

## Editorial

### I. From the Editor

Project Management/Engineering is a discipline which can bring significant benefits to business/engineering organisations. The challenges of the Project Management/Engineering Initiatives are to achieve these goals while keeping in mind the constraints of time, budget and scope.

The prime objective of this special issue (Volume 36 Number 1) is to publish original research, works and empirical results by researchers and practitioners in the discipline of Project Management/Engineering and associated fields that have been made in research and development and practical implications for sustainable development in the Caribbean region.

Besides, on behalf of the WIJE Publications and Editorial Board, I would like to update with you that our WIJE Website Project had been progressing although there was some setback in the past few months. It is anticipated that the digitising of the journal's paper archives would be complete in early 2014. The web site address is <http://sta.uwi.edu/eng/wije/>

### II. About This Volume

This Volume includes ten (10) technical/ research articles and viewpoint papers. The relevance and usefulness of respective articles/papers are summarised below.

**M.T-B. Ellis and G. Shrivastava**, "Fifty Years of Civil Engineering at St. Augustine: The First Decade (1961-1971)", present a brief account of the formative years of the Department of Civil Engineering of The University of the West Indies (UWI) at St. Augustine Campus. The authors describe the transformation of the Department with a modest beginning with less than ten students and only three staff members in 1961. The Department has gradually transformed itself into one of the leading centres in the Civil and Environmental Engineering discipline in the Commonwealth of Nations. The Department has produced over 1,000 graduates who are, and have been, responsible for the design, construction management and maintenance of infrastructure in the Commonwealth Caribbean.

**R.L.A. Ellis and L. Sobers**, "Project Management Model for the Application of Carbon Capture and Storage in Trinidad", discuss the planning stages of the Project Management Model with reference to the implementation of Carbon Capture and Storage (CCS) in Trinidad and Tobago (T&T). This paper presents the application of the model via international collaboration, and explores the opportunities and challenges of CCS implementation in the country. Results show that policies, regulations and government-led incentives for CCS are currently under development, and the opportunities for implementation are encouraging.

**V.R. Dubrie and K.F. Pun**, "Assessing Critical Thinking Capabilities of Project Management Practitioners: A Progressive Model", review the critical thinking (CT) theories, and derive a progressive model that assesses the CT competence of project management (PM) practitioners. A Delphi technique with convenience sampling was adopted, and a group of Project Management practitioners was invited to evaluate a facet of competency variables that are built into the model. Based on this pilot evaluation, the scores computed show a fair pragmatic determination on the level of CT competency among the practitioners participated in the study. Future research would validate the applicability of the model with empirical and experimental evidences in PM practices.

**K. Hassanali**, "Improving the 'Safe to Work' Programme Initiative for Contracting Firms in the Energy Sector of Trinidad and Tobago", investigates into the improvement of the current 'Safe to Work' (STOW) structure incorporating concepts and theories relating to health, safety and environmental (HSE). The author advocates a project management approach for facilitating contracting firms with their STOW implementation in T&T. Empirical data was acquired via survey and interviews, and a proposed framework for a STOW-Safety Management System (SMS) was derived. It was found that the proposed framework would provide a viable template for improving the HSE functionality of contracting firms in the energy sector in T&T, as well as a wider context of the Caribbean region.

**K.C. Richards**, "The Importance of Change Management in Managing IT Projects in the Public Service of Trinidad and Tobago", identifies the factors that cause the failure of IT projects, determines the extent to which change management methodologies are used in information technology (IT) project management. An online survey of IT professionals across the public service was used to identify the characteristics of IT project failure and the change management issues on IT projects. It was found that the timely delivery of IT projects was a major challenge, and the lack of change management practices in managing projects was the leading cause of IT project failure. The author then advocates an integrated approach of change management to IT project management to assist managers in the planning and execution of future IT projects in the Public Service of Trinidad and Tobago.

**Y. Zhang, et al.** "Upgrade of Wastewater Sistema Central in Havana, Cuba", present the work of a team at the University of Miami (UM). The team developed preliminary-level engineering designs to upgrade the key components of a wastewater system, Sistema Central, in the City of Havana, Cuba. The ocean outfall was designed, and parameters included the coastal bathymetry, wind and current velocities, water-quality standards in the

coastal waters, and flow rate to be handled by the system. In order to meet the water-quality standards, preliminary treatment, chlorination, and disposal through a multi-port diffuser was determined to be the best option.

**I. Khan-Kernahan**, “Assessment and Reconstruction of Bridges in Trinidad and Tobago”, provides an overview of the Roads and Bridges Programme of the National Highway Programme under the Inter-American Development Bank (IDB) Loan in T&T. A joint venture firm of engineering consultants carried out the planning and design phases of the programme. The Ministry of Works and Transport provided an initial list of ninety-six short and medium span bridges for preliminary inspection. A total seventy bridges were then short-listed for a detailed condition survey. Finally, forty bridges were selected for total reconstruction and one for partial reconstruction.

**U. Persad and K. Athre**, “Experiences with Teaching Introductory Product Design to Engineering Undergraduates”, describe the guiding principles adopted in the teaching of introductory product design in the Design and Manufacturing Engineering and Biomedical Engineering departments at The University of Trinidad and Tobago. They share the experience over the first five years of delivering the course to Engineering undergraduates. The approach to design teaching is discussed based on Problem-Based Learning (PBL). Evidence acquired from student evaluations is also presented to demonstrate the impact of the course on student work and learning. The paper concludes with a discussion on course improvements and the implications for further supporting product design education.

**M.G. Marks and L.A. Ellis**, “Delays in Major Agricultural Infrastructure Projects in Guyana: Causes and Proposed Solutions”, present the results of a study conducted to identify and evaluate the relative importance of the main causes of delays, and discuss the methods of minimising delays in major agricultural infrastructure projects in Guyana. It was found that amongst the main causes were weather conditions, poor access to site, too optimistic estimate of project duration, unforeseen site and/or ground condition, and necessary change orders/variations. Client-related delays were ranked as the leading causes. Having a multi-disciplinary team with sufficient time and money allocated at the design stage could minimise delays in major agricultural infrastructure projects in Guyana.

**G.S. King and C.R. Cameron**, “An Enhanced Structure for University-Industry Collaboration for Innovation in the Caribbean”, describe a new approach to collaborative applied research projects and to commercialisation of inventions, based on good practice, is being implemented in the Faculty of Engineering at UWI. Much increased dialogue with industrial, commercial and government partners is to gain an enhanced appreciation of the university-industry collaboration (UIC) needs that are matched to the capabilities within UWI in the Mechanical and

Manufacturing Enterprise Research Centre (MMERC). This paper also discusses the interfaces of the Centre with existing entities in UWI, and underlines the elements of Good Practice that are to be built into the UIC approach.

### III. Acknowledgements

On behalf of the Editorial Office, we gratefully acknowledge all authors who have made this special issue possible with their research work. We greatly appreciate the voluntary contributions and unfailing support that our reviewers give to the Journal.

Our reviewer panel is composed of academia, scientists, and practising engineers and professionals from industry and other organisations as listed below:

- **Dr. Albert H.C. Tsang**, Hong Kong Polytechnic University, Hong Kong
- **Dr. April Bryan**, University of the West Indies (UWI), Trinidad & Tobago (T&T)
- **Dr. Christopher Osita Anyaeche**, University of Ibadan, Nigeria
- **Professor Emeritus David McGaw**, UWI, T&T
- **Dr. Dianne Thurab-Nkhosi**, UWI, T&T
- **Professor Edwin I. Ekwue**, UWI, T&T
- **Professor Gossett Oliver**, University of Technology, Jamaica
- **Professor Gyan Shrivastava**, UWI, T&T
- **Dr. Dr. Hongyi Sun**, City University of Hong Kong, Hong Kong
- **Ms. Jill Marcelle de Silva**, UWI, T&T
- **Dr. Ken D. Thomas**, Auburn University, Auburn, USA
- **Professor Kit Fai Pun**, UWI, T&T
- **Ms Marcia Nathai-Balkissoon**, UWI, T&T
- **Dr. Margaret Bernard**, UWI, T&T
- **Dr. Michael A.O. Case**, University of Technology, Jamaica
- **Ms. Man Yin R. Yiu**, UWI, T&T
- **Professor Emeritus Richard A. Dawe**, UWI, T&T
- **Mr. Rodney Harnarine**, UWI, T&T
- **Professor Ronald McCaffer**, Loughborough University, UK
- **Dr. Ruel Ellis**, UWI, T&T
- **Professor Stephan Gift**, UWI, T&T
- **Professor Surendra Arjoon**, UWI, T&T

The views expressed in articles are those of the authors to whom they are credited. This does not necessarily reflect the opinions or policy of the Journal.

KIT FAI PUN, *Editor-in-Chief*

Faculty of Engineering,  
The University of the West Indies,  
St Augustine, Trinidad and Tobago  
West Indies

August 2013