



SRI LANKAN CONSULTING ENGINEER



Newsletter of the Association of Consulting Engineers, Sri Lanka
(Founded in 1980, Incorporated by Act No. 42 of 2003)

A Member Association of
the international Federation
of Consulting Engineers

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Issue 13

KEEP IN TOUCH WITH THE ASSOCIATION OF CONSULTING ENGINEERS, SRI LANKA

COUNCIL MEETINGS

The AGM was held on Friday, 21st January 2005. Under election of Council, Mr. N.G.R. de Silva, former President and Council Member, retired from the Council. Mr. G.E.M. Gomez – Hydrologist was duly elected to the Council to fill this vacancy, having being proposed by Mr. N.G.R. de Silva and seconded by Mr. U. Delpachitre.

At the 1st Council meeting after the AGM, the following office bearers were elected:

Election of Office Bearers 2005/2006

President : *Mr. W.M.S.C. Piyadasa*
Vice President : *Mr. D.P.T. Munasinghe*
Hony. Secretary : *Mr. B. Senaratne*
Hony Treasurer : *Mr. Upali Delpachitre*

Council Members :

Mr. T.G. Perera
Mr. K. Suntheralingam
Mr. R.M.A. Senarath
Mr. T.P. Ranaweera
Mr. G.E.M. Gomez

The President welcomed the new Council member, Mr. G.E.M. Gomez, and he was elected the Hony. Editor.

The Council also expressed their appreciation of the services rendered by Mr. N.G.R. de Silva, for guiding the Association as the President for 2 years and as a Council member. A letter of appreciation was addressed to Mr. de Silva by the President on behalf of the Association.

EDITOR'S NOTE

The human cost of the Tsunami disaster is unparalleled. This loss will be forever felt in every one of us for the rest of our lives.

With this national disaster, the economic and development cost to the national economy has been significant. Sri Lanka needs to meet this national challenge and rebuild what we have lost.

The best tribute we can pay to those who have lost their lives, is to restore life in the affected areas. The economic, social and development activity must continue in order to build a prosperous future for the people who have been affected by this disaster and the nation as a whole.

Converting this situation into an opportunity, Sri Lanka must put in place new infrastructure and systems to meet the challenges of the 21st Century and fulfill the dreams and aspirations of a modern society.

The Areas of Priority are:

- Buildings
- Roads and Bridges
- Water Supply and Sanitation
- Drainage
- Railway
- Urban Township Development
- Power
- Telecommunication
- Coast Conservation
- Environment Protection

The ACESL can contribute substantially in meeting this challenge. We have initiated action in this regard and hopefully in the near future our members will be actively engaged in providing their very valuable services in rehabilitating all the services highlighted above.

COUNCIL ACTIVITIES

Public Lecture

ACESL organized a Public Lecture by Dr. Chandana Perera on “Knowledge Management – A new Discipline for Engineers and Managers” on 17th December 2004 at IESL auditorium. The Lecture was well attended.

Liberalization of Professional Services under GATS

Director General of Commerce and Secretary, Ministry of Trade, Commerce and Consumer Affairs were informed to consult ACESL in the event of Sri Lanka planning to liberalize professional services sector, in particular engineering services, under GATS negotiations.

Appointment of Qualified Persons to Carryout Structural Designs for Buildings

Director General, Urban Development Authority was requested to invite ACESL to nominate members who are qualified and competent to carryout structural designs of buildings, to UDA panel of “Qualified Persons”.

Rehabilitation of Infrastructure Damaged by Tsunami Disaster

ACESL offered the services of our Members at a nominal fee to following international relief organizations.

1. International Committee of the Red Cross (ICRC)
2. Sri Lanka Red Cross (SLRC)
3. United Nations High Commissioner on Refugees (UNHCR)
4. United Nations Office for Project Services (UNOPS)

In addition, the contact details of members were furnished to several other organizations at their requests.

FIDIC 2005 ANNUAL CONFERENCE

FIDIC 2005 Annual Conference will be held in Beijing during 4 –8 September 2005.

ACESL is entitled to a 50% discount on Registration Fee (upto 2 delegates). All other expenses will have to be borne by the delegates.

Members interested in attending should contact Hony. Secretary.

Also please visit the web site www1.fidic.org/conference/2005 for details.

FIDIC NEWS

A FIDIC report on Engineering - Our future 2004 released in October 2004 provides interesting reading. It is prepared by the Strategic Review Task Force and successfully elaborates on previous reports prepared by the FIDIC Governance Task Force (GTF) and the FIDIC Task Force 21.

In this report, the five earlier objectives which are relevant to:

- What FIDIC does
- What FIDIC provides to members
- What are FIDIC’s governing principles and philosophy,

Have now been increased to seven and have been spelt out as:

- represent globally the consulting engineering industry
- enhance the image of consulting engineers
- be the authority on issues relating to business practice
- promote the development of a global and viable consulting engineering industry
- Promote quality
- Actively promote conformance to a code of ethics and to business integrity
- promote commitment to sustainable development.

The report further stresses that FIDIC will assist all member associations and member firms in endeavoring to achieve these noble objectives.

The report deals comprehensively on strategies needed to achieve these objectives. It is up to the membership to make good use of this opportunity and maintain a continuous dialogue with FIDIC in order to acquire adequate advise from FIDIC, which will help the member associations to upgrade their organizations to meet the aims and objectives of FIDIC.

(This note has been compiled by the Editor having perused the FIDIC Report – Engineering our Future – 2004. We extend our thanks to FIDIC for producing the document.

All members, who wish to study this report in greater detail, are requested to contact the Hony. Secretary, ACESL.)

TCDPAP NEWS

TCDPAP ANNUAL CONFERENCE 2005

The Annual Conference 2005 of the TCDPAP (Technical Consultancy Development Programme for Asia and the Pacific) will be held in Colombo, Sri Lanka and will be hosted by the ACESL, with the TCDPAP Secretariat sharing the responsibility for organizing and generating funds for the conference. The topic for the conference is “***Challenges of Engineering Consultancy in the Asia Pacific Region***”.

This conference will be held from 28th to 30th November 2005. It is planned to hold the conference in Taj Samudra Hotel in Colombo. As this is the biggest event ever to be organized by the ACESL, the Council therefore expects all member firms to contribute generously to enable the ACESL to raise the required funds for the event. Council expects all the individual members also to actively participate in organizing this event and attend the conference to make this event a great success.

It is hoped this event will also provide an opportunity for the local consultants to network with other firms in the region for mutual benefit and further development of the consulting industry in the region. This should pave the way to become more competitive vis-à-vis the consultancy firms outside the region.

FOR WHAT WE ARE RESPONSIBLE

Colin Spence, Director of the FIDIC member association in South Africa, spells out the responsibilities of the consulting engineer on construction projects

There seems to be some lack of understanding, on the part of clients, contractors and even some consulting engineers, of the true function and real responsibility of consulting engineers on construction projects. The client often expects his professional adviser to carry responsibilities which are not within his brief, nor indeed within his powers, and the contractor appears to want the consulting

engineer to act as some kind of guarantor of the contractor's adequate performance of his contract.

It is necessary in giving consideration to this problem to understand certain fundamental facts on which all responsibilities must ultimately depend.

In carrying out of engineering works using the normal arrangement of client, consulting engineer and contractor, there are three parties involved but only two contracts viz:

One contract is between the client (the employer) and the consulting engineer (the engineer) by which the employer agrees to use the services of the engineer to report on, design and administer the construction of the works which he desires to have built: for these services the employer undertakes to pay the engineer a professional fee and, except in so far as provision is made to resort to arbitration, the employer agrees to abide by the engineer's decision on engineering matters.

The other contract is between the employer and the contractor, whereby the contractor undertakes to carry out the construction of the works on the conditions laid down and to the design, drawings and specification's of the engineer: for which services the employer undertakes to pay the contractor the contract price in such a manner and at such times as are specified in the contract document: both parties to this contract agree to abide by the decisions of the engineer, except in so far as provision is made to resort to mediation or arbitration. There is no contract between the engineer and the contractor and this most important fact must be fully appreciated by the three parties.

Two functions of the engineer

The engineer exercises two distinctly different functions. Under the first contract he is the agent of the employer, employed to use his skill and knowledge to do what the employer himself cannot (for whatever reason) do, namely to report on, design and administer the construction of the works. In so doing the engineer has a duty to use his talents, skill and experience to produce a final product on paper which will meet the wishes of the employer but it is the contractor who is responsible for seeing that the project is built according to the plans. The engineer's function is not to instruct the employer what he should want but to advise him of the engineering implications and

consequences of meeting his stated requirements: it is the employer's function to make up his own mind once he has received the advice and recommendations of the engineer.

In terms of the second contract between the employer and the contractor the engineer has to act as an adjudicator. The limitations of his powers in this respect are defined by the terms of the second contract and the engineer's decisions may or may not be final according to whether this contract does or does not contain provisions to go to arbitration about any matters in dispute. Often the engineer's decisions in respect of materials and workmanship are final, but in the standard general conditions of contract applicable to most types of work "any dispute or difference of any kind whatsoever" may be referred to arbitration.

It is essential that the two separate functions of the engineer should not be confused. Whilst it is the duty of the engineer to advise the employer about what has to be done to construct a works which will satisfy the employer's requirements and to draw up the contract documents, specification and plans to provide for this, once he has done that he must in all other respects act independently of both employer and contractor. He must "hold the scale" fairly between them and act by way of his professional skill in accordance with the ethics and general practices of his profession. The independence of the engineer is an essential ingredient in the process and must be fully appreciated by all parties not the least the engineer himself.

Administration of the contract

The engineer's duties during the post-design stage are generally laid down in his agreement with the employer. These include:

- ▣ Drawing up tender documents, inviting tenders, analysing the tenders received and recommending on their acceptance, report on revised estimates of final cost in the light of tenders received, planning orders for the works on behalf of the employer (but the construction is signed by the employer and the contractor).
- ▣ Advising the employer on the appointment of such site supervisory staff as may be necessary to provide daily inspection and control of the works while in progress.
- ▣ Checking that the contractor's proposals for the permanent works conform with the design requirements.
- ▣ Issuing instructions, drawings and variation orders, co-ordinating and generally inspecting

the works at such intervals as he may deem necessary.

- ▣ Issuing certificates for payment to the contractor at regular intervals and agreeing the final quantities.
- ▣ Deciding on disputes or differences which may arise between the employer and the contractor prior to these going to mediation or arbitration if no agreement can be reached.
- ▣ Advising the employer on the necessity for special tests of material and plant and arranging for these to be carried out.
- ▣ Keeping records and providing the employer with record drawings and manuals of operation on completion.

Inspection not supervision

It is most important to note that the engineer's duties in respect of inspection of the works do not include detailed day-to-day supervision: they are essentially limited to such selective sampling procedures as the engineer, in his sole discretion or by prior arrangement with the employer, considers necessary to enable him to ascertain whether the contractor is carrying out the work in general conformity with the design concept of the project.

It must be clearly understood and appreciated by the employer that only work which has been seen during examination of representative samples by the engineer can be said to have been appraised, and comments upon the balance of the work are assumptions only, based on extrapolation by the engineer of such assessments as he has been able to make.

The proper performance of the contract is not the engineer's responsibility nor that of his site representative nor that of the site supervisory staff, and the engineer's contract administration and inspection services are not carried out for the contractor's benefit.

The contractor alone is responsible for the proper construction of the project and for the accuracy and quality control of his work, in terms of the contract between himself and the employer. In determining liability for any failure to build the works in accordance with the documents, specifications and drawings this is the one fundamental fact that takes precedence over all others.

Colin Spence, M. Eng.

KNOWLEDGE MANAGEMENT

Dr.Chandana Perera, Department of Management of Technology, University of Moratuwa, delivered a very interesting lecture on “Knowledge Management – A New Discipline for Engineers and Managers” in the presence of a very appreciative audience.

Some of the pertinent aspects of the lecture are given below :

- What is Knowledge Management (KM) ?
KM is the process of capturing and making use of an organization’s knowledge assets anywhere in the business.
- Why the Interest in Km?
KM enhances the company’s efficiency in the midst of vast competition between companies, which are all hi-tech in the current context. Due to the importance of KM, it has now become the concern of senior executives.
- What benefits can companies expect from KM?
An effective KM programme should help a company to introduce measures which significantly improve the running of a company by fostering innovation, by encouraging the free flow of ideas, improving customer service, by streamlining response time and many more aspects.
- What constitutes Intellectual or Knowledge based Assets?
In general intellectual and knowledge based assets fall into one of two categories : explicit or tacit. As a general rule of thumb “Explicit Knowledge” consists of anything that can be documented, archived and codified, often with the help of IT. The more difficult “Tacit Knowledge” pertains to the know how contained in the people’s head. Identifying tacit knowledge in the first place is a major hurdle for most organizations.
- What is Knowledge Infrastructure ?
Knowledge Infrastructure can be mainly classified into : Technology Infrastructure and Human Infrastructure. The success of the investment in knowledge infrastructure will be judged by it’s ability to identify, locate,

distribute and archive the required knowledge in an efficient, timely and cost effective manner.

- Is KM, Technology Based?
KM is not a technology based concept. It is therefore necessary not to be duped by software vendors touting their all inclusive KM solutions.
A KM Programme should not be divorced from a business goal. Without a solid business goal, KM is a futile exercise.

The speaker further elaborated on the role of engineers and managers in KM. In his concluding remarks he stressed that proper training is very important for providing the awareness among the people and developing the required skills for the success of a KM oriented organization.

FOOD FOR THOUGHT

Chinese used rice pudding as cement

By. Richard Spencer in Beijing

Children forced over the years to eat rice pudding will not be surprised to learn that it was used in part to hold together China’s historic fortifications.

The discovery by archaeologists may even prove the story passed down the centuries that sticky rice was used in building the Great Wall.

The archeologists’ conclusions are based on analysis of mortar from the walls of the ancient capital, Xi’an, home to the terracotta warriors.

Xi’an and the Great Wall were built on the orders of Qinshihuangdi, the first emperor of a unified China in the 3rd century BC.

The city walls, which still completely surround the city, date in their current form from the Ming dynasty in the 14th century.

Plasterwork removed during renovation was taken away for analysis after it proved particularly tough. Tests gave the same results as a study of what the Chinese call sticky rice porridge, normally eaten for breakfast.

Qin Jianming, of the Xi'an cultural relics preservation and restoration centre, told the state media that infra-red analyses also showed that the mortar and the rice had the same molecular structure. That led his team to conclude that they were one and the same material.

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A large building site was being leveled by a fleet of heavy machinery; under supervision by a Consulting Engineer (CE). A trade union leader (TUL) happened to visit this site.

TUL : "a hundred of my men could clear this area with spades."

CE : "why not a thousand of them with teaspoons".

The ACESL was wanted by ACE, Bangladesh to send a delegate for a Regional Seminar to be held in Dhaka. One of our senior consultant (also a Council member) agreed to represent ACESL at his own expense. All documentation was done and submitted to the Bangladesh High Commission in Colombo for issue of visa.

Lo and Behold – Visa Refused

So much for SAARC !!!

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