

# NEWSLETTER



## INSTITUTION OF INCORPORATED ENGINEERS, SRI LANKA - UAE BRANCH

C/o Consulate General of Sri Lanka, PO Box 51528, Dubai, UAE. Email: [iiesluae@gmail.com](mailto:iiesluae@gmail.com) Web: [www.iiesluae.org](http://www.iiesluae.org) Established on 18th July 2006.

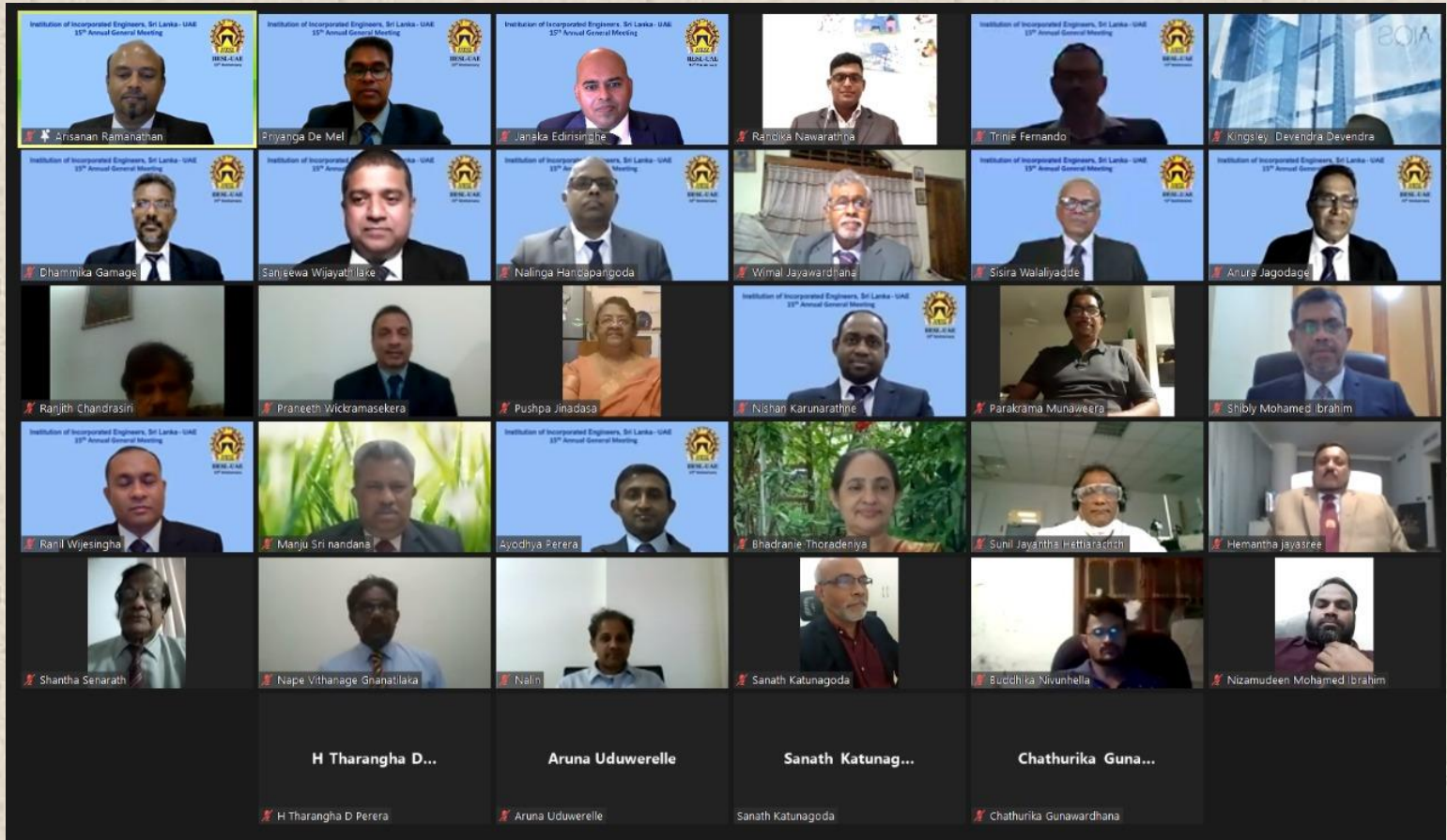
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### IIESL UAE Branch Held its 15th Annual General Meeting

The UAE Branch of the IIESL held its 15th Annual General Meeting, together with the 15<sup>th</sup> Anniversary Celebrations on 29<sup>th</sup> October 2021, on a virtual Zoom platform.



#### Publication Committee

- Eng. Sisira Walaliyadde – Past Chairman, IIESL UAE
- Eng. Priyanga De Mel – Chairman, IIESL UAE
- Eng. Nishan Karunaratne – Treasurer, IIESL UAE
- Eng. Anura Jagoda – Imd. Past Chairman, IIESL UAE



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## **IIESL UAE Branch 15<sup>th</sup> AGM**

Eng. Wimal Jayawardhana, the President, IIESL attended the meeting and graced the occasion. Eng. Pushpa Jinadasa-President Elect, Eng. W. D. Fonseka-Immediate Past President, Eng. Upali Hemachandra-Hony. Secretary, Eng. Shantha Senarath-Past President, Eng. Ranjith Chandrasiri-Past President, Eng. Dr. Bhadrane Thoradeniya and Eng. Namali Siyambalapitiya of the IIESL also attended the meeting from Sri Lanka. Besides, Eng. Sisira Walaliyadde, Founder Chairman and Eng. Jayantha Hettiarachchi, Immediate Past Chairman of the IIESL-UAE attended the meeting from Sri Lanka. Eng. Anura Jagodage, Chairman of the IIESL UAE Branch joined the meeting with all the executive committee members, Past Chairmen and the members of the IIESL UAE Branch.

Eng. Sanjeewa Wijayathilaka, Master of the Ceremony called the meeting to order.

The Chairman, IIESL UAE Branch, Eng. Anura Jagodage, delivered the welcome speech and welcomed the office bearers of the IIESL, Past Chairmen and Members of IIESL UAE Branch. He further stated that IIESL UAE Branch was formed over 15 years ago, had a lasting foundation which is quite evident as it sustained so long under many pressurized conditions. This is the most challengeable period of the recent history and the Branch is still managing to retain a sizable number of members to hold an AGM of this nature.

Eng. Ranil Wijesinghe, Secretary and Eng. Nishan Karunarathne, Treasurer presented the annual report and financial statement for year 2020-2021 respectively.

Mr. Janaka Edirisinghe presented a documentary, “15 Years of Professionalism” on the formation of the IIESL -UAE Branch and its successful journey, passing many milestones over the past 15 years. The presentation displayed the important past events, milestones and memories and took the audience into the history of the Branch.



**IIESL President Eng. Jayawardhana  
delivering President's Speech**

Eng. Wimal Jayawardhana, the President of the IIESL, delivering his speech stated that the IIESL has recently achieved many of its goals. Establishment of the ECSL, official recognition of the Incorporated Engineer by the Sri Lankan Government, recruiting system of members to IIESL are some of these targets. IIESL's future targets are to recruit more members to IIESL and get more number of members registered in the ECSL. Eng. Jayawardhana also stated that upgrading the current entry qualifications-Diploma level for IIESL membership to a three-year degree level is another target of the IIESL.

Relocation of the IIESL Headquarters, holding the Inco exhibition in May 2022 are also included in the list of targets. He also mentioned that IIESL is quite capable of achieving its targets with the knowledgeable and efficient team of Past Presidents, Senior Members and Council Members having innovative ideas, managing the activities of the IIESL. IIESL require continuing advice and support from Past Presidents, senior members, and the UAE Branch. Eng. Sisira Walaliyadde, founder Chairman of IIESL UAE Branch addressed the audience and stated that the strong foundation of the IIESL UAE Branch provides strength to the Branch despite severe obstacles that prevailed during its way forward. He thanked the Eng. Shantha Senarath and Eng. Mrs. Namalie Siyambalapitiya who extended their generous support for the formation of the first international branch of the IIESL, in the UAE, Its' Inaugural AGM, Membership drive, etc. He also thanked senior IIESL ExCom members, late Eng. J. K. Lankathilaka, Eng. Anton Peris and Eng. Dr. Bhadrane Thoradeniya and the Council Members for their generous support for the formation of the Branch and its activities to upgrade the status of the Branch to higher level.

Eng. Dhammika Gamage, Past Chairman and Returning Officer announced the new Executive Committee appointed during the AGM for the session 2021-2022. Eng. Priyanga De Mel was elected, uncontested as the Chairman for the session 2021-2022. Eng. Anura Jagodage, Immediate Past Chairman left the Excom after a great service rendered to the IIESL-UAE for three consecutive sessions. (Click here to see the new Excom elected for the Session 2021-2022)

During the discussion forum, many important matters related to the activities of the IIESL were raised and discussed in detail.



**Eng. De Mel Delivering Chairman's Speech**

Eng. Priyanga De Mel, the Chairman elected for the session 2021-2022 thanked the Past Chairman Eng, Anura Jagodage and the outgoing Committee Members for taking the Branch through the most difficult period and made all the arrangements to hold the 15th Annual General Meeting. He also thanked the Past Chairmen and the Excom members who did contribute immensely to the Branch and left the UAE and still supporting the Branch from Sri Lanka. He pledged that he, together with the current Excom will take all the initiatives to continue the Branch's activities under the prevailing situation and the limited resources available.

IIESL UAE Branch concluded its 15th Annual General Meeting on a virtual platform, successfully, keeping hopes for a successful future of the Branch

## **IIESL has Implemented On-line Professional Reviews for the Class of Member**

Potential candidates for the class of Member of the IIESL can now apply for On-line professional reviews as the IIESL has commenced on-line professional reviews with via-voce for the class of Member.

This process has long been awaited by the potential candidates, living and working in the Middle Eastern Region. Candidates from these countries faced issues in submitting necessary documents on-line for the registration and scheduling and attending PRs in Sri Lanka. IIESL-UAE greatly welcome this initiative and thank the Council and the Management of the IIESL for initiating this process.

## **6<sup>th</sup> AGM of IIESL-Qatar Branch**

IIESL-Qatar Branch has scheduled to hold its 6th AGM on 31st December 2021. As the prevailing pandemic situation prevents potential gathering of people the AGM has been scheduled to conduct on-line with the presence of the President of the IIESL.

IIESL-UAE branch convey its Congratulations to the Qatar Branch and wish for a successful 6th Year AGM. IIESL-UAE Branch has initiated the establishment of the Qatar Branch with the IIESL Members in Qatar and the Council of the IIESL.

Chairman, Eng. Upul Ranaweera said that the Qatar Branch could not hold its AGM in 2020 due to the Gulf Region's blockade of Qatar and the pandemic situation. Qatar Branch is happy to have the approval from the IIESL to conduct the 6th AGM in December 2021.



## Message from the Chairman – IIESL-UAE Branch

Dear Members,

As Chairman of the Institution of Incorporated Engineers, Sri Lanka, UAE Branch, I wish you all a Happy and Prosperous New Year. With your full support, we have gone through the first 2 months of the current session, successfully conducting 2 major events. Proceeding further we have a series of important tasks scheduled for the next few months. We will inform you regarding these events as we go on.

The present world's reliance on globalization, and dependence on latest technology gives rise to everyday challenges, and we, at the IIESL fully understand that our potential, organizations & community requirements are directly proportional to the success of our organization. Our past experiences, and track record demonstrate that we have been focusing on our members' professional development & community requirements as our primary targets.

On behalf of the entire team, I convey our sincere thanks to our esteemed past EXCOM teams, members, and our principals for their continuous support and guidance that has helped us achieve success over the years. I would also like to thank our team of highly trained engineers, and professionals who have always given their best, pushing the UAE Branch on the path of growth.

We have always strived to offer and deliver the most technologically updated educational sessions and support them with professional services. We assure that we will continuously strive in prioritizing our member's needs and ensure timely services to them to their satisfaction.

The IIESL-UAE is committed to maintaining core values, which has led to this Institution's success in the past. I hope the same commitment from our Members would continue. Our core values like Integrity, Honesty, and Service - have defined in the UAE since the founding of the branch.

Let us coalesce our expertise together and pool all of our resources in achieving the vision, and goals of the IIESL set for the remainder of the current year.



**Eng. Priyanga De Mel**  
Chairman - IIESL UAE Branch

## Immediate Past Chairman – IIESL UAE Branch



**Eng. Anura Jagodage, Immediate Past Chairman**

Eng. Anura Jagodage has completed a term of 3 consecutive years as the Chairman of the IIESL UAE Branch. Year after year Eng. Jagodage agreed without hesitation to serve as the Chairman of the Excom despite his official commitments and the troubled social and industrial issues. The period, Eng. Jagodage chaired can be considered as the most critical period of the Branch's journey of 15 years as the region's troubled economy and the industry and the Covid-19 pandemic situation made most of the Executive Committee Members and Members to leave the country.

Nearly a half of the Excom members had to leave the country, however Eng. Jagodage with the help of the remaining members of the team, managed to fulfil the requirements of the Excom and continued to maintain the functioning of the Branch without any hindrance.

Eng Jagodage has been a member of the IIESL UAE Branch since its inception and has served as a Committee Member and Vice Chairman, prior to election as the Chairman, during the session 2017-2018. Since then, he continued to Chair the Excom till the end of the session 2020-2021. Eng. Jagodage has already committed to continue his services to the Branch as the Immediate Past Chairman despite leaving the Chair.

Executive Committee Members and the Members of the IIESL-UAE Branch convey their sincere gratitude for his services and wish success and good luck for his future endeavors.

## Academic / Professional Achievements of Members Year 2021

#	Name of the Member	Academic/Professional Achievements	Designation/Title	Awarding Body, Institution or University
1	Eng. Chathurika Gunawardane	Corporate Member	MIIESL	Institution of Incorporated Engineers, Sri Lanka
2	Eng. Dharma Pathiraja Fernando	Corporate Member	MIIESL	Institution of Incorporated Engineers, Sri Lanka
3	Eng. Ranil Wijesinghe	Corporate Member	MRICS	Royal Institution of Chartered Surveyors, UK.
4	Eng. Kingsley Devendra	Construction Project Management	MSc	University of Birmingham City
5	Eng. Dhammika Gamage	President's Medal award for the "Outstanding Contribution to the Institution, Profession and to the Construction Industry at large"	-	Chartered Institution of Civil Engineering Surveyors, UK

# 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 Web: <http://www.iiesluae.org>

Established on 18th July 2006



## EXECUTIVE COMMITTEE - 2021/2022

	<b>Eng. Priyanga De Mel</b> C&G(Full Tech), GCGI(UK), Dip in IT, MIIESL, I Eng.	<b>Chairman</b>
	<b>Mr. Janaka Edirisinghe</b> NDT, BSc(Hons) QS, AMIIESL, MAIQS	<b>Vice Chairman</b>
	<b>Eng. Ranil Wijesinghe</b> NDT, MSc, MIIESL, MRICS, MAIQS, I Eng.	<b>Secretary</b>
	<b>Mr. Arisanan Ramanathan</b> NDT, B.Eng, MSc, AMIIESL, MRICS, GMICE	<b>Asst. Secretary</b>
	<b>Eng. Nishan Karunaratne</b> NDES, BSc (Hons), MIIESL, IEng.	<b>Treasurer</b>
	<b>Mr. Nalinga Handapangoda</b> NDT, MSc (CPM), AMIIESL, MAIQS, CQS	<b>Asst. Treasurer</b>
<b><u>Committee Members</u></b>		
	<b>Eng. Kingsley Devendra</b> NDT(Civil), BSc Hons(QS), Msc(CPM), MIIE(SL), MRICS, AIQS(SL), MAIQS, CQS, PQS, CCE, I Eng.	
	<b>Mr. Ayodhya Perera</b> NDT, MBA (PIM-USJ), AMIIESL	
	<b>Mr. Janaka Dandeniya</b> NDT, BSc(Hons) QS, AMIIESL, LCGI	
	<b>Mr. Tharanga Perera</b> HNDE, AMIIESL	
	<b>Eng. Praneeth Wikramasekera</b> HNDE, BIT, MIIESL, PMP	
	<b>Eng. Sanjeewa Wijayathilaka</b> NDES, MSc(CPM), FIIESL, GCGI(UK), I Eng.	<b>Internal Auditor</b>
	<b>Eng. Anura Jagodage</b> NDT, MSc, FIIESL, FRICS, FAIQS, AIQS(SL), CQS, I Eng.	<b>Immediate Past Chairman</b>
	<b>Eng. Sunil Jayantha Hettiarachchi</b> NDT(SL), GCGI(UK), MSc(UK), MIMechE(UK), MIET(UK), FIIE (SL), MIE(SL), CEng, I Eng.	<b>Past Chairman</b>
	<b>Eng. Sisira Walaliyadde</b> NDT, FIIESL, MCGI(UK), MICE, MIESL, C Eng., I Eng.	<b>Past Chairman</b>
	<b>Eng. Hemantha Jayasree</b> NDT, MBA (PIM-USJ), FIIESL, MAIQS, MRICS, AIQS(SL), GCGI(UK), I Eng.	<b>Past Chairman</b>
	<b>Eng. Dhammika T. Gamage</b> NDT, GCGI(UK), FIIESL, FAIQS, FACostE, FCIInstCES, FRICS, PQS, FIQSSL, MCI Arb, I Eng.	<b>Past Chairman/Returning Officer</b>
	<b>Eng. Parakrama Munaweera</b> NDT, MSc, MBA (PIM-USJ), MIIESL, GCGI(UK), PMP, I Eng.	<b>Past Chairman</b>



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### Renew your ECSL Registration

Your registration at Engineering Council Sri Lanka (ECSL) has to be renewed every year if you are serving as an engineering practitioner in Sri Lanka, as per the ECSL Act No.4 of 2017.

Accordingly, you have to renew your registration for year 2022 through the IIESL prior to 31<sup>st</sup> December 2021. Subsequently you will receive the new Certificate of registration from ECSL.

### FAILURES

are part of life.  
If you don't fail,  
you don't learn.

If you don't learn  
you'll never change.

### Institution of Incorporated Engineers, Sri Lanka – UAE Branch


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## UAE to Implement Saturday-Sunday Weekend in Line with Global Markets



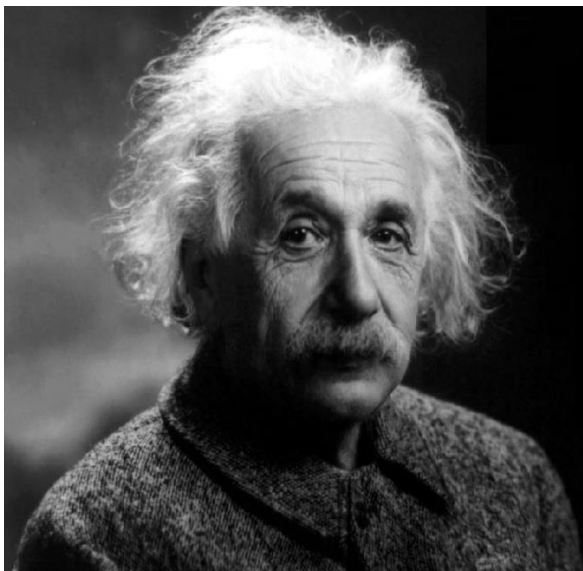
**UNITED ARAB EMIRATES  
GOVERNMENT ANNOUNCES  
FOUR AND A HALF DAY  
WORKING WEEK**

- **New system to apply in federal government entities**
- **8 working hours a day on Monday to Thursday from 7:30am to 3:30pm**
- **4.5 working hours on Friday from 7:30am to 12:00pm**
- **Friday sermons and prayers to be held after 1:15pm all year long in UAE**
- **Possibility of flexible working hours and work-from-home options on Fridays**
- **Longer weekends to boost productivity and improve work-life balance**
- **Starting from 1st of January, 2022**

The United Arab Emirates announced that the Emirates will shift to a four and half-day week starting in the year 2022 to better align with the global markets. The full weekend will fall on Saturday and Sunday but the private sector companies will be free to decide their own weekend.

The oil-producing Gulf state, the region's commercial, trade and tourism hub, currently has a Friday-Saturday weekend. From Jan. 1, however, the weekend will start on Friday afternoon, including for schools, a government circular said. The companies depending on their business sector could decide their weekend to suit the business and their employees. The UAE based multinational companies will have the opportunity to have stronger international business links.

The move would ensure smooth financial, trade and economic transactions with countries that follow Saturday-Sunday weekend. The longer weekend would improve the employee's work-life balance and the companies will have the benefit in return.



*"Engineering is not only study of 45 subjects but it is moral studies of intellectual life. Make things as simple as possible... But not simpler"*

*-Albert Einstein*



# UAE National Day

Celebrating UAE's 50th Independence & Unification of the Seven Emirates on "UAE National Day"



The National Day of UAE is celebrated on December 2 each year. This is a special day in the history of the UAE, as it marks the UAE's Union Day between the seven emirates which was followed by the joining of the seventh emirate, Ras Al Khaimah, in the year 1972.



The UAE National Day falls on the commemoration of the government unification of the seven emirates in 1971 which joined to frame the modern-day country, headed by Sheik Zayed bin Sultan Al Nahyan, the alliance's first president. Grand National Day festivals are held across the country to mark the event. Fireworks, dance shows, and car rallies are the most common celebration activities. Millions of UAE residents anticipate seeing the famous UAE firework show during the last UAE National Day weekend.

## The Theme of UAE National Day 2021

The theme of this year's UAE National Day is **UNITY – LEGACY OF UAE'S ANCESTORS – SPIRIT OF THE UNION.**

Theme's meaning: A full bright moon shining over the Emirates on the night they were united. This moon – the nation's soul – inspires all Emiratis and makes them united as one nation.

Greetings to all UAE Citizens, Leaders and Residents of the wonderful nation. Happy UAE National Day!!

**Best Wishes from the,  
Institution of Incorporated Engineers, Sri Lanka –UAE Branch**

## **Guidelines to select the best, optimized mobile package suitable for you**

*By Eng. Praneeth Wickramasekara*

Today's Service providers (Mobile operators) newly introducing, upgrading their mobile packages to attract customers due to market conditions and to face the competition between operators.

There are plenty of options when picking a mobile package. Following are some important points to consider when selecting a mobile operator and subscribing, changing, using a mobile package.

### **1. Network coverage and quality**

Network coverage is the most important factor should consider when you select the mobile operator for new connection, port out (change the operator with existing mobile number) or for new connection. Verify with the other mobile users of the coverage and quality of the network you plan for new connection. Confirm uninterrupted service for the areas for you will use the mobile in future with other users of decided operator.

### **2. Prepaid or Postpaid.**

For uninterrupted service prepaid account should maintain a positive balance all the time. Only limited number of prepaid packages are introduced by service providers. But they are very flexible in sense of upgrade and termination.

Postpaid invoice should settle during given time frame monthly to continue the service. By selecting auto play via credit card this activity can overcome.

### **3. Understand your needs, refresh your history of mobile package requirement.**

You should refresh your current usage, analyze and predict future usage of your voice and data monthly requirements for selecting or when upgrade/downgrade the package. If you are already subscribed for package check the total usage from the package and unused benefits lost at the end of the month. If you are not availing much benefits of the package during continuously consider of changing the package. Monthly data requirement is very tricky point. If Wi-Fi data available in your office and your mobile data required during travelling only you probably need only small data package around 5GB.

### **4. International, national or flexible minutes**

When two packages are combined all above three types of minutes may coexist in a mobile account. Due to technical limitations or marketing requirements of package handling system high priority is set for consume flexible minutes to consume first. In this case if you have national and flexible minutes in your mobile account flexible minutes will consume for national calls instead of national minutes. Therefore verify with the sales staff for the priority of the national or flexible minutes if subscribing together.

### **5. Contract Plan.**

By signing a contract plan for a package service provider can hold the customer for contracted period and assure the rental charge during contract period. Excess charges are applicable for early termination such as one or few months rental charge, excess payments charge per remaining months of the contract etc. If any possibility of early termination of the package better option is to sign a none contract plan with around 10% extra charge per month than the contract plan.



## 6. Free benefits attached to package.

To attract new customers and new packages mobile service providers may introduce various benefits such as double data, free data allocation for limited period, rental charge waived for some services, provide discounted rental charge for limited period etc. You need to analyze and conclude some of these benefits are really valid for you and should not be critical factor when subscribing a package.

## 7. Rollover unused minutes and data.

This is an important feature to consider when selecting the package. Full or part of the unused minutes and data of the current month will roll over to next month.

## 8. Terms and conditions of a package.

Terms and the conditions must verify when subscription for new package and service. Following are some key points may include in terms and conditions and should verify.

- Whether International and flexible minutes provided for the package are included for your favorite or frequently calling destinations. If this details not provide in Terms and conditions, the same should confirm with the sales staff.
- Term "Fair usage policy" may include for unlimited package. Make sure to obtain details of this.



**Eng. Praneeth Wickramasekara**  
HNDE, BIT, MIIESL, PMP.

## IIESL UAE - Events and Webinar Log 2021

#	Date	Topic	Conducted by	Presenter	Venue
1	17/04/2021	Technical and Economical Challenges to Integrate more Renewable Energy to National Grid of Sri Lanka	IIESL-UAE	Dr. Tilak Siyambalapitiya	Webinar on Zoom
2	02/05/2021	The Monthly progress Report & Updated Programmes	CICES/IIESL-UAE/IQSSL	Mr. Gary Beamish and Mr. Mohamed Salah Mohamed	Webinar on Zoom
3	April/May 2021	APC Winter Session- Mock Interviews for RICS Candidates	IIESL-UAE		Zoom App
4	29/05/2021	Efficient Procurement Techniques (Selection by Two Stage Tendering and EPC Approach)	IIESL-UAE	Mr. Lokitha Karawita	Webinar on Zoom
5	05/07/2021	Dispute Management in Construction	CICES/IIESL-UAE/IQSSL	Eng. Dhammika Gamage	Webinar on Zoom
6	17/12/2021	Membership Induction Workshop	IIESL-UAE	Eng. Anura Jagodage	Webinar on Zoom
7	18/12/2021	Contractual Letter Writing	IIESL-UAE	Eng. Dhammika Gamage	Webinar on Zoom

# 3D Printing in Construction Industry

*By Eng. Ranil Wijesinghe*

## 1.0 Introduction

The global construction industry has an annual revenue of nearly 10 trillion US Dollars, which represents around 6% of the global GDP (Lotfi R. and Sameh M.). Therefore, construction industry represents a key role of the world's economy.

Egan report (1998) "rethinking construction" focused on the lack of industry performance due to the construction is rework up to 30%, potential efficiency of labour is used 40-60%, accident cost is 3-6% by comparing the total project cost and 10% of materials are wasted in the USA construction industry. Productivity factor within the US construction industry and all non-farm industries over a period of 45 years is proofed lack of construction industry performance (Eastman et. al., 2011).

Construction companies are consistently seeking new means to increase productivity while optimizing the cost. 3D printing is one of the newest forms of technology that has been introduced in the construction industry. Technology is pushing construction towards automation to optimizing labour for safety reasons, reducing construction time on site, reducing production costs, minimize material wastage, increasing architectural freedom and increasing the rate of productivity in construction industry.

## 2.0 The 3D Printing Technology

Additive manufacturing (AM) is the new method of creating products from materials such as plastic, sand, cement and other powdered materials. The process of additive manufacturing was used since the mid of 1960s and there are various improvements in terms of materials used in the process of additive manufacturing. Additive manufacturing that is commonly known as 3D printing nowadays has been very efficient in cost reduction of manufacturing and reduction of waste in the process of manufacturing (Elfatah A.S.A, 2019).

The commonly used AM technologies include the use of a computer, 3D modelling software (BIM, Computer Aided Design or CAD), printing machine including equipment and material. Once an Object Model (CAD sketch) is produced, the file is then transferred to the AM equipment and the machine reads the data from the CAD file and starts to lay down the material in layers on top of each other, forming the object in three dimensions. The materials used to create these objects can be varied as per the printing object.

## 2.1 Application of 3D printing technology in Architecture, Engineering and Construction sector

3D printing technology applications are mainly used for 3D printing in Architecture, 3D printed buildings, 3D printing in interior design, 3D printed bridges in Architecture, extra-terrestrial printed structures in engineering and construction sector. The article focusses on "Would the 3D printing technology replace traditional construction technologies" and Investigates briefly the different 3D printing systems in construction, their benefits and challenges associated with their use in currently in construction projects. The use of 3D printing technology offers several advantages over the traditional methods. However, additional challenges and risks are faced due to the introduction of this new technology in construction projects.

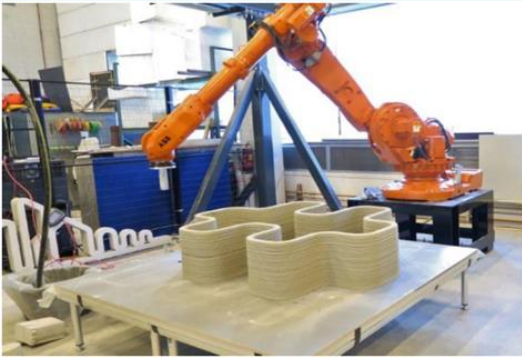
## 2.2 3D Printing Applications in Building Construction Industry

3D Printing applications in Building Construction Industry is a process by which physical objects are created by depositing special materials in layers based on a digital model. Basically, 3D printing processes require infrastructure, hardware, software, and materials to work together. There are three techniques of 3D printing in construction such as Contour Crafting, D-shape and Concrete Printing (Lotfi R. and Sameh M.).



All these methods use material extrusion through a nozzle to generate the layers by special printer machine (Figure 1 and Figure 2).

Figure 1 - Articulated robot structure



(Source Lotfi R. and Sameh M., 2020)

Figure 2 - Non-framed concrete 3D printers



(Source Elfatah A.S.A, 2019)



(Source [www.businessinsider.com](http://www.businessinsider.com))

## 2.3 The Advantages and Disadvantages of 3D Printing in Construction

There are numerous advantages and disadvantages of 3D Printing technology in the construction industry when compared with traditional construction techniques.

### **Advantages: -**

- Speed - 3D printing has already shown that it can build a home or building from the ground up in a matter of days. That's a significantly faster timeframe than conventional construction, which can take months and years to fully construct a commercial building.
- Lower costs – the cost of printing construction elements of houses is much lower than traditional construction methods, also material transportation and storage on sites is limited
- Reduce human error - Reduced number of injuries and fatalities onsite as the printers will be able to do most hazardous and dangerous works
- Time savings – time required to complete the building can be considerably reduced.
- Environmentally friendly construction processes and the use of raw materials with low embodied energy (i.e. construction and industrial wastes)
- Wet construction processes are minimized, so that building erection process generate less material wastes and dust compared to traditional methods
- Waste reduction - 3D printing is an additive manufacturing process that only uses as much material as is necessary for creating a structure.
- Design freedom - 3D printing offers the design freedom to Architects or Designers. Architects can build complex designs that are otherwise unattainable, or too expensive or labour-intensive to create by conventional construction means.

### **Disadvantages:-**

- Despite the benefits and potential that 3D printing has in the construction sector, there are several factors that may lead to challenge the technology from becoming mainstream.
- High costs - Key challenge to the adoption of 3D printing technology on construction sites is the high cost of purchasing or renting printing equipment and the logistics involved in getting these large 3D printers to the work site.
- Labour shortage - The construction sector is booming, and skilled workers are in high demand. 3D printing requires more specific skilled people set that would have to pull construction execution process. Construction labour shortages are already a problem, and finding qualified workers to employ in 3D printing construction environments could be more challenging in the future.
- Quality control - Weather already has the potential to slow construction progress, but issues with nature of location may be amplified with 3D printing. Furthermore, quality control in construction is tricky matter in the traditional construction. If not constantly monitored and overseen by expertise, quality in 3D printing could end up with very expensive product.
- Regulations - Regulation in 3D printing hasn't fully impacted the construction industry. However, there's also the contractual liability that may come with using printers rather than humans to perform certain construction tasks.



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**2022**  
**HAPPY NEW YEAR**

*Let the old year end and the New Year begin with the warmest of aspirations. Happy New Year!*

*Best Wishes from IIESL UAE Branch*

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