



# EDIFICE

## JULY 2021

VOL. 6, ISSUE 1

NEWSLETTER OF  
THE DEPARTMENT  
OF CIVIL  
ENGINEERING

# INDEX

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Contents	Pg.No
<b>From the HOD's Desk</b>	3
<b>Faculty Article</b>	
Drought vulnerability assessment in irrigated agriculture	4
<b>Activity Round up</b>	
ICE (UK) Student Chapter	6
ICI Student Chapter	12
IEI Student Chapter	16
IGBC Student Chapter	17
Association of Civil Engineers	18
Kraciva	30
Sharing session on PWD	35
Building Construction Hand Book	
<b>Faculty &amp; Staff</b>	
Faculty updates	40
Non-teaching staff updates	73
<b>Students</b>	
Student internship- L&T	93
Student achievements	98
Student updates	99
Placement details	124
<b>Articles</b>	
Industry article	125
Alumni article	133
Student articles	138



The world has forever changed because of the Coronavirus pandemic that hit us in 2020. Everyone is still recovering from the lasting effects of the Pandemic in 2021, while also being in constant vigil against subsequent waves of the virus. The transition towards online learning was a difficult one but both the student as well as the teaching community made it happen by adopting new technologies brought to the fore because of the Pandemic. Just like the latter half of last year, we were very active in the first half of this year as well.

I am happy to report that we, the department of Civil Engineering, had organized a number of events on a wide gamut of topics both academic as well as extra-curricular, in the past semester. This includes two international conferences on 'Applied Mathematics and Civil Structures' organized in association with Mathematics department in February 2021 and 'Sustainable Practices and Innovations in Civil Engineering' in March 2021. I am also extremely pleased to let you know that the department of Civil Engineering, SSN College of Engineering has signed a memorandum of understanding with Central Building Research Institute (CSIR-CBRI) under the Council of Scientific and Industrial Research, Government of India for student internships and projects. Both our teaching faculty as well as non-teaching staff members have constantly engaged in knowledge upgradation during these testing times and have equipped themselves better to face the future. I am also happy to report that our students were also engaged in delivering sharing sessions wherein they brushed up on topics in Civil Engineering handbooks and delivered lectures to their peers for improving their field knowledge. Our Alumni have also been actively in touch with us due to the paradigm shift in the way we meet and interact and have taken active part in the growth of the department.

I sure do hope that the upcoming academic session in 2021 offers us a better chance to make the best of what we have learned during the pandemic and develop an optimized blended system of learning for better knowledge sharing.

**Dr. N. Sivakumar**





## DROUGHT VULNERABILITY ASSESSMENT IN IRRIGATED AGRICULTURE


P.Sreehari Professor in Civil Engineering

*Department of Civil Engineering, SSN College of Engineering, Chennai-603110..*

Water, a scarce resource, is the elixir of life. It is a natural resource, fundamental to life, livelihood, food security and sustainable development. United Nations has declared the decade 2005-2015 as International Decade for Action 'Water for Life'. According to National Water Policy-2012 (Ministry of Water Resources, GoI, 2012), India has more than 17 percent of the world's population, but has only 4% of world's renewable water resources with 2.6% of world's land area. There are challenges of frequent floods and droughts in one or the other part of the country. Low consciousness about the scarcity of water and its life sustaining and economic value results in its mismanagement, wastage and inefficient use, as also pollution and reduction of flows below minimum ecological needs. In addition, there are inequities in distribution and lack of a unified perspective in planning, management and use of water resources.

Drought is a naturally recurring feature of climate which occurs in all climatic zones. The term drought refers to a constant reduction of water availability with respect to normal (mean) values. Drought can be assessed in meteorological, hydrological and agricultural aspects. Of these, rainfed agriculture is controlled by meteorological drought and the other cropped areas by agricultural drought. In this article we will look in to determine the agricultural drought severity of a command area using conventional demand-supply gap; to assess the remote sensing based agricultural drought severity of the command area; and to analyse the drought vulnerability of irrigated agriculture in GIS environment.

Agricultural drought severity assessment methods focus their attention mainly on micro-implications of agronomy of crops and not in quantification of water deficiency with respect to agricultural demand. An agricultural drought assessment methodology is developed based on supply and demand estimation.



The agricultural drought assessment is carried out with the objective of estimating agricultural drought severity by employing the supply demand estimate. The severity of agricultural drought could also be monitored through an understanding of vegetation status since the vegetation condition reflects the overall effect of rainfall, soil moisture, weather and agricultural practices. To develop an Agricultural Drought Severity Index which involves crop area delineated from remote sensing data using NDVI analysis. Maps generated for these satellite images which represent the area under agricultural vegetation using ArcGIS software package. Using this, Agricultural Drought Severity Index (ADSI) was formulated and used to calculate the extent of agricultural drought severity for the area under study. The ADSI values are divided into four drought severity classes.

Drought vulnerability of irrigated agriculture is analysed by overlaying the determined agricultural drought severities of the area through the conventional demand supply gap and Remote sensing based methods and compared with the assessments by the criteria of Government of India for DPAP. (Drought Prone Area Programme).

*“There can be little doubt that in many ways the story of bridge building is the story of civilisation. By it we can readily measure an important part of a people’s progress.”*

**-Franklin D Roosevelt, 1931**

## THE INSTITUTION OF CIVIL ENGINEERS (ICE)

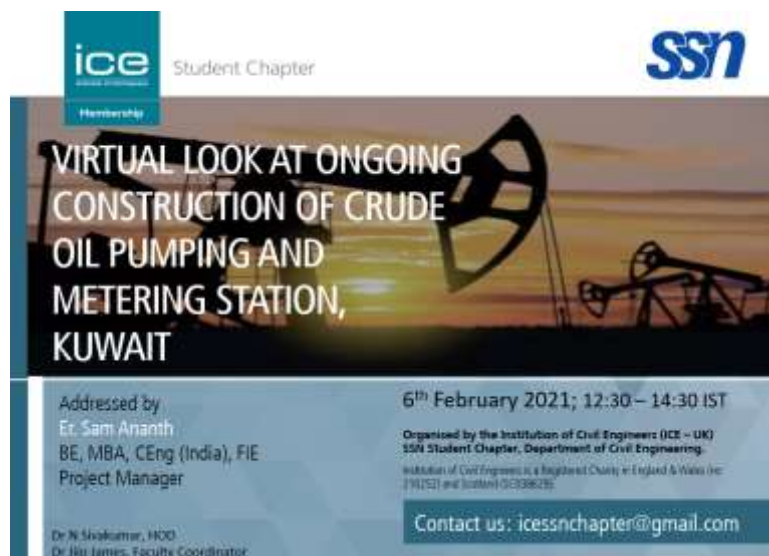
### ICE UK STUDENT CHAPTER

#### 1. Virtual Site Visit - “Reality Via Lens: Virtual Look at Ongoing Construction of Crude Oil Pumping and Metering Station, Kuwait”

**Date** 6<sup>th</sup> February 2021

##### **Speaker Details**

- Er Sam Ananth, B.E, MBA, CEng (India), FIE, Project Manager



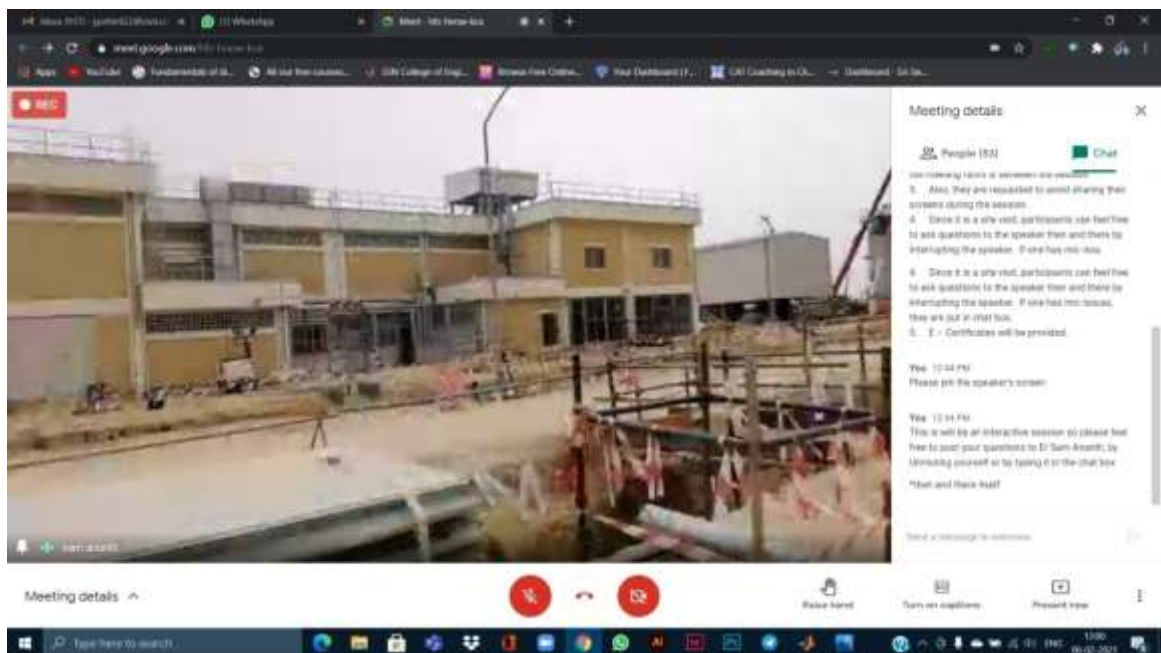
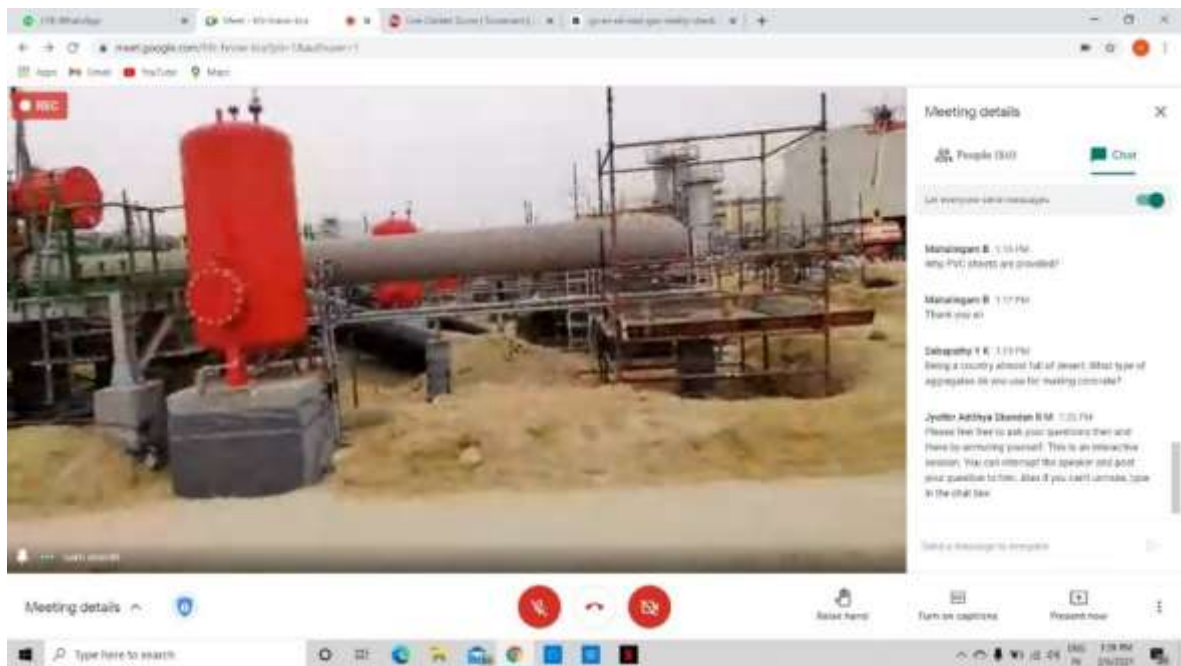
##### **Topic Covered:**

- Visit to the battery unit
- Visit to the pumping station
- Explanation about the pigging process
- Foundations used in the construction of the site
- Visit to the 2hr fire rated office – procedure explained about in case of a fire outbreak
- Other common features in the site – equipment and techniques used etc.

**Mode of Meet:** Google Meet

**Time** : 12.30 – 2.00 P.M IST

**Attendees** : 50+



## 2. Student Innovation Challenge 2021. “Infrastructure Reimagined”

### **Dates**

**Round 1** – Submission of Presentation/Video/Poster on 26<sup>th</sup> February 2021.

**Final Round** – Presentation on innovation Design and Viva-Voce on 22<sup>nd</sup> March 2021



### **Theme**

The virtual innovation challenge aimed at bringing out the latent innovative or unconventional ideas in students.

**Total number of teams:18**

**Teams qualified to Finals:5**

### **Judges for the Final Round**

- Dr YK Sabapathy, Professor, Department of Civil Engineering, SSN College of Engineering
- Dr P Sangeetha, Associate Professor, Department of Civil Engineering, SSN College of Engineering
- Dr R Vijayalakshmi, Associate Professor, Department of Civil Engineering, SSN College of Engineering



### ***Winning Details:***

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- Winner: Team Aegle, SRM Institute of Science and Technology, Ramapuram
- Runner up 1: Team Civilions, Sri Ramakrishna Engineering College, Coimbatore
- Runner up 2: Team the Three, Sri Ramakrishna Engineering College, Coimbatore

### ***Cash Prize***

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- Winner- ₹5000
- Runner up 1 - ₹3000
- Runner up 2 - ₹2000

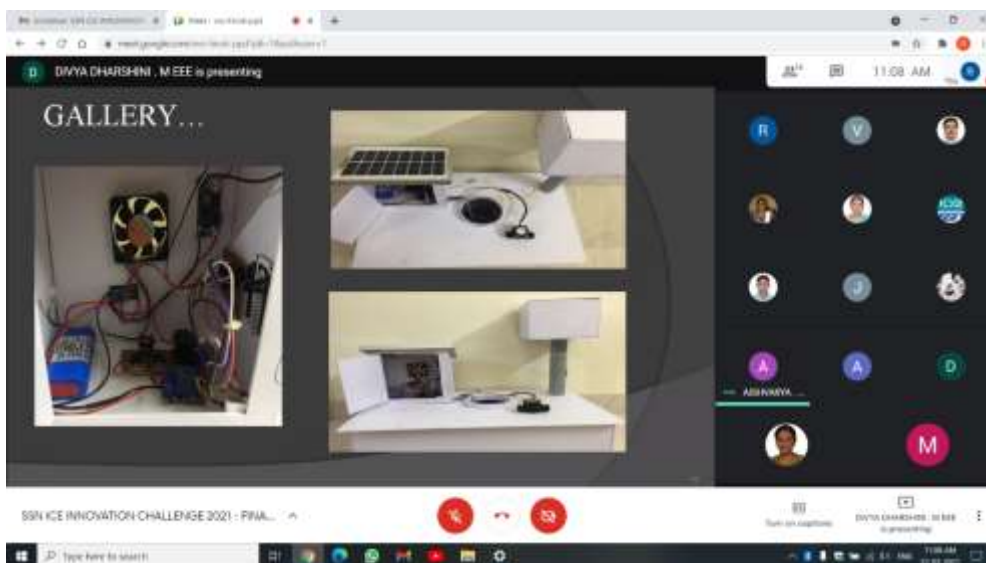
### ***Grading Criteria:***

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- Participants were graded based on the innovation, creativity, efficiency, accuracy and feasibility of the idea.

***Mode of Meeting*** : Google Meet

***Time*** : 10.00 A.M – 12.30 P.M



### 3. Webinar : Digitising Construction Practices using BIM

**Date:** 30<sup>th</sup> April 2021

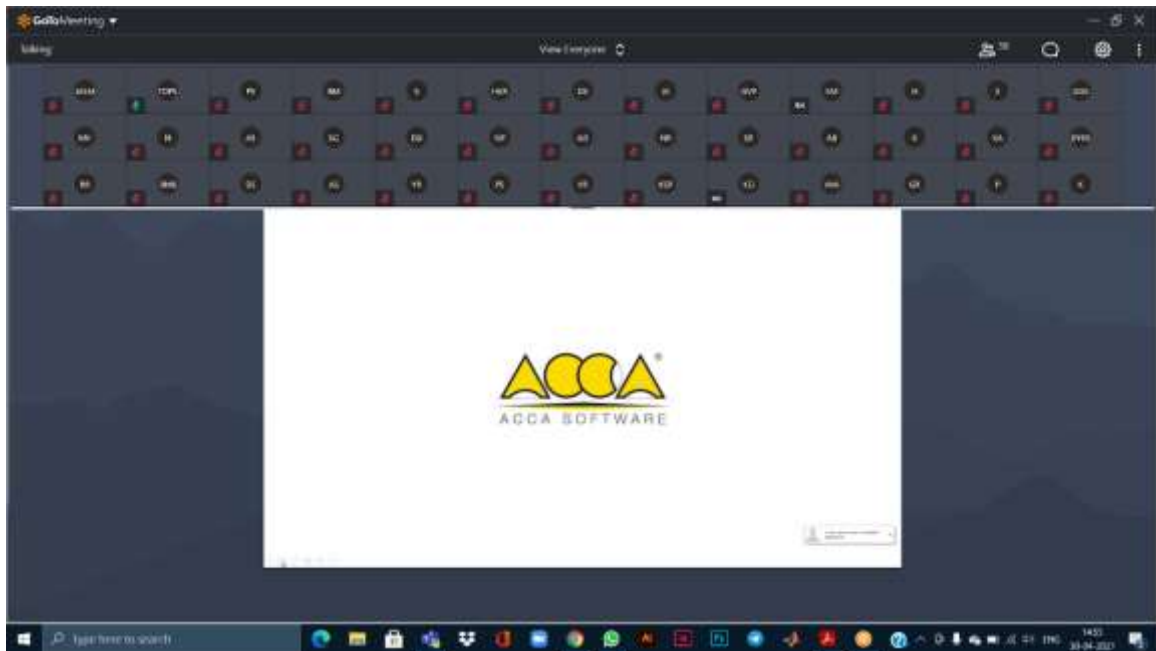
**Speaker Details:**

Tony de Palma, ACCA Software  
(Italy)

**Topics Covered:**

- A small introduction to Building Information Modelling (BIM)
- Introduction to ACCA Software
- ACCA Software and its evolution throughout the years
- A Visualisation of the 'Stazione di Napoli Centrale' (Naples Central Station) and a Virtual Tour around the station using the software.
- A Virtual Tour of an Archaeological Site close to Naples.
- Real time Visualisation of both the places using Google maps and information collection such as the materials used, client name, energy





*“Engineers ... are not mere technicians and should not approve or lend their name to any project that does not promise to be beneficent to man and the advancement of civilization”*

**-John Fowler**

# INDIAN CONCRETE INSTITUTE (ICI)

## ICI STUDENT CHAPTER

### 1. Webinar on Acceptance Criteria for Concrete Quality Control

**Date:** 10<sup>th</sup> February 2021

**Speaker details:**

Job Thomas

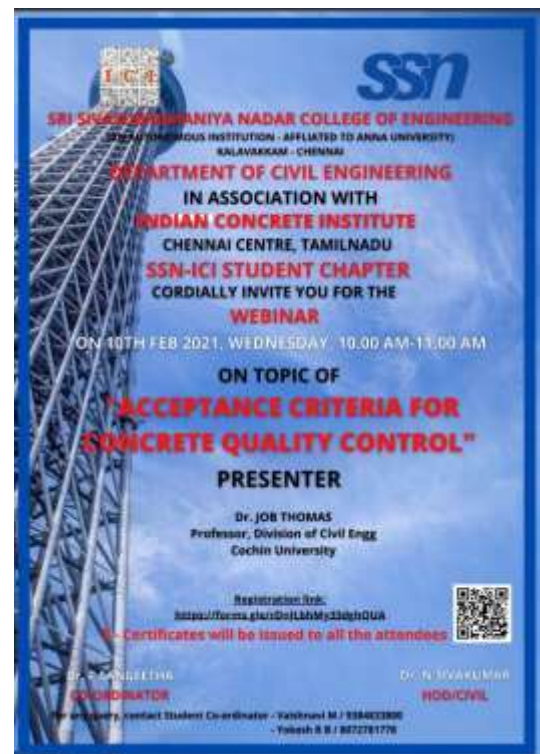
**Banner** SSN ICI Student Chapter

**Time** : 10.00 A.M to 11.00 P.M

#### Report

SSN-ICI Student Chapter organized a webinar on Acceptance Criteria for Concrete Quality Control on 10<sup>th</sup> February 2021. The expert speaker was Job Thomas, Professor in the Civil Engineering division, Cochin University.

The session started with the welcome address given by M. Vaishnavi, President, SSN-ICI Student Chapter, and Santhiya, Joint Treasurer, SSN-ICI Student Chapter, briefed about the speaker, Job Thomas, Professor in Civil Engineering division, Cochin University. The speaker presented about the various tests which as to determine the quality of fresh concrete, of which he mainly explained the slump test.





The idea about the compaction factor test was explained. The respective IS Code standards were mentioned by him. Later he explained the quality control criteria for hardened concrete. It basically includes three tests namely, cube test, cure test and load test. Cube and load test was explained with case studies and respective IS Code books were mentioned. He shared his vast knowledge on other non-destructive tests. The session ended with a question and answer session followed by vote of thanks by Dhanus, office bearer, SSN-ICI Student Chapter.

The participants found the session to be really interesting and informative. The session was interactive and the benefitted crowd included over 100 registrations and participants.



## 2. Webinar on “Degradation Mechanism of Concrete”

**Date :** 5<sup>th</sup> March 2021

### **Speaker Details**

Dr T. Palanisamy

**Banner** SSN ICI Student Chapter

**Time :** 10.00 A.M to 3.00 P.M

### **Report**

SSN – ICI Student Chapter organised a webinar on Degradation Mechanism of Concrete on 5<sup>th</sup> March 2021. The expert speaker was T Palanisamy, Associate Professor in department of Civil Engineering at National Institute of Technology, Karnataka, Surathkal.

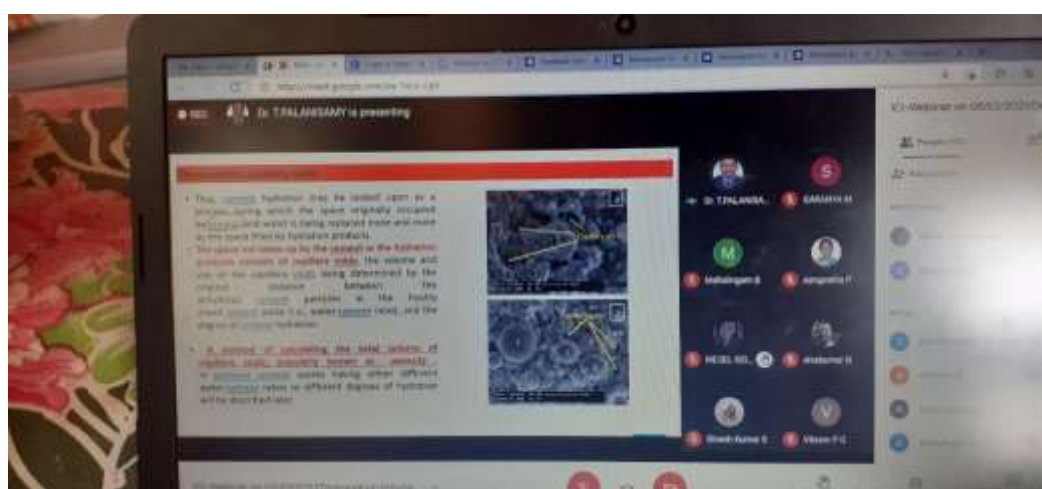
The session started with the welcome address given by M. Vaishnavi, President, SSN – ICI Student Chapter.



Sathya Shree T R, Joint Secretary, SSN – ICI Student Chapter, briefed about the speaker: T Palanisamy, Associate Professor, NIT, Surathkal. The speaker presented his PPT and explained the factors that affect the durability and strength of concrete. The elaboration on the two transportation mechanisms of water in concrete with various diagrams is discussed.

Then he explained the volumetrics of concrete hydration. He clearly explained how voids in cement paste results in degradation using various images from Scanning Electron Microscope. Lastly, he gave a clear-cut view on how permeability, porosity and diffusion cause degradation of concrete. The session concluded with a question-and-answer session followed by the vote of thanks by Meenaksi of 2<sup>nd</sup> year.

The participants found the session to be highly informative and interesting. The session was interactive and the benefitted included over 90 participants.



# THE INSTITUTION OF ENGINEERS (IEI)

## IEI STUDENT CHAPTER

### Challenges and opportunities as a material engineer in construction industry

**Date :** 27<sup>th</sup> February 2021

#### **Speaker Details**

K.Mohammed Haneefa

#### **Report**

The IE(I) civil engineering student chapter have conducted a webinar on " Challenges and opportunities as a material engineer in construction industry ", which have been conducted on 27th of February 2021. The webinar was taken by ' K.Mohammed Haneefa' who is a chartered engineer, project management consultant in India.



Our beloved speaker took the contents in such a way that most of us were more interested to listen. The contents taken by our beloved speaker was really a good one and also useful to many of us. He gave ideas how to become a successful material engineer. He also shared the details about the role of material engineer in the field. He also shared about the scope of material engineer. He compared the of material engineer in India to that of the gulf countries and other international countries.

He gave a detailed explanation of material engineer regarding what to do, what to practice, etc, He also told the opportunities of it in the current scenario and how it will be in future. This webinar will introduce the idea of how to become a material engineer in fresh minds. The impact of this webinar will be great to participants in future.



# THE INDIAN GREEN BUILDING COUNCIL(IGBC)

## IGBC

### Green Building Practices

**Date :** 16<sup>th</sup> to 20<sup>th</sup> February 2021

**Time :** 4.30 – 6.30 P.M

#### **Resource Person Details**

Er. M.Ramanujam (IGBCAP, GRIHACP,  
GEMCP)  
Green building expert with 25+ years of  
experience

#### **Report**

SSN-IIC in Collaboration with SSN-IGBC and CMTI organized a webinar on "GREEN BUILDING PRACTICES".

The webinar was a 5-day webinar series including the topics such as Introduction to green buildings, Green building designs, Energy efficiency, Green Building materials and resources. Water conservation and indoor environmental quality. The speaker clearly explained about the concepts and methods involved in a green building project. And also the practical methods and features of green building.

**SRI SIVASUBRAMANIYA NADAR  
COLLEGE OF ENGINEERING**  
(An autonomous institution, affiliated to Anna university)  
OMR, kalavakkam, Chennai-603110.

**SSN** **INSTITUTION'S INNOVATION COUNCIL**

**DEPARTMENT OF CIVIL ENGINEERING**  
Institution's Innovation Council (SSN-IIC) in  
collaboration with SSN IGBC and CMTI organizes

**"GREEN BUILDING PRACTICES"**

**16<sup>th</sup> to 20<sup>th</sup> February, 2021** **4:30 PM to 6:30 PM**

**TOPICS COVERED:**  
Day 1: Introduction to green buildings  
Day 2: Green buildings designs  
Day 3: Energy efficiency  
Day 4: Water conservation and indoor  
environment quality  
Day 5: Building materials and  
resources

**EXPERT TRAINER:**  
Er .M.Ramanujam  
Green building expert with 25+years Exp.  
IGBCAP | GRIHA CP | GEM CP | E&L and T

**EVENT COORDINATORS:**  
Dr.R.Srinath ~ Associate professor/Civil  
Dr.N.Sivakumar ~HOD/Civil  
Er. Ashok kumar ~ CMTI CEO and founder

**E-CERTIFICATES WILL BE PROVIDED** Registration link: <https://forms.gle/2u3h1GMyxci4NP46>

# ASSOCIATION OF CIVIL ENGINEERINS (ACE)

## ACE

### 1. INVENTE 5.0

#### i. Paper presentation

**Date** : 23<sup>rd</sup> January 2021

**Time** : 9A.M to 1 P.M

**Eventtype** : Technical

**Participation:**

- 3 per team
- Only Civil Department

**Numberofrounds** : 2

**Platform** : Zoom/Google Meet



### About the event

Every once in a while, a new technology, an old problem and a big idea turn into an innovation.” Believe it or not, presentation unleashes innovation and ignites inspiration because until and unless an idea is tested or questioned, it can’t be approved or accepted as an innovation we are offering you a forum to showcase your presentation skills and in depth knowledge of your research area in which your work will be weighed and evaluated by seasoned academic professionals

## ii. Business battle

**Date :** 22<sup>nd</sup> January 2021

**Time :** 9 A.M to 12 P.M

**Event Type :** Technical

**Participation:**

- Individual
- Any Department

**Number of rounds :** 2

**Platform :** Zoom



### About the event

“In business, you don't get what you deserve, you get what you negotiate. Negotiations take place continuously at any stage of a project, and so, the ability of engineers and managers to effectively carry a negotiation is crucial for the success or failure of projects and businesses. We are providing you with a forum to showcase your negotiation skills and enhance your business acumen. Negotiate your way through each round to be the winner of BUSINESS BATTLE.

### iii. Take - de – bait

**Date:** 22<sup>nd</sup> January

**Time :** 9 A.M to 1 P.M

**Event type:** Technical

**Participation:**

- Teams of 2
- Any department

**Number of Rounds:** 2

**Platform:** Zoom



### About the event

Have you ever found yourself in the midst of discussion—keeping your mouth shut to avoid the possibility of an uncomfortable confrontation? Have you ever felt like you know you're right, but the other person doesn't understand? use this place to improve your confidence, curiosity, critical thinking, and communication. Rise your voice and express your opinions. "Let your voice be heard and opinions be known."



#### iv. Quizophille

**Date :** 22<sup>nd</sup> January 2021

**Time:** 10 A.M to 12 P.M

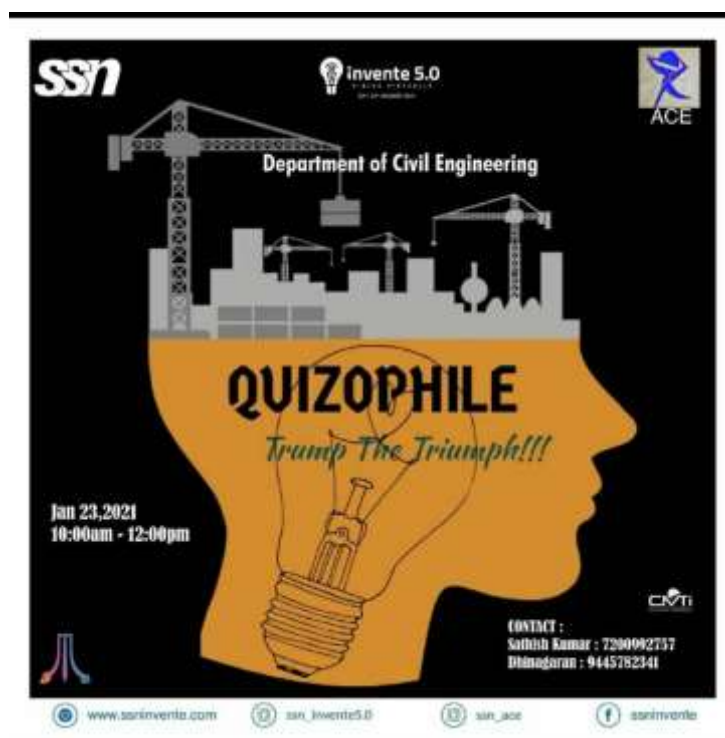
**Event type:** Technical

**Participation:**

- Individual or Teams of 2
- Any department

**Number of Rounds:** 2

**Platform:** Zoom



#### About the event

The Q! in Quizhophile is about Quickness, Quirks and Quest for Quality Quizzing. We have piled our questions, are you ready to answer them?

## v. Extemporize

**Date:** 23<sup>rd</sup> January 2021

**Time :** 10 A.M to 11 A.M

**Event type:** Technical

**Participation:**

- Individual
- Any department

**Number of Rounds:** 2

**Platform:** Zoom



### About the event

Hey there, are you concerned about many crises the world faces and do you have a solution for those crises? Here is -EXTEMPORIZE...An event being launched at the INVENTE 5.0. This event is a platform for all the genius to showcase their quick-wit and problem-solving skills.

## vi. Build A Thon

**Date :** 22<sup>nd</sup> January 2021

**Time :** 10 A.M to 3 P.M

**Event type:** Technical

**Participation:**

- Team of 1-4
- Civil department

**Number of Rounds:** 3

**Platform:** Google Meet, Zoom



### About the event

" A problem well stated is a problem half solved"  
-Charles Kettering

Well, we solved half the problem for you, how well are you gonna solve the rest?  
Presenting, BUILD-A-THON, the key event of INVENTE 5.0.  
A test to see how much your problem-solving skills are going to cater to the betterment of the society.

## vii. Cad- A – Thon

**Date :** 22<sup>nd</sup> January 2021

**Time :** 12 P.M to 4 P.M

**Event type:** Technical

**Participation:**

- Individual
- Any department

**Number of Rounds:** 2

**Platform:** Zoom



### About the event

Hey you all, CADMasters!

Here's a chance to get out of your own CADstations and unveil your design and drafting talent.

Are you someone who plans like a pro when it comes to AutoCAD?

Then join us online this January, to exhibit your design and drafting skills with our CAD-a-thon!

Let your design rule the deCADE.



### viii. Just Add KLV'S

**Date :** 22<sup>nd</sup> January 2021

**Time :** 12 P.M to 4 P.M

**Event type:** Technical

**Participation:**

- Team of 2
- Any department

**Number of Rounds:** 2

**Platform:** Google Meet



### About the event

Is guessing your biggest gesture?

Does finding connections relax your mind?

Then the right place would be this, to add your kelvis to guess and test your technical word skills!

Just add klvs and dig out your tech word bag!!!

## ix. PES Titans

**Date :** 23<sup>rd</sup> January 2021

**Time :** 1 P.M to 4 P.M

**Event type:** Non-Technical

**Participation:**

- Individual
- Any department

**Number of Rounds:** 2

**Platform:** Google Forms, Instagram



### About the event

Bored in lockdown? Confused of what next? Dust up your boots , come On ground, show your might in the football battle - but Virtually -- \* PES TITANS\* - a tribute to Maradona

## x. Quarantineshots

**Date :** 22<sup>nd</sup> January 2021

**Time :** 9 A.M to 10 A.M

**Event type:** Non-Technical

**Participation:**

- Individual
- Any department

**Number of Rounds:** 1

**Platform:** Google Forms, Instagram



### About the event

Photography is the art of making memories. The camera sees more than the eye, so why not make use of it?

Here, The Department of Civil Engineering invites you to participate in the online photography competition "Quarantine Shots". So grab your camera, focus & hit the shutter button and get a chance to win exciting prizes.

## xi. Workshop

**Date :** 23<sup>rd</sup> January 2021

**Time :** 11 A.M to 2 P.M

**Topic :** BIM-Revit Architecture

**Event type:** Technical

**Participation:**

- Civil Engineering Students
- Architectural Students

**Registration fee :** Rs.100/participant

**Platform:** Zoom/Google Meet



### About the event

A Unique workshop by the Department of Civil Engineering.

## 2. Webinar

**Date :** 17<sup>th</sup> February 2021

**Time :** 6.30 P.M

**Topic**

On the spot appraisal of structural members in building- easy techniques

**Resource Person Details**

Thiru.C. Kalyanasundaram  
Superintending Engineer  
TNPWD

**Report**

The Association of Civil Engineers conducted a webinar on “On the spot appraisal of structural members in building- easy techniques” on 17<sup>th</sup> February 2021 at 6.30pm. The guest lecturer for this event was Thiru.C. Kalyanasundaram.

He did his masters in structural engineering and serves as the superintending engineer in TNPWD. He shared his vast knowledge on structural members in building. It was very interesting and informative session.





## KRACIVA

### 1. Alumni chat session

**Date :** 12<sup>th</sup> December 2020

**Time :** 11 A.M

**Topic**

Online Proctored Exams

**Resource Person Details**

Mr Deveshwar K

Alumnus of 2020 Batch

Graduate Engineer Trainee at TechnipFMC

**Report**

KRACIVA conducted a chat session with alumni on the topic of “Online Proctored Exams”. The meeting was held on 12/12/2020 via Google meet. It was a 1-hour session from 10am to 11am with around 58 participants. The participants were the second year, Pre-final and Final year students.

The speaker shared his experiences on an online proctored exam. He gave us an idea about how to prepare for online proctored exams as well as the processes of the online proctored exam. He also told us the norms that they followed while writing exams. His words eased the students’ fear about online proctored exams. He finally concluded with his hearty wishes to the students for their exam.



## 2. Fresher's day

**Date :** 12<sup>th</sup> December 2020

**Time :** 11 A.M

### Report

KRACIVA Conducted a fresher's day event for the first year students of the 2020-2024 batch. The meeting was held on February 13th 2021 via Google meet. It was a 2 hours meeting which started at around 11:00 AM with around 60 participants. The Head of Department of the Civil Engineering department Dr.N. Sivakumar was the convenor of the event and the faculty coordinator was Dr. S.V. Sivapriya.

The meeting started with a staff introductory speech by the Head of the Department Dr. N. Sivakumar. It was followed by a short welcome note by all the staff. Then we had some fun games organised for the fresher. Finally, there was a senior junior interactive session.



### 3. Implementation of Complex Engineering Problems & Open Ended Labs in Direct Assessment Questions for Bachelor in Civil Engineering

**Date :** 9<sup>th</sup> March 2021

**Time :** 9 A.M

**Topic**

Implementation of Complex Engineering Problems and Open ended labs in direct assessment questions for bachelors in Civil Engineering.

**Resource Person Details**

Prof.IR.Marlinda Binti Abdul Malek  
Universiti Tenaga Nasional,  
Malaysia.



**Report**

KRACIVA conducted a webinar on Implementation of complex engineering problems and open ended labs in direct assessment questions for bachelors in Civil Engineering. The speaker was Prof.IR.Marlinda Binti Abdul Malek from Universiti Tenaga Nasional, Malaysia. The webinar was conducted on 9th March at around 9 am via Microsoft Teams. The Head of Department of the Civil Engineering Department N. Sivakumar was the convenor of the event and the faculty coordinator was SV Sivapriya. The speaker gave us an insight of teaching and marking skills in their University. She spoke about so many new construction techniques and materials available in the market.

It was an eye opener for all the students. At last we had a Q/A session in which the students had an active participation.

## 4. Introduction to STAAD Pro

**Date :** 21<sup>st</sup> May 2021

**Time :** 10.30 A.M to 11.30 A.M

**Topic**

Introduction to STAAD Pro

**Resource Person Details**

Lakshmipriya R

**Program**

For this Webinar, registration link using Google Meet was created. At the beginning, Nikitha Reddy, 2nd year Civil Engineering gave a welcome address to the participants and after the presentation, she also delivered the vote of thanks.

More than 65 participants both Teaching Faculty Members and Students have participated.

**Description**

During this webinar, the presenter taught the students on how to install the software 'STAAD PRO'. The installation was quite simple and the installation link was shared among the students for a live experience. She also taught various technical terms and usage of the tools in the software.

From the webinar, the participants had the opportunity to know about the tools to develop innovative projects using STAAD PRO.



**Date :** 22<sup>nd</sup> May 2021

**Time :** 10.30 A.M to 11.30 A.M

**Topic**

Introduction to STAAD Pro

**Resource Person Details**

Sushritha G

**Program**

For this Webinar, registration link using Google Meet was created. At the beginning, Nikitha Reddy, 2<sup>nd</sup> year Civil Engineering gave a welcome address to the participants and after the presentation, she also delivered the vote of thanks. More than 65 participants, both teaching faculty members and students have participated.

**Description**

Numerous technical terms were taught during this webinar. Preparing and creating models with STAAD PRO were lively and done by our presenter, Sushritha G, Final year Civil Engineering. Doubts regarding the installation of the software were clarified. She also answered the various doubts which were raised by our students. She shared her experience of learning this software from Bentley. The E-Certificates were sent to the participants electronically through mail. The Certificates were given to only those participants who had submitted Feedback.





## SHARING SESSION ON PWD BUILDING CONSTRUCTION HAND BOOK

**SRI SIVASUBRAMANIYA NADAR COLLEGE OF ENGINEERING**  
(AN AUTONOMOUS INSTITUTION - AFFILIATED TO ANNA UNIVERSITY)  
KALAVAKKAM - CHENNAI

**DEPARTMENT OF CIVIL ENGINEERING**  
IN ASSOCIATION WITH  
**INDIAN CONCRETE INSTITUTE**  
CHENNAI CENTRE, TAMILNADU  
**SSN-ICI STUDENT CHAPTER**  
CORDIALLY INVITE YOU FOR THE

**"SHARING SESSION ON PWD BUILDING CONSTRUCTION  
HANDBOOK - 1/16"**  
ON 6TH MAY 2021, THURSDAY 10.30 AM - 11.00 AM  
ON TOPIC OF  
**"QUALITY CONTROL ASPECTS OF  
CONCRETE"**

**PRESENTERS**

  
Sreeharini S T  
2nd year, Civil

  
Sathya Shree T R  
2nd year, Civil

Meeting Link:  
<https://bit.ly/3d6xM62>

Dr. P SANGEETHA  
CO-ORDINATOR

Dr. N SIVAKUMAR  
HOD/CIVIL

For any query, contact Student Co-ordinator - Varshnavi M / 9384833808  
- Youtube R B / 8072781778

**SRI SIVASUBRAMANIYA NADAR COLLEGE OF ENGINEERING**  
(AN AUTONOMOUS INSTITUTION - AFFILIATED TO ANNA UNIVERSITY)  
KALAVAKKAM - CHENNAI

**DEPARTMENT OF CIVIL ENGINEERING**  
IN ASSOCIATION WITH  
**INDIAN CONCRETE INSTITUTE**  
CHENNAI CENTRE, TAMILNADU  
**SSN-ICI STUDENT CHAPTER**  
CORDIALLY INVITE YOU FOR THE

**"SHARING SESSION ON PWD BUILDING CONSTRUCTION  
HANDBOOK - 2/16"**  
ON 7TH MAY 2021, FRIDAY 10.30 AM - 11.00 AM  
ON TOPIC OF  
**"CRUSHED SAND STONE - ALTERNATIVE  
TO RIVER SAND"**

**PRESENTERS**

  
Sanjayarathnam M  
2nd year, Civil

  
Oshiyana R S  
2nd year, Civil

Meeting Link:  
<https://bit.ly/3d6xM62>

Dr. P SANGEETHA  
CO-ORDINATOR

Dr. N SIVAKUMAR  
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(AN AUTONOMOUS INSTITUTION - AFFILIATED TO ANNA UNIVERSITY, CHENNAI)  
KALAVAKKAM - 605002

**Department of Civil Engineering**  
**KRACIVA**  
Cordially invites you for the

**"SHARING SESSION ON PWD BUILDING  
CONSTRUCTION HANDBOOK"**  
On 8th May 2021, Saturday  
10.30 am - 11.30 am  
ON TOPIC OF  
GUIDELINES IN CONSTRUCTION FOR FIELD ENGINEERS 3/16  
&  
MISCELLANEOUS TECHNICAL POINTS 4/16

**PRESENTORS**

  
Sushritha B  
(IV year Civil)  
10.30-11.00 A.M

  
Harwanth V  
(IV year Civil)  
11.00-11.30 A.M

Click Here to join  
(e-certificates will be provided)

Dr. S V Sivagpriya  
Faculty Coordinator

Dr. N Sivakumar  
Convener

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CHENNAI CENTRE, TAMILNADU  
**SSN-ICI STUDENT CHAPTER**  
CORDIALLY INVITE YOU FOR THE

**"SHARING SESSION ON PWD BUILDING CONSTRUCTION  
HANDBOOK - 6/16"**  
ON 14TH MAY 2021, FRIDAY 10.30 AM - 11.00 AM  
ON TOPIC OF  
**"PREFAB TECHNOLOGY -  
CONSTRUCTION METHODOLOGY"**

**PRESENTER**

  
Varshnavi M  
4th year, Civil

Meeting Link:  
<https://bit.ly/3d6xM62>

Dr. P SANGEETHA  
CO-ORDINATOR

Dr. N SIVAKUMAR  
HOD/CIVIL


For any query, contact Student Co-ordinator - Varshnavi M / 9384833808  
- Youtube R B / 8072781778

**ice** **SSN**

**SRI SIVASUBRAMANIYA NADAR  
COLLEGE OF ENGINEERING**  
(AN AUTONOMOUS INSTITUTION - AFFILIATED TO ANNA UNIVERSITY)  
KALAVAKKAM, CHENNAI

**DEPARTMENT OF CIVIL ENGINEERING**  
**ICE(UK) SSN STUDENT CHAPTER**  
Cordially invites you to the

**"SHARING SESSION ON PWD BUILDING  
CONSTRUCTION HANDBOOK - 6/16"**  
19th May 2021, 10:30 - 11:00 am IST  
On the Topic  
**"RAPID TESTING OF MATERIALS AT SITE"**  
To be delivered by

  
**MEENAKSI VENKATACHALAM**  
II Year, B.E., (Civil Engineering)

DR. JUJO JAMES  
FACULTY COORDINATOR

DR. N SIVAKUMAR  
HOD CIVIL

Session Number	Date	Topic Name	Speaker Name	Year	Description about the webinar
1	6-5-2021	Quality Control Aspects of Concrete	Sreeharani S T and Sathya Shree T R	II	Methods used to test the quality of concrete at site
2	7-5-2021	Crushed SandStone - Alternative to River Sand	Sanjayrathinam M and Oshiyana R S	II	Properties of crushed sandstone, advantages and disadvantages of crushed sandstone over river sand
3	8-5-2021	Guidelines in construction for field engineers	Sushritha G	IV	Step by Step Procedure followed in construction
4	8-5-2021	Concrete grade for coastal areas and non-coastal areas - Miscellaneous technical topics	Haswanth V	IV	Concrete grade for coastal areas and conditional assessment of RC structural elements
5	14-5-2021	Prefab Technology - Construction Methodology	Vaishnavi M	IV	Introduction to Prefab construction, Construction of Bridges using Prefabricated Concrete
6	19-5-2021	Rapid testing of materials at site	Meenaksi Venkatachalam	II	Testing of construction material(cement, bricks, stones, water, sand, TMT bars) at site to check their quality

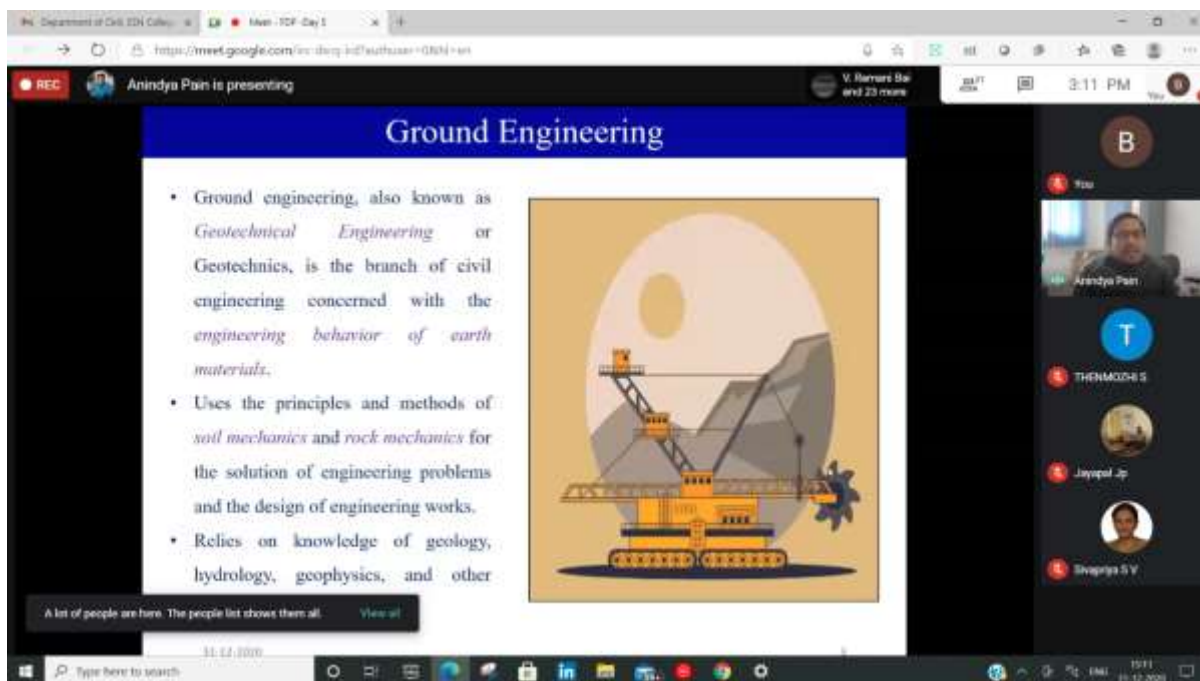
### Month: December 2020

**A** **Faculty Development Programme on “Ground Improvement Techniques”** was organized between 26<sup>th</sup> to 31<sup>st</sup> December 2020. The final lecture of the FDP on the 31<sup>st</sup> of December 2020 was delivered by Anindya Pain, Scientist, CSIR - Central Building Research Institute, (Govt. of India) Roorkee, Uttarakhand via Google meet online platform on the topic “Ground Engineering Using Geosynthetics”. Pain described in detail about ground engineering, geosynthetics and its various types and how ground is engineered using geosynthetics. He also touched upon the design basics of reinforced earth walls using geosynthetics and showed some case studies of good engineering design as well as poor design and their consequences. The session was informative and covered geosynthetics in detail.



**Dr. Anindya Pain**

Dr. Anindya Pain did his B. Tech in Civil Engineering from India. He obtained his Master's and Doctoral Degree in the field of Geotechnical Engineering from the Academy of Scientific and Innovative Research (AcSIR, New Delhi, India). He is the recipient of Innovative Student Project Award (Doctoral Level) 2017 given by Indian National Academy of Engineering (INAE). He also got the IACMAG Excellent Paper Award 2017 by the International Association for Computer Methods and Advances in Geomechanics for his paper published in the International Journal of Geomechanics (ASCE). He has been nominated to represent Indian Geotechnical Society (IGS) as Corresponding Member of the International Technical Committee TC-207 on “Soil-Structure Interaction and Retaining Walls” of the International Society for Soil Mechanics and Geotechnical Engineering (ISSMGE) for the term 2018-2021. His primary research interests include Earthquake Resistant Design of Geotechnical Structures, Probabilistic Analysis of Geotechnical Structures, Site Specific Ground Response Analysis, Rock Mechanics, Slope Stability Analysis and Application of Machine Learning for Pattern Recognition Problems. He has published 25 journal papers. He is an active reviewer of 21 SCI indexed journals.



## Month: April 2020

**A Webinar was organized by the ICE(UK) SSN Student chapter of the Department of Civil Engineering on 30<sup>th</sup> April 2021 titled, “Digitizing Construction Practices using BIM”. Mr. Tony de Palma from ACCA software (Italy) was the resource person for the event.**

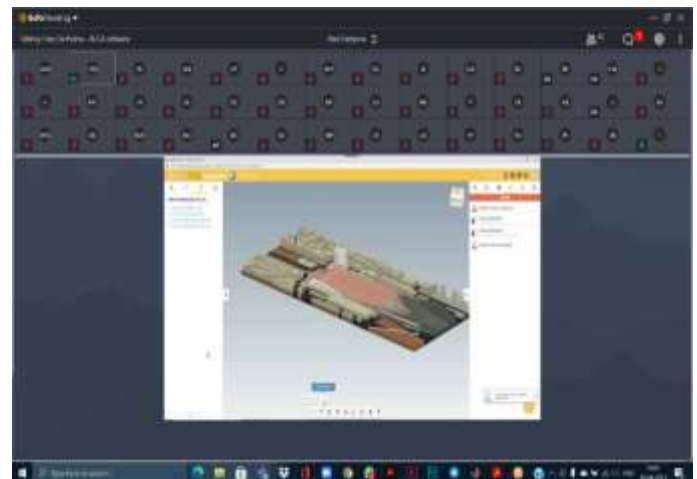
The details of the webinar held is as follows:

- A small introduction to Building Information Modelling (BIM)
- Introduction to ACCA Software
- ACCA Software and its evolution throughout the years
- A Visualisation the ‘Stazione di Napoli Centrale’ (Naples Central Station) and a Virtual Tour around the station using the software.
- A Virtual Tour of an Archaeological Site close to Naples.



- Real time Visualisation of Both the places using Google maps and information collection such as the materials used, client name, Energy efficiency of the material, The manufacturer's name and so on.

The session was followed by a Q&A round where basic questions were answered. Overall, the session gave insides to BIM and how it is used, and the dominance of BIM in the future of civil engineering.





## Industrial Advisory Council Meeting

The industrial advisory council meeting as a part of the Annual Programme Review Meet of the Department of Civil Engineering was organized by Dr.N. Sivakumar, Professor and Head, Civil Engineering, on the 15<sup>th</sup> of May 2021 at 10 am. The meeting was attended by Mr. R. Senthilnathan, Vice-President and Head-Technology & Corporate Services, Larsen & Toubro Ltd, Mount Poonamallee Road, Manapakkam, Chennai-600089, V. Balakumar, Senior Consultant, Simplex Infrastructure Ltd. and R. Senthil, Professor and Head, Department of Civil Engineering, CEG, Anna University, Chennai. The Head presented the Annual report of the department including syllabi for B.E, Civil Engineering under regulation 2021 and obtained the feedback from the council members. The council members gave valuable feedback and suggestions for the betterment of the department.

*“It is a great profession. There is the fascination of watching a figment of the imagination emerge through the aid of science to a plan on paper. Then it moves to realization in stone or metal or energy. Then it brings jobs and homes to men. Then it elevates the standards of living and adds to the comforts of life. That is the engineer's high privilege.”*

**-Herbert Hoover**

## FACULTY UPDATES

### ***External recognition:***

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N. Sivakumar acted as External examiner for ME thesis candidate of Universiti Teknologi Petronas, Malaysia

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Dr. P. Sreehari, Nominated as a member of the DC Panel of the scholar, "Mr. Santhosh Ram" pursuing his Ph.D., programme under "SRM Institute of Science and Technology" on "04.03.21".

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B. Mahalingam Delivered a Guest lecture on "Properties of Self Compacting Concrete" at Jerusalem College of Engineering on 04.03.2021.

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B. Mahalingam, Nominated as a member of the DC Panel of the scholar, "S. Vijayan" pursuing his Ph.D, programme under "SRM Institute of Science and Technology" on "04.03.21".

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S. V. Sivapriya won First Prize in Paper presentation in a conference organised by Indian Geotechnical Society, December 17- 19,2020 for prize money Euro. 120, sponsored by Springer.

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S. V. Sivapriya acted as a session Judge for the National Level Technical E-Symposium Asthivara 2021 organized by Eswari Engineering College, on 01.04.2021

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### ***Research Activity:***

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Sivakumar, Mahalingam.B, P.Sreehari, Srinath, Priyadharshni Varma.U.M, Niranjana Logeswaran (2020), "A Note on Climate Change and Extreme Water Event", Solid State Technology, Volume: 63 Issue: 4, pp. 2657-2664. ISSN:0038-111X

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Ramanagopal, S.Sathia, R. Vijayalakshmi, R, Vikram, PG, Yuvarani, R, and Yuvalatha R, (2020), "Uni axial compression behaviour of light weight expanded clay aggregate concrete cylinder confined by perforated steel tube and GFRP wrapping", Revista De la Construcción, Vol. 19, Issue No. 03, pp. 200 - 212, (ISSN number: 0718-915X).

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Sivapriya S.V , Gokul Krishnan J, Bijivemula Sruthi Reddy, Roshan R, Syed Mohammed (2021), "Experimental study on properties of mechanical resistance of polyamide in clay soil", iTeckne, Vol. 18(1),10.15332/iteckne.v18i1.2538.

Sangeetha.P, S.Ramanagopal, A.Jai Vigneshwar, K.Vaishnavi & A.Srinidhi (2020), "Flexural Strength of Steel-Concrete Composite Beams under Two-point loading", Civil and Environmental Engineering Reports, Vol. 30, pp. 21–32.

Sangeetha P & M.Shanmugapriya (2020), "Prediction of Mechanical Strength of Polypropylene Fiber Reinforced Concrete using Artificial Neural Network", Building Materials and Structures, Vol. 63, pp. 79–86.

Sangeetha P & M.Shanmugapriya (2020), "Artificial neural network applications in fiber reinforced concrete", Journal of Physics: Conference Series, Vol. 1706, pp. 1–8.

P Sangeetha, M Shanmugapriya, R Sundareswaran, K Sowmya & S Srinidhi (2020), "A Study of the Concrete Production Process -A graph theoretic approach", Journal of Physics: Conference Series, Vol. 1706, pp. 1–10.

P. Sangeetha and M.Shanmugapriya (2021), "Modeling and prediction of fatigue life of brass and EN24 steel using soft computing tool", Materials Today: Proceedings, Vol. 38, pp. 2912–2918.

P. Sangeetha, S.M.Revathi, V.Sudhakar, D.Swarnavarshini and S.Sweatha (2021), "Behaviour of cold-formed steel hollow beam with perforation under flexural loading", Materials Today: Proceedings, Elsevier , Vol. 38, No . 5, pp. 3103-3109.

P. Sangeetha and M.Shanmugapriya (2021), "Neural Network Modeling of Convection Heat Transfer Coefficient for the Caisson Nanofluid", TWMS Journal of Applied and Engineering Mathematics, Vol. 11, pp. 248–257.

P. Sangeetha, Ajay Nair, Hemalatha R, Harish Kumar K, Dinesh Kumar P, Inakota Sai Sahith and S. Radha (2021), "Efficient crack detection and quantification in concrete structures using IoT", Australian Journal of Electrical and Electronics Engineering , Vol. 18, No . 1, pp. 43–57.

Jijo James, J, Kirubhakaran, A, Balamurukan, R, Jawahar, V, Soorya, S. S, (2021), "Wetting-Drying Resistance of a Lime Stabilized Soil Amended with Steel Slag and Reinforced with Fibres", Revista Iteckne, Vol. 18, No. 1, (Online First Version).

### **Conference Activity:**

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N. Sivakumar, Salmia Beddu, Siti Asmahani Saad, Daud Mohamad Zarina Itam, Nur Liyana Mohd Kamal, Banmathi, Teh Sabariah, Zakaria Che Muda, Amalina Basri have presented a paper titled "Potential of Palm Mesocarp Fibres Ash as Cement Replacement Material in Concrete Properties Improvement" In: Proceedings of SPICE 2021, March 19–20, Chennai, India, SSN College of Engineering

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S. Ramana Gopal Presented a paper titled "Behaviour of ECC - Concrete filled steel tubular stub columns: in the International Conference on 'Applied Mathematics & Civil Structures-ICAMCS2021' held on 12-13, Feb.2021 organized by Dept. of Maths and Civil engineering, SSNCE

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S. Ramanagopal, R. Vijayalakshmi, V Charumathi, K S Niveditha, D. Sheena Grace, K. Rakshitha have presented a paper titled" Study on the properties of Crushed Seashell Aggregate Pervious Concrete" In: Proceedings of SPICE 2021, March 19–20, Chennai, India, SSN College of Engineering

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B. Mahalingam (2020), David Arunraj B, Sathish Kumar P, "A Study on Grout in Precast Construction" in Proceedings of the International Conference on Recent Development in Sustainable Infrastructure (ICRDSI 2020) Research and Practices during 19th - 21st December 2020. Organized by School of Civil Engineering, Kalinga Institute of Technology Deemed to be University, Bhubaneswar, Odisha 751024.

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B. Mahalingam , P Sabareeshwaran, S. Tharanyaa, M Kavitha have presented a paper titled "Thermo Mechanical effects of rubber chips replacement in uniform and gap graded aggregate concretes" In: Proceedings of SPICE 2021, March 19–20, Chennai, India, SSN College of Engineering.

R. Rajkumar, L Kavya, T Kamaleswari have presented a paper titled "Ground Improvement Techniques for Foundations of Structures - A Critical Review" In: Proceedings of SPICE 2021, March 19–20, Chennai, India, SSN College of Engineering

R. Rajkumar, L Kavya, T Kamaleswari have presented a paper titled "Comparative study of bamboo and steel as reinforcement in flexural and compression members In: Proceedings of SPICE 2021, March 19–20, Chennai, India, SSN College of Engineering

R. Rajkumar, L Kavya, T Kamaleswari have presented a paper titled "Effect of super-plasticizer on properties of concrete" In: Proceedings of SPICE 2021, March 19–20, Chennai, India, SSN College of Engineering

R. Rajkumar, L Kavya, T Kamaleswari have presented a paper titled "Experimental study on the enhanced strength of concrete using metakolain and copper slag" In: Proceedings of SPICE 2021, March 19–20, Chennai, India, SSN College of Engineering.

Srinath Rajagopalan presented a paper titled "Effect of sustainable material as partial replacement of aggregates in concrete with varying curing type co-authored by Sivapriya, David Arun raj, Raja Rajan T", International Conference on Advances in Materials and Manufacturing (ICAMM 2021) Feb 18-19, Sri Sivasubramaniya Nadar College of Engineering , Chennai India.

Srinath Rajagopalan B Mahalingam have presented a paper titled "Bio-Accumulation of Chromium in Zebra Fishes" In: Proceedings of SPICE 2021, March 19–20, Chennai, India, SSN College of Engineering

Srinath Rajagopalan B Mahalingam , P Sreehari Mohammed Haneefa K have presented a paper titled "Thermo Mechanical effects of rubber chips replacement in uniform and gap graded aggregate concretes" In: Proceedings of SPICE 2021, March 19–20, Chennai, India, SSN College of Engineering

Srinath Rajagopalan V. Nagarajan have presented a paper titled "Enhancement of Intersection at Kelambakkam Junction" In: Proceedings of SPICE 2021, March 19–20, Chennai, India, SSN College of Engineering



Sivapriya S V , Madhu T R and Sajid Ali, (2020), "Load Penetration Behaviour of Composite Soil with Nano-Alumina Material under Soaked and Unsoaked Condition", In: Indian Geotechnical Conference 2020, 17-19 December, Andhra University College of Engineering, Vishakapatnam.

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Sivapriya S.V , Harish Kumar M and Hariraj M J, (2021), "Assessing the retaining wall movement through finite element analysis for sustainable material as a backfill material", In: ICAMM 2021, December 18–19, India, Sri Sivasubramaniya Nadar College of Engineering.

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Sivapriya S.V , Srinath Rajagopalan, David Arunraj B, Rajarajan T (2021), "Effect of sustainable material as partial replacement of aggregates in concrete with varying curing type", In: ICAMM 2021, December 18–19, India, Sri Sivasubramaniya Nadar College of Engineering.

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Sivapriya S V presented a paper titled " Behavior of laterally loaded pile in sloping ground - a Review" In: Proceedings of SPICE 2021, March 19–20, Chennai, India, SSN College of Engineering

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Sivapriya S.V and R.Priyadharshini(2021) "Rainfall Induced landslide prediction using Neural Network based Approach", In: International Conference on Applied Mathematics and Civil Structures", February 12 -13, 2021

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Sivapriya S V, S Arunthathi, D Balaji,have presented a paper titled "A Mini Review on centralized waste management system in India" In: Proceedings of SPICE 2021, March 19–20, Chennai, India, SSN College of Engineering

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Sivapriya S V, Abithoo Dass, AD Bargavi, A Lakshmipriya, R Nandhini S have presented a paper titled "Seismic Analysis of Hypar Shell Foundation in Sandy Soil" In: Proceedings of SPICE 2021, March 19–20, Chennai, India, SSN College of Engineering

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P Sangeetha, M Shanmugapriya, R Sundareswaran, K Sowmya & S Srinidhi (2020), "Identifying Influential nodes in Planar Trusses and Meshes using centrality measures", In: Second International Conference on Recent Advances in Materials and Manufacturing (ICRAMM 2020), November 20–21, Erode, Tamil Nadu, India.

P. Sangeetha, S.Ashwin, J.Janani and R.B.Yokesh(2021), " Experimental and Analytical Behaviour of the Space Truss Components", In: Proceedings of International Conference on Applied Mathematics and Civil Structures(ICAMCS 2021), February 12-13, Chennai, SSN College of Engineering, pp. 99.

P. Sangeetha (2021), " Model Analysis of Composite Space Truss Structure", In: Proceedings of International Conference on Applied Mathematics and Civil Structures(ICAMCS 2021), February 12-13, Chennai, SSN College of Engineering, pp. 101.

P. Sangeetha, and A.Bargavi(2021), " Flexural Behaviour of the Cold-Formed Steel Box Section under Two point Loading", In: Proceedings of International Conference on Applied Mathematics and Civil Structures(ICAMCS 2021), February 12-13, Chennai, SSN College of Engineering, pp. 100.

P. Sangeetha, M. Dhinakaran, Gobinaath A. S, R. S. Saravana Kumar, A. D. Jeevan Raj (2021), "Performance Assessment of the Cold-formed Steel Columns with Perforation", In: Proceedings of SPICE 2021, March 19–20, Chennai, India, SSN College of Engineering, pp. 29.

Vijayalakshmi, R, (2021), "Investigation on the mechanical property and crack arresting mechanism of natural jute fiber used as reinforcement for lightweight concrete masonry prism", International Conference on Trends in Material Science and Inventive Materials (ICTMIM 2021) March-12-13, JCT college of engineering , Coimbatore, India.

Vijayalakshmi, R, Veera Vijaykumar, Naveen Prasath, (2021) "Study on the compression behaviour of confined concrete stub column strengthened by glass fiber reinforced polymer rebars", International Conference on Advances in Materials and Manufacturing (ICAMM 2021) Feb 18-19, Sri Sivasubramaniya Nadar College of Engineering , Chennai India.

Vijayalakshmi, R, (2021) "Study on the Prediction Model for Strength Properties of Light Weight Aggregate Pervious Concrete using Artificial Neural Network", International Conference on Applied Mathematics & Civil Structures (ICAMCS 2021), Feb 12-13, Sri Sivasubramaniya Nadar College of Engineering , Chennai India.

R. Vijayalakshmi, K Atchaya, M Naveen Kumar have presented a paper titled "Mechanical property of Sustainable pervious concrete containing lightweight foamed glass sphere aggregate as partial replacement" In: Proceedings of SPICE 2021, March 19–20, Chennai, India, SSN College of Engineering

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R. Vijayalakshmi, N Sivakumar, S Ramanagopal have presented a paper titled "Study on the compressive strength and water absorption characteristics of mortar blocks with cenosphere as partial replacement for cement" In: Proceedings of SPICE 2021, March 19–20, Chennai, India, SSN College of Engineering

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R. Vijayalakshmi, R, Jayesh, U, Kamalesh, R, Madhan kumar, D, and Selvam, K, (2021) "Water absorbing polymer balls as internal water curing agent in concrete to support hydration reaction", In proceedings of the international Conference , Recent Trends in Clean Technologies for Sustainable Environment (CTSE-2021), May-6-7, Chennai, India, department

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A. Syamsir, A. K. Allah, S. Naganathan, M. Zainoodin, N. M. Nor, and S. Beddu. Effect of various type of shear walls on behavior of tall building due to seismic force. AIP Conference proceedings 2339, 020132 (2021); <https://doi.org/10.1063/5.0044271>. 2339, 020132 (2021)

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### ***Project proposals applied:***

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S. Ramanagopal applied a project titled "Development of fibre reinforced cellular light weight concrete for non-structural applications" at SERB

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P. Sangeetha applied project titled "Assessment of the Vulnerability of Visakhapatnam Coastal Zones due to the Impacts of Sea-Level Rise and Coastal Change" at SERB

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Sivapriya SV applied project titled "Valorization of landfill waste material in the construction industry" at SERB

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### ***Doctoral Committee Members:***

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S. V. Sivapriya Attended Doctoral Committee meeting of Janani V from SRMISTE on December 12th, 2020

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S. V. Sivapriya Attended Doctoral Committee meeting of Mr.R.Dineshkumar on 29.01.2021 in SRMISTE, Kattankulathur, Chennai

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R. Rajkumar attended the DC meeting at the Sathyabama University, for the Candidate Mr.A.A.Dhanraj on 10.04.2021.

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P. Sangeetha Attended the 'DC meeting' to conduct the comprehensive Viva Voce Examination to the Ph.D Scholar Ms. Swati Sewakram Baghele, at VIT, Vellore.

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### ***Workshop / Webinar:***

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N. Sivakumar attended online webinar on Bacteria concrete- an innovative approach for sustainable future by Jyothi engineering college and ICI on 8/2/2021

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N. Sivakumar attended online webinar on the spot appraisal of structural members organised by ACE- SSNCE

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N. Sivakumar has participated in a webinar on "Challenges and Opportunities as a Material Engineer in Construction Industry" organized by Dept of Civil Engineering, SSNCE, on 27.02.2021

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N. Sivakumar has participated in a webinar on " Implementation of Complex Engineering Problems & Open Ended Labs in Direct Assessment Questions of B.E, Civil " organized by Dept of Civil Engineering, SSNCE, on 10.03.2021

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N. Sivakumar has participated in a webinar on "Managing Change" organized by Ultra Tech , on 17.04.2021

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N. Sivakumar has participated in a webinar on "Sustainable Construction a code based approach" organized by Ultra Tech, on 27.04.2021

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N. Sivakumar has participated in a webinar on "Digitizing Construction Projects using BIM" organized by ICE(UK) Dept of Civil Engineering, SSNCE, on 30.04.2021

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N. Sivakumar attended an online sharing session on PWD guideline for practicing engineers date 14/5/2021 organised by ICI SSNCE

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N. Sivakumar attended an online sharing session on PWD guideline for practicing engineers on 8/5/2021 organised by KRACIVA

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N. Sivakumar attended an online sharing session on PWD guideline for practicing engineers on 8/5/2021/2 organised by KRACIVA

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N. Sivakumar attended an online sharing session on PWD Building Construction Handbook - 6/16 on 19/5/2021 organised by ICE-SSNCE student chapter

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N. Sivakumar attended an online sharing session on PWD Building Construction Handbook - 1/16, on 6/5/2021 organised by ICI SSNCE

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N. Sivakumar attended an online sharing session on PWD Building Construction Handbook - 7/16, on 7/5/2021 organised by ICI SSNCE

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N. Sivakumar attended an online ultratech webinar on durability of concrete and its evaluation on 8/5/2021

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N. Sivakumar attended an online ultratech webinar on building geometrics and structural systems for earthquake resistant buildings on 15/5/2021

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Y. K. Sabapathy attended online webinar on "Degradation mechanism in concrete" held on 05\_03.2021, ICI Students Chapter, Dept. of Civil Engineering, SSN College of Engineering, Chennai.

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Y. K. Sabapathy attended Online webinar on "Implementation of Complex Engineering Problems & Open Ended Labs in Direct Assessment Questions for Bachelor in Civil Engineering" held on 10.03.2021, KRACIVA - organized by Dept. of Civil Engineering, SSN College of Engineering, Chennai.

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Y. K. Sabapathy attended Online webinar on "Challenges and opportunities as a material engineer in construction industry" on 27-02-2021, organized by ie(i) Civil engineering student chapter, kancheepuram local center Dept. of Civil Engineering, SSN College of Engineering, Chennai.



Y. K. Sabapathy has participated in a webinar on "Digitizing Construction Projects using BIM" organized by ICE(UK) Dept of Civil Engineering, SSNCE, on 30.04.2021

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Y. K. Sabapathy attended an Online webinar on " Quality Control Aspects of Concrete" on 6th May 2021(Thursday) organized by Dept. of Civil Engineering, SSN College of Engineering in association with ICI Student Chapter.

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Y. K. Sabapathy attended an online webinar on " Crushed SandStone - Alternative to River Sand" on 7th May 2021(Friday) organized by Dept. of Civil Engineering, SSN College of Engineering in association with ICI Student Chapter.

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Y. K. Sabapathy attended an online webinar on " Guidelines in construction for field engineers" on 8th May 2021 organized by KRACIVA Dept. of Civil Engineering, SSN College of Engineering.

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Y. K. Sabapathy attended an online webinar on " Concrete grade for coastal areas and non-coastal areas - Miscellaneous technical topics" on 8 th May 2021 organized by KRACIVA Dept. of Civil Engineering, SSN College of Engineering.

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Y. K. Sabapathy attended an online webinar on " Prefab Technology - Construction Methodology " on 14 th May 2021 organized by Dept. of Civil Engineering, SSN College of Engineering in association with ICI Student Chapter.

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Y. K. Sabapathy attended an online webinar on " Rapid testing of materials at site" on 19th May 2021 organized by Dept. of Civil Engineering, SSN College of Engineering in association with ICE(UK) SSN Student chapter.

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P. Sreehari attended online webinar on" Challenges and opportunities as a material engineer in construction industry" on 27 -02-2021, organized by IE(I) civil engineering student chapter, Kancheepuram local center Dept. of Civil Engineering, SSN College of Engineering, Chennai.

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P. Sreehari attended online webinar" Implementation of complex Engineering Problems & Open Ended Labs in Direct Assessment questions for BE held on 10.03.21

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P. Sreehari has participated a webinar on " Degradation mechanism in concrete" on 05.03.21

P. Sreehari has attended online training Programme on ISO 9001:2015 Quality Management System Internal Auditor Course

P. Sreehari attended a Sharing Session on PWD Building Construction Handbook - 2/16 "Crushed Sand Stone-Alternative to River Sand" delivered by "Sanjayrathinam M and Oshiyana R S, II year Civil Engineering Student" on "7th May" under the banner of "ICI Student Chapter"

P. Sreehari attended two days online webinar "Introduction to STAAD PRO" delivered by "Sushritha G and Lakshmi priya R" on "21.05.2021 and 22.05.2021" held at/via "Online platform" for "2,3 and 4 Year of study of students" under the banner of "KRACIVA".

B. Mahalingam attended an Online Webinar on 'Application of NDT in Structure Evaluation' held on 04th December 2020, organized by Ultra Tech Limited, New Delhi.

B. Mahalingam attended an Online Webinar on 'Green & Sustainable Building Materials and Utilization of C&D Waste' held on 5th December 2020, organized by Dept. of Civil Engineering, JUET, GUNA.

B. Mahalingam attended an Online Webinar on University Distinguished Lecture titled "Pursuit of Excellence: Institution Building" held on 12th December 2020, organized by SRM University- AP

B. Mahalingam attended an Online webinar on "Fundamentals concrete roads for sustainable development" held on 12th December 2020, organized by Ultra tech cement, New Delhi

B. Mahalingam attended an Online virtual Roundtable discussion on "Quality Assessment in Higher Education – The Need of the hour" held on 14th December 2020, Organized by Director – Client Relations, QS I-GAUGE

B. Mahalingam attended an Online webinar on "Durability of Structural Concrete" held on 25th December 2020, organized by Ultra tech cement, New Delhi

B. Mahalingam attended Online Webinar on "Efficiency and Effectiveness of curing process of concrete" held on 1<sup>st</sup> January 2021, Organized by Ultra tech Cement Ltd, Delhi

B. Mahalingam attended Online Webinar on " Climate change : Imperative concrete understanding and practice" held on 15th January 2021, Organized by Ultra tech Cement Ltd, Delhi

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B. Mahalingam attended Online Training course on " Evolving the Hydraulic design of reservoir Appurtenance services using physical and Numeric modeling" organized by CWPRS , Pune during 12-13 January 2021

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B. Mahalingam attended Online Seminar on "Sustainable Development in Civil Engineering Systems - Advances and Challenges" held on 23, 26 and 30 January 2021 organized by Department of Civil Engineering, Thapar Institute of Engineering and Technology , Patiala, India

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B. Mahalingam attended Online Webinar on "Virtual Look At Ongoing Construction Of Crude Oil Pumping And Metering Station" held on 06.02.2021 Organized by ICE - UK Student Chapter, Dept. of Civil Engineering, SSNCE

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B. Mahalingam attended Online Webinar on "Acceptance criteria for Concrete Quality Control" held on 10.02.2021 Organized by Indian Concrete Institute - Student Chapter, Dept. of Civil Engineering, SSNCE

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B. Mahalingam attended Online Webinar on " On the spot appraisal of structural members in Buildings - Easy Techniques" Organized by Association of Civil Engineers, Dept. of Civil Engineering, SSNCE

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B. Mahalingam attended Online Webinar on 'Enhancing quality teaching strategies through outcome based education' held on 2nd and 3rd March 2021, organized by Dept. of Electrical and Electronics Engineering and IQAC , Kongu Engineering College, Erode 638 060.

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B. Mahalingam attended Online Webinar on 'Degrading Mechanism in Concrete' held on 5th March 2021, organized by Dept. of Civil Engineering and ICI Student Chapter , Kalavakkam – 603110

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B. Mahalingam attended Online Webinar on 'Implementation of complex engineering problems and open ended in direct assessment questions for Bachelor of Engineering' held on 10th March 2021, organized by Dept. of Civil Engineering and Kraciva , Kalavakkam - 603110

B. Mahalingam attended Online Webinar on 'Smart Cities GOI: A Multidisciplinary Aspects of Civil Engineering ' held on 27th March 2021, organized by Dept. of Civil Engineering , Jaypee University of Engineering and Technology, Guna.

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B. Mahalingam Online webinar on "Panopto Basic and Pro training webinar" held on 30th March 2021, By Panaopto training Team, Panopto

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B. Mahalingam attended the National level Virtual 5 DAY STTP on Cyber Security Tools organized by Dept of IT, SSNCE from 30.03.21 TO 03.04.21

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B. Mahalingam participated Online Webinar on 'Building resilient reinforced soil walls- do's and don'ts' held on 31.03.21, CPD Programme organized by IEI, Calcutta..

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B. Mahalingam has participated in a webinar on "Digitizing Construction Projects using BIM" organized by ICE(UK) Dept of Civil Engineering, SSNCE, on 30.04.2021

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B. Mahalingam attended an Online Webinar on 'Emerging technologies in civil industry' held on 6th May 2021, organized by IEI, Eswari Engineering, Chennai

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B. Mahalingam attended an Online Webinar on 'Sharing session-On PWD Construction 1/16"' held on 6th May 2021, organized by ICI-student chapter, Departement of Civil Engineering, Sri Sivasubramaniya Nadar College of Engineering, Chennai

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B. Mahalingam attended an Online webinar on "Rheo-physics and shaping of fresh cement-based materials" held on 6th May 2021, organized by RIELM, France.

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B. Mahalingam attended an Online Webinar on 'Sharing session-On PWD Construction 2/16 "' held on 7th May 2021, organized by ICI - Student Chapter, Departement of Civil Engineering, Sri Sivasubramaniya Nadar College of Engineering, Chennai

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B. Mahalingam attended an Online Webinar on 'Sharing session-On PWD Construction 3/16 - Guidelines for construction For Field Engineers"' held on 8th May 2021, organized by Kraciva, Departement of Civil Engineering, Sri Sivasubramaniya Nadar College of Engineering, Chennai

B. Mahalingam attended an Online Webinar on 'Detailed Project Report Preparation for Highways and Roads' held on 17th May 2021, Skill-Lync, Chennai.

B. Mahalingam attended an Online Webinar on 'Introduction to Intellectual Property Rights (IPR), Types and Examples held on 19th May 2021, Institution's Innovation Council (SSN - IIC) , Sri Sivasubramaniya Nadar College of Engineering, Chennai.

B. Mahalingam attended an Online Webinar on 'Sharing session-On PWD Construction 6/16 - Guidelines for construction For Field Engineers"' held on 19th May 2021, organized by ICE(UK)- Student Chapter, Departement of Civil Engineering, Sri Sivasubramaniya Nadar College of Engineering, Chennai

B. Mahalingam attended an Online Webinar on 'Introduction to STAAD -PRO"' held on 21st and 22nd May 2021, organized by Kraciva, Departement of Civil Engineering, Sri Sivasubramaniya Nadar College of Engineering, Chennai

B. Mahalingam attended a Workshop on 'One day Workshop on CFD Fundamentals Theory-Practice' held on 18th May 2021 organized by Dept. of Mechanical Engineering, SSN College of Engineering, Chennai.

B. Mahalingam attended an Workshop on 'Introduction to MAT Lab' held on 26th May 2021 organized by Maths Works Even team.

B. Mahalingam attended an Online Webinar on 'Importance and Implementation of Process Safety Management held on 23rd May 2021 organized by Tamil Nadu Safety Professional Association, Chennai

B. Mahalingam attended an Online Webinar on 'Functioning of City' held on 9th April 2021, organized by MOURD, New Delhi.

B. Mahalingam attended an Online Webinar on 'Bahai's House of Worship- Lotus Temple' held on 22nd May 2021, organized by Ultra Tech Limited, ICI, Chennai.

B. Mahalingam attended an Online Webinar on 'An Introduction to Shallow Foundations ' held on 22nd May 2021, organized by Skill-Lync, Chennai.

R. Rajkumar attended an Online webinar on Horse Power to Horse Power on Dec 28, 2020 organized by IIT Madras.



R. Rajkumar attended Webinar on Virtual look at ongoing Construction of Crude oil Pumping and Metering Station on Feb 6, 2021 orgnized by ICE (UK), SSN Student Chapter

R. Rajkumar attended online Webinar on "Degradation mechanism in concrete" held on 05\_03.2021, ICI Students Chapter, Dept. of Civil Engineering, SSN College of Engineering, Chennai.

R. Rajkumar attended Online Webinar on "Implementation of Complex Engineering Problems & Open Ended Labs in Direct Assessment Questions for Bachelor in Civil Engineering" held on 10.03.2021, KARCIVA - organized by Dept. of Civil Engineering, SSN College of Engineering, Chennai.

R. Rajkumar attended Online Webinar on" Challenges and opportunities as a material engineer in construction industry" on 27 -02-2021, ORGANIZED BY IE(I) Civil engineering Student chapter, kancheepuram local center Dept. of Civil Engineering, SSN College of Engineering, Chennai.

R. Rajkumar has participated in a webinar on "Digitizing Construction Projects using BIM" organized by ICE(UK) Dept of Civil Engineering, SSNCE, on 30.04.2021

R. Rajkumar attended an Online webinar on ' Sharing Session on PWD Building Construction 'on May 6, 2021 organized by Department of Civil Engineering, SSNCE

R. Srinath Online Webinar on "Degradation Mechanism in Concrete" held on 5th March 2021, organized by Dept. of Civil Engineering, SSN College of Engineering, Chennai.

R. Srinath Online Webinar on "Challenges and opportunities as a material engineer in construction industry" held on 27th Feb 2021, organized by IE(I) Civil Engineering Student Chapter, Kancheepuram Local Center

R. Srinath has participated in a webinar on "Digitizing Construction Projects using BIM" organized by ICE(UK) Dept of Civil Engineering, SSNCE, on 30.04.2021

R. Srinath attended an Online webinar on " Sharing Session on PWD Building Construction- 1/16" held on 06/05/2021organized by ICI Student Chapter, Department of Civil Engineering, SSN College of Engineering.

R. Srinath attended an Online webinar on " Sharing Session on PWD Building Construction- 2/16: Guidelines in Construction for Field Engineers" held on 08/05/2021 organized by KRACIVA Student Chapter, Department of Civil Engineering, SSN College of Engineering.

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R. Srinath attended an Online webinar on " Sharing Session on PWD Building Construction- 5/16" held on 14/05/2021 organized by ICI Student Chapter, Department of Civil Engineering, SSN College of Engineering

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R. Srinath attended an Online webinar on " Sustainable Practices in Urban Sanitation" " held on 31/05/2021 organized by ACE Student Chapter, Department of Civil Engineering, SSN College of Engineering

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R. Srinath attended an Online webinar on " Sharing Session on PWD Building Construction- 6/16" held on 19/05/2021 organized by ICE(UK) Student Chapter, Department of Civil Engineering, SSN College of Engineering

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R. Vijayalakshmi attended Online Webinar on 'Challenges and Opportunities as a material Engineer in Construction Industry' held on 27th February 2021, organized by IE(I) Civil Engineering Student Chapter, SSN College of Engineering, Chennai.

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R. Vijayalakshmi attended Online Webinar on 'Implementation of Complex Engineering Problem & Open Ended Labs in Direct Assessment Questions for Bachelor in Civil Engineering' held on 10th March 2021, organized by Association of Civil Engineering, SSN College of Engineering, Chennai.

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Vijayalakshmi R has participated in a webinar on "Digitizing Construction Projects using BIM" organized by ICE(UK) Dept of Civil Engineering, SSNCE, on 30.04.2021

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R. Vijayalakshmi attended an webinar on 'sharing session on PWD building construction handbook' organized by department of civil engineering , SSN college of Engineering, Chennai

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R. Vijayalakshmi attended an Online Training Programme on ' MSP Online workshop' held on April 26th - 2nd May 2021 organised by Construction Management Training Institute (CMTI).

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S. V. Sivapriya attended a Workshop on 'Scour and Erosion' held on "16.12.2020" organized by "Indian Geotechnical Society, Vizag, India"

Sivapriya S V attended a webinar on “Application of Value Engineering in Foundation Design” held on December 12, 2020, conducted by Qcrete Redimix India Pvt. Ltd.

Sivapriya S V attended a webinar on "Tensor Spectra Pavement Optimization" on the 10th December 2020 conducted by Tensor International, U.K.

S. V. Sivapriya attended Online Webinar on 'Rockfall protection for hill roads' held on "25.01.2021" organized by "Maccafferi's , India"

S. V. Sivapriya attended Online Webinar on 'Engineering and Heritage Structures' held on "10.01.2021" organized by "Ultra tech , India"

S. V. Sivapriya attended Online Webinar on 'Acceptance criteria for concrete quality control' held on 10th February 2021, organized by Dept. of Civil Engineering, SSN College of Engineering, Chennai.

S. V. Sivapriya attended Online Webinar on '6 light house projects - for Affordable housing' held on 5th February 2021, organized by Ultra tech, India.

S. V. Sivapriya attended Online Webinar on 'Virtual Look at ongoing construction of crude oil pumping and metering station' held on 6th February 2021, organized by Dept. of Civil Engineering, SSN College of Engineering, Chennai.

S. V. Sivapriya attended Online Webinar on 'Innovative well foundations of signature bridge' held on 26th February 2021, organized by Ultra tech, India.

S. V. Sivapriya attended Online Webinar on '3D Printing of concrete structures' held on 5th March 2021, organized by Dept. of Civil Engineering, SRM ISTE, Chennai.

S. V. Sivapriya attended Online Webinar on 'Blending more SCMs for better concrete' held on 27th March 2021, organized by Qcrete Redymix (india) Pvt, Ltd, India.

S. V. Sivapriya attended Online Webinar on 'Degradation mechanism in concrete' held on 5th March 2021, organized by Dept. of Civil Engineering, Dept. of Civil Engineering, SSN College of Engineering, Chennai.

S. V. Sivapriya has participated in a webinar on "Sustainable Construction a code based approach" organized by Ultra Tech, on 27.04.2021

Sivapriya S V has participated in a webinar on "Digitizing Construction Projects using BIM" organized by ICE(UK) Dept of Civil Engineering, SSNCE, on 30.04.2021

S.V. Sivapriya attended an Online Webinar on 'Durability of concrete and its evaluation' held on 8th May 2021, organized by Ultra Tech Cement, India.

S.V. Sivapriya attended an Online Webinar on 'Sharing Session on PWD Building Construction' held on 6th May 2021, organized by ICI student Chapter - Department of Civil Engineering, SSN College of Engineering, Chennai.

S.V. Sivapriya attended an Online Webinar on 'Sharing Session on PWD Building Construction' held on 7th May 2021, organized by ICI student Chapter - Department of Civil Engineering, SSN College of Engineering, Chennai.

S.V. Sivapriya attended an Online Webinar on 'Sharing Session on PWD Building Construction' held on 19th May 2021, organized by ICE student Chapter - Department of Civil Engineering, SSN College of Engineering, Chennai.

S.V. Sivapriya attended an Online Webinar on 'Durability and Service life predictions for concrete' held on 8th May 2021, organized by Ultra Tech Cement, India.

S.V. Sivapriya attended an Workshop on 'MSP Online workshop' held between 26.04.2021 to 02.05.2021 organized by Construction Management Training Institute, Bengaluru.

P. Sangeetha attended an Online Webinar on 'Sustainable Use of Alternative Aggregates in Concrete' held on 18th December 2020, organized by UltraTech Cement Ltd. and ICI.

P. Sangeetha attended an Online Webinar on 'Durability of Structural Concrete' held on 25th December 2020, organized by UltraTech Cement Ltd. and ICI.

P. Sangeetha attended Online Webinar on 'Emerging Technologies in Construction Industry' held on 31st December 2020, organized by Dept. of Civil Engineering, N.G.P. Institute of Technology, Coimbatore.

P. Sangeetha attended Online Webinar on 'Current Trends in Building Construction' held on 6th January 2021, organized by Dept. of Civil Engineering, Hindusthan College of Engineering and Technology in association with ICI Student Chapter, Coimbatore.

P. Sangeetha attended Online Webinar on 'Application of Foam Concrete-Thermal Insulation Material' held on 8th January 2021, organized by Dept. of Civil Engineering, Hindusthan College of Engineering and Technology in association with ICI Student Chapter, Coimbatore.

P. Sangeetha attended Online Webinar on 'Engineering and Heritage Structures' held on 8th January 2021, organized by UltraTech Cement Ltd, Chennai.

P. Sangeetha attended Online Webinar on ' Interpretation of NDT Results for Acceptance of Concrete' held on 29th January 2021, organised by UltraTech Cement Ltd.

P. Sangeetha attended Online Webinar on ' On the Spot Appraisal of Structural Members in Building-Easy Techniques' held on 17th Feb 2021, organised by Association of Civil Engineers , SSN College of Engineering.

P. Sangeetha, " Experimental and Analytical Behaviour of the Space Truss Components", In: Proceedings of International Conference on Applied Mathematics and Civil Structures(ICAMCS 2021), February 12-13, Chennai, SSN College of Engineering, pp. 99.

P. Sangeetha (2021), " Model Analysis of Composite Space Truss Structure", In: Proceedings of International Conference on Applied Mathematics and Civil Structures(ICAMCS 2021), February 12-13, Chennai, SSN College of Engineering, pp. 101.

P. Sangeetha, " Flexural Behaviour of the Cold-Formed Steel Box Section under Two point Loading", In: Proceedings of International Conference on Applied Mathematics and Civil Structures(ICAMCS 2021), February 12-13, Chennai, SSN College of Engineering, pp. 100.

P. Sangeetha attended Online Webinar on 'Challenges and Opportunities as a material Engineer in Construction Industry' held on 27th February 2021, organized by IE(I) Civil Engineering Student Chapter, SSN College of Engineering, Chennai.

P. Sangeetha attended Online Webinar on 'Implementation of Complex Engineering Problem & Open Ended Labs in Direct Assessment Questions for Bachelor in Civil Engineering' held on 10th March 2021, organized by Association of Civil Engineering, SSN College of Engineering, Chennai.



P. Sangeetha has participated in a webinar on "Sustainable Construction a code based approach" organized by Ultra Tech, on 27.04.2021

P. Sangeetha has participated in a webinar on "Digitizing Construction Projects using BIM" organized by ICE(UK) Dept of Civil Engineering, SSNCE, on 30.04.2021

P. Sangeetha attended an Online Webinar on 'Restore Our Earth: What We Can Do' held on 25th April 2021, organized by Dept. of Electrical and Electronics Engineering , SSN College of Engineering, Chennai.

P. Sangeetha attended an Online Sharing Session on PWD Building Construction Handbook - 'Guidelines in Construction for Field Engineers' held on 8th May 2021, organized by Kraciva , Dept. of Civil Engineering, SSN College of Engineering, Chennai.

P. Sangeetha attended an Online Sharing Session on PWD Building Construction Handbook - 'Concrete Grade for Coastal and Non- Coastal Areas' held on 8th May 2021, organized by Kraciva , Dept. of Civil Engineering, SSN College of Engineering, Chennai.


P. Sangeetha attended an Online webinar on ' Green Materials for Construction - Way Forward' held on 14th May 2021, organized by UltraTech Cement Ltd, Chennai

P. Sangeetha attended an Online webinar on 'Sharing Session on PWD Building Construction Handbook - 6/16 ' held on 19th May 2021, organized by Institution of Civil Engineers (UK) SSN– Student Chapter , Dept. of Civil Engineering, SSN College of Engineering, Chennai.

P. Sangeetha attended an Online webinar on 'Introduction to Intellectual Property Rights(IPR), Types and Examples ' held on 19th May 2021, organized by Institution of Innovation Council , SSN College of Engineering, Chennai.

P. Sangeetha attended an Online Webinar on 'Introduction to STAAD PRO' held on 21st & 22nd May 2021, organized by Kraciva , Dept. of Civil Engineering, SSN College of Engineering, Chennai.

P. Sangeetha attended an Online Webinar on 'Advances in Per-Engineered buildings ' held on 22nd May 2021, organized by Kraciva , Dept. of Civil Engineering and the FORCE-Forum of Civil Engineering of Presidency University, Hyderabad.



P. Sangeetha attended an Online Webinar on 'Analysis and Design of Steel Pre Engineered Buildings ' held on 29th May 2021, organized by Dept. of Civil Engineering Sri Venkateswara College of Engineering, Sriperumbudur

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P. Sangeetha attended an Online webinar on ' Health Monitoring - Tandrut Concrete' held on 28th May 2021, organized by UltraTech Cement Ltd, Chennai

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P. Sangeetha attended an One Day Workshop on 'CFD Fundamentals-Theory and Practice' held on 18th May 2021 organized by Dept. of Mechanical Engineering, SSN College of Engineering, Chennai.

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P. Sangeetha attended an Online Webinar on ' The role of Elsevier's Research Reference Books in Quantity and Quality of Publications' organized by Science Direct, Elsevier.

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Jijo James attended an online webinar on "Engineering and Heritage Structures" organized by Indian Concrete Institute in Association with Ultratech Cement on 8th January 2021

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Jijo James attended an online webinar on "Tips and Tricks for a Successful Research Grant" delivered by Don Bosco Balaguru Rayappan, Dean Research, SASTRA, Thanjavur, organized by the Department of Civil Engineering, SSN College of Engineering, Chennai.

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Jijo James attended an online webinar on "Remedial Waterproofing for Buildings" organized by Indian Concrete Institute in Association with Ultratech Cement on 22nd January 2021

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Jijo James attended an Online Webinar on '6 Light House Projects - For Affordable Housing' held on February 5th, 2021 organized by Ultratech. Cement Ltd.

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Jijo James attended an Online Webinar on 'Technocrat's Forum on 3S Prefabricated Construction Practices' held on February 5th, 2021 organized by Ultratech. Cement Ltd.

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Jijo James attended an Online Webinar on 'Construction Safety Challenges and Their Solutions' held on February 19th, 2021 organized by Ultratech. Cement Ltd.

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Jijo James attended an online webinar on 'Innovative Well Foundations of Signature Bridge' held on February 26th, 2021 organized by Ultratech. Cement Ltd

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Jijo James attended an online webinar titled "Degradation Mechanism in Concrete" on the 5th of March 2021, organized by the Department of Civil Engineering under the banner of ICI SSN Student Chapter.

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Jijo James attended an online webinar titled "Ultra High Performance Concrete - Optimization and Design" on the 13th of March 2021, organized by UltraTech Cement Ltd.

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Jijo James attended an online webinar titled "Role of Water in Concrete" on the 13th of March 2021, organized by QCrete Readymix India Pvt. Ltd.

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Jijo James attended an online webinar titled "Sustainable Pavement Option - Concrete Pavement" held on 23rd April 2021, organized by Ultratech Cement Ltd.

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Jijo James attended an online webinar titled "Introduction to UPHC" held on 28<sup>th</sup> April 2021, organized by Qcrete Readymix India Pvt. Ltd..

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Jijo James attended an online webinar titled "Pavement Design Incorporating Geogrids" held on 29th April 2021, organized by Tensar International, United Kingdom.

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Jijo James attended an online webinar titled "Geotechnical Engineering Mitigation Techniques: Challenges and Opportunities" held on 30th April 2021, organized by Institution of Engineers India, Headquarters, Kolkata, India.

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Jijo James attended an online webinar on "Sharing Session on PWD Building Construction - Session 6/16" held on 14th May 2021. Organized by ICI Student Chapter, SSN College of Engineering, Chennai.

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Jijo James attended an online webinar on "Sharing Session on PWD Building Construction - Concrete Grade for Coastal and Non Coastal Areas" held on 9th May 2021 Organized by Kraciva, SSN College of Engineering, Chennai.

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Jijo James attended an online webinar on "Sharing Session on PWD Building Construction - Guidelines in Construction for Field Engineers" held on 9th May 2021 Organized by Kraciva, SSN College of Engineering, Chennai.



Jijo James attended an online webinar on "Sharing Session on PWD Building Construction - Session 1/16" held on 7th May 2021. Organized by ICI Student Chapter, SSN College of Engineering, Chennai.

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Jijo James attended an Online Webinar on "Durability of Concrete and Its Evaluation" held on 8th May 2021. Organized by Ultratech Cement Ltd.

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Jijo James attended an Online Webinar on "Building Geometries and Structural Systems for Earthquake Resistant Buildings" held on 15th May 2021. Organized by Ultratech Cement Ltd.

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Jijo James attended an Online Webinar on "Construction of Baha'i House of Worship - Lotus Temple" held on 22nd May 2021. Organized by Ultratech Cement Ltd.

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Jijo James attended an Online Webinar on "From Ready Mix Concrete (RMC) to Ready Made Buildings (RMB)" held on 29th May 2021. Organized by Ultratech Cement Ltd.

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Ms. R. Sumetha attended a Webinar on 'Fundamentals of Concrete Roads for Sustainable Development' on 12th Dec 2020, organized by Ultratech Cement Ltd.

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Ms. Sumetha R has participated in a webinar on "Digitizing Construction Projects using BIM" organized by ICE(UK) Dept of Civil Engineering, SSNCE, on 30.04.2021

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Ms. Sumetha R Attended the online training programme on MS Projects conducted by Construction Management Training Institute (CMTI) from 27th Apr to 2nd May 2021.

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Ms. Sumetha R Attended the online 'Sharing Session on PWD Building Construction - 1/16' conducted by ICI Student Chapter, Dept. of Civil Engineering, SSNCE on 6th May 2021.

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Ms. Sumetha R Attended the online 'Sharing Session on PWD Building Construction - 2/16' conducted by ICI Student Chapter, Dept. of Civil Engineering, SSNCE on 7th May 2021.

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Ms. Sumetha R Attended the online 'Sharing Session on PWD Building Construction - 6/16' conducted by ICI Student Chapter, Dept. of Civil Engineering, SSNCE on 14th May 2021.

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Ms. Sumetha R Attended the webinar on 'My Successful Story - Motivational Session' organized by Sengunthar Engineering College, Tiruchengode on 15th May 2021.

Ms. Sumetha R Attended the webinar on 'Sustainable Practices in Urban Sanitation' conducted by Association of Civil Engineers and Institution's Innovation Council, SSNCE on 31st May 2021.

#### **FDP:**

B. Mahalingam attended an International FDP on 'Advanced concepts in Materials and Structural health Monitoring' held from 16th to 21st December 2020, organized by Dept. of Civil Engineering, SRM University and UNIMAS supported by ICI, ACCE and Ultra Tech Cements.

B. Mahalingam attended "Recent Advances in Pavement Material Testing and Design - STTP II" held on 14th December 2020 to 19th December 2020 (6 days), Organized by Department of Civil Engineering, MNM Jain Engineering College, Chennai sponsored by AICTE

R. Rajkumar attended an online FDP on Structural Response under Extreme Loading organized by TCE, Madurai

R. Srinath attended an FDP on "Creative and Innovative Teaching Strategies for the New Normal" held from 24th to 31st May 2021, organized by the Institution's Innovation Council of Sri Sivasubramaniya Nadar College of Engineering

P. Sangeetha attended an ATAL -FDP on 'Earthquake Engineering' held from 1st to 5th December 2020, organized by LD College of Engineering, Ahmedabad.

P. Sangeetha attended FDP on 'Responsibility of Higher Education Institutions under AICTE in Implementing Sustainable Development Goals' held from 11th to 24th February 2021, organised by Sri Sairam Institute of Technology, Chennai

S. V. Sivapriya attended an online FDP on 'A Beeline for circular economy through sustainable waste management' held from 24.04.2021 to 01.05.2021, organized by Dept. of Civil Engineering, KSR College of Engineering, AICTE sponsored, Tamil Nadu.



Jijo James attended an FDP on "Recent Research Trends in Civil Engineering" from 24th May to 28th May 2021, organized by the Department of Civil Engineering, NIT Puducherry, India.

Ms. Sumetha R Completed the AICTE Training And Learning (ATAL) Academy Online FDP on 'Smart Cities-Infrastructure & Sustainability' from 24th to 28th May 2021 conducted by Indian Institute of Technology Ropar.

#### ***Events conducted:***

N. Sivakumar & B. Mahalingam organized a Virtual site visit on Transmission line tower foundation erection on 13.04.21 and 15.04.21 from 8.45 am to 9.45 am organized by IEI, Dept. of Civil Engineering, SSNCE.

N. Sivakumar organized the online International conference (as conference chair) "SPICE2021" organized by Dept. of Civil Engineering, SSNCE on March 19-20, 2021.

N. Sivakumar organized Quick-chat session (Industry-institute interaction) by Mr.Ekambaram, Cluster Head Larsen & Toubro Limited, Chennai.

B. Mahalingam organized a webinar titled "Challenges and Opportunities as a Material Engineer in Construction Industry" delivered by K. Mohammed Haneefa, PMP, Chartered Engineer(INDIA), and Project Management Consultant on 27.02.21 online platform for students under the banner of "Institution of Engineers - Student Chapter, Dept. of Civil Engineering, SSNCE

B. Mahalingam organized a guest lecture titled "Challenges and opportunities as a material Engineer in construction Industry" delivered by " Mohammed Haneefa.K and Consultant and LEED Manager " on "27.02.21" held at/via "MS Teams" for "Civil Engineering Students" under the banner of "IEI Student Chapter.

R. Srinath organizing chair for an International Conference on Sustainable Practices and Innovations in Civil Engineering (SPICE) 2021 on 19th and 20th March 2021

R. Rajkumar organized the online International conference "SPICE2021" organized by Dept. of Civil Engineering, SSNCE on March 19-20, 2021.

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Sivapriya S V and Jijo James organized a five day virtual faculty development programme on Ground Improvement Techniques from 26th December to 31st December 2020.

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Dr. S. V. Sivapriya organized a guest lecture titled "On the spot appraisal of structural members in buildings - easy techniques" delivered by "Thiru.C.Kalyanasundaram M.E(Struct.)Superintending Engineer - TNPWD on "17.02.2021" held via "Online platform" for "2,3 and 4th year students" under the banner of "ACE"

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S. V. Sivapriya organized a guest lecture titled "Implementation of Complex Engineering Problems" delivered by "Prof.Ir.Marlinda Abdul Malek , Universiti Tenaga Nasional, Malaysia" on "10.03.2021 via "Online platform" for "All students and Faculties" under the banner of "Kraciva"

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S. V. Sivapriya organized an online webinar "Guidelines in Construction for field Engineering and Miscellaneous Technical points" delivered by "Sushritha G and Haswanth.V" on "08.05.2021" held at/via "Online platform" for "2,3 and 4 Year of study of students" under the banner of "KRACIVA"

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S. V. Sivapriya organized two days online webinar "Introduction to STAAD PRO" delivered by "Sushritha G and Lakshmipriya R" on "21.05.2021 and 22.05.2021" held at/via "Online platform" for "2,3 and 4 Year of study of students" under the banner of "KRACIVA"

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S. V. Sivapriya organised webinar titled " Sustainable Practices in Urban Sanitation" on 31.05.2021 under the banner of the Association of Civil Engineers and SSN-IIC, Chennai.

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P. Sangeetha organised a webinar on the topic " Acceptance Criteria for Concrete Quality Control" delivered by Job Thomas, Professor, Division of Civil Engineering, Cochin University of Science and Technology, on 10th Feb 2021 under the banner of " ICI-Student Chapter"

P. Sangeetha organised an International Conference on " Applied Mathematics & Civil Structures" by virtual mode , during 12th Feb - 13th Feb 2021 , jointly organized by Department of Mathematics and Department of Civil Engineering.

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P. Sangeetha organized a Webinar "Degradation Mechanism in Concrete" on 5th March 2021 between 10.00am - 11.00 am under the banner of " ICI Student Chapter "

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P. Sangeetha Organized a sharing Session on PWD Building Construction Handbook - 1/16 "Quality Control Aspects of Concrete" delivered by "Sreeharini S T and Sathya Shree T R, II year Civil Engineering Student" on "6th May" under the banner of "ICI Student Chapter"

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P. Sangeetha organized a sharing Session on PWD Building Construction Handbook - 2/16 "Crushed Sand Stone-Alternative to River Sand" delivered by "Sanjayrathinam M and Oshiyana R S, II year Civil Engineering Student" on "7th May" under the banner of "ICI Student Chapter"

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P. Sangeetha organized a sharing Session on PWD Building Construction Handbook - 6/16 "Prefab Technology-Construction Methodology" delivered by "Vaishnavi M, IV year Civil Engineering Student" on "14th May" under the banner of "ICI Student Chapter"

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Jijo James organized an online webinar on "Sharing Session on PWD Building Construction Handbook - Rapid Testing of Construction Materials at Site" delivered by Ms. Meenakshi Venkatachalam, II Year B.E, Civil Engineering on 19th May 2021 held via Microsoft Teams for Students of Civil Engineering under the banner of ICE(UK) SSN Student Chapter

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Jijo James organized an Online webinar titled "Digitizing Construction Projects using BIM" delivered by M/s. ACCA Software, Italy on 30th April 2021 held online via GoToWebinar platform for the students of B.E, Civil Engineering under the banner of ICE(UK) student chapter.

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Jijo James jointly organized an International Conference on Sustainable Practices and Innovations in Civil Engineering (SPICE) 2021 as organizing chair on the 19th and 20th March 2021 via Microsoft Teams.



Jijo James organized and judged an international competition "SSN Innovation Challenge 2021" held between 26th February and 22nd March 2021 under the banner of the ICE SSN Students Chapter held via Google Meet.

Jijo James organized a virtual site visit to an 'Ongoing Construction of Crude Oil Pumping and Metering Station, Kuwait' on 6th February 2021 under the banner of ICE(UK) Student Chapter.

#### ***Other Activities:***

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N. Sivakumar reviewed a manuscript for the journal Advances in Computational Design, An International Journal published by Techno Press in December 2020

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N. Sivakumar reviewed a manuscript for the journal Construction and Building Materials published by Elsevier B V (D20-11504) in December 2020

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N. Sivakumar reviewed a manuscript for the journal Construction and Building Materials published by Elsevier B V (D20-10203) in December 2020

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N. Sivakumar reviewed a manuscript for the journal of Environmental Management published by Elsevier B.V. in January 2021

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N. Sivakumar reviewed a manuscript for the journal Construction and Building Materials published by Elsevier B.V. in January 2021.

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N. Sivakumar attended online 5 day course on Green buildings practices organised by IGBC SSNCE, CMTI, IIC from 16/2/21 to 20/2/21

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N. Sivakumar reviewed paper Analytical Solutions for the Design of Shotcrete-reinforced Waste Rock Barricades Construction and Building Materials in February 2021

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N. Sivakumar reviewed paper Estimating the Conceptual Cost of Residential Buildings: A Fuzzy Logic Ain Shams Engineering Journal in February 2021

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N. Sivakumar reviewed a paper ACI materials. Pumping of flowable concrete: analytical prediction and experimental validation in March 2021

N. Sivakumar reviewed a paper Structural engineering and Mechanics International journal, Techno press. The Effect of CFRP-Concrete Bond Mechanism on Dynamic Parameters of Repaired Concrete Girders in March 2021

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N. Sivakumar reviewed a paper ACI materials. Sustainable ferrocement mortar with waste materials and curing methods in Feb 2021

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N. Sivakumar reviewed a paper of SPICE 21

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N. Sivakumar organized an online programme titled "Meet My HOD#3" on the 3rd of May 2021.

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N. Sivakumar organized an online programme titled "Meet My HOD#3" on the 18th of May 2021.

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N. Sivakumar organized an online programme titled "Meet My HOD#3" on the 29th of May 2021.

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N. Sivakumar coordinated the Annual Programme Review meeting of the Department of Civil Engineering on the 13th and 15th of May 2021.

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Y. K. Sabapathy Chaired a session at the "INTERNATIONAL CONFERENCE - Sustainable Practices and Innovations in Civil-Engineering (SPICE 2021) held on 19th and 20th March 2021, organized by the Department of Civil Engineering, SSN College of Engineering, Chennai.

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Y. K. Sabapathy Judged the "SSN ICE INNOVATION CHALLENGE 2021", organised by the Institution of Civil Engineers (UK) - Student Chapter held between 26th of February, 2021 and 22nd of March 2021, organized by the Department of Civil Engineering, SSN College of Engineering, Chennai.

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Ramana Gopal has been appointed as a session chair in the International Conference on applied Mathematics and Civil Structures organized by Dept of Maths & Civil, SSNCE on Feb 12-13, 2021

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P. Sreehari attended online 5 day course on Green buildings practices organised by IGBC SSNCE, CMTI, IIC from 16/2/21 to 20/2/21



B. Mahalingam completed an Online Course Titled " Industrial Training on Structural Analysis and Design using ETABS" from 23.11.20 to 07.12.20 Organized by The National Small Industries Corporation Limited, Technical Services Centre (NSIC), Hyderabad.

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B. Mahalingam attended the Online "35th Indian Engineering congress" held on 18th December 2020 to 20th December 2020 , organized by IEI, Calcutta.

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B. Mahalingam attended online 5 day course on Green buildings practices organised by IGBC SSNCE, CMTI, IIC from 16/2/21 to 20/2/21

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B. Mahalingam Chaired a session at the "International conference - Sustainable Practices and Innovations in Civil-Engineering (SPICE 2021) held on 19th and 20th March 2021, organized by the Department of Civil Engineering, SSN College of Engineering, Chennai.

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B. Mahalingam attended online Training course on ' Dam Break Analysis and Emergency Action Planning' held on 22 and 23 rd Feb 2021 organized by Central water and Power Research Station, Pune.

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B. Mahalingam nominated as Expert member for Question Paper setter for BCEPC6010 Design of Steel Structure ordered executed by Controller of Examinations, GIET University, GUNUPUR-765022, Dist. Rayagada, Odisha, mail dated 05.04.21

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B. Mahalingam nominated as Expert member for Question Paper setter for Basic Structural Design ordered executed by Controller of Examinations, Anna University, Guindy, Chennai mail dated 10.03.21

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R. Rajkumar attended online 5 day course on Green buildings practices organised by IGBC SSNCE, CMTI, IIC from 16/2/21 to 20/2/21

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R. Srinath delivered an invited lecture titled "Conducting practical courses for non-circuit branches on virtual mode- case study" as a part of FDP "Creative and innovative teaching strategies for the new normal" organized by organized by the Institution's Innovation Council of Sri Sivasubramaniya Nadar College of Engineering on 26th May 2021 via MS Teams Platform.

R. Vijayalakshmi had been a session chair in the In INTERNATIONAL CONFERENCE ON Applied mathematics & civil structures (icamcs 2021), Feb 12-13, Sri Sivasubramaniya Nadar College of Engineering , Chennai India

S. V. Sivapriya Reviewed one manuscript for the journal 'Journal of Asian Architecture and Building Engineering' published by Taylor and Francis in February 2021

S. V. Sivapriya Reviewed one manuscripts for the Eighth National Conference on "Recent Advancements in Geotechnical Engineering ' by Bannari Amman Institute of Technology, Sathyamangalam- 638 401 in March 2021

S. V. Sivapriya Chaired the session of "Eighth National Conference on "Recent Advancements in Geotechnical Engineering" Bannari Amman Institute of Technology, Sathyamangalam- 638 401, in 26th March, 2021

S. V. Sivapriya Evaluated the projects for " SSN ICE Innovation Challenge 2021" organised by department of Civil Engineering, SSN College of Engineering, Chennai in March 2021

S. V. Sivapriya Organized online Appreciation Meeting for the Members of Association and Student Chapters in 03rd May, 2021.


S. V. Sivapriya organized online recognition meeting for the Semester toppers in 20th May, 2021.

P. Sangeetha reviewed a paper for the International Conference ICAMM 2021, Conducted by the Department of Mechanical Engineering, SSN College of Engineering in February 2021

P. Sangeetha Judged the 'SSN ICE Innovation challenge 2021' held on 26th of February to 22nd March 2021, organized by Institution of Civil Engineers, SSN College of Engineering, Chennai.

P. Sangeetha reviewed manuscript " Structural Behaviour of Green Geopolymer Concrete Binder" for the journal 'Key Engineering materials' published by Scientific.net in April 2021

P. Sangeetha Reviewed manuscript "A Semi Analytical Method for In-Plane Free Vibrations of Arches with a Variable Curvature"for the journal 'Key Engineering materials' published by Scientific.net in April 2021



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P. Sangeetha Reviewed manuscript " Improving the Structural Performance of Reinforce Ash" for the journal 'Key Engineering materials' published by Scientific.net in April 2021

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P. Sangeetha Reviewed two manuscripts for the SPICE21' Lecture Notes in Civil Engineering' published by Springer on April 2021

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Jijo James reviewed a manuscript for the journal Construction and Building Materials published by Elsevier B.V. in April 2021

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Jijo James attended the 35th Indian Engineering Congress held between 18th to 20th December 2020 in Virtual Mode in December 2020

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Jijo James reviewed one manuscript for the journal Construction and Building Materials published by Elsevier B.V in January 2021

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Jijo James reviewed one manuscript for the International Journal of Sustainable Engineering published by Taylor and Francis in February 2021

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Jijo James reviewed one manuscript for the International Journal of Geosynthetics and Ground Engineering published by Springer Nature in February 2021

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Jijo James reviewed one manuscript for the journal Civil and Environmental Engineering Reports published by Sciendo, Degruyter Open in March 2021

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Jijo James reviewed one manuscript for the Journal of Engineering and Technological Sciences published by Institut Teknologi Bandung, Indonesia in April 2021

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Jijo James reviewed one manuscript for the journal 'Geofluids' published by Hindawi Publishing Corporation in May 2021

## NON-TEACHING STAFF

### K Jagadeesan

Attended online Webinar on "Internal Quality assurance cell & Roles" held on 25th Nov 2020, organized by Isde academy.

Attended online Webinar on "Application of Value Engineering in foundation design" held on 12th Dec 2020, organized by Qcrete readymix (india) pvt LTD.

Attended Online Webinar on "Sustainable use of alternative aggregates in construction" held on 18th Dec 2020, organized by Ultra tech cement LTD.

Attended online Webinar on "Impact of Climate Change on Water Resource Engineering" held on 23rd Dec 2020, organized by Water Resource Engineering PG Section of Civil Engineering Department S. & S. S. Ghandhy Government Engineering College, Surat.

Attended online Webinar on "Durability of structural concrete" held on 25th Dec 2020, organized by Ultra tech cement LTD.

Attended online course "ISO 45001:2018 - Principles of Occupational Health and Safety Management Systems" for a period of attended during Date (02/12/ 2020) of the course through "ALISON"

Attended online course "Soil and Water Conservation Engineering -Introduction to Soil Erosion " for a period of attended during Date (04/12/ 2020) of the course through "ALISON"

Attended online course "Diploma in Soil and Water Conservation Engineering " for a period of attended during Date (09/12/ 2020) of the course through "ALISON"

Attended online course "Fundamental Principles of Unsaturated Soil Mechanics" for a period of attended during Date (10/12/ 2020) of the course through "ALISON"

Attended online course "Concrete Structures: Corrosion of Embedded Metal and Reinforcement " for a period of attended during Date (23/12/ 2020) of the course through "ALISON"

Attended online course " English vocabulary (foundation)"  
During Date (08/12/2020)of the course through "STUDY SECTION"

Attended online Webinar on " Application of Foam Concrete – Thermal Insulation Material" held on 8th Jan 2021, Hindusthan college of Engineering and technology coimbatore

Attended online Webinar on "PRIMAVERA" held on 9th Jan 2021, organized by Dept. of Civil Engineering, Aalim muhammed salehgh college of engineering ,avadi ,iaf chennai - 55

Attended online Webinar on "Environmental Issues in the Modern Era" held on 19th Jan 2021, organized by Dept. of Civil Engineering, Arasu engineering college Kumbakonam.

Attended online Webinar on " Remedial water proofing for buildings" held on 22nd Jan 2021, organized by Ultra tech cement LTD.

Attended online Webinar on " Technocrat's forum on revision control system for construction" held on 22nd Jan 2021, organized by ULTRA TECH CEMENT LTD.

Attended online Webinar on "Inter pretation of ndt result for acceptance of concrete " held on 29th Jan 2021, organized by Ultra tech cement LTD.

Attended online course titled " Industrial Engineering Control Valve Basic " course attended during Jan 4th 2021, through alison.

Attended online course titled "Design of Flexural Beams in Steel Structures " course attended during Jan 5th 2021, through alison.

Attended online course titled "English Parts of Speech Level (1) Foundation " course attended during Jan 7th 2021, through Study section.

Attended FDP on " Ground Improvement Techniques" held from 26th to 31st December 2020, organized by Dept. of Civil Engineering, SSN College of Engineering, Chennai.

Attended online Webinar on "6 Light house Project For Affordable Housing" held on 5th FEB 2021, organized by Ultra tech cement LTD.

Attended online Webinar on "Technocrat's Forum on 3s Prefabricated Construction Practice " held on 5th Feb 2021, organized by Ultra tech cement LTD.



Attended Online Webinar on "BACTERIA CONCRETE: AN INNOVATIVE APPROACH TOWARDS SUSTAINABLE FUTURE" held on 8th FEB 2021 organized by Dept. of Civil Engineering, Jyothi Engineering College, Jyothi Hills, Vetti attiri P O, Cheruthuruthy.

Attended Online Webinar on "Acceptance criteria for concrete quality control" held on 10th FEB 2021, organized by Dept. of Civil Engineering, SSN College of Engineering, Chennai.

Attended Online Webinar on "Implementation of Structural Theories into a Real Practical Extend" held on 13th FEB 2021, organized by ARASU Engineering College, Kumbakonam-612501.

Attended Online course titled "Advanced Diploma in Waste Water Treatment And Recycling" for a period of attended during 12th FEB 2021, through ALISON.

Attended Online course titled "Construction safety and health" for a period of attended during 18th FEB 2021, through alison.

Attended Online Webinar on "Challenges and opportunities as a material engineer in construction industry" held on 27th FEB 2021, organized by Dept. of Civil Engineering, SSN College of Engineering, Chennai.

Attended Online Webinar on "Testing techniques for self-compacting concrete" held on 5th MARCH 2021, organized by ULTRA TECH CEMENT LTD.

Attended Online Webinar on "Technology up gradation in concrete structures using supplementary cementitious materials (scm)" held on 20th march 2021, organized by Ultra tech cement ltd.

Attended Online Webinar on "Process of chandigarh" held on 25th MARCH 2021, organized by Ultra tech cement ltd.

Attended Online Course titled "Measuring the porosity and pore structure of construction materials" of Course duration' attended during "Date(16/03/2021) of the course" through "alison".

Attended Online Course titled "Masonry materials and properties" of Course duration' attended during "Date (27/03/2021) of the course" through "alison".

Attended online Webinar on 'Design trends in concrete' held on 10th April 2021 , organized by UltraTech Cement Ltd.

Attended online Webinar on 'sustainable pavement option - concrete pavement' held on 23 rd Ap 2021 , organized by UltraTech Cement Ltd.

Attended online course titled 'An Introduction to good lab practice' for attended during( 12.04 2021), through ALISON.

Attended online Course titled "Masonry materials and properties" of Course duration' attended during "Date(27/03/2021) of the course" through "ALISON".

Participated in a webinar on "Digitizing Construction Projects using BIM" organized by ICE(U ) Dept. of Civil Engineering, SSNCE, on 30.04.2021

#### **Kalatharan M**

Attended online webinar on Application of NDTin structure evaluation held on Dec.4, 2020 organized by Ultratech cement Ltd.

Attended online webinar on Trends in concrete pavements held on Dec 10, 2020 organized by Ultratech cement Ltd

Attended online webinar on Fundamentals of concrete roads for sustainable development held on Dec 12, 2020 organized by Ultratech cement Ltd.

Attended online webinar on Sustainable use of alternative aggregates in construction held on Dec 18, 2020 organized by Ultratech cement Ltd.

Attended online webinar on Durability of structural concrete held on Dec 25, 2020 organized by Ultratech cement Ltd.

Attended online webinar on Application of value engineering in foundation design held on Dec 12, 2020 organized by Qcrete Readymix (India) pvt ltd.

Attended online webinar on Impact of climate change on water resource engineering.held on Dec 23, 2020 organized by Dept. of Civil Engineering, s.&s.s Ghandhy government engineering college,Surat.

Attended online webinar on Emerging technologies in construction industry held on Dec 31, 2020 organized by Dept. of Civil Engineering, N.G.P. Institute of Technology, coimbatore.

Attended online webinar on Internal quality assurance cell-roles& responsibilities held on Nov 25, 2020 organized by ISDE ACADEMY.

Attended Online course titled 'The complete online marketing and advertising course' during Dec 8, 2020 through alison.

Attended Online course titled Soil and water conservation engineering-introduction to erosion control measures during Dec 7, 2020 through alison.

Attended Online course titled WORK ing with students with special educational needs - revised. during Dec 10, 2020 through alison.

Attended online FDP on "Ground Improvement Techniques" held on DEC 26 - 31, 2020 organized by Dept. of Civil Engineering, SSN college of Engineering, Chennai -603110

Attended online webinar on " Interpretation of NDT Results for Acceptance of concrete" held on Jan 29,2021 organized by UltraTech cement Ltd.

Attended online webinar on " Technocrat's Forum on 3S Prefabricated construction practices " held on Feb 5, 2021 organized by UltraTech cement Ltd.

Attended online webinar on " 6 Light House projects-for Affordable Housing " held on Feb 5, 2021 organized by Ultra Tech cement Ltd.

Attended online webinar on "Concrete Sustainability" held on Feb 12, 2021 organized by Ultratech cement Ltd.

Attended online webinar on " Construction safety challenges and their solution " held on Feb 19, 2021 organized by Ultra Tech cement Ltd.

Attended online webinar on " Bacteria concrete; An innovative approach towards sustainable future " held on 8 February, 2021 organized by Dept.of civil Engg. ,Jyothi Engineering college,cheruthuruthy.

Attended online webinar on " Implementation of structural Theories into a Real practical Extend " held on 13th February , 2021 organized by Dept. of civil Engg, Arasu Engineering college, Kumbakonam.

Attended online webinar on " Approaching New Age careers for Technical and Non-Technical Graduates in the current Environment " held on 8th February,2021 organized by Ven ateswara open University, Itanagar.

Attended online webinar on " Acceptance criteria for concrete Quality control " held on 10.02.2021 organized by Dept. of civil Engg. ,ssn college of engineering, Kalavakkam.

Attended online webinar on Durability-how do we measure it? Held on January 29,2021 organized by the American Concrete Institute.

Attended online webinar on" Latest Developments in civil Engineering" held on 11th January 2021 organized by Dept. of civil Engineering, Arasu Engineering college, umba onam.

Attended online webinar on "Environmental Issues in the Modern Era" held on 19th January 2021 organized by Dept. of civil Engineering, Arasu Engineering college Kumbakonam.

Attended online webinar on" Efficiency and Effectiveness of curing Process of Concrete" held on January 1,2021 organized by Ultra Tech cement Ltd.

Attended online webinar on "Climate change; Imperative concrete Understanding &Practice "held on January 15,2021 organized by Ultra Tech cement Ltd.

Attended online webinar on "Remedial Waterproofing for Buildings held on January 22,2021 organized by Ultra Tech cement Ltd.

Attended online webinar on "Technocrat's Forum on Revision control System for Construction" held on January 22,2021 organized by Ultra Tech cement Ltd.

Attended online webinar on "A Novel Systems in Waste Water Treatment for Sustainable Development" held on 28th December 2020 organized by Dept. of civil Engineering, Karpaga Vinayaga college of Engineering And Technology ,Madhuranthagam.

Attended online webinar on "Current Trends in Building Construction" held on 6th January 2021 , organized by Dept. of civil Engineering, Hindusthan college of Engineering And Technology, Coimbatore.

Attended online webinar on "Application of Foam Concrete-Thermal Insulation Material" held on 8th January 2021 organized by Dept. of civil Engineering, Hindusthan college of Engineering And Technology, Coimbatore.

Attended online webinar on "PRIMAVERA" held on 9th January 2021 organized by Dept. of civil Engineering, Aalim Muhammed Salegh college of Engineering ,Avadi.

Attended online course titled Industrial Engineering-control valve Basics, through alison.

Attended online course titled Introduction to Quic Boo s online through alison.

Attended online Training programme on "Green Buildings - Practices" held on 16to20th February 2021 organized by Dept.of civil Engineering, SSN IGBC and construction Management Training Institute.

Attended online webinar on "on the spot appraisal of structural members in buildings - easy techniques" held on 17.02.2021 organized by Dept.of civil Engineering , SSN College of Engineering.

Attended online webinar on "Climate change Actions in the state of Gujarat" held on 28th February 2021 organized by Dept of civil Engineering, S.&S.S Ghandhy Government Engineering college,surat.

Attended online webinar on "Degradation mechanism in concrete" held on 05.03.2021 organized by Dept.of civil Engineering, SSN college of Engineering.

Attended online webinar on "Challenges and opportunities as a material engineer in construction industry" held on 27.02.2021 organized by Dept.of civil Engineering, SSN College of Engineering.

Attended online webinar on "Advancement in concrete Technology "held on March 19th, 2021 organized by Dept. of civil Engineering, N.G.P. INSTITUTE OF TECHNOLOGY, Coimbatore.

Attended online webinar on " Innovative Well Foundations of signature Bridge" held on Feb 26,2021 organized by Ultratech cement Ltd.

Attended online webinar on "Waste to Wealth ; A Sustainable Building Materials for construction" held on Mar 5, 2021 organized by Ultratech cement Ltd.

Attended online webinar on "Testing Techniques for self-compacting concrete" held on Mar 6, 2021 organized by Ultratech cement Ltd.

Attended online webinar on "Ultra High Performance concrete -Optimisation and Design" held on Mar 13, 2021 organized by Ultratech cement Ltd.

Attended online webinar on "Innovative Investigation Techniques and Data processing for the Assessment of Bridges" held on 7th April 2021 ,organized by Dept. of civil Engineering ,SRM Institute of science & Technology, chennai.89.

Attended online webinar on "Green Buildings" held on 26.03.2021 organized by Dept. of civil Engineering ,SRM Institute of science & Technology, chennai 89.

Attended online webinar on " Emerging threats against the water security" held on 22th March ,2021 organized by Dept. of civil Engineering ,s.&s.s. Ghandy Government Engineering college, Surat.

Attended online webinar on "Water challenges in 21st century" held on 22th March 2021,organized by Dept. of civil Engineering, S.& S.S.Ghandhy Government Engineering college, Surat.

Attended online webinar on "Design trends in concrete held on Apr10,2021 organized by UltraTech cement Ltd.

Attended online webinar on "Testing Techniques for self compacting concrete" held on Mar 6, 2021 organized by Ultratech cement Ltd.

Attended online webinar on "cement - super plasticizer compatibility "held on Apr 3,2021, organized by UltraTech cement Ltd.

Attended online webinar on "Case study on Roads & Buildings construction in Rann of Kutch, Gujarat held on Mar 27 ,2021 organized by UltraTech cement Ltd.

Attended online webinar on "Process of CHANDIGARH" held on Mar 25, 2021 organized by UltraTech cement Ltd.

Attended online webinar on "Technology Up gradation in concrete structures using supplementary cementitious Materials (SCM), held on Mar 20, 2021 organized by UltraTech cement Ltd

Completed online course "Principles of occupational health and safety management through Alison on 24.04.2021



Participated in a webinar on "Digitizing Construction Projects using BIM" organized by ICE(U ) Dept of Civil Engineering, SSNCE, on 30.04.2021

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### **Prasath R**

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Attended an online webinar on Application of NDT in Structure Evaluation held on 4th December 202, organized by Ultra tech cement Ltd.

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Attended an online webinar on "Internal Quality Assurance Cell - Roles & Responsibilities held on 25th November 2020,organized by ISDE Academy (PS Quality Certification Pvt.Ltd).

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Attended an online webinar on "Virtual Reality in Construction" held on 5th December 2020, organized by Aalim Muhammed Salegh College of Engineering.

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Attended an online webinar on "Green & Sustainable Building materials and Utilization of C&D Waste held on 5th December 2020, organized by Jaypee University of Engg.&Technology, Guna India.

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Attended an online webinar on Fundamentals of Concrete Roads for Sustainable Development held on 12th December 2020, organized by Ultratech Cement Ltd.

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Attended an online webinar on "Application of Value Engineering in foundation design" held on 12th December 2020, organized by Qcrete Readymix (India)Pvt.Ltd.

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Attended an online webinar on "Impact of Climate Change on Water Resource Engineering" held on 23rd December 2020, organized by S. & S.S.Ghandhy Government Engg.College, Surat, Gandhinagar.

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Attended an online webinar on Durability of Structural Concrete held on 25th December 2020, organized by Ultratech Cement Ltd.

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Attended online workshop on Space for Healthy Living held on 12th December 2020, organized by Dept. of Civil Engineering, Jyothi Engineering college.

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Attended online workshop on Quantity Surveying held on 12th December 2020, organized by Mohamed Sathak AJ College of Engg.  
Dept. of Civil Engineering, Chennai.

Attended online Webinar on "A Novel Systems in Waste Water Treatment for Sustainable Development" held on 28th Dec. 2020, organized by Dept. of Civil Engineering, Karpaga Vinayaga College of Engineering and Technology

Attended online Webinar on "Efficiency and Effectiveness of Curing Process of Concrete" held on 1st Jan. 2021, organized by Ultratech Cement Ltd.

Attended online Webinar on "Current Trends in Building Construction" held on 6th Jan. 2021, organized by Dept. of Civil Engineering, Hindustan College of Engineering and Technology, Coimbatore

Attended online Webinar on "Application of Foam Concrete - Thermal Insulation Material" held on 8th Jan. 2021, organized by Dept. of Civil Engineering, Hindustan College of Engineering and Technology, Coimbatore

Attended online Webinar on "Latest Developments in Civil Engineering" held on 11th Jan. 2021, organized by Dept. of Civil Engineering, Arasu Engineering College, Kumbakonam

Attended online Webinar on "PRIMAVERA" held on 9th Jan. 2021, organized by Dept. of Civil Engineering, Aalim Muhammed Salegh College of Engineering, Avadi, Chennai

Attended Online Webinar on Climate Change: Imperative Concrete Understanding & Practice held on 15th Jan. 2021, organized by Ultratech Cement Ltd.

Attended online Webinar on "Environmental Issues in the Modern Era" held on 19th Jan. 2021, organized by Dept. of Civil Engineering, Arasu Engineering College, Kumbakonam

Attended online Webinar on Technocraft's Forum on Revision Control System for Construction held on 22nd Jan. 2021, organized by Ultratech Cement Ltd.

Attended online Webinar on Remedial Waterproofing for Buildings held on 22nd Jan. 2021, organized by Ultratech Cement Ltd.

Attended online Webinar on "Durability - How do we measure it" held on 29th Jan. 2021, organized by American Concrete Institute, India Chapter.

Attended online Webinar on "Geo HECRAS 1D & 2D Module Training session" held on 21st Jan. 2021, organized by Dept. of Civil Engineering, D College of Engineering, Nagpur.

Attended online Webinar on "Road Safety Awareness Programme" held on 3rd February 2021, organized by Dept. of Civil Engineering, St.Peters College of Engineering, Chennai

Attended online Webinar on "6 Light House Projects for Affordable Housing" held on 5th February 2021, organized by Ultratech Cement Ltd.

Attended online Webinar on "Technocraft's Forum on 3S Prefabricated Construction Practices" held on 5th February 2021, organized by Ultratech Cement Ltd.

Attended online Webinar on "Virtual Look on Ongoing Construction of Crude Oil Pumping and Metering Station" held on 6th February 2021, organized by Dept. of Civil Engineering, SSN College of Engineering, Chennai.

Attended online Webinar on "Acceptance Criteria for Concrete Quality Control" held on 10th February 2021, organized by Dept. of Civil Engineering, SSN College of Engineering, Chennai.

Attended online Webinar on "Concrete Sustainability" held on 12th February 2021, organized by Ultratech Cement Ltd.

Attended online Webinar on "Implementation of Structural Theories into a Real Practical Example" held on 13th February 2021, organized by Dept. of Civil Engineering, Arasu Engineering College, Kumbakonam - 612 501.

Attended online Webinar on green buildings - practices held on 16th Feb. to 20th February 2021 (5 days), organized by Dept. of Civil Engineering, SSN College of Engineering, Chennai.

Attended online Webinar on "on the spot appraisal of structural members in buildings - easy techniques" held on 17.02.2021, organized by Dept. of Civil Engineering, SSN College of Engineering, Chennai.

Attended online Webinar on "Construction Safety Challenges and their Solution" held on 19th February 2021, organized by Ultratech Cement Ltd.

Attended online Webinar on "Innovative Well Foundations of Signature Bridge" held on 26th February 2021, organized by Ultratech Cement Ltd.

Attended Online Webinar on "Climate Change Actions in the State of Gujarat" held on 28th February 2021, organized by Dept. of Civil Engineering, S.&S.S.Gandhy Government Engineering College, Surat.

Attended Online Webinar on "Indian Standards for Glass and Glazing" held on 26th February 2021, organized by Bureau of Indian Standards, Glazing Society of India, CSIR-Central Glass & Ceramic Research Institute and Indian Institute of Technology, Madras.

Attended Online Webinar on "Challenges and Opportunities as a material engineer in Construction Industry" held on 27th February 2021, organized by Dept. of Civil Engineering, SSN College of Engineering, Chennai.

Attended Online Webinar on "Degradation Mechanism in Concrete" held on 5th March 2021, organized by Dept. of Civil Engineering, SSN College of Engineering, Chennai.

Attended Online Webinar on Water Challenges in 21st Century held on 22nd March 2021 organized by S&SS Gandhy Government Engineering College, Surat

Attended Online Webinar on Emerging threats against the Water Security held on 22nd March 2021 organized by S&SS Gandhy Government Engineering College, Surat

Attended Online Webinar on Waste to Wealth: A Sustainable Building Materials for Construction held on 5th March 2021 organized by Ultratech Cement Ltd.

Attended Online Webinar on Testing Techniques for Self Compacting Concrete held on 6th March 2021 organized by Ultratech Cement Ltd.

Attended Online Webinar on Ultra High Performance Concrete-Optimisation and Design held on 13th March 2021 organized by Ultratech Cement Ltd.

Attended Online Webinar on Vadeeya Usaaree De Nush hey held on 19th March 2021 organized by Ultratech Cement Ltd.

Attended Online Webinar on "Safe and Clean Environment for Healthy Living" held on 2nd March 2021, organized by Dept. of Civil Engineering, NGP Institute of technology, Coimbatore-641 048.

Attended Online Webinar "Case Study on Roads & Buildings construction in Rann of Kutch, Gujarat" held on 2nd March 2021, organized by Dept. of Civil Engineering, NGP Institute of technology, Coimbatore-641 048.

Attended Online Webinar on 'Green Buildings' held on 26th March. 2021, organized by Dept. of Civil Engineering, SRM Institute of Science & Technology, Ramapuram, Chennai 600089.

Attended Online Webinar on "Importance and Application of Remote Sensing Techniques in Water Resources Engineering" held on 29th March. 2021, organized by Dept. of Civil Engineering, Karpaga Vinayaga College of Engineering and Technology, Chengalpattu-603308.

Attended Online Webinar on Cements- superplasticizer compatability held on 3rd April 2021, organized by Ultratech Cement Ltd.

Attended Online Webinar on Education paradigm: past, present, future held on 6th April 2021,organised by training and placements cell and ISTE students chapter of S& S S.Ghandhy Government engineering college, Surat

Attended Online Webinar on Covid Vaccination Life Promotion held on 5th April 2021, organised by Indian Medical Association and Department of Civil Engineering.D. college of engineering, Nagpur, Maharashtra

Attended Online International Webinar on Innovative investigation techniques and data processing for the assessment of bridges held on 7th April 2021, organized by Dept. of Civil Engineering, SRM Institute of Science & Technology, Ramapuram, Chennai 600089.

Attended Online Webinar on process of Chandigarh held on 9th April 2021, organized by Ultratech Cement Ltd.

Attended Online Webinar on Design trends in concrete held on 10th April 2021, organized by Ultratech Cement Ltd.

Attended Online Webinar on Sustainability construction a code based approach held on 24th April 2021, organized by Ultratech Cement Ltd.

Attended Online Course on "An introduction to Good Lab Practices" held on 13th April. 2021, through ALISON

Participated in a webinar on "Digitizing Construction Projects using BIM" organized by ICE(U ) Dept of Civil Engineering, SSNCE, on 30.04.2021

## **Anbazzhagan K**

Attended online webinar titled " Application of NDT in Structure Evaluation" organized by UltraTech Cement on Dec 4, 2020.

Attended online webinar titled " Trends in Concrete Pavements" organized by UltraTech Cement on Dec 10, 2020.

Attended online webinar titled " Fundamentals of Concrete Roads for Sustainable Development" organized by UltraTech Cement on Dec 12, 2020.

Attended online webinar titled " Application of Value Engineering in Foundation Design" organized by Qcrete Quality Concrete on Dec 12, 2020.

Attended online webinar titled " Sustainable use of Alternative Aggregates in Construction" organized by UltraTech Cement on Dec 18, 2020.

Participated in the Interactive webinar titled " Impact of Climate Change on Water Resource Engineering" organized by S & SS Ghandhy Government Engineering College, Surat on Dec 23, 2020.

Attended online webinar titled " Durability of Structural Concrete" organized by UltraTech Cement on Dec 31, 2020.

Attended online webinar titled " Emerging Technologies in Construction Industry" organized by NGP Institute of Technology, Coimbatore on Dec 25, 2020.

Attended online FDP on "Ground Improvement Techniques" held on DEC 26 - 31, 2020 organized by Dept. of Civil Engineering, SSN college of Engineering, Chennai -603110

Attended a webinar on "A Novel Systems in Waste Water Treatment for Sustainable Development" organized by Karpaga Vinayaga College of Engineering and Technology on 28 December 2020.

Attended a webinar on " Efficiency and Effectiveness of Curing Process of Concrete" organized by UltraTech on Jan 1, 2021.

Attended a webinar on "Current Trends in Building Construction" organized by Hindustan College of Engineering and technology, Coimbatore on Jan 6, 2021.

Attended a webinar on "Latest Developments in Civil Engineering" organized by Arasu Engineering College, Kumbakonam on Jan 11, 2021.



Attended online live demo on "PRIMAVERA" organized by Aalim Muhammed Salegh College of Engineering, Coimbatore on Jan 9, 2021.

Attended a webinar on "Technocrat's Forum on Revision Control System for Construction" organized by UltraTech on Jan 22, 2021.

Attended a webinar on "Interpretation of NDT Results for Acceptance of Concrete" organized by UltraTech on Jan 29, 2021.

Successfully completed a online course titled "Meditation" through Alison.

Attended online webinar on "Green Buildings - Practices " held on 16-20, Feb 2021 organized by Dept. of civil Engg. SSN college of engineering, Kalavakkam

Attended online webinar on " Technocrat's Forum on 3S Prefabricated construction practices " held on Feb 5, 2021 organized by UltraTech cement Ltd.

Attended online webinar on " 6 Light House projects-for Affordable Housing " held on Feb 5, 2021 organized by UltraTech cement Ltd.

Attended online webinar on "Concrete Sustainability" held on Feb 12, 2021 organized by Ultratech cement Ltd

Attended online webinar on " Construction safety challenges and their solution " held on Feb 19, 2021 organized by UltraTech cement Ltd.

Attended online webinar on "Bacteria concrete; An innovative approach towards sustainable future" held on 8 February, 2021 organized by Dept. of civil Engg. , Jyothi Engineering college, Cheruthuruthy.

Attended online webinar on " Implementation of structural Theories into a Real practical Extend " held on 13th February , 2021 organized by Dept. of civil Engg, Arasu Engineering college, Kumbakonam

Attended online webinar on " Acceptance criteria for concrete Quality control " held on 10.02.2021 organized by Dept. of civil Engg. ,SSN college of engineering, Kalavakkam

Attended online webinar on "On the spot Appraisal of Structural Members in Buildings - Easy Techniques" held on 17.02.2021 organized by Dept. of Civil Engg. SSN college of engineering, Kalavakkam

Attended online webinar on " Innovative Well Foundations of Signature Bridge " held on Feb 26, 2021 organized by UltraTech cement Ltd.

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Attended online webinar "Challenges and Opportunities as a Material Engineer in Construction Industry " organized by Dept. of Civil Eng. SSN College of Engineering on 27th Feb, 2021

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Attended online webinar "Safe and Clean Environment for Healthy Living" organized by N. G. P. Institute of Technology, Coimbatore on 2nd March, 2021

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Attended online webinar "Degradation Mechanism in Concrete " organized by Dept. of Civil Eng. SSN College of Engineering on 5th March, 2021

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Attended online webinar "Testing Techniques for Self Compacting Concrete" organized by UltraTech Cement Ltd. on 5th March, 2021

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Attended online webinar "Waste to Wealth: A Sustainable building Materials for Construction" organized by UltraTech Cement Ltd. on 5th March, 2021

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Attended online webinar "Implementation of Complex Engineering Problems and Open Ended Lab in Direct Assessment Questions for Bachelor of Civil Engineering" organized by Dept. of Civil Eng. SSN College of Engineering on 10th March, 2021

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Attended online webinar "Ultra High Performance Concrete - Optimization and Design organized by UltraTech Cement Ltd. on 13th March, 2021

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Attended online webinar "Technology Up gradation in Concrete Structures using supplementary contentious Materials" organized by UltraTech Cement Ltd. on 20th March, 2021.

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Attended online Research Seminar "Advancement in Concrete Technology" organized by N. G. P. Institute of Technology, Coimbatore on 19th March, 2021

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Attended online webinar " Case study on Roads & Buildings Constructions in Rann of Kutch, Gujarat on" organized by UltraTech Cement Ltd. on 27th March, 2021.

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Attended online webinar on " Process of Chandigarh " held on April 9th, 2021 organized by UltraTech cement Ltd.

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Attended online webinar on " Design trends in Concrete " held on April 10th, 2021 organized by UltraTech cement Ltd.

Attended online webinar on " Sustainable construction a code based Approach " held on April 24th, 2021 organized by UltraTech cement Ltd

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Participated in a webinar on "Digitizing Construction Projects using BIM" organized by ICE(U ) Dept of Civil Engineering, SSNCE, on 30.04.2021

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Attended online webinar "Testing Techniques for Self Compacting Concrete" organized by UltraTech Cement Ltd. on 5th March, 2021

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Attended online webinar "Waste to Wealth: A Sustainable building Materials for Construction" organized by UltraTech Cement Ltd. on 5th March, 2021

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Attended online webinar "Implementation of Complex Engineering Problems and Open Ended Lab in Direct Assessment Questions for Bachelor of Civil Engineering" organized by Dept. of Civil Eng. SSN College of Engineering on 10th March, 2021

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Attended online webinar "Ultra High Performance Concrete - Optimization and Design organized by UltraTech Cement Ltd. on 13th March, 2021

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Attended online webinar "Technology Up gradation in Concrete Structures using supplementary Contentious Materials" organized by UltraTech Cement Ltd. on 20th March, 2021.

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Attended online Research Seminar "Advancement in Concrete Technology" organized by N. G. P. Institute of Technology, Coimbatore on 19th March, 2021

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Attended online webinar " Case study on Roads & Buildings Constructions in Rann of Kutch, Gujarat on" organized by UltraTech Cement Ltd. on 27th March, 2021.

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## **Jegan K**

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Attended online webinar on "Safe and Clean Environment for Healthy Living" held on March 2nd, 2021 organized by the Department of Civil Engineering, N.G.P. Institute of Technology, Coimbatore.

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Attended online webinar on " Degradation Mechanism in Concrete " held on March 5th, 2021 organized by Department of Civil Engineering, SSN College of Engineering, Kalavakkam - 603 110.

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Attended online webinar on " Testing Techniques for Self Compacting Concrete" held on March 6th, 2021 organized by UltraTech cement Ltd.

Attended online webinar on " Waste to Wealth: A Sustainable Building Materials for construction " held on March 5th, 2021 organized by UltraTech cement Ltd.

Attended online webinar on " Challenges and Opportunities as a Material Engineer In Construction Industry " held on FEB 27th, 2021 organized by Department of Civil Engineering, SSN College of Engineering, Kalavakkam - 603 110.

Attended online webinar on " Implementation of Complex Engineering Problems & Open Ended Labs in Direct Assessment Questions for Bachelor in Civil Engineering " held on March 10th, 2021 organized by Department of Civil Engineering, SSN College of Engineering, Kalavakkam - 603 110.

Attended online webinar on " Ultra High Performance Concrete - Optimisation and Design " held on March 13th, 2021 organized by UltraTech cement Ltd.

Attended online webinar on " Advancement in Concrete Technology " held on March 19th , 2021 organized by the Department of Civil Engineering, N.G.P. Institute of Technology, Coimbatore.

Attended online webinar on " Process of CHANDIGARH " held on March 25th, 2021 organized by UltraTech cement Ltd.

Attended online webinar "Technology Up gradation in Concrete Structures using Supplementary Cementitious Materials (SCM)"held on March 20th, 2021 organized by UltraTech cement Ltd.

Attended Online Webinar on "Emerging threats against the Water Security" held on 22nd March 2021 organized by S&SS Ghandhy Government Engineering College, Surat

Attended Online Webinar on "Water Challenges in 21st Century" held on 22nd March 2021 organized by S&SS Ghandhy Government Engineering College, Surat

Attended online webinar " Case study on Roads & Buildings Constructions in Rann of Kutch, Gujarat " held on March 27th, 2021 organized by UltraTech cement Ltd.

Attended Online Webinar on " Indian Standards for Glass and Glazing" held on 26th February 2021, organized by Bureau of Indian Standards, Glazing Society of India, CSIR- Central Glass & Ceramic Research Institute and Indian Institute of Technology, Madras.

Attended online webinar on " Managing Change " held on April 17th, 2021 organized by UltraTech cement Ltd.

Attended online webinar on " Sustainable construction a code based Approach " held on April 24th, 2021 organized by UltraTech cement Ltd

Attended online webinar on " Process of Chandigarh " held on April 9th, 2021 organized by UltraTech cement Ltd.

Attended online webinar on " Design trends in Concrete " held on April 10th, 2021 organized by UltraTech cement Ltd.

Attended online webinar on " Cement - Super plasticizer Compatibility " held on April 3rd, 2021 organized by UltraTech cement Ltd.

Attended online webinar on " Green Buildings " held on March 26th, 2021 organized by Department of Civil Engineering, SRM Institute of Science & Technology, Ramapuram, Chennai - 89

Attended an Online course titled 'Principles of Occupational Health and Safety Management Systems' attended during the month April 2021, through Alison participated in a webinar on "Digitizing Construction Projects using BIM" organized by ICE(U ) Dept of Civil Engineering, SSNCE, on 30.04.2021

Attended online webinar on "Safe and Clean Environment for Healthy Living" held on March 2nd, 2021 organized by the Department of Civil Engineering, N.G.P. Institute of Technology, Coimbatore.

Attended online webinar on " Degradation Mechanism in Concrete " held on March 5th, 2021 organized by Department of Civil Engineering, SSN College of Engineering, Kalavakkam- 603 110.

Attended online webinar on " Testing Techniques for Self Compacting Concrete" held on March 6th, 2021 organized by UltraTech cement Ltd.

Attended online webinar on " Waste to Wealth: A Sustainable Building Materials for construction " held on March 5th, 2021 organized by UltraTech cement Ltd.

Attended online webinar on " Challenges and Opportunities as a Material Engineer In Construction Industry " held on Feb 27th, 2021 organized by Department of Civil Engineering, SSN College of Engineering, Kalavakkam- 603 110.

Attended online webinar on " Implementation of Complex Engineering Problems & Open Ended Labs in Direct Assessment Questions for Bachelor in Civil Engineering " held on March 10th, 2021 organized by Department of Civil Engineering, SSN College of Engineering, Kalavakkam- 603 110.

Attended online webinar on " Ultra High Performance Concrete - Optimisation and Design " held on March 13th, 2021 organized by UltraTech cement Ltd.

Attended online webinar on " Advancement in Concrete Technology " held on March 19th , 2021 organized by the Department of Civil Engineering, N.G.P. Institute of Technology, Coimbatore.

Attended online webinar on " Process of Chandigarh " held on March 25th, 2021 organized by UltraTech cement Ltd.

Attended online webinar "Technology Up gradation in Concrete Structures using supplementary Cementitious Materials (SCM)"held on March 20th, 2021 organized by UltraTech cement Ltd.

Attended online Webinar on "Emerging threats against the Water Security" held on 22nd March 2021 organized by S&SS Ghandhy Government Engineering College, Surat

Attended online Webinar on "Water Challenges in 21st Century" held on 22nd March 2021 organized by S&SS Ghandhy Government Engineering College, Surat

Attended online webinar " Case study on Roads & Buildings Constructions in Rann of Kutch, Gujarat " held on March 27th, 2021 organized by UltraTech cement Ltd.

Attended Online Webinar on " Indian Standards for Glass and Glazing" held on 26th February 2021, organized by Bureau of Indian Standards, Glazing Society of India, CSIR-Central Glass & Ceramic Research Institute and Indian Institute of Technology, Madras



## INDUSTRY LINKED PROJECT

**Organisation:** L&T Construction, Manapakkam, Chennai

**Internship period:** January 02, 2021 to April 15, 2021

**Title of the project work:** Project scope uncertainty and cost contingency assessment using PDRI

**Internal guide:** B. Mahalingam

**External guides:** S. Kalirajan, Deputy Dean, Institute of Project Management, Larsen and Toubro Construction, Mr. D. Muthukumar, Chief Engineering Manager, EDRC-Heavy Civil Infrastructure, Larsen and Toubro Construction, Ms. Ashitha E.V.R, Assistant Manager, Nuclear Segment, Heavy Civil Infrastructure IC, Larsen and Toubro Construction and to Santhosh Loganathan, Research Associate, L&T Institute of Project Management.

### Team members:

Name	Register number	Batch
Anne Sherin S	312217103004	2017-2021 (Final Year)
Rebekah Rubidha Lisha R	312217103048	2017-2021 (Final Year)
Supraja G	312217103056	2017-2021 (Final Year)
Vinothni S N	312217103061	2017-2021 (Final Year)



### ***Acknowledgement:***


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We express our sincere gratitude to S. Kalirajan, Deputy Dean, Institute of Project Management, Larsen and Toubro Construction, for his technical support and guidance from the industry throughout our project. Our sincere and heartfelt thanks to Mr. D. Muthukumar, Chief Engineering Manager, EDRC-Heavy Civil Infrastructure, Larsen and Toubro Construction for his timely guidance and inputs about the industrial project. We are extremely grateful to Ms. Ashitha E.V.R, Assistant Manager, Nuclear Segment, Heavy Civil Infrastructure IC, Larsen and Toubro Construction for her immense help and guidance. Our sincere thanks to Santhosh Loganathan, Research Associate, L&T Institute of Project Management for all his inputs and guidance. We are extremely grateful to N. Sivakumar, Head of the Department of Civil Engineering, SSN College of Engineering for giving us spontaneous and whole hearted support and encouragement. We extend our gratitude to B. Mahalingam, Associate Professor, Department of Civil Engineering, SSN College of Engineering for his able guidance and counsel throughout our project.

### ***Information about company:***

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L&T Construction is a division of Larsen & Toubro (L&T) a major Indian technology, engineering, construction, manufacturing and financial services conglomerate, with global operations. L&T addresses critical needs in key sectors - Hydrocarbon, Infrastructure, Power, Process Industries and Defence - for customers in over 30 countries around the world. With over 8 decades of a strong, customer focused approach and a continuous quest for world-class quality, they unmatched expertise across Technology, Engineering, Construction, Infrastructure Projects and Manufacturing.



### ***Internship summary***

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Project scope definition, the process by which projects are selected, defined and prepared for definition, is a process necessary for achieving excellent project performance and is a key element in the pre-project planning process. The scope of a project in general is defined to provide all the stakeholders with a clear understanding of why the project was initiated and defines its key goals. If the scope of a project is poorly defined, the probability of its relative failure is comparatively high. Although the project scope definition should be done during the initiation of the project, it becomes necessary to identify whether there are any changes to the requirements for the project. Project Definition Rating Index (PDRI) is an efficient scope assessment as well as project scope definition tool developed under the guidance of Construction Industry Institute (CII) designed to increase the likelihood of project success by improving project scope definition, specifically by identifying deficiencies in scope definition early during the front-end planning process. This tool has been used for assessing the scope of the cooling tower of Kakrapar atomic power station (Phases 3&4). The tender documents for the project were thoroughly studied and 68 relevant elements were selected out of total 70 elements defined by the Construction Industry Institute (CII). The bid estimate was calculated based on data from the tender documents. The elements were designated as high rated or low rated elements, allocated weighting factor based on designation and allocated appropriate maturity values based on relevant data from the tender documents. The total scores were then calculated. The uncertainty range was then determined by using the accuracy class developed by AACE. Monte Carlo Simulation was then performed and the Uncertainty Reserve Volume (URV) was determined. The project has been divided into 5 phases namely initial tendering phase, final tendering phase, initial planning phase, detailed planning phase and nearing end of construction. The PDRI score calculation and Monte Carlo Simulation were carried out for all the 5 phases and URV was found to be 6.82%, which is higher than the conventional 5%.



The PDRI score calculation and Monte Carlo Simulation were also performed for various other test cases. Weighting distributions such as 80/20, 70/30 and 60/40 were compared and it was found out that the 3 distributions gave similar results. Different trends in variables like PDRI Score, initial estimate, final estimate, previous URV and URV were explored across the different project stages. Cumulative probability and probability density graphs for different project phases were plotted and mean of the distribution and overrun were determined. The regression analysis was performed for the 5 phases using the Statistical Package for the Social Sciences (SPSS) software with the URV as the dependent variable and it was found that data points are valid and reliable.

### ***Lessons learnt***

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1. Gained an in-depth understanding about the various phases of a construction project
2. Gained an insight into the timeline of a project and the various reasons for time overrun and cost overrun
3. Learned to analyse the tender documents
4. Got hands on experience in the preparation of rough estimate for a real time project
5. Acquired an in-depth understanding about the PDRI tool, its application and got a chance to use that tool for a real time project to determine the uncertainty scope definition
6. Studied to perform Multiple Regression Analysis and also to interpret the results

## Conclusion

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1. The efficiency of PDRI as a project scope assessment tool is evident as it has proved helpful in determining the exact value of uncertainty.
2. It is applicable to all industrial, infrastructure and building projects and the respective rating elements have been published by the CII.
3. In a nutshell, PDRI is a must-use tool for projects with high budgets since a small overrun in cost can be costly.

*“Civil Engineering is the art of directing the great sources of Power in Nature for the use and convenience of man; being that practical application of the most important principles of natural Philosophy which has in a considerable degree realized the anticipations of Bacon, and changed the aspect and state of affairs in the whole world. The most important object of Civil Engineering is to improve the means of production and of traffic in states, both for external and internal Trade.”*

**-Thomas Tredgold**

## STUDENT ACHIEVEMENTS

Vikram P G of III Year B.E, Civil Engineering has secured 2<sup>nd</sup> prize in the quiz programme conducted as a part of the "Intercollegiate Physics Fest" organized by the Women's Christian College on 30.04.2021.

Magendra Kamalnath S A, I Year, Civil, won the 2<sup>nd</sup> Place in the Mad over Marketing Contest organized by Civil Engineering Association of Sri Venkateswara College of Engineering, Chennai. The event was a part of ARTIFEX 2021. The event involved random construction products being given to participants for marketing. The contestants needed to create a brand name, tag line and formulate key selling points for the product to market it in the construction industry based on their Civil Engineering knowledge. Following this, the contestants needed to market their product in front of the judges for 10 minutes. Magendra was randomly given the product 'tiles' which he successfully marketed by giving a catchy brand name and a tag line to attract both traditional as well as modern customers. He also impressed upon the judges about the tile composition, manufacturing, its transportation and effective marketing tactics to capture the market. There were 10 participants from various colleges and Magendra won the second place for his efforts.

*“ The story of civilization is, in a sense, the story of engineering-that long and arduous struggle to make the forces of nature work for man's good.”*

**-L. Sprague de Camp**



## STUDENT UPDATES

Sathya Shree T R has participated in the online live demo on "Virtual Reality in Construction" conducted by Aalim Muhammed Salegh College of Engineering on Dec 5, 2020

Sathya Shree T R has participated in the online live webinar on "Thin Film Gas Sensors" conducted by Sathyabama of Science and Technology on Dec 10, 2020

Janani J has successfully participated in Industry Academia Conclave conducted from 22.12.20 to 25.12.20 organized by Ministry of Science and Technology, Ministry of Earth Sciences and Ministry of Health and Family Welfare, Govt of India

Rushikaa S has actively participated in the Creative Poster contest on " Air Quality Management" held on 09.12.20 at IIT Madras, Chennai

Rushikaa S has undergone 30 days internship successfully qualified the three days selection and recruitment process as Campus Ambassador at Younity.in.

Vikram P G has participated in online course on "Remote Sensing and Digital Image Analysis" conducted by Indian Institute of Remote Sensing (IIRS), ISRO Dehradun during 17-8.20 to 11.09.20

Vikram P G has successfully completed the online course " Everyday Excel, Part 1 through Coursera

Vikram P G has successfully completed NPTEL online course titled " Introduction to Geographic Information Systems" and secured 90% marks

Vikram P G has successfully completed NPTEL online course titled " Strength of Materials" and secured 91% marks

Vinothni S N has successfully participated in Industry Academia Conclave as a part of India International Science Festival (IISP) 2020 organized by Ministry of Science and Technology, etc, from 22 - 25 December 2020 and secured 6<sup>th</sup> place in All India level.

Janani J has successfully participated in Industry Academia Conclave as a part of India International Science Festival (IISP) 2020 organized by Ministry of Science and Technology, etc, from 22 - 25 December 2020 and secured 6<sup>th</sup> place in All India level.

Anne Sherin A has successfully participated in Industry Academia Conclave as a part of India International Science Festival (IISP) 2020 organized by Ministry of Science and Technology, etc, from 22 - 25 December 2020 and secured 6th place in All India level.

Grandhe Vishnu Prathap (2018-22) completed an online course "MATLAB Onramp" for 20 days offered by Mathworks through Mathworks Training Services on 30-01-2021.

Prabhakaran P (2018-22) completed the NPTEL course "Integrated Waste Management for a Smart City", offered by SWAYAM in Sep-Dec 2020.

Sathya Shree T R (2019-23) completed the NPTEL course "Municipal Solid Waste Management", offered by SWAYAM in Sep-Dec 2020.

Blessy J (2018-22) participated in the Online Training Programme on "Green Buildings – Practices", conducted by Construction Management Training Institute, Bangalore, from 20th – 24th Jan 2021.

Grandhe Vishnu Prathap (2018-22) participated in the Online Training Programme on "Green Buildings – Practices", conducted by Construction Management Training Institute, Bangalore, from 20th – 24th Jan 2021.

Grandhe Vishnu Prathap (2018-22) attended the webinar on "Infrastructure Series- Session 10", conducted by Construction Management Training Institute, Bangalore, on 23rd Jan 2021.

Blessy J (2018-22) attended the webinar on "Infrastructure Series- Session 10", conducted by Construction Management Training Institute, Bangalore, on 23rd Jan 2021.

Meenaksi V (2019-23) attended the webinar on "Infrastructure Series- Session 9", conducted by Construction Management Training Institute, Bangalore, on 16th Jan 2021.

Gokul S (2018-22) participated in the online Live Demo on "Primavera", conducted by Aalim Muhammed Salegh College of Engineering, on 9th Jan 2021.

Rajarajan T (2017-21) participated in "Power talks and Panel Discussions" at E-Summit 2021, conducted by the Entrepreneurship Cell of IIT Bombay, on 30th Jan 2021.

Sathya Shree T R (2019-23) attended the webinar on “Climate Change: Imperative Concrete Understanding and Practice”, organized by UltraTech Cement Ltd, on 15th Jan 2021.

Blessy J (2018-22) attended the webinar on “Remedial Waterproofing for Buildings”, organized by UltraTech Cement Ltd, on 15th Jan 2021.

Sonika M (2019-23) attended the webinar on “Infrastructure Series- Session 10”, conducted by Construction Management Training Institute, Bangalore, on 23rd Jan 2021.

Sonika M (2019-23) participated in the online Live Demo on “Primavera”, conducted by Aalim Muhammed Salegh College of Engineering, on 9th Jan 2021.

Atchayah K has participated the webinar on "Acceptance criteria for concrete quality control" organized by "ICI student chapter" on "10.2.21" organized by the Dept. of Civil Engg. SSNCE

Vidhyaa K has participated the webinar on "Acceptance criteria for concrete quality control" organized by "ICI student chapter" on "10.2.21" organized by the Dept. of Civil Engg. SSNCE

Vidhyaa K has attended online 5 day course on Green buildings practices organised by IGBC SSNCE, CMTI, IIC from 16/2/21 to 20/2/21

K Sai Phanindra attended Online Webinar on "Virtual Look At Ongoing Construction Of Crude Oil Pumping and Metering Station” held on 06.02.2021 Organized by ICE - UK, Dept. of Civil Engineering, SSNCE

K Sai Phanindra has participated the webinar on "Acceptance criteria for concrete quality control" organized by "ICI student chapter" on "10.2.21" organized by the Dept. of Civil Engg. SSNCE

Javith S has attended online 5 day course on Green buildings practices organised by IGBC SSNCE, CMTI, IIC from 16/2/21 to 20/2/21

Sonika M has attended online 5 day course on Green buildings practices organised by IGBC SSNCE, CMTI, IIC from 16/2/21 to 20/2/21

Sonika M attended Online Webinar on ' On the Spot Appraisal of Structural Members in Building-Easy Techniques' held on 17th Feb 2021, organised by Association of Civil Engineers, SSN College of Engineering.

Sonika M has participated the webinar on "Acceptance criteria for concrete quality control" organized by "ICI student chapter" on "10.2.21" organized by the Dept. of Civil Engg. SSNCE

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Abdullah Mohamed Muhajirin has participated the webinar on "Acceptance criteria for concrete quality control" organized by "ICI student chapter" on "10.2.21" organized by the Dept. of Civil Engg. SSNCE

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Roshna R attended Online Webinar on ' On the Spot Appraisal of Structural Members in Building-Easy Techniques' held on 17th Feb 2021, organised by Association of Civil Engineers , SSN College of Engineering.

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Roshna R has participated the webinar on "Acceptance criteria for concrete quality control" organized by "ICI student chapter" on "10.2.21" organized by the Dept. of Civil Engg. SSNCE

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Roshna R attended Online Webinar on "Virtual Look At Ongoing Construction Of Crude Oil Pumping and Metering Station" held on 06.02.2021 Organized by ICE - UK, Dept. of Civil Engineering, SSNCE

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Roshna R has attended online 5 day course on Green buildings practices organised by IGBC SSNCE, CMTI, IIC from 16/2/21 to 20/2/21

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Roshna R has attended online 5 day course on Green buildings practices organised by IGBC SSNCE, CMTI, IIC from 16/2/21 to 20/2/21

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Abinaya D has participated programme on Say yes to Life, Not to drugs, Narcotics control Bureau, Govt of India, on February 02 2021

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Abinaya D has participated programme on Pledge for Anti-Dowry organized National Commission for Women, Govt of India, on February 02 2021

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Abinaya D has participated programme on Gandhi in Me, Gandhi Smriti & Darshan Samiti, Govt of India, on February 02 2021

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Rupashri V has participated the webinar on "Acceptance criteria for concrete quality control" organized by "ICI student chapter" on "10.2.21" organized by the Dept. of Civil Engg. SSNCE

A S Sowmya Sri has attended online 5 day course on Green buildings practices organised by IGBC SSNCE, CMTI, IIC from 16/2/21 to 20/2/21

A S Sowmya Sri attended Online Webinar on "Virtual Look At Ongoing Construction Of Crude Oil Pumping and Metering Station" held on 06.02.2021 Organized by ICE - UK, Dept. of Civil Engineering, SSNCE

A S Sowmya Sri has participated the webinar on "Acceptance criteria for concrete quality control" organized by "ICI student chapter" on "10.2.21" organized by the Dept. of Civil Engg. SSNCE

M C Ashwin has attended online 5 day course on Green buildings practices organised by IGBC SSNCE, CMTI, IIC from 16/2/21 to 20/2/21

M C Ashwin has participated the webinar on "Acceptance criteria for concrete quality control" organized by "ICI student chapter" on "10.2.21" organized by the Dept. of Civil Engg. SSNCE

Kesavan J has attended online 5 day course on Green buildings practices organised by IGBC SSNCE, CMTI, IIC from 16/2/21 to 20/2/21

Kesavan J has participated pathway to preparation for studying abroad organized by McGrawHill on 6.2.21

Kesavan J has participated the webinar on "Acceptance criteria for concrete quality control" organized by "ICI student chapter" on "10.2.21" organized by the Dept. of Civil Engg. SSNCE

Gokul S has participated the webinar on "Acceptance criteria for concrete quality control" organized by "ICI student chapter" on "10.2.21" organized by the Dept. of Civil Engg. SSNCE

Gokul S attended Online Webinar on '6 light house projects - for Affordable housing' held on 5th February 2021, organized by Ultra tech, India.

Gokul S has participated the webinar on "Acceptance criteria for concrete quality control" organized by "ICI student chapter" on "10.2.21" organized by the Dept. of Civil Engg. SSNCE

Gokul S has attended online webinar on "Concrete Sustainability" held on Feb 12, 2021 organized by Ultratech cement Ltd.

Gokul S attended Online Webinar on ' On the Spot Appraisal of Structural Members in Building-Easy Techniques' held on 17th Feb 2021, organised by Association of Civil Engineers , SSN College of Engineering.

Gokul S has attended online 5 day course on Green buildings practices organised by IGBC SSNCE, CMTI, IIC from 16/2/21 to 20/2/21

Gokul S has attended online webinar on " Bacteria concrete; An innovative approach towards sustainable future " held on 8 February, 2021 organized by Dept.of civil Engg. ,Jyothi Engineering college, cheruthuruthy.

R M Jyothir Adithya Skandan has successfully completed Foundations of Everyday Leadership - 4 weeks - University of Illinois - Coursera - October 29th 2020

R M Jyothir Adithya Skandan has successfully completed Weather Observation and Meteorological Observation Encoding - Self Paced - Udemy - December 10th 2020

Bharathi M has participated the webinar on "Acceptance criteria for concrete quality control" organized by "ICI student chapter" on "10.2.21" organized by the Dept. of Civil Engg. SSNCE

Bharathi M has attended online 5 day course on Green buildings practices organised by IGBC SSNCE, CMTI, IIC from 16/2/21 to 20/2/21

Bharathi M has attended a webinar on “on the spot appraisal of structural members in buildings – Easy Techniques” organized by the Association of Civil Engineers, Department of Civil Engineering, SSN College of Engineering held on the 17/02/2021.

Meenakshi V attended Online Webinar on "Virtual Look At Ongoing Construction Of Crude Oil Pumping and Metering Station” held on 06.02.2021 Organized by ICE - UK, Dept. of Civil Engineering, SSNCE

Manikandan D attended Online Webinar on "Virtual Look At Ongoing Construction Of Crude Oil Pumping and Metering Station” held on 06.02.2021 Organized by ICE - UK, Dept. of Civil Engineering, SSNCE



Manikandan D has participated the webinar on "Acceptance criteria for concrete quality control" organized by "ICI student chapter" on "10.2.21" organized by the Dept. of Civil Engg. SSNCE

Manikandan D has attended online 5 day course on Green buildings practices organised by IGBC SSNCE, CMTI, IIC from 16/2/21 to 20/2/21

Grandhe Vishnu Prathap attended Online Webinar on "Virtual Look At Ongoing Construction Of Crude Oil Pumping and Metering Station" held on 06.02.2021 Organized by ICE - UK, Dept. of Civil Engineering, SSNCE

Dinesh Kumar S attended Online Webinar on "Virtual Look At Ongoing Construction Of Crude Oil Pumping and Metering Station" held on 06.02.2021 Organized by ICE - UK, Dept. of Civil Engineering, SSNCE

Charanya S has participated the webinar on "Acceptance criteria for concrete quality control" organized by "ICI student chapter" on "10.2.21" organized by the Dept. of Civil Engg. SSNCE

Charanya S has attended online 5 day course on Green buildings practices organised by IGBC SSNCE, CMTI, IIC from 16/2/21 to 20/2/21

Gunalan S has actively participated in the Nationwide search for budding minds- A virtual project competition organized by Kumaraguru College of Technology, Coimbatore from 21 to 22 January 2021

K.Sai Phanindra has participated in tech Webinar on " Degradation Mechanism in Concrete held on 05.03.2021 organized by Dept. of Civil Engineering, SSNCE

Santhiya S has participated in tech Webinar on " Degradation Mechanism in Concrete held on 05.03.2021 organized by Dept. of Civil Engineering, SSNCE

Gokul S has participated in tech Webinar on " Degradation Mechanism in Concrete held on 05.03.2021 organized by Dept. of Civil Engineering, SSNCE

M Saranya has participated in tech Webinar on " Degradation Mechanism in Concrete held on 05.03.2021 organized by Dept. of Civil Engineering, SSNCE

Roshna R has participated in tech Webinar on " Degradation Mechanism in Concrete held on 05.03.2021 organized by Dept. of Civil Engineering, SSNCE

Jyothir Adithya Skandan R M has participated in teh Webinar on " Degradation Mechanism in Concrete held on 05.03.2021 organized by Dept. of Civil Engineering, SSNCE

Bharathi M has participated in the Webinar on " Degradation Mechanism in Concrete held on 05.03.2021 organized by Dept. of Civil Engineering, SSNCE

Ashwin Kumar K T has participated in teh Webinar on " Degradation Mechanism in Concrete held on 05.03.2021 organized by Dept. of Civil Engineering, SSNCE

Kishore Kumar D has participated in teh Webinar on " Degradation Mechanism in Concrete held on 05.03.2021 organized by Dept. of Civil Engineering, SSNCE

Javith S has participated in teh Webinar on " Degradation Mechanism in Concrete held on 05.03.2021 organized by Dept. of Civil Engineering, SSNCE

Sheena Grace D has participated in teh Webinar on " Degradation Mechanism in Concrete held on 05.03.2021 organized by Dept. of Civil Engineering, SSNCE

Shashankar V has participated in teh Webinar on " Degradation Mechanism in Concrete held on 05.03.2021 organized by Dept. of Civil Engineering, SSNCE

Samundeeswari P has participated in teh Webinar on " Degradation Mechanism in Concrete held on 05.03.2021 organized by Dept. of Civil Engineering, SSNCE

Prithika Saishree S has participated in teh Webinar on " Degradation Mechanism in Concrete held on 05.03.2021 organized by Dept. of Civil Engineering, SSNCE

R.Senthamil Selvi has participated in teh Webinar on " Degradation Mechanism in Concrete held on 05.03.2021 organized by Dept. of Civil Engineering, SSNCE

Rakshitha S has participated in teh Webinar on " Degradation Mechanism in Concrete held on 05.03.2021 organized by Dept. of Civil Engineering, SSNCE

Yuvasri Raja has participated in teh Webinar on " Degradation Mechanism in Concrete held on 05.03.2021 organized by Dept. of Civil Engineering, SSNCE

Kaviya Roshne GM has participated in teh Webinar on " Degradation Mechanism in Concrete held on 05.03.2021 organized by Dept. of Civil Engineering, SSNCE

Manikandan D has participated in teh Webinar on "  
Degradation Mechanism in Concrete "held on 05.03.2021  
organized by Dept. of Civil Engineering, SSNCE

Vikaram P G has actively participated in the Nationwide search for budding minds-Avirtual project competition organized by Kumaraguru College of Technology, Coimbatore from 21 to 22 January 2021

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Gunalan S has actively participated in the Nationwide search for budding minds-Avirtual project competition organized by Kumaraguru College of Technology, Coimbatore from 21 to 22 January 2021

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R Senthamil Selvi has participated in the Online Training Programme on Green Buildings - Practices 2 hours/ 5 day session on 16th to 20th February 2021 organised by dept. of civil engineering, SSNCE

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Shashankar V has participated in the Online Training Programme on Green Buildings - Practices 2 hours/ 5 day session on 16th to 20th February 2021 organised by Dept. of civil engineering, SSNCE

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Santhiya S has participated in the Online Training Programme on Green Buildings - Practices 2 hours/ 5 day session on 16th to 20th February 2021 organised by Dept. of civil engineering, SSNCE

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Kesavan has successfully completed 15 hours course on Finance for Engineering Professionals on 19th March 2021 conducted by Thomas More Smith, Emory University, USA

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Shashankar V has successfully completed " 3D Printing of Concrete Structures" organized by SRM Institute of Science and Technology, Chennai on 5th March 2021

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Shashankar V has successfully completed six weeks online training on AutoCAD. on 8th March 2021 conducted by Intershala Tranining

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Sheena Grace D has participated in the online training programme on Construction Finishes organized by Construction Management Training Institute on 1.30 hours/5 day session on 16th to 20th March 2021

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Roshna R has participated in the online training programme on Construction Finishes organized by Construction Management Training Institute on 1.30 hours/5 day session on 16th to 20th March 2021

Vikram P G has secured SECOND place in the Quiz programme organized Dept of Physics, Women's Christian College

Manikandan D has participated in a Webinar on "Challenges and Opportunities as a Material Engineer in construction Industry" organized by Dept. of Civil Engg. SSNCE on 27.02.2021

Kaviya Roshne G M has participated in a Webinar on "Challenges and Opportunities as a Material Engineer in construction Industry" organized by Dept. of Civil Engg. SSNCE on 27.02.2021

Rakshitha S has participated in a Webinar on "Challenges and Opportunities as a Material Engineer in construction Industry" organized by Dept. of Civil Engg. SSNCE on 27.02.2021

Senthamil Selvi R has participated in a Webinar on "Challenges and Opportunities as a Material Engineer in construction Industry" organized by Dept. of Civil Engg. SSNCE on 27.02.2021

Prithika Sai Sree S has participated in a Webinar on "Challenges and Opportunities as a Material Engineer in construction Industry" organized by Dept. of Civil Engg. SSNCE on 27.02.2021

Samundeeswari P has participated in a Webinar on "Challenges and Opportunities as a Material Engineer in construction Industry" organized by Dept. of Civil Engg. SSNCE on 27.02.2021

Shashankar V has participated in a Webinar on "Challenges and Opportunities as a Material Engineer in construction Industry" organized by Dept. of Civil Engg. SSNCE on 27.02.2021

Javith S has participated in a Webinar on "Challenges and Opportunities as a Material Engineer in construction Industry" organized by Dept. of Civil Engg. SSNCE on 27.02.2021

Ashwin Kumar K T has participated in a Webinar on "Challenges and Opportunities as a Material Engineer in construction Industry" organized by Dept. of Civil Engg. SSNCE on 27.02.2021

Bharathi M has participated in a Webinar on "Challenges and Opportunities as a Material Engineer in construction Industry" organized by Dept. of Civil Engg. SSNCE on 27.02.2021

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Gokul S has participated in a Webinar on "Challenges and Opportunities as a Material Engineer in construction Industry" organized by Dept. of Civil Engg. SSNCE on 27.02.2021

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Vidhyaa K has participated in a Webinar on "Challenges and Opportunities as a Material Engineer in construction Industry" organized by Dept. of Civil Engg. SSNCE on 27.02.2021

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Kaviya Roshini G M has participated in a Webinar on "Implementation of Complex Engineering Problems an open ended labs in Direct assessment questions for Bachelor in Civil Engineering" organized by Dept. of Civil Engg. SSNCE on 10.03.2021

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Kesavan J has participated in a Webinar on "Implementation of Complex Engineering Problems an open ended labs in Direct assessment questions for Bachelor in Civil Engineering" organized by Dept. of Civil Engg. SSNCE on 10.03.2021

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Ashwin M C has participated in a Webinar on "Implementation of Complex Engineering Problems an open ended labs in Direct assessment questions for Bachelor in Civil Engineering" organized by Dept. of Civil Engg. SSNCE on 10.03.2021

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Rakshitha S has participated in a Webinar on "Implementation of Complex Engineering Problems an open ended labs in Direct assessment questions for Bachelor in Civil Engineering" organized by Dept. of Civil Engg. SSNCE on 10.03.2021

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Senthamil Selvi has participated in a Webinar on "Implementation of Complex Engineering Problems an open ended labs in Direct assessment questions for Bachelor in Civil Engineering" organized by Dept. of Civil Engg. SSNCE on 10.03.2021

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Prithika Sai Shree S has participated in a Webinar on "Implementation of Complex Engineering problems an open ended labs in direct assessment questions for Bachelor in Civil Engineering" organized by Dept. of Civil Engg. SSNCE on 10.03.2021

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Kishore Kumar D has participated in a Webinar on "Implementation of Complex Engineering Problems an open ended labs in Direct assessment questions for Bachelor in Civil Engineering" organized by Dept. of Civil Engg. SSNCE on 10.03.2021

Sheena Grace D has participated in a Webinar on "Implementation of Complex Engineering Problems an open ended labs in Direct assessment questions for Bachelor in Civil Engineering" organized by Dept. of Civil Engg. SSNCE on 10.03.2021

Bharathi M has participated in a Webinar on "Implementation of Complex Engineering Problems an open ended labs in Direct assessment questions for Bachelor in Civil Engineering" organized by Dept. of Civil Engg. SSNCE on 10.03.2021

Jyothir Aadhthya Skandan R M has participated in a Webinar on "Implementation of Complex Engineering Problems an open ended labs in Direct assessment questions for Bachelor in Civil Engineering" organized by Dept. of Civil Engg. SSNCE on 10.03.2021

Abudllah Mohammed Muhajirin has participated in a Webinar on "Implementation of Complex Engineering Problems an open ended labs in Direct assessment questions for Bachelor in Civil Engineering" organized by Dept. of Civil Engg. SSNCE on 10.03.2021

Roshna R has participated in a Webinar on "Implementation of Complex Engineering Problems an open ended labs in Direct assessment questions for Bachelor in Civil Engineering" organized by Dept. of Civil Engg. SSNCE on 10.03.2021

Jyothir Adithya Skandan attended online webinar on 'Digitizing Construction Practices using BIM' organized by ICE(UK) SSN Student Chapter on 30th April 2021

Vikaram P G has secured 2nd prize in the quiz programme on "Intercollegiate Physics Fest" organized by Women's Christian College on 30.04.2021

M. C. Ashwin has participated in the webinar on " Infrastructure Series - session 16 conducted by CMTI on 03.04.21

M. C. Ashwin has participated in the webinar on " Infrastructure Series - session 17 conducted by CMTI on 09.04.21

J. Kesavan has participated in a webinar on "Digitizing Construction Projects using BIM" organized by ICE(UK) Dept of Civil Engineering, SSNCE, on 30.04.2021

Vaageesan U has participated in a webinar on "Digitizing Construction Projects using BIM" organized by ICE(UK) Dept of Civil Engineering, SSNCE, on 30.04.2021

K Sai Phanindra has participated in a webinar on "Digitizing Construction Projects using BIM" organized by ICE(UK) Dept of Civil Engineering, SSNCE, on 30.04.2021



Yuvasri Raja has participated in a webinar on "Digitizing Construction Projects using BIM" organized by ICE(UK) Dept of Civil Engineering, SSNCE, on 30.04.2021

M. Sanjarathinam has participated in a webinar on "Digitizing Construction Projects using BIM" organized by ICE(UK) Dept of Civil Engineering, SSNCE, on 30.04.2021

S. Javith has participated in a webinar on "Digitizing Construction Projects using BIM" organized by ICE(UK) Dept of Civil Engineering, SSNCE, on 30.04.2021

Sonika M has participated in a webinar on "Digitizing Construction Projects using BIM" organized by ICE(UK) Dept of Civil Engineering, SSNCE, on 30.04.2021

Sonika M has participated in a webinar on "Online short time training programme on Revit-Architecture and design organized by NGP Institute of Technology from 26.04.21 to 01.05.21

Sonika M has attended webinar on Infrastructure Series - session 18 conducted by CMTI on 19.04.21

Vikram P.G, III Year, qualified in the 3 days online course organized by TEAM 2020 HELPERS (Non-Profit Organization- West Bengal, India) in the title of "Vastu Plan in Modern Era between on 27-29th April 2021.

Sathya Sree T R, II Year, participated in an online short term programme on Revit Architecture and Design organized by ICI, Coimbatore between 26th April and 1st May 2021

Magendra Kamalnath S A, I year, successfully completed Fundamentals of Digital Marketing certification exam on 5th April 2021.

Magendra Kamalnath S A, I year, successfully completed 7 Day Python and Data Analysis bootcamp conducted by Shape AI.

Vishnu Balaji, II Year, successfully completed an online course on Estimating and Costing in Civil Engineering on 30th May 2021 by Udemy.

Ganapathi Nikitha Reddy, II Year, participated in an online training programme on Project Planning using Primavera P6 from 9th May to 20th May 2021.

Grandhe Vishnu Pratap, III Year, participated in an online training programme on Project Planning using Primavera P6 from 9th May to 20th May 2021.

Sreeharini S T, II Year, participated in an online training programme on Project Planning using Primavera P6 from 9th May to 20th May 2021.

Yogasree Muthuswamy, I year, participated in the workshop on automation of construction process using 3D printing organized by Sri Venkateshwara College of Engineering on 21<sup>st</sup> May 2021

Vikram P G, III Year, attended a two days workshop on Fundamental concepts of Electromagnetic fields and applications organized by SVCE, Tirupati, on 28-29 May 2021.

Vikram P G, III Year, participated in a sharing session on PWD Building Construction Handbook organized by ICE (UK) SSN Student chapter on 19<sup>th</sup> May 2021.

Vikram P G, III Year, participated in a international webinar on Journey as a Scientist of ISRO organized by Team 2020 Helpers on 29<sup>th</sup> May 2021.

Abinaya D, II Year, participated in a sharing session on PWD Building Construction Handbook organized by ICI SSN Student chapter on 14<sup>th</sup> May 2021.

Gokul S, II Year, participated in a sharing session on PWD Building Construction Handbook organized by ICI SSN Student chapter on 6<sup>th</sup> May 2021.

Gokul S, II Year, participated in a sharing session on PWD Building Construction Handbook organized by ICI SSN Student chapter on 7<sup>th</sup> May 2021.

Gokul S, II Year, participated in a sharing session on PWD Building Construction Handbook organized by ICI SSN Student chapter on 14<sup>th</sup> May 2021.

Gokul S, II Year, participated in a sharing session on PWD Building Construction Handbook organized by Kraciva, Association of Civil Engineers, SSNCE on 8<sup>th</sup> May 2021.

Gokul S, II Year, participated in a sharing session on PWD Building Construction Handbook organized by Kraciva, Association of Civil Engineers, SSNCE on 9<sup>th</sup> May 2021.

Gokul S, II Year, participated in a Workshop on Introduction to STAAD Pro organized by Kraciva, Association of Civil Engineers, SSNCE on 21<sup>st</sup> and 22<sup>nd</sup> May 2021.

Gokul S, II Year attended an Online Webinar on "Construction of Baha'i House of Worship - Lotus Temple" held on 22nd May 2021 Organized by Ultratech Cement Ltd.

Gokul S, II Year attended an Online Webinar on "Restore our Earth: What we can do" held on 25<sup>th</sup> April 2021 Organized by Dept. of EEE, SSNCE.

Manikandan D, II Year, participated in a sharing session on PWD Building Construction Handbook organized by ICI SSN Student chapter on 6<sup>th</sup> May 2021.

Manikandan D, II Year, participated in a sharing session on PWD Building Construction Handbook organized by Kraciva, Association of Civil Engineers, SSNCE on 8th May 2021.

Manikandan D, II Year, participated in a sharing session on PWD Building Construction Handbook organized by Kraciva, Association of Civil Engineers, SSNCE on 9th May 2021.

Manikandan D, II Year, participated in a sharing session on PWD Building Construction Handbook organized by ICE (UK) SSN Student chapter on 19th May 2021.

Manikandan D, II Year, participated in a Workshop on Introduction to STAAD Pro organized by Kraciva, Association of Civil Engineers, SSNCE on 21st and 22nd May 2021.

Oshiyana R S, II Year, participated in a sharing session on PWD Building Construction Handbook organized by ICI SSN Student chapter on 7th May 2021.

Oshiyana R S, II Year, participated in a sharing session on PWD Building Construction Handbook organized by ICI SSN Student chapter on 6th May 2021.

Sathya Sree T R, II Year, participated in a sharing session on PWD Building Construction Handbook organized by ICI SSN Student chapter on 7th May 2021.

Sathya Sree T R, II Year, participated in a sharing session on PWD Building Construction Handbook organized by ICI SSN Student chapter on 14th May 2021.

Ashwin M C, II Year, participated in a Workshop on Introduction to STAAD Pro organized by Kraciva, Association of Civil Engineers, SSNCE on 21st and 22nd May 2021.

Ashwin M C, II Year, participated in a sharing session on PWD Building Construction Handbook organized by ICE (UK) SSN Student chapter on 19th May 2021.

Ashwin M C, II Year, attended an Online Webinar on "From Ready Mix Concrete (RMC) to Ready Made Buildings (RMB)" held on 29th May 2021 Organized by Ultratech Cement Ltd.

Ashwin M C, II Year, attended an Online Webinar on "Flood and Drought Mapping using GIS" held on 25th May 2021 Organized by NGP Institute of Technology, Coimbatore.

Ashwin M C, II Year, attended an Online Webinar on "Concrete – A 360 degree view from quality perspective in Maharashtra Metro" held on 24th May 2021 Organized by SRM Institute of Science and Technology, Chennai.

Ashwin M C, II Year, attended an Online Webinar on "Construction of Baha'i House of Worship - Lotus Temple" held on 22nd May 2021 Organized by Ultratech Cement Ltd.

Ashwin M C, II Year, attended an Online Webinar on "Challenges in Design and Construction of World's Tallest Bridge" held on 6th May 2021 Organized by SRM Institute of Science and Technology, Chennai.

Bharathi M, II Year, participated in a sharing session on PWD Building Construction Handbook organized by ICI SSN Student chapter on 6th May 2021.

Bharathi M, II Year, participated in a sharing session on PWD Building Construction Handbook organized by ICI SSN Student chapter on 7th May 2021.

Bharathi M, II Year, participated in a sharing session on PWD Building Construction Handbook organized by Kraciva, Association of Civil Engineers, SSNCE on 8th May 2021.

Bharathi M, II Year, participated in a sharing session on PWD Building Construction Handbook organized by ICI SSN Student chapter on 14th May 2021.

Bharathi M, II Year, participated in a sharing session on PWD Building Construction Handbook organized by ICE (UK) SSN Student chapter on 19th May 2021.

Bharathi M, II Year, participated in a Workshop on Introduction to STAAD Pro organized by Kraciva, Association of Civil Engineers, SSNCE on 21st and 22nd May 2021.

Bharathi M, II Year, attended an Online Webinar on "Sustainable Practices in Urban Sanitation" held on 31st May 2021 Organized by Association of Civil Engineers, and IIC, SSNCE.

Magendra Kamalnath S A, I year, successfully completed Python for Finance Workshop conducted by Leapup Edutech Pvt. Ltd. in April 2021.

Magendra Kamalnath S A, I Year, participated in a sharing session on PWD Building Construction Handbook organized by ICE (UK) SSN Student chapter on 19th May 2021.

Magendra Kamalnath S A, I Year, attended an Online Webinar on "Basics of Geopolymer Concrete and its Applications" Organized by Qcrete Readymix India Pvt. Ltd. on 20th May 2021.

Magendra Kamalnath S A, I Year, attended an Online Webinar on "Sustainable Concrete to make Durable Structures" held on 22nd May 2021 Organized by Mahalingam College of Engineering and Technology and Amazecrete Pvt. Ltd.

Magendra Kamalnath S A, I Year, attended an Online National Level Technical Talk on "Basics of Digital Marketing" Organized by MGR University on 28th May 2021.

Magendra Kamalnath S A, I Year, attended an Online Webinar on "Advances in Pre-Engineering Buildings" held on 22nd May 2021 Organized by Presidency University, Karnataka.

Magendra Kamalnath S A, I Year, participated in a Workshop on Introduction to STAAD Pro organized by Kraciva, Association of Civil Engineers, SSNCE on 21st and 22nd May 2021.

Magendra Kamalnath S A, I year, participated in the workshop on automation of construction process using 3D printing organized by Sri Venkateshwara College of Engineering on 21st May 2021

Magendra Kamalnath S A, I Year, attended an Online Webinar on "Patent Filing and its Importance" held on 20th May 2021 Organized by NGP Institute of Technology, Coimbatore.

Magendra Kamalnath S A, I Year, attended an Online Webinar on "Foundation of Computational Fluid Dynamics" held on 25th May 2021 Organized by Arasu Engineering College, Kumbakonam.

Magendra Kamalnath S A, I Year, attended an Online Webinar on "3D Printing in Construction: Building the Home of the Future" held on 21st May 2021 Organized by NGP Institute of Technology, Coimbatore.

Magendra Kamalnath S A, I Year, attended an Online Webinar on "Ornate Mandal" held on 22nd May 2021 Organized by St. Joseph's College of Engineering, Chennai.

Magendra Kamalnath S A, I Year, attended an Online Webinar on "Non-destructive Testing for Industrial Application" held on 25th May 2021 Organized by Arasu Engineering College, Kumbakonam.

Magendra Kamalnath S A, I Year, attended an Online Webinar on "Changing Consumerism and Role of Digital Marketing (A Post Covid Perspective)" held on 20th May 2021 Organized by Nandha Engineering College, Erode.

Nitesh M, I Year, attended an Online Webinar on "Construction of Baha'i House of Worship - Lotus Temple" held on 22nd May 2021 Organized by Ultratech Cement Ltd.

Nitesh M, I Year, participated in a sharing session on PWD Building Construction Handbook organized by ICE (UK) SSN Student chapter on 19th May 2021.

Nitesh M, I year, participated in the workshop on automation of construction process using 3D printing organized by Sri Venkateshwara College of Engineering on 21st May 2021

Nitesh M, I Year, attended an Online Webinar on "From Ready Mix Concrete (RMC) to Ready Made Buildings (RMB)" held on 29th May 2021 Organized by Ultratech Cement Ltd.

Nitesh M, I Year, attended an Online Webinar on "Understanding Structural Health in India" Organized by Qcrete Readymix India Pvt. Ltd. on 27th May 2021.

Srinidhi N, I Year, participated in a sharing session on PWD Building Construction Handbook organized by ICE (UK) SSN Student chapter on 19th May 2021.

Srinidhi N, I Year, attended an Online Webinar on "Construction of Baha'i House of Worship - Lotus Temple" held on 22nd May 2021 Organized by Ultratech Cement Ltd.

Srinidhi N, I year, participated in the workshop on automation of construction process using 3D printing organized by Sri Venkateshwara College of Engineering on 21st May 2021

Srinidhi N, I Year, participated in a Workshop on Introduction to STAAD Pro organized by Kraciva, Association of Civil Engineers, SSNCE on 21st and 22nd May 2021.

Srinidhi N, I Year, attended an Online Webinar on "From Ready Mix Concrete (RMC) to Ready Made Buildings (RMB)" held on 29th May 2021 Organized by Ultratech Cement Ltd.



Srinidhi N, I Year, attended an Online Webinar on "Understanding Structural Health in India" Organized by Qcrete Readymix India Pvt. Ltd. on 27th May 2021.

Vignesh Muralidharan, I Year, participated in a Workshop on Introduction to STAAD Pro organized by Kraciva, Association of Civil Engineers, SSNCE on 21st and 22nd May 2021.

Vignesh Muralidharan, I Year, participated in a sharing session on PWD Building Construction Handbook organized by ICE (UK) SSN Student chapter on 19th May 2021.

Ashwin Kumar K T, II Year, participated in a sharing session on PWD Building Construction Handbook organized by ICE (UK) SSN Student chapter on 19th May 2021.

Naveen Prasath, II Year, participated in a sharing session on PWD Building Construction Handbook organized by ICI SSN Student chapter on 7th May 2021.

Naveen Prasath, II Year, participated in a sharing session on PWD Building Construction Handbook organized by ICI SSN Student chapter on 6th May 2021.

Abdullah Mohammed Muhajirin, II Year, participated in a sharing session on PWD Building Construction Handbook organized by ICE (UK) SSN Student chapter on 19th May 2021.

Vedajanani, I Year, participated in a Workshop on Introduction to STAAD Pro organized by Kraciva, Association of Civil Engineers, SSNCE on 21st and 22nd May 2021.

Dinesh Kumar S, I Year, participated in a sharing session on PWD Building Construction Handbook organized by ICI SSN Student chapter on 14th May 2021.

Adithya V, II Year, participated in a sharing session on PWD Building Construction Handbook organized by ICE (UK) SSN Student chapter on 19th May 2021.

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Yaashika M, I Year, participated in a sharing session on PWD Building Construction Handbook organized by ICE (UK) SSN Student chapter on 19th May 2021.

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Amith Krishna Manikandan, I Year, participated in a Workshop on Introduction to STAAD Pro organized by Kraciva, Association of Civil Engineers, SSNCE on 21st and 22nd May 2021.

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Ashwin Kumar K T, II Year, participated in a Workshop on Introduction to STAAD Pro organized by Kraciva, Association of Civil Engineers, SSNCE on 21st and 22nd May 2021.

Ashwin Kumar K T, II Year, participated in a sharing session on PWD Building Construction Handbook organized by Kraciva, Association of Civil Engineers, SSNCE on 8th May 2021.

Ashwin Kumar K T, II Year, participated in a sharing session on PWD Building Construction Handbook organized by Kraciva, Association of Civil Engineers, SSNCE on 9th May 2021.

Ashwin Kumar K T, II Year, attended an Online Webinar on "Digitizing Construction Projects using BIM" Organized by ICE (UK) SSN Student chapter on 30th April 2021.

Ashwin Kumar K T, II Year, participated in a sharing session on PWD Building Construction Handbook organized by ICI SSN Student chapter on 7th May 2021.

Ashwin Kumar K T, II Year, participated in a sharing session on PWD Building Construction Handbook organized by ICI SSN Student chapter on 6th May 2021.

Ashwin Kumar K T, II Year, participated in a sharing session on PWD Building Construction Handbook organized by ICE (UK) SSN Student chapter on 19th May 2021.

Adarsh C, I Year, participated in a sharing session on PWD Building Construction Handbook organized by Kraciva, Association of Civil Engineers, SSNCE on 8th May 2021.

Adarsh C, I Year, participated in a sharing session on PWD Building Construction Handbook organized by Kraciva, Association of Civil Engineers, SSNCE on 9th May 2021.

Adarsh C, I Year, participated in a sharing session on PWD Building Construction Handbook organized by ICE (UK) SSN Student chapter on 19th May 2021.

Adarsh C, I Year, participated in a Workshop on Introduction to STAAD Pro organized by Kraciva, Association of Civil Engineers, SSNCE on 21st and 22nd May 2021.

Amith Krishna Manikandan, I Year, attended an Online Webinar on "Construction of Baha'i House of Worship - Lotus Temple" held on 22nd May 2021 Organized by Ultratech Cement Ltd.

Ashwin Kumar K T, II Year, participated in an online short term programme on Revit Architecture and Design organized by ICI, Coimbatore between 26th April and 1st May 2021

Krishna Sree, I Year, attended an Online Webinar on "From Ready Mix Concrete (RMC) to Ready Made Buildings (RMB)" held on 29th May 2021 Organized by Ultratech Cement Ltd.

Vishwa R, III Year, participated in an international webinar on Journey as a Scientist of ISRO organized by Team 2020 Helpers on 29th May 2021.

Yogasree Muthusamy, I Year, attended an Online Webinar on "Concrete – A 360 degree view from quality perspective in Maharashtra Metro" held on 24th May 2021 Organized by SRM Institute of Science and Technology, Chennai.

Yogasree Muthusamy, I Year, attended an Online Webinar on "Flood and Drought Mapping using GIS" held on 25th May 2021 Organized by NGP Institute of Technology, Coimbatore.

G Gaayathri Sangavi, I Year, participated in a sharing session on PWD Building Construction Handbook organized by ICE (UK) SSN Student chapter on 19th May 2021.

Ganapathy Nikitha Reddy, II Year, participated in a Workshop on Introduction to STAAD Pro organized by Kraciva, Association of Civil Engineers, SSNCE on 21st and 22nd May 2021.

Grandhe Vishnu Pratap, III Year, participated in a sharing session on PWD Building Construction Handbook organized by ICE (UK) SSN Student chapter on 19th May 2021.

Amith Krishna Manikandan, I Year, completed a Build a Face Recognition Application as a part of AI for India Event on April 24th 2021.

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Sharanya V, I Year, participated in a sharing session on PWD Building Construction Handbook organized by ICE (UK) SSN Student chapter on 19th May 2021.

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Jyothiraditya Skandan, III Year, participated in a sharing session on PWD Building Construction Handbook organized by ICE (UK) SSN Student chapter on 19th May 2021.

K.Sai Phanindra, II Year, participated in a sharing session on PWD Building Construction Handbook organized by ICI SSN Student chapter on 6th May 2021.

K. Sai Phanindra, II Year, participated in a sharing session on PWD Building Construction Handbook organized by ICI SSN Student chapter on 7th May 2021.

K. Sai Phanindra, II Year, participated in a sharing session on PWD Building Construction Handbook organized by ICI SSN Student chapter on 14th May 2021.

Karan K, I Year, participated in a sharing session on PWD Building Construction Handbook organized by ICE (UK) SSN Student chapter on 19th May 2021.

Kaviya Roshne G M, II Year, participated in a 5 day intern workshop on Interior Design Process between 24th and 28th May 2021 organized by Institute of Industrial Design, Salem.

Krishna Sree, I Year, participated in a sharing session on PWD Building Construction Handbook organized by ICE (UK) SSN Student chapter on 19th May 2021.

Krishna Sree, I Year, participated in a Workshop on Introduction to STAAD Pro organized by Kraciva, Association of Civil Engineers, SSNCE on 21st and 22nd May 2021.

Lavanya Jayakumar, I Year, participated in a Workshop on Introduction to STAAD Pro organized by Kraciva, Association of Civil Engineers, SSNCE on 21st and 22nd May 2021.

Lavanya Jayakumar, I Year, participated in a sharing session on PWD Building Construction Handbook organized by ICE (UK) SSN Student chapter on 19th May 2021.

M.Sanjayrathinam, II Year, participated in a sharing session on PWD Building Construction Handbook organized by ICI SSN Student chapter on 6th May 2021.

M.Sanjayrathinam, II Year, participated in a sharing session on PWD Building Construction Handbook organized by ICI SSN Student chapter on 7th May 2021.

Naresh Mohan, I Year, participated in a Workshop on Introduction to STAAD Pro organized by Kraciva, Association of Civil Engineers, SSNCE on 21st and 22nd May 2021.

Naresh Mohan, I Year, participated in a sharing session on PWD Building Construction Handbook organized by ICE (UK) SSN Student chapter on 19th May 2021.

Naveen Prasath, I Year, participated in a sharing session on PWD Building Construction Handbook organized by ICE (UK) SSN Student chapter on 19th May 2021.

Naveen Prasath, II Year, participated in a sharing session on PWD Building Construction Handbook organized by ICI SSN Student chapter on 14th May 2021.

Nitish Kanna K, I Year, participated in a sharing session on PWD Building Construction Handbook organized by ICE (UK) SSN Student chapter on 19th May 2021.

P S Sri Raghav Soliah, I Year, participated in a sharing session on PWD Building Construction Handbook organized by ICE (UK) SSN Student chapter on 19th May 2021.

Yogasree Muthusamy, I Year, attended an Online Webinar on "Patent Filing and its Importance" held on 20th May 2021 Organized by NGP Institute of Technology, Coimbatore.

Yogasree Muthusamy, I Year, participated in a sharing session on PWD Building Construction Handbook organized by ICE (UK) SSN Student chapter on 19th May 2021.

Yogasree Muthusamy, I Year, attended an Online Webinar on "Understanding Structural Health in India" Organized by Qcrete Readymix India Pvt. Ltd. on 27th May 2021.

Charanya S, III Year, participated in a sharing session on PWD Building Construction Handbook organized by ICI SSN Student chapter on 14th May 2021.

Javith S, II Year, participated in a Workshop on Introduction to STAAD Pro organized by Kraciva, Association of Civil Engineers, SSNCE on 21st and 22nd May 2021.

Javith S, II Year, participated in a sharing session on PWD Building Construction Handbook organized by ICI SSN Student chapter on 6th May 2021.

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Kaviya Roshne G M, II Year, participated in a sharing session on PWD Building Construction Handbook organized by ICI SSN Student chapter on 6th May 2021.

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Kuchi Phani Soumika, I Year, participated in a sharing session on PWD Building Construction Handbook organized by ICE (UK) SSN Student chapter on 19th May 2021.

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Yogasree Muthusamy, I Year, attended an Online Webinar on "Smart City Infrastructure" held on 26th May 2021 Organized by SRM TRP Engineering College, Trichy.

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Giridharan S Y, I Year, participated in a Workshop on Introduction to STAAD Pro organized by Kraciva, Association of Civil Engineers, SSNCE on 21st and 22nd May 2021.

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Yogasree Muthusamy, I Year, participated in a Workshop on Introduction to STAAD Pro organized by Kraciva, Association of Civil Engineers, SSNCE on 21st and 22nd May 2021.

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Keerthana A, I Year, participated in a Workshop on Introduction to STAAD Pro organized by Kraciva, Association of Civil Engineers, SSNCE on 21st and 22nd May 2021.

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Sharanya V, I Year, participated in a Workshop on Introduction to STAAD Pro organized by Kraciva, Association of Civil Engineers, SSNCE on 21st and 22nd May 2021.

---

Sharanya V, I Year, attended an Online Webinar on "From Ready Mix Concrete (RMC) to Ready Made Buildings (RMB)" held on 29th May 2021 Organized by Ultratech Cement Ltd.

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Yogasree Muthusamy, I Year, attended an Online Webinar on "From Ready Mix Concrete (RMC) to Ready Made Buildings (RMB)" held on 29th May 2021 Organized by Ultratech Cement Ltd.


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Vanaja M J, I Year, participated in a sharing session on PWD Building Construction Handbook organized by ICE (UK) SSN Student chapter on 19th May 2021.

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Veera Vijay Kumar V, II Year, participated in a sharing session on PWD Building Construction Handbook organized by ICI SSN Student chapter on 6th May 2021.





Veera Vijay Kumar V, II Year, participated in a sharing session on PWD Building Construction Handbook organized by ICI SSN Student chapter on 7th May 2021.

Vikram P G, III Year, participated in a National Level Quiz competition on Techno-social awareness on 11th May 2021 organized by AISSMS College of Engineering, Pune.

Magendra Kamalnath S A, I Year, won the II Place in the Mad over Marketing Contest organized by Civil Engineering Association of Sri Venkateshwara College of Engineering, Chennai

Magendra Kamalnath S A, I Year, participated in a National Level Quiz competition on Powerplant Engineering on 18th May 2021 organized by Mandsaur University, Mansaur.

Magendra Kamalnath S A, I Year, participated in a National Level Quiz competition on RCC Structures in May 2021 organized by Koneru Lakshmaiah Education Foundation, Guntur.

K Sai Phanindra, II Year, participated in a National Level Quiz competition on Geotechnical Engineering between 6th and 8th May 2021 organized by Reva University, Bangalore.

Yogasree Muthusamy, I Year, participated in a National Level Quiz competition on RCC Structures in May 2021 organized by Koneru Lakshmaiah Education Foundation, Guntur.

Subiksha R S, I Year, participated in a sharing session on PWD Building Construction Handbook organized by ICE (UK) SSN Student chapter on 19th May 2021.

Shaista Ali, I Year, was recognized for her excellent contributions made during the ECell Ambassador programme conducted on May 24th 2021 by Coincent and Tryst, IIT Delhi.

Vikram P G, III Year, participated in Graphitety Event (Pencil Sketching) as a part of Takshashila 2021 held between 17th and 21st May 2021 organized by Chennai Institute of Technology, Chennai.

Magendra Kamalnath S A, I Year, was recognized by Shape AI for his support to help grow their community.

## Placement details of students(2020-2021):

S.NO.	NAME	PLACEMENT
1	Achchutha Varman S	Cognizant
2	Anne Sherin A	TCS Ninja
3	Basudev Singh	Cognizant
4	David Arunraj B	Infosys
5	Gunalan S	TCS Ninja
6	Harika Madireddy	Infosys
7	Janani J	LatentView Analytics
8	Kamalesh R	Infosys
9	Krishna Priya S	Infosys
10	Lakshmipriya R	Infosys
11	Modhagapriyan A	Cognizant
12	Nandhini S	Cognizant
13	Niranjan J	TCS Ninja
14	Nithila A	The Climber
15	Rebekah Rubidha Lisha R	Cognizant
16	Shalini Devi M	TCS Ninja
17	Sushritha G	L&T ECC
18	Vaishnavi M	Cognizant
19	Varshini B	Cognizant

## THE BIM SKILLS & COMPETENCIES FOR AECO DISCIPLINE STUDENTS



-Dr. Amarnath CB

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### ***The BIM Skills & Competencies for AECO discipline students***

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AECO industry is inclined towards employing graduates with exposure to BIM tools, techniques and processes. In line with today's AECO industry necessities, universities are running a wide range of BIM courses, for exposing AECO students to this new paradigm shift. However, today's academic BIM education is not completely integrated with other AECO programs in Tertiary Education System (TES). BIM education in academia has a history of almost two and half (2.5) decades. The development of BIM teaching in universities from 1990s to date can be visualized as in Figure 1.

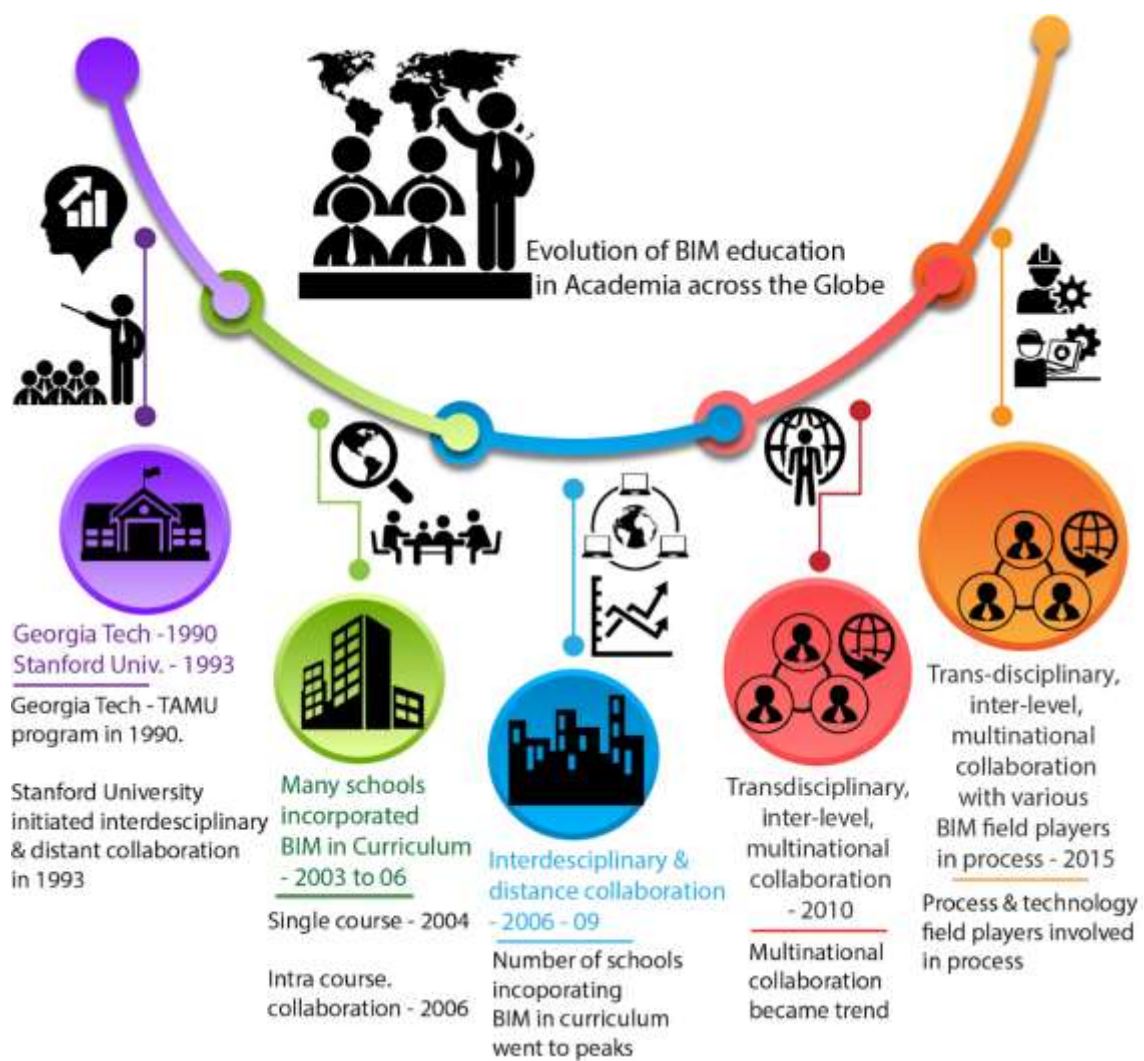




Figure 1: Evolution of BIM education in academia



Georgia Institute of technology in USA has carried out research in BIM i.e. TAMU project since the early 90s. Also, their architecture programs were those first showed interest in this area. In line, Stanford University in 1993 integrated BIM into curriculum by introducing interdisciplinary and distant collaboration for their discipline students. Here, students worked in geographically distributed multi-disciplinary teams to learn about cross-disciplinary impacts, integration issues, usage of collaboration technologies, team dynamics, collaborative work, and the impact of collaboration technologies on organization performance. Witnessing the benefits of BIM technology and processes for AECO industry, several universities globally had incorporated BIM to their curriculum by 2003. Around 2004, teaching the students on BIM concepts, tools and techniques was seen as an important part of AECO programs. And, BIM education was delivered for students as a single course in majority of the universities. Approaching to the year 2006, few universities made an effort to experiment for delivering BIM education with intra-course collaboration by integrating AECO discipline students. Reflecting the benefits of intra course, from the year 2006-09, several universities started introducing BIM course in their curriculum with collaboration types such as distance and interdisciplinary. By the year 2010, inter-level, trans-disciplinary and multinational collaboration had become the trend for BIM course delivery (Barison & Santos 2012b). However, most of the universities had introduced BIM education in only one subject-area and few attempts to stimulate the integrated practices.


Besides these programs, project based Learning (PBL) lab established by Renate Fruchter at Stanford University is a pilot model to demonstrate on how construction educators might teach and enable students to practice team collaboration in a global framework (Becker et al. 2011). BIM Academic Forum (BAF), a group of representatives from a large number of UK Universities and BIM task group, was established in late 2011. BAF was established to respond for AEC industry's BIM adoption and to promote the academic aspects of BIM in the UK.




To fulfill the optimum requirements for BIM teaching among Higher Education Institutions (HEIs) in the UK, a BIM assessment matrix was also developed by BAF (Underwood & Ayoade 2015). The UK has stepped ahead in promoting BIM education in most of the Universities at UK, thereby benefiting all adopters i.e, HEIs, students and AECO industry. Recently, Gier (2015) has also evidenced that BIM education is trending towards trans-disciplinary, inter-level and multinational collaboration with process and technology field players, considering that students need to collaborate with actual industry professionals on real cases.

Research analysis on global trends in BIM education by reviewing the BIM publications reveals that, BIM is not just an addition to the original AEC curriculum, but as a catalyst enabling education reform for AECO associated disciplines. Academia demands for the revision of old AEC curriculum to cope up with industry needs. Project based learning and Computer-Mediated Communications (CMC) combined together can support this paradigm shift. Several universities have realized that, BIM should be thought as a technique and process to produce BIM-ready graduates (Barison & Santos 2012b). Another key question for AECO specialty educationalists and researchers is how to design courses in which BIM technology enriches teaching rather than substitutes for it?

Efforts have already been undertaken by active BIM academicians in Brazil and Australia to assist students and professionals on specialized BIM skillsets (Gardner et al. 2014; Barison & Santos 2010a, 2011, 2012a, 2013). In our standpoint, future AECO discipline students need to be trained with these new skills and technological competencies to address the upcoming challenges. Dossick et al. 2015 and Hsieh et al. 2015 study reveals that BIM education in academia benefits AECO discipline students to gain BIM knowledge by adopting latest practice such as trans-disciplinary, inter level and multinational collaboration with AECO industry professionals and academia. Above discussed innovative practices in universities support the delivery of quality BIM education in TES.







Different AECO industry specialists need distinct BIM knowledge and skillsets. AECO students, who will be future BIM specialists, need to be trained to acquire such essential competencies. Here, the term BIM specialist refers to any of BIM modelers, BIM analysts, BIM software developers, managers, consultants, and researchers. BIM educationalists train these future specialists with the unique BIM skillsets required by adopting certain training techniques. The basic skillsets that AECO discipline students must possess are identified in our study and it is visualized in Figure 2. To start with, students must be able to visualize AECO projects with different views and perspectives. The students should acquire professional and ethical responsibilities. Apart from this, students must be capable to design, test, analyze and interpret data. They must also acquire a brief knowledge on contemporary issues, e.g. climate change. Students need to understand on impact of engineering solutions in global, economic, environmental and societal context. To have an ability to use recent AECO industry tools and techniques to successfully accomplish real project case. To recognize and resolve complications that occur in present day projects. To be capable, is that students must be capable enough to Collaboration, Communication, Coordination (CCC) effectively on multidisciplinary AECO teams and projects. And last but not least, students must be able to understand the relationships between people, products and processes.

*“Go for civil engineering, because civil engineering is the branch of engineering which teaches you the most about managing people. Managing people is a skill which is very, very useful and applies almost regardless of what you do.”*

**-Sir John Harvey Jones**



Figure 2: Knowledge, skills and behaviors for AECO discipline students

Along with this basic knowledge, skills and behaviors stated above, AECO students must possess distinct BIM knowledge and skillsets to be a BIM ready graduate as stated in this section. BIM knowledge and skillsets such as, technical (modelling, drafting, and model management), operational (designing, simulating, and quantifying), functional (collaboration, facilitation, and project management), implementation (component development, standardization, and technical training), administrative (tendering and procurement, contract management, and human resource management), support (data and network support, equipment, and software troubleshooting), managerial (leadership, strategic planning, and organizational management), and R&D, i.e. change management, knowledge engineering, and industry engagement (Succar & Sher, 2013; Amarnath et al. 2016). BIM educationalists train these future BIM graduates with the unique BIM skillsets required by adopting certain training techniques. 'BIM-ready' graduates with the knowledge base, skill sets and behaviors outlined above will be suitable for today's AECO industry to effectively deliver projects.

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## Evolution of Building Materials

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### ***Evolution of Building Materials***

The materials that we use for constructing houses, offices and commercial buildings are classified as building materials. Innovation in building materials appears to advance as civilizations advance, not so much in their knowledge and technology but according to the requirements of the society. That explains why advances in other technologies such as transport, medicine etc. evolves at different rates compared to building materials. In the last hundred years the development of business and commerce has led to the need for several high rise buildings.

Construction materials used in the early years included rocks, clays and other materials. Clay was the primary substance used to bind the gap between stones and bricks. Clay and mud were the most common materials used for construction. Wood was also used by people in the olden days to build their houses. Wood was not only used for the construction of houses but also for furniture such as tables, desks, chairs etc. Fast forward to present day, the most common material used for construction is concrete. It is a mixture of sand, gravel, cement and water in right proportion. It is durable and stronger compared to the wood and mud houses of the past. Another material most commonly used nowadays in the construction process is metal. Large mansions and offices are build using metals which are typically strong and last a lifetime.



Let's take a look at the timeline when some of the most popular building/construction material were invented:

- 10,000 BC- First Earth and stone built shelters appear.
- 5,000 BC- Introduction of timber carpentry to supplement the use of stone.
- 2,500 BC- Glass; The Egyptians provided the first examples with silica and calcium.
- 2000 BC- Fired brick- First appeared in Middle East.
- 1500 BC- Steel; was first developed in Eastern part of Africa.
- 100 AD- Clear Glass; The Romans invented the first modern day glass.
- 1540 AD- Sand Casting- The process involves casting with molten metal.



- 1790 AD-Coke based Iron Smelting-This brought about the 1st Industrial Revolution.
- 1845 AD- Portland cement was invented.
- 1846 AD- Hydraulic cranes were invented.
- 1855 AD- Bessemer process of Steel production.
- 1867 AD- Reinforced Concrete – The revolutionary structural construction material.
- 1913 AD- Stainless steel was invented.
- 1926 AD- PVC – the most commonly used plastic came into existence.
- 1952 AD- Fiber Optics



Bricks



Cement



Concrete



Sand



Reinforcement



Glass



Plastic




Wood



Tiles

By the end of the 20th century, ecology, energy conservation and sustainable development had become more important issues of construction. There has been a greater emphasis on the development of sustainable buildings also known as green building. It typically involves the application of eco-friendly, resource-efficient construction process designed to reduce the overall environmental impact of a structure throughout its lifetime. Construction and other activities associated with it can have a direct and indirect impact on the environment. Sustainable buildings such as green buildings, Pre-fabricated buildings and also buildings designed with the help of BIM can seek to reduce the effects and negative impacts it can have on the environment.





The evolution of construction materials has taken a slow and steady pace over the centuries. Compared to other branches of engineering and technology, the evolution of construction and its materials have been on the slower side. Civil and construction is one of the last major industries that are yet to be totally integrated with technology. The future holds exciting opportunities that includes augmented reality, Virtual reality, 3D printing and much more. Our generation of civil engineers will witness the transformation and integration of civil and construction practices and its methods from conventional to modern.

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*“Architects and engineers are among the most fortunate of men since they build their own monuments with public consent, public approval and often public money.”*

**-John Prebble**

**WAVY WALLS USES LESSER BRICKS OVER STRAIGHT WALLS..!****-Grandhe Vishnu Prathap****Author**

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***Wavy walls uses lesser bricks over straight walls***

We all know that civil engineering is a world of innovation. There are lot of advancements in the technology in today's era. But most of the techniques that we use today in construction of many great structures are inspired from ancient world. For example, shinbhashira (a central pillar) of ancient Japanese Pagoda structure is inspiration to central tower used in Tokyo sky tree.

Walls are important component for any structure built. Now we are going to know about one of the innovative ancient wall structures called Wavy walls. Wavy wall also known as crinkle crankle wall or serpentine wall or sinusoidal wall. As the name indicates these walls are in the shape of wave (an alternate concave and convex curves). They are popular in European nations like England from 18<sup>th</sup> century, not only just because of their beautiful aesthetics but also because of many structural uses.



### History of wavy walls:

These kind of walls are mostly seen various parts of United Kingdom, we can see them as garden walls and compound walls in many of the historical structures of England. Especially in the county called Suffolk (East Anglian county of ancient origin in England), we can find around 50 of such kind of walls belonging to mid 1600s. It is believed that the word “crinkle crinkle” is derived from Suffolk’s dialect. Thomas Jefferson the third president of United States incorporated these serpentine walls into the architecture of University of Virginia. Some claim that these walls are designed by Thomas Jefferson with inspiration from original English style.



*Figure 1 Serpentine wall in Virginia University*

But the recent archaeological studies found these kind of walls used in ancient city of Egypt named “The Rise of Aten” discovered under the sand on the western bank of Luxor, which is thought to be about 3500 years old. They found that the walls are around 10 feet high and made of mudbricks.





*Figure 2 Wavy walls found in ancient Egypt city*

Benefits over straight walls:

When we see Wavy walls, we might think that they use more bricks but they use lesser number of bricks compared to the traditional straight walls as these walls are made with single brick thickness. In traditional straight compound walls we use multiple layers of bricks to maintain the stability of the wall. If we use single layer of bricks in straight wall, it will collapse easily. But the alternate convex and concave shape of wavy wall helps the wall to stand still even with less thickness/ single layer. These walls are also more resistant towards the lateral forces like wind pressure and other outward forces, thanks to the sinusoidal shape and arch support.

People in England built these walls from east to west in their gardens so that one side is always under sunrays.

In terms of long compound walls and garden walls, use of crinkle crankle wall reduces the overall construction cost as they use less construction material. They are more durable for 100s of years and also improves the aesthetics of the structure.





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***“Scientists investigate that which already is; Engineers create that which has never been.”***

**-Albert Einstein**

# Building Information Modelling (BIM)

**-Tilakeshwaran S**

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## **Building Information Modelling (BIM)**

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### ***“Assessing your Construction even before you Begin”***


The Book “Electric Universe: How Electricity Switched on the Modern World” (2004) states that modernisation and computerisation of various skills in several fields had begun only in the late 2000s. As far as the Field of Civil Engineering is concerned, the concept of BIM ( digital representation of a built asset ) has existed since the 1970s.

### **HISTORY OF DEVELOPMENT**

The first software tools developed for modelling buildings emerged in the late 1970s and early 1980s, and included workstation products such as Chuck Eastman's Building Description System and GLIDE, RUCAPS, SONATA, REFLEX and GABLE 4D SERIES.

Development of standards and adoption of BIM has progressed at different speeds in different countries; the early applications, and the hardware needed to run them were expensive, which limited widespread adoption.

The term 'building model' (in the sense of BIM as used today) was first used in papers in the mid-1980s: in a 1985 paper by Simon Ruffle eventually published in 1986, and later in a 1986 paper by Robert Aish - then at GMW Computers LTD, developer of RUCAPS software - referring to the software's use at London's Heathrow Airport. Further, the term 'Building Information Model' first appeared in a 1992 paper by G.A. van Nederveen and F. P. Tolman. However, the terms 'Building Information Model' and 'Building Information Modelling' (including the acronym "BIM") did not become popular until 10 years later.



In the early 2000s Autodesk released a white paper entitled "Building Information Modelling," and other software vendors also started to assert their involvement in the field. By hosting contributions from Autodesk, Bentley Systems and Graphisoft & other industry observers and Jerry Laiserin helped popularize and standardize the term as a common name for the digital representation of the building process in 2003.

Facilitating exchange and interoperability of information in digital format had previously been offered under differing terminology by Graphisoft as "Virtual Building", by Bentley Systems as "Integrated Project Models", and by Autodesk or Vectorworks as "Building Information Modelling".

As Graphisoft had been developing such solutions for longer than its competitors, Laiserin regarded its ArchiCAD application as then "one of the most mature BIM solutions on the market." Following its launch in 1987, ArchiCAD became regarded by some as the first implementation of BIM, as it was the first CAD product on a personal computer able to create both 2D and 3D geometry, as well as the first commercial BIM product for personal computers.

However, ArchiCAD founder Gábor Bojár has acknowledged to Jonathan Ingram in an open letter, that Sonata "was more advanced in 1986 than ArchiCAD at that time", adding that it "surpassed already the matured definition of 'BIM' specified only about one and a half decade later".

### **Building Information Modeling in simple terms**

Building Information Modeling (BIM) is a digital representation of physical and functional characteristics of a facility. A BIM is a shared knowledge resource for information about a facility forming a reliable basis for decisions during its life-cycle; defined as existing from earliest conception to demolition.

### **Usage throughout the project life-cycle**

Use of BIM goes beyond the planning and design phase of the project, extending throughout the building life cycle. The supporting processes of building lifecycle management include cost management, construction management, project management, facility operation and application in green building.

**A 'Common Data Environment' (CDE) is defined in ISO 19650 as an:**

*“Agreed source of information for any given project or asset, for collecting, managing and disseminating each information container through a managed process.”*

A CDE workflow describes the processes to be used while a CDE solution can provide the underlying technologies. A CDE is used to share data across a project or asset lifecycle, supporting collaboration across a whole project team (the meaning overlaps with enterprise content management, ECM, but with a greater focus on BIM issues).

### **Management of building information models**

Building information models span the whole concept-to-occupation time-span. To ensure efficient management of information processes throughout this span, a BIM manager might be appointed.

The BIM manager is retained by a design build team on the client's behalf from the pre-design phase onwards to develop and to track the object-oriented BIM against predicted and measured performance objectives, supporting multi-disciplinary building information models that drive analysis, schedules, take-off and logistics.

Companies are also now considering developing BIMs in various levels of detail, since depending on the application of BIM, more or less detail is needed, and there is varying modelling effort associated with generating building information models at different levels of detail.

### **BIM in construction management**

Participants in the building process are constantly challenged to deliver successful projects despite tight budgets, limited manpower, accelerated schedules, and limited or conflicting information.

The significant disciplines such as architectural, structural and MEP designs should be well-coordinated, as two things can't take place at the same place and time. BIM additionally is able to aid in collision detection, identifying the exact location of discrepancies.

The BIM concept envisages virtual construction of a facility prior to its actual physical construction, in order to reduce uncertainty, improve safety, work out problems, and simulate and analyse potential impacts.

Sub-contractors from every trade can input critical information into the model before beginning construction, with opportunities to pre-fabricate or pre-assemble some systems off-site. Waste can be minimised on-site and products delivered on a just-in-time basis rather than being stock-piled on-site.

### **BIM in green building**

BIM in green building, or "green BIM", is a process that can help architecture, engineering and construction firms to improve sustainability in the built environment. It can allow architects and engineers to integrate and analyse environmental issues in their design over the life cycle of the asset.

*“Nothing is built on stone; all is built on sand, but we must build as if the sand were stone.”*

## AMBIENT INTELLIGENCE IN CIVIL ENGINEERING

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### ***Ambient Intelligence in Civil Engineering***

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Integrating technology in daily life is of great interest these days and Ambient Intelligence is considered to be a milestone in the field.

Ambient intelligence (Aml), which is generally sensitive and responsive to the people around, is an environment predominantly made of sensors and sensor networks. It is an emerging discipline in today's tech world, which has an aim of bringing intelligence to the environment we live in!


It involves a system comprising of the sensors and sensor networks, pervasive computing, and most importantly artificial intelligence. It makes computing available to the commoners in a non-intrusive way, thus minimizing the explicit interaction at its core value. It enhances the style of living.

In recent days, Aml has been extensively used in Civil Engineering, with an aim of providing comfortable, ambient, and enhanced living to the people. Smart homes are one such example. In this, the environment is aware of people's needs and thus interacts with people non-intrusively.

#### **How Aml works in buildings?**

Aml, which consists of several hidden intelligent interfaces. these interfaces involve three basic technologies: Ubiquitous computing, ubiquitous communication, and intelligent user interfaces. Ubiquitous computing, a sensor network, is integrated into the building's components like doors, windows, etc.





This sensor network comprises various sensors (such as heat sensors installed in windows, which helps in thermal insulation as well) enables the ubiquitous communication, which creates a platform for the components to interact with each other. The intelligent user interfaces allows the user to convey their needs as well as to control the computing system. In this way, Aml intrudes the technology in people's everyday life non intrusively. Smart buildings: A standing testimony!

Smart buildings are perfect examples for Aml in daily life. It extensively uses Aml and is automated to various processes to automatically control the ventilation, heating, air-conditioning, most importantly security. Also, it has enhanced energy – efficiencies and user comfort. These days Aml has also been used in hospitals, highways, etc.

Many researches which are under process, caters to integrate Aml to answer the practical applications of civil engineering. It is also used in various fields of civil engineering, other than building construction, such as bridge engineering, geotechnical engineering, underground engineering, road engineering, geological exploration, etc, thus providing a greener approach in all possible ways.

Civil engineering, which has an aim of providing a comforted living to the world, would reach greater distances when Aml is incorporated.

# Thank you