

WEDNESDAY 4 JUNE 2025

Hall A

9:30 AM - 10:00 AM: **Opening**

10:00 AM - 11:00 AM: **Plenary**

Session 1 *ID 119, 128, 174*

Session Chair: Vicente Gonzalez

Learning From the Best: Lessons to Construction From High-performing

Teams Across Sectors - Joonas

Lehtovaara, Antti Peltokorpi and Olli Seppänen

Where Is the Evidence of Performance Improvement in the Lean Construction Literature? -

Ashan Senel Asmone, Aritra Pal, Danny Murguia, Asitha Rathnayake and Campbell Middleton

Lean Construction for the Sake of What? - Randi M. Christensen, Paz Arroyo, Annett Schöttle and Glenn Ballard

11:00 AM - 11:30 AM: *Coffee Break*

11:30 AM - 12:15 PM: **Supply Chain Management** *ID 214, 158, 130*

Session Chair: Emmanuel Daniel

Towards a Supply Chain Integration Theory in Offsite Construction: Insights From Industry Practices - Bochen Zhang, Guillermo Prado, Leonardo Rischmoller and Martin Fischer

Simulating JIT Implementation in Prefabricated Construction: a Digital Framework for Supply Chain Optimization - Ali Bidhendi, Rodrigo F. Herrera and Mani Poshdar

Quality Assurance of Prefabricated Concrete Elements - Oskar Jørgensen, Ola Lædre and Jardar Lohne

Hall B

11:30 AM - 12:15 PM: **Digital Support for Lean Construction** *ID*

Session Chair: Fernanda Leite

Continuous Improvement of the Digital Last Planner System Whiteboard - Ergo Pikas, Rasmus Jaagant and Lauri Koskela

Harmonizing Construction Flow: Integrating Takt Planning, Workspace Management, and Lookahead Strategies - Eyob T. Mengiste and Borja Garcia de Soto

Hall C

11:30 AM - 12:15 PM: **People, Culture and Change** *ID 105, 251,*

Session Chair: Sol Skinnarland

Team Health: a Pulse Check and Prescription for the Collective Learning Tool - Anthony Muñoz and John Cleary

Culture of Quality - Sulyn Gomez Villanueva, Mauricio Rivera and Mauricio Neyra

Lean Construction Barriers From the Organizational Culture Lens - Rubén Romo, Francisco Orozco, Francisco Moreno, Carroll Francesconi, Reinaldo Valdebenito and Eric Forcael

<p>12:15 PM - 13:00 PM: Modular and Off-Site ID 100, 199, 225</p> <p>Session Chair: Ivanka Iordanova</p> <p>Impacts of Prefabrication on Construction Workers' Wellbeing: a Case Study - Vishal Sharma, Don Mah, Neetu Sharma, Mohamed Al-Hussein, Ahmed Bouferguene and</p> <p>Applying Lean Standard Operating Procedure to Panelized Prefabrication in the Factory - Leyi Zhou and Xinming Li</p> <p>Comparative Analysis of Construction Waste: Robotic Vs. Manual Offsite Assembly - Ali Hadi, Franco Cheung and Solomon Adjei</p>	<p>12:15 PM - 13:00 PM: Lean Theory ID 152, 188, 299</p> <p>Session Chair: Ergo Pikas</p> <p>Lean Principles for Determining Generative Design Benefits - Diego Rojas Marinkelle, Nelly P. Garcia-Lopez and Santiago Lara</p> <p>Paradoxes in Integrated Project Delivery - Una Obiose Kriston Nwajei, Trond Bølviken and Magnus Mikael Hellström</p> <p>From Theory to Practice: Applying Time Span of Discretion in Last Planner System® and Takt Production to Navigate Work Complexity - Christopher Görsch, Eelon Lappalainen, Tobias Onshuus Malvik, Joonas Lehtovaara and Jaakko Riekk</p>	<p>12:15 PM - 13:00 PM: People, Culture and Change ID 167, 179,</p> <p>Session Chair: Sol Skinnarland</p> <p>Lean Construction in Germany – Empirical Findings on the Current State of Practice - (Paul) Christian John, Katharina Niederprüm, Eliane Maier and Shervin Haghsheeno</p> <p>Evaluating the Perceptions of UK Construction Professionals on the Adoption and Implementation of Lean Construction - Imram Phiri and Emmanuel Itodo Daniel</p> <p>Lean Construction Adoption in Indonesia and Australia: Based on Toe Framework - Muhamad Abduh and Gao Shang</p>
<p>13:00 PM - 14:00 PM: <i>Lunch Break</i></p> <p>14:00 PM - 15:00 PM: Contract and Cost Management ID 240, 143, 111</p> <p>Session Chair: Thais Alves</p> <p>Impact of Project Delivery System Selection on Value Generation - Ramzi Chahuán, Harrison Mesa, Omar Zegarra, Beda Barkokebas and Luis Fernando Alarcón</p> <p>Exploring IGLC Literature on Subcontracting - Gregory F. Saragih, Rafael V. Coelho, Richardus N. Kasih, Wataru Kon and Iris D. Tommelein</p> <p>Enhancing Cost Reliability in Construction: the Synergistic Impact of BIM and Lean Principles - León William, Guevara Jose and García-López Nelly</p>	<p>13:00 PM - 14:00 PM: <i>Lunch Break</i></p> <p>14:00 PM - 15:00 PM: Health Safety and Quality ID 125, 200, 228, 252</p> <p>Session Chair: Jochen Teizer</p> <p>Construction Workers' Safety Perceptions and Job Satisfaction: a Comparative Analysis of Denmark and Peru - Edson Zanabria, Danny Murguia and Cristina T. Pérez</p> <p>Worker Well-being, Suicide, and Lean Construction – Unravelling the Global Silent Killer - Matthew S. Araki and James P. Smith</p> <p>Good Safety, Health, and Quality Performances in Construction Industry: MRT Jakarta Phase 2 CP203 Through Best 5S Practices - Andung Damar Sasongko, Mardiansyah, Rizky Agung Saputra, Aliset Sebayang, Rias Nur Wulandari, Amy R. Widyastuti and Roberto Prans</p> <p>Devising Visual Systems for Quality Management in Construction - Mauricio Neyra, Sulyn Gomez, Carlos T. Formoso and Kevin Ronceros</p>	<p>13:00 PM - 14:00 PM: <i>Lunch Break</i></p> <p>14:00 PM - 15:00 PM: Learning and Teaching Lean ID 156, 170, 121, 120</p> <p>Session Chair: Ming Shan Ng</p> <p>Simulation to Bridge the Gap Between Visual Management Theory and on-Site Applications - Srujan Pramod Nawar, Zofia Kristina Rybkowski, Ganesh Devkar and Hameedullah Ehsas</p> <p>Dissemination of Target Value Design Principles Through a Bridge Construction Online Simulation: Overview and Case Study - Manav Shah, Doobari Bharadwaj, Hameedullah Ehsas, Shobha Ramalingam and Zofia K. Rybkowski</p> <p>Developing and Testing Muri Puzzle Game - Jose Torres, Suryeon Kim, David Jeong and Zofia Rybkowski</p> <p>Development of a Serious Game in Construction Logistics Considering Digital and Lean Tools - Philipp Zielke, Daniel Weber, Franz-Ferdinand Gloser and Svenja Lauble</p>
<p>15:00 PM - 15:30 PM: <i>Coffee Break</i></p>	<p>15:00 PM - 15:30 PM: <i>Coffee Break</i></p>	<p>15:00 PM - 15:30 PM: <i>Coffee Break</i></p>

<p>15:30 PM - 16:15 PM: Production Planning and Control ID 107, 235, 110</p> <p>Session Chair: Farook Hamzeh</p> <p>Building the Capabilities for Takt Production Performance Measurement - Jaakko Riekk, Joonas Lehtovaara, Olli Seppänen and Antti Peltokorpi</p> <p>Zonal Delivery Planning in the Construction of Infrastructure Projects: a Case Study - Ayman Naser</p> <p>Takt Control: Core Concepts and Preliminary Propositions - Carlos T. Formoso, Iris D. Tommelein, Karina B. Barth and Rafael V. Coelho</p>	<p>15:30 PM - 16:15 PM: Supply Chain Management ID 102, 198, 204</p> <p>Session Chair: Emmanuel Daniel</p> <p>Leveraging Multi-agent System Powered by Large Language Model to Improve Transparency and Reliability in Automated Supply Chain Coordination - Xianxiang Zhao, Wenyi Kuang and Yong-Woo</p> <p>Leveraging the Supplier's Expertise Through an Innovative Organizational Structure - Aishwarya Fadnavis and Yong-Woo</p> <p>Integrating Construction 4.0 Technologies to Strengthen Post-disaster Construction Supply Chain - Tran Duong Nguyen, Qinghao Zeng and Pardis Pishdad</p>	<p>15:30 PM - 16:15 PM: Learning and Teaching Lean ID 201, 194, 186</p> <p>Session Chair: Zofia Rybkowski</p> <p>Bridging Theory and Practice: Evaluating Lean Construction with Lego Simulations - Abdhy Gazali, Rina Asri Aisyah, Yusuf Maharani, Prama Putra and Alfandi Ziqri</p> <p>Perceptions of Lean Concepts From Japan: Using an Interactive Game to Teach Lean Terminology - Ming Shan Ng and Qian Chen</p> <p>Collaborative Online International Learning: a Catalyst for Advancing Lean Construction Education - Ehsan Asnaashari and Amrit Sagoo</p>
<p>16:15 PM - 17:00 PM: Production Planning and Control ID 246, 254, 133</p> <p>Session Chair: Tatiana Amaral</p> <p>Implementation of Progress Monitoring Dashboard Based on Last Planner System on Pavement Work: a Case Study of Bayung Lencir – Tempino Section 3 Toll Road Construction - Agung Fajarwanto, Rizky A. Saputra, Gregorius A. Sentosa, Akhyaarul U. Azzaqy, Amy R. Widyastuti, Ariel Winfried, Nadlirul Wachid, Dwi Nugroho, Audy Aditriananda and P. Mardianegara</p> <p>Integrating Agile, Scrum, and LPS Principles: the Development of a Hybrid Agile Lean (HAL) Production Planning & Control System - William Power and Derek Sinnott</p> <p>Roadmap for Implementing Standardized Work in Construction Process with Takt Time Planning - Fabiana Bonesi, Marcus Sterzi, Nicolas F. S. Orellana, Raul A. B. Villanueva and Karina B. Barth</p>	<p>16:15 PM - 17:00 PM: Lean and Green ID 173, 135, 151</p> <p>Session Chair: Annett Schöttle</p> <p>Exploring the Role of Lean Construction in Decarbonizing the Building Industry: Insights From Industry Experts - Alberto E. Pozzer, Christopher Rausch and Fernanda Leite</p> <p>Investigating the Role of Lean Tools in Minimizing Construction Waste Across the Triple Bottom Line - Zeina Malaeb and Farook Hamzeh</p> <p>Exploring Lean Principles in Large-scale Renovation: a Review of Socio-economic Impacts - Kädi-Riin Vendel, Ergo Pikas, Lauri Koskela and Müge Tetik</p>	<p>16:15 PM - 17:00 PM: Learning and Teaching Lean ID 281, 131, 261</p> <p>Session Chair: Ming Shan Ng</p> <p>Teaching Lean Construction: an Overview of Trends and Future - Eric Forcael, Vicente A. Gonzalez, Rodrigo Herrera, Eder Martínez and Caroll Francesconi</p> <p>A Decade of Transformation: the Role of the German Lean Construction Institute in the Construction Industry - Marc Weinmann, Thomas Bär, (Paul) Christian John and Shervin Haghsheno</p> <p>KHS&S – a Case Study of Lean Training for Trade Contractors - Robert Leicht, Blake Tormey, Rob Walter and Elnaz Asadian</p>

17:00 PM - 17:45 PM: Production System Design <i>ID 116, 138, 234</i> Session Chair: John Skaar Strategic Takt Planning - Iris D. Tommelein and Samir Emdanat	17:00 PM - 17:45 PM: Lean and Green <i>ID 295, 271, 127</i> Session Chair: Annett Schöttle Leaner Construction and Demolition Waste (CDW) Management: Practitioners’ Insights - Saleh Alazmi, Imelda Saran Piri, Oisik Das, Mohammed Abdelmegid, Mani Poshdar and Vicente A Gonzalez
Geotechnical Insights for a Proactive Production System for Earthwork - Kim Simmons, Thomas LaMay and Paz Arroyo Takt Planning: a Reinterpretation of Adjustment Mechanisms From the Perspective of Slack - Marcus C. T. Fireman and Marco Binninger	Method for Estimating and Planning Carbon Emissions - Kristian Birch Pedersen, Glória Stefankovics, Martin Veis Marxen and Søren Wandahl Construction Site Emissions: Exploring Sustainable Practices - Müge Tetik, Ergo Pikas, Lauri Koskela and Kädi-Riin Vendel

THURSDAY 5 JUNE 2025

Hall A

9:30 AM - 10:15 AM: Health, Safety and Quality ID 168, 169

Session Chair: Jochen Teizer

Time-lapse Image Processing for Estimating Construction Equipment Emissions - Vimal Bharathi, Kepong Hong and Jochen Teizer

Behavioral Safety Performance Assessment in Construction: a Data-driven Approach in Virtual Reality - Kilian Speiser, Olga Golovina and Jochen Teizer

10:15 AM - 11:00 AM: Production Planning and Control ID 229, 265, 259

Session Chair: Joonas Lehtovaara

Kaizen Events for the Development of the Last Planner System® Maturity in a Construction Project - Kevin Ronceros, Harold Ronceros, Luis Mio, Oscar Miranda, Jose Chicoma and Ricardo Soto

An Agile Approach to Implementing the Principles for Flow Design and Improvement: a Case Study in a Mining Project - Carlos E. Rázuri and Luis F. Alarcón

Lean Thinking for a Digital Last Planner System - Kevin McHugh, Pat Egan and Bhargav Dave

11:00 AM - 11:30 AM: Coffee Break

Hall B

9:30 AM - 10:15 AM: Digital Support for Lean Construction ID 184, 274, 297

Session Chair: Danny Murguia

Use of Computer Vision and Object Detection to Measure Construction Productivity Using Crew Balance Charts - Mauricio J. Toledo, Macarena Lorca and Miguel Mora

Method for Classifying Wastes by Making-do Using Machine Learning - Tatiana Gondim do Amaral, Caio César Medeiros Maciel, Marcos Paulino Roriz Junior and Gabriella
New Model to Minimize Cost and Time of Rework Due to Prefabricated Construction Errors - Reza Maalek

11:00 AM - 11:30 AM: Coffee Break

Hall C

9:30 AM - 10:15 AM: People, Culture and Change ID 134, 154, 227

Session Chair: Kristen Parrish

An Investigation of Construction Project Communications Under IPD Constraints - Neil A. Kaufman, Felicia Collins and Haley Rogers

Integrated Project Delivery in Norway – the Clients' Perspective on Challenges - Una Obiose Kriston Nwajei, Trond Bølviken and Magnus Mikael Hellström

Integrating Design and Production Planning to Enhance Collaboration and Secure Project Objectives in Megaprojects: a Reverse Approach - Annett Schöttle and André Haubrich

10:15 AM - 11:00 AM: People, Culture and Change ID 180, 279, 205

Session Chair: Kristen Parrish

Revitalizing Language Action in the Last Planner System™ - John Skaar, Trond Bølviken and Bo Terje Kalsaas

The Meaning of Work in Construction: an Individual Well-being Perspective - Sol Skinnarland, Thais da C. L. Alves and Dominic Desmarais

Exploratory Study on Construction Workers Mental Health - Thais da C. L. Alves, Min Liu, Chuanni He, Weilin He and Tejaswini Hegade

11:00 AM - 11:30 AM: Coffee Break

11:30 AM - 12:15 PM: Production Planning and Control ID 217, 292, 101 Session Chair: Joonas Lehtovaara What Types of Problem-solving Are Used in the Last Planner System? - Trond Bølviken, John Skaar, Bo Terje Kalsaas and Lauri Koskela The Last Controller: a Human-centric Approach to Value Delivery in Construction Project Controls - Adam Hoots, Colin Milberg and Vivek Sharma Optimized Cycle-time Flow Batching: Enhanced Performance in Project Portfolio Management - Doron S. Gabai, Eran Haronian, Rafael Sacks, Mark K. Miera, Tabitha D. Cloyd and Nicah Wong	11:30 AM - 12:15 PM: Digital Support for Lean Construction ID 288, 113, 192 Session Chair: Danny Murguia Analysis of the Integration Between Digital Twins and Lean Construction for Construction Projects - Jorge Mauricio Ramirez Velasquez and Ivanka Iordanova Daily Batch Size of Design – Proposal for the Sizing of Design Batches - Eelon Lappalainen, Hisham Abou-Ibrahim, Jyrki Oraskari, Olli Seppänen, Umer Majid and Markus Derry Simulation and Gamification in Lean Construction: an Overview of Current Applications and Integration Opportunities - Veronic Tuivai, Ali Bidhendi, Mani Poshdar and Kayvan Koohestani	11:30 AM - 12:15 PM: People, Culture and Change ID 136, 232, 171 Session Chair: Patricia Tzortzopoulos Bridging Perspectives: a Thematic Analysis of Trust in Construction Management - Zeina Malaeb and Farook Hamzeh Bridging Problem and Solution Spaces: Developing an Innovation Framework with Lean and Agile Methods in Construction - Bernardo Martim Beck da Silva Etges and Carla Schwengber ten Caten The Adaptive Interoperability Journey: Navigating Fragmentation in Digital AEC Projects - Marc Blancher, Laura Florez-Perez and Danny Murguia
12:15 PM - 13:00 PM: Production Planning and Control and Production System Design ID 129, 165, 187 Session Chair: Tatiana Amaral What Are the Main Causes of Discontinuous Work? - Asitha Rathnayake, Danny Murguia, Ashan Senel Asmone, Aritra Pal and Campbell Middleton Model for Production System Design in Modular Construction Projects - Fernanda S. Bataglin, Carlos T. Formoso and Daniela D. Viana Lean-based Analysis of Factors Influencing Metal Stud Framing and Drywall Workers' Productivity - Hameedullah Ehsas and Zofia Rybkowsk	12:15 PM - 13:00 PM: Product Development ID 250, 272, 273 Session Chair: Frode Drevland Metrics in Integrated Concurrent Engineering (ICE): Insights, Challenges, and Opportunities - Sivert Risnes Bøen and Frode Drevland Collaborative Management Practices for High-rise Building Design - Sebastián Parraguez, Karen Castañeda, Edison Atencio and Rodrigo F. Herrera Design Management in High-rise Building Projects in Chile - Benjamín Aravena, Karen Castañeda, Edison Atencio and Rodrigo F. Herrera	12:15 PM - 13:00 PM: People, Culture and Change ID 294, 140, 118 Session Chair: Patricia Tzortzopoulos From Projects to Systems: the Alberta Facilities Production System (AFPS) - Lynn Shehab, Jason Russell and Farook Hamzeh The Hidden Lean: Lessons From Japan - Wataru Kon, Iris D. Tommelein, Gregory F. Saragih, Richardus N. Kasih and Rafael V. Coelho How Is the Construction Industry Performing? Insights From Four Years of Measurement - Jan A. Elfving, Olli Seppänen and Joonas Lehtovaara
13:00 PM - 14:00 PM: Lunch Break		

14:00 PM - 15:00 PM: Plenary

Session 2 *ID 218, 115*

Session Chair: Thais Alves

An Exploration of Target Value

Delivery in a Single-entity Design-

build Organisation - Jeferson Shin-Iti

Shigaki, Takeshi Saito and Hiroaki

Yamasaki

Strategic Levers for Prefabrication

in Construction: an Economic Case

Study - Svenja Lauble, Dominik

Steuer, Helena Großmann and Philipp

15:00 PM - 15:30 PM: *Coffee Break*

15:30 PM - 17:30 PM: *Paper 255* and

Lean Simulation Session

Session Chair: Paul Ebbs

Duplo® Simulation for Introduction

of the Last Planner System® - David

Umstot and Summer Umstot

FRIDAY 6 JUNE 2025

Hall A	Hall B	Hall C
9:30 AM - 10:15 AM: Production System Design <i>ID 237, 148, 123</i>	9:30 AM - 10:15 AM: Product Development <i>ID 142, 144, 275</i>	9:30 AM - 10:15 AM: Digital Support for Lean Construction <i>ID 195, 231, 266</i>
Session Chair: TBD Method for Designing Macro and Micro Layouts for Storage and Temporary Facilities in Residential Projects Based on Takt Planning - Raquel H. Reck and Marcus C. T. Fireman Simulation of Takt Time Planning Study Case: Housing in the New Capital City of Indonesia - Rina Asri Aisyah, Abdhy Gazali, Prama Putra, Andek Prabowo, Galang Bastiono and Helen Libastari A Structured Continuous Improvement Process for High-rise Construction Using Time-motion Studies - Bernardo de Cossio, Danny Murguia, Jorge Gonzalez de Cossio and Jorge Antonio Gonzalez de Cossio	Session Chair: Rodrigo Herrera Plan Validation in TVD: a Healthcare Case Study Project in California - Paz Arroyo, Zofia Rybkowski, Dan Tran and Callahan Lieb Exploring Opportunities for Integrating Target Value Delivery and Front-end Planning in Industrial Megaprojects - Richardus N. Kasih, Iris D. Tommelein, Rafael V. Coelho, Gregory F. Saragih, Wataru Kon, Richardus B. Utomo and Gerardus B. Kasih TVD for Enhanced Value: a Case Study of Preconstruction Cost Optimization in Residential Buildings - Frederick M. Gutierrez Lazarte	Session Chair: Hisham Abou Ibrahim Generative AI in Lean Construction: a Scoping Review - Mohammad Hamed Ganji Rad and Mohammad Ilbeigi Developing a Genai Methodology for Data Analysis in Industrialized Construction: a Lean View - Italo Sepúlveda, Luis F. Alarcón, Beda Barkokebas and Antonia Ebensperger Towards Enabling Sustainability-aware Operations in Housing Manufacturing with AI-driven Value Stream Mapping: a Review - Miguel Mora, Pingbo Tang and Mauricio Toledo
10:15 AM - 11:00 AM: Production Planning and Control <i>ID 159, 277, 126</i>	10:15 AM - 11:00 AM: Product Development <i>ID 290, 278, 293</i>	10:15 AM - 11:00 AM: Digital Support for Lean Construction <i>ID 137, 207, 196</i>
Session Chair: Dave Umstot Integrating Advanced Work Packaging and Value Stream Mapping Into Last Planner System: an Operational Framework - Ayman Naser A Multi-criteria Decision Model for Classifying Best Practices to Reduce Making-do Waste - Tatiana Gondim do Amaral, Renato Rafael Del Grosso Filho, Rúbia Cristina de Souza Pessoni, Nadya Regina Galo and Beda Barkokebas Workflow Issue Identification by Applying Location-based Work Sampling - Malik Madushanka, Tobias Fiirgaard and Cristina T. Pérez	Session Chair: Rodrigo Herrera House Retrofits: Impacts of Sustainability Measures on Health - Samira Awwal, Patricia Tzortzopoulos, Leigh Fleming and Rakesh Mishra A Target Value Maturity Model for Performance Target Management in the Design Phase of Lean Construction Projects - Lorine Ouma, Robert Leicht and John Messner A Framework for Integrating 3P Within TVD - Daniel Forgues, Nicolas Beaulieu, Brenda Da Silva Laurindo and Érik Poirier	Session Chair: Hisham Abou Ibrahim Perceptions of Robotic Inspections for Confined Spaces in Lean Construction: a Qualitative Study - Zhong Wang, Qiwei Mei, Gaang Lee, Thomas Bock and Vicente A. González Implications of Construction Robots for On-site Lean Construction: an In-depth Case Study - Rongbo Hu, Jiazhen Mao, Soungho Chae and Justin K.W. Yeoh Development of a Space Constraint Management Ontology for Lean Construction: Enhancing Constraint Management in Steel Fabrication Projects - Zeyu Mao, Rafiq Ahmad, Farook Hamzeh and Vicente A. Gonzalez
11:00 AM - 11:30 AM: Coffee Break	11:00 AM - 11:30 AM: Coffee Break	11:00 AM - 11:30 AM: Coffee Break

11:30 AM - 12:15 PM: Production Planning and Control <i>ID 238, 291, 287</i> Session Chair: Farook Hamzeh Practices and Barriers to the Adoption of Digital Twin Construction in Latin America - Jhonattan G. Martinez, Zulay Giménez, Luis Salazar, Luis Alva, Luis F. Alarcón, Timson Yeung and Rafael Sacks VDC in Practice: Insights From Production Metrics Reported as Useful by AEC Professionals in Norway - Tulika Majumdar and Katrin Johannesdottir Implementation of VDC in the Construction Stage of a Hospital: a Case Study - Adrian R. Gutiérrez Alvarez, Ronald R. Nuñez Quispe, Isaac M. Ccoyllar Escobar, Mauricio A. Melgar-Morales, Felipe M. Arteaga Linares and David A. Manrique	11:30 AM - 12:15 PM: Product Development <i>ID 268, 283, 289</i> Session Chair: Frode Drevland Project Governance in a Norwegian Municipality - Idar Aasland Grande, Erlend Vassbotn Winther, Ola Lædre and Atle Engebø Lean Project Management From the Perspective of Enterprise Architecture - Eric Forcael, Adrián Burgos, Edison Atencio, Felipe Muñoz-La Rivera and Reinaldo Valdebenito Lean in Action: BZI's Innovation Process for Steel Erection - Adam Hoots, Corinne Nalder, James Jeffs, Shima Clarke and Alex Henry	11:30 AM - 12:15 PM: Lean Theory <i>ID 206, 145</i> Session Chair: Ergo Pikas Reliable Delivery Order for Improving Workflow in the Construction Supply Chain - Yong-Woo Kim and Glenn Ballard Prioritizing Lean Construction Practices for Effective Megaproject Delivery - Abdelazim Ibrahim, Tarek Zayed and Zoubeir Lafhaj
12:15 PM - 13:00 PM: Modular and Off-Site <i>ID 189, 163</i> Session Chair: Ivanka Iordanova A Lean Approach to Productivity Improvement in Roof Panel Manufacturing for Modular Off-site Construction Using DfMA and Emerging Technologies - Amirhossein Mehdipoor, Arash Rohani Hajiagha, Sahar Mehdipoorkaloorazi and Ivanka Iordanova Understanding the Design Process in Modular Construction Projects Based on Value Stream Mapping - Vanessa C. Cunha, Carlos T. Formoso, Louise Amaro and Iamara R. Bulhões	12:15 PM - 13:00 PM: Digital Support for Lean Construction <i>ID</i> Session Chair: Claudio Mourgues A Study of Drone-based Reality Capture for Construction Management: Kaizen in Daily Huddles - Jiaxi Zhou, Soungho Chae, Keiji Tanaka and Rongbo Hu Feasibility of Eye-trackers for Monitoring Cognitive Load in Lean Construction 4.0 - Amira Eltahan, Gaang Lee and Farook Hamzeh	12:15 PM - 13:00 PM: Learning and Teaching Lean <i>ID 230, 219</i> Session Chair: Zofia Rybkowski The Impact of Lean Training Programs on Behavior and Organizational Performance - Eder Martinez, Louis Pfister and Eric Forcael Direct Work Observations for Workflow Improvement and ISO 18404 Competency Development - Nour Al Hour, Paul Ebbs and Emmanuel Manu
13:00 PM - 14:00 PM: Lunch Break		
14:00 PM - 16:00 PM: IGLC Business Meetings		