

ICCREM 2017



ASCE

Edited by Yaowu Wang
Yongshi Pang
Geoffrey Q. P. Shen



**CONSTRUCTION
INSTITUTE**

This is a preview. [Click here to purchase the full publication.](#)

ICCREM 2017

INDUSTRY REGULATION AND SUSTAINABLE DEVELOPMENT

PROCEEDINGS OF THE INTERNATIONAL CONFERENCE ON
CONSTRUCTION AND REAL ESTATE MANAGEMENT 2017

November 10–12, 2017
Guangzhou, China

SPONSORED BY

Modernization of Management Committee
of the China Construction Industry Association

The Construction Institute
of the American Society of Civil Engineers

EDITORS

Yaowu Wang
Yongshi Pang
Geoffrey Q. P. Shen
Yimin Zhu, Ph.D.



Published by the American Society of Civil Engineers

This is a preview. [Click here to purchase the full publication.](#)

Published by American Society of Civil Engineers
1801 Alexander Bell Drive
Reston, Virginia, 20191-4382
www.asce.org/publications | ascelibrary.org

Any statements expressed in these materials are those of the individual authors and do not necessarily represent the views of ASCE, which takes no responsibility for any statement made herein. No reference made in this publication to any specific method, product, process, or service constitutes or implies an endorsement, recommendation, or warranty thereof by ASCE. The materials are for general information only and do not represent a standard of ASCE, nor are they intended as a reference in purchase specifications, contracts, regulations, statutes, or any other legal document. ASCE makes no representation or warranty of any kind, whether express or implied, concerning the accuracy, completeness, suitability, or utility of any information, apparatus, product, or process discussed in this publication, and assumes no liability therefor. The information contained in these materials should not be used without first securing competent advice with respect to its suitability for any general or specific application. Anyone utilizing such information assumes all liability arising from such use, including but not limited to infringement of any patent or patents.

ASCE and American Society of Civil Engineers—Registered in U.S. Patent and Trademark Office.

Photocopies and permissions. Permission to photocopy or reproduce material from ASCE publications can be requested by sending an e-mail to permissions@asce.org or by locating a title in ASCE's Civil Engineering Database (<http://cedb.asce.org>) or ASCE Library (<http://ascelibrary.org>) and using the “Permissions” link.

Errata: Errata, if any, can be found at <https://doi.org/10.1061/9780784481066>

Copyright © 2017 by the American Society of Civil Engineers.
All Rights Reserved.
ISBN 978-0-7844-8106-6 (PDF)
Manufactured in the United States of America.

Preface

We would like to welcome you to the 2017 International Conference on Construction and Real Estate Management (ICCREM 2017). Harbin Institute of Technology, Guangzhou University, Hong Kong Polytechnic University, Louisiana State University, University of Alberta, Luleå University of Technology, Heriot-Watt University, Marquette University, Karlsruhe Institute of Technology. The Conference is a continuation of the ICCREM series which have been held annually since 2003.

The theme for this conference is “Prefabricated Construction and Construction Industrialization”. It especially highlights the importance of construction industrialization and prefabricated technology for construction engineering and management. The conference proceedings include 174 peer-review papers covered eleven important subjects. And all papers went through a two-step peer review process. The proceedings of the congress are divided into four parts:

- Prefabricated Buildings, Industrialized Construction and PPP
- Industry Regulation and Sustainable Development
- Real Estate and Urbanization
- Project Management and Construction Technology

On behalf of the Construction Institute, the American Society of Civil Engineers and the 2017 ICCREM Organizing Committee, we welcome you and wish you leave with a wonderful experience and memory at ICCREM 2017.

Professor Yaowu Wang

Harbin Institute of Technology
P. R. of China

Professor Yongshi Pang

Guangzhou University
P. R. of China

Acknowledgments

Organized by

Harbin Institute of Technology, P.R. China
Guangzhou University, P.R. China
Hong Kong Polytechnic University, P.R. China
Louisiana State University, USA
University of Alberta, Canada
Luleå University of Technology, Sweden
Heriot-Watt University, UK
Marquette University, USA
Karlsruhe Institute of Technology, Germany

Executive Editors

Xianfei Yin
Xianwei Meng
Zhuyue Li
Chong Feng
Wei Gao
Yuru Gao
Tingting Chen
Jia Ding
Xiangkun Qi
Yue Cao
Zixin Han
Tongyao Feng
Hongmeng Kang

Conference website: <http://www.iccrem.com/>

Email: iccrem@vip.163.com

Conference Committee

Committee Chairs

Prof. Yaowu Wang, Harbin Institute of Technology, P.R. China
Prof. Geoffrey Q.P. Shen, Hong Kong Polytechnic University, P.R. China

Conference Executive Chair

Prof. Jiyang Fu, Guangzhou University, P.R. China

Conference Co-Chairs

Prof. Yongshi Pang, Guangzhou University, P.R. China
Director Katerina Lachinova, Construction Institute of ASCE.(ASCE members), USA
Prof. Yimin Zhu, Louisiana State University, USA
Prof. Mohamed Al-Hussein, University of Alberta, Canada
Prof. Thomas Olofsson, Luleå University of Technology, Sweden
Prof. Ming Sun, Heriot Watt University, UK
Prof. Yong Bai, Marquette University, USA
Prof. Kunibert Lennerts, Karlsruhe Institute of Technology, German

Organizing Committee and Secretariat

General Secretariat

Prof. Xiaolong Xue, Harbin Institute of Technology, P.R. China

Deputy General Secretariat

Prof. Xuotong Wang, Guangzhou University, P.R. China

Committee Members

Asso. Prof. Chengshuang Sun, Harbin Institute of Technology, P.R. China

Asso. Prof Qingpeng Man, Harbin Institute of Technology, P.R. China

Mr. Zhenmin Yuan, Harbin Institute of Technology, P.R. China

Mr. Shiwei Chen, Harbin Institute of Technology, P.R. China

Contents

In-Depth Review of Partnering Research Trends in Construction Journals.....	1
Kristian Bohnstedt, Arne Rasmussen, and Lene Ussing	
Lessons Learned in the Construction Industry Extracting Collaborative Components.....	16
Kristian Bohnstedt, Arne Rasmussen, and Lene Ussing	
Challenges of Emotional Intelligence among Construction Stakeholders.....	33
Ayodeji Oke, Clinton Aigbavboa, Ntebo Ngcobo, and Mercy Sepuru	
Implementation Strategies for Urban Renewal and Sustainable Development Practice in Ghana	41
Callistus Tengan and Clinton Ohis Aigbavboa	
Energy Performance Analysis of Residential Buildings.....	48
Michael Oladokun and Clinton Aigbavboa	
A BIM-Based Method for Analyzing the Trade-Off between Embodied and Operational Energy	59
Farshid Shadram, Jani Mukkavaara, Jutta Schade, Marcus Sandberg, and Thomas Olofsson	
Theoretical Analysis Review of Public Buildings Carbon Emissions Trading	71
Lei Zhang, Hui Yan, Biying Jiang, and Weirui Xue	
Large Case Study Approach in Key Courses of Construction and Real Estate Management Major.....	80
Lin Chen, Jianhui Tan, and Xuetong Wang	
Evaluating Urban Sustainable Development Using Cloud Model	87
Ting Luo, Xiaolong Xue, and Liang Wang	
Comparative Study on Disposing Wasted Clay Bricks Based on the Lifecycle Assessment	96
Kaicheng Shen, Zhihui Zhang, Dichun Wang, and Xiaodong Li	
Analysis of Incentive for the Adoption of the Engineering Construction Standards in China Based on the Multi Task Principal: A Gent Model.....	105
Wei Wang, Shoujian Zhang, and Zhi Sun	

Prioritizing Social Sustainability Indicators of Public Projects: A Chinese Context	120
Hongyang Li, Yousong Wang, Hui Yan, and Yuan Fang	
Analysis on Public Building Energy Consumption Based on Actual Data: Take 18 Buildings in Shenzhen for Example	128
Hui Yan, Guoliang Ding, Yong Cheng, Lei Zhang, and Hongyang Li	
Urban Family Housing Consumption Behavior Based on Logit Model-Taking Harbin as an Example.....	139
Wei Wang, Xixi Gong, and Jiaomin Yang	
The Influencing Factors of Carbon Emissions in Chinese Construction Industry Based on Factor Analysis and Improved STIRPAT Model.....	148
Qi Zhang, Shengyue Hao, and Xu Ren	
A BIM-Based Code Checking Approach for Green Construction	156
Shaohua Jiang and Zheng Wu	
Incremental Cost-Benefit Analysis of Passive Residence Based on Low Carbon Perspective.....	164
Yikun Su, Weiyi Cong, and Sichen Pan	
Research on How to Improve the Core Competitiveness in the Construction Industry	172
Zhuyue Li, Qingpeng Man, and Chengshuang Sun	
Research on Construction and Application of Comprehensive Credit Evaluation System of Bid Inviter's	182
Jicheng Fu, Jun Fang, and Weiming Wang	
A Regional Population Density Model with Poly-Centers: From the Perspective of Sustainable Development	194
Chen Lu and Zhiwei Yu	
Public Transportation Impact on Restaurants through Customer Revisit Intention.....	206
Jing Wang and Xiangbin Yan	
Research on Motivation Behavior of Passive Residential Development Subject	214
Weiyi Cong, Yikun Su, and Sichen Pan	
Construction of Rural Mutual Aid Pension Model	225
Lijun Wan and Yili Hu	

Design of EPC Bidding Mechanism Based on Game Theory	234
Xianzhe Zhang and Jun Fang	
Study on the Adaptability of Standard System of Industrialized Building in China	241
Yan Lei, Shoujian Zhang, and Wei Huang	
Life-Cycle Evaluation of Passive Building	251
Qiangnian Li and Lijuan Zhao	
Efficiency Evaluation of Construction Industry under Environmental Regulation Based on Undesirable DEA	260
Shen Zhong, Yuqi Liu, and Xu Han	
Measuring Service Quality Using a Hierarchical Model: An Application of Engineering Consulting Services in China	270
Yifei Chen, Jin Yan, Zhangfeng Yang, Jin Bian, and Hui Chi	
Study on Virtual Multi-Agent Collaboration Mode for SI-System Housing in China	279
Xinying Cao, Yangzhi Yan, and Xiaoshu Lu	
Fighting Corruption in China's Construction Industry: The Imperatives of Social Participation	289
Weiwei Chen and Zhuofu Wang	
Analysis on the Innovative Development Path of Real Estate Development Enterprise under the New Construction Industrialization	297
Xiaolin Yang, Ying Hong, and Changping Sun	
Housing Affordability of Graduates from Different Universities in Guangzhou	305
Fan Wu, Linghin Li, and Mingjie Dai	
Green Building Investment Decision Making Research That Based on the Value Engineering and Fuzzy Mathematics Theory	314
Jiaxu Wang, Qi Wang, and Daqing Zhang	
Considerations on the Training Model of the Real Estate Professional in the Perspective of Globalization	322
Qunhong Liu and Ran Ma	
Predictive Analysis of Construction Enterprises Influencing Factors Based on SEM Model	332
Xu Hu, Jianru Wang, Lu He, and Ping Wang	

The Relationship between Macro Regulation of Real Estate Industry and Industry Positioning: A Case Study of Shanghai	339
Qingguo Ran	
Evaluation on Effects of Construction Dust Pollution on Economic Loss	346
Peng Mao, Jie Li, Liyan Jin, and Jiao Qi	
An Agent Based Modeling of Building Demolition Waste Sustainable Management.....	354
Zhikun Ding, Min Li, and Shenghan Li	
Analysis on Green Building Strategy of Real Estate Projects under New Normal.....	367
Hong Yang	
Research on the Dynamic System of Modern Construction Industry	375
Yanxia Zhang, Lihong Li, and Zhuo Wang	
Combination Effect Analysis of Construction Bid Division for Construction Engineering Project.....	384
Xun Liu and Hong Liu	
A Study on the Development Trend of China's Information of Construction Industry: A Perspective of Public Policy Analysis	395
Shan Zhou and Shaoyan Wu	
Research on Application-Oriented Undergraduate Talents Cultivation Program of Engineering Management Specialty	405
Feiyan Zhao, Zhenxiang Shi, and Hui Wang	
Construction and Application of Comprehensive Evaluate System of Credit of Bidders.....	411
Liwen Zhang and Jun Fang	
Investigating Project Managers' Waste Reduction Behavior in Construction Projects	422
Hongping Yuan and Jing Wang	