



Book Production Plan
(First Draft for Authors)

Book Title: Analytics for Building-Scale Sustainable Ecosystems (BSSE) – US-China Research Perspectives

Publisher: Begell House, New York. Connecticut. USA

Editor: Yong X. Tao, *University of North Texas, USA*

Co-editor: Yi Jiang, *Tsinghua University, China*

Page estimate: 250-300 pages (Five parts x 5-6 articles per part = 28 articles. **10 pages** per articles on average = 280 pages + introduction and preface.) **Suggestion to Authors: Please limit the number of pages of your article to 8 to 11 including references and appendices.** Any exception will be dealt with individually.

Brief Description:

This edited volume comprises of research and review articles primarily resulting from the recent workshop of US-China Workshop on Analytics for Building-Scale Sustainable Ecosystems, sponsored by the US National Science Foundation (NSF), and held in Tsinghua University, Beijing, China, in June 12-13, 2012. A group of researchers from both US and China academic institutions present in this volume their views of bottlenecks in engineering, software and social sciences, forming a nexus of critical issues impeding wider application of net-zero-energy (or near zero energy) building technology in the context of defining building-scale sustainable ecosystems. The focus of these investigations is the fundamentals of sciences that lead to a robust, significant improvement towards modeling and predicting building performance indices such as energy usage with user integration and sustainability. Achievements and challenges in research and development initiatives and best-practices from U.S. and China provide a foundation for such development of analytics and possibility of benchmarking and comparability.

Contents and Author Assignments: The volume divides the topics in the following main parts and sections:

Part I Overall Prospects

Article 1 (Prof. Yi Jiang, Tsinghua) Challenges in US-China Building Research Collaboration – What We Need to Do

Article 2 (Prof. Yong Tao, U. North Texas) A Review of International Research on Building-Scale Ecosystem

*Article 3** (Prof. David Cartes, Florida State University) Policy and Societal Issues of Sustainable Buildings (to be confirmed)

*Article 4** (Prof. Stan Ingman) Societal Benefits and Challenges of Sustainable Buildings and its Ecosystems for Aging Populations (to be updated)

Part II Data Collection, Comparison and Analysis

Article 5 (Yimin Zhu, Florida International University) Role of Life-Cycle Assessment in Sustainable Building Ecosystems

Article 6 (Jianjun Xia and Qi Shen, Tsinghua University) Online Building Energy Monitoring System

Article 7 (Yan, Wei, Texas A&M University) Streamlining Parametric Modeling, BIM and Building Energy Modeling

Article 8 (Lam, K. P., Carnegie Mellon University) System Integration for Interoperable Data Models of Building Scale Ecosystem

Article 9 (Chen Peng, Tsinghua University) Building energy status and obstacles in China

Article 10 (Mike Grinshpon, Ray Oebtrw Harrell) Building energy comparison between China and US

Part III: Human behavior

Article 11 (Mirsad Hadzikadic, University of North Carolina, Charlotte) Understanding Human Behavior in Designing Building-scale Sustainable Ecosystems

Article 12 (Da Yan, Tsinghua University) The Effect of Occupant Behavior on Building Design and Operation

Article 13 (Carol C. Menassa, University of Wisconsin) Developing Occupancy Influence Parameters in Commercial Building using Energy Modeling

Article 14 (Chuang Wang, Tsinghua University) Simulation of Human Behavior in Buildings

Article 15 (William J. Tolone, University of North Carolina, Charlotte) Rich Analytical Environments for Building-scale Sustainable Ecosystems

Part IV: Green Buildings in China and US

Article 16 (Dr. Lane Burt, USGBC, Technical Policy Director) Emerging challenges in Green Building Movement in US

Article 17 (Prof. Yingxin Zhu, Tsinghua University) The State-of-the-Art of Green Building Development in China

Article 18 (Kibert, Charles J., University of Florida) Sustainable Construction: the Cutting Edge

Article 19 (Prof. Thomas Spiegelhalter) Towards Net-Zero-Energy Buildings In 2018

Article 20 (Ming Shan) Rural Building Energy in China and Sustainable Strategies

Part V: Selected Topics on Innovative and Emerging Building Design and Technology

Article 21 (Yinping Zhang, Tsinghua) Integrated Building Design Based on Minimizing Thermal Discomfort

Article 22 (Dr. Ziyang Jiang, Tsinghua University) Innovation Automation Systems

*Article 23** (Dr. Yiding Cao, Florida International University) Wankel Rotary Engine Or Compressor For Building Cooling Or Solar And Energy Recovery Applications (To be confirmed)

Article 24 (Dr. Xiaoyun Xie, Tsinghua University) Evaporation cooling systems

*Article 25** (Saeed Moghaddam, J. N. Chung, Sherif Sherif, Skip Ingley and Bill Lear) Advanced Absorption Cooling using Solar-Thermal Heat and Waste Heat for buildings

Article 26 (Prof. Xiaohua Liu, Tsinghua University) High Temperature Cooling and Low Temperature Heating in Buildings - New IEA ANNEX 59

Article 27 (Prabir Barooah and Kun Deng, U of Florida and U of Illinois) Supervisory Control System for Energy Efficient Buildings

Article 28 (Xianting Li, Tsinghua) High Performance Air-Source Heat Pump Systems for Year-Round Operation

*Invited articles. Authors did not attend the workshop.

Intended readers include multidisciplinary researchers in the interested areas, and students in both graduate and senior undergraduate levels. The related disciplines of readers include architecture, sciences (including social and computer sciences), engineering, and public policy.

Article Format: A template will be provided soon.

Publication Plan: Manuscript ready by November-December 2012. Publish in 2013. Catalog will be out soon.

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