Table of Contents

Preface, Organizing Committee and Sponsors

Chapter 1: Green Building Technologies

The Calculation of Energy Performance of Buildings with Summer Degrees L. Tronchin	3
Research on Energy Saving Technology during the Reconstruction Design of Exterior Public Space - Chaogewenduer Gacha as the Model M. Zhang, J. Kong, J. Wang and M. Ma	8
Green Management Analysis of Construction Projects Based on Full Life-Cycle H. Gao, Q. Li and G. Lv	13
Application Plan for an Intelligent Façade and Interactive Design of Environment-Friendly Buildings W.D. Seo and K.G. Lee	18
Approach to Calibrated Simulation Tool for Improved Building Performance S.A. Shika, M. Sapri, I. Sipan, A.I. Abubakar, A. Umar and U.B. Wakawa	22
The Building's Skin Design and Configuration Method for Facilitating Solar Energy W.D. Seo	26
Energy-Saving Reconstruction Research of Old Buildings in Hot Summer and Cold Winter Regions	20
X. Zhang, F. Lu and Y.F. Yan	30
Building Policies for Energy Efficiency and the Development of a Zero-Energy Building Envelopment System in Korea J.S. Kang, J.H. Lim, G.S. Choi and S.E. Lee	35
Research on Energy Saving Method of Traditional House in Northwest Shanxi L. Fu and Q.F. Shi	39
Optimization by Discomfort Minimization for Designing a Comfortable Net Zero Energy Building in the Mediterranean Climate S. Carlucci, L. Pagliano and P. Zangheri	44
GreenBuilding ^{plus} Project: A Basis for Supporting Energy Efficient Investments S. Carlucci, L. Pagliano and M. Pietrobon	49
Life Cycle Energy and CO₂ Emissions of Residential Buildings in Bandung, Indonesia U. Surahman and T. Kubota	54
A Brief Discussion on Energy-Saving Technology of the Single Residential Building J. Zhao	60
Energy-Saving Patterns of Iranian Traditional Architecture in Various Climates T. Fardpour	66
Role of Building Services Quantity Surveyors in Managing Cost of Green Buildings G.A. Yusuf, S.F. Mohamed, Z.M. Yusof and M.S. Misnan	71
An Analysis of the Historical Texture of Kandovan from the Viewpoint of Green Architecture	
H. Ebrahimi Asl and D. Sattarzadeh	75
Strategy for the Incorporate Design of SWH System with Small High Residential Building in Northern Part of Guangxi Zhuang Autonomous Region J.M. Chen, Q.S. Zhu and L. Wang	81
Conceptual Framework for Green Affordable Home in Malaysia	01
M.B. Zulkepli, I. Bin Sipan and J.D. Jibril	86
The Management Objectives of Green Construction and Difficulties on its Dissemination C.X. Zhou, X.F. Xu and F. Yao	90
Research on Ecological Experience of Traditional Dwellings in Zhejiang Province Y. Zhang	95
The Improvement for Thermal Insulation Properties of Traditional Residential Building Envelope in the North Region of Shanxi Province X.L. Zhang and Q.F. Shi	100

Research of the Construction Industry Efficiency in China — Based on DEA Panel Data Approach	
W.Z. Zhou and C.L. Liu	105
Research on the Construction of Saving-Energy Building Modular System Y. Zhang, Q.K. Wang and Q. Huang	110
Low Energy Residential Building Design for Hot Arid Climate: A Green Approach T.S. Brar and M.A. Kamal	114
The Analysis of Passive Design in Zero-Energy Buildings: A Case Study of Solar Decathlon C. Chen, R.W. Du and H. Zhang	119
The Development and Application of the Green Construction Technology in Small and Mid- Sized Cities - A Case Study of Jincheng, Shanxi Province M.M. Cui and Y.P. Liu	125
On the Modern Chinese Church Building – A Case Study of the Lady Chapel in Bansi Mountain Y. Lei and Y.P. Liu	130
Research on Energy Saving Design Strategy of New Traditional Residence in Jinzhong, China Q.F. Shi and L.L. Zhao	134
Optimization Strategies for Green Substation Assessment System in China: Based on LEED and Chinese Green-Building Evaluation Standard	
J. Zhang and J. Xiong Discussion on the Strategies of Industrial Building Heritage Conservation and Utilization Q. Wang	139 144
Study on Sustainable Construction and Improvement of Dwellings in Huhhot and Baotou Area of Middle Inner Mongolia L.P. Sun and J.F. Yin	149
Low Carbon Based Structural Design Method in Super Tall Buildings X. Zhao and S. Fang	153
Methodology of the Data Processing with ICT Solutions for the Evaluation of the Energy and Water Savings S. Domínguez, J. Fernández-Agüera, R. Escandon and E. Dominguez	158
The Sun-Shading Technologies of the Existing Traditional Dwellings in China L.P. Sun	163
Technical Analysis for the Utilization of Unconventional Water Resource in Green Building X.Y. Jiang, C.H. Law and J.K. Yang	167
Green Technology Applied in the Greening of Buildings' Outer Skins R.S. Wang and J. Xu	172
Development and Evaluation of SHGC Measurement System for Cooling Energy Saving in Buildings	177
J.S. Kang, T.J. Kim, G.S. Choi and S.E. Lee Importance of a View Window in Rating Green Office Buildings Y. Aminy Dada, M. Zin Kandan, D. Barra, Green, J.D. Ehril, A. Halady, Barrague and A.	176
Y. Aminu Dodo, M. Zin Kandar, D. Remaz Ossen, J.D. Jibril, A. Haladu Bornoma and A. Ibrahim Abubakar Achieving the Net Zoro Energy Torget in Northern Italy: Lessons Learned from an Existing	180
Achieving the Net Zero Energy Target in Northern Italy: Lessons Learned from an Existing Passivhaus with Earth-to-Air Heat Exchanger S. Carlucci, P. Zangheri and L. Pagliano	184
Study on the New Green Technology in Protection and Renovation of Historical Buildings' Structure H.X. Yu and L. Yan	188
Research on Green Building Technology and Design - Take I. M. Pei's Architectural Design Works for Example	
L.Q. Guo and Y.Q. Guo Ecological Effect of Water Cyclic Utilization in Green Architecture	193
C.R. Zhang, C.M. Zhao, Y. Tian and L. He Design Research on Building Integration of Ceramic Solar Collection System W. L. L. and H. B. Live	198
W.J. He and H.P. Liu Energy-Saving and Reuse of New Energy Resource in Green Architecture — Science and Technology Industry Building of Sino-Singapore Tianjin Eco-City	203
Y. Tian, C.R. Zhang and Q. Wen	207

Discussion on Modern Coach Station Design H.Y. Li	211
Research on the Balance between Green Building's Environment and Economy in China J. Li	216
Regional Expression and Innovation of the Long-Span Building X. Li and L.L. Li	221
A Study on Energy Consumption and CO ₂ Emissions in End-Life Cycle of Residential Buildings	22.6
G.W. Cha, W.H. Hong and S.W. Shin	226
Materials and Resources Items in Green Building Certification in Korea: Critiques and Suggestions	
K.G. Lee, W.H. Hong, C.Y. Jang, B.L. Ahn and T.W. Kim	230
Chapter 2: Green Building Materials and Structures	
Evaluation on the Energy Performance of PAS Wall Applying Vacuum Insulation B.H. Choi, G.S. Choi, J.S. Kang and S.E. Lee	237
An Analysis of the Energy Performance and Economic Efficiency of the Practical use of Low Carbon Fumed Silica Insulation Panel Using Recycled Resources G.S. Choi, S.J. Woo, S.E. Lee and J.S. Kang	241
Performance Evaluation of Dry Double Floor-System Using Recycled Materials H.J. Choi, K.W. Kim, J.O. Yeon, K.S. Yang and K.H. Kim	246
From Construction to Operation: Achieving Indoor Thermal Comfort via Altering External	
Walls Specifications in Egypt M.M. Mahdy and M. Nikolopoulou	250
Innovative Materials in Interior Design: Organic Light Emitting Textiles (Oleds) M.A. Kasapseçkin and D. Altuncu	254
Experimental Research on Compressive Strength of Ready-Mixed Concrete when Mixed with Fly Ash and Mineral Powder	260
Z.Q. Shi and L.L. Gao	260
Performance of Lightweight Foamed Concrete with Replacement of Concrete Sludge Aggregate as Coarse Aggregate N.M. Ibrahim, R. Che Amat, N.L. Rahim and S. Sallehuddin	265
Thermal Performance of Sandwich Insulation System According to the Type of Form-Tie Y.M. Kim, Y.J. Lee, G.S. Choi and J.S. Kang	269
Evaluation of the Embodied Energy for Building Materials in Turkey	
S.K. Öztaş and C.A. Ipekci	273
Study on Temporary Residence Development by Applying the Modular Construction	270
W.C. Wang, Y.H. Song and S.H. Lim Effect of Perforated Ceilings on the Floor Impact Noise in Multi-Storied Residential	278
Buildings K.H. Kim, K.W. Kim, H.J. Choi, J.O. Yeon, J.H. Kim and J.Y. Jeon	282
A Study on the Application of a Low Viscosity Epoxy Resin Curing System Y.L. Peng, Y. Liang, C. Huang and Z.H. Wang	286
Material Perception - Experience Design of Construction Material X.F. Chen and J.J. Xiong	290
Study on the Ultimate Limit State of the Curvature for Circular Section Reinforced	
Concrete Bridge Pier H.L. Li and G.Y. Huang	294
Strength Improvement of Early Age Unfired Soil Lime Bricks P. Heru, D. Priadi and H.R. Lumingkewas	299
Research on the Permanent Deformation Behavior of Asphalt Mixture with Basic Oxygen Furnace Slag	
Z.W. Chen, S.P. Wu, J. Xie and J.Y. Chen	304
The Study on Low Power Consumption Technology of the Walls Based on Powdered Caol Ash and Karst Slab Building Material — Take for Example Karst Region in Guizhou,	
China H. Wang and J. Chen	309

Reusing Plastic Bottles in Energy-Saving Design and Construction M. Khalili, S. Amindeldar and H. Mashhadibagher Moakhar	316
Evaluation & Degradation Prediction on the Environmental Resistance of WPC Windows J.J. Choi and J.W. Park	320
Experimental Research on Unconfined Compressive Strength of Artificially Cemented Sand X.S. Zhuang, C. Zhao and X.M. Wang	324
FBG Strain Sensors for Creak Measurement Due to Hydration Heat in Massive Concrete S.J. Lee, G.S. Lee, S.D. Shon and D.J. Moon	329
Analysis on the Optical Performances of Window Film in Korea J.S. Kang, M.S. Jang and G.S. Choi	333
Nature Regeneration — Study on the Ecological and Regional Performance of Earthen Materials in Chinese Contemporary Architecture L.J. Wang, X. Zhang and X.Y. Sun	337
Experimental Study on the Stabilization Effects of Dredged Sludge by Fly Ash or Phosphogypsum	
Z.H. Yu, Y. Gui, Q. Zhang and X.Y. Kong	342
Influence of Activity of Waste Slag Powder on Slag Cement Strength S.B. Zhou, A.Q. Shen and G.F. Li	348
Stress of Carbon Fiber Reinforced Polymer Tendons in Prestressed Simply Supported Beams	
C.X. Bai, X.Y. Shao and Q.P. Wang	353
Research on Using Sludge to Manufacture Lightweight Ceramsite and Sintering Mechanism Y.D. Liu, D.Y. Yang and L.L. Wang	358
Research on Rheological Properties of Warm Mix Asphalt Binders Y.Q. Zou	363
The Experimental Study on Consolidation of Acrylic Non-Aqueous Dispersion for Kiln Qionglai Monuments in Chengdu, China W. Yi, B. Jiang and B. Jia	368
Development and Engineering Application of Dry-Mixing Self-Compacting Concrete B. Yi, Y.H. Li and S. Ding	372
Fabrication of Multi-Purpose Geodesic Dismountable Bamboo Dome	378
A Study of the Effects of Ingredients to the Mechanical Properties of Natural Fiber Composites (NFC) J.S. Oh, S.W. Nam and S.W. Choi	382
Model Test on Incremental Launching Construction Method for JIUBAO Bridge in Hangzhou B.J. Li	389
Energy Performance Assessment of the High Insulated Panels Green Home	369
H.Y. Lee, J.S. Kang, G.S. Choi and S.E. Lee	394
Impact of Environmental Assessment of Green Building Materials on Sustainable Rating System	
U.A. Umar, H. Tukur, M.F. Khamidi and A.U. Alkali	398
High Performance of Fumed Silica Insulation Board for Green Building J.S. Ryu, K.S. Oh and B.W. Lee	403
Tectonic Research of Sustainable Building Materials Based on Regional Perspective - Taking Wuyishan City for Example X.H. Chen, L. Ma and Q.H. Guo	407
Chapter 3: Urban Planning and Architectural Environment Engineering	
The Effects of the University Science Park on Urban Development in China J.J. Zhang and H. Li	417
The Study on Preparing the Plan for Analyzing the Actual Condition and Improving the Environment of Decrepit Research Buildings J.Y. Park and C.U. Chae	422
A Study on Measures for Coping with Climate Change in College Campuses in Korea J.C. Park, W.H. Hong, K.G. Lee and H.G. Jeong	426

Environment Landscape Design and Construction of the Green Building — A Case Study of Green Magic School Environment Landscape in National Cheng Kung University M. Wang	430
Exergy Analysis of Hot-Water Heating System Conditioning Methods J.M. Yang, N. Cheng and W. Wang	435
Research on the Ecological Characteristics and Transformation of Traditional Cave Dwelling in Central Part of Shanxi Province - Taking Hougou Village, Yuci as an Example X.J. Zhao and Q.F. Shi	439
On Improving the Competitiveness of Real Estate Enterprises Based on the Concept of Lean Construction J.L. Yang, Y. Peng and Y.S. Chen	444
The Application of Ecological Energy-Saving Technologies in Urban Planning-Taking Gongqing DigiEcoCity as an Example X.Q. Li, H.T. Bai, C.Y. Tao and Y.X. Wang	448
Energy-Saving Optimization of Heating Supply Systems of Sino-Singapore (Tianjin) Eco- City Energy Planning L. Tang and Y.L. Xing	453
Research on the Mining Wasteland Landscape Transformation T. Li and L. Tao	459
Preservation and Reuse of the Ancient Xiaoyi City R. Shen and J.P. Wang	463
Fractal Researches on the Spatial Structure of the Urban System in Sheyang Economic Zone S.H. Ren, L. Su and J.H. Zhu	467
New Developing Direction of Domestic Villas in the Real Estate Market W.L. Chai and Y.B. Gao	473
Cooperation Environment Planning Strategy Research: Relative Case of Hokkaido in Japan and Guangdong in China H.B. Zhu	477
Urban Building Energy Consumption Forecast Based on the IPAT Theory C. Zou and X.L. Liu	482
The Need for Affordable Urban Settlement in Tebet - Jakarta Indonesia: Challenge and Opportunity A.P. Budi	487
Regeneration and Improvement of the Underground Courtyards in South Shanxi — Taking Zhangdian Town of Pinglu County as Example Q.F. Shi and S.Y. Li	496
Building a New Village Prepared Regulatory Approaches and Methods under the Background of Suburban Towns - A Case Study in Renhe, Dazhu County of Sichuan B. Shi and K.C. Nie	500
Modern Urban Ecological Waterscape Planning and Design F. Pan	505
The Technological Integration of Digital City and Ecological City — Take Sino-Finland Gongqing DigiEcoCity as an Example Q.Y. Yang, X.H. Zhang, C.Y. Tao, Y.X. Wang and T. Mauri	509
Discussion of China's City Planning Based on the Concept of Low-Carbon H.Y. Li	514
Explore Underground Space Development in Ecotourism Area Based on Environmental Characteristics	510
Z.W. Zhao and X.B. Yang A Brief Discussion about Construction of Low-Carbon and Energy-Saving Ecological Community — A Case Study of Yilongwan Community in Changzhi City	519
L. Yan and J.B. Zhao Orini and Powire: Reviving the Locality of Laika for Sustainable Design	524
Y.A. Yusran and A. Citraningrum Research on Architectural Pattern of Residential Quarter Based on Atmospheric Pollutant Diffusion of Point Source	528
Y.H. Yuan, J.G. Xu, Y. Qi and J.T. Chen	533

Assessing Sustainable Municipal Solid Waste Management Factors for Johor-Bahru by Analytical Hierarchy Process A.H. Abba, Z.Z. Noor, A. Aliyu and N.I. Medugu	540
Research of Graphic User Interface of Carbon Dioxide Emission Evaluation Model in Construction Life Cycle Based on Matlab X.H. Gan, W. Wang and S.M. Liu	546
Influence of Sand Concentration on Variation Characteristics of Aquifer Parameters under Groundwater Source Heat Pump Long-Term Operation S.Q. Wang and S.J. He	551
Concentration Distribution and Composition of Phosphorus in Street Dust from Small Towns in Yongchuan, Chongqing S.M. Wang, Q.H. Zhu, B. Zhang and X. Gao	556
Awareness of 3R's Critical Success Factor for Greener Higher Educational Institutions J.D. Jibril, I. Bin Sipan, M.B. Zulkepli, Y. Aminu Dodo and M.A. Jogana	561