

TECHNICAL PAPERS

CONSTRUCTION MATERIALS AND METHODS

- 1 Sino-American Opinions and Perceptions of Counterfeiting in the Construction Supply Chain / **R. Edward Minchin Jr., Shuai Cui, Russell C. Walters, Raymond Issa, and Jiayi Pan**
- 9 Analysis of Construction Equipment Safety in Temporary Work at Height / **J.C. Rubio-Romero, M.C. Rubio, and C. García-Hernández**

CONTRACTING AND PROJECT DELIVERY SYSTEMS

- 15 Anatomy of Construction Disputes / **Sai On Cheung and Karen Hoi Yan Pang**
- 24 Building Information Modeling in Support of Sustainable Design and Construction / **Patrick Bynum, Raja R. A. Issa, and Svetlana Olbina**

COST AND SCHEDULE

- 35 Unit Costs of Public and PPP Road Projects: Evidence from India / **Surya Sudheer Meduri and Thillai Rajan Annamalai**
- 44 LOB and CPM Integrated Method for Scheduling Repetitive Projects / **Mohammad A. Ammar**
- 51 Modification of Advanced Programmatic Risk Analysis and Management Model for the Whole Project Life Cycle's Risks / **Mehran Zeynalian, Bambang Trigunarsyah, and H. R. Ronagh**
- 60 Factors That Affect Transaction Costs in Construction Projects / **Huimin Li, David Arditi, and Zhuofu Wang**

INFORMATION TECHNOLOGIES

- 69 Comparison of Image-Based and Time-of-Flight-Based Technologies for Three-Dimensional Reconstruction of Infrastructure / **Fei Dai, Abbas Rashidi, Ioannis Brilakis, and Patricio Vela**

PROJECT PLANNING AND DESIGN

- 80 Social Sustainability Considerations during Planning and Design: Framework of Processes for Construction Projects / **Rodolfo Valdes-Vasquez and Leidy E. Klotz**
- 90 Time and Cost-Optimized Decision Support Model for Fast-Track Projects / **Kyuman Cho and Makarand Hastak**
- 102 Identifying and Categorizing the Sources of Uncertainty in Construction Supply Chains / **Jonathan Gosling, Mohamed Naim, and Denis Towill**

QUANTITATIVE METHODS

- 111 Modeling Profitability and Stock Market Performance of Listed Construction Firms on the Athens Exchange: Two-Stage DEA Approach / **Ioannis E. Tsolas**

TECHNICAL PAPERS

CONSTRUCTION MATERIALS AND METHODS

- 121 Performance-Cost Analysis of Stabilized Undercut Subgrades / **Benjamin Cote, Brent Robinson, M.A. Gabr, and Roy H. Borden**

ORGANIZATIONAL ISSUES

- 128 Communication Makes a Corporate Code of Ethics Effective: Lessons from Hong Kong / **Christabel M.F. Ho**
- 138 Model for Enhancing Integrated Identification, Assessment, and Operational Control of On-Site Environmental Impacts and Health and Safety Risks in Construction Firms / **Marta Gangoellels, Miquel Casals, Nuria Forcada, Alba Fuertes, and Xavier Roca**

QUANTITATIVE METHODS

- 148 Dynamic Feasibility Analysis of the Housing Supply Strategies in a Recession: Korean Housing Market / **Sungjoo Hwang, Moonseo Park, Hyun-Soo Lee, SangHyun Lee, and Hyunsoo Kim**
- 161 Resource Sharing-Based Multiobjective Multistage Construction Equipment Allocation under Fuzzy Environment / **Jiuping Xu, Jun Meng, Ziqiang Zeng, Shiyong Wu, and Manbin Shen**
- 174 Computing a Displacement Distance Equivalent to Optimize Plans for Postdisaster Temporary Housing Projects / **Omar El-Anwar and Lei Chen**

PROJECT PLANNING AND DESIGN

- 185 Development and Interpretation of the Security Rating Index / **Jonathan R. Sylvie, Stephen R. Thomas, Sang-Hoon Lee, Robert E. Chapman, and Ryan T. Smith**
- 195 Generic Model for Measuring Benefits of BIM as a Learning Tool in Construction Tasks / **Weisheng Lu, Yi Peng, Qiping Shen, and Heng Li**
- 204 Critical Success Factors for Key Project Players and Objectives: Case Study of Singapore / **Bon-Gang Hwang and E-Sin Janicia Lim**

CASE STUDIES

- 216 Is the Knowledge Management System Truly Cost Effective? Case Study of KM-Enabled Engineering Problem Solving / **Wen-Der Yu, Ting-Chun Lin, Shen-Jung Liu, and Pei-Lun Chang**
- 225 Performance Measurement to Aid Decision Making in the Budgeting Process for Apartment-Building Construction: Case Study Using MCDA-C / **Rogério Cabral de Azevedo, Rogério Tadeu de Oliveira Lacerda, Leonardo Ensslin, Antônio Edésio Jungles, and Sandra Rolim Ensslin**
- 236 GIS Method for Haul Road Layout Planning in Large Earthmoving Projects: Framework and Analysis / **Sanghyeok Kang and Jongwon Seo**

DISCUSSIONS AND CLOSURES

- 247 Discussion of "Energy Management Reduces Great Pyramid Build Effort by More Than 98%" by Gerard C. A. Fonte / **Gunnar Lucko**
- 249 Closure / **Gerard C.A. Fonte**

- 251 Discussion of "Role of Simulation in Construction Engineering and
Management" by Simaan AbouRizk / **H. H. Einstein, S. Min, and Y. Moret**
- 252 Closure / **S. AbouRizk**
- 253 Discussion of "Probabilistic Estimation and Allocation of Project Time
Contingency" by Gabriel A. Barraza / **Willy Herroelen**
- 255 Closure / **Gabriel A. Barraza**

TECHNICAL PAPERS

CONSTRUCTION MATERIALS AND METHODS

- 257 Effectiveness Study of Methods for Removing Temporary Pavement Markings in Roadway Construction Zones / **Yong Cho, Koudous Kabassi, Jae-Ho Pyeon, Kunhee Choi, Chao Wang, and Terri Norton**

COST AND SCHEDULE

- 267 Cost Overruns and Failure in Project Management: Understanding the Roles of Key Stakeholders in Construction Projects / **Hemanta Doloi**

LABOR AND PERSONNEL ISSUES

- 280 Explaining Knowledge-Sharing Intention in Construction Teams in Hong Kong / **Peihua Zhang and Fung Fai Ng**

ORGANIZATIONAL ISSUES

- 294 Quantifying the Impact of Facilitation on Transactive Memory System Formation in Global Virtual Project Networks / **Semra Comu, Josh Iorio, John E. Taylor, and Carrie Sturts Dossick**
- 304 Impacts of Governance Structure Strategies on the Performance of Construction Joint Ventures / **Yi-Hsin Lin and S. Ping Ho**

QUANTITATIVE METHODS

- 312 Improved AHP Method and Its Application in Risk Identification / **Fengwei Li, Kok Kwang Phoon, Xiuli Du, and Mingju Zhang**

CASE STUDIES

- 321 Determining the Probability of Project Cost Overruns / **Peter E.D. Love, Xiangyu Wang, Chun-pong Sing, and Robert L.K. Tiong**
- 331 Impact of Irreversibility and Uncertainty on the Timing of Infrastructure Projects / **Phuong Doan and Kojo Menyah**
- 339 Estimation of Greenhouse Gas Emissions from Land-Use Changes due to Road Construction in the Republic of Korea / **Byungil Kim, Hyounkyu Lee, Hyungbae Park, and Hyoungkwan Kim**

TECHNICAL NOTES

- 347 Sharpening Competitive Edge through Procurement Innovation: Perspectives from Chinese International Construction Companies / **Weisheng Lu, Anita M.M. Liu, Steve Rowlinson, and S.W. Poon**

IN MEMORIAM

- 353 In Memoriam: John R. Lamberson, Founding Member of the Construction Institute / **Cliff Schexnayder**

TECHNICAL PAPERS

COST AND SCHEDULE

- 354 Survey of Motivations, Benefits, and Implementation Challenges of Last Planner System Users / **Jose L. Fernandez-Solis, Vishal Porwal, Sarel Lavy, Ali Shafaat, Zofia K. Rybkowski, Kiyoungh Son, and Nishi Lagoo**

INFORMATION TECHNOLOGIES

- 361 Interaction Effects of Information Technologies and Best Practices on Construction Project Performance / **Youngcheol Kang, William J. O'Brien, Jiukun Dai, Stephen P. Mulva, Stephen P. Thomas, Robert E. Chapman, and David Butry**

LABOR AND PERSONNEL ISSUES

- 372 Assessment of Residential Defects at Post-Handover / **Nuria Forcada, Marcel Macarulla, and Peter E. D. Love**

ORGANIZATIONAL ISSUES

- 379 Hybrid Approach to the Study of Inter-Organization High Performance Teams / **Freddy Solis, Joseph V. Sinfield, and Dulcy M. Abraham**
- 393 Workplace Stress Experienced by Construction Professionals in South Africa / **Paul Bowen, Peter Edwards, and Helen Lingard**

PROJECT PLANNING AND DESIGN

- 404 Importance of Operational Efficiency to Achieve Energy Efficiency and Exhaust Emission Reduction of Construction Operations / **Changbum R. Ahn and SangHyun Lee**
- 414 Construction Scheduling Using the Constraint Satisfaction Problem Method / **Pasit Lorterapong and Mongkol Ussavadiokrit**

ROBOTICS AND AUTOMATION

- 423 Toward Automated Earned Value Tracking Using 3D Imaging Tools / **Yelda Turkan, Frédéric Bosché, Carl T. Haas, and Ralph Haas**
- 434 Multiimaging Sensor Data Fusion-Based Enhancement for 3D Workspace Representation for Remote Machine Operation / **Hyojoo Son and Changwan Kim**

CASE STUDIES

- 445 Cost-Benefit Analysis of Construction Information Management System Implementation: Case Study / **Joshua L. Vaughan, Michael L. Leming, Min Liu, and Edward Jaselskis**

EDITOR'S NOTE

- 457 Updates to Journal of Construction Engineering and Management Editorial Board / **Jesús M. de la Garza**

TECHNICAL PAPERS

CONSTRUCTION MATERIALS AND METHODS

- 459 Algorithmic Method for Scraper Load-Time Optimization / **Marina Marinelli and Sergios Lambropoulos**
- 466 Quantifying the Impact of Construction Waste Charging Scheme on Construction Waste Management in Hong Kong / **C.S. Poon, Ann T.W. Yu, Agnes Wong, and Robin Yip**

CONTRACTING

- 480 Federal Acquisition Regulation Applied to Alliancing Contract Practices / **Travis R. Johnson, Peter Feng, William Sitzabee, and Mark Jernigan**

COST AND SCHEDULE

- 488 Uncertainty in Task Duration and Cost Estimates: Fusion of Probabilistic Forecasts and Deterministic Scheduling / **Homayoun Khamooshi and Denis F. Cioffi**
- 498 Scheduling Model for Rehabilitation of Distribution Networks Using MINLP / **Alaa Salman, Osama Moselhi, and Tarek Zayed**

INFORMATION TECHNOLOGIES

- 510 Projectwide Access: Key to Effective Implementation of Construction Project Management Software Systems / **Paul Arnold and Amy Javernick-Will**

LABOR AND PERSONNEL ISSUES

- 519 Determining Safety Climate Factors in the Repair, Maintenance, Minor Alteration, and Addition Sector of Hong Kong / **Carol K.H. Hon, Albert P.C. Chan, and Michael C.H. Yam**

ORGANIZATIONAL ISSUES

- 529 Analysis of United Kingdom Off-Highway Construction Machinery Market and Its Consumers Using New-Sales Data / **Gary D. Holt and David J. Edwards**

PROJECT PLANNING AND DESIGN

- 538 Project Cell: Cellular Organization of the Building Design Process / **André Luiz Aquere, José Dinis-Carvalho, and Rui M. Lima**

QUANTITATIVE METHODS

- 547 Carbon Footprint Estimation Tool for Transportation Construction Projects / **Suvish Melanta, Elise Miller-Hooks, and Hakob G. Avetisyan**
- 556 Fuzzy-Based Life-Cycle Cost Model for Decision Making under Subjectivity / **Mohammad Ammar, Tarek Zayed, and Osama Moselhi**

CASE STUDIES

- 564 Using Simulation to Plan Tunnel Construction / **Mohammed Al-Bataineh, Simaan AbouRizk, and Holly Parkis**
- 572 Applying Risk Management Workshop for a Public Construction Project: Case Study / **Cheng Siew Goh, Hamzah Abdul-Rahman, and Zulkiflee Abdul Samad**
- 581 Task Demands in Masonry Work: Sources, Performance Implications, and Management Strategies / **Panagiotis Mitropoulos and Babak Memarian**

ERRATA

- 591 Erratum for "Key Assessment Indicators for the Sustainability of Infrastructure Projects" by Liyin Shen, Yuzhe Wu, and Xiaoling Zhang / **Liyin Shen, Yuzhe Wu, and Xiaoling Zhang**

EDITOR'S NOTE

593 Seeking Excellence / **Jesús M. de la Garza**

FORUM

594 Integration of Construction Worker Safety and Health in Assessment of Sustainable Construction / **Jimmie Hinze, Ray Godfrey, and James Sullivan**

TECHNICAL PAPERS

CONSTRUCTION MATERIALS AND METHODS

601 Framework for Empirical Process to Improve Nonnuclear Gauge Performance in Hot-Mix Asphalt Pavement Construction / **Yong Cho, Chao Wang, and Ziqing Zhuang**

CONTRACTING AND PROJECT DELIVERY SYSTEMS

611 Employing Data Warehousing for Contract Administration: e-Dispute Resolution Prototype / **Heap Yih Chong, Rosli Mohamad Zin, and Siong Choy Chong**

620 Determining Optimal Proportion of Design in Design-Build Request for Proposals / **Bo Xia, Keith Molenaar, Albert Chan, Martin Skitmore, and Jian Zuo**

LABOR AND PERSONNEL ISSUES

628 Major Accident Factors for Effective Safety Management of Highway Construction Projects / **Young Ai Kim, Boong Yeol Ryoo, Yong-Su Kim, and Woon Chan Huh**

641 Understanding a Contractor's Regional Variations in Safety Performance / **Qian Chen, Ruoyu Jin, and Alfred Soboyejo**

ORGANIZATIONAL ISSUES

654 Shaping the Future of the Civil Engineering Profession / **Jeffrey S. Russell**

PROJECT PLANNING AND DESIGN

665 Stabilizing Production Flow of Interior and Finishing Works with Reentrant Flow in Building Construction / **Irina Brodetskaia, Rafael Sacks, and Aviad Shapira**

QUANTITATIVE METHODS

675 Pricing Strategy for Best Value Tender / **Wen-der Yu, Kwo-Wuu Wang, and Ming-Teh Wang**

685 Real Option Approach to Sharing Privatization Risk in Underground Infrastructures / **Taeil Park, Byungil Kim, and Hyoungkwan Kim**

694 Adaptive Learning of Contractor Default Prediction Model for Surety Bonding / **Adel Awad and Aminah Robinson Fayek**

705 Developing a Benchmarking Model for Construction Projects in Hong Kong / **John F.Y. Yeung, Albert P.C. Chan, Daniel W.M. Chan, Y.H. Chiang, and Huan Yang**

CASE STUDIES

- 717 Assessing the Market Potential for Housing Construction Products in Mexico / **I. Cariaga and T.E. El-Diraby**
- 726 Analysis of Strategic Issues Underpinning the Innovative Financing of Infrastructure within Developing Countries / **Edward Badu, De-Graft Owusu-Manu, David J. Edwards, and Gary D. Holt**
- 738 Integration of Financial and Contract Management on the Shanghai Expo Construction Program / **Yun Le, Yuhong Wang, Cheng Luo, and Yong Peng**

TECHNICAL NOTES

- 749 Ground-Penetrating Radar for Inspection of In-Road Structures and Data Interpretation by Numerical Modeling / **Mercedes Solla, Higinio González-Jorge, Maria Varela, and Henrique Lorenzo**

TECHNICAL PAPERS

CONTRACTING AND PROJECT DELIVERY SYSTEMS

- 755 Contractor Selection Model for Highway Projects Using Integrated Simulation and Analytic Network Process / **Mohammed S. El-Abbasy, Tarek Zayed, Marwa Ahmed, Hani Alzraiee, and Mona Abouhamad**

INFORMATION TECHNOLOGIES

- 768 Domain Ontology for Construction Knowledge / **Tamer E. El-Diraby**
785 Server-Customer Interaction Tracker: Computer Vision-Based System to Estimate Dirt-Loading Cycles / **Ehsan Rezazadeh Azar, Sven Dickinson, and Brenda McCabe**

LABOR AND PERSONNEL ISSUES

- 795 Sharing Tacit Knowledge for Integrated Project Team Flexibility: Case Study of Integrated Project Delivery / **Lianying Zhang, Jing He, and Shuguo Zhou**
805 Multilevel Safety Culture and Climate Survey for Assessing New Safety Program / **Qian Chen and Ruoyu Jin**
818 Exploratory Case Study of Pictorial Aids for Communicating Health and Safety for Migrant Construction Workers / **Billy Hare, Iain Cameron, Kevin J. Real, and William F. Maloney**
826 Relationship between Unsafe Working Conditions and Workers' Behavior and Impact of Working Conditions on Injury Severity in U.S. Construction Industry / **Seokho Chi, Sangwon Han, and Dae Young Kim**

ORGANIZATIONAL ISSUES

- 839 Visualizing Evolution of Knowledge Management Capability in Construction Firms / **Le Chen and Patrick S. W. Fong**
852 Market Structure, Ownership Structure, and Performance of China's Construction Industry / **Yi Sheng Liu, Xue Feng Zhao, and Yu Ping Liao**

PROJECT PLANNING AND DESIGN

- 858 Empirical Assessment of Spatial Prediction Methods for Location Cost-Adjustment Factors / **Giovanni C. Migliaccio, Michele Guindani, Maria D'Incognito, and Linlin Zhang**

QUANTITATIVE METHODS

- 870 Analysis of Causes of Construction Defects Using Fault Trees and Risk Importance Measures / **Hamad Aljassmi and Sangwon Han**
881 Three-Dimensional Modeling of Site Elements by Analytically Processing Image Data Contained in Site Photos / **Fei Dai and Ming Lu**

TECHNICAL NOTES

- 895 Enhancing Construction As-Built Documentation Using Interactive Voice Response / **Mohamed Abdel-Monem and Tarek Hegazy**

TECHNICAL PAPERS

CONTRACTING AND PROJECT DELIVERY SYSTEMS

- 899 Optimal Incentive Contract with Risk-Neutral Contractor / **S. Mahdi Hosseinian and David G. Carmichael**
- 910 Design of Performance Assessment System for Selection of Contractors in Construction Industry E-Marketplaces / **I.M. Horta, A.S. Camanho, and A.F. Lima**
- 918 Risk and Value in Privately Financed Health Care Projects / **Alberto De Marco and Giulio Mangano**
- 927 Nature of Tender Review Meetings / **Samuel Laryea**
- 941 Interweaving Trust and Communication with Project Performance / **Sai On Cheung, Tak Wing Yiu, and Man Chung Lam**

COST AND SCHEDULE

- 951 Simulating Construction Duration for Multistory Buildings with Controlling Activities / **Long D. Nguyen, Duc H. Phan, and Llewellyn C.M. Tang**

CONSTRUCTION MATERIALS AND METHODS

- 960 Implementation of Noise-Free and Vibration-Free PHC Screw Piles on the Basis of Full-Scale Tests / **Yongkyu Choi, Dong-Chol Kim, Sung-Soo Kim, Moon S. Nam, and Tae-Hyung Kim**
- 968 Standardizing Housing Defects: Classification, Validation, and Benefits / **Marcel Macarulla, Nuria Forcada, Miquel Casals, Marta Gangoellels, Alba Fuertes, and Xavier Roca**
- 977 Risk-Based Protocol for Inspection of Transportation Construction Projects Undertaken by State Departments of Transportation / **Ali Mostafavi, Dulcy Abraham, Samy Noureldin, Greg Pankow, Joseph Novak, Ronald Walker, Kevin Hall, and Bren George**
- 987 Nanotechnology as a Preventive Engineering Solution to Highway Infrastructure Failures / **Onuegbu O. Ugwu, Julius B. Arop, Clifford U. Nwoji, and Nwolisa N. Osadebe**

INFORMATION TECHNOLOGIES

- 994 Visual Representations for Monitoring Project Performance: Developing Novel Prototypes for Improved Communication / **Namhun Lee and Eddy M. Rojas**

LABOR AND PERSONNEL ISSUES

- 1006 Laser Scanning for Safe Equipment Design That Increases Operator Visibility by Measuring Blind Spots / **Eric D. Marks, Tao Cheng, and Jochen Teizer**
- 1015 Effects of Workers' Social Learning: Focusing on Absence Behavior / **Seungjun Ahn, SangHyun Lee, and Robert P. Steel**
- 1026 Turning Green to Gold in the Construction Industry: Fable or Fact? / **Yujie Lu, Qingbin Cui, and Yun Le**

QUANTITATIVE METHODS

- 1037 Modeling of Simultaneously Continuous and Stochastic Construction Activities for Simulation / **Vivek Puri and Julio C. Martinez**

- 1046 Distribution of Materials in Road Earthmoving and Paving: Mathematical Programming Approach / **Roberto Xavier de Lima, Ernesto Ferreira Nobre Júnior, Bruno de Athayde Prata, and José Weissmann**

CASE STUDIES

- 1055 Using Contractor Bid Amounts to Estimate the Impact of Night Construction on Cost for Transportation Construction / **R. Edward Minchin Jr., S. Brent Thurn, Ralph D. Ellis Jr., and Don W. Lewis**

TECHNICAL NOTES

- 1063 Managing the Cost of Power Transmission Projects: Lessons Learned / **Hani M. Gharaibeh**

TECHNICAL PAPERS

CONTRACTING AND PROJECT DELIVERY SYSTEMS

- 1069 Multiobjective Bayesian Network Model for Public-Private Partnership Decision Support / **Jingzhu Xie and S. Thomas Ng**
- 1082 Exogenous Determinants for Renegotiating Public Infrastructure Concessions: Evidence from Portugal / **Carlos Oliveira Cruz and Rui Cunha Marques**
- 1091 Project Impacts of Specialty Mechanical Contractor Design Involvement in the Health Care Industry: Comparative Case Study / **Bryan W. Franz, Robert M. Leicht, and David R. Riley**
- 1098 Construction Risk Identification and Allocation: Cooperative Approach / **Awad S. Hanna, Greg Thomas, and Justin R. Swanson**

COST AND SCHEDULE

- 1108 Multiresource Leveling in Line-of-Balance Scheduling / **Atilla Damci, David Arditi, and Gul Polat**
- 1117 Fast and Near-Optimum Schedule Optimization for Large-Scale Projects / **Wail Menesi, Behrooz Golzarpoor, and Tarek Hegazy**

LABOR AND PERSONNEL ISSUES

- 1125 Relationships among Language Proficiency, Communication Patterns, and Safety Performance in Small Work Crews in the United States / **Rayyan Alsamadani, Matthew R. Hallowell, Amy Javernick-Will, and Jacinto Cabello**
- 1135 Hands-On Exercise for Enhancing Students' Construction Management Skills / **Tarek Hegazy, Mohamed Abdel-Monem, Dina A. Saad, and Roozbeh Rashedi**
- 1144 Conceptualizing Safety Management in Construction Projects / **Riza Yosia Sunindijo and Patrick X.W. Zou**

ORGANIZATIONAL ISSUES

- 1154 Practical Framework for Measuring Performance of International Construction Firms / **Zhigang Jin, Fei Deng, Heng Li, and Martin Skitmore**
- 1168 Relationship between Owners' Capabilities and Project Performance on Development of Hydropower Projects in China / **Shuli Wang, Wenzhe Tang, and Yuxuan Li**

PROJECT PLANNING AND DESIGN

- 1179 Developing Fuzzy Enterprise Risk Management Maturity Model for Construction Firms / **Xianbo Zhao, Bon-Gang Hwang, and Sui Pheng Low**

QUANTITATIVE METHODS

- 1190 Predicting Construction Materials Prices Using Fuzzy Logic and Neural Networks / **Mohamed Marzouk and Ahmed Amin**
- 1199 Construction in an Open Economy: Autoregressive Distributed Lag Modeling Approach and Causality Analysis—Case of North Cyprus / **Vedat Yorucu**
- 1211 Determinants of Efficiency of Contractors in Hong Kong and China: Panel Data Model Analysis / **Jing Li, Yat Hung Chiang, Tracy N.Y. Choi, and King Fai Man**

- 1224 Predicting Loss for Large Construction Companies / **Titilola Adeleye, Meng Huang, Zhenhua Huang, and Lili Sun**
- 1237 Forecasting Engineering News-Record Construction Cost Index Using Multivariate Time Series Models / **S.M. Shahandashti and B. Ashuri**

CASE STUDIES

- 1244 Quality Costs in Construction: Case of Qom Monorail Project in Iran / **Amirhosein Jafari and Peter E.D. Love**
- 1250 Determination of Behaviors in Building Product Information Acquisition for Developing a Building Product Information System in Turkey / **Elcin Tas, Pinar Irlayici Cakmak, and Haluk Levent**
- 1259 Preliminary Engineering Cost Estimation Model for Bridge Projects / **Donna A. Hollar, William Rasdorf, Min Liu, Joseph E. Hummer, Ingrid Arocho, and Simon M. Hsiang**
- 1268 Managing Project Risk at the Enterprise Level: Exploratory Case Studies in China / **Jun Ying Liu, Patrick X. W. Zou, and Wei Gong**

AWARDS

01213001 2012 Best Paper Award / **Jesús M. de la Garza**

TECHNICAL PAPERS

- 04013001 Localization Typologies Evident among Foreign Enterprises Active in the Chinese Construction Market / **Igor Martek and Chuan Chen**
- 04013002 Using the Concept-Mapping Method for Empirical Studies in Construction Research / **Rodolfo Valdes-Vasquez and Leidy E. Klotz**
- 04013003 Relationship between Construction Safety and Quality Performance / **John Wanberg, Christofer Harper, Matthew R. Hallowell, and Sathyanarayanan Rajendran**
- 04013004 Contingency-Based Approach to Firm Performance in Construction: Critical Review of Empirical Research / **Fei Deng and Hedley Smyth**
- 04013005 Relationship between Personal Protective Equipment, Self-Efficacy, and Job Satisfaction of Women in the Building Trades / **Heidi Wagner, Angella J. Kim, and Linsey Gordon**
- 04013006 Construction-Safety Best Practices and Relationships to Safety Performance / **Jimmie Hinze, Matthew Hallowell, and Kevin Baud**
- 04013007 Comparison of Cost and Time Performance of Design-Build and Design-Bid-Build Delivery Systems in Florida / **R. Edward Minchin Jr., Xiaoxiao Li, Raja R. Issa, and Gary G. Vargas**
- 04013008 Application of Time Buffers to Construction Project Task Durations / **Marion M. Russell, Gregory Howell, Simon M. Hsiang, and Min Liu**
- 04013009 State of Practice of Building Information Modeling in Mechanical and Electrical Construction Industries / **Awad Hanna, Fawaz Boodai, and Mounir El Asmar**
- 04013010 Proactive Construction Safety Control: Measuring, Monitoring, and Responding to Safety Leading Indicators / **Matthew R. Hallowell, Jimmie W. Hinze, Kevin C. Baud, and Andrew Wehle**
- 04013011 Automated Method for Checking Crane Paths for Heavy Lifts in Industrial Projects / **Zhen Lei, Hosein Taghaddos, Jacek Olearczyk, Mohamed Al-Hussein, and Ulrich Hermann**

CASE STUDIES

- 05013001 Method to Implement Delayed Product Differentiation in Construction of High-Rise Apartment Building Projects / **Cecília Gravina da Rocha and Sergio Luiz Kemmer**

TECHNICAL NOTES

- 06013001 Building Code Requirements for Inspection of Adhesive Anchors in Concrete / **Brian Gerber and Mahmut Ekenel**
- 06013002 Document Management in Construction: Practices and Opinions / **Mohammed Al Qady and Amr Kandil**
- 06013003 Organizational Barriers to Productivity and Innovation in Large-Scale, U.S.-Based Photovoltaic System Construction Projects / **Jumie Yuventi, Raymond Levitt, and Hugh Robertson**
- 06013004 Criticality Comparison between the Repetitive Scheduling Method and the Network Model / **Lihui Zhang, Chuyun Pan, and Xin Zou**

TECHNICAL PAPERS

- 04013012 Quantifying Performance for the Integrated Project Delivery System as Compared to Established Delivery Systems / **Mounir El Asmar, Awad S. Hanna, and Wei-Yin Loh**
- 04013013 Trade-Level Productivity Measurement: Critical Challenges and Solutions / **Bon-Gang Hwang and Chin Kiat Soh**
- 04013014 Where to Focus for Successful Adoption of Building Information Modeling within Organization / **Jongsung Won, Ghang Lee, Carrie Dossick, and John Messner**
- 04013015 Project Management Knowledge of Construction Professionals: Cross-Country Study of Effects on Project Success / **Jui-Sheng Chou, Nelly Irawan, and Anh-Duc Pham**
- 04013016 Building Information Modeling Education for Construction Engineering and Management. I: Industry Requirements, State of the Art, and Gap Analysis / **R. Sacks and E. Pikas**
- 04013017 Reducing Hindrances to Adoption of Relational Behaviors in Public Construction Projects / **Yan Ning and Florence Yean Yng Ling**
- 04013018 Comparison of Preproject Planning for Green and Conventional Buildings / **Youngcheol Kang, Changwan Kim, Hyojoo Son, Seungtaek Lee, and Charinee Limsawasd**
- 04013019 Improving Public Engagement in Construction Development Projects from a Stakeholder's Perspective / **Mei-yung Leung, Jingyu Yu, and Qi Liang**
- 04013020 New Road Surfaces: Logical Bases for Simple Quality-Related Pay Adjustments / **F.G. Praticò**
- 04013021 Knowledge-Based Simulation Modeling of Construction Fleet Operations Using Multimodal-Process Data Mining / **Reza Akhavian and Amir H. Behzadan**
- 04013022 Construction Price Prediction Using Vector Error Correction Models / **Heng Jiang, Youquan Xu, and Chunlu Liu**
- 04013023 Mechanical Response of Unbraced Wood Composite I-Joist to Walking Loads / **Daniel P. Hindman, Paul D. Timko, and Maury A. Nussbaum**
- 04013024 Use of Mechanistic-Empirical Pavement Design Principles to Assign Asphalt Pavement Pay Factor Adjustments / **Van De Jarnette, Leslie Myers McCarthy, Thomas Bennert, and Maria Chiara Guercio**
- 04013025 Case Study on the Effect of 690 mpa (100 ksi) Steel Reinforcement on Concrete Productivity in Buildings / **Aaron Thomas, Brad Davis, Gabriel B. Dadi, and Paul M. Goodrum**

CASE STUDIES

- 05013002 Building Information Modeling Education for Construction Engineering and Management. II: Procedures and Implementation Case Study / **E. Pikas, R. Sacks, and O. Hazzan**
- 05013003 Decision Support System–Enhanced Scheduling in Matrix Organizations Using the Analytic Hierarchy Process / **James D. Goedert and Videgla D. Sekpe**

Considerations of Sustainability in Construction Engineering and Management / Amlan Mukherjee, Caroline Clevenger, Sinem Mollaoglu-Korkmaz and Phil Lewis

INTRODUCTION

- A2013001 Special Issue on Considerations of Sustainability in Construction Engineering and Management / **Amlan Mukherjee, Caroline M. Clevenger, Sinem Mollaoglu-Korkmaz, and Phil Lewis**

TECHNICAL PAPERS

- A4013001 Energy-Related Risk Management in Integrated Project Delivery / **Hyun Woo Lee, Iris D. Tommelein, and Glenn Ballard**
- A4013002 Quantification of Sustainability Index for Underground Utility Infrastructure Projects / **Samuel T. Ariaratnam, Kalyan Piratla, Aaron Cohen, and Matthew Olson**
- A4013003 Integrated Framework for Estimating, Benchmarking, and Monitoring Pollutant Emissions of Construction Operations / **Changbum R. Ahn, Phil Lewis, Mani Golparvar-Fard, and SangHyun Lee**
- A4013004 Contested Factors for Sustainability: Construction and Management of Household On-Site Wastewater Treatment Systems / **Jessica Kaminsky and Amy Javernick-Will**
- A4013005 Process Indicators to Track Effectiveness of High-Performance Green Building Projects / **Pelin Gultekin, Sinem Mollaoglu-Korkmaz, David R. Riley, and Robert M. Leicht**
- A4013006 Building Environmentally and Economically Sustainable Transportation Infrastructure: Green Highway Rating System / **Jincheol Lee, Tuncer B. Edil, Craig H. Benson, and James M. Tinjum**
- A4013007 Quantification of Particulate Matter from Commercial Building Excavation Activities Using Life-Cycle Approach / **Kevin Ketchman and Melissa Bilec**
- A4013008 Operational Performance of Sustainable Measures in Public Buildings / **Moatassem Abdallah, Khaled El-Rayes, and Liang Liu**
- A4013009 Life-Cycle Assessment of Concrete Dam Construction: Comparison of Environmental Impact of Rock-Filled and Conventional Concrete / **Chunna Liu, Changbum R. Ahn, Xuehui An, and SangHyun Lee**
- A4013010 Service-Learning Assessment: Sustainability Competencies in Construction Education / **Caroline M. Clevenger and Mehmet E. Ozbek**

CASE STUDIES

- A5013001 Response of Construction Clients to Low-Carbon Building Regulations / **Beliz Ozorhon**
- A5013002 Rethinking Wastewater-Treatment Infrastructure: Case Study Using Life-Cycle Cost and Life-Cycle Assessment to Highlight Sustainability Considerations / **Scott Glick and Angela Acree Guggemos**