NEWSLETTER

INSTITUTION OF INCORPORATED ENGINEERS, SRI LANLA - UAE BRANCH

Business Centre 1, M Floor, The Meydan Hotel, Nad Al Sheba, PO Box 66691, Dubai, UAE. Email: iiesluae@gmail.com Web: www.iiesluae.org. Established on 18th July 2006.

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Institution of Incorporated Engineers, Sri Lanka-UAE Branch

17th Annual General Meeting and Annual Get-together

On the 28th of October 2023, a significant event took place at the Radisson Blu Hotel in Dubai Deira Creek, UAE. The gathering marked the eagerly anticipated 17th Annual General Meeting (AGM) and Annual Get-together of the Institution of Incorporated Engineers, Sri Lanka-UAE Branch. This occasion was especially noteworthy as it represented the first annual get-together since 2019.

The event commenced at 5 pm. The initial segment of the event featured the 1st Session: the Annual General Meeting. Eng. Dr. Bhadranie Thoradeniya, the President of IIESL, travelled from Sri Lanka to grace the occasion, emphasizing the significance of this gathering. Eng. Priyanga De Mel was re-elected as the chairman of the branch, a testament to his dedication and leadership within the IIESL-UAE branch. Notably, Eng. Mrs. Chaturika Gunawardane made history by being elected as the Secretary, becoming the first woman representative to join the Executive Committee, marking a significant milestone in the institution's progress towards inclusivity and diversity.

The 2nd session of the event was the Annual Get-together, graced by esteemed guests. H.E. Udaya Indraratna, the Ambassador of Sri Lanka to the UAE, honoured the event as the Chief Guest. Adding to the dignified presence was the Guest of Honour, Hon. Alexi Gunasekara, the Consul General of Sri Lanka to Dubai and the Northern Emirates, who brought an aura of importance to the gathering.

The atmosphere was filled with joy and entertainment as Ms. Virginia Samaranayake and the musical group "Black Rose" captivated the audience with their performances, making the evening delightful and memorable.

This Annual General Meeting and Get-Together not only marked a significant milestone in the history of the Institution of Incorporated Engineers, Sri Lanka-UAE Branch but also served as a platform for networking and fostering camaraderie among engineers and professionals from diverse backgrounds. It highlighted the dedication of its members toward the advancement of engineering and the promotion of a more inclusive and vibrant community within the industry.

The event concluded on a high note, imprinting a lasting impression of camaraderie, achievement, and the spirit of unity among attendees. being the first gathering after a hiatus, it set the tone for future endeavours, promising continued success and collaboration within the engineering community across the UAE.


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INSTITUTION OF INCORPORATED ENGINEERS, SRI LANKA - UAE BRANCH
17th ANNUAL SESSIONS &


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17th ANNUAL SESSIONS &
GET-TOGETHER 2023

Institution of Incorporated Engineers, Sri Lanka – UAE Branch

C/O Consulate General of Sri Lanka

P O Box 51528, Dubai, United Arab Emirates

Email: iiesluae@gmail.com **Contact No: 0503863066**

Web: www.iiesluae.org

INSTITUTION OF INCORPORATED ENGINEERS, SRI LANKA - UAE BRANCH

Email: iiesluae@gmail.com Web: http://www.iiesluae.org

Established on 18th July 2006

Contact No. 0503863066

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Facilitating the Adaptation of Sustainable Public Transport for Low Carbon Development

By: Eng. Deepal Rajaguru

Abstract

The transport sector is one of the main consumers of Fossil Fuel hence, a major contributor to the phenomena of the `Carbon footprint'. Due to emission of burning fuel, the Global Green House gas concept is extensively discussed among the nations, and are swiftly trying their ways to find lasting solutions to the impending global disaster. With the strong growth of trucks and buses on the roads as the supply chains and passenger transport sector increases and, all these vehicles are direct dependents on the fossil fuel, the increase of 'Green House Gas' emissions had increased tenfold. Not only the grave concern of the fossil fuel dependency for the road transport vehicles, but also leads to severe impacts on social problems such as traffic congestion, poor health, noise, resources of waste which all finally contribute to the climate change.

To mitigate the impending disaster of the greenhouse gas emissions by fuel driven transport vehicles, multiple countries had turned over to electric mobility and electrification of transport sector. 'Decorbonization' of the atmosphere is the prime goal of the project.

1.0 Introduction

`Carbon footprint' has been the universal buzz word for many years now. Every year high level world leaders of top industrial nations summits take place in the world to discuss the effects of carbon emission to the atmosphere (Ref).

The worldwide transport sector has been of considerable concern of carbon emission gas release to the atmosphere through the old public transport buses fueled by diesel fuel. Among the countries which have introduced E-bus projects are Mexico City, Kathmandu-Nepal, and Petra- Jordan and Rwanda. The experiences of such initiatives highlight the concerns of those projects as sustainable management of battery use/waste. Institutional arrangements, appropriate policy mix and capacity building needs of stakeholders across the e-mobility value chain. Further, funding mechanisms to accelerate private sector investments and partnerships is identified as an important issue in these projects (Ref.).

In Sri Lanka, about a couple of decades ago, it was stipulated as a law, that all road transport vehicles need to be certified for acceptable limits of gas emissions at testing centers before annual vehicle revenue license would be issued (Ref). All the gas emissions in the form of dangerous carbon monoxide gas through diesel and petrol driven engine exhaust add thousands of tons of poisonous gas to the atmosphere. The phenomenon is experienced in everyday life while driving behind those public transport and other public goods transport vehicles.

Presently Electrical Buses (E-Bus) plying on our Sri Lankan roads has been in the agenda of the road transport authorities for some time. After years of research studies, the Ministry of Transport and highways of Sri Lanka had embarked on a very remarkable project to introduce E-Bus concept on Sri Lankan roads where the `Global Green Gas Institution' (GGGI) head quartered in Seoul, South Korea is the consultants. Recently, the GGGI had carried out a feasibility study collaboratively with the engineers of Ministry of Transport & Highways (MoT & H) for sustainable public transport systems in reducing the carbon footprint threatening our atmosphere. This paper presents some important facts regarding the status of the project as presented at a knowledge sharing session for stakeholders by the Ministry of Transport and Highways (MoT & H, 2022).

2.0 Sri Lanka's Predicament

The Sri Lankan Transport sector emits an alarming 48% of carbon to the atmosphere (MOT, 2023) and Sri Lanka is ranked in the 23rd place in Global Environment Index. Obviously, this rating is not a good sign at all in the context of breathing air quality. Specially, the air quality situation deteriorating in Kandy and Kurunagala town limits is a deep concern of the authorities.

In Consequence, introducing the e-bus concept gradually to replace the old fossil fuel driven buses has come to the light of the Transport Ministry, perhaps within the next decade or so to run the public transport vehicles to electrical powered vehicles using electric battery power. Currently, various perspectives of way forward are studied on key areas of e-mobility towards implementation of sustainable public transport in Sri Lanka.

The use of renewable energy to convert the public transport from fossil fuel to battery powered system is another concern (De Alwis, E-Mobility, Sept 2022 MOT & H)

3.0 Current study - Summary

Route	Length (km)	Load factor	Busses /16 h
187/1	19.5	0.86	274
183	15.5	0.70	256
143/1	15.3	0.91	101
170	14.6	0.91	124
138/2	22.7	0.84	266
120/2	19.7	1.12	260
100 & 101	20.9	0.75	420

Table 1: Road stretches selected for studies

The per-feasibility report produced on is based on extensive research by collecting data from seven key bus routes (Table 1 and Figure 1) of Colombo suburb operation. (Eileen Hur, Sept 2022).

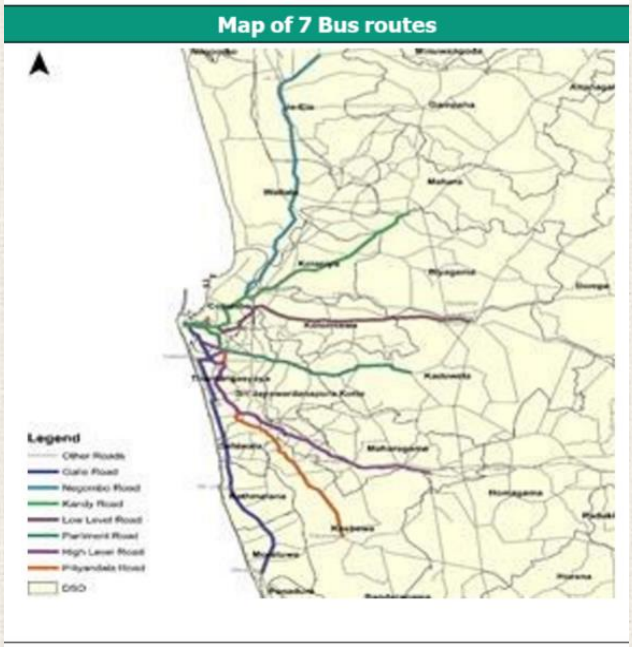

Figure 1 – Map of 7 Bus Routes (Source: Hur, 2022)

Route	Stretch (From Pettah)	Road
187/1	Ja Ela	Negambo
183	Kadawatha	Kandy
143/1	Kaduwela	Low Level
170	Malabe	Parliament corridor
138/2	Homagama	Highlevel
120/2	Piliyandala	Piliyandala corridor
100 & 101	Moratuwa	Galle

Table 2: Summary of data

Table 2 presents the summary of data collected from the above 7 routes, facilitating adoption of e- buses and ITS (Intelligent Transport Systems) in Sri Lankan Road transport system.

The buses duration during the peak times, the distances between the two cities, load factors and the number of buses plying on these roads during a standard 16 hour period had been the key factors in analyzing the data. The `corridor speeds' of the fueled buses had also been measured on inbound/Outbound during the week days on Peak (AM), Off peak (PM) & PM peak (when passengers head home) in km/h.

By studying the statistics, it was learned since 1985 to 2012, the public transport users had resorted to alternate ways of reaching to the Colombo city using their private vehicles or have shifted to the Government railway to avoid the traffic congestion but in turn had been wasting a lot of time to enter the city limits.

On the other hand, it also seemed to have created more traffic congestion on roads for big buses to maneuver their way through the private vehicles, thus further the slowing down of speeds and more fuel burnt in the process, releasing more Carbon monoxide gas to the atmosphere.

2.1 Financial Impacts

If electric buses are gradually introduced along these seven routes there will be a huge gain on low carbon emission to the Air and creating financial opportunities. The financial benefits in comparison if electric driven passenger transport buses are introduced to replace the fuel driven buses are reflected in the comparison below (Table 3).

Table 3: Financial and Economic Calculations

	Diesel	BEB
CAPEX bus (Including one time battery replacement	13,483,285	24,621,290
CAPEX bus infrastructure	0	2,374,747
Incremental total CAPEX		13,512,752
OPEX savings p.a.		2,242,522
Economic savings p.a.		255,570
Financial NPV		6,043,533
FIRR		17%
EIRR		20%
MAC per tCO2, non-discounted (WTW)		-69
MAC per tCO2, discounted (WTW)		-262

Note Abbreviations used; CAPEX- Capital Expenditure, OPEX- Operational Expenditure, WTW- Well to wheels, MAC-Marginal Abatement Cost

Economic NPV of incremental economic benefits from emissions reduction is calculated as USD 114.574 per bus and Economic Internal rate of Return (EIRR) is 20%, which is higher than WACC 8.8%, which is the hurdle rate. This is for the same distances operated by the current fleet of fossil fueled buses.

2.2 Traveler Information Service

Another sound advantage for the passengers by operating the e-buses is the `Traveler Information Services'. Passengers waiting to get on board will be able to know when their bus is due at the halt by display screens erected at certain prominent stops. This kind of information can be coupled to e-buses using their computer systems and getting the feed into their on – board computers. The existing traffic condition ahead is fed to the computers by centralized traffic data computer signals.

Such TIS services maybe introduced step by step – 1st phase (TMC, BIS/BMS, ATMS) and 2nd phase (ATMS, Illegal Parking Enforcement System (IPES), Parking Management System (PMS)

2.3 Battery Life Span

The life span of the electric bus battery is an important concern. It is usually believed that the continuous operation between cities will affect the battery and will result in a faster declined life span. The experience of the other countries such as Mexico City, Kathmandu-Nepal, and Petra- Jordan and Rwanda, which have introduced E-bus projects highlight the concerns of sustainable management of battery use/waste.

This was the same myth when Sri Lanka was introduced the `hybrid' vehicle's and 'fully electric vehicles' about 15-20 years ago which resulted the buyers apprehensive of the high cost in case the electric batteries may have to be replaced after their limited life sustainable life span. Over the years that fear had been gradually diminished from the minds of Sri Lankan public as many low-cost battery cell replacement/extension of life procedures were developed by the companies with industrial tacit knowledge. A research study by Kumarage (Sept 2002) has found that the battery life can be extended of these Lithium/Ion batteries. Therefore, the fear on electric batteries could be minimized of private bus operators, who may invest on e-buses.

3.0 Conclusion

With the prospect of Sri Lanka in the near future would move to the e-bus concept; it is a good opportunity to include `sustainable energy aspects in transport sector and other key industrial areas'; as a module of subject in National Diploma courses for the students to be aware of the impending danger of carbon foot print and come up with novel innovative ideas to present to the Universities thus helping the inspiring projects of e-buses.

Acknowledgement

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Eng. Deepal Rajaguru *I.Eng, FIIESL, FCPM, MBA-USJ, GCGI (UK), AMRAeS.*
Operations Manager Engineering at FitsAir (Pvt) Ltd, Colombo International Airport, Ratmalana.

HVAC and Sustainability in UAE

By: Eng. A. S. M. Faizal

As temperatures continue to rise in the UAE, it's crucial to consider sustainable solutions for cooling and heating where we explore the crucial role that heating, ventilation, and air conditioning (HVAC) plays in creating a more sustainable future for the region. As Dubai rapidly grows into one of the world's most vibrant cities, it is essential to ensure that its infrastructure is designed with sustainability in mind. In this article, we will dive deeper into how HVAC technology can support sustainable development goals while also reducing energy consumption and carbon emissions.

What is the sustainability?

Sustainability is a term that refers to meeting the needs of today's society without compromising the ability of future generations to meet their own needs. In other words, it's about balancing economic, social, and environmental factors in a way that ensures long-term viability for our planet. Utilizing resources sensibly while simultaneously advancing equality and justice are key components of sustainable development. As per (Antonio, n.d.), the Below Venn diagram explain the relation of the sustainable pillars.

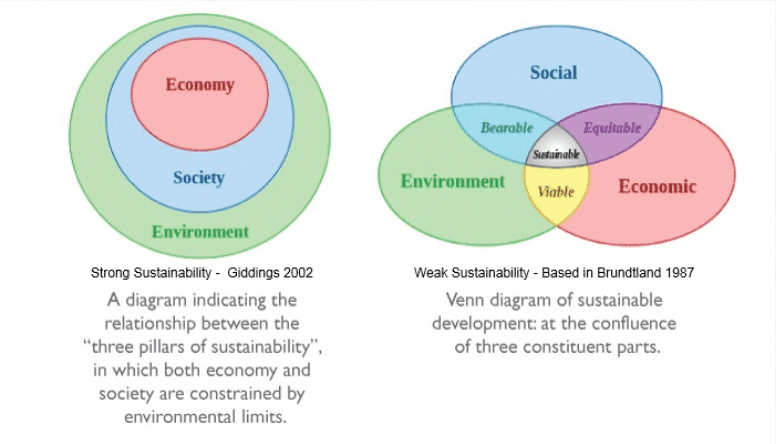

Fig. 1. Sustainability (Antonio, n.d.)

As we continue to deal with urgent concerns like climate change, water shortages, biodiversity loss, and pollution, the idea of sustainability has gained popularity over the past few decades. It acknowledges that our existing production and consumption patterns cannot continue indefinitely.
A more just and habitable society for everyone demands effort at all scales, from individuals to organizations to governments, in order to achieve sustainability. This entails taking into account both the social and economic effects of our activities as well as their effects on the environment.

In short, sustainability is all about ensuring that we leave behind a healthy planet for future generations by making responsible choices today.

HVAC Industry in UAE

A building may become more effective, efficient, and sustainable by utilizing smart building technologies, which are being rapidly incorporated into the construction industry. Smart buildings may conserve resources and cut costs while improving tenant experiences by integrating systems like HVAC, lighting control, security, communication, and facilities management (Hu, 2021)

The HVAC industry in the UAE has been growing steadily over the past few years. With the increase in construction and real estate development, there has been a surge in demand for HVAC systems. The rising temperatures throughout the year have also contributed to this growth.

Many HVAC companies in Dubai and other parts of UAE are now focusing on providing sustainable solutions. They are using advanced technology to design energy-efficient systems that reduce carbon emissions while maintaining high standards of indoor air quality.

The government is also taking steps to promote sustainability in the HVAC industry through regulations and incentives. For instance, Dubai Municipality (DM) requires all new buildings to meet certain green building standards which include energy-efficient HVAC systems. Dubai Green Building Regulations and Specifications (GBRS), published in 2011 by DM and Dubai Electricity and Water Authority (DEWA), represent a significant step toward converting Dubai into a green city and launching Dubai's green economy (Neukirch, 2014). The majority of the construction restrictions are under the control of the DM. Decree No. 66, which was published in 2001 and was one of the most significant rules, was one of the first laws in the UAE to require thermal insulation (Bassam & Noha, 2019). Moreover, there are bodies like Trakees have developed regulation to energy requirement. Table 1 compares all Dubai's previous regulations in terms of building envelop values in which are used energy requirement in HVAC systems.

Organization	Issue/ year	U-value (W/m².K)									
		Roof	Wall	Floor		Glazing					
				Ground floor	Typical floor	≤40%	SC	40%-60%	SC	60%≤	SC
Legal Affairs Department	Decree 66/2003	0.44	0.57	-		3.28	0.4	2.1	0.35	2.5	0.76
Trakhees	GB-001/2008	Description Regulation									
DM	GBRS /2011 Code 501.01	0.3	0.57	0.3	-	2.1	0.4	1.9	0.32	1.9	0.25
DM	GBRS /2011 Code 805					2.1- 3.28		2.1			
DM	Circular 198- U-value calculation/2012	0.3	0.57	0.57	-						
DM	Circular 198- U-value calculation/2014	-	-	-	-	2.1	0.4	1.9	0.32	1.9	0.25
Trakhees	GB-4.0/2013	Description Regulation									
Trakhees	GB-8.0/2014	0.25	0.28	0.57	-	<30% 2.1	0.29	>30% 1.9		SC 0.24	
DM	Circular 198- GB insulation for villas 2014										
	Type 1	0.962 - 15 cm screed	1.2568 – 5 cm screed	≈ 0.4879	0.57 insulated	0.78 non insulated	2.89 non insulated	Note: Indication (≈) is for refer to DM-Excel files. Type 1: Expanded polystyrene (CIBSE) selected for the insulation layer from material list ID 105 row no. 198 while thickness is followed cavity wall system 35. Type 2: applies AAC block wall according to the material list ID99- row no.187. Type 3: cladding layer – ID 400, row no. 566.					
	Type 2			≈0.3167							
	Type 3			≈0.3482							
	Type 4			0.4700							
	Type 5			0.3800							
	Type 6			0.3723							

Table 1. Criteria for buildings' exterior in Dubai's history of sustainability (Bassam & Noha, 2019)

Moreover, many companies have started offering maintenance services that ensure optimum performance of their installed systems over time. This not only increases their lifespan but also reduces energy consumption by ensuring proper functioning.

In summary, as sustainability becomes more crucial than ever before, it's vital for businesses across all industries including HVAC to embrace eco-friendly practices not just for compliance purposes but also with an aim towards reducing environmental impact.

How the HVAC play its role in sustainability

The HVAC industry plays a crucial role in the sustainability of buildings and structures. In the UAE, where temperatures can soar high during summers, HVAC systems are an essential part of any building. However, these systems consume massive amounts of energy contributing to significant carbon emissions.

To address this issue, HVAC manufacturers are now developing more efficient and eco-friendly systems that reduce energy consumption while still providing optimal cooling or heating performance. One way they do this is by incorporating smart technology into their products so that they only operate when necessary, thereby reducing unnecessary power consumption.
Moreover, some companies have started using renewable energy sources such as solar panels to power their HVAC units while others use recycled materials for manufacturing and packaging. These initiatives not only reduce the environmental impact but also help create a positive image for these brands among consumers who value sustainable practices.

In another aspect, the heat load can be decreased by reducing other internal loads and external loads which will affect the energy consumption in large. Internal energy such as energy efficient lighting, equipment are introduced already with home smart systems. On the other hand, the building envelop is the interface between the interior and exterior of the building which act as a thermal barrier. It is necessary to manage them to reduce the heat load gain to reduce more energy consumption. It's to be commenced from the design stage, selecting the orientation of the building relates to the natural environment i.e. the Wind, sun weather pattern, landscape (Gulati, 2012). The material used for the envelop, roof, wall, glazing, Windows to be selected with best thermal conductance value (U – Value) where it helps to reduce the heat gain in the building and helps in reducing building energy and money.

In summary, the HVAC industry has come a long way in terms of sustainability with many companies taking steps towards reducing carbon footprint without compromising on performance or quality. With continuous innovations and advancements in technology, we can expect even better solutions from the industry in years to come!

What is the future of HVAC in a Sustainable Environment?

As we have seen, the HVAC industry plays a significant role in promoting sustainability in UAE. With the increasing demand for energy-efficient and eco-friendly solutions, it is evident that HVAC systems will continue to evolve to meet these needs.

"We will see larger improvements in energy efficiency over the next 15 years than we have ever seen in the history of air-conditioning – not just in peak-load improvements, but in energy efficiency throughout the year," Kent Peterson ASHRAE President told *Buildings magazine* (Samantha, n.d.).

The future of HVAC lies with advancements in technology and a focus on renewable energy sources. With smart controls and automation becoming more prevalent, buildings can be optimized for maximum efficiency while still maintaining occupant comfort. The first century of HVAC technology was dominated by mechanical advancements, but electronics are now in the spotlight. Manufacturers may now create equipment that is more compact, effective, and efficient thanks to computers (Samantha, n.d.)

Additionally, innovative cooling technologies such as geothermal systems are gaining popularity due to their low environmental impact and cost-effectiveness over time. As regulations become stricter regarding carbon emissions, HVAC manufacturers will need to adapt by providing sustainable solutions that reduce harmful pollutants without sacrificing performance. Smart Thermostats, Motion-activated air conditioning will give the end user more control on their HVAC and help them to reduce the energy even they are away from home. Sensor system helps saving money as it may work on occupancy and motion.

In summary, the future of HVAC in a sustainable environment looks bright. We can anticipate continued innovation and development towards environmentally friendly practices as the industry moves forward. By working together towards this common goal, we can create a healthier planet for ourselves and generations to come.

Eng. A. S. M. Faizal

BSc. (QS), HNDE (Mech), MIIESL, IEng

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45th AGM and Technical Sessions of the IIESL

The Institution of Incorporated Engineers, Sri Lanka held its 45th Annual General Meeting for the session 2022-2023, on 22nd July 2023. The meeting was held as a hybrid meeting on Zoom platform and physically. The physical meeting was held at the Lotus Hall at the Bandaranaike Memorial International Conference Hall, Colombo.

Hon. Dr. Susil Premajayantha, Minister of Education, as the Chief Guest and Prof. Rohan Samarajiva, Chairman of LIRNEasia as the Guest of Honour attended the ceremonial session and graced the occasion.

Outgoing President Eng. Pushpa Jinadasa delivered the welcome address followed by the election of the Council of Management for the Session 2023-2024. The Chief Returning Officer, Eng. Benedict Ulluwishewa announced the newly elected Council of Management.

The gathering paid a special tribute to the late Vidya Jyothi Prof. Dayantha Wijesekera who contributed immensely towards the progress and development of the IIESL, since its establishment.

Eng. Dr. Mrs. Bhadranie Thoradeniya was elected as the President of the IIESL for the Session 2023-2024. Dr. Thordeniya was inducted as the President of the IIESL by the outgoing President, Eng. Mrs. Pushpa Jinadasa followed by the President's address. Eng. S B G C P Sampathbandara was elected as the President-Elect for the session 2023-2024.

Certificates for the newly elected Fellows and Members of the IIESL and certificates of special recognition were awarded ceremonially followed by the address of the Chief Guest.

The IIESL Technical Sessions 2023 were held on 21st July 2023 at the CIDA auditorium, Savsiripaya, Colombo.

The Keynote address was delivered by Prof. S A Ariyadurai

and the resource persons of the session were,

- Eng. Luxman Janz
- Prof. Rangika Halwatura
- Dr. Samantha Rathnayaka


INSTITUTION OF INCORPOR
ENGINEERS, SRI LANKA
NNUAL SESSIONS


Ibbankatuwa Megalithic Tombs site - an ancient burial site
The site is believed to be belongs to the megalithic prehistoric and protohistoric periods of Sri Lanka and considered as one of the several ancient burial
This Early Iron Age
has been dated to 750 BC to 400 BC.
Proves


Source:
No Signal

IIESL Council of Management (Session 2023 - 2024)	Column1	Column2	Column3
Ser No	**Name**	**Position**	
1	Eng. Dr. Bhadranie Thoradeniya	President	
2	Eng. (Mrs.) Pushpa Jinadasa	Immediate Past President	
3	Eng. K. Ariyawansa	Past President	
4	Eng. P.A.D.R. Chandrasiri	Past President	
5	Eng. S.B.G.C.P. Sampathbandara	President Elect	
6	Eng. M.B.P. Jinadasa	Vice President	
7	Eng. N.A. Nandasena	Vice President	
8	Eng. G.D.F.U. Perera	Vice President	
9	Eng. U.A. Gunasekera	Vice President	
10	Eng. R.S. Kuruppu	Vice President	
11	Eng. U.K.S. Hettige	Secretary	
12	Eng. M.P.C. Kumara	Treasurer	
13	Eng. (Dr.) A.K. Hadunge	Editor	
14	Eng. V.H.M.S. Babalagama	Asst. Secretary	
15	Eng. K.G.I. Deshappriya	Asst. Treasurer	
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17	Eng. (Prof.) W.A. Wimalaweera	30	Eng. K.M.I.P.A. Bandara
18	Eng. (Dr.) S.J. Hettiarachchi	31	Eng. M.M.U.P. Abahayagunawardane
19	Eng. J.E.L. De Silva	32	Eng. W.D. Darshana
20	Eng. K.S.P. Nonis	33	Eng. P.C.C. Colombage
21	Eng. M.P.A. Gunawardena	34	Eng. E.G.H. Darshana
22	Eng. N.K.P.P. Waidyasekara	35	Eng. C.N. Jayasinghe
23	Eng. K.G.U.S. Jayasekara	36	Eng. D.V.G.J. Chamara
24	Eng. W.A. Kulathilake	37	Eng. P.N.U. De Silva
25	Eng. L.W.N.D. Rajaguru	38	Eng. (Dr.) Anura Walpola
26	Eng. (Mrs.) J.M. Liyanarachchi	39	Eng. E.P.R. Chaminda
27	Eng. S.S.T. Sumanasekara	40	Eng. E.B.K. Senadeera
28	Eng. K.S.G. Ariyaratna		

IIESL HEAD OFFICE
Institution of Incorporated Engineers,
Sri Lanka
No. 27/B, Udumulla Road,
Battaramulla, Sri Lanka
Tel+94112887734 Fax:+94112887737
Email : iiesl@iie.lk , editor@iie.lk
Web. www.iie.lk, iiesl@iie.lk

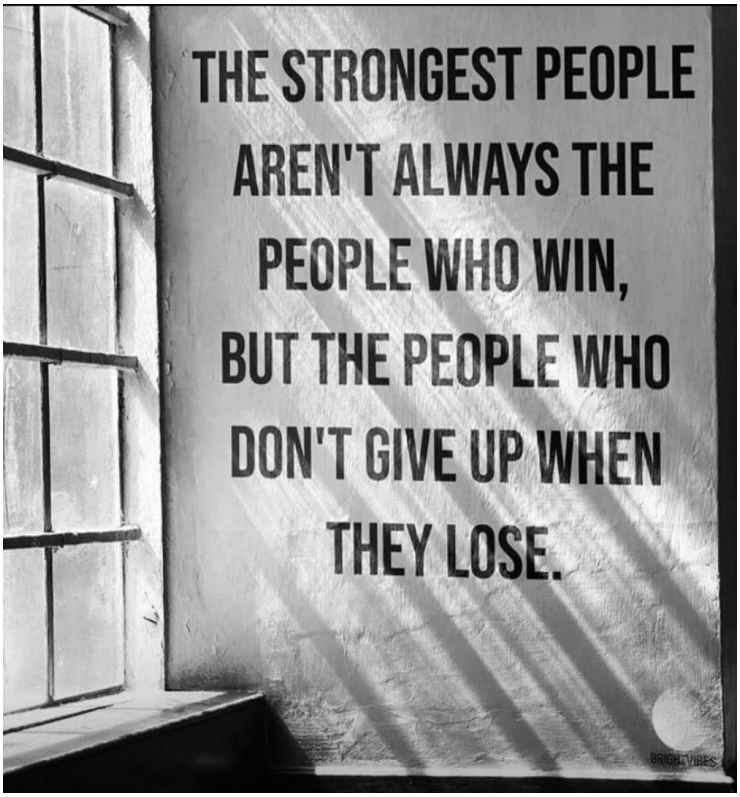
IIESL CITY OFFICE
Institution of Incorporated Engineers,
Sri Lanka
No. 490, Ocenica tower,6th Floor,
Galle Road,
Colombo, Sri Lanka
Tel :+94114736708
Fax : +94114734298
Email :inco@sltnet.lk

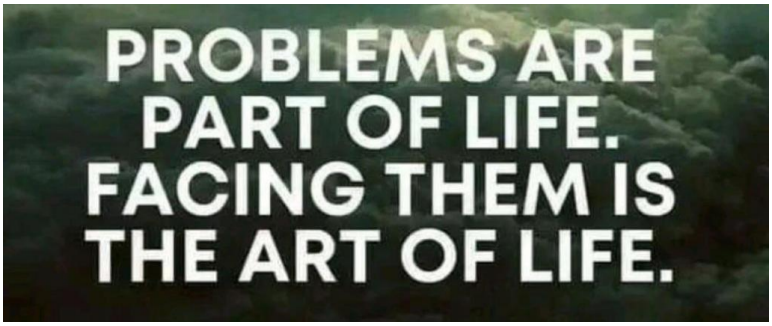
CPD on Contractual Letter Writing

IIESL-UAE Past Chairman Eng. Dhammika Gamage conducted a CPD on "Contractual Letter Writing" at the IIESL Secretariat on 26th October 2023.

The objectives and the outcome of the session were:

- Enhancing the participants knowledge on contractual letter writing
- Providing guidelines to create the writer's own contract letters and customize each version of the message for each participant.
- Guiding the participants for effective business correspondence.



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INSTITUTION OF INCORPORATED ENGINEERS, SRI LANKA
CONTRACTUAL CONFLICTS AND DISPUTE RESOLUTIONS
RESOURCE PERSON
ENG. UPALI RANATUNGA
Graduated from the Sheffield Hallam University of UK in Construction Management. Diploma in Commercial Arbitration. Corporate member of the RICS of UK. Member of the AACE International of USA. Construction Superintendent, Project Engineer and Project Manager. Administrator of the CCCC. Senior Lecturer for HND in Don Bosco Civil Engineering Institution. Fellow Member of IIESL
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Alternative Dispute Resolutions (ADR)
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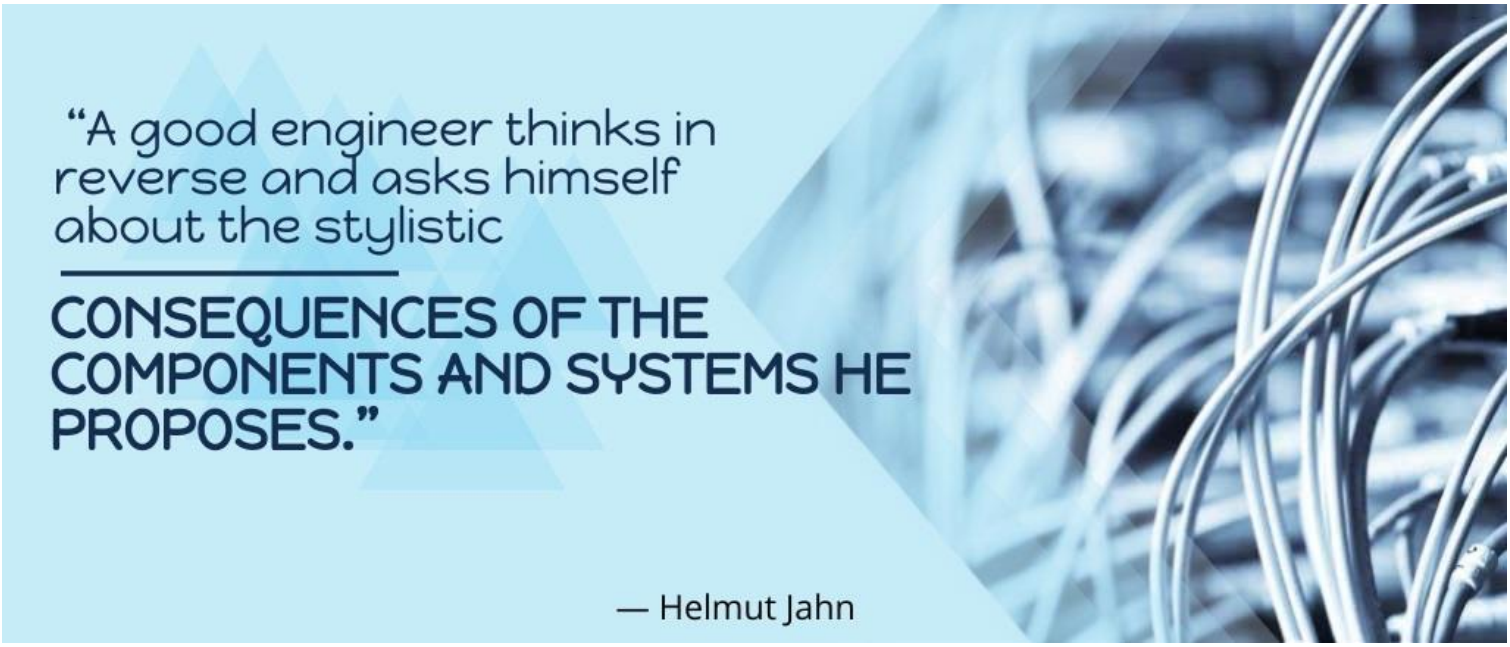
"A good engineer thinks in reverse and asks himself about the stylistic
CONSEQUENCES OF THE COMPONENTS AND SYSTEMS HE PROPOSES."
— Helmut Jahn


2024
HAPPY NEW YEAR
Wishing you a year filled with new hopes, new joys,
and new beginnings. Happy New Year!
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