

GLF-CEM newsletter

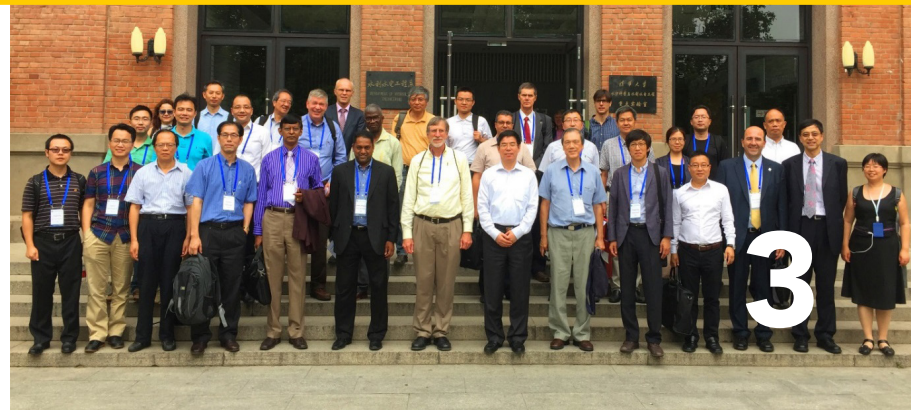
May 2017
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**Global Leadership Forum for
Construction Engineering and Management:**
<http://wpvcemweb01.itap.purdue.edu/glf/default.aspx>

New Member Application:
https://www.surveymonkey.com/r/GLFCEM_Application

welcome

GLF-CEM MEMBERS + FRIENDS


In 2010, the GLF-CEM was established with the aim of promoting educational excellence, international collaboration, and strengthening the position of construction engineering and management programs around the world. Seven years later, the GLF-CEM has grown from a small group based out of Purdue University into an organization of 72, internationally-recognized leaders in construction engineering and management.

As the current Chair, I am motivated by the expansion of knowledge and ingenuity that has resulted from our growing membership. However, this growth has also challenged our ability to keep our members informed and engaged. To address these difficulties, the Executive Board and I have decided to regularly distribute a newsletter to better inform our membership of the GLF-CEM's progress and to increase awareness of upcoming activities, ongoing projects, and participation opportunities.

In the current issue of our newsletter, we have chosen to highlight the progress of Trends Advisory Committee, which has been working on identifying industrial, educational, and research trends that impact construction engineering and management graduate programs around the world. I am excited to share their preliminary findings with our members and hope that it inspires many of you to participate in this endeavor. The newsletter also details information for the upcoming 2017 GLF-CEM in Los Angeles, California on May 27 and 28. This year's program features several keynote speakers from industry who will participate in a panel discussion exploring leadership in construction engineering and management. I look forward to joining many of you at this event soon.

As organizational leaders and experts, it is your knowledge, participation, and collaboration that will drive the expansion of ideas and the development of best practices. Whether it be through participation in our GLF-CEM initiatives or committees, contribution of content to our newsletter, or simply by providing your feedback and suggestions, we hope our expanding membership continues to remain engaged and informed.

Sincerely,



Simaan AbouRizk
GLF-CEM Chair
Distinguished University Professor
University of Alberta, Canada

2016 - 2018 Executive Committee



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Simaan AbouRizk
University of Alberta
Canada



Vice-Chair
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Bauhaus-University at Weimar
Germany



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North Carolina State University
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United States



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Hong Kong Polytechnic University
Hong Kong



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United States

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South Africa

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Irtishad Ahmad
Florida International University
United States

Mike Kagioglou
University of Huddersfield
United Kingdom

Dongping Fang
Tsinghua University
China

Koshy Varghese
Indian Institute of Technology, Madras
India



THE 2016 GLF-CEM IN Beijing, China

Jan Wium, Ph.D.

Executive Committee Member, GLF-CEM

Professor, Chair in Construction Engineering and Management
Stellenbosch University
South Africa

The 2016 GLF-CEM was hosted from July 3rd to 5th by the Department of Construction Management at Tsinghua University and was attended by 46 delegates from 12 countries. The meeting commenced with the traditional introduction of new members on the first afternoon. The next morning, Prof. Roger Flanagan from Reading University highlighted, in his keynote address, future opportunities and challenges for the construction industry—two of these being the large demand for housing and complex construction projects.

The second keynote speaker, Dr. Jianzhong Lu, President of CCCC International Holding Limited and Executive General Manager of the CCCC Overseas Department, also pointed out the increase in project scale and stressed the need for business models to include operations, political changes, influences of economies, and social, cultural, and community involvement. He indicated that he foresees development along the original silk route yet remarked that, without government support, it will be difficult for international investors to become involved.



Participants of the 2016
GLF-CEM organized by the
Department of Construction
Management at Tsinghua
University

A panel discussion on leadership debated the role of mentors, the need for industry and academic leaders, and the role of each individual in becoming a leader in the profession.

The plenary discussions focused on two topics. The first topic addressed trends and key performance indexes (KPIs) in CEM. Delegates were invited to participate in an ongoing initiative in which KPIs will be monitored between different countries. Preliminary results of this initiative are summarized in the enclosed white paper entitled, “The GLF-CEM Key Performance Indicators (KPI) Initiative,” which is found on **page 5** of this newsletter. The second plenary topic addressed student education and cultivation of young researchers. A variety of topics included student and lecturer exchange, mentorship, and collaborative research projects.

The workshop was concluded with a technical visit to concrete prefabrication facilities of the Beijing-based UN-Construction Group.

The GLF-CEM Key Performance Indicators Initiative

Makarand (Mark) Hastak^a, Thomas Ng^b, Mohan Kumaraswamy^{b,c}, Jan Wium^d, Michail Kagioglou^e, and Geoffrey Shen^f

^aDivision of Construction Engineering and Management, Purdue University, United States; ^bUniversity of Hong Kong, Hong Kong; ^cIndian Institute of Technology Madras, India; ^dStellenbosch University, South Africa; ^eUniversity of Huddersfield, United Kingdom; ^fHong Kong Polytechnic University, Hong Kong.

The Trends Committee, in concert with a general need for the Global Leadership Forum for Construction Engineering Management (GLF-CEM) to consider global trends, was mandated to address one of the GLF-CEM's key objectives and purposes: To be at the forefront of developments in construction engineering and management and—through engagement with future leaders—ensure the global consideration of CEM-related issues within CEM educational programs, academic research, and industrial collaboration.

The purpose of the Trends Committee was to “report and articulate Construction/Built Environment industry¹, educational², and research trends that have the potential to or are already impacting Construction Engineering and Management and Construction Management graduate programs.”

Introduction

The first trends workshop that engaged the entire GLF-CEM membership took place in 2014 in Banff, Canada. Thirty-four issues were identified as potential markers for establishing trends against them. Those issues were broadly grouped together around four themes (Education, Industry, Research, and Funding). Several reports and presentations detailing the subsequent findings of the Trends Committee—which was led by several colleagues from the USA, Canada, South Africa, Hong Kong and the UK and lasted over 1 year—have since been

produced. The results of this work were presented in Weimar, Germany in 2015.

The adopted methodology included surveys to the GLF-CEM membership and other personal contacts. It was quickly established that the validity of the work was influenced by factors including sample size choices and representation, breadth of GLF-CEM membership, and available resources. The lack of an established baseline upon which to base any future measurements and trends was also evident. During 2015 to 2016, numerous conversations amongst the GLF-CEM membership regarding KPIs

resulted in the creation of a joint workshop community who formally recognized the need for a global hub of KPIs in the areas of education, programs, research, and industry.

Committee Achievements

At the 2016 GLF-CEM forum in China, a special session on ‘Trends and KPIs in CEM’ was conducted in the form of a workshop chaired by Michail Kagioglou with presentations by Mohan Kumaraswamy (on ongoing KPI exercises in Hong Kong and India), Makarand (Mark) Hastak (on what has been done and is needed in USA), and Jan Wium (on the South African scenario and plans to develop KPIs); UK-specific examples were provided by Michail Kagioglou. A ‘Global Hub’ related to KPIs entitled, “Global Hub for Construction Performance Analysis and Improvement,” was proposed. This project will begin by identifying specific KPIs for which data was easily available, and a sub-committee was formed to carry this work forward. This sub-committee, comprised of Michail Kagioglou, Mohan Kumaraswamy, Thomas Ng, Jan Wium, Geoffrey Shen, and Makarand (Mark) Hastak, has—as of December 2016—held five joint Skype meetings.

Current KPI Projects United States

Pi-C (Purdue Index for Construction): The complex dynamics inherent to the context of decision-making in the construction industry requires more rigorous application of analytics. However, effective frameworks to facilitate such data-driven decision-making are noticeably lacking in the construction industry. To address this deficiency, the Purdue Index for Construction (<http://wpvcemweb01.itap.purdue.edu/CEM/Pi-C>) was developed at Purdue University to facilitate and promote data-driven decision-making in the construction industry. As a preliminary step, a hierarchical definition for health of the construction industry was defined based on the results of a literature review, survey, and interviews. The developed hierarchical definition was then used to propose a framework to benchmark, interpret, and analyze data associated with the status of the health of the industry. The proposed framework was tested with existing publicly-available data to

explore its effectiveness in improving decisions made in the form of policies or strategies. The results highlighted (i) the gap in the availability and frequency of data for analytics in the construction industry, (ii) the need for benchmarking the dynamics of the industry as a coupled system, and (iii) the potential for using analytics. Therefore, topics within the construction industry that require more rigorous data collection were systematically explored. Policy-makers and strategy developers can apply the proposed framework for data-driven decision-making using their preferred set of data as well as the data on trends. Researchers can use this framework to further explore the dynamics of the health of the construction industry on topics such as sustainable development or the diversity of the construction project area.

United Kingdom

Huddersfield University was involved in the GLF-CEM Trends Committee study that was focused on establishing a baseline for future measurements involving the areas of education, program, research, and industry. The UK has been very active in establishing KPIs for the construction sector, with Colleagues at Huddersfield University having been involved in this area for over 20 years. In particular, they have explored how construction performance should be measured and evaluated across a number of perspectives. Data collection, respective KPI reports, and the measures themselves have changed over a number of years. The data is publicly available (based on yearly analyses) through Constructing Excellence and Glenigan's, which, as of August 2016, has merged with BRE (Building Research Establishment). The data consists of three strands of Economic, Social, and Environmental measures in different sectors for various stakeholders and for particular products. Depending on when such measures were introduced, data for certain cases are available for over 15 years. Colleagues at Huddersfield have previously identified certain weaknesses in the way KPIs were interpreted and how meaningful they were. Current research aims to identify statistical correlations across the previous 15 to 20 years and to examine the possibility of establishing high-level measures that can determine industry

¹Workforce and human capacity, project delivery, corporate strategy, technology and innovation, markets and demand drivers, and social and political influences, etc.

²Content offered, web-based learning, distance education, MOOCs, flipped classrooms, etc.

performance and hence, inform the global development of KPIs.

India

An Action Team on KPIs has developed a family of KPIs under the 'Ci3 India' – Construction Industry Improvement Initiative, India that was launched through IIT Madras with a Regional Building Clients Roundtable in October 2015. As of October 2016, three additional Roundtables have been held in Mumbai and Chennai bringing together top-tier building industry clients to improve industrial practices and performance levels. Five Action Teams that were established following the Mumbai Roundtable in February 2016 have progressed on specific fronts, with Action Team 1 on KPIs having recently issued the final draft of a family of KPIs for feedback from others in Ci3 India.

The 'Suggested KPIs' for Building Clients in India would allow organizations to choose from this suite of KPIs: (i) from three different groups (e.g., design phase, construction phase, or business outcomes); and (ii) at three different levels (e.g., project/organization level, benchmarking club level, or industry level). They could use chosen KPIs to benchmark internally over time, across their projects, and/or with other organizations. They could also modify these for internal use only or agree to modify jointly if benchmarking. There are two additional columns of the KPIs template that must be populated in the next stage of development: (i) to design realistic 'weighting indicators' that will help allow for special conditions by adjusting a 'typical KPI value' accordingly and (ii) to collect data for and determine typical (i.e., average) value ranges under 'normal' conditions.

South Africa

The Chair in Construction Engineering and Management at Stellenbosch University in South Africa participates in the GLF-CEM initiative to compare KPIs from different countries. Although several KPIs have been identified for comparison, not all of these are readily available from public sources. Therefore, a contribution to the initiative will be made for those indicators that are in the public domain in South Africa.

Nevertheless, the Chair is also commencing with its own study to build a database of project information that will address a specific local need. It has been found that one of the more prominent risks encountered by construction organizations on projects is the quality of project documentation prepared by clients and consultants. Several reasons are cited by industry players, but the study aims to gather sufficient evidence to justifiably identify key indicators. For this reason, a program will be launched to capture project information from large public clients who are regularly involved in infrastructure projects. Typical information would include, but not be limited to, the planned and final project cost and duration, consultant fees, number of changes (or variations), number of drawings, and the qualifications and experience of project team members. It is expected that once it has been proven that such data can be captured successfully, the initiative can be expanded to also capture other key indicators. The project will commence in the first half of 2017.

Hong Kong

A contract research study has been initiated by the Construction Industry Council of Hong Kong to develop a set of KPIs to benchmark the performance of the local construction industry against that of other advanced economies. While the culture and requirements of the construction industry may vary between countries, the first task of this study is to identify a list of KPIs that is considered important to various constituencies. The KPIs evolve around four broad categories, namely: productivity, manpower, safety, and the environment. With that, the definition and measurement method for each KPI have been delineated.

Based on the identified KPIs and measurement methods, the research team has collected data from relevant sources for trend analyses and international benchmarking. This will enable policy makers and construction stakeholders to identify the strengths and weaknesses of the Hong Kong construction industry during the boom and bust periods and after new regulations or initiatives have been instituted.

At the current stage of the study, the analysis in Hong Kong is primarily focused on construction

performance at the industrial level—although the sectoral performance will also be a subject of this investigation in the subsequent stage. In addition, the results of this study will complement other investigations being carried out by other members at the project and organizational levels.

Next Steps/Conclusions

Based on these efforts, the committee has shortlisted the following KPIs under each of the sub-categories (Table 1). These KPIs were specifically selected because the required data is publicly available in each country (e.g., Hong Kong, India, South Africa, UK, and USA). The committee is of the opinion that, for the longevity of this effort, the required data should be publicly available to all participating GLF-CEM members in their respective countries.

We would encourage all members to identify similar data sources for the suggested KPIs within their countries. In doing so, this initiative could be spread to as many member countries as possible. Please contact any of the committee members with your interest.

Table 1. Selected KPIs

	Industry	Program	Education	Research
Data Availability	Yes	Yes	In Progress	In Progress
Data Selection	1. Productivity ³ 2. Safety ⁴	1. No. student applications (CEM or Eng.) ⁵ 2. Employment rate of students by country ⁵	To be determined.	To be determined.

³Data available at the U.S Department of Labor, U.S. Bureau of Labor Statistics, Bureau of Economic Research (BER), and South African Forum of Civil Engineering Contractors

⁴Data available at U.S. Bureau of Labor Statistics, United Nations Statistics Division

⁵Data available at CEM Department in University of Hong Kong, Purdue University, IIT Madras, Stellenbosch University, and Hong Kong Polytechnic University

Interested in participating?

For more information, please contact:

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Prof. Geoffrey Shen
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2017 GLF-CEM

University of Southern California
Los Angeles, United States

MAY 27 + 28

Registration + Fees:

Registration fees are \$450 USD per forum member. Additional guests may attend the closing event at the Hotel Shangri-La in Santa Monica for a fee of \$140 USD. Additional registration and hotel information is available on the **event webpage**.

To register for the event, **click here** and enter the ESVP code **glfcem17**.

GLF-CEM Event Program

Saturday, May 27, 2017

The Forum at USC Tutor Campus Center

15:00 - 18:00 Introduction of New Forum Members

18:00 - 20:00 Cocktail Reception

Sunday, May 28, 2017

The Forum at USC Tutor Campus Center

08:30 - 09:15 Breakfast

09:15 - 10:00 KPI and Trends Committee Progress
Dr. Hastak and Dr. Kagiolgou

10:00 - 10:30 GLF-CEM Collaborations
Dr. Wium and Dr. Bargstädt

11:00 - 11:45 Construction Engineering and Management at USC
Dr. Soibelman

11:45 - 12:45 GLF-CEM Membership
Dr. AbouRizk, Dr. Shen, and Dr. Hastak

12:45 - 13:45 Lunch

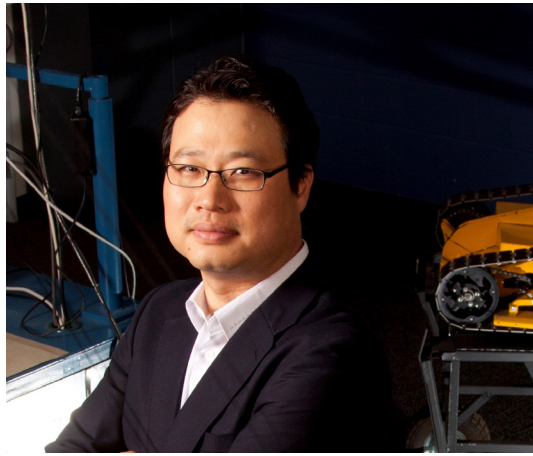
13:45 - 17:15 Panel on Leadership
Facilitated by Dr. Ashley

- Phillip J. Stassi; Jacobs Engineering Group Inc.
- Dr. Jim Rowings; Kiewit Corporation
- Dr. Feniosky Pena-Mora; NYC Department of Design and Construction
- Dr. Simaan M. AbouRizk; Hole School of Construction Engineering

Hotel Shangri-La, Santa Monica

18:30 - 20:30 Closing Dinner

MEET OUR Nominated Members



Yong Cho
Associate Professor

Civil and Environmental Engineering
Georgia Institute of Technology
Atlanta, United States

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<http://rical.ce.gatech.edu>

As a 2011 recipient of the National Science Foundation Early Career Award, Dr. Yong Cho's research interests include field construction robotics and automation. He is leading the development of a new paradigm in these research areas by challenging the current understanding of science/engineering technologies in field operations. Among the challenges he is investigating are robotizing and automating several critical construction, maintenance, and field management tasks for worker's safety and productivity utilizing robots, real-time sensor data, cloud computing, and 3D visualization technologies.

First Attendance:
2016 GLF-CEM in Beijing, China

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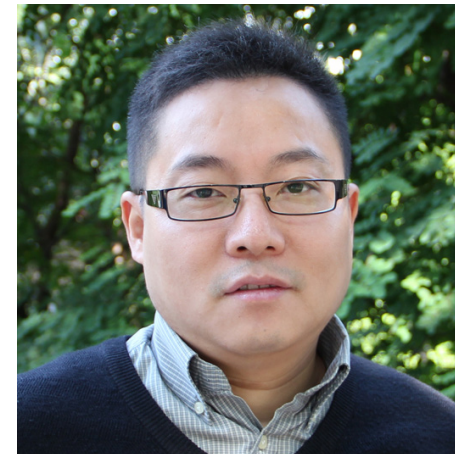


Li Dehzi
Associate Professor, Head

Department of Construction and Real Estate
Southeast University
Nanjing City, China

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<http://civil.seu.edu.cn/2009/1111/c1269a93728/page.htm>

Dr. Li Dehzi has research interests and expertise in sustainable construction, smart city, urban renewal, and affordable housing. As a principal investigator, he has led several research projects funded by a variety of organizations, such as the National Natural Science Foundation of China and the Chinese Ministry of Education. He has published over 60 scholarly papers in Chinese and international journals, such as the ASCE's Journal of Management in Engineering, Building and Environment, Ecological Indicators, and Habitat International. He also contributes reviews of leading international journals, such as Land Use Policy, Urban Studies, Social Indicators Research, Environmental Engineering Science and Resources, Conservation and Recycling.



Wilson W.S. Lu
Associate Professor, Associate Dean

Real Estate and Construction
University of Hong Kong
Hong Kong

wilsonlu@hku.hk

Dr Wilson Lu has a computer science background and shifted to construction management in 1999. His research is mainly focused on construction management with three clear directions: Construction Informatics, International Construction, and Construction Waste Management. He is the winner of the HKU Outstanding Young Researcher Award (2014-2015) for his excellence achievement of scholarship. He is the Associate Dean of Research in the FoA. Dr Lu is also steering the development of iLab, which is an urban big data hub under the umbrella of the HKUrbanLab, the research arm of the FoA at HKU. iLab facilitates multi-dimensional and multi-disciplinary urban big data collection, storage, analysis, and presentation to inform all sorts of decision-making throughout the lifecycle of urban development. His recent research and consultancy projects fostered in iLab include how Building Information Modelling (BIM) can be used for construction cost management, smart construction, logistic and supply chain management, and facility management.

First Attendance:
2016 GLF-CEM in Beijing, China

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2016 GLF-CEM in Beijing, China

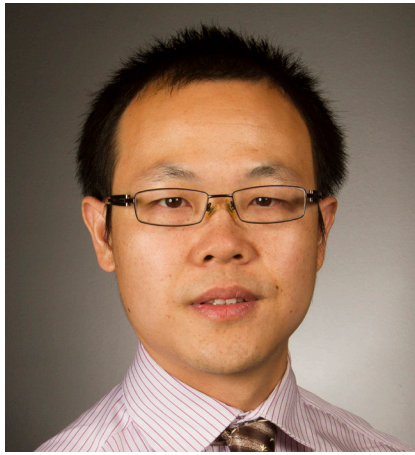


Youngsoo Jung
Professor

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Yongin, South Korea

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http://www.cicms.org/yjung/Youngsoo_Eng.htm

Youngsoo Jung holds a Ph.D. from the University of Texas at Austin and a B.S. from Yonsei University in Korea. Prior to joining faculty at Myongji University in 2000, he had eleven years of industry experience as a project engineer, cost engineer, and information systems manager. His areas of research interest include CIC, BIM, BPR, project delivery systems, and automated cost and time management. His recent research efforts have focused on automated life-cycle project information management for power plants, steel mills, capital airports, and modernized traditional housing. He is also serving as a vice president of the Korea Institute of Construction Engineering and Management (KICEM).



Pingbo Tang
Assistant Professor

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<https://sites.google.com/site/tangpingbo/>

Pingbo Tang obtained his Ph.D. from the group of Advanced Infrastructure Systems at Carnegie Mellon University in 2009. He won a best paper award from the ASCE's Construction Research Congress in 2009, the 2013 Recent Alumnus Achievement Award from the Civil and Environmental Engineering Department at Carnegie Mellon University, and the National Science Foundation CAREER Award in 2015. His research explores remote sensing (e.g., LiDAR, Photogrammetry), human systems engineering, and information modeling technology (e.g., Building Information Modeling) to support spatiotemporal analyses needed for effective diagnosis and management of construction job sites, constructed facilities, and civil infrastructure systems. He has published more than 60 peer-reviewed articles in these areas. The National Science Foundation (NSF), Department of Energy (DOE), National Aeronautics and Space Administration (NASA), Salt River Project (SRP), DPR Construction, and Phoenix Government have funded his research efforts.

First Attendance:
2016 GLF-CEM in Beijing, China

First Attendance:
2016 GLF-CEM in Beijing, China



ShouQing Wang
Professor

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Dr. ShouQing Wang is the Principal Expert at the Center for PPP, the Deputy Director for the Institute of International Engineering and Project Management, and the Director of the PPP Lab of Hang Lung Center for Real Estate at Tsinghua University in Beijing, China. His research focuses on PPP and Project Management. He has produced over 300 publications. He is also the Chairman of China National Collaboration Network for M.Eng. (PM) Education (161 universities), is an Expert Member for the legislation of China Concession Law for Infrastructures, and an Editorial Board Member for the International Journal of Project Management and the Journal of Financial Management of Property and Construction.



Lianying Zhang
Professor, Chair

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Lianying Zhang received his Ph.D. in Structural Engineering and his M.S. in Offshore Engineering from the School of Civil Engineering at Tianjin University in 1999 and 1995, respectively. His current research interests include project governance and knowledge management in construction projects and social responsibility of construction corporations. At present, Professor Zhang is heading three projects for the National Natural Science Foundation of China.

First Attendance:
2016 GLF-CEM in Beijing, China

Other 2017 Nominees

Xioaming Wang
CSIRO, Australia

Zoubeir Lafhaj
École centrale de Lille, France

Yousong Wang
South China University of Technology, China

Interested in GLF-CEM membership?

Individual membership is open to persons who are involved in construction engineering and management programs. Institutional and practitioner memberships are also available.

Applicants for membership must have demonstrated a record of involvement in a construction engineering management educational program, preferably as a full professor or as an administrator.

Persons or organizations interested in GLF-CEM membership must submit a written application letter to the GLF-CEM Chair prior to a regularly scheduled meeting of the GLF-CEM.

Click here to begin your membership application today.

For additional information or questions, please contact:

Simaan M. AbouRizk
Distinguished University Professor
GLF-CEM Chair
abourizk@ualberta.ca

GLF-CEM
Our Members



Since 2011, the GLF-CEM has been open to persons involved in construction engineering and management programs around the world. To date, our membership is comprised of

72 members from 57 institutions in 16 countries.

AUSTRALIA

Curtin University
 Xiangyu Wang
 Queensland University of Tech.
 Martin Skitmore

CANADA

Concordia University
 Osama Moselhi
 École de Technologie Supérieure
 Adel Francis

CHILE

Universidad Técnica Federico
 Santa María
 Leonhard Bernold

CHINA

Chongqing University
 Guiwen Liu
 Liyin Shen

University of Alberta
 Mohamed Al-Husseini
 Aminah Robinson Fayek
 Simaan AbouRizk

University of British Columbia
 Thomas Froese

University of Calgary
 Janaka Ruwanpura

University of Waterloo
 Carl T. Haas

Harbin Institute of Technology
 Xiaolong Xue

Shanghai Jiao Tong University
 Saixing Zeng

Shenzhen University
 Jiayuan Wang

Tongji University
 Guangbin Wang

Tsinghua University
 Dongping Fang

GERMANY

Bauhaus-University, Weimar
 Hans-Joachim Bargstädt

Technical University of Dresden
 Rainer Schach

University of Karlsruhe
 Fritz Gehbauer

University of Stuttgart
 Fritz Berner

HONG KONG

Hong Kong Polytechnic University
 Geoffrey Q.P. Shen

University of Hong Kong
 Mohan Kumaraswamy
 Thomas Ng

INDIA

Amity University
 Anil Sawhney

Indian Institute of Technology, Delhi
 K.C. Iyer

Indian Institute of Technology, Madras
 Satyanarayana Kalidindi
 Koshy Varghese

POLAND

Warsaw University of Technology
 Aleksander Nicał

SOUTH AFRICA

Stellenbosch University
 Jan Wium

SOUTH KOREA

University of Seoul
 Chang Taek Hyun

SPAIN

Universitat Politècnica de València
 Eugenio Pellicer

SWEDEN

Chalmers University of Technology
 Hans Björnsson

TAIWAN

National Central University
 Rong-Yau Huang

National Taiwan University
 Luh-Maan Chang
 Po-Han Chen
 Shang-Hsien P. Hsieh

UNITED ARAB EMIRATES

Abu Dhabi University
 Raid Al-Aomar

UNITED KINGDOM

University of Cambridge
 Sebastian MacMillan
 Campbell R. Middleton

University of Huddersfield
 Mike Kagioglou

UNITED STATES

Arizona State University
 Samuel Ariaratnam

Florida International University
 Irtishad Ahmad

Georgia Institute of Technology
 Daniel Castro

Iowa State University
 Charles T. Jahren

Michigan State University
 M. G. Matt Syal

North Carolina State University
 Edward J. Jaselskis
 William J. Rasdorf

Pennsylvania State University
 Chimay Anumba

Polytechnic Institute of NYU
 Fletcher Griffis

Purdue University
 Daniel Halpin
 Makarand Hastak

Texas A&M University
 Stuart Anderson
 Jorge A. Vanegas

University of Cincinnati
 Issam A. Minkarah

University of Colorado Boulder
 Keith Molenaar
 Paul Goodrum

University of Dayton
 Eddy Rojas

University of Hawaii
 Amarjit Singh

University of Illinois
 Khaled A. El-Rayes

University of Nevada
 David Ashley

University of Southern California
 Lucio Soibelman

University of Texas at Austin
 Carlos Caldas
 Wayne A. Crew
 William O'Brien

University of Wisconsin-Madison
 Awad Hanna
 Jeffrey Russell

Vanderbilt University
 Sanjiv Gokhale

Virginia Polytechnic Institute and State University
 Jesus M. de la Garza
 Mike Vorster

Bylaws

of the Global Leadership Forum for Construction Engineering and Management Programs (GLF-CEM)

Amendments agreed upon on July 4, 2016 at the 2016 GLF-CEM

Article I. Vision

Section 1.01 The vision of the GLF-CEM is to be a foremost authority for producing future leaders in construction engineering and management through state of the art teaching and research.

Article II. Mission

Section 2.01 Educational: To develop program guidelines for creating credible programs that promote educational excellence by preparing students with practice and theory to become global construction leaders in academia or industry.

Section 2.02 Organizational: To prepare the next generation of global construction leaders.

Article III. Objectives

Section 3.01 To advance construction engineering and management programs by sharing information about different construction engineering and management programs, trends, and issues around the world.

Section 3.02 To promote best practices of international project management by sharing teaching and research.

Section 3.03 To improve the ability to share resources among programs by facilitating exchange students, faculty collaborations, and the sharing of courses.

Section 3.04 To strengthen the international position of construction engineering and management programs by presenting a united voice to industrialists, research councils, industry associations, governments, etc.

Section 3.05 To maintain an active membership of excellent construction engineering and management programs and program leaders.

Article IV. Membership

Section 4.01 Persons or organizations interested in membership on the GLF-CEM must submit a written application letter to the GLF-CEM Chair prior to a regularly scheduled meeting of the GLF-CEM.

Section 4.02 There are three types of membership: individual, institutional, and practitioner. Individual membership (or "Membership") is open to persons who are involved in construction engineering and management educational programs. Institutional membership is open to accredited institutions with construction engineering and management educational programs. Practitioner membership is open to persons who have an interest in construction engineering and management educational practices.

Section 4.03 Applicants for membership must have a demonstrated record of involvement in a construction engineering and management education program, preferably as a full professor or as an administrator.

Section 4.04 Applicants for institutional membership must be institutions with a construction engineering and management educational program and must designate one or more representatives, as per section 4.03 above.

Section 4.05 Applicants for practitioner membership must demonstrate interests in construction engineering and management educational practices.

Section 4.06 Practitioner and institutional members are not eligible for election to the Executive Committee but may serve on the Advisory Committee or Working Groups at the discretion of the Chair.

Section 4.07 All members pay an annual membership fee, fixed for each level of membership by the GLF-CEM Executive Committee, as required.

Section 4.08 Applicants for membership or institutional representatives must be in attendance at the regularly scheduled GLF-CEM meeting to be considered. New members shall be elected by a majority vote of the members present at the meeting.

Section 4.09 GLF-CEM members shall serve for an indefinite period of time and may discontinue membership by contacting the Secretary. The Secretary will maintain a current roster of members.

Section 4.10 A member may appoint another GLF-CEM member to serve as their proxy at a GLF-CEM meeting by notifying the Chair prior to the meeting. Proxy votes may be allowed for GLF-CEM business transactions at the discretion of the Chair.

Section 4.11 Observers: individuals who are interested in attending a GLF-CEM meeting but are presently not members. Observers may attend the GLF-CEM meetings at the discretion of the event chair.

Article V. Executive Board

Section 5.01 The Executive Board shall consist of ten members and past chair(s).

Section 5.02 The Executive Board leadership team (referred to as the "Executive Committee") shall consist of a Chair, a Vice-Chair, a Secretary, a Treasurer, and the immediate past chair. The roles and responsibilities of the Executive Committee members and other members of the board are indicated in **Appendix A**.

Section 5.03 Executive Board Members shall have the authority to act for the GLF-CEM when, in the opinion of the Executive Board, it is impractical to call a meeting of the entire GLF-CEM. To validate the action taken, the GLF-CEM membership shall be informed within a two-week period.

Section 5.04 Executive Committee Members shall serve a two-year term that expires at the conclusion of the annual meeting of the GLF-CEM. At the annual meeting of the GLF-CEM, a current member of the Executive Board shall be elected to the respective officer's position(s). If the Executive Committee officer is unable to fulfill the responsibilities of his/her elected office, a special election will be called by the GLF-CEM Chair.

Section 5.05 The chair shall preside at all meetings, appoint working groups or task committees at his/her discretion, and perform the duties specified in these Bylaws - Guidelines and Operating Procedures.

Section 5.06 The Vice Chair shall oversee the advisory committee and working groups, shall assist the Chair, and shall perform the duties of the Chair when he/she is absent from a meeting or is temporarily unable to perform his/her assigned duties.

Section 5.07 The Treasurer shall collect membership dues, manage fundraising activities, and perform other duties assigned by the Chair.

Section 5.08 The Secretary shall maintain records, take minutes of Board meetings, distribute them to the board members, and perform other duties assigned by the Chair.

Section 5.09 The Executive Board shall meet at least twice a year. Agreeing to serve on the Executive Board carries with it the commitment on the part of the member to fund travel to one committee meeting each year.

Article VI. Election of Executive Board Members

Section 6.01 Nomination of candidates for election to offices of the GLF-CEM shall be made by nominations tendered by members of the GLF-CEM. Nominations shall be submitted to GLF-CEM officers in advance of the annual GLF-CEM meeting. At least two candidates shall be nominated when appropriate. The names of the official candidates shall appear on the agenda that is distributed prior to the annual GLF-CEM meeting. Nominations will also be accepted from the floor. Nominees must have been active members of GLF-CEM for a minimum of two years.

Section 6.02 The Executive Board member(s) shall be elected by a majority of those members voting.

Section 6.03 Election shall be held by mail, using a video conference ballot, or at a regularly scheduled meeting.

Section 6.04 Election dates and ballot-counting procedures shall be established by the GLF-CEM Chair.

Article VII. Meetings

Section 7.01 The GLF-CEM shall hold an annual meeting and any other meetings deemed appropriate and called for by the Chair.

Section 7.02 Notice of meetings and a tentative meeting agenda shall be sent to the GLF-CEM membership prior to the meeting date.

Section 7.03 A quorum for normal business shall consist of those members present at a regularly scheduled meeting. At the discretion of the Chair, items of major importance may be referred to the entire GLF-CEM membership by mail or electronic ballot.

Section 7.04 Copies of the GLF-CEM annual meeting minutes/reports shall be distributed by email to all GLF-CEM members by the Secretary.

Article VIII. Advisory Committees and Working Groups

Section 8.01 In addition to the Executive Board, the GLF-CEM Executive Committee shall maintain an Advisory Committee and one or more Working Committee(s), as required.

Section 8.02 The GLF-CEM Chair, in consultation with the Executive Board and GLF-CEM membership, shall appoint GLF-CEM members to serve on the Advisory Committee. The GLF-CEM Chair shall also appoint a Chair for this Advisory Committee. The Advisory Committee shall comprise of at least four members. The initial appointment of the Advisory Committee chair is appointed for a two-year term, which is renewable.

Section 8.03 The GLF-CEM Chair, in consultation with the Executive Board and GLF-CEM membership, shall institute working committees, as required, to pursue GLF-CEM objectives and agreed initiatives. Working Committees shall sunset upon completion of their intended function.

Article IX. Conflicts of Interest

Section 9.01 GLF-CEM members are encouraged to take a temporary leave of absence from the GLF-CEM should a potential conflict of interest arise.

Section 9.02 A member taking a temporary leave of absence may nominate an alternate member to serve in his/her absence in accordance with Article IV of these Bylaws - Guidelines and Operating Procedures.

Article X. Amendments

Section 10.01 Bylaws may be amended by majority vote of the GLF-CEM membership.

Section 10.02 Proposed changes may be initiated by the Executive Board or under the signature of any five GLF-CEM members.

**Appendix A:
Roles and Responsibilities of the Executive Committee and Members of the Board**

Function	Chair	Vice-Chair	Secretary	Treasurer	Members
Set agendas	X				
Conduct meetings	X				
Propose establishment of Advisory Committee and working groups	X				
Propose sunseting of working groups	X				
Provide representation at outside functions	X				
Arrange GLF-CEM meeting time and location		X			
Report on working group activities		X			
Maintain register of working groups, their missions, memberships, and activities		X			
Monitor activity and progress of working groups		X			
Monitor attendance			X		
Advise non-attendees			X		
Maintain membership list			X		
Distribute agenda			X		
Keep minutes			X		
Distribute minutes			X		
Collect membership dues				X	
Record payment of dues				X	
Suggest removal of members for non-payment				X	
Propose fundraising activities				X	
Monitor fundraising activities				X	
Appoint members to Advisory Committee	X				
Ombudsman and special projects	X				
Active participations in all Executive Committee activities and meetings					X
Additional tasks as assigned by the chair					X

Have something to share?

**The GLF-CEM Committee
wants to hear from you.**

We are looking for announcements, opinion pieces, images, and research highlights to include in our next issue. Have something to share? **Click here.**

And don't forget to let us know how we're doing—**click here** to take our short survey.