President’s Corner

Dear Members,

As I pen these words, I realize that three months of the 2017/18 session is now complete. Months of November and December saw the Annual General Meetings of all Provincial Chapters of IESL, and I was happy to participate in the AGM’s of Southern, Eastern, Sabaragamuwa, Wayamba and Kandurata Chapters as the President of IESL. I do apologize for not being able to participate in the Uva, Rajarata and Vadakkhin chapters, and will make it a point to visit the Chapters during my tenure as President.

I also attended the Qatar Chapter AGM which took place on Friday 26th January 2018. It is very heartening to note the enthusiasm of our members in the Provincial and Overseas Chapters in organizing these events to a very high standard, and making sure to include dissemination of knowledge by inviting high caliber engineers and educators in their regions to address these gatherings of engineers, in addition to the formality of the AGM’s, cultural shows and fellowship. The time, effort and money that goes into organizing these events can only be imagined, as I can see the attention to detail and striving for perfection in the final product – the events themselves, all of which ran so smoothly. I applaud all those who were involved in the organization of these events.

We also had the Meeting of the Provincial Chapters at the Head Quarters on the 6th of January, which was attended by the new chairpersons and executive committee members of the Provincial Chapters and District Centers, where the Council members met the Chapter Officials for exchange of ideas and reporting back on the Chapter activities. The value of such exchange of experiences among our members cannot be underestimated. While there are many new Construction Projects taking place in the Western Province, particularly in Colombo, the main focus of engineering works that provides water for food production, transport for goods and people, power generation and distribution to satisfy the demand for

Contd. on page 5....

Women Engineers Day - 2018

The Women Engineer’s Day will be held with the Annual General Meeting of the Women Engineers’ Forum (WEF) of the IESL on Friday, 16th March 2018 at the Wimalasurendra Auditorium of the IESL. Ms. Sri Widowati, Country Director, Asian Development Bank will grace the occasion as the Chief Guest. AGM will be from 03.30 pm to 06.00 pm followed by a cocktail till 09.00 pm at Members Lounge with attractive events.

All of you Women Engineers are invited. Thank you.
112th Annual Sessions
The Institution of Engineers, Sri Lanka

Call for Papers

Technical papers are invited under the following categories:

- Engineering theory/research (academic) oriented technical papers,
- Technical papers based on Engineering practice/design /projects/ techniques.

The paper should be of value and interest to Engineers and aimed at making a contribution to the advancement of the Profession of Engineering. It must be based on review of past practice, information of current interest, or probing into new fields of engineering activity. It should be a presentation of thought provoking study contributing to planning, analysis, design, construction, fabrication, production, management or maintenance of Engineering works.

In this context, practical papers are strongly encouraged. Wherever possible, theoretical papers should include a section on practical application or additional research areas to be pursued for effective technology transfer.

Submission of Papers:

Intention of submitting a paper should be conveyed to the IESL with an abstract of the proposed paper. The abstract, not exceeding 300 words in English, together with details of the author(s) can be submitted in electronic format at the URL https://easychair.org/conferences/?conf=iesl2018.

Schedule of Key Dates

- Last date for receipt of abstracts: 01st to 15th April 2018
- Notification of acceptance: 15th June 2018
- Last date for submission of full paper: 17th & 18th October 2018
- Proposed dates for Technical Paper presentation at the Annual Sessions: 15th March 2018

Best Paper Award

Best paper based on the marks given by referees and judges at the presentation, will be entitled to the prestigious Prof. E.O.E. Pereira Award.

Mailing Address

All correspondence besides submissions in electronic format through URL https://easychair.org/conferences/?conf=iesl2018 should be addressed to:

Eng. (Prof.) Jagath Manatunge
Editor, Technical Papers for Annual Sessions,
The Institution of Engineers, Sri Lanka,
120/15, Wijerama Mawatha,
Colombo 7.

For more information visit website www.iesl.lk
(check Announcements)

SAFETY IN BUILDINGS –
by Dr Ananda Ranasighe

It is not an easy picture to see when bodies are lying under debris of a crumbled building. This has happened in many countries, including Sri Lanka due to collapsing of buildings. Therefore the builders have to be extremely careful when constructing a building to see that the structure is safe in every aspect.

First thing that an Engineer would like to ensure is that the foundations are strong enough to support a building. A Structural Engineer would carefully evaluate loads acting on each and every column and see what is the worst possible load combination that could have the maximum load on the column. Without doing these calculations, he cannot evaluate the type of foundation that has to be provided in a building. When I say type of foundation, there are different types of foundations, provided by Structural Engineers to support a building. The type of foundation depends on the ground conditions and also the load acting on a column as discussed above.

I would recommend that if a building is more than a single storied building, soil investigation is extremely necessary. Sometimes even in single storied buildings, one cannot ignore an investigation of soil if the ground conditions are believed to be extremely poor. In some of the areas in and around Colombo, there is soil which cannot withstand any load because such soil consists of decomposed vegetation. This soil is identified as peat soil. The Engineers would decide what type of foundation that has to be provided in a building. Therefore if you advise that soil investigations is a waste of money, it is a serious mistake on the part of the consultant of the building. It is also important that when an owner intends to construct a building, he should make up his mind for what purpose the building is constructed. The importance of this is that the load acting on the foundations depends on the usage of the building, for e.g. if you are constructing a library or a bookshop, the weight of books are much heavier than the usual loading. Therefore when calculating the loading, the Engineer takes into account the intended use of the structure and thereby foundation sizes will be decided based on the usage. Therefore the owners shall not change the usage of the building without obtaining advice from a Structural Engineer.

Collapsing of buildings is more severe in the other South Asian countries than in Sri Lanka. The famous collapse of Rana Plaza in Bangladesh caused at least 1129 workers dead.

Contd. on page 11...
A circular was thus issued for procedural and implementation guidelines for the establishment of PMU’s to line ministries and provincial councils by the Management Services Department (MSD) which came under the Ministry of Finance. As time went by the original year 2000 Management Service Circular MSD 10 was replaced by Management Service Circular No. 33 and subsequently in year 2016 by MSD 2016/01.

The latest Management Service Circular came into effect in March 2016 which, among other features, specifies and stresses the number of years of experience required for important cadre positions and also links the Salary Scales to number of years of experience as well as Project values as shown in the tables below. Perhaps included as a knee jerk reaction to avoid political meddling in recruitment, the measures are proving to be a management quagmire to Project Directors who are tasked with actual implementation of projects. The policy change effectively shuts down the gate for employment of junior engineers and Junior Technical Officers, as it has specified minimum requirements of five years’ experience. Experience has shown the difficulty of recruiting important staff with several years’ experience and services of very capable junior engineers and junior diplomats have been hitherto used for filling the gaps in most engineering projects which are very crucial. There is no significant relationship between project value and the salary & qualifications of Engineers & Engineering Assistants whereas the qualification criteria in MSD Circular 2016/01 are completely based on the project cost. Considering the nature of project and complexity of project, the Project Director and project entity should be allowed to decide on required staff and their qualifications. Furthermore, the policy change leads to inconsistencies in salary scales among projects of different values making it difficult to retain staff in public projects as the Table below shows.

An engineer recruited for a project of a lower value would be always on the lookout for openings in the higher value projects as they are offering higher salaries for the same number of years’ experience. Thus, medium and long-term projects could be susceptible to high employee turnover rates.

The fact that the effects of such issues arising out of the Year 2016 March MSD Circular have started to appear only now is understandable since the repercussions are beginning to feel increasingly with staff turnovers.

On the other hand, the policy change would result in no opportunities for raw graduates and diplomates being absorbed, into development projects of our very own country. It is depriving fresh graduates and diplomates passing out of our universities and higher education institutions, of vital exposure to the management quagmire to Project Directors which is especially so in the public sector’s project value. Thus, medium and long-term projects could be susceptible to high employee turnover rates.

That solutions have to be found at the early stages considering the nature of these issues to aggravate with time and turn into a gridlock to management of projects is obvious. Plan, Do, Check, Act (PDCA) is necessary and now it is urgently needed to review the circular again with actual implementers. It is especially so since the government is laying the foundation to put the country in the high per capita income bracket by year 2025 and flow of foreign private investments through projects are much dependent on. IESL Policy Forum highlighted this urgency. Forum members suggested more conducive amendments to the circular and it was decided to meet the government officials including relevant subject Ministers.

Government agencies have awarded various contracts to international contractors at costs of multibillion rupees. In the absence of proper management, consequences are delays of projects, additional costs for variations; social unrest, social impacts, environmental issues, quality issues and finally failure to deliver intended benefits in a timely manner for achieving economic development objectives of these high value projects.

These salient points emerged from a recently held discussion of the IESL Policy Forum with project directors who are members of the institution. The principal forum is to discuss Infrastructure Policies and Industrial Policies of the Government in connection with Economic Development of Sri Lanka. The Institution of Engineers, Sri Lanka (IESL) is the apex professional body for engineers in Sri Lanka.
By December our climate turns cold and it is the end of every vacation. It turns to a little lazy vacation period for the people who have a family and more relaxation. They begin to move away from their regular lifestyle and pay more attention to seasonal activities.

The members of CESC, while celebrating this festival period, are not ready to switch off their responsibilities to their Institution. Our services, arrangements and activities are being carried out as per the schedule by our members while enjoying the season.

Our Committee of Public Lectures, Seminars and Workshops organized last month in public workshops titled “PORTICITY DEVELOPMENT PROJECT AND ITS IMPACT” which was held on the 2nd of December and delivered by Eng. Dr. G. P. Karunarathne. In this lecture Dr. Karunarathne discussed the impacts of above project with details of research. He described in good detail, the effects of the possible rising sea level on the ground water level in suburban areas and its implications infrastructure, structural foundations etc. Journalists from several national newspapers were also brisk to write about these newly found impacts based on this lecture.

CESC then arranged a technical session on the topic “DEVELOPMENT OF THE EFFICIENCY OF FRP SYSTEMS IN STRENGTHENING CARCAS, BRIDGES AND BUILDINGS” with Dr. Riadh Al-Mahaidi. It helped both our practicing engineers and members of the public think about new technologies beyond the traditional methods of construction.

Again SCPLSW arranged another important workshop in December. It was titled “DESIGN AND CONSTRUCTION ASPECTS OF UMAOYA MULTIPURPOSE DEVELOPMENT PROJECT” which was held on December 12th at the IESL seminar room. Participation at this workshop was very high, possibly because it is an issue of National concern. Here, we were presented key information about design and construction of above project. Especially regarding the ground water leakage into the tunnel and its further consequences, research was done in the above project. It was held in the UMA OYA project from its inception. Our Engineers are now armed with the necessary information to give their own professional opinion on the impacts and opinions of this project.

Meanwhile CESC members planned the field trip to visit an ancient city to study our Engineering heritage. The trip was planned to be held on JETHAWANA STHUPA in Anuradhapura, to study its structural behavior and the construction methodology behind it. In addition, plans are underway to visit Sinhagiri in order to study its ancient irrigation system. We hope these field trips will be useful to our civil engineers for green constructions in future. Additionally, field trips to visit LOTUS TOWER and ALTAIR PROJECT have been proposed in order to study the modern technologies behind them.

This year our annual get together will be held on 9th December. It will be held at MeeMure, a self-sufficient, serene and naturally colorful village in Kandalama district. This time our SCAG team are planning to organize ourget together at a camp site with a camp fire as well. Therefore we invite all civil engineers to join us, and encourage our students to come along as well.

Another important event is the Building Clinic. Our SCBC committee have planned to hold THE BUILDING CLINIC this year. It will be arranged with some differences this year, aimed at gathering higher number of participants from the general public. They are looking at different methods of gaining publicity. Providing engineering knowledge and solutions to people via attractive teaching methods. The event will likely include seminars, short documentaries, models of common problems in houses etc.

Our research for this year is centered around cement and concrete, Dr. Eng. Thushara Priyadarshane is very keen about the topic and has given his fullest cooperation to carry out the research. All the lab facilities will be provided within our national universities and in partnership the cost will be covered by CESC. All the financial factors and supervision will be done by RDSC. Members who are to carry out the research will be offered a valuable chance to visit cement factories in India. Finally we hope to submit our research papers to the Annual Sessions of IESL in 2018. This will be a useful program for our members to gain sound knowledge on research procedures. Therefore we request all members to confirm your participation as early as possible to commence the research.

CPD programs are very useful to improve our careers. The CPD committee has proposed to introduce important areas to study for civil engineers in future. Especially they have been studying the following CPDs.

- Fundamentals of water quality, water safety
- Management and Dispute Resolution of construction contracts
- Principals of waste water collection, treatment D i s p o s a l / R e u s e, storage and Guidance on Design of wastewater treatment systems
- Procurement management

However, our committee members trying to make improvements and to correct omissions of CPDs for future.

CESC always look towards improving people’s lives in our society whenever possible. This year our project for the society will be held at Kudimbagala. It has a Aranya Senasangaly at kudimbagala near by Kumana national sanctuary. The monks, villagers and visitors coming to this village giving have been facing with severe problems relating to clean water access. Our members have planned to implement a clean water project as our community project for this year. Definitely it will be a useful project to assist people in this area and invite our members to take hands with organizing committee to serve the society.

To accomplish the above activities, the CESC has filled the remaining positions of subcommittees by the time of meeting held on 18-12-2017 and CESC members have been working hard with a dynamic mindset. We also want to thank our fraternity to be vigilant about our activities and try their best to collaborate with us to serve society and our professional body.

Prepared By
Publication & Editorial Subcommittee
CESC-IESL
BSESC Monthly Progress Report – December 2017

BSESC Inaugural Meeting

The inaugural meeting of the Building Services Engineering Sectional Committee (BSESC) was held on the 28th November 2017 (Tuesday) from 5.30 pm onward at IESL in which fifty six (56) members participated.

The new chairman of the BSESC, Eng. Samantha Gunawardana warmly welcomed all the members presented for the inauguration meeting. Further he congratulated the BSESC membership for winning the Gold Award for the Best Sectional Committee of IESL at the Techno Awards 2017 ceremony.

Tackling BSESC to Provincial Chapters

1. BSESC to Provincial Chapters
   - Samantha Gunawardana
   - Chamini Jayarankike
   - Kirthi Sri Senanayake

2. BSESC Publications / SLEN
   - D.U. Amarasinghe
   - Suran Fernando

3. Corporate Social Responsibility
   - Dinesh Subasinghe
   - Chamini Jayarankike
   - Janaka Perera

4. Social Events
   - Lakmal Isuru
   - Dharmshuka Kodithuwakkul

Table 1: BSESC Tasks & their task leaders

Prepared by,
Eng. Samantha Gunawardana (Chairman, BSESC) and
Eng. Suran Fernando (Secretary, BSESC)

Flashback on BSESC 2016/2017 Session

Then the former secretary, Eng. Suran Fernando has made a brief presentation on the activities carried out by the BSESC during the session 2016/2017 (see Annex-01). He explained about the achievements of the BSESC team and elaborated on the tasks that BSESC made progresses during the previous session (CPDs, Public Lectures, Field Visits, Techno 2017, Engineering heritage exploration etc.).

BSESC Road Map 2017/2018

The new chairman has done presentation on the road map for this session 2017/2018. (See Annex-02). Thus, the chairman requested the full support of the entire membership consists of fellows, members, associate members & affiliate members to achieve the mentioned milestones during the session.

BSESC Committee 2017/2018

The committee for members for the 2017/18 session were appointed by the house. Eng. Suran Fernando was elected as the secretary.

This committee comprises of both senior and junior members, and working in the building services sector.

Appointment of BSESC Task Leaders

The first meeting of the BSESC 2017/2018 main committee was held on 5th Dec. 2017 (Tuesday) at IESL in which the task leaders for each BSESC activity were appointed.

Every committee member was given a task leadership of one or more activities. Some tasks were continued from the last session while some other tasks were introduced during the current session.

IESL NEWS

5

IESL NEWS

BSESC ROAD MAP – 2018 / 19

- Building Code TOR
- SCA 8
- Heritage Exploration
- Plumbing Guide
- Plumber Licensing and Electrician Licensing
- CPD courses (ELV, Plumbing, Fire, BMS & Energy Management)
- CSR
- Training Organisations
- Techno
- Taking BSC to Provincial Chapters
- Charter Criteria

Cont'd from page 1...

President's Corner

energy, telecommunication for connectivity among the people, healthcare and education for the urban and rural population, all has to happen in all the Provinces. The Provincial Chapters provide the platform for meeting and discussing issues that spring up during the performing of our official duties in an informal manner. We must make use of this opportunity provided to our optimum advantage. The concept of ‘Planning Circles’ initiated a few years ago is one such example, where the engineers in one region involved from the different organizations can discuss the implications of upcoming projects from their own perspectives, and try to find compromise solutions that are technically, environmentally and socially sound. This kind of discussions may not be feasible in the office environments. Resource sharing among different competing uses is another area where the networking among all engineers will provide a common ground where informal discussions, trying to understand the issues involved, would lead to the common good.

Our engineers in the provinces and overseas have such a wealth of knowledge and experiences that needs to be shared liberally among the membership. That is why it is very important that news, technical articles, and other articles are very important to come from the Provinces and Overseas Chapters. Please do keep those articles flowing in, to make the SLEN interesting to the members. Particularly, the junior engineers and engineering students would benefit immensely by reading about the Projects that you are involved in. They need not be large scale Projects – innovative technologies that are palm sized, that can make a positive impact on the people’s lifestyle, health or education, sometimes may be much more important than a luxury apartment building or hotel that appears to be a huge deal! We will only know if you talk or write about it – so please communicate your ideas! SLEN is there for that purpose.

Table 1: BSESC Tasks & their task leaders

1. Public Lectures/ Workshops
   - W.A.D.N. Indika
   - Dharmshuka
   - Kodithuwakkal

2. CPD Courses
   - Koojana Weerasinghe
   - Lakmal Isuru

3. Techno 2018
   - Thushara Pathirana
   - Dharmshuka
   - Subasinghe
   - Tony Fernando

4. Engineering Heritage Exploration
   - Priyan Bellana

5. SCA/8 Revision
   - Samantha Gunawardana
   - Sanath Abeykoon

6. Knowledge Sharing Sessions
   - Dilan Thilanga
   - Wasantha Vithanage

7. Field Visits / Get-together
   - Danesh Subasinghe
   - Pradeep Dankanda

8. Plumbing Guide Book
   - Prasanna Naran
goda
   - K Dilitha Wannasiri

9. Plumbers’ Licensing
   - Prasanna Naran
goda
   - Lakmal Isuru

10. Charter Criteria Review
    - Samantha Gunawardana
    - Sanath Abeykoon
    - Chula de Silva

11. Training Place Recognition
    - Samantha Gunawardana
    - Pradeep Dankanda

12. Building Code - TOR
    - Samantha Gunawardana
    - Bandula
    - Karunarathne
    - T. Uthyayakumar

13. BSESC to Provincial Chapters
    - Samantha Gunawardana
    - Chamini Jayarankike
    - Kirthi Sri Senanayake

14. BSESC Publications / SLEN
    - D.U. Amarasinghe
    - Suran Fernando

15. Corporate Social Responsibility
    - Dinesh Subasinghe
    - Chamini Jayarankike
    - Janaka Perera

16. Social Events
    - Lakmal Isuru
    - Dharmshuka Kodithuwakkal

Prepared by,
Eng. Samantha Gunawardana (Chairman, BSESC) and
Eng. Suran Fernando (Secretary, BSESC)
The 9th International Conference on Sustainable Built Environment 2018

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We invite researchers to submit abstracts to be considered for presentation at the following themes.

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Sustainable Water Management
Recycling and Waste Management
Sustainable Manufacturing etc...

Important Dates

- May 15th 2018 : Abstract Submission
- June 31st 2018 : Abstract Notification
- July 15th 2018 : Manuscript Submission
- August 30th 2018 : Notification of Manuscript
- October 15th 2018 : Submission of Camera Ready Version

Contact Us

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ranjith@fulbrightmail.org

Ms. Amali Palangasinghe
Conference Secretary
icsbe2018@gmail.com

Technical Co Sponsors by

For Abstract submission deadline and for further details, please log in to www.icsbe.org
“Present Status and the Future of the Sri Lankan Power System”

(Article presented by EE&T Sectional Committee based on public lecture held on 16th January 2018 by Eng. Buddhika Samarasekara, Chief Engineer (Generation Planning) and Eng. Dr. H.M Wijekoon Banda, Chief Engineer (Transmission Planning) of Ceylon Electricity Board)

The presentation consisted of the present status of the power system, results of Long Term Generation Expansion Plan (LTGEP) including proposed capacity additions & energy mix for the future, commitments to COP 21 & other environmental aspects, major projects in the pipeline, cost impact of different generation technologies and future transmission network development. Further the resource persons highlighted the increased focus on renewable energy power plant development including large scale solar and wind power parks. The presentation was concluded by identifying the financial impact of delays in project implementation and with the recommendation of commissioning the major power plants in the pipeline and transmission network developments identified for the period up to 2025 without further delay.

Present Status

Speakers described the present status of power generation and capacity shown as in Figure 1. It was highlighted that, 50% of the existing system capacity is comprised with renewable energy technologies and energy contribution is varied due to the dependency on the climatic conditions.

Promotion of Renewable Energy

Sri Lanka has already harnessed its major hydro potential to its maximum level. Other Renewable Energy (ORE) development in Sri Lanka is very successful compared to other countries in the region. Figure 2 illustrates the historical contribution of Renewable energy sources for the total annual electricity generation. When considering past 20 years, ORE cumulative capacity addition has been approximately 3,400MW. An aggressive renewable energy development is envisioned for next 20 years by maintaining optimum energy contribution from ORE power plants and it is planned to implement total cumulative capacity approximately 555MW.

When considering the major CEB power plants as major thermal based power plants. Major hydro development planned is around 240MW whereas Other Renewable Energy (ORE) including Wind, Solar, Mini Hydro and Biomass planned contribution is 2,800MW. Further 600MW Pumped Storage Power Plant is also planned to be implemented. According to draft LTGEP 2018-2037, next 20 years capacity additions will consist of 2,700MW Coal and 1,500MW LNG Combined Cycle Power Plants as major thermal based power plants. Major hydro development planned is around 240MW whereas Other Renewable Energy (ORE) including Wind, Solar, Mini Hydro and Biomass planned contribution is 2,800MW. Further 600MW Pumped Storage Power Plant is also planned to be implemented. According to most recent discussions and directions given by Oversight Committee on Energy to facilitate the government to government LNG combined cycle power plants, the base case of draft LTGEP 2018-2017 was revised. The energy mixes of the two cases are given in Figure 4.

When considering the major Coal power capacity additions they are proposed to be high efficient & eco-friendly Coal power plants. Higher efficiency reduces CO2 emissions and other proposed emission control technologies reduce SOx and NOx emissions to limits that comply with Sri Lankan and International standards. Further, adoption of indoor Coal storage facilities, closed conveyors for mitigating the Coal dust problems are also proposed.

Cost Impacts

Average cost at selling point for the years 2015, 2016 and 2017 were 15.06Rs/kWh, 18.09Rs/kWh and 21.32 Rs/kWh respectively. Accordingly, it can be seen that the average unit generation cost of electricity has been increasing over the past years. Speakers highlighted that the units generated from hydro and coal based sources would drive the CEB’s average generation cost down.

Further it was stated that the average selling price in 2017 was 17.54Rs/kWh.

Table 1 illustrates the present status of Other Renewable Energy as at 31st December 2017. Table 1: Present status of ORE

<table>
<thead>
<tr>
<th>Other Renewable Energy Technology</th>
<th>No of Projects</th>
<th>Capacity (MW)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Mini Hydro Power</td>
<td>182</td>
<td>364.04</td>
</tr>
<tr>
<td>2. Biomass - Agricultural &amp; Industrial Waste</td>
<td>10</td>
<td>13.08</td>
</tr>
<tr>
<td>3. Biomass - Dendro Power</td>
<td>6</td>
<td>13.02</td>
</tr>
<tr>
<td>4. Solar Power - Parks</td>
<td>8</td>
<td>51.36</td>
</tr>
<tr>
<td>5. Wind Power</td>
<td>15</td>
<td>128.45</td>
</tr>
<tr>
<td>Total</td>
<td>213</td>
<td>560</td>
</tr>
<tr>
<td>6. Solar rooftop as at January 2018</td>
<td></td>
<td>119</td>
</tr>
</tbody>
</table>

Contd. on page 11....
Free Trade Agreements - Bane or Boon?

by Eng. (Dr.) Chandana Gamage
Chairman – IT & Computer Engineering Sectional - Committee, IESL

In the current climate of arguments against Free Trade Agreements (FTAs) that border on histronics, it is useful to look back into the history of development of free trade ideas. The first coherent treatise on the subject was the book authored by Scottish economist and philosopher Adam Smith in 1776 titled “An Inquiry into the Nature and Causes of the Wealth of Nations” (widely known by its short title of “The Wealth of Nations”).

Adam Smith’s work was in response to the Mercantilism prevalent at that time (see in vogue since 1500s. Colonialism, from which Sri Lanka suffered greatly [the Portuguese arrived in Sri Lanka in 1505 when their merchant fleets were rowing the seven seas to plunder wealth of other nations], was fueled by Mercantilism that posited wealth to be fixed and finite and the only way to enrich was to hoard gold and impose tariffs on products originating from abroad.

In short, the theory of Mercantilism is that for a country to prosper, it should sell its goods and services to other countries while buying nothing from them. It is easy for one to see in the absence of deadly coercion (as practiced by the Portuguese, Dutch and the British colonialists in Sri Lanka) how retaliatory tariffs and other trade barriers would quickly escalate choking off global trade.

Adam Smith’s argument was that if a foreign country is able to produce and supply a commodity or product cheaper than what it would cost to produce it ourselves, then it is more sensible (and profitable) to buy that commodity or product from the foreign country with some portion of the commodity or product which we have produced where we have an advantage.

This idea on comparative advantage as a driver for international trade and the free market economic theories associated with it were developed by the British businessman, economist and parliamentarian David Ricardo. His publication in 1817 titled “On the Principles of Political Economy and Taxation” expounded the idea that free trade between countries can be mutually beneficial even when one country holds an unassailable advantage over other countries in all areas of production.

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Web: www.granttechholdings.com
The FTA Portal in site [2] provides comprehensive details about all already signed and implemented FTAs [3] listing 12 Bilateral FTAs and 9 Regional FTAs.

While the Sri Lanka-Singapore FTA is still listed under FTAs undergoing negotiations, it is safe to assume that full details of the FTA and how Singaporean companies could benefit from it will soon be available in this portal. After all, the slogan of Singapore Government is: “Integrity - Service - Excellence”.

The site also provides the texts of already concluded/signed but not yet implemented FTAs (at present, there are two such FTAs with the European Union and the Trans Pacific Partnership). This Singaporean government operated site does not provide any details for FTAs that are undergoing negotiations with 10 such FTAs listed (5 bilateral and 5 regional). This list includes Sri Lanka - Singapore FTA as well. One positive aspect of the FTA with Singapore could be that even if Sri Lanka does not build a portal as the Singaporeans have done, Sri Lankan businesses and entrepreneurs stand to benefit immensely when Singapore government update their portal and provide a detailed insight to the opportunities unlocked by the FTA and the process for benefitting from it.

It is useful look at FTA activity of Singapore and shown below is a summary of 2 key economic indicators (GDP and Per Capita GDP) for countries that have signed and implemented Bilateral FTAs with Singapore.

*Data sourced from the site [4], which get primary data from United Nations COMTRaDE database on international trade and valid for 2016.

It is interesting to see from above summary of data that even for a country such as Singapore, which is considered an Asian economic tiger and a country that consistently ranks at the top of many global economic indicators (such as ease of doing business, most liveable country, strong intellectual property rights enforcement, comprehensive trade dispute arbitration, stable fiscal and taxation policies, etc), has only managed to sign 12 FTAs over a period of 18 years. This is in an era where bilateral FTAs are considered essential for economic prosperity and sustained economic growth. Also, it should be kept in mind that the Singapore government is renowned for its efficiency and does not have to deal with an effective political opposition.

The trade balances for international trade in services with Singapore (positive values are in favour of Singapore) computed from the data provided by the Singapore Department of Statistics [5] is shown below for a set of countries with which Singapore has FTAs. The highlighted cell indicates the year in which the FTA was signed with the particular country and it should be noted that it could take several years before an FTA becomes active consequent its signing.

As shown in the table, China has benefited from the FTA by stabilizing its trade deficit in services which was in an upward trajectory prior to the signing of FTA. Both India and South Korea have converted the deficits that were earlier unfavourable to those countries to favourable trade balances since the signing of FTAs. Countries that already had trade balances favourable to them prior to the signing of FTAs, US and Panama, have continued to post major gains in their favour.

In contrast, Japan, New Zealand and Australia have continued on an upward trajectory of trade balances that are unfavourable to them on international trade in services. It is essential for Sri Lanka to study the nuances in these different behaviours of service trade between Singapore and other countries with which it has FTAs and develop strategies to improve the economic performance of Sri Lanka.

The graph below shows the deficit in trade in merchandise between Singapore and Sri Lanka for which data is available at the Singapore Department of Statistics (positive values are favourable to Singapore and are in SGD millions). As can be seen from the graph, Sri Lanka need to develop both new products and marketing strategies to deal with the rapidly increasing deficit in this area of trade.

<table>
<thead>
<tr>
<th>Year</th>
<th>China</th>
<th>India</th>
<th>Japan</th>
<th>South Korea</th>
<th>United States</th>
<th>Australia</th>
<th>New Zealand</th>
<th>Panama</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>390.6</td>
<td>342.3</td>
<td>1,143.3</td>
<td>454.6</td>
<td>-5,835.0</td>
<td>757.0</td>
<td>142.4</td>
<td>48.8</td>
</tr>
<tr>
<td>2001</td>
<td>495.8</td>
<td>148.5</td>
<td>1,236.8</td>
<td>316.9</td>
<td>-5,819.2</td>
<td>570.7</td>
<td>131.5</td>
<td>36.8</td>
</tr>
<tr>
<td>2002</td>
<td>413.4</td>
<td>252.0</td>
<td>968.7</td>
<td>603.8</td>
<td>-6,029.3</td>
<td>706.4</td>
<td>223.2</td>
<td>66.9</td>
</tr>
<tr>
<td>2003</td>
<td>562.6</td>
<td>442.4</td>
<td>782.4</td>
<td>543.4</td>
<td>-6,881.1</td>
<td>1,000.4</td>
<td>226.2</td>
<td>28.7</td>
</tr>
<tr>
<td>2004</td>
<td>553.3</td>
<td>709.5</td>
<td>663.5</td>
<td>725.8</td>
<td>-6,973.4</td>
<td>1,339.6</td>
<td>312.7</td>
<td>-33.3</td>
</tr>
<tr>
<td>2005</td>
<td>665.0</td>
<td>841.0</td>
<td>1,151.5</td>
<td>533.3</td>
<td>-6,380.0</td>
<td>1,995.5</td>
<td>377.0</td>
<td>-55.4</td>
</tr>
<tr>
<td>2006</td>
<td>929.4</td>
<td>991.8</td>
<td>546.6</td>
<td>634.6</td>
<td>-3,620.7</td>
<td>2,269.5</td>
<td>436.7</td>
<td>-37.1</td>
</tr>
<tr>
<td>2007</td>
<td>1,690.5</td>
<td>1,384.0</td>
<td>1,946.1</td>
<td>1,045.6</td>
<td>-6,130.7</td>
<td>2,297.9</td>
<td>541.2</td>
<td>39.9</td>
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<tr>
<td>2008</td>
<td>1,894.4</td>
<td>1,220.5</td>
<td>1,444.3</td>
<td>890.8</td>
<td>-5,827.7</td>
<td>3,797.3</td>
<td>576.1</td>
<td>-166.2</td>
</tr>
<tr>
<td>2009</td>
<td>1,184.8</td>
<td>1,443.1</td>
<td>474.4</td>
<td>746.7</td>
<td>-9,570.9</td>
<td>4,657.5</td>
<td>523.5</td>
<td>-176.6</td>
</tr>
<tr>
<td>2010</td>
<td>2,467.1</td>
<td>1,334.1</td>
<td>1,114.5</td>
<td>675.1</td>
<td>-8,760.9</td>
<td>5,745.4</td>
<td>520.3</td>
<td>-196.9</td>
</tr>
<tr>
<td>2011</td>
<td>451.9</td>
<td>1,251.8</td>
<td>813.3</td>
<td>410.6</td>
<td>-4,184.1</td>
<td>6,207.3</td>
<td>484.7</td>
<td>-220.1</td>
</tr>
<tr>
<td>2012</td>
<td>352.0</td>
<td>1,303.9</td>
<td>1,514.2</td>
<td>236.6</td>
<td>-10,073.9</td>
<td>6,637.2</td>
<td>521.4</td>
<td>-162.8</td>
</tr>
<tr>
<td>2013</td>
<td>1,114.6</td>
<td>1,349.0</td>
<td>2,762.5</td>
<td>170.1</td>
<td>-9,566.5</td>
<td>6,882.4</td>
<td>732.5</td>
<td>-596.5</td>
</tr>
<tr>
<td>2014</td>
<td>657.7</td>
<td>646.4</td>
<td>4,413.6</td>
<td>137.7</td>
<td>-13,590.9</td>
<td>8,525.6</td>
<td>955.5</td>
<td>-881.3</td>
</tr>
<tr>
<td>2015</td>
<td>773.7</td>
<td>744.9</td>
<td>6,913.7</td>
<td>-44.0</td>
<td>-22,050.0</td>
<td>8,950.0</td>
<td>1,089.3</td>
<td>-787.8</td>
</tr>
<tr>
<td>2016</td>
<td>1,092.3</td>
<td>-424.6</td>
<td>7,897.4</td>
<td>-805.6</td>
<td>-20,346.2</td>
<td>10,832.6</td>
<td>1,527.8</td>
<td>-1,170.0</td>
</tr>
</tbody>
</table>

These should be lessons for us as we seek to develop the economy of our country and provide employment for a workforce that is growing (in the short-term) amidst a population that is aging (in the long-term).

GREEN BUILDING COUNCIL OF SRI LANKA
‘Committed Leadership in Sustainability’

20th Batch of Associate Professional Training Program of Green Building Council of Sri Lanka (GBCSL), was completed successfully.

The Associate Professional Training Course (GREEN™ AP) is designed to train property industry professionals to perform as Green Professionals. The APs who practice as green professionals for more than one year will be qualified to apply to become Accredited Green Professionals (GREEN™ AccP) of the GBCSL.

Participants of the batch 20 which was conducted on 26, 27 January and 2, 3 February 2018.

Next Associate Professional Training Course
Dates: 23, 24, 30, 31 March 2018
Time: 8.30 A.M. to 4.30 P.M.
Venue: Hector Kohobekadawu Agrarian Research and Training Institute, 714, Wijerama Mawatha, Colombo 07

Green Walk with Tree Planting Campaign
All the Associate and Accredited Professionals of GBCSL and all the nature lovers are invited to make their promises and commitment to love and protect nature by join hands for the GREEN WALK, on 5th June 2018. The Green Walk is organized as the first activity of the Alumnae of GBCSL. At the end of the Green Walk, a tree planting campaign will be commenced with the target of planting ONE MILLION trees island wide with the collaboration of various government and non-government organizations.

GBCSL formed an Alumnae to face future industrial challenges collectively
Green Building Council of Sri Lanka, GBCSL has trained over 1000 building industry professionals as Green Building Consultants. These professionals have been enlisted by the GBCSL as ‘Associate Professionals of the Green Building Council of Sri Lanka’.

Hence, with the intention of forming a united and result oriented green professional force to meet future challenges in the industry and achieve common objectives, GBCSL Alumnae was formed in January 2018. First Executive Committee was nominated by GBCSL to attend preliminary activities of formation of Alumnae.

‘Committed Leadership in Sustainability’
120/10, Vidya Mandiraya, Vidya Mawatha, Colombo 07. +94 112679130, office@sriTankagbc.org, www.srltankagbc.org
Contd. from page 7...

Sri Lanka has adopted many policy measures for climate change adaptation and mitigation although emission levels are much insignificant compared to the global level.

Following commitments are undertaken by Sri Lanka, relative to mitigation of GHG emissions from energy sector.

1. Nationally Determined Contributions (NDCs)

Nationally Determined Contributions submitted to UNFCC by Sri Lankan National Designated Authority (NDA), Ministry of Mahaweli Development and Environment states that Sri Lanka expects to reduce 20% of emission in energy sector by 2030 against the Business-As-Usual scenario as unconditionally 4% and conditionally 16%.

These energy sector NDCs has been prepared based on LTGEP 2015-2034 and they are also incorporated in the draft LTGEP 2018-2037 Revised Basic Plan.

2. Amendment of National Energy Policy

3. Contribution from Renewable Energy

4. Clean Development Mechanism

5. Carbon Partnership Facility

6. Fuel Quality Road Map

7. Loss Reduction

8. Demand Side Management & Energy Conservation

Actual Cost of Delay in Implementation of Power Plants

PUCSL in their report 'Financial impact of delay in implementation of power plants' dated 11/10/2017 has indicated that the actual cost of delay in power plant implementation is more than LKR 50 billion. In contrast the researchers highlighted that the actual cost of delays based on CEB observations is approximately LKR 2 billion which could be avoided with the timely implementation of the LNG combined cycle power plant at Kerawalapitita.

Further the cost of delay of Uma Oya hydro power plant will be LKR 4.6 billion which is a responsibility of all stakeholders related to development of Uma Oya Project.

Conclusion

Speakers concluded the presentation with the fact that Sri Lankan electricity generation is currently based on a mix of imported fossil fuels and local indigenous resources and Long Term Generation Expansion Plan further proposes to enhance energy security of the electricity sector by diversifying energy mix, diversifying fuel supply, increasing the utilization of Indigenous renewable energy sources (Wind, Solar, Mini Hydro, Biogas, etc.) and initiate utilization of local natural gas.

Present transmission network is comprised with 132kV, 220kV lines and 132/33 kV, 220/132/33 kV, 132/11 kV, 220/132kV Grid Sub Stations. Speakers highlighted the constraints of present transmission network and emphasized the planned mitigatory actions by CEB including 400kV network development. Further it was stated that, the planned and ongoing transmission projects will enhance the network performance for future ORE development.

The speakers further emphasized that power sector development projects involving unique social & environmental characteristics such as public consultations, feasibility studies, bird migration studies and othersocial & environmental issues which need more than 1-2 years for clearance. Therefore, the responsibility should be shared among all relevant Governmental Institutions and encouraged to accelerate the development of the power project to minimize the impact on economy.

Finally it was also concluded that the cost of delay must be kept to a minimum to allow the increase of GDP per capita which will enable Sri Lanka to compete equally with the world economy.

SAFETY IN .... Contd. from page 2...

In the year 2005 the Spectum Garments Building collapsed killing over 60 workers. The following year at least another 60 died in a fire at KTS Textile Mill in Chittagong and in November 2012, 112 people were killed at a fire at Tazarene Fashion Factory outside Dhaka.

Apart from the safety of building, one also has to be mindful about the functionality of the building. Presently people construct buildings for general use and convert them to various other specific uses. If buildings are used to stack material, it could cause an additional loading about 3-4 times more than what it was designed for. Under these circumstances, the conversion of the usage of a building shall not be done in an ad-hoc manner.

Presently in the City of Colombo, many high rise buildings are being constructed and it is not uncommon to have buildings having more than 30-40 storeys. These buildings may have been designed by qualified Structural Engineers and also it may even fulfill most of the functional requirements described by the authorities. However fire is going to be a major hazard which is going to affect the safety of buildings. Even in countries like UK there had been disasters due to fire in condominiums.

The recent fire which engulfed a 24 storeyed Grenfell Tower in West London has caused loss of lives and a severe damage to property. The survivors of the Grenfell Tower should be much thankful to fire fighters, since there was no way of escaping from the building in an emergency of this nature. The fire was reported at the 24-storey block in North Kensington at mid night, leading to 40 fire engines and more than 200 fire-fighters tackling the blaze. It took until the following day to get it under control, with the fire affecting most floors of the building and destroying 151 homes, both in the tower and surrounding areas. The London Mayor has told that the fire fighters could reach only up to the 12th floor. Therefore there should be a way of handling fires in high rise buildings.

Several of the victims of the Grenfell Tower fire have now been identified Police say that while 80 people are currently presumed to have died, the final toll will not be known. It is reported that there was only one fire exit staircase and no sprinklers or other fire extinguishing equipment functioning in the building. Presently various authorities take action to clear the state land by providing alternative accommodation for dwellers in multi-storied buildings. Therefore, the writer believes that priority has to be given to safety aspects.

Very rarely I have seen a fire drill in a multi-storied building and therefore even if there are sufficient fire escapes, people may not know what to do in a case of emergency.

Presently the Institution of Engineers, Sri Lanka publishes a directory of Engineers, who are qualified to design multi-storied buildings. A copy of this directory could be purchased from the Institution of Engineers, Wijerama Mawatha and also a list of Engineers who could practice as Structural Engineers is listed in the IESL web. Depending on the competency and experience, the Structural Engineers are categorized into different classes. Any Chartered Civil Engineer registered in the Institution of Engineers could design buildings up to 4 storeys. Their names are separately listed in the directory. Similarly the second category of Engineers who could design buildings up to 8 storeys and the third category is Engineers those who could design buildings up to 12 storeys.

Therefore depending on the height of your building, one should be mindful to select a suitable Engineer from the directory published by the Institution of Engineers. For buildings more than 12 storeys and up to 20 storeys, there are 2 other categories and also Engineers those who are qualified to design more than 20 storeys are also listed in a separate category. Therefore when you are constructing a building or a house, the advice that we could give is to select a suitable Structural Engineer as it is the most important factor. Do not be misled by advertisements that show the collapsing of buildings due to inferior steel. Poor steel or concrete may be one reason for a failure, but there are so many reasons for collapsing of a building.

The writer recommends that it is always preferable to obtain services of a qualified Structural Engineer when you are constructing a house or a building.
The 114th birth anniversary of Eng. (Prof.) Robert Haisington Paul was commemorated by the IESL on Friday, 9th February, 2018 at the Wimalasurendra Auditorium of the institution from 1715 hours.

Prof. R.H. Paul is known as the Father of Electrical Engineering Education in Sri Lanka, for his vital role in the history of Development of Engineering Education in the country. The late Professor had been the President of the IESL in 1968, IAEA Expert on Technical Cooperation and well known academic, Eng. (Dr.) Mahendra Prinath Dias, delivered the memorial lecture on “Global Warming: Are Advanced Nuclear Reactors Possible Solution” to mark the event.

The lighting of the traditional oil lamp and garlanding of the portrait of the late Professor by the President of the IESL, Eng. (Prof.) Mrs. Niranjanie Ratnayake, preceded the delivery of the memorial oration. IESL Council members, Past Presidents and relatives of the late professor participated in the ceremony. Those belonging to the profession from the industry and academia attended.

President of IESL, Eng. (Prof.) Mrs. Niranjanie Ratnayake welcomed the invitees to the party at which the blessings were performed by Parish Priest, Reverend Father Chandana. Christmas Carols were sung by CML- MTD Choir accompanied by Eng. Dharshana Perera.

Congratulations for the successful organization of the party goes to the organizing committee comprised of Eng. (Prof.) Mrs. Niranjanie Ratnayake – President of IESL / Chairperson, Eng. K.P.I.U. Dhamapala, Eng. (Mrs.) Shyama Gunawardena, Eng. Kosala Abeyesirawardene, Eng. (Mrs.) Lakmini Nonis, Eng. Mangala Silva and IESL Staff; Mr. Malith Kannangara – Manager Operations, Sales & Marketing who was backed by Avril, Dayakanthi, Chamara, Augustus and Anuradha.

Appreciations also go to corporate sponsors M/s CML-MTD, M/s YUNICA DESIGN AND ENGINEERS (Pvt.) LTD, M/s ASIA POWER (Pvt.) LTD, M/s DIESEL & MOTOR ENGINEERING PLC and M/s SYNERGO CONSULTANTS (Pvt.) LTD. for their generosity. Special mention is due to the staff of M/s CML-MTD who donated in their individual capacities.

Santa kept his appointment with IESL members and their families at the fun & joy filled IESL Christmas Party 2017 held on Saturday, 16th December, 2017. Held in pleasant settings of the Members’ Lounge of the IESL the more than 200 participants were treated to variety of fun and games the climax of which, especially for children, was the arrival of Santa Claus and the distribution of presents.