Tenth Issue | July 2017

SONA COLLEGE OF TECHNOLOGY
Learning is a Celebration!

Indian Concrete Institute | ICI STUDENT CHAPTER

DEPARTMENT OF CIVIL ENGINEERING

SONA CREA

Convenor : Dr. R. Malathy, Ph.D, Dean(R&D), HoD/Civil
Co-ordinator: Prof. M. Arivoli
President: K. Dhamini
Secretary:T. Sivanesh Kumar
Joint Secretary:N. Ramakrishnan
Treasurer:S. Vigneshwari
Office Bearers
M. Prema | N. Poovitha
N. Nandhini Priya | A. Syed Rishvana
R. Pooja | A.Rasheeda
Fathima | A.Ku.Nisha | Ms.Prathiba

CONTENTS

An Overview of 3R's-Repair, Rehabilitation and Retrofitting 2
Plastic Formwork 2
The Chenab Bridge 3
Vaastu Planning 4
Concrete Innovations 5
Guest Lecture on Best Way of Designing A Kitchen 6
Guest Lecture on the Topic "Construction Practices and Techniques" 6
Workshop on Total Station and GPS 6
Need Based Training for the Non Teaching Faculty 7
Guest Lecture on the Topic "Approval Of Building Plans" 7
Two Days Training on Ansys Software 7
Guest Lecture on Water Resources 8
Carve 17 National Symposium 8
Project Expo 17 8
Guest Lecture on Design of Bridges – Practical Approach 9
Skill Development Programme on "Research Methodology and Quality Publications" 9
Guest Lecture on the Topic "Super Structure Construction" 9
"Pre-Employment Technical Program" 10
"Innovation in Concrete & Construction" Icon 2017 10
All India Seminar on "An Effective Integrated Management Approach to Municipal Solid Wates in India" 11
Faculty Rejuvenation Programme on "Towards Academic Excellence" 12
Congratulations Toppers 12
Congratulations Faculty 12

HOD'S MESSAGE

I am happy that SONACREA is releasing 10th issue. It is interesting on seeing the articles by faculty and students on latest trends in the technology development. The department of civil engineering seems to be proactive in organizing many events. Faculty and students should make use of these opportunities to express their views and to update their knowledge.

I congratulate each and everyone who has contributed to brand this newsletter colorful and making our department full of pride. It is my duty and pleasure to acknowledge Prof.M.Arivoli for her efforts in releasing this newsletter with accomplishments of our faculty and students towards Civil Engineering community.

Dr. R. MALATHY
HoD / Civil
Convenor/ICI Student Chapter

ICI STUDENTS CHAPTER COORDINATOR MESSAGE

M. ARIVOLI
AP/ CIVIL
ICI Students Chapter Coordinator

It gives me great pleasure in releasing the 10th issue of SONACREA. Once again this newsletter brings out bundle of information though various faculty and student articles. Events organized for the knowledge and skill upgradation of students are reviewed. This also acts as a forum to recognize the achievements of both faculty and students.

It is my privilege to thank the management of Sona College of Technology and Convenor Dr.R.Malathy (HoD/Civil) in bringing out this newsletter.

ICI STUDENTS CHAPTER PRESIDENT MESSAGE

K. Dharmini
Final yr / Civil
ICI Students Chapter President

I am much privileged of having a supercilious feeling over the 10th issue of the SONACREA that stands as the exposure for the students of our department. I am fortunate to be the part of the release of this year newsletter which provides the students, a platform filled with opportunities. This version encloses the innovations and intelligence in the field of Civil engineering and the achievements and alacrities of the prides of our department.

On behalf of the ICI student chapter, I express my endless gratitude to Dr. R. Malathy, Head of the Department of Civil engineering for encouraging and motivating us by various activities. And I assure that this newsletter provides the knowledge-treat to the readers and also illuminate the path towards their goal.

AN OVERVIEW OF 3R'S-REPAIR, REHABILITATION AND RETROFITTING

R.S.GANDHIMATHI
Assistant Professor/CIVIL

The structures can be considered as lifeline of city and are created with huge investment of resources. It is therefore essential to maintain them in functional condition.Construction of structures in our country is increasing geometrically without matching to the availability of quality inputs (material &labour).The gap between the quality planned and quality achieved is WIDE-RANGING.The factors contributing to the distress starts from the construction stage itself. Often it is concealed by external renderings.In a developing country like India, it is not possible to undergo reconstruction of structuresfor distressbecause it is not economical. Instead we can prefer this 3R technique. The 3R is Repair, Rehabilitation and Retrofitting.

Repair is bringing back the original position of the structure from previous distressed condition to perform well without covering the strength aspect.

Building Before and After Repair

Rehabilitation means returning a structure to a useful state by means of repair, modification or alteration.It is related to the strength aspect of structures.

Building Before and After Rehabilitation

Retrofitting is the modification of existing structures to make them more resistant to seismic forces, ground motion or soil failure due to earthquakes.The retrofit techniques are also applicable for other natural disasters such as cyclones, floods, and severe winds from thunderstorms.

Building Before and After Retrofit

Large number of materials and ample techniques are available to carry out the 3R process.Inorder to proceed 3R process, it is essential to have sufficient knowledge about managing it.The 3R management process includes

- Physical inspection of distress
- Identifying causes of distress
- Selecting materials and techniques for the 3R process
- Preparation of drawings with specifications
- Selection of a contractor
- Execution of the work
- Quality Control

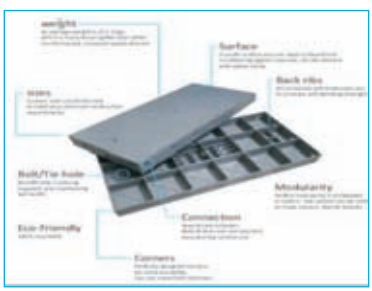
There are several advantages in this 3R process like it is economical, enhanced strength andupgraded performance. Not only buildings, many of the historical monuments are protected in the same manner. Emergence of new materials and innovative techniques has made 3R to gain its importance in the present scenario.

PLASTIC FORMWORK

A.MEENACHI
Assistant Professor/CIVIL

Plastic formwork is a new innovative technique and can be categorized as an advanced environmental technique. Any technology, process, or material which satisfies the following two aspects, namely controlling pollution and conservation of natural resources is also known as environment preservation technique. It can be further explained as the process of controlling pollution by reducing its intensity through the treatment called recycling as the plastic formwork after its wear and tear it can be recycled up to 33%.Secondlyit is the conservation of natural resources by avoiding the other conventional formworks like timber and steel. So the plastic formwork give an EEE (Environment, Efficient & Economy) output. This paper gives a brief information on its properties, components and systemsand it is cost saving, faster construction time and improvement of overall construction quality which fulfil with the basic goal in the construction industry which is "time, quality and cost".

Plastic formwork are made up of panel of PC-ABS (Poly carbonate Acrylonitrile Butadiene Styrene) along with40%-60% of waste plasticsand thickness of 80mm. These panels fits perfectly to each other and used as locking assembly for this system. As the formwork material is made up of ABS plastic, they are light in weight but still possesses high load bearing capacity and ease in handling and on site transportation process becomes much easier.



Components of plastic formwork

Strength

The material of modular formwork is PC-ABS mixed with special glass fibres if it is required. This PC-ABS enable panels to hold high pressures. The handles are made by high strength Nylon, each panel locked by at least 4 handles, which also helps in arranging the formwork. Load carrying capacity of these panels is 72kN/$m^{2.}$

Smooth Surface

The final concrete work will get smooth finish with minor joint line which does not require plaster. One can do putty & paint it. The plastic formwork panels do not stick to concrete. So, there will be no patches and it will be of smooth surface and it

eliminate materials and men cost for plastering.

Finished surface of concrete works

Chemical Proof

It is very important property because the concrete when mixed with admixtures, the effects due to chemical agents and other environmental actions in case of conventional formworks is more. So as to resist this chemical attack it should be chemical proof. This plastic formwork is made from special grade plastic and hence no chemical reaction take place nor the material stick to it. Because of this property you would not get any patched on the RCC finish.

Less Weight

Comparatively this systems weigh less and can be handled quickly on site without using cranes or other mechanical lifting devices which save time and cost. The biggest panel is 120x60cm, weight only 10.5kg, which can be lift and set up by only one person easily.Hence saves 30% time is saves in assembling & also while dismantling the same.

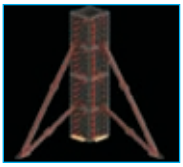
Weightless modular units

Water Proof

This plastic formwork, is particularly suited to build columns when working in presence of water, and hence make the work difficult and complicated. Use of plastic formwork is the only possible solution, since it is made of PC-ABS which is water proof.In case of wooden formwork, it is impossible to work under such condition and the steel is also unfit because of corrosion.

Corrosion resistant in adverse conditions

Types Based on Shapes



1-Square and rectangular formwork

2-Circular formwork

3-Star formwork

4-Panel formwork

Summary of Benefits

- Plastic formwork can be used more than 100 times (if handled properly), which is not possible with timber.
- The panels are light weight, sturdy and easier to handle than steel or timber.
- The concrete does not stick to it; making it easy to clean after use just by spraying water.
- No shuttering oil is required as the surface tension is low and the concrete does not stick.
- Unlike steel and timer, plastic is neither damaged in water nor there the problem of rusting.
- It can be locked by a locking handle which ensures tight fixation of panels that ensures no leakage of Concrete
- Thus by joining the panels it makes it one single panel. Hence locking the panel is easier and more accurate than the arrangement in timber and steel`
- It ensures a good finish of walls, slabs,columns, beams etc. reducing the need to plaster the walls.

Comparison

MATERIALS	Wood	Steel	Plastic
RECYCLING	NIL	10%	40%
WATER PROOF	Very Poor	Poor	Excellent
ANTI-CORROSION	Very Poor	Very Poor	Excellent
REUSABLE	15 times	70 times	100 times
COST	Low	High	Economy
STRENGTH	Poor	Excellent	High

Even after being comparatively expensive than the plywood or steel it still works out much cheaper due to its repeatability and finish. Waste materials also can be recycled and reprocessed.

THE CHENAB BRIDGE

R.POOJA
III[rd] yr - Civil

The Chenab Bridge is being constructed as a part of Jammu-Udhampur-Srinagar-Baramulla rail link (JUSRL) which is the most awaited railway bridge project of length 1315m undertaken by Indian railways. It was announced as a national project in 2002 and is direct by konkan railways.

It is the widest span bridge in Indian broad gauge. Once constructed it will be the tallest bridge in the world surpassing Beipan River Shuibai Railway Bridge (257m height) in china's Guizhou province.

Deck Height- 359m | Bridge Length- 1315m
Arch Span- 467m | Arch Length- 485m

It is the widest span bridge in Indian broad gauge. Once constructed it will be the tallest bridge in the world surpassing Beipan River Shuibai Railway Bridge (257m height) in china's Guizhou province.

Construction

The bridge will be constructed by building arch outward from both sides of canyon using stayed cantilever method. This is the massive steel arch bridge of its first kind in India with approach viaducts on either side and several tunnels on its way. The piers near viaduct are made of concrete whereas those nearer to It is estimated that the construction of bridge will require 25000 million tonnes of steel,

4000 million tonnes of reinforced steel, 46000 m^3 of concrete and eight million m^3 of excavation. The bridge is being constructed in one of the most complicated and isolated terrain. Biggest challenge faced was the construction of bridge without obstructing flow of river. Approach roads of 5km length were constructed to reach foundation. The deck of bridge partly lies in straight horizon and partly in curves. This is the first time a bridge being constructed incrementally on a transitional curve. Steel was chosen to construct the bridge because it will be more economical and able to resist the temperatures of -20°C and wind speeds of above 200kmph.The Bridge will be painted in a special corrosion resistant paint which can last for 15 years. This bridge will include 17 piers as well as 469m main arch which will be built as a two-ribbed arch with steel truss made of concrete filled sealed steel boxes. A Norway based force technology laboratory has conducted several wind tunnels to understand the effects of wind speed, static force coefficient and gust buffering. The seismic nature and geology of the Himalayan zone was also considered during its design.

Problem During Construction

The project was suspended in 2008 due to challenges on stability as climate is unpredictable in the Himalayan zone and safety as it just 60km to the line of control (LoC) terror attack is possible. The alignment of the entire Jammu-Udhampur-Srinagar-Baramulla rail link (JUSRL) was reviewed and it is approved in 2009. The design of the bridge was approved in 2012 and again the work resumed.

Anti-terror Features

This is the first bridge in India constructed with in-built anti-terror features. The design of the bridge is done after consultation with Defence Research Developmental Organisation (DRDO). The bridge uses 63mm thick special blast proof steel to enhance safety. The concrete pillars of the bridge are designed to withstand explosions. The bridge pillar and other parts can sustain jolt created by 40kg of RDX with no immediate adverse effect on operation of train. If one of the piers is blown up, it won't result in bridge collapsing. Further deck of the bridge can take a blast load of trinitrotoluene (TNT).

This bridge has a life span of 120 years. It can establish connection between Kashmir valley to the rest of the state which can help in economical development as well as increase mobility of the people. This project is expected to be completed in 2019.

VAASTU PLANNING

M.Arumugam Maharaja
III[rd] yr - Civil

Every living and non-living thing on this cosmos gives out energy effecting the lives in different ways. Science of architecture which is precisely called Vaastu-Shastra gives away norms of placement for everything relative to this earth.

Vaastu plays an important role in construction of residential building which brings pleasure to inmates. So it is an important factor in Civil Engineering.

Vaastu considered the interplay of various forces of nature involving the five elements of earth, water, wind, fire and ether and strives to maintain equilibrium as these elements influence, guide and change the living styles of not only human beings but every living being on earth.

Vaastu For Residential House

Plot: Try and buy a plot that is rectangular or a regular shape, this helps in avoiding wastage and creates a good design & brings harmony. East, West & North Facing Plots are preferred as they provide us with a Good Entrance and helps in following certain Vaastu Principles. South Facing Plots are not bad, although they are the last option.

Building Position: Leave more space towards North and East side of the House compared to South and West side. Now you'll realize why North and East facing plots are preferred as they allow us to design properly. We should generally leave space all around the house, it is considered as a good Vaastu,this helps in better air circulation and proper ventilation.

Entry Gate into the Plot is advisable to be in North & East, these areas are generally cool and helps in better ventilation. Entry to the house is also preferred to be in North or East, this helps the house dwellers in having Prosperity and Good Health.

Kitchen: Kitchen is the most important part of any house, it is advisable that the kitchen is located in the South East part of the house. This helps in proper ventilation and creates overall warmth in the family and relationships.

Master Bedroom: Master Bedroom is advised to be located in the South West Portion of the house and also the Master Bedroom should be the highest part of the house as well. For a duplex house, Master Bedroom should be on the First Floor.

Toilets & Bathrooms: Toilets and Bath rooms are advised to be located on the South & West part of the house, leaving the North and East parts free for proper ventilation and also protecting the house from heat.

Staircase: Staircase should be located on the South or West part of the house, it is advisable that you climb the staircase from East to West direction or North to South Direction in a clock wise fashion. This helps in reducing accidents on staircases and this idea is based on human use and ergonomics.

South West: South West should be the highest point in your house.

Water: Underground Tanks, Water Tanks, Bore wells, etc. should be located in the North East portion of the house.

Puja Room: Puja room is preferred in the North East portion of the house, facing east.

Center of the House: Central portion of the house should be left free for circulation and any heavy structures like staircases etc. should not be placed in the center.

Colour Vaastu – What Each Colours Signifies

Since colours are everywhere, there needs to be some meaning to them.

Red: Red is a bold colour. It represents lust, passion, materialism, base energies, bravery, power, drama, emotions, action, passion, aggressiveness, warmth, energy and vibrancy. Its nature is active and stimulating (that's why you can see more of red in some restaurants as it stimulates hunger).

You can use red colour at places that need warmth and energy. Try putting combination of red colour shades (not too much) in the living room and see how lively that room becomes.

People suffering from depression or who're nervous should avoid red colour as it can be very stressful.

Blue: Sky and water are represented by this colour. Blue also signifies beauty, tranquility, contentment, emotions, inspiration, devotion, truth and mercy. It's a colour that helps healing and reduces pain.

You can use blue colours in areas that are huge. Avoid using blue for small rooms. Always make sure to choose lighter shades of blue while colouring walls of your home. Try to avoid more of blue colour in office, shop or factory.

Avoid having too much blue in the house as it'll lead to cough, cold and similar medical issues.

Green: Growth, nature, relaxation, healing, fertility, abundance, prosperity, positive energy, rebirth, re-creation etc. are the attributes represented by green colour. Since it represents healing that's why you'll notice more of green colour in hospitals.

Another important quality of green colour is that it helps to calm down temper and helps soothe the mood. Hence, people or couples with **temperament issues** can use more of green colour.

White: White colour signifies purity, cleanliness, openness, innocence, simplicity and luxury. Since it also represents privacy and intimacy, you should not paint the whole house white, else you may become egocentric.

You must make sure to have the whole ceiling of the house in white colour.

Yellow: Yellow represents happiness, purity, positive thoughts, optimism, openness, illumination, intelligence, study, stable mind, wealth and concentration. Yellow has broadening effect i.e. it can be used at places or rooms that aren't big; this'll make the place look bigger than it actually is.

The solar plexus chakra of the human body has yellow colour. Hence, people having behavioral issues can use more of yellow colour.

Orange: Orange colour characterizes pride, determination, goals, communication, good health, vivacity, warmth, action, energy, comfort and ease.

It's a colour that can be used by people who feel depressed with life. Also, young aspirants who're willing to put in determined efforts to achieve goals in their life should use more of orange colour.

However, make sure not to use too much of orange (just use it in moderation).

Brown: Brown represents satisfaction, contentment, comfort, stability and earth element. It's a masculine colour and can be used by anyone who wants to feel happy and satisfied in his life.

Purple: Purple is the colour of luxury, riches, graciousness, self-respect and poise. It can be used by people who're suffering from inferiority complex (especially males).

Violet: It represents spirituality, contentment, satisfaction, memory, concentration, peace of mind and decisive nature.

Indecisive people should use more of violet colour; it'll help them take better decisions and instill confidence. Also, people who feel they're always discontented with life can use violet colour.

It's a very good colour to be used moderately in kid's bedroom, pooja room, study room and the rooms of people whose work requires constant mental activity.

CONCRETE INNOVATIONS

Nisha
III[rd] yr - Civil

Our construction industry is meeting the need of a changing world. We continue to evolve the production and use of cement and concrete in order to make an even greater contribution to sustainable development. These are some of new innovation in concrete technology.

Polymer Concrete

Polymer concrete is a concrete which uses polymers to bind the aggregate. Polymer concrete can gain a lot of strength in a short amount of time. Polymer concrete is generally more expensive than conventional concretes. Since plastic waste is available more in India, we can make use of it to produce polymer concrete.

Polymer concrete coating

Betao Organico

This type of concrete was created in 2005 by "Lisbon-based architects and designers e-studio." This organic concrete blends organic and inorganic material together to create a living surface. Concrete retains water, as such the concrete is used as a "battery" to provide water during dry spells for the plant life growing on it. Rather than having grass growing between concrete slabs, it is now possible to have the grass grow on the concrete slabs. These slabs could be added to outside walls to create living siding and provide plants to soak up Co_2.

Betao Organico

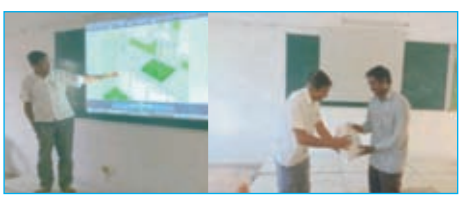
Pervious Concrete

Pervious concrete is sometimes specified by engineers and architects when porosity is required to allow some air movement or to facilitate the drainage and flow of water through structures. Pervious concrete is referred to as "no fines" concrete because it is manufactured by leaving out the sand or "fine aggregate". A pervious concrete mixture contains little or no sand (fines), creating a substantial void content. Using sufficient paste to coat and bind the aggregate particles together creates a system of highly permeable, interconnected voids that drains quickly. Both the low mortar content and high porosity also reduce strength compared to conventional concrete mixtures, but sufficient strength for many applications is readily achieved. Pervious concrete pavement is a unique and effective means to address important environmental issues and support sustainable growth. By capturing rainwater and allowing it to seep into the ground, porous concrete is instrumental in recharging groundwater and reducing storm-water runoff.

Pervious Concrete

GUEST LECTURE ON BEST WAY OF DESIGNING A KITCHEN

A one day guest lecture on best way of designing a kitchen presented by Mr.Parivallal (CEO, CNC Solutions Pvt Ltd) on 18.01.2017 from 2.00 to 5.00pm. The programme was organized by Prof.S.Thirumurugan and Prof. S. Kalaiselvi at M.E first year class room in Civil engineering department. The Students and faculty members were participated actively. The guest has presented about the basic plan preparation for kitchen with case studies and also referred the plan orientation with national building code of INDIA. The required dimension of the projections, height of slabs from floors, height of doors at lintel level, position of exhaust fans and minimum dimensions required as per triangular diagram on plan were clearly explained based on the reality conditions in the buildings. Overall the session provides valuable information on kitchen design considering the safety, durability and hygienic condition of the kitchen.



Mr.Parivallal (CEO, CNC Solutions Pvt Ltd) presenting about the basic plan preparation for kitchen

GUEST LECTURE ON THE TOPIC "CONSTRUCTION PRACTICES AND TECHNIQUES"

A Guest lecture was organized in department of Civil engineering by Prof.R.Renuka & Prof.K. Thulasiraman for II Year UG students on 28.01.17 at C.V.Raman hall. The guest lecture was on the topic of "Construction practices and techniques" presented by Er.V.Balaji Subbramanian (Managing director at Sri vijaya bharathi associates, Dharmapuri). Er.V.Balaji Subbarmanian has explained about the constructional activities followed in site. He explained about the basic civil engineering activities and construction coordination for a residential building. He explained site clearance, site marking and some basic equipment which are used in construction. He discussed about masonry, types of masonry and its practical applications in a building. He discussed on the method providing DPC in a residential building, overhead water tank and walls. He discussed some of the examples based on based on the type of building. Finally, he finished with floor finishes and its types. The students were interactive on this topic and gained knowledge on constructional practices in residential building.

Er.V.Balaji Subbarmanian explaining about the constructional activities

WORKSHOP ON TOTAL STATION AND GPS

A two day workshop was conducted to our final year civil engineering students exclusively on the topic of Practical usage of Total station equipment and GPS in surveying field to improve their placement opportunities.

The resource person was Er.S.Raj Kumar, Chairman (Chief Surveyor) and Er.S. Dinesh Kumar (HR, The Salem Land Survey Institute)

The workshop was on 30th and 31st January 2017. The workshop started with a half a day introduction to the opportunities for fresher's in the field of surveying and the basics of surveying.

The remaining days covered the topics on the basic options and usage of Total station instrument. They were practically taught the measurement of horizontal and vertical distance and how to find out the area and height of the building. The difference between two equipments and the reflector and prism types used according to the practical difficulty in fixing them was taught. Practically the students itself handled the instrument and made use of the workshop efficiently.

Students trained at hands on session

NEED BASED TRAINING FOR THE NON TEACHING FACULTY

A one day need based training for the non teaching faculty was organized by Prof.Jennifer Monica, department of Civil engineering on 31.1.2017 at department library. As per their requirement training was given in MS OFFICE (MS word and MS excel). Resource persons were from Department of Computer Science and Engineering, Sona college of technology, Salem. Dr.R.S.Sivagami, Associate Professor and Mr. B. Govindarajan, System Engineer gave training in word basics, work with text, formatting documents and work with text objects. Prof. B. Galeebathullah, Assistant Professor and Mrs. I. Hajeera Banu, Tr.Sec.Asst. trained the participants in excel basics, formatting workbook, adding charts and graphics and analyzing data. At the end of the session, resource persons clarified the participants' doubts and participants gave their feedback about the session. We thank our Head of the Department, Dr.R.Malathy who grant us permission to conduct this workshop and we also extend our sincere gratitude to Dr.B.Sathiyabama, Head of the Department, Computer Science and Engineering, Sona College of technology, for accepting our request to conduct this workshop.

GUEST LECTURE ON THE TOPIC "APPROVAL OF BUILDING PLANS"

A guest lecture was organized in Civil Department, under the guidance of Dr, R, Malathy, HOD/ Civil by Prof. M. Arivoli and Prof. S. Priscil Nidhu for the final year and PG students and on the topic "Approval of Building Plans" by Er. DS. Panneer Selvam, Proprietor of Sri Vijay Constructions, Salem on 03.02.2017. Almost 100 students attended the lecture and were enriched with the knowledge of how to get approval for building plans from local bodies, the procedures followed in dimensioning a building as per National Building Code of Practice and some information regarding online approval process through website which asks for necessary information with guidelines. He also added that this online procedure has made it easy to get approval in less than a month wherein offline procedures takes almost a year. The session was an interaction between the guest and the students and was made interesting by students asking various questions related to the topic as it is one among their curriculum. This lecture was a great opportunity for students who will become an entrepreneur and start up their own firm, as these were the basic knowledge required for an engineer.

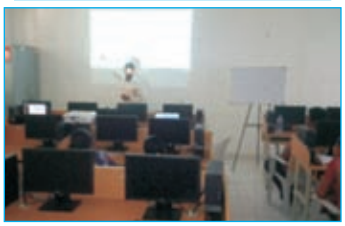
Er. DS. Panneer Selvam delivering lecture

Guest interacting with the students

TWO DAYS TRAINING ON ANSYS SOFTWARE

The department of civil engineering had arranged two day software training programme on ANSYS software (structural) in the CAD lab on 6.2.2017 and 7.2.2017. The software trainee from ARK solution Mr.Prabhakaran had given the ANSYS training for both faculty and PG students. In the training basic utilisation of tools were explained on the structural point of view and details about the formation of different layouts based on linear and non linear analysis are also discussed. Structural model on different elements such as beams,

column and solid element were worked and procedure of analysis the model is also explained. The training includes half day technical training on ANSYS and followed by software training to the faculty and students.



Faculty and student participants in the training program

GUEST LECTURE ON WATER RESOURCES

Er. M. Mathiyalagan B.E, MBA, MIE, Superintending Engineer, TWAD Board, Salem-Namakkal Circle, Salem delivered a lecture on the implementation of water supply schemes by TWAD Board, on 09.02.2017 – 11 am to 01 pm, in Sir C. V. Raman Hall. Third Year B.E. Civil Engineering students attended the lecture.

Er. Mathiyalagan described the process of formulating a water supply scheme and how it is implemented. He narrated the details of Namakkal Municipal Added Areas Water Supply Scheme as a case study. Water becoming a scarce resource, he urged the students to create awareness among the public to conserve water resources and to avoid wasting water and requested the students to practice water conservation and protection measures. He touched upon sewerage schemes and the benefit of using treated wastewater for purposes other than drinking. He also invited the students to visit Mettur to see ongoing implementation of water supply scheme components.

The Students received the teachings with keen interest and enthusiasm.

Assistant Professors C. Ganapathy, U. Indira Priya Dharshini, G. Aruna, Thulasi Raman, and Soundararajan looked after the arrangements. Dr. S. Suresh, Professor, thanked Er. Mathiyalagan for sparing his time and for his inspirational speech.

Er. M. Mathiyalagan B.E, MBA, MIE, Superintending Engineer, TWAD Board, Salem-Namakkal Circle, delivering about water resources

CARVE 17 NATIONAL SYMPOSIUM

Department of Civil Engineering in association with ICI & IEI Students Chapter organized CARVE 17 – an inter college National level technical symposium on 3rd March 2017 in the august presence of Dr.M. Usha, Principal, Sona College of Technology, Dr. V. Jaya Prakash, Director- Industry Connect, SCT, Dr. R. Malathy, HOD, Civil Department. Mr. K. S. Ravichandran, Marketing Head, Teemage Builders presided over the function and delivered the keynote address on "". The souvenir containing the abstracts of all the projects was released. During the inauguration MoU was signed between Sona College of Technology and The Salem Land Survey Institute. Students from different colleges participated in various events like paper presentation, poster presentation, CADD contest, multimedia, photography, code cracking and quiz. The students who excelled in various events were felicitated during the valedictory.

Dr.R.Malathy delivering welcome speech

MoU signed between SCT & Salem Land Survey Institute

Souvenir released during inaugural

PROJECT EXPO 17

Department of Civil Engineering in association with ICI & IEI Students Chapter organized Project Expo 17 on 3rd March 2017 in the august presence of Dr.M. Usha, Principal, Sona College of Technology, Dr. V. Jaya Prakash, Director- Industry Connect, SCT, Dr. R. Malathy, HOD, Civil Department. Mr.K.S.Ravichandran, Marketing Head, Teemage Builders inaugurated the Project Expo and appreciated all the students for bringing out their talents in various domains and visited all the project models & prototypes displayed. He also congratulated the Head of the Department Dr. R. Malathy for encouraging the students to showcase their innovations. Projects like bamboo sit out, self cleaning concrete, plastic bottle construction, glass house, power generation from speed breakers, solar tree, etc., attracted most of the visitors. The best projects were selected and the students were awarded.

Students explaining the Gate Tower Building Project

Chief guest visiting the project expo

Students explaining the principle of floating suspension bridge

GUEST LECTURE ON DESIGN OF BRIDGES – PRACTICAL APPROACH

A guest lecture was conducted to our civil engineering and post graduate structural engineering students exclusively on the practical approach on design of bridges which will help them to understand the concept of bridge configurations and the design loadings as per code provision on 11th Febraury 2017 in the MBA conference hall.

The resource person was Er.M.Ravi Kumar, Assistant General Manager, Structural division, Larsen & Tourbo (L&T) IDPL, Chennai.

He started with the statement that the engineering concepts base is from the nature and stated the role of bridge and its function. He appraised various parts of the bridge like superstructure consist of deck slab and girder, substructure consist of pier cap and pier and foundation with sketch. He also explained the necessity of the types of bridges starting from small structures to massive structures ordering from pipe and box culverts, Underpasses (Animal, reptile, cattle, Pedestrian, Vehicular), minor bridges, major bridges, flyovers, elevated corridors, Rail over bridges (ROB) and Rail under bridges (RUB). He also listed the loadings on the bridge as per IRC 6 and its specifications. He finally finished his presentation with projects he has been involved.

Er.M.Ravi Kumar, Assistant General Manager, Structural division, Larsen & Tourbo (L&T) explaining about design of bridges

SKILL DEVELOPMENT PROGRAMME ON "RESEARCH METHODOLOGY AND QUALITY PUBLICATIONS"

IEI Salem Local Centre in association with IEI Student's Chapter of Sona college of Technology organised skill development programme on "Research Methodology and Quality Publications" on 04.03.17.This programme was inaugurated by Dr R Jayavel, Director-Research, Anna University, Chennai. He has started with a short introduction about Anna University, Chennai and various researches carried over by them. He added that Anna University stands 5th among other universities in case of research publications. Among many disciplines, publications in Environmental science and Engineering tops first. He gave an overview on the significance of research and the quality publications. Literature study plays a vital role in identifying the gap and carrying out the research. Research should be beneficial to the society and cost-effective. He briefed the research design stages which includes selection of problem, conceptual clarity, methodology, literature collection, bibliography, collection of data, testing, interpretation of the result and report writing. He asked the researchers to publish their works in the nonpaid journals rather than paid one. Plagiarism needs to be checked before publication. He has listed the available plagiarism checker in the internet. He concluded by wishing the research scholars and doctorates for their contribution towards research. Vivekanadha Engineering College handed over the institutional membership form and Student's Chapter application form to Er K Pandian, Chairman, IEI Salem Local Centre. The chairman honoured the guest with a memento and Er Saravanan, Secretary, IEI Salem Local Centre proposed vote of thanks.

Dr R Jayavel, Er K Pandian, Chairman, IEI Salem Local Centre and Dr.R.Malathy at the inauguration

GUEST LECTURE ON THE TOPIC "SUPER STRUCTURE CONSTRUCTION"

A Guest lecture was organized in department of Civil engineering by Prof.R.Renuka & Prof.A.Divya for II Year UG students on 14.03.17 at ECE conference hall. The guest lecture was on the topic of "Super Structure Construction" presented by Er.V.Balaji Subbramanian (Managing director at Sri vijaya bharathi associates, Dharmapuri). Er.V.Balaji Subbarmanian has explained about the super structure construction in bridges. He explained about launching girder, erection of launching girder. He explained foundation and types of foundation for bridges. He discussed about caisson, cofferdam & their types. He discussed on the method of prestressing in bridges and erection of domes, shells. He discussed about types of bridges and construction of bridges. Finally, he finished with construction sequence of caissons & cofferdam. The students were

interactive on this topic and gained knowledge on super structure construction in bridges.

V.Balaji Subbarmanian explaining about the super structure construction in bridges

"PRE-EMPLOYMENT TECHNICAL PROGRAM"

Department of Civil and ICI student chapter organized two days training on **"Pre-employment Technical Program"** in association with UltraTech Cements Ltd., on 16.03.2017 and 17.03.2017 at MBA Conference Hall. The scope of the training is to fill the gap between the knowledge gained in the institution and the skills required in the construction industry. The training program was inaugurated by Er.Easwaran, Marketing Manager UltraTech in presence of Dr.R.Malathy, HoD/Civil, Er.Sanjaikumar, tertiary technical service manager, UltraTech and Prof,M.Arivoli, coordinator. On day one, the session was given about materials and practices in the field, and followed by methods of application of construction equipments. The afternoon session was given by Prof.S.Thirumurugan, and it was about various foundation types meeting the different type of soil. Then, Er.Sanjaikumar elaborated about scaffolding, formworks and safety construction practices. On day two, a trip was arranged to a construction site. There the students were clearly explained about bar bending, volume batching, circular, rectangular column detailing, plastering and so on. Then the students visited material showroom, there they learned about material purchasing and their specification. At the end of the day, students gave presentation about their observation in construction site and material showroom. The best presentations were honored by gifts from UltraTech. At feedback, the students expressed that the training was very informative rather than the text books and they wished to conduct many more such trainings in future.

Er.Easwaran, Marketing Manager UltraTech, Dr.R.Malathy, HoD/Civil, Er.Sanjaikumar, tertiary technical service manager, UltraTech and Prof,M.Arivoli, coordinator at the inauguration

Participated students at the inauguration

The consultant engineer explaining about bar bending the students

"INNOVATION IN CONCRETE & CONSTRUCTION" ICON 2017

1st DAY

Two day National Conference on "Innovation in Concrete and Construction" **ICON 2017** was conducted by Post Graduate Students of Civil Engineering on 06.04.2017 & 07.04.2017 at Dr.Abdul Kalam Conference hall and PG Auditorium. The conference was sponsored by UltraTech cements in association with CAFET, ICI Students chapter, IEI Students chapter and ISTE Students chapter. This conference was organized by the PG students of Construction Engineering and Management and Structural engineering students.

Dr.G.Balachandran Research head of JSW was the chief guest for the function. After invoking God's blessing the gathering was welcomed by Dr.R.Malathy, Dean (R&D) /HoD. The Conference was started in traditional manner with the lightning of Kuthuvilaku by the dignitaries on the dais.

The Chief Guest gave a thought provoking ideas on innovations in concrete in present scenario. Around 37 internal participants presented their research ideas through paper presentation in various themes. Poster Presentation for UG students was also conducted in parallel session where around 20 posters were presented. A separate set of panel members had judged this session.

Two sessions were chaired by two external chairpersons on Concrete, Steel & Construction Management Dr.R.Thirunanam & Dr.R.Shanmuguapriya. The chairperson gave key note address on Formwork Engineering to PG students in a unique manner which realized the students to think in different perspective and after the address gets over around 20 papers were presented by the PG students of Structural & CEM students.

Dr.R.Malathy, Dean (R&D) /HoD welcome the gathering

Dr.Thirunanam gave key note address on special concrete at afternoon session which motivated the students and their scope in concrete related areas and research activity and after that 17papers were presented in that session.

2nd DAY

On the 2nd day, Dr.R.Jayavel, Research Director from Anna

University combined with department of computer science engineering, had the inauguration function. We had Head of the department s from various departments principal, Director industry connect and Chairman joined for the inauguration function. Dr.R.Jayavel shared his experience about this research fields and his insights on Japanese technology. He suggested how research and teaching should go hand in hand. Proceeding and CD was released which had all the abstracts of the projects that was received and presented. The proceedings was released by Dr.V.Jayaprakash and received by chief guest Dr.R.Jayavel.

Dr.R.Shanmuguapriya giving key note address

After the inauguration we had keynote session given by Dr.T.Ch.Madhavi on the topic "Seismic and retrofitting". Technical session of project presentation was done in MBA conference hall wherein external chairpersons where Dr.T.Ch.Madhavi and Dr.P.M.Shanmugasvadivu and internal chairperson was Dr.R.Malathy. Students from various colleges like IRTT, Vellalar, Dhirajlal, Sri Shanmuga college and Sri Krishna college had presented their papers. Once the technical session was over Valedictory function was conducted and best paper award was given to both internal and external participants and special award was given to best poster and for UG project presentation as well.

Panel discussion was conducted and some special suggestions were given by various chairperson. Dr.R.Malathy, the Head of the department gave her suggestions and feedback for the forthcoming conference. We received positive feedback from external participants. Prof.R.S.Surendar and Prof.P.Priyadarshni gave vote of thanks for the entire team and management for the fullest cooperation.

Finally the conference was successfully completed with the full support from management, principal and most importantly HoD. The program had gained its full support and shape by the tireless efforts of student coordinators and support from faculties. This conference has filled its aim by achieving its main objective and was a best platform for knowledge sharing.

ALL INDIA SEMINAR ON "AN EFFECTIVE INTEGRATED MANAGEMENT APPROACH TO MUNICIPAL SOLID WATES IN INDIA"

All India seminar on "An effective integrated management approach on municipal solid waste management" on 25th &26th April 2017 was organised by the Institution of Engineer (India) Salem local centre, in association with Sona College of Technology. We had our Convenor Dr.R.Malathy, and organizing secretary Prof.N.Savitha from Sona College of Technology. The seminar mainly focused on minimizing the rate of waste generation through education and source reduction to decrease the volume of residual waste which must be managed. The gathering was welcomed by Dr.R.Malathy and felicitations were done by our vice chairman Shri.ThyaguValliappa, Director-Industry connect Dr.V.Jayaprakash, Principal Dr.M.Usha. Special address was delivered by Dr.S.T.Ramesh, Associate Professor and Associate Dean, of NIT Trichy, Dr.M.P.Rajasekharan, CEO, of sustainable Enviro Promoter, Trichy and Er.Saravanan, IEI Salem local centre.

The first keynote talk as given by Dr.S.T.Ramesh, Asso. Professor and Associate Dean, of NIT Trichy, discussed on strategies for effective management on solid waste who clearly explained on ways to manage solid waste and present environmental change in Madurai and Trichy and their solution to change the environment.

Inaugural function

Releasing of seminar proceedings

Releasing of seminar proceedings

The next keynote was given by Dr.M.P.Rajasekharan, CEO, of sustainable Enviro Promoter, Trichy on "Legislations for solid waste in India". He clearly explained on the policies and harmful effects on solid waste which is commonly made by humans in day-to-day life.

In the afternoon session we had Er. S. JothiVenkataraman, A.E, Pollution Control Board, from Hosur on "Industrial Solid waste management in India". He fully focused on Industrial waste in and around Hosur and how to manage them in effective manner. We also had few external participants who presented their views on solid waste management. With this we came to the end of first day programme of All India seminar.

On the second day we started with keynote session by Dr.S.Ganapathy Venkata Subramaniyan, Professor. In Anna University Chennai who expressed his views on environmental legal regime for the effective environmental management ways for solid waste in India. He gave us clear penal laws and legislations about environmental issues.

The next keynote address was given by Mr.SureshBhandari who is founder of Clean City foundation in Coimbatore on "Current challenges in solid waste management in India". He was mearly a true inspirion for our students who took waste management as a challenge to clean the environment with true love and passion.

Keynote address

We also had Er.Chythenyen, proprietor of Green Connect, Salem a proud alumnus of Sona College of Technology who made way in managing solid waste with Bio-gas emission focused mainly for hotels where lot of organic waste been converted to ashes. We had our next entrepreneur Mr.Chakkravarthy Rajamani from ICS who deliberated about converting waste into flyash without any fuel where the ashes were been used for construction and building.

Then we had the most interesting panel discussion which was headed by Dr.S.G.V. Subramaniyan along with Er.Kamaraj corporation commissioner salem division so as to get various views from the eminent deligates and to make awareness about solid waste management.

Panel discussion

With this we came to the end of two days of All India seminar where the students were fully enriched with the new technologies and important aspects to save the nature.

FACULTY REJUVENATION PROGRAMME ON "TOWARDS ACADEMIC EXCELLENCE"

Three days faculty Rejuvenation programme was organized for the faculty members of Civil Engineering from 22nd May to 24th May 2017. Around 35 members participated in this programme. On the first day, inaugural function started at 9.30 a.m in the presence of Dr.M.Usha, Principal, Dr.R.Malathi, Medical officer, Naturopathy and Yoga, SCT and Dr.R.Malathy, HOD/Civil.

Inaugural Function

On 22nd May 2017, the first session was given by Dr.R.Malathi. She enlightened all of us to keep our health in good condition. She taught basic things to keep our mind and body healthy. She shared her vast knowledge in the field of naturopathy and taught us many mudras that can be practiced in our day to day life. Her speech rightly lead us to accept that "Health is Wealth" always.

Positive promotion of health by Dr.R.Malathi

Food and Medicine by Dr.R.Vetrivendan

In the afternoon session of the same day, Dr.R.Vetrivendan gave a complete chart of healthy food that has to be consumed by all. He insisted us to take alternate food, local fruits, vegetables and snacks. The importance of drinking hot water, doing exercises, practicing yoga was clearly discussed by him.

On the second day, Dr.N. Arunachalam was the key note speaker who discussed the activities of faculty towards academic excellence, effectiveness of teaching, comparative study of some teaching methods, spectrum of teaching methods, lessons of psychology of learning and domains of learning. He also dealt with the components of Educational Technology, measurement of academic excellence, ways to handle effective practical classes, different methods of delivering lectures and ways of achieving overall academic excellence in a course. In the afternoon session, he created an interest in involving research activities and gave tips to guide UG,PG and Ph.D projects.

Towards academic excellence by Dr.N. Arunachalam

Effective way of doing projects by Dr.N. Arunachalam

On the third day of the programme, all the faculty members handling same courses were grouped into teamsand prepared lesson plan, questions for CIE tests, mini projects for the courses. Thus the three days programme came to an end successfully.

CONGRATULATIONS TOPPERS

S.No	Student Name	SGPA	Rank
VI Semester			
1	Susmitha T	9.69	1
2	Shaakirah S	9.58	2
3	Srimathi S	9.5	3
IV Semester			
4	Menaka.B	9.67	1
5	Kothai.A.S	9.54	2
6	KaniMozhi.P		
7	Revathi.P.A	9.5	3
II Semester			
8	Chittal B	9.45	1
9	Paras Kumar Gupta	9.36	2
10	Ayush Nath Ghimire	9.23	3

CONGRATULATIONS FACULTY

- Dr.R.Malathy, has been conferred the award titled, "Distinguished researcher &Scholar Icon-2017" by Jupiter Publications Consortium.
- Dr.P.Velumani, has been awarded, "Research Excellence Award-2017" by Institute for Exploring Advances in Engineering.
- Prof.C.Ganapathy scored topper in NPTEL online course " Earth Science for Civil Engineering"