Time Slot								
Pre-Conference Day - Tuesday, May 21, 2019								
9:00 AM to 1:00 PM	Golf Tournament							
4:00 PM to 8:00 PM	Registration - Van Horne C							
6:00 PM to 8:00 PM	Welcome Reception - Van Horne C							

Time Slot								
Conference Day 1 - Wednesday, May 22, 2019								
7:00 AM - 8:00 AM	Registration & Breakfast							
8:00 AM - 9:15 AM	Plenary Session - Van Horne A/B							
Parallel Sessions		Van Horne C	Van Horne A/B	Baron Shaughnessy	Sir Edward Beatty	D.C. Coleman	David O'Brien	Rob Ritchie
9:30 AM - 9:50 AM		SPATIAL EFFICACY OF RESPIRATION MONITORING USING DOPPLER RADARS FOR COMFORT ASSESSMENT, Wooyoung Jung, Farrokh Jazizadeh	SMART CONSTRUCTION SITE: ONTOLOGY OF INFORMATION SYSTEM ARCHITECTURE, Thomas Danel, Zakaria Dakhli, Fanny Brunet, Zoubeir Lafhaj	AN AUGMENTED REALITY BASED MAINTENANCE SYSTEM FOR BUILDING INTERIOR CONSTRUCTION, Soonwook Kwon, Suwan Chung, Daeyoon Moon	CARTESIAN POINTS VISUALIZATION IN GAME SIMULATION FOR ANALYZING GEOMETRIC REPRESENTATIONS OF AEC OBJECTS IN IFC, Jiansong Zhang, Yunfeng Chen, Rui Liu, Luciana Debs	ICCREM_Keynote	ACTUAL CLT PROJECTS IN GERMANY AND EUROPE AND ASSOCIATED RESEARCH PROJECTS, Stefan Winter	BIM-BASED TACT-TIMING PLANNING AND TACT CONTROL - REQUIREMENTS FOR DIGITAL CONSTRUCTION PROCESS MANAGEMENT, Juergen Melzner
9:50 AM - 10:10 AM		CASE STUDY ON MOBILE VIRTUAL REALITY CONSTRUCTION TRAINING, Jochen Teizer, Mario Wolf, J.H. Ruse	AUTOMATIC SELECTION TOOL OF QUALITY CONTROL SPECIFICATIONS FOR OFF-SITE CONSTRUCTION MANUFACTURING PRODUCTS: A BIM-BASED ONTOLOGY MODEL APPROACH, Pablo Martinez, Rafiq Ahmad, Mohamed Al-Hussein	3D POSTURE ESTIMATION FROM 2D POSTURE DATA FOR CONSTRUCTION WORKERS, Yantao Yu, Heng Li, Xincong Yang	CONTEXT-REALISTIC VIRTUAL REALITY-BASED TRAINING SIMULATORS FOR ASPHALT OPERATIONS, Faridaddin Vahdatikhaki, Armin Kassemi Langroodi, Denis Makarov, Seirgei Miller	ICCREM_Keynote	ACTUAL CLT PROJECTS IN GERMANY AND EUROPE AND ASSOCIATED RESEARCH PROJECTS, Stefan Winter	ADAPTIVE AUTOMATION STRATEGIES FOR PARAMETRIZED MASS TIMBER BUILDING COMPONENTS, Oliver David Krieg, Oliver Lang
10:10 AM - 10:30 AM		THE EFFECTIVENESS OF VIRTUAL REALITY IN SAFETY TRAINING: MEASUREMENT OF EMOTIONAL AROUSAL WITH ELECTROMYOGRAPHY, Sheng Xu, Qingqing Ni, Qiang Du	INTEGRATING COMPUTATIONAL DESIGN TO IMPROVE THE DESIGN WORKFLOW OF MODULAR CONSTRUCTION, Tom Greenough, Matthew Smith, Aaron Mariash	A REPRESENTATIVE SIMULATION MODEL FOR BENCHMARKING BUILDING CONTROL STRATEGIES, Alexander Kümpel, Florian Stinner, Bastian Gauch, Marc Baranski, Dirk Müller	GENERATING GENERIC DATASETS FOR MACHINE LEARNING APPLICATIONS IN BUILDING SERVICES USING STANDARDIZED TIME SERIES DATA, Florian Stinner, Yingying Yang, Thomas Schreiber, Gerrit Bode, Marc Baranski, Dirk Müller	ICCREM_Keynote	ACTUAL CLT PROJECTS IN GERMANY AND EUROPE AND ASSOCIATED RESEARCH PROJECTS, Stefan Winter	A REVIEW OF SOCIAL, PHYSIOLOGICAL, AND COGNITIVE FACTORS AFFECTING CONSTRUCTION SAFETY, Sahel Eskandar, Jun Wang, Saiedeh Razavi
10:30 AM - 11:10 AM	Coffee and Networking							
11:10 AM - 11:30 AM		AN APPLICATION OF SLOPED–LAMINATED OBJECT MANUFACTURING (S-LOM) METHOD TO FREEFORM CONCRETE FORMWORK, Joon Hyeok Sim, Daehie	DECISION SUPPORT TOOL FOR ENHANCING THE ECONOMIC IMPACT OF CONSTRUCTION USING OFFSITE SYSTEMS, Tsvetomila Duncheva, Robert Hairstans	VBUILT: VOLUME-BASED AUTOMATIC BUILDING EXTRACTION FOR AS-BUILT POINT CLOUDS, Mustafa Khalid Masood, Akash Pushkar, Olli Seppänen, Vishal Singh, Antti Aikala	TEACHING ROBOTS TO PERFORM CONSTRUCTION TASKS VIA LEARNING FROM DEMONSTRATION, Ci-Jyun Liang, Vineet Kamat, Carol Menassa	ICCREM_Keynote	THE VALUE OF RFID TECHNOLOGY IN TALL PREFABRICATIED TIMBER BUILDINGS, Alireza Ahmadian Fard Fini, Perry Forsythe, Alireza Jalali Yazdi	OPTIMIZATION OF PIPE SPOOL FABRICATION SEQUENCE USING GENETIC ALGORITHM, Sina Abdollahnejad, Narges Sajadfar, Yasser Mohamed
11:30 AM - 11:50 AM		DEVELOPMENT OF A CHATBOT-ASSISTED CONSTRUCTION-DAILY-REPORT GENERATION SYSTEM, Jehyun Cho, Ghang Lee	ASSESSING ENVIRONMENTAL IMPLICATIONS OF INDUSTRIALIZED HOUSING CONSTRUCTION, Firehiwot Nesro Kedir, Daniel M. Hall	GOVERNMENT OPEN DATA AND SENSING DATA INTEGRATION FRAMEWORK FOR SMART CONSTRUCTION SITE MANAGEMENT, Wei-Liang Kuo, Chiu-Ming Lee, Tzu-Jan Tung, Bo-Kai Huang, Shu-Hsiang Hsu, Shang-Hsien Hsieh	APPLYING AUGMENTED REALITY TECHNIQUE TO SUPPORT ON-SITE REBAR INSPECTION, Hao-Wei Hsu, Shang-Hsien Hsieh	ICCREM_Keynote	MASS TIMBER IN HIGH-RISE BUILDINGS: MODULAR DESIGN AND CONSTRUCTION; PERMITTING AND CONTRACTING ISSUES, Tamer El-Diraby, Dalia Dorrah	ONTOLOGY FOR LOGISTICS REQUIREMENTS ON A 4D BIM FOR SEMI-AUTOMATIC STORAGE SPACE PLANNING, Jan Weber, Jana Stolipin, Markus König, Sigrid Wenzel
11:50 AM - 12:10 PM		AUTOMATED DETECTION OF URBAN FLOODING FROM NEWS, Mazdak Nik-Bakht, Farzaneh Zarei	TOWARD COMMUNITY GENERATION: ENERGY SIMULATION AND PERFORMANCE EVALUATION OF MULTI-FAMILY SOLAR PV SETTINGS FOR ENERGY-EFFICIENT HOMES IN EDMONTON, CANADA, Hadia Awad, Mustafa Gül, Mohamed Al-Hussein	ARTIFICIAL INTELLIGENCE TECHNIQUES TO SUPPORT DESIGN AND CONSTRUCTION, Ebrahim Karan, Atefeh Mohammadpour, Somayeh Asadi	SMART CONSTRUCTION MONITORING FOR DISASTER PREVENTION BASED ON SPATIAL INFORMATION AND GNSS/USN/IOT, Sangho Yeon, Chunhum Yeon	ICCREM_Keynote	CONSEQUENCES OF THE BC ENERGY STEP CODE AND THE FUTURE NATIONAL BUILDING CODE OF CANADA ON OFFSIDE CONSTRUCTION, Guido Wimmers, Alison Conroy	INTEGRATING SOCIAL SUSTAINABILITY IN VALUE STREAM MAPPING: PANELIZED POST-DISASTER TEMPORARY HOUSING CASE STUDY, Burcu Akinci, Miguel Mora, Luis Alarcón
12:10 PM - 12:30 PM		ANALYTIC HIERARCHY PROCESS AS A TOOL TO EXPLORE THE SUCCESS FACTORS OF BIM DEPLOYMENT IN CONSTRUCTION FIRMS, Shunming Liang, I-Chen Wu, Zheng-Yun Zhuang, Chin-Wen Chen	EVALUATION OF RISK MANAGEMENT PRACTICE IN THE NIGERIA CONSTRUCTION INDUSTRY, Moses Ugwu, Temidayo Osunsanmi, Clinton Aigbavboa	FREQUENCY SWEEP BASED SENSING TECHNOLOGY FOR NON-DESTRUCTIVE ELECTRICAL RESISTIVITY MEASUREMENT OF CONCRETE, Lasitha Piyathilaka, Sathira Wickramanayake, Sarath Kodagoda, Karthick Thiyagarajan	CONSTRUCTION AND USAGE OF THREE-DIMENSIONAL DATA FOR ROAD STRUCTURES USING TERRESTRIAL LASER SCANNING AND UAV WITH PHOTOGRAMMETRY, Satoshi Kubota, Chiyuan Ho, Kotaro Nishi	ICCREM_Keynote	DEVELOPMENT OF A DESIGN-DRIVEN PARAMETRIC MASS TIMBER CONSTRUCTION SYSTEM FOR MODULAR MID-RISE URBAN HOUSING, Oliver Lang, Clayton Blackman, Oliver David Krieg, Cindy Wilson, Shaique Uddin, Ryan Gillespie	MODELING OF IDENTIFYING MODERATION EFFECT BETWEEN PROJECT DELIVERY SYSTEMS AND COST PERFORMANCE, Hyosoo Moon, Hyun-Soo Lee, Moonseo Park, Bosik Son
12:30 PM - 1:45 PM	Lunch and Plenary Session - Van Horne A/B							
2:00 PM - 2:20 PM		AS-IS GEOMETRIC DATA COLLECTION AND 3D VISUALIZATION THROUGH THE COLLABORATION BETWEEN UAV AND UGV, Yong Cho, Jisoo Park, Pileun Kim	HOW TO ACHIEVE CAPITAL EFFICIENCY?, Fred Haney, Cathy Farina	STANDARD CLOSED-CIRCUIT TELEVISION (CCTV) COLLECTION TIME EXTRACTION OF SEWER PIPES WITH MACHINE LEARNING ALGORITHM, Xianfei Yin, Yuan Chen, Ahmed Bouferguene, Hamid Zaman, Mohamed Al-Hussein, Randy Russell, Luke Kurach	COMPARISON OF VIRTUAL COMMUNICATION ENVIRONMENT FOR REMOTE BIM MODEL REVIEW COLLABORATION, Tzong-Hann Wu, Feng Wu, Shih-Chung Kang, Hung-Lin Chi	A SYSTEM DYNAMICS MODEL OF PREVENTION THROUGH DESIGN REGARDING UNSAFETY BEHAVIOR IN CONSTRUCTION, Xinlu Sun	DECISION-MAKING FOR CROSS-LAMINATED TIMBER MODULAR CONSTRUCTION LOGISTICS USING DISCRETE EVENT SIMULATION, Joseph Louis, Bahar Abiri, Mariapaola Riggio	ANALYZING AFFORDABLE HOUSING INDUSTRIALIZATION STATUS IN BEIJING FROM THE PERSPECTIVE OF ENERGY SAVING AND EMISSION REDUCTION, Shasha Fu
2:20 PM - 2:40 PM		HOLONIC SYSTEM FOR REAL-TIME EMERGENCY MANAGEMENT IN BUILDINGS, Alessandro Carbonari, Leonardo Messi, Massimiliano Pirani, Andrea Bonci, Berardo Naticchia, Lucia Cristina Tolve	DEVELOPING AN ANALYTICAL SOLUTION THAT MIMICS SIMULATION MODELING FOR CONSTRUCTION PLANNING: EARTHWORK CASE, Waleed Shakeel, Ming Lu	QUANTIFYING REMOTENESS FOR CONSTRUCTION PROJECTS USING NIGHTTIME SATELLITE IMAGERY AND MACHINE LEARNING, Pouya Zangeneh, Hesam Hamledari, Brenda McCabe	SERVICE LEVEL EVALUATION OF FLORIDA'S HIGHWAYS CONSIDERING THE IMPACT OF AUTONOMOUS VEHICLES, Amirsaman Mahdavian, Alireza Shojaei, Amr Oloufa	STUDY ON INFLUENCING FACTORS OF BIM ADOPTION IN CHINA'S CONSTRUCTION INDUSTRY BASED ON FA-SEM MODEL, Xinyue Zhang	CLT TILT-UP CASE STUDY FOR LIGHT INDUSTRIAL, Carla Dickof	CO-PRESENCE IN A SHARED VIRTUAL ENVIRONMENT (SVE): A CASE STUDY OF A HIGHWAY WORK ZONE CONSTRUCTION, Sanaz Saeidi
2:40 PM - 3:00 PM		GRASPED ELEMENT POSITION RECOGNITION AND ROBOT PATH PLANNING ADJUSTMENT DURING MODULE ASSEMBLY, Kepa Iturralde, Thomas Bock, Taku Kinoshita	PARKLET: A NEW URBAN PLATFORM FOR EMERGENT FORMS OF COMMUNICATION TO BETTER FACILITATE SOCIAL INTERACTION, Mona Ghandi	DEEP LEARNING DETECTION FOR REAL-TIME CONSTRUCTION MACHINE CHECKING, Bo Xiao, Shih-Chung Kang	THROUGH-WALL OBJECT RECOGNITION AND POSE ESTIMATION, Ruoyu Wang, Siyuan Xiang, Chen Feng, Pu Wang, Semiha Ergan, Yi Fang	STUDY ON INTEGRATED APPLICATION OF BIM AND RFID IN PREFABRICATED COMPONENT LOGISTICS MANAGEMENT, Xinnan Liu	TIMBER 4.0: OPEN SOURCE SYSTEMS AS A DEMOCRATIC TOOL FOR DESIGNING AND BUILDING, Ulrich Dangel	PROCESS OPTIMIZATION CALCULATION MODEL AND EMPIRICAL RESEARCH OF PREFABRICATED BUILDINGS BASED ON DSM, Likun Zhao
3:00 PM - 3:20 PM		A NEW UAV-BASED MODULE LIFTING AND TRANSPORTING METHOD: ADVANTAGES AND CHALLENGES, Dong Bin Kim, Jin Ouk Choi	COST EVOLUTION THROUGHOUT THE CONSTRUCTION VALUE CHAIN, Zakaria Dakhli, Zoubeir Lafhaj	A COMPARISON OF TLS-BASED AND ALS-BASED TECHNIQUES FOR CONCRETE FLOOR WAVINESS ASSESSMENT, Yelda Turkan, Nisha Puri	A METHODOLOGY FOR INDOOR HUMAN COMFORT ANALYSIS BASED ON BIM AND ONTOLOGY, Vincent J.L. Gan, Keyu Chen, Jack C.P. Cheng, Weiwei Chen	APPLYING GENERATIVE ADVERSARIAL NETWORK TO COMBINE OCCUPANT RESPONSES TO DESIGN CONTEXTS IN IMMERSIVE VIRTUAL REALITY WITH EXISTING BUILDING PERFORMANCE MODELS, Chanachok Chokwitthaya	MASS TIMBER PRODUCTIVITY - THE SIGNIFICANCE OF REDUCTION IN NON-VALUE ADD ACTIVITIES DURING ON-SITE INSTALLATION SEQUENCE, Alireza Ahmadian Fard Fini, Richard Brisland, Perry Forsyth	ECONOMIC BENEFIT CALCULATION MODEL FOR PREFABRICATED BUILDINGS IN CHINA BASED ON CASH FLOW, Yuan Qi

3:20 PM - 4:00 PM	Coffee and Networking							
4:00 PM - 4:20 PM	OPTIMIZING SITE LAYOUT PLANNING UTILIZING BUILDING INFORMATION MODELLING, Abhishek Raj Singh, Yash Patil, Venkata Santosh Kumar Delhi	AN IMPROVED TAG-BASED INDOOR LOCALIZATION OF UAVS USING EXTENDED KALMAN FILTER, Navid Kayhani, Mohammad Nahangi, Adam Heins, Wenda Zhao, Brenda McCabe, Angela Schoellig	A PILOT STUDY OF IDENTIFYING EXECUTION PLAN DIFFERENCES FOR ACCELERATED BRIDGE CONSTRUCTION, Jin Ouk Choi, Elina Prajapati		NEW SYSTEM FORM SELECTION PROCESS USING QFD AND TRIZ, Changsu Lee, Dongmin Lee, Woobin Kwon, Hunhee Cho, Kyung-In Kang	A FRAMEWORK FOR THE CONTRACT MANAGEMENT SYSTEM IN CLOUD-BASED ERP FOR SMES IN THE CONSTRUCTION INDUSTRY, Ling Li	ENVIRONMENTAL BENEFITS OF RE-USABLE MODULAR MASS TIMBER CONSTRUCTION FOR RESIDENTIAL USE IN JAPAN: AN LCA APPROACH, Rafael Novais Passarelli	RESEARCH ON ENERGY EFFICIENCY OF CHINESE PROVINCIAL CONSTRUCTION INDUSTRY FROM 2006 TO 2015 BASED ON SUPER-SBM MODEL, Zongyu Li
4:20 PM - 4:40 PM	IMPLEMENTING COLLABORATIVE LEARNING PLATFORMS IN CONSTRUCTION MANAGEMENT EDUCATION, Raja R.A. Issa, Fopefoluwa Bademosi, Ralph Tayeh	ADAPTIVE HAPTICALLY INFORMED ASSEMBLY WITH MOBILE ROBOTS IN UNSTRUCTURED ENVIRONMENTS, Sven Stumm, Pradeep Devadass, Sigrid Brell-Cokcan	CALIBRATING CII RT283'S MODULARIZATION CRITICAL SUCCESS FACTOR ACCOMPLISHMENTS, Jin Ouk Choi, James O'Connor, Young Hoon Kwak, Rajarshi Ghimire		PAVEMENT CRACK MOSAICKING BASED ON CRACK DETECTION QUALITY, Yeo-San Yoon, Seongdeok Bang, Francis Baek, Hyoungkwan Kim	BUILDING INFORMATION MODELLING (BIM) FRAMEWORK FOR PRACTICAL ASSESSMENT, Dat Tien Doan	HIGHLY MECHANICAL PERFORMANCE OF LAMINATED VENEER LUMBER INDUCED BY HIGH VOLTAGE ELECTROSTATIC FIELD., Qian He, Tianyi Zhan, Zehui Ju, Haiyang Zhang, Lu Hong, Zhiqiang Wang, Nicolas Brosse, Xiaoning Lu	HOW URBAN NEIGHBORHOOD ENVIRONMENT AFFECTS QUALITY OF LIFE OF OLDER ADULTS: ENLIGHTENMENTS FOR SUPPORTING "AGING IN PLACE", Fan Zhang, Dezhi Li
4:40 PM - 5:00 PM	SCHEDULE UNCERTAINTY ANALYSIS SYSTEM FRAMEWORK TO MANAGE AND ALLOCATE HISTORICAL DATA FOR INDUSTRIAL CONSTRUCTION PROJECT, In Seok Yoon, Hyun-Soo Lee, Moonseo Park, Jin Gang Lee, Suho Ahn	TIME-WARPING: A TIME SERIES DATA AUGMENTATION OF IMU DATA FOR CONSTRUCTION EQUIPMENT ACTIVITY IDENTIFICATION, Khandakar M. Rashid, Joseph Louis	AN EFFICIENCY-ORIENTATED TOTAL FACTOR PRODUCTIVITY MEASUREMENT MODEL FOR CONSTRUCTION PROJECTS, Wenting Zhan, Wei Pan		PREDICTING BRIDGE CONDITIONS IN ONTARIO: A CASE STUDY, Maedeh Taghaddos, Yasser Mohamed	COMPUTER VISION TECHNOLOGIES AND MACHINE LEARNING ALGORITHMS FOR CONSTRUCTION SAFETY MANAGEMENT: A CRITICAL REVIEW, Yongyue Liu	MASS TIMBER MODULAR CONSTRUCTION IN OREGON, Judith Sheine, Mark Donofrio, Mikhail Gershfeld	CARBON EMISSIONS ANALYSIS FOR CONSTRUCTION PROCESS, Yuan Fang
5:00 PM - 5:20 PM	DEVELOPMENT OF CLASSIFICATION MODEL FOR THE LEVEL OF BID PRICE VOLATILITY OF PUBLIC CONSTRUCTION PROJECT FOCUSED ON ANALYSIS OF PRE-BID CLARIFICATION DOCUMENT, Yeeun Jang, June Seong Yi, Jeongwook Son, Jeehee Lee	COMPARATIVE STUDY OF EXPERIENCED AND INEXPERIENCED OPERATORS WITH AUTO-CONTROLLED CONSTRUCTION MACHINE, Takeshi Hashimoto, Kenichi Fujino	LEAN CONSTRUCTION SUPPLY CHAIN: A BIBLIOMETRIC ANALYSIS OF THE KNOWLEDGE BASE, Temidayo Osunsanmi, Ayodeji Oke, Clinton Aigbavboa	IAARC Board Meetring	AUTOMATED MATHEMATICAL-BASED DESIGN FRAMEWORK FOR THE SELECTION OF RIGGING CONFIGURATION, Seyed Mohammad Amin Minay Hashemi, Sanghyeok Han, Jacek Olearczyk, Ahmed Bouferguene, Mohamed Al-Hussein, Joe Kosa	GLOBAL BUILDING INFORMATION MODELING MATURITY, Yunfeng Chen	CANADIAN MASS TIMBER DEMONSTRATION PROJECTS INITIATIVES, Mohammad Mohammad, Richard Coxford, Miranda Williamson	QUANTIFYING THE GREEN EFFICIENCY OF THE CONSTRUCTION INDUSTRY IN CHINA, Jianjian Teng
5:20 PM - 5:40 PM	CONSTRUCTION PAYMENT AUTOMATION THROUGH SMART CONTRACT-BASED BLOCKCHAIN FRAMEWORK, Moumita Das, Han Luo, Jun Wang, Jack C.P. Cheng	DESIGN, MODELLING AND SIMULATION OF NOVEL HEXAPOD-SHAPED PASSIVE DAMPING SYSTEM FOR COUPLING CABLE ROBOT AND END EFFECTOR IN CURTAIN WALL MODULE INSTALLATION APPLICATION, Meysam Taghavi, Taku Kinoshita, Thomas Bock	RESEARCH TRENDS IN OFF-SITE CONSTRUCTION MANAGEMENT: REVIEW OF LITERATURE AT THE PROCESS LEVEL, Jun Young Jang, Chansik Lee, Jung In Kim, Tae Wan Kim		IMPACT OF 5G TECHNOLOGY ON IOT APPLICATIONS IN CONSTRUCTION PROJECT MANAGEMENT, Varun Kumar Reja, Koshy Varghese	BREAKDOWN STRUCTURE IN THE DIGITALIZATION OF DESIGN WORK FOR INDUSTRIALIZED HOUSE-BUILDING: A CASE STUDY OF SYSTEMS BUILDING USING PREDEFINITION LEVELS OF PRODUCT PLATFORMS, Gustav Jansson	SERVICEABILITY PERFORMANCE OF TIMBER CONCRETE COMPOSITE FLOORS, Thomas Tannert, Md Mehdi Ebadi, Adam Gerber	COMPARATIVE STUDY OF INDUSTRIALIZED CONSTRUCTION LOGIC BETWEEN GENERAL PREFABRICATED AND IMPROVED PREFABRICATED CONSTRUCTION IN CHINA, Long Li
5:40 PM - 6:00 PM	REVIEW OF BIM-CENTERED IOT DEPLOYMENT: STATE OF THE ART, OPPORTUNITIES, AND CHALLENGES, Ali Motamedi, Mehrzad Shahinmoghadam	MONITORING AND ALERTING OF CRANE OPERATOR FATIGUE USING HYBRID DEEP NEURAL NETWORKS IN THE PREFABRICATED PRODUCTS ASSEMBLY PROCESS, Xiao Li, Hung-Lin Chi, Wenfeng Zhang, Geoffrey Quiping Shen	APPRAISAL OF STRATEGY ADOPTED BY CONSTRUCTION PROFESSIONALS FOR COPING WITH STRESS, Ayodeji Oke, Temidayo Osunsanmi, Clinton Aigbavboa		FACTORS AFFECTING THE PERFORMANCE OF 3D THERMAL MAPPING FOR ENERGY AUDITS BY USING INFRARED THERMOGRAPHY (IRT) MOUNTED ON UNMANNED AIRCRAFT SYSTEMS (UAS), Yu Hou, Lucio Soibelman, Rebekka Volk, Meida Chen	A DISCRETE EVENT SIMULATION-BASED ANALYSIS OF PRECAST CONCRETE SUPPLY CHAIN STRATEGIES CONSIDERING SUPPLIERS' PRODUCTION AND TRANSPORTATION CAPABILITIES, Kailun Feng, Yaowu Wang	FINITE ELEMENT MODELLING OF TIMBER-CONCRETE COMPOSITE FLOOR WITH NOTCHED CONNECTIONS AND ANALYTICAL MODEL VERIFICATION, Lei Zhang, Ying Hei Chui	EXPLORING THE RELATIONSHIPS BETWEEN THE TRIPLE BOTTOM LINE OF SUSTAINABILITY IN THE CONSTRUCTION INDUSTRY, Weina Zhu
7:00 PM - 10:00 PM	Banquet							

Time Slot	Theatre Room	Van Horne C	Van Horne A/B	Baron Shaughnessy	Sir Edward Beatty	D.C. Coleman	David O'Brien	Rob Ritchie	N. R. Crump
				Conference Day 2 - Thursday, May 23, 2019					
7:00 AM - 8:00 AM				Registration & Breakfast					
8:00 AM - 9:15 AM				Plenary Session - Van Horne A/B					
Parallel Sessions	Theatre Room	Van Horne C	Van Horne A/B	Baron Shaughnessy	Sir Edward Beatty	D.C. Coleman	David O'Brien	Rob Ritchie	N. R. Crump
9:30 AM - 9:50 AM		RESEARCH ON ROLES TRANSFORMATION OF STAKEHOLDER IN THE INDUSTRY CHAIN OF INDUSTRIALIZED BUILDING IN CHINA BASED ON NICHE THEORY, Chao Mao, Yuedan Liu, Guiwen Liu, Fangyun Xie, Yan Fu	CASE STUDY: OFF-SITE MANUFACTURING OF EIFS PANELIZED WALL ASSEMBLIES TO GAIN EFFICIENCY IN CONSTRUCTION SEQUENCING, Scott Root, Allan Chasey, John Cribbs	CHATBOT SYSTEM FOR DATA MANAGEMENT: A CASE STUDY OF DISASTER-RELATED DATA, James Yichu Chen, Meng-Han Tsai, Hao-Yung Chan, Cheng-Hsuan Yang, Shih-Chung Kang	A CONVERSATION-BASED SYSTEM FOR SCHOOL BUILDING INSPECTIONS, Liang-Yuan Liu, Hao-Yung Chan, Meng-Han Tsai	ICCREM_Keynote	DEVELOPMENT OF RIGGING SYSTEM FOR PREFABRICATED WOOD I-JOIST FLOOR PANELS, David Joo, Ying Hei Chui, Sigong Zhang, Jean-Philippe Letarte, Luca Dalcastagne	APPLICATION OF VIRTUAL REALITY IN TASK TRAINING IN THE CONSTRUCTION MANUFACTURING INDUSTRY, Regina Barkokebas, Chelsea Ritter, Val Sirbu, Xinming Li, Mohamed Al-Hussein	
9:50 AM - 10:10 AM		INTRO TO AMII AND MACHINE LEARNING, Riphay Al-Hussein	RAINIER SQUARE TOWER: STEEL FABRICATION TECHNIQUES AND CHALLENGES, Amir Jamshidi	A BASIC STUDY ON METHODOLOGY OF MAINTENANCE MANAGEMENT USING MR, Taehoon Kim, Seungyeon Choo, Jihyo Seo, Seunghak Woo	DEVELOPING PERSONALIZED INTELLIGENT INTERIOR UNITS TO PROMOTE ACTIVITY AND CUSTOMIZED HEALTHCARE FOR AGING SOCIETY, Thomas Bock, Katja Pawlitza, Jörg Güttler, Amir Kabouteh, Thomas Linner, Rongbo Hu	ICCREM_Keynote	STRUCTURAL PERFORMANCE OF MASS TIMBER BEAM HANGER CONNECTIONS, S. Saeed Rezvani, Lina Zhou	ANALYSIS OF THE PERCEPTIONS OF BENEFICIARIES AND INTERMEDIARIES ON CHALLENGES IN IMPLEMENTING INTEGRATED PROJECT DELIVERY SYSTEM IN INDIAN CONSTRUCTION, V. Paul C. Charlesraj, Vatsala Gupta	
10:10 AM - 10:30 AM		CUSTOM DIGITAL CONSTRUCTION FOR HEALTHCARE, Julie Pithers	RISK IDENTIFICATION AND ALLOCATION IN THE SUPPLY CHAIN OF MODULAR INTEGRATED CONSTRUCTION (MIC), Ibrahim Yahaya Wuni, Geoffrey Q.P. Shen	HYPERSPECTRAL IMAGING FOR AUTONOMOUS INSPECTION OF ROADS PAVEMENT DEFECTS, Mohamed Abdellatif, Harriet Peel, Anthony G Cohn, Raul Fuentes	EVALUATING RISK RESPONSE STRATEGIES IN CONSTRUCTION PROJECTS USING FUZZY RULE-BASED SYSTEM, Seyed Hamed Fateminia, Nima Gerami Seresht, Aminah Robinson Fayek	ICCREM_Keynote	EFFECT OF LOADING SPEED ON THE MECHANICAL PROPERTIES OF NAIL JOINTS, Shervin Shameli Derakhshan, Lina Zhou, Chun Ni	APPLYING KANBAN SYSTEM IN CONSTRUCTION LOGISTICS FOR REAL-TIME MATERIAL DEMAND REPORT AND PULLED REPLENISHMENT, Ningshuang Zeng, Markus König, Xuling Ye, Xiaofeng Peng	
10:30 AM - 11:10 AM				Coffee and Networking					
11:10 AM - 11:30 AM		AUTOMATED LOCALIZATION OF A MOBILE CONSTRUCTION ROBOT WITH AN EXTERNAL MEASUREMENT DEVICE, Selen Ercan, Sandro Meier, Fabio Gramazio, Matthias Kohler	AN OPTIMIZED PREFABRICATED RAFT FOOTING SYSTEM FOR HOUSES ON SHRINK-SWELL SOILS, Bertrand Teodosio, Kasun Shanaka Kristombu Baduge, Priyan Mendis	A SMART IMU-BASED TOOL TRACING AND TRACKING SYSTEM FOR ON-SITE CONSTRUCTION, Xincong Yang, Fenglai Wang, Heng Li, Yantao Yu, Xiaochun Luo, Ximei Zhai	MEASURING AND POSITIONING SYSTEM DESIGN OF ROBOTIC FLOOR-TILING, Tianyu Liu, Huixing Zhou, Yanan Du, Jianping Zhao	VISUAL SIMULATION FOR OPTIMIZATION AND APPLICATION IN TUNNEL SCHEDULE ENGINEERING, Zhong Wei	LATERAL PERFORMANCE OF CROSS-LAMINATED TIMBER WALLS: ANALYTICAL AND NUMERICAL INVESTIGATIONS, Thomas Tannert, Md Shahnewaz, Marjan Popovski	SOCIAL STRATIFICATION AND HOUSING WEALTH INEQUALITY IN TRANSITIONAL URBAN CHINA, Yuyao Li, Chengdong Yi	
11:30 AM - 11:50 AM		AUTOMATIC FLOORPLAN GENERATION OF LIVING SPACE FOR SIMULATING A LIFE OF AN ELDERLY RESIDENT SUPPORTED BY A MOBILE ROBOT, Can Jiang, Akira Mita	APPLYING VIRTUAL REALITY TO IMPROVE THE CONSTRUCTION LOGISTICS OF HIGH-RISE MODULAR INTEGRATED CONSTRUCTION, S. Thomas Ng, Enoch H.L. Cheung	AUGMENTED REALITY-ENABLED PRODUCTION STRATEGY PROCESS, Dharmaraj Veeramani, Hala Nassereddine, Awad Hanna	DISPERSED CYBER-PHYSICAL COORDINATION AND PATH PLANNING USING UNMANNED AERIAL VEHICLE, Thomas Bock, Daher Sayfeddine, Alexey Bulgakov, Sergei Emelianov	PROJECT CONTROLS AND MANAGEMENT SYSTEMS: CURRENT PRACTICE AND HOW IT HAS CHANGED OVER THE PAST DECADE, Kareem Mostafa, 40	CROSS LAMINATED TIMBER SHEAR WALLS IN BALLOON CONSTRUCTION: SEISMIC PERFORMANCE OF STEEL CONNECTIONS, Hossein Daneshvar, Jan Niederwestberg, Ying Hei Chui, Carla Dickof, Jean-Philippe Letarte	OCCUPATIONAL HEALTH MANAGEMENT IN ROAD CONSTRUCTION ENTERPRISES: A VIEW OF COGNITIVE BIAS, Dan Chong	
11:50 AM - 12:10 PM		INFOGRAPHICS ON UNMANNED DOZER OPERATION, Shigeomi Nishigaki, Katsutoshi Saibara	JUST-IN-TIME DELIVERY REQUIRES JUST-IN-TIME PRODUCTION X2: SYCHRONISING FACTORY AND SITE., Alan Mossman	AUGMENTED REALITY AND DEEP LEARNING FOR MANAGEMENT OF SECONDARY BUILDING ASSETS, Alessandro Cabonari, Berardo Naticchia, Alessandra Corneli, Frédéric Bosché	IMPROVEMENT OF AUTOMATED MOBILE MARKING ROBOT SYSTEM USING REFLECTORLESS THREE-DIMENSIONAL MEASURING INSTRUMENT, Takehiro Tsuruta, Kazuyuki Miura, Mikita Miyaguchi	META-NETWORK MODELLING FOR INTERNATIONAL CONSTRUCTION RISK MANAGEMENT OF MULTIPLE OBJECTIVES, Tsenguun Ganbat	STRUCTURAL DESIGN AND MODELLING METHOD FOR THE POST-TENSIONED CLT SHEAR WALL STRUCTURES, Xiaofeng Sun, Minjuan He, Zheng Li	VALUE PERSPECTIVE: RESEARCH ON THE INFLUENCING FACTORS OF HOUSING PRICE BASED ON STRUCTURAL EQUATION MODEL, Ya Zhao, Yandi Zhou	
12:10 PM - 12:30 PM		FORMULATION OF THE OPTIMIZATION PROBLEM OF THE CYBER-PHYSICAL DIAGNOSIS SYSTEM CONFIGURATION LEVEL FOR CONSTRUCTION MOBILE ROBOTS, Thomas Bock, Tatiana Kruglova, Alexey Bulgakov	LEAN AS AN INTEGRATOR OF MODULAR CONSTRUCTION, Bruno Soares De Carvalho, Sergio Scheer	A STUDY OF KINETIC FAÇADE MODELLING PERFORMANCE USING VIRTUAL REALITY, David Panya, Seungyeon Choo	DESIGNING A RELIABLE FIDUCIAL MARKER NETWORK FOR AUTONOMOUS INDOOR ROBOT NAVIGATION, Bharadwaj Mantha, Borja Garcia de Soto	INFLUENCE OF RISK FACTORS ON PROJECT'S OBJECTIVES IN CONSTRUCTION INDUSTRY OF PAKISTAN, Asad Kamal	AN NOVEL BAMBOO/WOOD-STEEL HYBRID MOMENT FRAME WITH ENERGY DISSIPATION JOINTS, Dongsheng Huang, Zirui Huang, Yanhua Wang, Yan Feng	ANALYSIS OF LAND FINANCIAL DEPENDENCE AND DISCUSSION ON CAUSES, Ningning Lang	
12:30 PM - 1:45 PM				Lunch and Plenary Session - Van Horne A/B					
2:00 PM - 2:20 PM	PLATFORMS FOR ENABLING FLEXIBILITY AT TWO CONSTRUCTION COMPANIES, Henrik Eriksson, Ellinor Emilsson	ASSESSMENT OF WORK EFFICIENCY OF HMD VIEWING SYSTEM FOR UNMANNED CONSTRUCTION WORK, Genki Yamauchi, Takeshi Hashimoto, Shin'Ichi Yuta	APPRAISAL OF THE CHALLENGES TO ENSURING OCCUPATIONAL HEALTH AND SAFETY COMPLIANCE WITHIN THE NIGERIAN CONSTRUCTION INDUSTRY, Charles Arum, Temidayo Osunsanmi, Clinton Aigbavboaa	DESIGNING A DEVELOPMENT BOARD FOR RESEARCH ON IOT APPLICATIONS IN BUILDING AUTOMATION SYSTEMS, Markus Hans Schraven, Carlo Guarnieri Calo Carducci, Marc Axel Baranski, Dirk Müller, Antonello Monti	3D MODELING APPROACH OF BUILDING CONSTRUCTION BASED ON POINT CLOUD DATA USING LIDAR, Byeongjun Oh, Minju Kim, Chanwoo Lee, Hunhee Cho, Kyung-In Kang	BUILDING THE MODEL OF MULTI-OBJECTIVE COOPERATIVE MEASUREMENT FOR THE COMPLEX CONSTRUCTION PROJECT, Jie Liu	NUMERICAL AND EXPERIMENTAL STUDY ON MODULAR-BASED TIMBER STRUCTURES, Sigurdur Ormarsson, Marie Johansson, Johan Vessby	THE IMPACT OF LAND INTENSIVE USE ON URBAN DEVELOPMENT QUALITY IN MOUNTAIN CITY: A CASE STUDY OF CHONGQING, CHINA, Ting-Kwei Wang, Hongyue Lv	
2:20 PM - 2:40 PM	PROCESS MODELLING IN CIVIL INFRASTRUCTURE PROJECTS: A REVIEW OF CONSTRUCTION SIMULATION METHODS, Maryam Al-Kaissy, Mehrdad Arashpour, Sajad Fayezi, Ali Akbarnezhad, Baabak Ashuri	DEVELOPING RESPONSIVE ENVIRONMENTS BASED ON DESIGN-TO-ROBOTIC-PRODUCTION AND -OPERATION PRINCIPLES, Turkuaz Nacafi, Henriette Bier, Erik Zanetti	INVESTIGATING STAKEHOLDERS' PERCEPTIONS OF FEASIBILITY AND IMPLICATIONS OF MODULAR CONSTRUCTION-BASED POST-DISASTER RECONSTRUCTION, Yong-Cheol Lee, Pedram Ghannad, Jin Ouk Choi	USE OF ANSYS FOR THE ESTIMATE OF FREEZING AND MAINTENANCE PHASE OF INDIRECT & DIRECT ARTIFICIAL GROUND FREEZING OF PROPOSED FROZEN SILT MAT, AN ALTERNATIVE OF TIMBER MAT, Ghulam Muhammad, Mohamed Al-Hussein, Ahmed Bouferguene	OPTIMAL LASER SCAN PLANNING FOR AS-BUILT MODELING OF PLANT RENOVATIONS USING MATHEMATICAL PROGRAMMING, Eisuke Wakisaka, Satoshi Kanai, Hiroaki Date	RESEARCH ON FINANCIAL EARLY WARNING OF PPP PROJECTS FROM REFINANCING PERSPECTIVE, Wenhua Hou, Lun Wang	PROGRESSIVE COLLAPSE MITIGATION IN TALL MASS TIMBER BUILDINGS, Hossein Daneshvar, Ying Hei Chui	RESTRAINING THE ILLEGAL SUBLEASE PHENOMENON OF PUBLIC RENTAL HOUSING IN CHINA: BASED ON DYNAMIC EVOLUTIONARY GAME THEORY, Shilong Li, Siyu Liu	
2:40 PM - 3:00 PM	PREDICTING SAFETY HAZARDS AMONG CONSTRUCTION WORKERS USING COMPUTER VISION AND EQUIPMENT USING DEEP LEARNING TECHNIQUES, Peter Kok-Yiu Wong, Mingzhu Wang, Han Luo, Sudip Kumar, Venkata-Santosh Kumar Delhi, Jack Chin-Pang Cheng	DISTRIBUTED COORDINATION AND TASK ASSIGNMENT OF AUTONOMOUS TANDEM ROLLERS IN ROAD CONSTRUCTION SCENARIOS, Patrick Wolf, Thorsten Ropertz, Alexander Matheis, Karsten Berns, Peter Decker	BRIDGING THE GAP BETWEEN ACADEMIC AND PRACTICE QUANTITY SURVEYING IN NIGERIAN CONSTRUCTION INDUSTRY, Tawakalitu Odubiyi, Douglas Aghimien, Clinton Aigbavboa, Wellington Thwala	DEM-BASED CONVOLUTIONAL NEURAL NETWORK MODELING FOR ESTIMATION OF THE SOLAR IRRADIATION: COMPARISON ON THE EFFECT OF DEM RESOLUTIONS, Jae Heo, Jaehoon Jung, Byungil Kim, Sanguk Han	TRAJECTORY PREDICTION OF MOBILE CONSTRUCTION RESOURCES TOWARD PRO-ACTIVE STRUCK-BY HAZARD DETECTION, Daeho Kim, Meiyin Liu, Sanghyun Lee, Vineet R. Kamat	AN EMPIRICAL STUDY ON THE FACTORS INFLUENCING THE CAPITAL STRUCTURE OF PPP PROJECTS, Min Zhao	STRATEGIES FOR A SAFE INTEGRATION OF WATER-BEARING MEP SYSTEMS IN PREFABRICATED CLT ROOM MODULES, Michael Monsberger, Gerhard Schickhofer, Anna-Katharina Magg, Konstantin Ganster, Markus Neumayer, Thomas Bretterklieber, Christian Kaufmann	DESIGN AND EFFICIENCY EVALUATION OF INFRASTRUCTURE CONSTRUCTION IN 31 CHINESE PROVINCES USING INPUT-OUTPUT TABLES, Guijun Li, Yongsheng Wang	
3:00 PM - 3:20 PM	THE DESIGN OF BUILDING MANAGEMENT PLATFORM BASED ON CLOUD COMPUTING AND LOW-COST DEVICES, Li-Te Huang, Yi-Yang Chiu, Ying-Chieh Chan	INDOOR VISUALIZATION EXPERIMENTS AT BUILDING CONSTRUCTION SITE USING HIGH SAFETY UAV, Tomohiro Narumi, Shigeru Aoki	CASE STUDY: PROGRAM MANAGEMENT OF VOLUME MODULES, Gregory Starzyk	DIRECT-WRITE FABRICATION OF WEAR PROFILING IOT SENSOR FOR 3D PRINTED INDUSTRIAL EQUIPMENT, Nuwan Munasinghe, Lewis Miles, Gavin Paul	CONSTRUCTION DATA-DRIVEN DYNAMIC SOUND DATA TRAINING AND HARDWARE REQUIREMENTS FOR AUTONOMOUS AUDIO-BASED SITE MONITORING, Yiyi Xie, Yong-Cheol Lee, Tallis Huther Da Costa, Jongyoon Park, Jayati H Jui, Jin Woo Choi, Zhongjie Zhang	EFFECTS OF CONTRACTUAL INCENTIVES IN CONSTRUCTION PROJECTS, Yunhong Wang	CHALLENGES IN THE PREFABRICATION PROCESS OF THE WOOD INNOVATION RESEARCH LABORATORY, Guido Wimmers	URBAN CARBON METABOLISM: BASED ON THE CHANGE OF CULTIVATED LAND AREA, Xuezhu Cui	
3:20 PM - 3:30 PM				Coffee and Networking					
3:30 PM - 4:00 PM				Coffee and Networking	ICCREM_Keynote				
4:00 PM - 4:20 PM	AUTOMATIC KEY-PHRASE EXTRACTION TO SUPPORT THE UNDERSTANDING OF INFRASTRUCTURE DISASTER RESILIENCE, Xuan Lv, Seyed Ahnaf Morshed, Lu Zhang	AUTOMATED MONITORING OF PHYSICAL FATIGUE USING JERK, Lichen Zhang, Mohsen Mutasem Diraneyya, Juhyeong Ryu, Carl Haas, Eihab Abdel-Rahman	DATA ANALYTICS APPLICATION FOR NON-CONFORMANCE REPORTS IN A CABINET MANUFACTURING FACILITY, Osama Mohsen, Yasser Mohamed, Mohamed Al-Hussein	GENERATION OF BRIDGE GEOMETRIC DIGITAL TWIN FROM LABELLED POINT CLUSTERS, Ruodan Lu, Ioannis Brilakis	DESIGN AND DEVELOPMENT OF DRILL-RESISTANCE SENSOR TECHNOLOGY FOR ACCURATELY MEASURING MICROBIOLOGICALLY CORRODED CONCRETE DEPTHS, Lasitha Piyathilaka, Karthick Thiyagarajan, Sarath Kodagoda, Nicolas Giovangeli, Steve Barclay, Dammika Vitanage	ICCREM_Keynote	A RESEARCH ROADMAP FOR OFF-SITE CONSTRUCTION: AUTOMATION AND ROBOTICS, Jeremy Bowmaster, Jeff H. Rankin	EMPLOYING SIMULATED ANNEALING ALGORITHMS TO AUTOMATICALLY RESOLVE MEP CLASHES IN BUILDING INFORMATION MODELING MODELS, Hsieh-Chih Hsu, I-Chen Wu	

4:20 PM - 4:40 PM	DEVELOPING A WORKFLOW FOR CLOUD-BASED INSPECTION OF TEMPORARY STRUCTURES IN CONSTRUCTION, Chang Liu, Sara Shirowzhan, Samad M.E. Sepasgozar	A REAL-TIME PATH-PLANNING MODEL FOR BUILDING EVACUATIONS, Brenda McCabe, Farid Mirahadi	BIM IMPLEMENTATION IN A CONSTRUCTION COMPANY, Dominique Mansur, Erik Santos	LIVE DATA VISUALIZATION OF IOT SENSORS USING AUGMENTED REALITY (AR) AND BIM, Ali Motamedi, Worawan Natephra	A REAL-TIME 4D AUGMENTED REALITY SYSTEM FOR MODULAR CONSTRUCTION PROGRESS MONITORING, Zhiyang Lin, Frank Petzold, Zhiliang Ma	ICCREM_Keynote	SPOIL HANDLING IN AUSTRALIA, Ali Rahimzadeh, Willy Sher, Patrick Tang, Peter Davis	AN ANALYSIS OF THE PROBLEMS OF BIM-BASED DRAWINGS AND IMPLEMENTATION DURING THE CONSTRUCTION DOCUMENT PHASE, Yije Kim, Sangyoon Chin	
4:40 PM - 5:00 PM	PRIMITIVE FITTING USING DEEP GEOMETRIC SEGMENTATION, Chen Feng, Duanshun Li	DEVELOPMENT OF AN EARTHMOVING MACHINERY AUTONOMOUS EXCAVATOR DEVELOPMENT PLATFORM, Rauno Heikkilä, Tomi Makkonen, Ilpo Nishanen, Matti Immonen, Mikko Hiltunen, Tanja Kolli, Pekka Tyni	THE ABC'S OF MODULAR AND PREFABRICATED CONSTRUCTION, Malcom Hachborn, Brian Hall	AN IMAGE AUGMENTATION METHOD FOR DETECTING CONSTRUCTION RESOURCES USING CONVOLUTIONAL NEURAL NETWORK AND UAV IMAGES, Seongdeok Bang, Francis Baek, Somin Park, Wontae Kim, Hyoungkwan Kim	DEVELOPMENT OF AN EYE- AND GAZE-TRACKING MECHANISM IN AN ACTIVE AND ASSISTED LIVING ECOSYSTEM, Alexander Liu Cheng, Nestor Llorca Vega, Galoget Latorre	RESEARCH ON THE PROBLEM OF SOCIAL STABILITY RISK ASSESSMENT FOR MAJOR PROJECTS, Siyu Luo	THE LEGACIES OF MANUFACTURING AND FACTORIES OF INDUSTRIALISED CONSTRUCTION, Rachel Couper, Duncan Maxwell, Mathew Aitchison	APPLYING AN A-STAR SEARCH ALGORITHM FOR GENERATING THE MINIMIZED MATERIAL SCHEME FOR THE REBAR QUANTITY TAKEOFF, Shen Chang, Ruei-Shiue Shiu, I-Chen Wu	
5:00 PM - 5:20 PM	IMPLEMENTATION FRAMEWORK FOR BIM ADOPTION AND PROJECT MANAGEMENT IN PUBLIC ORGANIZATIONS., Giuseppe Miceli Junior, Paulo C. Pellanda, Marcelo de Miranda Reis	BIM-BASED AUTOMATED DESIGN CHECKING FOR HOUSE BUILDERS IN THE LIGHT-FRAME BUILDING INDUSTRY, Hexu Liu, Harish Narayanaswamy, Mohamed Al-Hussein	DEVELOPMENT OF AN AUTOMATED MONITORING AND CONTROL SYSTEM FOR CAPITAL CONSTRUCTION PROJECTS, Reza Maalek, Janaka Ruwanpura, Derek Lichti	COMPUTER VISION TECHNIQUES IN CONSTRUCTION, OPERATION AND MAINTENANCE PHASES OF CIVIL ASSETS: A CRITICAL REVIEW, Shuyuan Xu, Jun Wang, Xiangyu Wang, Wenchi Shou	USING SCAN-TO-BIM TECHNIQUES TO FIND OPTIMAL MODELING EFFORT; A METHODOLOGY FOR ADAPTIVE REUSE PROJECTS, Mansour Esnaashary Esfahani, Ekin Eray, Steven Chuo, Mohammad Mahdi Sharif, Carl Haas	RESEARCH ON THE QUALITY DEMAND OF CONSTRUCTION MANAGEMENT INDUSTRY BASED ON FACTOR ANALYSIS, Yingying Luo	TRANSFER LEARNING ENABLED PROCESS RECOGNITION FOR MODULE INSTALLATION OF HIGH-RISE MODULAR BUILDINGS, Zhi-Qian Zhang, Wei Pan, Zhen-Jie Zheng	USING BIM AND SENSING MATS TO IMPROVE IMU-BASED INDOOR POSITIONING ACCURACY, Chia-Hsien Chen, I-Chen Wu	
5:20 PM - 5:40 PM	CLASSIFICATION AND EXEMPLARY BIM MODEL DEVELOPMENT OF DESIGN CHANGES, Jia-Rui Lin, Yu-Cheng Zhou, Jian-Ping Zhang, Zhen-Zhong Hu	TOWARDS MOBILE PROJECTIVE AR FOR CONSTRUCTION CO-ROBOTS, Siyuan Xiang, Ruoyu Wang, Chen Feng	CHARACTERIZATION OF THE LATERAL RESISTANCE OF STAPLED SHEAR WALLS, Roberto Aranda, Alexander Salenikovich, J. Daniel Dolan, Peter Dechent	3D HUMAN BODY RECONSTRUCTION FOR WORKER ERGONOMIC POSTURE ANALYSIS WITH MONOCULAR VIDEO CAMERA, Zhenhua Zhu, Sanghyeok Han, Xiaowei Luo, Wenjing Chu	USING VIRTUAL REALITY SIMULATION FOR OPTIMIZING TRAFFIC MODES TOWARD SERVICE LEVEL ENHANCEMENTS., Firas Habbal, Fawaz Habbal, Abdallah Al Shawabkeh, Abdulla Al Nuaimi, Ammar Safi	A STUDY ON CONSTRUCTION-OPERATION INTEGRATED MANAGEMENT OF MEGAPROJECT: A CASE OF ABC INTERNATIONAL AIRPORT, Guangshe Jia, Hongyun Ma, Zhongyu Wang, Zhiyang Xu, Kaili Liu, Yuhao Liu, Meng Zhang	SMART MANUFACTURING SUPPORT TO PRODUCT PLATFORMS IN THE INDUSTRIALIZED HOUSE BUILDING, Alexander Vestin, Shamnath Thajudeen, Djordje Popovic	ASSESSING DIGITAL INFORMATION MANAGEMENT BETWEEN DESIGN AND PRODUCTION IN INDUSTRIALISED HOUSE-BUILDING – A CASE STUDY, Henrik Eriksson, Marcus Sandberg, Jani Mukkavaara, Gustav Jansson, Lars Stehn	
5:40 PM - 6:00 PM						A STUDY ON STAKEHOLDER RELATIONSHIP IN URBAN RENEWAL PROJECTS: CASE OF TIANZIFANG IN SHANGHAI, Yaqin Cai			

Time Slot					Conference Day 3 - Friday, May 24, 2019				
7:00 AM - 08:00 AM					Lunch and Plenary Session - Van Horne A/B				
Parallel Sessions	Theatre Room	Van Horne C	Van Horne A/B	Baron Shaughnessy	Sir Edward Beatty	D.C. Coleman	David O'Brien	Rob Ritchie	N. R. Crump
8:00 AM - 8:20 AM	SEMANTIC NETWORK ANALYSIS AS A KNOWLEDGE REPRESENTATION AND RETRIEVAL APPROACH APPLIED TO UNSTRUCTURED DOCUMENTS OF CONSTRUCTION PROJECTS, Tamer El-Diraby, Rodrigo Rodrigues Aragao	AN INVESTIGATION INTO THE EFFECTS OF DEPOSITION ORIENTATION OF MATERIAL ON THE MECHANICAL BEHAVIOURS OF THE CEMENTITIOUS POWDER AND GYPSUM POWDER IN INKJET 3D PRINTING, Shami Nejadi, Pshtiwan Shakor, Gavin Paul	TOWARDS AUTOMATED HVAC CONTROLS COMMISSIONING: MECHANISMS TO IDENTIFY TEMPERATURE AND FLOW RELATED FUNCTIONS OF AHU COMPONENTS, Burcu Akinci, Semiha Ergan, Raghuram Sunnam	SPATIAL INFORMATION ENRICHMENT USING NLP-BASED CLASSIFICATION OF SPACE OBJECTS FOR SCHOOL BLDGS. IN KOREA, Jin-Kook Lee, Jinsung Kim, Jaeyeol Song	IMPLEMENTATION OF AN AUGMENTED REALITY AR WORKFLOW FOR HUMAN ROBOT COLLABORATION IN TIMBER PREFABRICATION, Ondrej Kyjanek, Bahar Al Bahar, Lauren Vasey, Benedikt Wannemacher, Achim Menges	EFFORTS TO UNMANNED CONSTRUCTION FOR POST-DISASTER RESTORATION AND RECONSTRUCTION, Shigeo Kitahara, Yasushi Nitta, Shigeomi Nishigaki	INVESTIGATION OF DIFFERENT CONSTRUCTION METHODS AND INFLUENCING FACTORS TO PROVIDE AN ACCEPTABLE AIR-LEAKAGE DWELLING'S PERFORMANCE IN CANADA, Maysoun Ismaiel, Yuxiang Chen	A COLLABORATIVE SCHEME FOR DFX TECHNIQUES IN CONCURRENT ENGINEERING MITIGATED WITH TOTAL DESIGN ACTIVITY MODEL, Anas Itani, Rafiq Ahmad, Mohamed Al-Hussein	
8:20 AM - 8:40 AM	WEB-BASED DEEP SEGMENTATION BUILDING STRUCTURE, Yelda Turkan, Erzhuo Che, Fuxin Li, Michael Olsen, Zehuan Chen	INTEGRATING HARDWARE-IN-THE-LOOP SIMULATION AND BUILDING INFORMATION MODELING FOR AS-BUILT MEP INSPECTION USING UNMANNED AERIAL VEHICLE WITH DEEP LEARNING TECHNIQUES, Kai Wang, Jack C.P. Cheng	INTEGRATING EARTHWORK ONTOLOGY AND SAFETY REGULATIONS TO ENHANCE OPERATION SAFETY, Alhusain Taher, Faridaddin Vahdatikhaki, Amin Hammad	SUPPORTING DEMOLITION WASTE MANAGEMENT THROUGH 3D IMAGING: A CASE STUDY, Burcu Akinci, Akash Pushkar, Yujie Wei	SIMULATING EXTREME POINTS OF CRANE BY ROBOT ARM IN VIRTUAL REALITY, Tsang King Ho, Chen Kuan Lin, Yang Yao-Yu, Kang Shih-Chung	STUDY OF CONSTRUCTION-ORIENTED STRUCTURAL CONNECTORS FOR A TEMPORARY BRIDGE, Yao-Yu Yang, Chia-Ming Chang, Shih-Chung Kang, Fang-Yao Yeh	SITE-SPECIFIC MODULAR DESIGN OPTIMIZATION FOR HIGH-RISE RESIDENTIAL BUILDINGS, Vincent Gan, K.T. Tse, Jack Cheng, Irene Lo, C.M. Chan	RFID-INTEGRATED SOFTWARE CONSTRUCTION MATERIALS MANAGEMENT, Safa Dardouri, Zakaria Dakhli, Andry Rabenantoandro, Zoubeir Lafhaj	
8:40 AM - 9:00 AM	AN EXPERIMENTAL INVESTIGATION OF THE INTEGRATION OF SMART BUILDING COMPONENTS WITH BUILDING INFORMATION MODEL (BIM), Kereshmeh Afsari, Emily Maneke, Mahdi Afkhamiaghda	AUTOMATIC CLASSIFICATION OF DESIGN CONFLICTS USING RULE-BASED REASONING AND MACHINE LEARNING--AN EXAMPLE OF STRUCTURAL CLASHES AGAINST THE MEP MODEL, Will Y. Lin, Ying-Hua Huang	WEB-BASED JOB HAZARD ASSESSMENT FOR IMPROVED MANAGEMENT OF SAFETY KNOWLEDGE IN CONSTRUCTION, Emad Mohamed, Parinaz Jafari, Estacio Pereira, Stephen Hague, Simaan Abourizk, Rod Wales	TEXT DETECTION AND CLASSIFICATION OF CONSTRUCTION DOCUMENTS, Narges Sajadfar, Sina Abdollahnejad, Ulrich Hermann, Yasser Mohamed	3D PRINTING ARCHITECTURAL FREEFORM ELEMENTS: CHALLENGES AND OPPORTUNITIES IN MANUFACTURING FOR INDUSTRY 4.0, Chang Liu, Anqi Shi, Marjo Niemelä, Samad Sepasgozar, Sara Shirowzhan	ROBOTIC FABRICATION OF NAIL LAMINATED TIMBER, Hakim Hasan, Anish Reddy, Andrew Tsayjacobs	ACCESSIBILITY-BASED LOCATION SELECTION FOR BUILDING PANELIZED HOUSING FOR SENIORS, Yuan Chen, Xianfei Yin, Ahmed Bouferguene, Yuxuan Zhang, Mohamed Al-Hussein, Bingsheng Liu	A SURVEY ON INFORMATION FLOW TOOLS IN ALBERTA'S CONSTRUCTION INDUSTRY, Rafiq Ahmad, Mohammad Abdelghani, John Doucette	
9:00 AM - 9:20 AM	ONTOLOGY-BASED KNOWLEDGE MODELING FOR FRAME ASSEMBLIES MANUFACTURING, Pablo Martinez, Shi An, Rafiq Ahmad, Mohamed Al-Hussein	INFERENCE OF RELEVANT BIM OBJECTS USING CNN FOR VISUAL-INPUT BASED AUTO-MODELING, Jin-Kook Lee, Jinsung Kim, Jaeyeol Song	ONTOLOGY DEVELOPMENT FOR SMART TRANSPORTATION PLANNING VIA TOPIC MODELING, Jin Zhu, Sudipta Chowdhury	AUTOMATED BID DATA VISUALIZATION USING ARCPY SITE PACKAGE FOR ARCGIS, K. Joseph Shrestha, H. David Jeong	MULTIOBJECTIVE OPTIMIZATION ANALYSIS FOR SELECTIVE DISASSEMBLY PLANNING OF BUILDINGS, Carl Haas, Christopher Rausch, Benjamin Sanchez, Rebecca Saari	DESIGN OF A ROBOTIC SOFTWARE PACKAGE FOR BUILDERS OF MODULAR HOME MANUFACTURING, Cheng-Hsuan Yang, Tzong-Hann Wu, Bo Xiao, Shih-Chung Kang	STRATEGIES FOR BUILDING INFORMATION MODELLING ADOPTION IN THE SOUTH AFRICAN CONSTRUCTION INDUSTRY, Tawakalitu Odubiyi, Clinton Aigbavboa, Wellington Thwala, Netshidane Nendy	DATA ANALYTICS OF PRODUCTION CYCLE TIME FOR OFFSITE CONSTRUCTION PROJECTS, Angat Pal Singh Bhatia, Sanghyeok Han, Osama Moselhi, Zhen Lei, Claudio Raimondi	
9:20 AM - 9:40 AM					Coffee and Networking				
9:40 AM - 10:00 AM	A DECISION TOOL TO SIMULATE THE CONCURRENT INTER-DEPENDENCIES BETWEEN MULTI-DFX TECHNIQUES, Anas Itani, Rafiq Ahmad, Mohamed Al-Hussein	PPES COMPLIANCE TECHNOLOGY TO LEGALIZE THE AUTOMATED MONITORING OF SAFETY STANDARDS, Fawaz Habbal, Firas Habbal, Abdulla Al Nuaimi, Anwaar Al Shimmari, Ammar Safi, Tala Abhushuqair	A MASK R-CNN BASED APPROACH TO AUTOMATICALLY CONSTRUCT AS-IS IFC BIM OBJECTS FROM DIGITAL IMAGES, Sanghoon Lee, Huaquan Ying	COMBINING DEEP LEARNING AND ROBOTICS FOR AUTOMATED CONCRETE DELAMINATION ASSESSMENT, Evan McLaughlin, Nicholas Charron, Sriram Narasimhan	SIMULATING WOOD-FRAMING WALL PANEL'S PRODUCTION WITH TIMED COLOURED PETRI NETS, Fabiano Correa	ON THE ESTIMATION OF RESONANCE FREQUENCIES OF HYDRAULICALLY ACTUATED SYSTEMS, Matteo Ragaglia, Renzo Villa, Alfredo Argiolas, Marta Niccolini, Manuel Pencelli, Paolo Rocco, Andrea Maria Zanchettin	LOGISTICS PLANNING AND VISUALIZATION OF MODULAR INTEGRATED CONSTRUCTION PROJECTS BASED ON BIM-GIS INTEGRATION AND VEHICLE ROUTING ALGORITHM, Wei Pan, Yi Yang, Sanyuan Niu	CRITICAL REVIEW OF THE PRINCIPLES OF DESIGN FOR DISASSEMBLY, Ernest Kissi, Mark Ansah, Johnson Oteng Ampofo, Emmanuel Boakye	
10:00 AM - 10:20 AM	IMPACT OF BIM ON FIELD PIPELINE INSTALLATION PRODUCTIVITY BASED ON SYSTEM DYNAMICS MODELING, Lijuan Chen, Peixin Shi, Qinglin Wu	AN APPROACH TO ENHANCE INTEROPERABILITY OF BUILDING INFORMATION MODELING (BIM) AND DATA EXCHANGE IN INTEGRATED BUILDING DESIGN AND ANALYSIS, Elvis Amoah, Troy Nguyen	TOWARDS RULE-BASED MODEL CHECKING OF BUILDING INFORMATION MODELS, Christoph Sydora, Eleni Stroulia	LEADING SAFETY INDICATORS: APPLICATION OF MACHINE LEARNING IN SAFETY PERFORMANCE MEASUREMENT, Parinaz Jafari, Emad Mohamed, Estacio Pereira, Shih-Chung Kang, Simaan Abourizk	A MIXED VR AND PHYSICAL FRAMEWORK TO EVALUATE IMPACTS OF VIRTUAL LEGS AND ELEVATED NARROW WORKING SPACE ON CONSTRUCTION WORKERS' GAIT PATTERN, Lucky Agung Pratama, Jay Puckett, Mohammad Sadra Fardhosseini, Mahmoud Habibnezhad	IDENTIFICATION OF THE STRUCTURAL STATE IN AUTOMATED MODULAR CONSTRUCTION, Benny Raphael, Aparna Harichandran, Abhijit Mukherjee	A KNOWLEDGE-BASED APPROACH TOWARDS AUTOMATED MANUFACTURING-CENTRIC BIM: WOOD FRAME DESIGN AND MODELING FOR LIGHT-FRAME BUILDINGS, Mahmud Abushwereb, Hexu Liu, Mohamed Al-Hussein	LOGISTICS STRATEGY FOR INDUSTRIALISED HOUSE BUILDING, Duncan Maxwell, Martin Rudberg, Rachel Couper, Mathew Aitchison	
10:20 AM - 10:40 AM	AUTOMATIC GENERATION OF THE VERTICAL TRANSPORTATION DEMANDS DURING THE CONSTRUCTION OF HIGH-RISE BUILDINGS USING BIM, Borja Garcia de Soto, Keyi Wu, Bryan T. Adey, Feilian Zhang	IMPACT OF BIM ON ELECTRICAL SUBCONTRACTORS, Anoop Sattineni, Bradley Brock	THE BENEFITS AND BARRIERS OF BIM ADOPTION IN CANADA, Yuan Cao, Li Hao Cao, Brenda McCabe, Arash Shahi	REAL-TIME TRACKING FOR INTELLIGENT CONSTRUCTION SITE PLATFORM IN FINLAND AND CHINA: IMPLEMENTATION, DATA ANALYSIS AND USE CASES, Jianyu Zhao, Jinyue Zhang, Olli Seppänen	EXPERIENCING EXTREME HEIGHT FOR THE FIRST TIME: THE INFLUENCE OF HEIGHT, SELF-JUDGMENT OF FEAR AND A MOVING STRUCTURAL BEAM ON THE HEART RATE AND POSTURAL SWAY DURING THE QUIET STANCE, Lucky Agung Pratama, Jay Puckett, Mohammad Sadra Fardhosseini, H. Jebelli, Terry Stentz, Mahmoud Habibnezhad	ENABLING BIM FOR PROPERTY MANAGEMENT OF EXISTING BUILDINGS BASED ON AUTOMATED AS-IS CAPTURING, Ralf Becker, Elisa Lublasser, Jan Martens, Raymond Wollenberg, Haowei Zhang, Sigrid Brell-Cokcan, Jörg Blankenbach	SPATIAL PARAMETERIZATION OF NON-SEMANTIC CAD ELEMENTS FOR SUPPORTING AUTOMATED DISASSEMBLY PLANNING, Christopher Rausch, Ben Sanchez, Carl Haas	DRYWALL WASTE BLOCKS: A NOVEL MASONRY MATERIAL UTILIZING RECYCLED CONSTRUCTION & DEMOLITION WASTE., David Drake, Fadil Zaky Ramadhan, Ping Fai Sze, Taiji Miyasaka	
10:40 AM - 11:00 AM	SCHEDULE QUALITY ASSESSMENT FOR ND MODELS USING INDUSTRY FOUNDATION CLASSES, Mazdak Nik-Bakht, Rahul Dharsandia, Ashok Kavad, Abdelhady Hosny	AUTOMATED CLASH RESOLUTION OF REBAR DESIGN IN RC JOINTS USING MULTI-AGENT REINFORCEMENT LEARNING AND BIM, Pengkun Liu, Jiepeng Liu, Liang Feng, Wenbo Wu, Hao Lan	IMPROVING THE QUALITY OF EVENT LOGS IN THE CONSTRUCTION INDUSTRY FOR PROCESS MINING, Seokyoung Kang, Liyuan Chen, Shahin Karimidorabati, Carl Haas	SEMANTIC SEGMENTATION OF SEWER PIPE DEFECTS USING DEEP DILATED CONVOLUTIONAL NEURAL NETWORK, Mingzhu Wang, Jack C.P. Cheng	APPLYING EYE TRACKING IN VIRTUAL CONSTRUCTION ENVIRONMENTS TO IMPROVE COGNITIVE DATA COLLECTION AND HUMAN-COMPUTER INTERACTION OF SITE HAZARD IDENTIFICATION, Xuling Ye, Markus König	ACCURATE POSITION CONTROL FOR HYDRAULIC SERVOMECHANISMS, Matteo Ragaglia, Renzo Villa, Alfredo Argiolas, Gianni Ferretti, Marta Niccolini, Manuel Pencelli, Paolo Rocco, Andrea Maria Zanchettin	AUTOMATIC MATERIAL ESTIMATION BY TRANSLATING BIM DATA INTO ERP READABLE DATA FOR PANELIZED RESIDENTIAL CONSTRUCTION, SangJun Ahn, Meng Wang, Youyi Zhang, Mohamed Al-Hussein, Yongsheng Ma, Mohammed Sadiq Altaf	SIMULATION BASED APPROACH FOR THE INDUSTRIALIZATION OF A CABINET MANUFACTURING FACILITY, Ryan Brown, Chelsea Ritter, Mohamed Al-Hussein	
11:00 AM - 11:20 AM	OPTIMIZING THE USAGE OF BUILDING INFORMATION MODEL (BIM) INTEROPERABILITY FOCUSING ON DATA NOT TOOLS, Troy Nguyen, Elvis Amoah	MODELLING TRAFFIC CONDITIONS ON FUEL USE AND EMISSIONS OF ON-ROAD CONSTRUCTION EQUIPMENT, Khalegh Barati, Xuesong Shen	THE AUTOMATION OF THE SOFTER SIDE OF SMART CITY: A SOCIO-SEMANTIC ROADMAP, Tamer El-Diraby, Alain Zarli, Mohamed El-Darieby	A FRAMEWORK DEVELOPMENT FOR MAPPING AND DETECTING CHANGES IN REPEATEDLY COLLECTED MASSIVE POINT CLOUD, Joon Heo, Sungha Ju, Sangyoon Park, Sanghyun Yoon	DIGITAL TERRAIN MODELING USING AKAZE FEATURES DERIVED FROM UAV ACQUIRED, NADIR AND OBLIQUE IMAGES, Hyojoo Son, Hyunsoo Kim, Changwan Kim	EVALUATING THE PERFORMANCE OF E-CONSTRUCTION TOOLS IN HIGHWAY RESURFACING PROJECTS, Roy Sturgill, Gabriel Dadi, Timothy Taylor, Dhaivat Patel	AUTOMATED PREFABRICATION: FROM START-UP TO DELIVERY, Alfred Porsche	A CASE STUDY FOR 3D MODELING PROCESS ANALYSIS BASED ON BIM LOG FILE, Nan Zhang, Mohamed Al-Hussein, Yichen Tian	
11:20 AM - 11:40 AM	BIM-BASED DECISION SUPPORT SYSTEM FOR CONCRETE FORMWORK DESIGN, Ehsan Rezazadeh Azar, Leonardo Sanabria Mejia, Roman Romanovskyi	USING SERIOUS GAMES IN VIRTUAL REALITY FOR AUTOMATED CLOSE CALL AND CONTACT COLLISION ANALYSIS IN CONSTRUCTION SAFETY, Olga Golovina, Caner Kazanci, Jochen Teizer, Markus König	A REVIEW OF DATA-DRIVEN ACCIDENT PREVENTION SYSTEMS: INTEGRATING REAL-TIME SAFETY MANAGEMENT IN THE CIVIL INFRASTRUCTURE CONTEXT, Amin Assadzadeh, Mehrdad Arashpour, Alireza Bab-Hadiashar, Ali Rashidi, Sajad Fayezi	DEVELOPMENT OF THE SIMULATOR FOR CARRYING A LIFTED LOAD IN LARGE PLANT CONSTRUCTION, Yoshihito Mori, Masaomi Wada, Sayuri Maki, Satoshi Tsukahara	DEEP-LEARNING FOR OCCUPANCY DETECTION USING DOPPLER RADAR AND INFRARED THERMAL ARRAY SENSORS, Milad Abedi, Farrokh Jazizadeh Karimi		TITLE NOT AVAILABLE, Shahab Moeini	WHY ISN'T IT CHEAPER? COST CERTAINTY VS COST SAVINGS IN PREFABRICATION, Xavier Toby	
11:40 PM - 1:10 PM					Lunch and Plenary Session - Van Horne A/B				