

中文建筑科学类核心期刊  
中国科技论文统计源期刊(中国科技核心期刊)

# 建筑科学®

## BUILDING SCIENCE

# 8

# 2013

第29卷 第8期  
VOL.29 NO.8

◆ 中华人民共和国住房和城乡建设部主管

◆ 中国建筑科学研究院主办

可持续建筑 Sustainable Building

ISSN 1002-8528



08>

9 771002 8528 03

万方数据

中国科技论文统计核心期刊  
 国际 CODEN 中心收录期刊  
 《中国科学引文数据库》来源期刊  
 国际连续出版物数据系统收录期刊  
 ICONDA 国际建筑文献数据库收录期刊  
 中国科技期刊文摘(CSTA)英文版  
 数据库收录期刊  
 《中国学术期刊(光盘版)  
 检索与评价数据规范》执行优秀期刊



# 建筑科学

JIANZHU KEXUE

(月刊)

第 29 卷 第 8 期(总第 193 期)

2013 年 8 月 20 日出版

(1985 年创刊)

主 办:中国建筑科学研究院  
 编 辑:《建筑科学》编辑部  
 地址:北京北三环东路 30 号  
 邮编:100013  
 电话:010-64517786;84272776  
 传真:010-84272776  
 E-mail:busc@263.net  
 主 编:赵基达

“可持续建筑”编辑组  
 电话:010-64517427  
 E-mail:hjb365@126.com;  
 hjb365@gmail.com

责任编辑:李 正  
 编 辑:俞英鹤 唐冬芬  
 美 编:陈 辛  
 策 划:王东青

\* \* \* \* \*  
 印 刷:北京时捷印刷有限公司  
 国内发行:全国各地邮局订阅  
 邮发代号:2-381  
 零 售:《建筑科学》编辑部发行室  
 国外发行:中国国际图书贸易总公司  
 (北京 399 信箱)  
 广告经营许可证:京朝工商广字第 0209  
 号(101)

## 目 次

### 建筑光学专栏

- 北京地区天空亮度的观测与研究 ..... 罗 涛,林若慈,赵建平,等(1)  
 图像亮度测量的几何校正技术研究 ..... 王书晓,罗 涛,张 滨(5)  
 基于多目标的居住建筑天然光环境优化设计 ..... 张 滨,王书晓(9)  
 基于日光系数法的导光管效率计算方法研究 ..... 王书晓,利 岚,张 滨(12)  
 导光管节能分析研究 ..... 利 岚,张 滨,王书晓(16)  
 居住区光环境检测及评价研究 ..... 王立雄,苏晓明,党 睿,等(19)

### 论 坛

- 国际建筑生命周期能耗和 CO<sub>2</sub> 排放比较研究 .....  
 ..... 林波荣,刘念雄,彭 渤,等(22)

### 理论 & 实验研究

- 湿热气候区风景园林微气候舒适度评价研究 ..... 陈睿智,董 颀(28)  
 周期性热作用下相变材料内部相变传热特征实验研究 ..... 冉茂宇,赵红利(34)  
 西安市某办公建筑室内外颗粒物浓度变化特征分析 .....  
 ..... 樊越胜,谢 伟,李路野,等(39)  
 基于活动烦扰度分类的大学城声环境研究 ..... 苏万庆,康 健,金 虹(45)  
 主动式太阳房相变蓄热地板供暖实测研究 ..... 牛润萍,徐小龙(49)  
 绿色建材应用现状的调查研究 ..... 柴海华,王素芳,晋国亮,等(53)  
 华东地区封闭鸡舍内热、湿与污染物散发量的现场实测研究 .....  
 ..... 韩 星,梁 煦,马克华(57)

- 西宁住宅小区冬季微气候测试研究 ..... 刘世文,杨 柳,张 璞,等(64)

### 计算分析

- 基于年收益投资比的建筑节能目标确定方法研究 .....  
 ..... 刘宗江,徐 伟,孙德宇,等(70)  
 区域建筑冷(热)负荷的影响因素敏感性分析及预测方法研究 .....  
 ..... 张晓彤,刘金祥,陈晓春,等(77)  
 夏热冬冷地区冷却塔—土壤耦合热泵过渡季蓄冷特性研究 .....  
 ..... 谢 莉,刘金祥,刘 凯(83)  
 基于能值的土壤源热泵空调系统的可持续性评价 .....  
 ..... 罗玉和,吕 智,丁力行(90)  
 水蓄能空调系统设计蓄冷率的确定 ..... 张 钦,张爱华,岳玉亮(93)

### 综 述

- 城市人为热及其影响城市热环境的研究综述 ..... 王 频,孟庆林(99)

\* \* \* \* \*

[期刊基本参数] CN11-1962/TU \* 1985 \* b \* 16 \* 112 \* zh \* P \* ¥12.00 \* 8000 \* 21 \* 2013-08

## BUILDING SCIENCE

(Monthly Journal)

No. 8 Vol. 29, Aug. 2013

(Initial Issue in 1985)

---

Director: China Academy of Building  
Research  
Edited & Published: Editorial Committee of  
BUILDING SCIENCE  
Address: 30 Bei San Huan Dong Lu,  
Beijing 100013, China  
Tel: 86-10-64517786  
Fax: 86-10-84272776  
E-mail: buse@263.net

Chief Editor: ZHAO Ji-da

“Sustainable Building” Editorial Team

Tel: 86-10-64517427

E-mail: bjb365@126.com;

bjb365@gmail.com

Responsible Editor: LI Zheng

Editor: YU Ying-he TANG Dong-fen

Art Editor: CHEN Xin

Planner: WANG Dong-qing

\* \* \* \* \*

Distributed in China:

Post Office Code Name 2-381

Distributed Abroad:

China International Book Trading  
Corporation

(GUO JI SHU DIAN)

P. O. Box 399, Beijing, China

## CONTENTS

### Column of architectural optics

- Observation and Study on Sky Luminance Distribution in Beijing .....  
..... LUO Tao, et al. ( 1 )
- Studies on Geometric Calibration Technology of Image-based Luminance  
Measurement ..... WANG Shu-xiao, et al. ( 5 )
- Multi-objective-based Optimization Design of Natural Daylight Environment of  
Residential Buildings ..... ZHANG Bin, et al. ( 9 )
- Daylight Coefficient Computational Method-based Study on Calculation Method of  
Tubular Daylight Device Efficiency ..... WANG Shu-xiao, et al. (12)
- Analysis Study on Energy-saving of Tubular Daylight Device ..... LI Lan, et al. (16)
- Light Environment Detection in Residential Area and Evaluation Study .....  
..... WANG Li-xiong, et al. (19)

### Forum

- International Comparative Study on Building Life-cycle Energy Consumption and  
CO<sub>2</sub> Emission ..... LIN Bo-rong, et al. (22)

### Theoretical & experimental study

- Study on Comfort Level Evaluation of Microclimate of Landscape Architecture in  
Humid-hot Climate Area ..... CHEN Rui-zhi, et al. (28)
- Experimental Study on the Characteristics of Phase Change Heat Transfer in PCM  
with Outside Periodic Heating and Cooling ..... RAN Mao-yu, et al. (34)
- Feature Analysis of Changes of Indoor and Outdoor Particulate Matter Concentration  
of a Certain Office Building of Xi'an ..... FAN Yue-sheng, et al. (39)
- Sound Environment Research Based on the Classifications of Activities Disturbance  
in University Campuses ..... SU Wan-qing, et al. (45)
- Test and Research on Phase Change Energy Storage Floor Heating System in Active  
Solar House ..... NIU Run-ping, et al. (49)
- Investigation of Application Status of Green Building Materials .....  
..... CHAI Hai-hua, et al. (53)
- Field Test Study on Heat, Humidity Dissipating Capacity and Pollutant Emission  
Capacity in Enclosed Chicken House of Eastern China ..... HAN Xing, et al. (57)
- Test Study on Xining Residential Microclimate in Winter ..... LIU Shi-wen, et al. (64)

### Computational analysis

- Study on Building Energy Efficiency Target Based on SIR Method .....  
..... LIU Zong-jiang, et al. (70)
- Sensitivity Analysis of Influencing Factors and Prediction Methods Study of Cooling  
(Heating) Load in Regional Buildings ..... ZHANG Xiao-tong, et al. (77)
- Characteristic Study on Cool Storage in Transition Period of Cooling Tower-Ground  
Coupled Heat Pump in Hot-summer and Cold-winter Zone ..... XIE Li, et al. (83)
- Emergy-based Sustainability Evaluation of Air-conditioning System of Ground-  
source Heat Pump ..... LUO Yu-he, et al. (90)
- Confirmation of Design Cool Storage Rate of Water Energy Storage Air-conditioning  
System ..... ZHANG Qin, et al. (93)

### Summarization

- Review on Research of Anthropogenic Heat Emission and Its Influence on  
Urban Thermal Environment ..... WANG Pin, et al. (99)