


 **中國建築科學研究院**  
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Nov 12<sup>th</sup> 2013. Bangkok. Thailand  
42st Meeting of the APEC Expert Group on Energy Efficiency & Conservation (EGEE&C 42)

## Green Building Overview of China

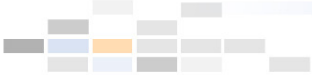
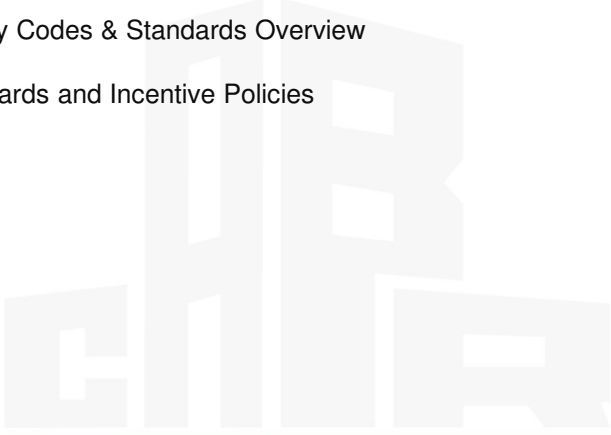
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- China Building Energy Codes & Standards Overview
- Green Building Standards and Incentive Policies



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## Building Classification

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            graph TD
            A[建筑 Building] --> B[民用建筑 Civil Building]
            A --> C[工业建筑 Industrial Building]
            B --> D[居住建筑 Residential Building]
            B --> E[公共建筑 Public Building]
            
```

- Residential Building:
  - House, apartment, dormitory, the residential part in mixing building, nursery, kindergarten, etc.
- Public Building:
  - Office Building
  - Shopping, Finance Building
  - Hotel and place of entertainment
  - Buildings for education, science, culture, Gymnasium and public health services
  - Buildings for communication, post and broadcasting
  - Buildings for transportation (Airport, Train station, etc.)

- Building includes Civil Building and Industrial Building
- Civil Building includes Residential Building and Public Building
- Public building including government building and non-government building

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## China Building Energy Codes & Standards

UDC  
中华人民共和国行业标准  
**JGJ 26-2010**  
备案号: J 997-2010

严寒和寒冷地区居住建筑节能设计标准  
Design standard for energy efficiency of residential buildings in severe cold and cold zones

**Latest version.**

**Implementing on Aug.1st, 2010**

2010-03-18 发布 2010-07-01 实施  
中华人民共和国住房和城乡建设部 发布

中华人民共和国行业标准  
夏热冬冷地区居住建筑节能设计标准  
Design Standard for Energy Efficiency of Residential Buildings in Hot Summer and Cold Winter Zone

**Latest version.**

**Implementing on Aug.1st, 2010**

2011.8.7

UDC  
中华人民共和国国家标准  
**GB 50189-2005**

公共建筑节能设计标准  
Design standard for energy efficiency of public buildings

**Implementing on Jul 1st, 2005;**

**Under revised**

2005-04-04 发布 2005-07-01 实施  
中华人民共和国住房和城乡建设部 联合发布  
中华人民共和国质量监督检验检疫总局

For residential building: Based on climate zone.

For Public building: Not based on climate zone.

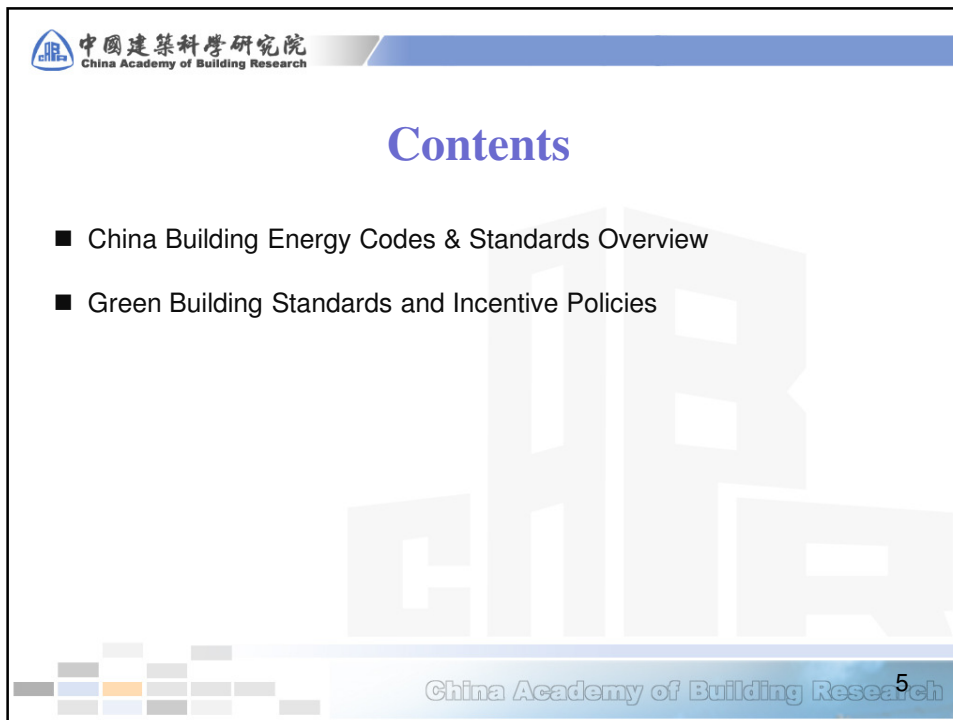
中华人民共和国行业标准  
夏热冬暖地区居住建筑节能设计标准  
Design standard for energy efficiency of residential buildings in hot summer and warm winter zone

**Implementing on Oct.1st, 2003**

**Under revised**

2003.5.8

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## Green Building

- Certification based on the National Standard  
*Evaluation Standard for Green Building*
  - Management System
  - Technical System
- Feature
- Related Organizations

Under Revising , the new version will be 2013

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## Green Building

### Management system

- 2007, Regulation on green building evaluation ,MOC. (now is MOHURD)
- 2009, Regulation on one star & two star green building evaluation , MOHURD.

**建设部文件**

建建[2007]206号

关于印发《绿色建筑评价标识管理办法》(试行)的通知

**住房和城乡建设部文件**

建建[2009]206号

关于印发《一、二星级绿色建筑评价标识工作细则》的通知

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## Green Building

### Technical system

- 2006, National Standard Evaluation standard for green building
- 2007, Specific technical guideline for green building evaluation
- 2008, Additional regulations of Specific technical guideline for green building evaluation (Design part)
- 2009, Additional regulations of Specific technical guideline for green building evaluation (Operation part)

中华人民共和国国家标准

**GB**

GB/T 50378-2006

绿色建筑评价标准

Evaluation standard for green building

2006-03-01 实施 2006-06-01 实施

**绿色建筑评价技术细则**

(试行)

住房和城乡建设部标准

2007年发布

绿色建筑评价技术细则附加和补充细则

(规划设计部分)

住房和城乡建设部标准

2008年发布

绿色建筑评价技术细则附加和补充细则

(运行管理部分)

住房和城乡建设部标准

2009年发布

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## Green Building

### Evaluation system

Grade	Basic Requirements	General Requirements						Priority Requirements (Preference)
		Land efficiency	Energy efficiency	Water efficiency	Material efficiency	IAQ	O&M	
		6	10	6	5	6	3	12
★	Conform	3	4	3	3	3	1	0
★★	Conform	4	6	4	3	4	2	5
★★★	Conform	5	8	5	4	5	2	8

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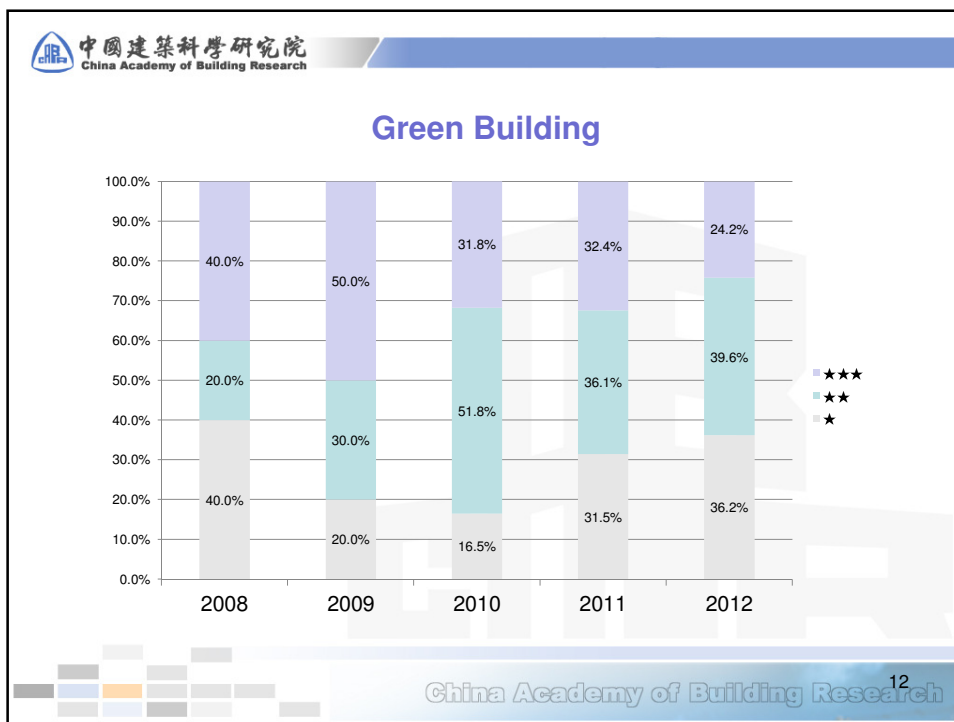
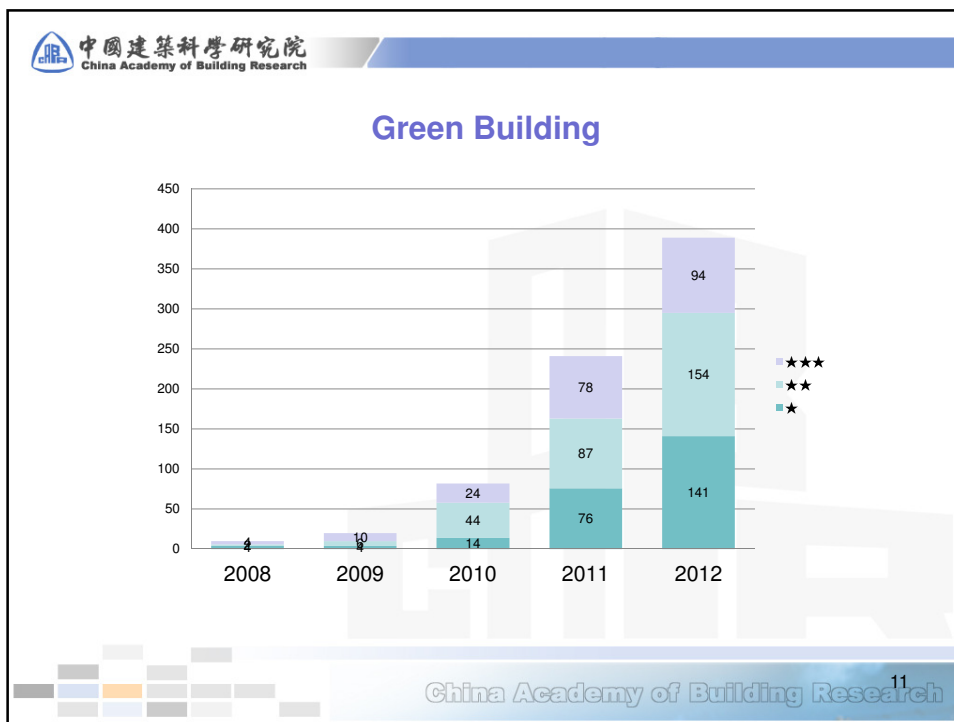
## Green Building

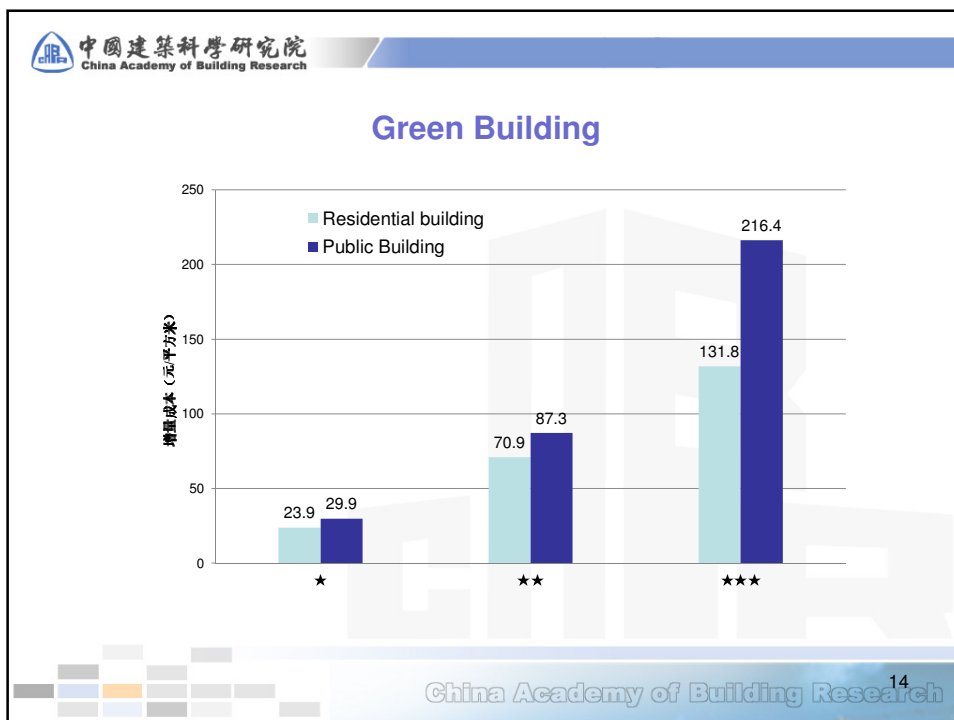
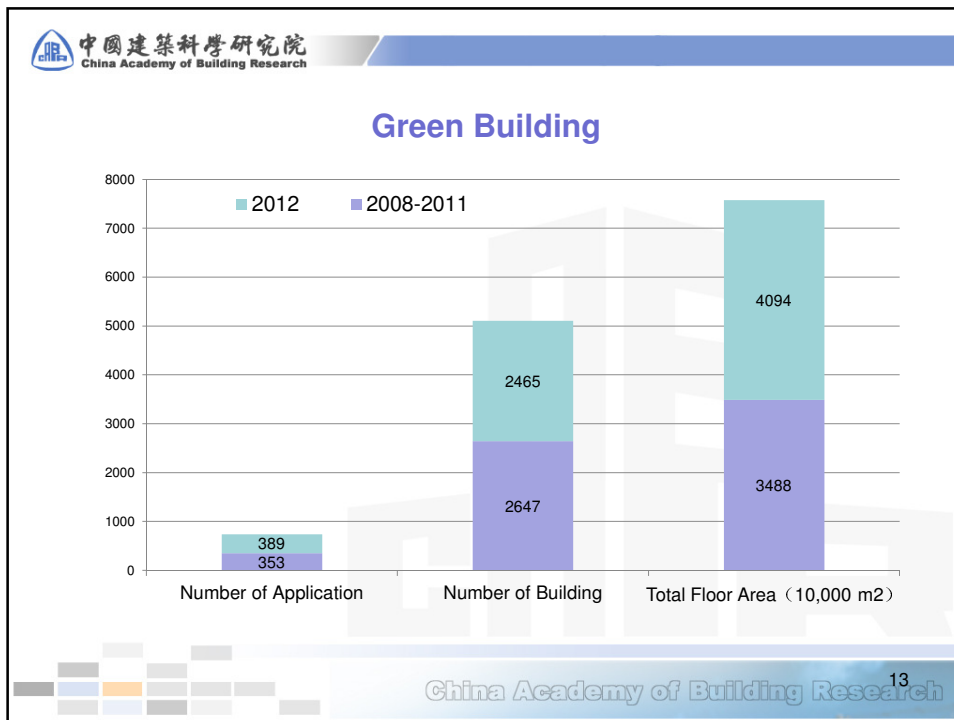
Certification of Green Building Design Label

GREEN BUILDING LABEL  
住宅和城乡建设部  
2008.3

Certification of Green Building Design Label

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## Incentive Policies of Green Building

Ministry of Science and Technology, 2006.

<National Outline for Medium and Long Term S&T Development 2006-2020>

The key research topics include green building design technology, building energy-saving technology and equipment, building integrated renewable energy devices technology, exquisite construction and green construction technology and equipment, energy-saving and green building materials and building energy-saving technical standard.

Leading by the outline, more than 300 million USD are supporting the R&D of building energy efficiency and green building in the 11<sup>th</sup> Five Year Plan in China from the central government.

## Incentive Policies of Green Building


### Implementing opinions on accelerate Green Building development

2012-167. by Ministry of Finance and Ministry of Housing and Urban-Rural Development

- (1) Subsidy: **¥45/(7 USD)** for two-star green building, **¥80/(13 USD)** for three-star green building. (large city as Beijing and Shanghai have city-level subsidy besides the central government subsidy)
- (2) subsidy for the green ecological district meet the necessary requirements. **The subsidy benchmark is ¥50,000,000. (8,000,000 USD)**






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## Incentive Policies of Green Building

### Green Building Action Plan


2013-No.1. by State Council

**Main Objective**

- 1 billion m<sup>2</sup> new green building in 12<sup>th</sup> Five Year Plan (2011-2015)
- By the end of 2015, 20% of urban building are green building.
- Heat metering and energy efficiency retrofit, 400 million m<sup>2</sup> in northern cold and severe cold area.
- Residential building energy efficiency retrofit, 50 million m<sup>2</sup> in hot summer and cold winter area.
- Public building and Intuitional office building retrofit 120 million m<sup>2</sup>.
- Rural area, building retrofit 400,000 units.

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## Incentive Policies of Green Building

### Green Building Action Plan


2013-No.1. by State Council

Three kinds of buildings must comply with green building standards since 2014.

- Invested by the government. including government offices, schools, hospitals, museums, science museums, stadiums;
- Indemnificatory apartment in provincial capital and special cities
- large public buildings which with single building area over 20,000 square meters including the airport, railway stations, hotels, restaurants, shopping malls, office.

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## CONCLUSION

- Mandatory building energy codes have a very positive impact responding to climate change and global warming in building sector. It also work as the most important part of green building.
- Voluntary green building with the financial incentives will growing quickly in the future. In a certain time, some cities could make it implement mandatory.
- Green Building Codes might be a future trend for a single building. But Building Energy Codes needs more collaboration with Energy Smart Community.

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 China Academy of Building Research

# Thank you

**ZHANG SHICONG**  
 Institute of Building Environment and Energy Efficiency  
 China Academy of Building Research  
 86-10-84270181  
 zhangshicong01@126.com

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