

The session went on by addressing the various topics like, Tension member-Types of tension members, types of failures of tension member and design of tension member, Compression member-Types of compression member, types of buckling and design of axially loaded compression member, . Beams-Types of beams, types of failure of beams, design of beams and built-up beams and Roof truss- components of roof truss, load calculation on roof truss, design of purlins.

He concluded the session by presenting the usage of IS 875 Part 3. The session was made interactive and it is also very informative for the students.



Dr. M. Anbarasu delivering guest lecture



Dr. M. Anbarasu interacting with students

Tripunithura, Kochi. Built in 1865, the Palace complex consists of 49 buildings in the traditional architectural style, spreading across in 54 acres (220,000 m<sup>2</sup>) and the day was followed with the visit to the construction site of famous LULU Complex (8 story 5 star boarding and lodging hotel cum marriage hall). Students were divided into 10 batches then taken into the site with proper safety measures by wearing safety shoes and helmets. Officials at construction site guide the students regarding different aspect of construction and gave the satisfactory answers to different questions raised by students.



## STUDENTS ACHIEVEMENTS

NAME	CGPA	RANK
<b>7<sup>th</sup> Semester</b>		
V.CHANDRIKA	9.58	I
G.BAKIYALAKSHMI	9.46	II
S.AISHWARYA	9.42	III
<b>5<sup>th</sup> Semester</b>		
P.SUGANYA	9.3	I
R. VIDHUSHA	9.26	II
P.SARANYA S.KAVIPRIYAA	9.16	III
<b>3<sup>rd</sup> Semester</b>		
T.SUSMITHA	9.42	I
R.KAVIPRIYA	9.38	II
C.LAKSHMI PRIYA N.MONISHA	9.27	III

## REPORT ON INDUSTRIAL VISIT

The Department of Civil Engineering, Sona College of Technology organized a two days industrial visit to Cochin on 12th and 13th of August 2015 for B.E Civil Engineering students. Visit was organized with the prior permission and guidance of honourable Principal of Sona College of Technology, Dr. V. Jayaprakash, Dr. R. Malathy, Head of the Departments and Dr. S. Suresh Industrial link staff incharge. Students were accompanied by four faculty members Prof. M. Adhyanan, Prof. S. Karthika, Prof. K. Thulasiraman and Ms. M. Malathi.

First day (11.09.2015) of the visit is on Metro Rail construction near Jawaharlal Nehru International Cricket Stadium by 10 am and students were separated into batches then visited construction work and equipment's.

Second day (12.09.2015) morning visited Hill Palace the largest archaeological museum in Kerala, at



## SONA CREA

### Convenor

Dr. R. Malathy, Ph.D,  
Dean(R&D), HoD/Civil

### Co-ordinator

Prof. M. Arivoli

### President

V.Chandrikka, IV year

### Secretary

R.Pravinraj, IV year

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V. Ponmani, III year  
R. Priyadharshini, III year  
N. Dharani, III year  
B.S. Dheepa, III year  
B. Sivasankari, III year  
Shruthi.S, III year

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## HOD'S MESSAGE

It's my pleasure to release 7th issue of "SONA CREA" newsletter. I am happy to see that the students and faculty were vibrant and conducted many events in our department. The articles given by the students are covering recent innovations in Civil Engineering.

I expect the students and faculty members will make use of this opportunity to exhibit their talents and update their knowledge. I congratulate the coordinator involved to bring this newsletter successfully.



*Dr. R. Malathy*

Dr. R. MALATHY

HoD / Civil

Convenor/ICI Student Chapter

## ICI STUDENTS CHAPTER COORDINATOR MESSAGE



*M. Arivoli*

M. ARIVOLI

AP/ CIVIL

ICI Students Chapter Coordinator

I am very happy to pen down the events that took place during July to November 2015 in our Civil Engineering department through this newsletter.

On 21st August 2015, a one day National Seminar on "Current Trends in Water Quality Management" was conducted to create awareness among students about Pollution status of surface water and desalination process.

A two day workshop on "Concrete Mix Proportioning" was conducted for students to throw light on mix design by IS method.

On Engineer's and Concrete day celebrations, the renowned Engineers of Salem were honored and students were felicitated on that occasion for participating in various events conducted through ICI student chapter.

I look forward for more contributions from both students and faculty.

## ICI STUDENTS CHAPTER COORDINATOR MESSAGE

I am very happy to add my note about the events conducted in Sona College of Technology for 2nd years and 3rd on behalf of ICI students chapter.

I feel proud that I am a part of this chapter, I must thank Dr.R.Malathi our honorable HOD and Mrs. M. Arivoli, the chapter co-ordinator. From my 2nd year I actively participated in all the events of ICI Students chapter, they encouraged me from my initial step that has made me to reach this stage.

Finally I must thank all the faculty members who encouraged the students to participate in all events and students of Civil Department who actively participated in all the events.

"The moto of this Student Chapter is to bring out the hidden talents of the students like creative skills, designing and leadership skills". I request my juniors to actively participate in all the events because it will mould us as a Professional Engineer which will help in future when we enter into the society. By experience I felt it and I am really feeling proud to be a part of this ICI Students Chapter as a President.



*V. Chandrikka*

V. CHANDRIKKA

IV yr / Civil

ICI Students Chapter President

## GEOPOLYMER CONCRETE



**P. SUGANYA**  
III Yr Civil - C

Geopolymer concrete was proposed by Davidovits. The principle behind this concrete is that an alkaline liquid could be used to react with the silicon (Si) and the aluminium (Al) in a source material of geological origin or in by-product materials such as fly ash, blast furnace slag, and rice husk ash to produce binders. Because the chemical reaction that takes place in this case is a polymerization process, Davidovits coined the term 'Geopolymer' to represent these binders. Water, expelled from the geopolymer matrix during the curing and further drying periods, leaves behind nano-pores in the matrix, which provide benefits to the performance of geopolymers.

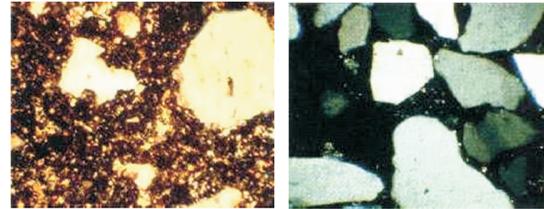
There are two main constituents of geopolymers, namely the source materials and the alkaline liquids. The source materials for geopolymers based on alumina-silicate should be rich in silicon (Si) and aluminium (Al). These could be natural minerals such as kaolinite, clays, etc. Alternatively, by-product materials such as fly ash, silica fume, slag, rice-husk ash, red mud, etc could be used as source materials. The choice of the source materials for making geopolymers depends on factors such as availability, cost, type of application, and specific demand of the end users. The alkaline liquids are from soluble alkali metals that are usually Sodium or Potassium based. The most common alkaline liquid used in geopolymerisation is a combination of sodium hydroxide (NaOH) or potassium hydroxide (KOH) and sodium silicate or potassium silicate.

Geopolymeric materials have a wide range of applications in the field of industries such as in the automobile and aerospace, non-ferrous foundries and metallurgy, civil engineering and plastic industries. The type of application of geopolymeric materials is determined by the chemical structure in terms of the atomic ratio Si: Al. For many applications in the civil engineering field, a low Si: Al ratio is suitable.

Applications of geopolymeric materials based on silica-to-alumina atomic ratio.

Si:Al ratio	Applications
1	- Bricks - Ceramics - Fire protection
2	- Low CO <sub>2</sub> cements and concretes - Radioactive and toxic waste encapsulation
3	- Fire protection fibre glass composite - Foundry equipments - Heat resistant composites, 200° C to 1000° C - Tooling for aeronautics titanium process
> 3	- Sealants for industry, 200° C to 600° C - Tooling for aeronautics SPF aluminium
20-35	- Fire resistant and heat resistant fibre composites

If we compare in a microscope the structure of mortar made of regular cement with another sample made of geopolymer, we notice that the regular cement is a coarse stacking of grains of matter. This causes cracks and weaknesses. On the opposite, geopolymer cement (in black) is smooth and homogeneous. This provides, in fact, superior properties.



The best example for Geopolymer concrete is the Brisbane West Wellcamp Airport (BWVA), Toowoomba, Queensland, Australia. This project marks a very significant milestone in engineering – the world's largest geopolymer concrete project. BWVA was built with approximately 40,000 m<sup>3</sup> (100,000 tonnes) of geopolymer concrete making it the largest application of this new class of concrete in the world.

### ADVANTAGES OF GEOPOLYMER CONCRETE

- Compressive strength is 1.5 times more than that of OPC.
- It has the potential to greatly reduce the CO<sub>2</sub> emission.
- Geopolymer concrete has good workability as of the OPC.
- Fire proof.
- Low permeability.
- Eco-friendly and non-toxic.
- Excellent properties within both acid and salt environments.
- Greater corrosion resistance.
- Rapid strength gain and lower shrinkage.
- Cost effective.

## CELLULAR LIGHT WEIGHT CONCRETE BLOCKS



**G.V. Saisubramanian**  
III Yr Civil

Cellular Light Weight Concrete (CLC) is also called as Foam Concrete. These concrete is also produced as normal concrete under ambient conditions. CLC blocks are cement bonded material made by bending slurry of cement.

Addition of foam to concrete mixture creates millions of tiny voids or cells in the material, hence the name describes cellular concrete.

It is produced by making slurry of cement + fly ash + water, which is mixed with addition of pre-formed stable foam in ordinary concrete mixer under ambient conditions.

### MATERIALS TO BE USED

**1.Cement:** Used in all mixtures is commercially available in Portland cement of 53 grade. Specific gravity must be 3.13.

**2.Water:** Potable water should be used.

**3.Fly ash:** Bye-product from thermal power plants.

**4.Foaming agent:** It should be kept airtight and temperature should not exceed 25°. Once the foam is diluted in water, it should be used immediately. At any circumstances, it should not be in contact with oil, fat, chemicals or other materials that affects their functions.

### DEPENDING ON THE USAGE, IT CAN BE CLASSIFIED INTO

**GRADE 1 :** Used in load bearing units and it's block density is in the range of 1200kg/m<sup>3</sup> to 1800kg/m<sup>3</sup>.

**GRADE 2 :** Used in non-load bearing units and block density is in the range of 800kg/m<sup>3</sup> to 1000kg/m<sup>3</sup>.

**GRADE 3 :** Used for providing thermal insulation and it's density is in the range of 400kg/m<sup>3</sup> to 600kg/m<sup>3</sup>.

### DIMENSIONS

LENGTH: 400,500 or 600mm, HEIGHT: 250 or 300mm, WIDTH: 100,150,200 or 250mm.

### PROPERTIES

Low weight, Good thermal insulation, Thermal expansion is negligible, Freezing and Thawing problems are absent, Sound absorption is good, Less tendency to spall.

### ADVANTAGES

Bricks are the most importantly used building material in construction field. When compared to bricks, it has several advantages. They are

1. Uniform in shape & design and normally equal to six numbers of normal modular brick.
2. Faster masonry work and five times faster than normal bricks.
3. It requires very thin mortar layer between blocks and for joinery, thus lot of cost is saved.
4. Good thermal insulator and controls noise pollution efficiently.

When compared to AutoClaved Aerated Concrete (AAC)

1. AAC offers greater compressive strength for lesser block density, but CLC gains strength throughout the lifetime.
2. CLC blocks can be cast into different shapes unlike AAC.
3. AAC is more energy intensive, so it is better to use Cellular light weight concrete.

### DISADVANTAGES

It cannot replace bricks in case

1. If it does not have any other use, rather than to put in plinth filling. But red clay bricks can be used for
  - Terraced water proofing
  - Sunk slab filling
  - Soak pit filling
  - Rain harvesting soak pit near bore well
2. Some Architect works particularly use bricks.
3. It is hard for doing electrical works, but bricks can be easily usable.

### CONCLUSION

Global warming and Environmental pollution is now a great concern in the society. So use of these blocks can reduce the cost of construction and also provides greater strength than bricks.

## FEASIBILITY OF SOLAR ROADWAYS IN INDIA



**E. SIVABAVITHRAA**  
III Yr Civil - C

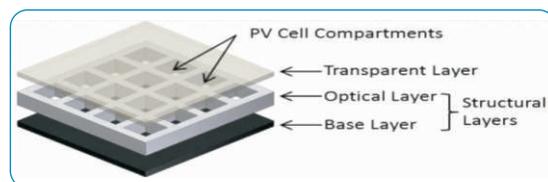
### INTRODUCTION

India is one of the largest economies in the world. India's 70% electricity generation is depended on coal based power plants. As the electricity demand dramatically increasing, demand for coal also increases and it leads to environmental pollution. The alternate energy source is solar. One of the largest problems with solar technology is the requirement of large surface area for the production of solar energy. India has the second largest road network in the world with 33 lakh km length. Most of the road surfaces are exposed to solar radiations for long duration. By combining two existing technologies (Road network systems and Solar panels), it is possible to achieve the necessary surface area required in order to make the solar energy become a feasible solution to the energy crisis.

The Structural components of solar roads consist of three layers as illustrated in figure below: on top, a hard glass layer containing the solar panels, LED lights and heating. Then the second layer, which contains the controller, where a microprocessor unit activates the lights and communicates with the road panels. Finally, the bottom layer ensures that the electrical current collected from above makes it to homes and charging stations for electric cars. In addition, there is space for other cables, such as television or telephone lines.

The solar panels are divided into three basic layers:-

1. Road Surface Layer
2. Electronics Layer
3. Base Layer



The top most layer is made of tempered glass. And it is tough enough for handling today's heaviest loads under the worst conditions and it is made water-proof so

that it can prevent electronics layer beneath it. It provides greater thermal strength. The electrical layer includes all the current generating components - photo voltaic cells, Light Emitting Diode (LED), Sensors, Microprocessor, etc.

Solar cell is a photovoltaic device that converts the light energy into electrical energy based on the principles of photovoltaic effect. Over 95% of all the solar cells produced worldwide are composed of the semiconductor material Silicon (Si). As the second most abundant element in earth's crust, silicon has the advantage, of being available in sufficient quantities.

Mono-crystalline silicon cells are best as they provide the highest power output of commonly available solar cells. Various shapes and sizes are available, out of them 125mm square cells allow a large area for exposure and a very little part of the transparent layer is cantilevered over the cell.

When a solar panel exposed to sunlight, the light energies are absorbed by a semiconductor materials. Due to this absorbed energy, the electrons are liberated and produce the external DC current. The DC current is converted into 240-volt AC current using an inverter for different applications.

Traditionally the cells in a solar panel would be connected by soldering a tin-coated copper ribbon across the bus bars of one cell and then soldering these ribbons onto the adjacent cell.

The solar road is feasible for India because, With about 300 clear sunny days in a year, India's theoretical solar power reception, just on its land area, is about 5 PWh/year (i.e. = 5 trillion kWh/yr ~ 600 TW). The daily average solar energy incident over India varies from 4 to 7 kWh/m<sup>2</sup> with about 1500-2000 sunshine hours per year, depending upon location. This is far more than current total energy consumption. The India Energy Portal estimates that if 10% of the land were used for harnessing solar energy, the installed solar capacity would be at 8,000GW, or around fifty times the current total installed power capacity in the country. The main advantage of the Solar Roadway concept is that it utilizes a renewable source of energy to produce electricity. It has the potential to reduce our dependence on conventional sources of energy such as coal, petroleum and other fossil fuels. Also, the life span of the solar panels is around 30-40 years, much greater than normal asphalt roads, which only last 7-12 years. Even earthquakes will not affect the

solar roads because, it can simply be replaced, because all of the elements connect to create an intelligent street network, which can even use LED lights to alert drivers to dangers around the next curve.

The electricity generated pays for the Solar Roadways. Additional revenue can be acquired by leasing the conduit within the Solar Roadways to service providers such as the telephone, cable TV, and high-speed internet industries.



Even though solar roads costs higher than three times of normal roads, it would be viable for our country as its energy needs increasing dramatically. Research reveal that the solar roads once installed will serve more than 20 years with energy production compared to

## POLYCARBONATE SHEETS



**S. Shruthi**  
III Yr Civil

As technology goes on improving and people gets civilized, more and more new inventions and discoveries occur that facilitate safety and luxury to human beings. Usage of asbestos was the most common for roofing in the recent years. There was a grow in the use of Asbestos in the 19th century amongst company and builders after they open its excellent sound fascination and its resistance to fire, heat, electrical and chemical harm asbestos was used for the building of roofs and awnings. But it absorbs more heat and affects the ease temperature inside the building. There came an alternative "POLYCARBONATE SHEETS".

This will reduce the use of space condition element, which in turn around decreases your electricity bills. This is possible because it block off UV rays from the sunlit that could high temperature up the temperature in the

interior your house. The improved global temperature due to global warming has made polycarbonate to become more and more popular. For the security of your family if you have an asbestos awning take away it and return it with a polycarbonate sheets of your choice.



### ADVANTAGES

- Polycarbonate panels are finding use in an increasing number of scenarios. They are virtually unbreakable and can withstand massive force. For this reason, they are used in the construction of bulletproof windows and police shields. They also find use in the construction of banks, offices, and fences.
- Ultraviolet blockage is another great plus with polycarbonate panels. This quality makes these panels the material of choice for constructing overhead covers and awnings in commercial establishments. These panels are also very light when compared to glass, acrylic, or other plastics. This results in easy transportation, installation, and lower labor costs -- three big bonuses when considering building costs for businesses.
- Polycarbonate panels are available in clear glass-like shades and also opaque shades for better cover. Depending on the needs of an organization or individual, these panels can be colored or left translucent, adding to the flexibility of use.
- Another favorable factor with polycarbonate panels is their high resistance to heat and cold. These panels are ideal for use in any kind of harsh environment, as they can last longer than other standard construction materials. This, combined with the excellent optical properties of polycarbonate panels in keeping out ultraviolet rays while letting in adequate sunlight and heat, makes them the preferred material of choice for constructing greenhouses and plant nurseries. On top of that, polycarbonate factors are also resistant to sunlight, rain, and snow. This enables these panels to last in the outdoors for many years without showing signs of fading, yellowing, or discoloration.

### DISADVANTAGES

- Polycarbonate panels have few disadvantages when compared to other materials such as glass or plastic.
- High price is one of the major disadvantages of

polycarbonate panels since it is much more expensive than glass and other plastics. As a result, many consumers consider opting for ABS (Acrylonitrile Butadiene Styrene), which is also considerably tough but has lower impact resistance and heat resistance. ABS is much lower in price and can offer a good solution for buyers who do not require the extreme toughness and heat resistance of polycarbonate panels.

- Polycarbonate panels are not very resistant to scratching, marring, and abrasive surfaces. As a result, denting is possible on the surface if care is not taken.

Antonine Wall, but this was changed after a petition in favour of two locks and a tunnel under the wall.



The ground on which the wheel is built was previously used as an open cast fire clay mine, a coal mine, and a tar works, resulting in contamination of the canal with tar and mercury and 20 meters (66 ft.) of loosely packed backfill from the mining operations containing large sandstone boulders was not considered adequately solid foundation for the size of the structure, so deep foundations with thirty 22 meters (72 ft.) concrete piles socketed onto the bedrock were used.

Due to the changing load as the wheel rotates in alternating directions, some sections experience total stress reversals. In order to avoid fatigue that could lead to cracks, sections were bolted rather than welded, using over 14,000 bolts and 45,000 bolt holes.

### FEATURES

- First structure of its kind of world.
- Design life of at least 120 years.
- 35 meters high.
- 35 meters wide.
- 30 meters long.
- Each gondola contains at least 250,000 litres of water.
- Capable of carrying eight boats at a time.
- A single trip takes 15 minutes.

Most visitors make their way to the Falkirk Wheel by road rather than by canal. It is well signposted from every approach to the Falkirk area. Entrance to the visitor center is free, and inside you will find a range of background material on the Millennium Link and on the Falkirk Wheel itself. You will also find a large shop and a cafe selling a range of good value food.

But it is the Falkirk Wheel itself that draws visitors to this spot. It is 35m or 115ft high, the height of eight double-decker buses. Each gondola contains 300 tonnes of water, meaning that the wheel moves 600 tonnes on each lift. But because the gondolas are always in balance (because boats displace their own weight of water) moving them takes surprisingly little power. Up to eight boats can be carried at any one time.

And while many visitors will be happy simply admiring a remarkable structure designed both to look good and function well, the real experience only comes from trying it out for yourself. Details of boat trips are set out on the right. You board your hour long trip in front of the Visitor Centre before being lifted in the wheel to the length of canal through Rough castle Tunnel.



WHEEL IN MOTION      WHEEL FROM VISION CENTRE

Beyond the tunnel your boat turns, before returning through it and descending via the wheel. Advance booking of boat trips is highly recommended. And if one wonders of its age is not enough for you, footpaths from the Falkirk Wheel take you a little over half a mile to Rough Castle Roman Fort, complete with one of the best preserved stretches of the Wall. The wheel will be a symbol for Scottish innovation and ingenuity as well as a unique, thrilling experience for visitors.

### SISBRICK



P. Saranya  
III Yr Civil

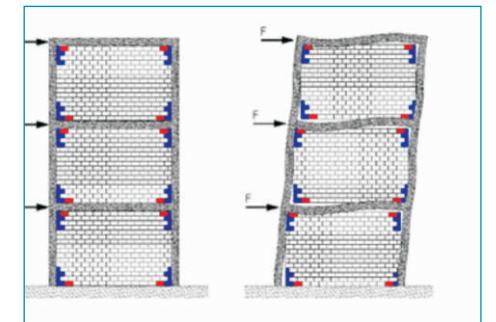
#### What is a SISBRICK?

Sisbrick is a new class of earthquake-resistant building materials that seismically isolates partition walls from the main building structure, significantly reducing the tension between these two elements and, therefore, the damage incurred.

#### INVENTION AND EFFECTS OF SISBRICKS

Researchers from the Universitat Politècnica de València (Polytechnic University of Valencia, UPV) have designed a new seismic isolator that improves the way buildings respond to earthquakes. The key to the Sisbrick, as the invention is known, lies in the way different materials have been combined to achieve two main effects: it is able to absorb horizontal seismic

movements, while also supporting vertical loads (for instance, partition walls) that act on the integrity of the building frame. Designed specifically for use in partition walls, its brick form means it can be readily incorporated into traditional construction techniques, without the need for additional measures or equipment. Techniques and special bricks to improve the way buildings respond to earthquakes are already available on the market. However, what sets Sisbrick apart is its approach to partition walls. As researcher Luis Pallarés at the UPV's Concrete Science and Technology Institute (ICITECH) explains, these structures greatly condition a building's response to a seismic event. Merely making partition walls more resistant does not address the more widespread damage caused by earthquakes. The Sisbrick's large capacity to absorb the horizontal movements caused by earthquakes seismically isolates the partition walls from the main building frame: "They effectively serve as an insulating barrier, avoiding the transfer of loads from these partition elements to the main structure. By doing so, their impact on overall structural integrity in the face of an earthquake is greatly reduced" (Pallarés).



This also brings real seismic response into line with projected seismic response as calculated at the building design stage. Francisco Javier Pallarés, also of ICITECH, tell us that "today, seismic calculations only take into consideration the structure of the building frame and do not consider the partition walls, despite the clear and widely-reported influence they have on a building's response to earthquakes." By isolating the partition walls from the main frame, these calculations become more reliable. On top of the convenient brick form, only a relatively small amount of these bricks is needed to achieve this seismic isolation. Laboratory testing proves that, if the bricks are arranged in a specific way, just a small amount can afford significant gains in seismic wave absorption. Specifically, partition walls that incorporate Sisbricks can absorb horizontal movements in the order

of three times greater than those that do not. This translates into considerably less tension in the partition walls, meaning correspondingly less tension is transferred to the building frame during earthquakes. The Sisbrick has been patented by the UPV. Testing is currently being carried out into the thermal and acoustic isolation afforded by this material, in order to comply with the specifications of the Building Code. The team at ICITECH is currently looking for collaborators for the implementation, manufacture and commercialization of this product

### GUEST LECTURE ON "UNDERGROUND STRUCTURES AND EXECUTION TECHNIQUES"

Guest lecture on "Underground Structures and Execution Techniques" was organized by department of civil engineering on 11.07.2015. Resource Person is Mr. A. Manickavel, Resident Engineer, GC-EMBYE, C/o. Chennai Metro Rail Limited. The main objective of this guest lectures it to understand the recent trend of Civil Engineering construction in underground structure by adopting modern execution techniques. This lecture is also covered the fact and remedial measure about the execution failure during the underground boring by BTM (Boring Tunnel Machine). Students from final year are eagerly participated to this lecture by posting many technical aspects related to the metro rail projects. Faculty members, Staffs, Final year students and Pre-final year students attended the guest lecture.



Mr. A. Manickavel Interacting with students

### GUEST LECTURE ON "INTERNSHIP IN CIVIL ENGINEERING"



Prof K.Vetrivel honoring Mr. K. Shanmugam

Guest lecture on "INTERNSHIP IN CIVIL ENGINEERING" was organized by Department of Civil Engineering on 17.07.2015. Resource Person is Mr. K. Shanmugam, Technical Sales Manager, Enthu Technology Solutions India Pvt Ltd, Coimbatore. The main focus of this lecture is to provide awareness on various internship possibilities for the Civil Engineering students to develop their professional skill towards the individual item of work. This lecture is also covered the different part of execution work in construction industry and illustrated the step by step procedure for the installation of False Ceiling. Students from final year are eagerly participated for this lecture by posing many related questions like tools related to false ceiling

### SOFTWARE TRAINING IN SAP & ETABS

To enhance the student's knowledge in various Civil Engineering software's, Department of Civil Engineering, Sona College of Technology, Salem, conducted 3 days Software Training Course in SAP & ETABS on 22nd to 24th July 2015 with reference to the HOD Dr.R.Malathy by the course coordinators Prof P.Ashok kumar & Prof S.Prabhakaran. The interested 12 PG students along with 8 faculty members attended the training. Mr. Vivek Prasad course trainee from CSI Engineering Software Private Limited, New Delhi has provided a valuable information on the two software's SAP & ETABS with latest version.



Participants of training program with co-coordinators

### SEMINAR ON "BUILD BEAUTIFUL"

Department of Civil Engineering Association with ICI and IEI student's chapter has organized the guest lecture 19.08.15. **Chief Guest is ER. K. JAYASANKAR**, Assistant Vice President, Technical Services, Ultra Tech Cement Ltd, Governing Council Member, ICI. He explained the Types of concrete with their applications, what are the causes of failure concrete in site, 10 important "C's" of concrete that should be maintained in practical applications.



ER.K.JAYASANKAR delivering the lecture



ER.K.JAYASANKAR interacting with participants

### WORKSHOP ON TRAINING OF AUTOCAD REVIT ARCHITECTURE

The workshop on training in AUTOCAD REVIT ARCHITECTURE is arranged and conducted by Civil Engineering Department in coordination with ICTACT TamilNadu and Autodesk software on 20,21,22 August, 2015 for a period of three days. In the workshop civil engineering students from SONA and other colleges participated with a total strength of 120 students. The trainees were arranged by the AutoDesk. The main objective of this workshop on training in AUTO REVIT is to give a clear picture on the basics of REVIT architecture and its current application in construction and architectural areas. The students were exposed to the major tool bars in the revit software and trained to do planning, elevation, element formations considering the usage of the building elements in practical situations. To design a 3D elevation structure, students were trained for an initial work through of 3D rendering from the plan to elevation in a small sized single storey building. Students were also given an overview about camera walking in Revit software inside the building to have an exposure of walk through. In the three days workshop a basic utilisation of REVIT software were given to students and the students had got capability to design a single storey building, plan, elevation and 3D modelling on his own.

### NATIONAL-LEVEL SEMINAR ON CURRENT TRENDS IN WATER QUALITY MANAGEMENT

A one-day "National-level Seminar on Current Trends in Water Quality Management: Local and Global Scenario" was conducted on 21.08.2015 at Sona College of Technology, Salem by the Civil Engineering Department of Sona College of Technology.

The objective of this seminar was to create awareness and improve knowledge on recent trends in water quality management among students, engineers and scientists.

A large number of students and faculty members from various engineering colleges, polytechnic colleges and arts and science colleges participated in the seminar.

Also scientists and engineers from PWD Groundwater Division and Tamil Nadu Water Supply Drainage Board, Salem participated in the seminar.

Professor and Head of the Civil Engineering Department, Dr. R. Malathy welcomed the participants and highlighted the need for water conservation by every individual in every possible way.

The chief guests of the seminar were Mr. P. P. Chandrasekaran, Assistant Director (Lab), Advanced Environmental Laboratory, Tamil Nadu Pollution Control Board, Salem and Mr. Sudhakar Deenadayalan, General Manager, Chemin Enviro System Pvt. Limited, Chennai.

Mr. Chandrasekaran explained the pollution status of water quality of surface water of river Cauvery.

Mr. Sudhakar Deenadayalan described the desalination process, especially reverse osmosis, and the methods to dispose reject water. He also visualized that large-scale desalination process will become a viable solution for water crisis in future.

The other presenters were faculty members of Sona College of Technology, Dr. M. Ramesh Kumar of Fashion Technology Department, and Dr. L. Vijay Anand and Professor N. Vetrivel of Civil Engineering Department. Dr. M. Ramesh Kumar described the processes in textile and dyeing industry and industrial wastewater treatment processes.

Dr. L. Vijay Anand presented a paper on uranium contamination of soil and groundwater with reference to two sites in the USA. Professor N. Vetrivel described the concept of groundwater modelling and explained the procedure to be followed in the application of

MODFLOW groundwater modelling software.

The students showed keen interest on the said topics and interacted with the resource persons. The proceedings of this seminar have been well received by the students, faculty members, and scientists and engineers from Government Departments.



Inauguration of the national seminar



Mr. Chandrasekaran explaining the pollution status



Mr. Sudhakar Deenadayalan interacting with students

## GUEST LECTURE ON TRANSPORTATION ENGINEERING

A guest lecture was organized in Civil Department, under the guidance of Dr. R. Malathy, HOD/ Civil by Prof. W. Jeson John Williams and Prof. S. Priscil Nidhu for the students of V semester on the topic "Transportation Engineering" by Dr. R. Velkennedy, Professor, Thiagarajar College of Engineering, Madurai on 25.09.2015. The session was held both in the forenoon and afternoon separately for each section. He started the session with a brief lecture on the topic "Harbour and Docks", various terms and definitions, functions, etc., and then he discussed about "Airways"- functions, components of airport, terminal building, Runway and Taxiway design and visual aids. The session went on by discussing the Design of curves in "Railways". Almost the entire syllabus was refreshed; the students were made to work out few problems. The session was an interactive and informative one for the students.



Dr. R. Malathy introducing the chief guest



Student honouring the Chief Guest



Dr. R. Velkennedy delivering lecture

## WORLD WATER WEEK CELEBRATION-2015

World water week celebration 2015 was held at Sona College of Technology (22.8.2015 to 28.8.2015 August).

Various competitions influencing importance of water were conducted through out the week. Rangoli competition on the theme of "water conservation", photography competition & project presentation competitions on the topic & "water pollution water scarcity in Salem" & debate was held on the topic the Major contribution for water pollution is either common man or industries for the students.

Civil Engineering students actively participated in all the competitions in an enthusiastic way and presented their skills. Principal, Academic Director, HOD & Faculty members delivered speech empower the importance of water & water conservation to the students.



Students participating in Rangoli



Student participants in poster presentation and Debate



## WORKSHOP ON CONCRETE MIX PROPORTIONING

A two day workshop on concrete mix proportioning sponsored by Indian concrete Institute and Ultra Tech Cement Ltd was held at Department of Civil Engineering, Sona College of Technology, on 01.9.2015 & 02.9.2015. Forty Students of final year were participated in the workshop. On 01.9.2015, Er.Venkatraman, DM, Marketing, Ultra Tech Cement Ltd, gave detailed mix design procedure by IS standards. They also provided a booklet which is a guide for mix proportioning.

On second day 02.09.2015 hands on session on mix proportioning was conducted in the laboratory. There the students can visibly understand the effect of super plasticizer in concrete and how it reduces the usage of cement. The students went on trail mix proportions and finally casted cubes. At the end of the workshop students are issued the participation certificate and they expressed their thanks for organizing such an informative workshop.



Inauguration by Er. Venkatraman



Organizing members with student participants

## CELEBRATION OF CONCRETE DAY AND ENGINEER'S DAY

Concrete day and Engineer's day was celebrated by the Department of **Civil Engineering in Sona College of Technology** by the ICI student chapter and IEI student chapter on 15th September 2015. The chief guest of the function was **Er. P. Williams Jai, Executive engineer, Construction, Southern Railway** inaugurated the programme and delivered a key note lecture on **"WHAT AWAIT WHEN YOU GO UOT OF THIS COLLEGE"**. The News Letter SONACREA is released by the chief guest. Those engineers from Salem who do remarkable contribution to the society are honored by Dr.R.Malathy, HoD/Civil. Er.E.D.Vishwanath, gave a special lecture on "Introduction to GIS & GPS". Followed by the lecture, the prizes were distributed to the students for the events, Tech Talk, CADD Contest and Manual Drawing.



Dr.R.Malathy, HoD/Civil honoring Er.Joy Williams



Engineers from Salem are honored by Dr.R.Malathy, HoD/Civil.

## GUEST LECTURE ON "STALLED NATION CALLED INDIA"

The guest lecture entitled "Stalled Nation called INDIA" was held on 19.09.2015. Our heartfelt thanks to our alumini Mr.R.Ambrish, Assistant Manager Projects, CPF India Pvt Ltd, Bangalore. The programme was started at 11am in morning and the session ended at 12.30 in the afternoon. The objective of the guest lecture was to discuss about the stalled projects in India and the scope of Civil Engineering field in future. Being a Sona alumini himself, the session went interactive and students came up with lot of queries they had regarding the projects and its scope.

The lecture mainly focused on various mega projects in India that are stalled and the underlying reasons for it. Overall an ideology about the projects were brought in sight along with the current scope of Civil Engineers. The programme was an overall success with kind support of HOD and staff members of Department of Civil Engineering.

## GUEST LECTURE ON DESIGN OF STEEL STRUCTURES

Under the guidance of Dr.R.Malathy, Dean R&D, Department of civil engineering, sona college of technology, Prof.A.Murugesan, prof.G.Aruna & prof.S.Prabhakaran Department of civil engineering, sona college of technology organized guest lecture on "Design of steel structures" given by Dr. M. Anbarasu, Assistant professor, Government college of Engineering, Salem. The Guest lecture was delivered on September 30th, 2015 for the students of B.E (Civil Engineering) V-semester. He initiated his first lecture session with the stress strain behaviour of steel. After that he explained about various design methods of structural elements such as working stress, ultimate load factor and limit state method and given the over view of "IS:800-2007 code of practice for use of structural steel in general building construction". The various types of connections such as bolted; welded connections with design have been discussed.