

→ Involves designing or installing a uniquely green system

***Green Jobs in design and construction are not:***

- Administrative or non-construction professions
- Manufacturing or producing green products jobs

# Unemployed Workers in Construction Industry Looking for Opportunity in Green Jobs

- 60% seek a green job
- 17% exclusively seek a green job
- 34% are seeking a green job in a different field
- 31% are more interested in a green job as they are in a non-green job



## Unemployed Demographics

- 61% Architects
- 12% Engineers
- 22% GCs
- 5% Trades

# Formal Training and Professional Green/Energy-Efficient Accreditations Are Critical

- **Certified employees** expand green business opportunity—according to **68% of firms**
- Formal Training is becoming more critical for professionals to **acquire needed skills** in green and energy-efficiency:
  - **Trades workers:** 33% in 2014, up from 21% this year
  - **Architects, engineers and contractors:** 41% in 2014, up from 37% this year

# Firms that Report Having Green Construction Industry Jobs

## National Average Reporting Green Jobs

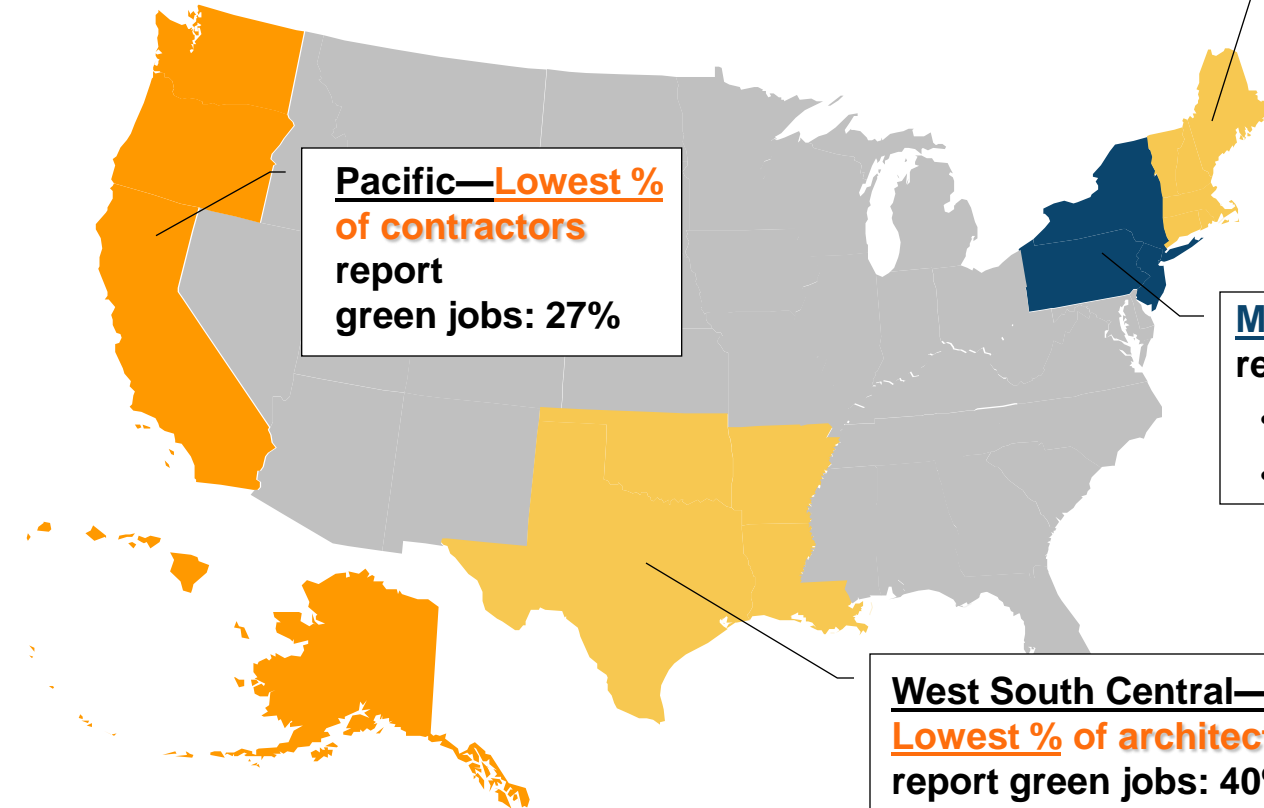
- Architects/Engineers: 47%
- Contractors: 39%

**New England—**  
**Lowest % of architects/**  
**engineers report**  
**green jobs: 36%**

**Pacific—Lowest %**  
**of contractors**  
**report**  
**green jobs: 27%**

**Mid-Atlantic—Highest %**  
**report green jobs:**  
• Architects/ Engineers: 58%  
• Contractors: 46%

**West South Central—**  
**Lowest % of architects/engineers**  
**report green jobs: 40%**

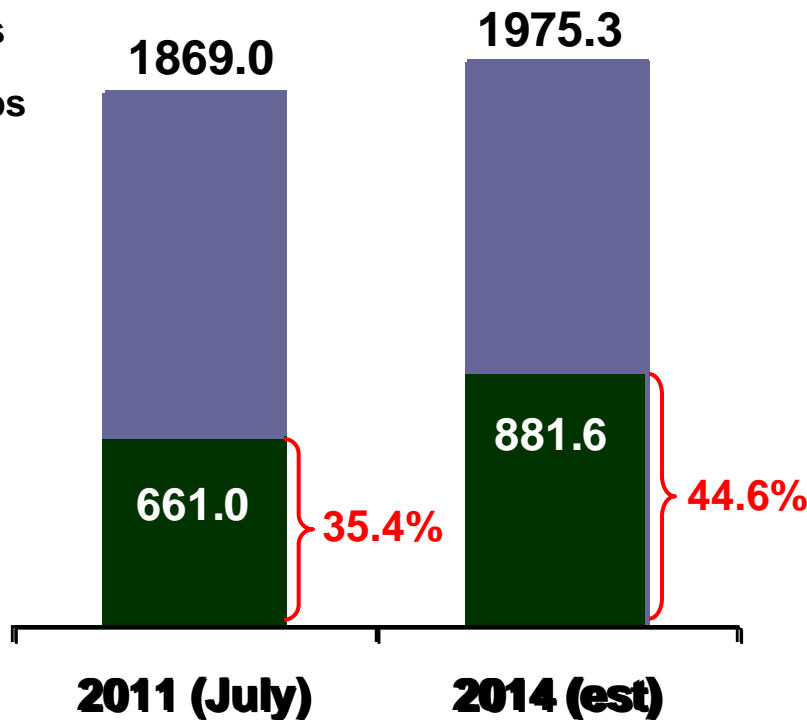


Source: McGraw-Hill Construction Workforce/Green Jobs survey, October 2011

# Green Jobs Key to Future Construction Workforce

Number of  
AEC Construction Jobs  
(in thousands)

■ Total Jobs  
■ Green Jobs



Trades:

- 15% in 2011
- 25% in 2014



# Thank You!

## MHC Resource Websites:

- **construction.com**
  - construction.com/events
  - construction.com/market\_research
- **analytics.construction.com**
- **sweets.com**
- **bim.construction.com**
- **greensourcemag.com**
- **archrecord.com**
- **enr.com**