EDIFICE

NEWSLETTER OF THE DEPARTMENT OF CIVIL ENGINEERING

Vol. 1

May 2016

Issue 1

SSN

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FROM THE HOD's DESK

Since the inception of our department in 2011, we have continuously expanded the scope of our activities from conducting technical symposiums to national conferences. This year, we are proud to present the first edition of our very own newsletter– EDIFICE.

I wish to congratulate the entire editorial board for making this possible and also appreciate the earnest efforts of our students for bringing pride to the department. The year 2015 saw the first graduating class of civil engineers from our institute and I am extremely pleased that over 40 students have been placed and over 15 students have secured admission to pursue higher studies both in India and abroad.

Through the continued efforts of our students, faculty and staff, we have successfully conducted our first two days National conference on Advances in Civil Engineering (ACE-2k15) in March 2015. In the last two years, our department has conducted four workshops, a seminar and ten guest lectures by eminent speakers from reputed institutions including IITM, CEG and SERC. With support from the management, our faculty members have published 12 papers in the current academic year with significant contribution from our students. I wish to congratulate all our faculty members for their continued research efforts and commitment to expand the frontiers of civil engineering. Once again, I would like to thank our management for providing support to our students and faculty members through research grants. I wish all the very best for the graduating class of 2016 for a successful career in academia and industry.

Dr.S.Ramana Gopal

RESEARCH PUBLICATIONS

- **Ramanagopal, S., B. Mahalingam, P. Sreehari, K. Mohammed Haneefa, G. Jaswanth, M. Revathi, Sai Saketh Reddy,** and **Shilpa Shashidharan.** "A Study on Geopolymers with Bagasse Ash Blended Class F Fly ash." *International Journal of Applied Engineering Research* 11.3 (2016).
- **Yogesh, R.,** and **B. Mahalingam.** "Fly Ash – An Effective Replacement of Cement in Mortar." *International Journal of Earth Sciences and Engineering* 8.3 (2015).
- **Rajkumar, R., Akkineni Surya Teja,** and **Ramya Sajeevan** "Experimental Study on the Strength and Durability of Nano Concrete" *International Journal of Applied Engineering Research* 11.4 (2016).
- Nirmala, R., and **R. Rajkumar** "Finite Element Analysis of Buried UPVC Pipe." *Indian Journal of Science and Technology* 9.5 (2016).
- Nirmala, R., and **R. Rajkumar** "Theoretical Studies on UPVC Pipes Buried in Cohesionless Backfill." *International Journal of Applied Engineering Research* 10.62 (2015).
- **Rajkumar, R., Akkineni Surya Teja,** and R. Pandia Rajan "Experimental Investigation on Mechanical and Durability Properties of Concrete using Metakaolin and Copper Slag." *International Research Journal of Engineering and Technology* 2.4 (2015).
- **Akkineni Surya Teja, M. Revathi,** and **R. Rajkumar** "Study of High Performance Concrete." *Journal of Basic and Applied Research* 2.4 (2015).

- Kunal, B., A. Bahurudeen, **K. Mohammed Haneefa,** and **B. Mahalingam** "Microstructural Characterization of Rice Husk and Residual Ash for the Production of Superior Blended Concrete." *International Journal of Research in Engineering and Technology* 4.13 (2015).
- Chopperla, S. T., R. Jupalli, D. Kanraj, A. Bahurudeen, **K. Mohammed Haneefa,** and M. Santhanam "Development of an Efficient Procedure for Sustainable Low Carbon Cement Manufacturing Process." *Applied Mechanics and Materials* 787 (2015).
- **Vijayalakshmi, R.,** and **P. Sangeetha** "Strength and Durability of the Mortar Cube with Bagasse Ash." *International Journal of Civil Engineering and Applications* 5.1 (2016).
- **Sangeetha, P., P. Naveen Kumar,** and R. Senthil "Finite Element Analysis of Space Truss using Matlab." *ARPN Journal of Engineering and Applied Sciences* 10.8 (2015).
- **Sangeetha, P.,** and R. Senthil "Experimental and Analytical Behaviour of Space Truss Structure." *Wulfenia Journal* 22.1 (2015).
- **Muthulingam, S.,** and B.N. Rao "Consistent Models for Estimating Chloride Ingress Parameters in Fly Ash Concrete." *Journal of Building Engineering* 3 (2015).
- **Muthulingam, S.,** and B.N. Rao "Numerical Assessment of Non-Uniform Corrosion Scenarios of Rebar in Concrete Exposed to Natural Chloride Environment." *Sadhana* 40.4 (2015).

CONFERENCE PRESENTATIONS

- **Akkineni Surya Teja and Ramya Sajeevan (III Year),** presented a research paper on "Retrofitting of Concrete Circular Columns using CFRP", in the National Conference on Forensic Structural Engineering organised by School of Mechanical and Building Science, VIT, Chennai (March 2016).
- **Krishna Shrija. A (III Year),** presented a paper on "Mechanical Properties of Short Rigid Glass Fibre Reinforced Concrete", in the International Conference on Advances in Civil Engineering and Sustainable Construction organised by SRM University, Chennai (April 2016).

MoUs WITH INDUSTRIES

- The department has signed a MoU with **JSW Steel Ltd. Salem Works** to undertake research related to **Strength and Durability Studies on SMS Slag.**

JSW Steel Ltd. is an Indian steel company owned by the JSW Group based in Mumbai, Maharashtra, India. The JSW Group has diversified interests in steel, energy, minerals and mining, infrastructure, cement and information technology. JSW Steel is India's second largest private sector steel company with an installed capacity of 14.3 MTPA.

The research undertaken by the department aims to investigate the utilization of Steel Making Slag (SMS slag) obtained as a by product of steel manufacturing process which is otherwise an industrial waste as aggregate in cement concrete.

- The department has entered into a MoU with **P.A. Footwear Pvt. Ltd., Tannery Division, Ranipet** to investigate the **Beneficial Use of WB Leather Scraps.**

P A Footwear Pvt Ltd

The MoU will enable investigation of the beneficial uses of Wet Blue leather scraps generated at the tannery division of P A Footwear Pvt. Ltd.

FUNDED PROJECTS - FACULTY

- **Dr. Mohammed Haneefa K. and Dr. S. Ramanagopal** – "The Use of Alternative Cementitious Materials for Sustainable Concrete - Development of Geopolymer concrete using Fly Ash Slag and Sugarcane Bagasse." – Rs. 5,50,000.

- **Dr. B. Mahalingam** – "A Study of Self Compacting Concrete using Alternative Cementitious Materials." – Rs. 2,25,000.

- **Dr. R. Vijayalakshmi and Ms. P. Sangeetha** – "Study on the Behaviour of Concrete Filled Stub Columns under Compression." – Rs. 2,20,000.

FUNDED PROJECTS – STUDENTS

Sl. No.	Name of the Students	Title of the Project	Faculty Guide	Amount in Rs.
1	Karthik R, Manish V, Katrhikeyan R, Vishal V. (III yr BE)	Performance of Concrete with Ferrochrome Slag Aggregates – An Experimental Study	Dr. R. Rajkumar	22000
2	S. Venkatesh, H. Jubin John Thomas S. Monika, C. Priyanka. (III yr BE)	Study on Concrete Filled Aluminium Stub Columns under Compression	Dr. S. Ramanagopal Dr. R.Vijayalakshmi	22000
3	S.Rajan Kumar, S. Surya Prakash, AruHarihara S, B.SaiMadhumathi. (III yr BE)	Tests on Concrete Filled FRP Tubular Stub Columns	Dr. S. Ramanagopal Mrs. P. Sangeetha	22000
4	D. Baranidharan, S. SathyaPriya, M. Saravana Kumar, R.M. Ashwin Muthuraman. (II yr BE)	Fly Ash Based Geo Polymer Bricks	Dr. R. Rajkumar	20000
5	Akshay Krishnan B, Ajay S, Adithyan M P. (IIyr BE)	Experimental Investigation on Mechanical, Structural and Durability Properties of E-Glass Fibre Reinforced Self Compacting Concrete	Dr. R. Rajkumar	22000

Sl. No.	Name of the Students	Title of the Project	Faculty Guide	Amount in Rs.
6	Rekha J, Krishna Shrija A, Gowtham V, Arjun Sa. (III yr BE)	An Experimental Study on the Use of Rigid E-Glass Fibres in Concrete	Dr. Y. K. Sabapathy	20000
7	R. Sarathkumar, A. Venkata Subramanian. (III yr BE)	Development of Fly Ash Bricks with Copper Slag as a Partial Replacement for Sand	Dr.Sivapriya S. V	22000
8	Pavithra P K, Sowmiya P, Uma devi S. (III yr BE)	Plastics in Sand as Pond Liner Underlay	Dr.Sivapriya S. V	12000
9	N. U. Nikhilesh, Akshay D Desai, D. Deepak Kumar, Haripriya V P, Revathy D. (II, III & IV yr BE)	A Study on Impact of Looped End GFRP Fibres in Concrete	Dr. Y. K. Sabapathy	18000
10	R. Arunkumar, V. Deva Ramanathan, S. Gautham, S. Rahul Narayanan, N. Vignesh, B. Vineeth. (II yr BE)	Strength Properties of Steel Slag in Mortar	Dr. Y. K. Sabapathy	18000
11	Karthick S, M. Naga Jyothi, P. Priyamvadha, Rashmi Nagendran, Roshini A. (III yr BE)	Environmental Impacts of Rubber as a Alternate Aggregate in Concrete	Dr. Srinath Rajagopalan	20000

Sl. No.	Name of the Students	Title of the Project	Faculty Guide	Amount in Rs.
12	S. Sivaram, P. Bala Subramaniam, G. Harihara Shamugan, V. MuthuAravind. (II yr BE)	Strengthening of Flexural Members Using Basalt Rebar Techniques	Dr. R. Rajkumar	20000

CO-CURRICULAR ACTIVITIES

SUMMER INTERNSHIPS

1 **Akkineni Surya Teja (III Year)**
Larsen & Toubro Ltd. – Chennai Headquarters & Goa Project Site

2 **Karthik R (III Year)**
SPI Cinemas – Human Resources Department

IN-PLANT TRAINING

1 **Akkineni Surya Teja, C. Dharani, D. Deepak Kumar, S. Surya Prakash (III Year)**
Chennai Metro Rail Limited (CMRL)

2 **G. Pushparaj, G. Sai Pradeep, Roshni. A (III Year)**
Public Works Department

3 **Aadhitya.S.R, Bhagirathan.M, G.Pushparaj, Priyanka.C, Rashmi Nagendran, Ramya Sajeevan, Roshni.A, P.Priyamvadha, G. Sai Pradeep, Srinivas.K, Srivatsan.D (III Year)**
S.K. Developers Pvt. Ltd.

4 **R. Sachin Nishil, Prashaanth. V (III Year)**
LaFarge India Pvt.Ltd.

5 **Krishna Shrija. A (III Year)**
VGN Constructions

6 **Monika.S, Priyamvadha.P, Priyanka.C (III Year)**
Chennai Metro Rail Limited (CMRL)

WORKSHOPS

1 **D. Deepak Kumar (III Year)**
One Day International Workshop on "Disaster, Project Manaement & Green Building Concepts" organised by Top Engineers.

2 **Akkineni Surya Teja (III Year)**
Two Days Workshop on "Precast Construction Practices in India" organised by Indian Concrete Institute.

3 **S.R.Aadhitya, D.Deepak Kumar, G.Pushparaj, C.Priyanka, Rashmi Nagendran, Monika.S, Priyamvadha.P, Venkatesh.S, Jubin John Thomas.H, Srivatsan.D, Sarath Kumar.R, Rajan Kumar.S, Gayathri.K, Swarnalakshmi.M.V, Ramya Sajeevan, Roshni.A, G. Sai Pradeep (III Year)**
Two Days Workshop on Transportation Engineering organised by Dept. of Civil Engineering, Easwari Engineering College.

4 **M.Elamathy, A.Sathya (IV Year)**
One week workshop on Geographical Information Systems organised by Loyola Institute of Technology.

5 **M.Elamathy (IV Year)**
One week workshop on Training on Instruments and Methods for Coastal Ocean Monitoring organised by NIOT (National Institute of Ocean Technology).

6 **S. Janani, G. Dachina, Dhivya. M, D. Deepak Kumar (III Year)**
Geospatial Technology Workshop at NIT Trichy.

7 **S. Janani, G. Dachina, Dhivya. M (III Year)**
Workshop on GPS, GPRS and Drone Utilization at NIT Trichy.

8 **Srivatsan.D, Vishal V (III Year)**
Workshop on Green Buildings and Energy Saving Systems at NIT Trichy.

9 **Janani.S, G. Dachina (III Year)**
Workshop on E-tabs at CEG, Anna University.

10 **G. Dachina (III Year)**
Workshop on Seismic Design of Buildings at CEG, Anna University.

11 **Akkineni Surya Teja, D.Deepak Kumar, Nithin John Thomas, G.Pushparaj, Ramya Sajeevan, Srivatsan.D, R.Sachin Nishil, Prashaanth.V (III Year)**
Workshop on Green Building Convcepts and Geopolymer Concrete organised by Indian Concrete Institute (ICI) students' chapter at Easwari Engineering College.

12 **Akkineni Surya Teja, D.Deepak Kumar, Nithin John Thomas (III Year)**
AICTE sponsored workshop on Personality Development and Industrial Practices at SSNCE.

13 **Krishna Shrija.A. (III Year)**
Attended a workshop conducted by Bentley at National Institute of Ocean Technology (NIOT).

S Y M P O S I U M S

1 **Dharshana Rajasekar, K.Abinaya, R.Amirtha (II Year)**
3rd place - Technical quiz - Symplix 2K16 - MNM Jain College of Engineering

2 **G. Pushparaj (III Year)**
Presented a paper on - "Smart Building Materials" - Castellate 2k15 - KCG College of Technology

3 **Rashmi Nagendran (III Year)**
Participated in Potential Professor - CEA FEST'16 - IIT Madras

4 **D. Deepak Kumar (III Year)**
Participated in Bridge It - Artifex'15 - Sri Venkateswara College of Engineering

5 **G. Sai Pradeep and Roshni.A (III Year)**
I place - VIBRANCE (Poster Presentation) Symplix 2k16 - MNM Jain College of Engineering

6 **D. Deepak Kumar (III Year)**
I Place - Survey Junkie - ICI FEST'15 - SRM University, Ramapuram

7 **D. Deepak Kumar (III Year)**
I Place - CADD Contest - ICI FEST'15 - SRM University, Ramapuram

8 **Nijandhan Hari, H. Lavanya (IV Year)**
I Place - Technical Quiz - Symplix 2k16 - MNM Jain College of Engineering

9 **Ameer Sheik (IV Year)**
I Place - CAD Contest - Symplix 2k16 - MNM Jain College of Engineering

10 **Ramya Sajeevan, Rekha.J, Krishna Shrija. A (III Year)**
Placed I – Business Idea Contest – SSN BEST in association with IIPC

11 **Dachina.G, Janani.S (III Year)**
Placed II – Paper Presentation on “Non Destructive Testing” at Civilization, CEG, Anna University

12 **Dachina.G (III Year)**
I Place – Walk-in - Civilization, CEG, Anna University

13 **Karthik.R, Sivakumar.M (III Year)**
I Place – Techno Quest – ACT Chennai.

14 **Sivakumar.M (III Year)**
I Place – Material Abstract – ACT Chennai.

EXTRA CURRICULAR ACTIVITIES

- **Krishna Shrija. A (III Year)**
  Longlisted for the SSN Fiction Prize – Creative Writing Contest

- **Nikhileesh.U, Sai Pradeep.M (II Year)**
  Basketball
  1st place - MIT SUMMIT ’15 - National Level Inter Engineering Sports Meet at MIT, Pune
  2nd place - Anna University Zonals 2015-2016
  3rd place - KCG Vergheese State Level Tournament at KCG College of Technology
  2nd place - MEPCO Trophy at MEPCO Schlenk Engineering College, Sivakasi.

- **B.V. Ramya Tulasi (III Year)**
  Badminton
  III Place - Senior Women's Doubles, 71st South Zone Interstate Badminton Championship 2015
  Winner - Women's Doubles, Tamil Nadu Senior State Championship
  III Place - Women Singles, Tamil Nadu Senior State Championship
  II Place - Chennai Region Chief Minister's Trophy
  Winner - Anna University Inter Zonal Tournament 2015-2016
  Semi Finalist - Women Doubles, Tamil Nadu Senior State Ranking Badminton Tournament
  Winner - Women's Singles & Doubles, Third LICET tournament

- **U. Vishal (III Year)**
  Cricket
  Played for Tamilnadu Under-23 team.

ASSOCIATION OF CIVIL ENGINEERS

KRACIVA V2.0

The most awaited and the most exciting event of the year, Kraciva V2.0, marked its presence on the 28th of August, 2015 with an enthralling crowd. With great pomp and splendour, the National Level Technical Symposium organised by the Association of Civil Engineers took off with a great start. With more than 15 events, both technical and non-technical and prizes worth Rs.75000, it was an opportunity for the nearly three thousand students from different colleges to explore different scenarios and fields of work through the hands-on workshops held, events and guest lectures delivered. Though it was the second version of the symposium, it had not lost its glory and was as successful as the very first one; and the reason behind the great success will certainly be the enthusiastic and determined student participation, support from all edges and corners, teamwork and creativity.

So how did the BIG DAY start?

The inaugural event experienced an overflowing auditorium with the presence of our chief guest Mr.Krishnan, the Managing Director of Petrofac. The program commenced with the welcome address from our Head of the Department Dr. S. Ramanagopal and then an inspirational speech was delivered by our chief guest. The department magazine "The Codebook" was also officially inaugurated by the chief guest. This was followed by the display of Official Promo videos which received great applause from the audience.

What happened NEXT?

The on-spot registrations took over in an organised pace and the events began with no further delay at all. Every event, including the new events we had included this year were well conducted and were a really big hit. We received several positive feedback from all the participants. The entire department, auditorium and the way to the department was well decorated with route maps and event details present everywhere for the ease of the participants.

We had a wonderful display of models made by the student of both second and third years with the help of Mr.Jegadheesan, our lab assistant. The second years had made a model of the Golden Temple at Sripuram and the third year's model showcased the different stages of construction. The entire day wrapped up with the prize distribution ceremony.

The zeal exhibited by each and every student in the department was tremendous and that was also a good reason why everything was in place at the right time and in the right state. Students from all the years, came forward to take up responsibilities and contributed their skills in all possible ways. The different teams present during the symposium did their job systematically and ensured the overall success of the event. Kraciva V2.0 was a good example to a well planned event exhibited by the Department of Civil Engineering. Kudos to a wonderful team! And best wishes to the team that is taking over.

The Core Committee – Kraciva 2.0


kraciva


CIV


kraciva
DEPT OF ELECTRICAL & ELECTRONICS
ENGG


KRACIVA


LANDS
INTO

PLACEMENT UPDATE

LARSEN & TOUBRO LTD.

Sudhirr A Nanda

Sandeep Sreekumar

WIPRO

Balaji V C

COGNIZANT TECH. SOLUTIONS

Cibi Nandan T

Deepak Raj P

Elamathy M

James Daniel A

Karthick V

Madhan Gopal K

Nijandhan H

Revathi M

Sathya A

Srivathsan R

Tammineni Sai Krishna

Loga Raja Kumaran A

TATA CONSULTANCY SERVICES

Vignesh S B

ACCENTURE

Dilip Kumar G

Hutesh Reddy K

Jaswant G

Lavanya H

Ridhuvaran S

Sharon Pothigai P

Shilpa Shashidharan

INFOSYS

Akshay K

Priya C

Udhay Kumar S

F R E S H D E S K

Swetha S

Yashwanth S

Tarun Thomas Philip

Placement Co-ordinators for 2016-17

RAMYA TULASI B V

AKKINENI SURYA TEJA

HIGHER EDUCATION UPDATE

GATE 2016 Topper

Tamineni Sai Krishna (51.94)

NICMAR Admits

Balaji V C

Shilpa Shashidharan

Ridhuvaran S

Foreign University Admits

Jaswant S

Arizona State University
Virginia Tech University
Texas A&M
University of Massachusetts, Lowell

Kasturi N

Delft University of Technology

Vinay Kumar B R

University of Cincinnati

PLACEMENT EXPERIENCE

With lakhs and lakhs of engineers graduating every year, grabbing a job is becoming all the more difficult every passing year. When one is in college, there is still a place to live, food to eat and an environment to look for opportunities. The world outside is becoming too harsh a place to seal a job. With this situation I need not reiterate the importance of getting a job while still in college.

Having sat for five companies and converting one, I am not the best person to guide someone through their placement in college. If one is looking for guidance their faculty is the best place to search for it. I am merely giving a few pointers based on my fairly limited experience.

Invariably every company has this first round where they test ones' aptitude. X number of questions in Y minutes. Clearing this round needs practice. It is imperative to stay calm and meet each question as it comes and have a sense of clarity while solving each of the questions. There is ample material available to practice and reach that level of clarity. Also I sat for a couple of companies where I did not really want to get placed. I just wanted to know where I stand in terms of aptitude. The reality of my ability was a rude shock, but it was good that I attended those. It gave me an idea of handling time, which question not to waste time on etc.

Make a crisp Resume

A long 3-4 page resume doesn't give them an impression that you are more qualified. Make your resume short and add points relevant to the job first. Don't make it too descriptive as this enables you to interact with your interviewer.

Do your research

Read up on the organisation you are sitting for before your interview. Showing knowledge about the company tells the interviewer that you are genuinely interested in being a part of their organisation. Everyone loves to feel flattered

Dress well

This is of course a given. Don't wear anything too flashy. Subtlety is best. First impressions make the best impressions.

End your answers well

When answering a question, make sure that you make it clear to the interviewer that you have finished your answer. Otherwise it might lead to awkward pauses where the interviewer feels that you're thinking about more to say and you're not sure if the interviewer expects more from your answer

Practice, practice, practice

This cannot be stressed enough. Practice your aptitude. Practice your technical skills. Practice answering basic interview questions. Read up on past interview experiences of people from the company you're sitting for. Practice.

A few tips

With so much practice, when the aptitude test for L&T (The one I dreamt of) was over, I knew I was going to the next round and I did. I was among the few people to actually finish answering all questions. Practice hard.

I accidentally stumbled upon a Quora thread which had people sharing their interview experiences - both successful ones and unsuccessful ones. There was a lot to learn from both. When I was waiting for my turn of the interview there was total chaos around me, but I stayed calm. I told myself here is a chance to interact with three people from L&T. This is just a talk with three human beings, so enjoy it as much as you can, learn as much as you can. Forget the fact that they are judging you, make the interaction count. This was the mental side of things. I did do my homework. I read about every nook and corner of the company and the job. Brushed up the basics in technical side too. There were questions for which I did not know the answer to, but I asked them the solution and discussed my approach with them. I felt I engaged them well for 20 minutes. It was an interaction.

In all the interviews and GDs, one thing is common. It is important to stay calm. Staying calm can help you present yourself in the best possible way. What I mentioned above worked for me, but it might not work for others. All you need to do is build your confidence. Explore yourself and find a way to present yourself as you are. The rest shall fall in place.

Sharon Pothigai
IV Year

WORKSHOP ON RECENT ADVANCES IN BIOREMEDIATION

A one day workshop on Recent Advances in Bioremediation was conducted by the Department on 17th March 2016 coordinated by Dr. R. Srinath.

Dr.Mukesh Doble, Professor, Department of Bio-technology, IITM, **Dr.Indumathi M. Nambi**, Associate Professor, Department of Civil Engineering, IITM and **Dr. Vijaya Ravichandran**, Scientist, National Institute of Ocean Technology (NIOT) delivered enlightening lectures on the advancements in techniques and instrumentation in environmental remediation, ranging from site assessment and mapping to bioremediation.

The sessions by the eminent scholars helped provide a deep insight into the increasingly crucial field of bioremediation which is a treatment that uses naturally occurring organisms to break down hazardous substances into less toxic or non toxic substances to the eager participants.

The first speaker Dr. Mukesh Doble elucidated the various biological methods of sewage treatment ranging from Activated Sludge Process to Bio-towers. His speech discussed critical points such as the possibility of eradicating chemicals in the process of sewage treatment and achieving zero discharge from an industry.

Next was Dr. Vijaya Ravichandran from NIOT. She was instrumental in setting up the NIOT facility in Chennai and a secondary centre in Nellore, and she has tremendous exposure to the effect of oceanic currents and tides. Her talk covered the aspects of disposal of waste at sea and the scientific methodology to do so. She also illustrated examples of good and bad design for disposal of waste at sea.

Finally, we had Dr Indumathi Nambi also from IIT-Madras who covered a totally different perspective on remediation, she had raised the topic of cleaning up underground aquifers and the effects of oil pipelines affecting the groundwater tables, especially in North Chennai.


ACE
RECENT ADVANCEMENTS IN
REMEDIATION


Biological techniques for waste water treatment
Mukesh Doble

SEMINAR ON STEEL STRUCTURES

A seminar on Steel Structures was conducted on 4th February 2016 where two eminent personalities in the field of Steel Structures – **Dr. Rupen Goswami** from IITM and **Dr. G S Palani** from Structural Engineering Research Centre (SERC) delivered talks on the various aspects of steel structures. The tallest and biggest structures being built today are all made of steel. Hence this guest lecture provided valuable insights not only into what the students have already learnt in college but also into all the advancements that have been happening in the field.

The first speaker of the day was Dr. Rupen Goswami. Dr. Goswami is a Professor of Structural Engineering at IIT Madras. He has done extensive research in seismic connections and earthquake resistant buildings. Aseismic design is a most important aspect of any structure, be it steel or otherwise, as the proper design of a building can be the difference between life and death. His lecture mainly focused on how joints and connections in steel structures can be designed to act aseismically.

The next speaker was Dr. G.S.Palani. He is a senior principal scientist at the Steel Lab in CSIR – SERC Campus. He gave the students a broad insight into computational structural mechanics for analysis and design, modelling simulation & software development. The lecture proved very useful as structural computation using softwares and its various aspects were discussed.

These lectures, apart from being highly informational, also gave the students a peek into the pace at which technology is moving in the world around them. Even when the syllabus may not be able to keep up with every advancement in technology, which happens almost every day, these lectures help keep the students well informed.

INDUSTRIAL VISITS

VISIT TO PRECASTING YARD OF CMRL

A group of 15 students from III year visited the precasting yard unit of INMA International Ltd. near Muttukadu where tunnel rings for Chennai Metro work are precast. The students were briefed about the various processes in the yard and each stage of casting the six segment ring was demonstrated in the site. Some of the unique features were the use of 20 mm slump self compacting concrete, the mechanised dynamic carousel unit for casting and steam curing of the demoulded segments.

VISIT TO SEWAGE TREATMENT PLANT AT PERUNGUDI

On 13th April, 2016, the III Year students visited the sewage treatment plant at Perungudi, Chennai. The students were briefed about the functions and operation of the various units in the plant.

REACHING FOR THE SKIES

Man has always had the desire to build big. The idea of skyscrapers originated in the early 1800s. Chicago and New York City claim to have put up the first skyscrapers in world. But today, skyscrapers are being built all over the world.

Two developments in the 19th century paved the way for the first skyscrapers. One was the development of a safe elevator and the other was the introduction of new building materials and methods. Till the mid 19th century, primitive elevators were used. They were highly unsafe. If the cable broke, the elevator would plummet down the shaft. A safety device was then installed in the elevators which prevented the elevators from falling. Later on a transition to electrical motors made elevators much safer. The second development was the introduction of modern building methods.

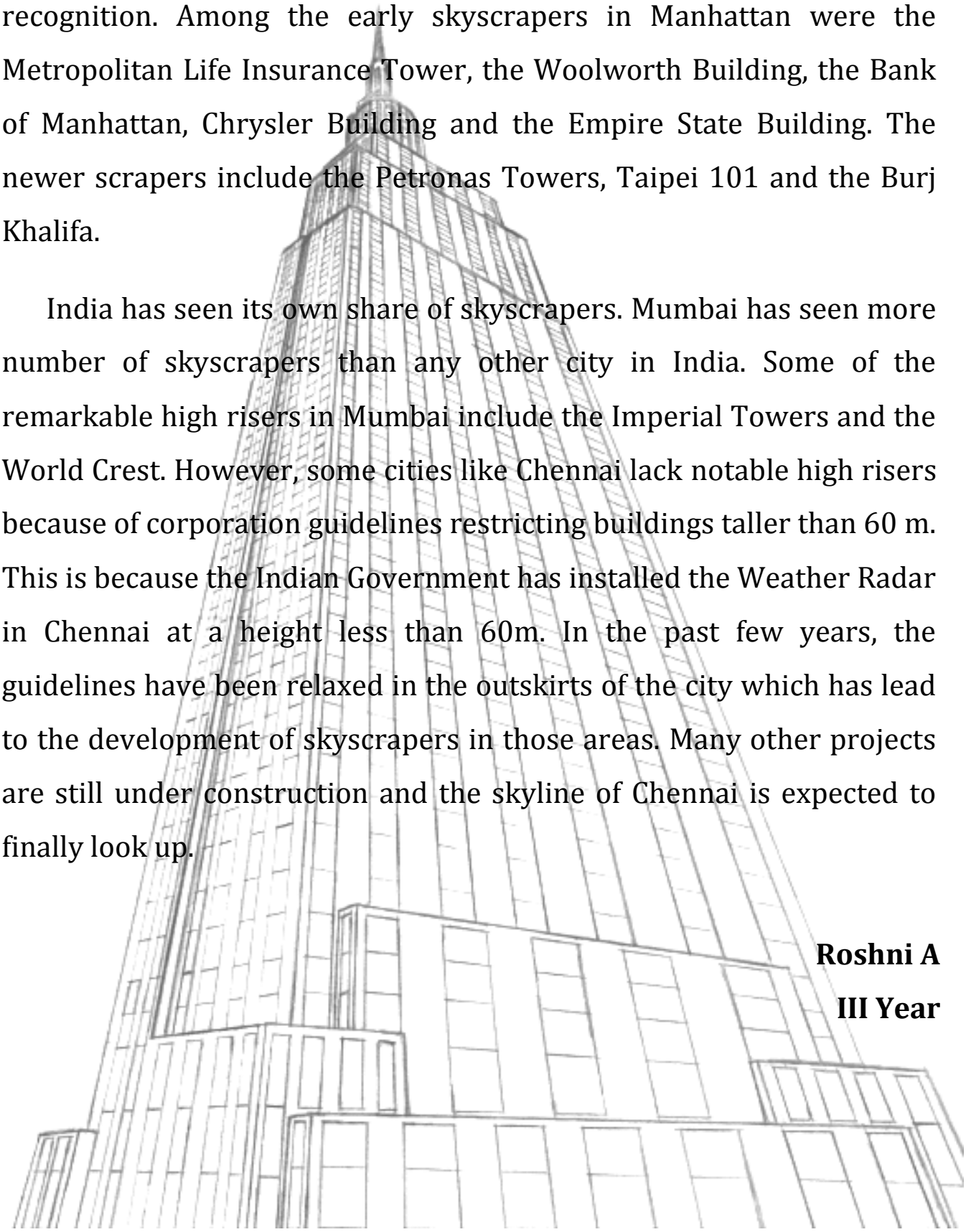
In the 19th century, Chicago was expanding rapidly and there was a high demand for land. The price of land rose beyond control. That was when the idea of tall buildings came into existence. But in order to achieve the desired height, construction techniques had to change. A new method of building was developed that used a grid of steel beams and columns that were strong enough to support any stresses or forces a building might experience, including both the weight of the floor and the building contents, as well as the force of wind or even, in some areas, earthquakes.

Skyscrapers are built to last. Hence, builders and engineers started looking for materials that are strong, durable, resistant to weather changes and affordable. Concrete is one of the most common materials, beyond the steel supports, because it is enormously versatile. Its composition can be changed depending on the needs of the building. It can be reinforced to make it stiffer and stronger by setting steel mesh or bars into the concrete. And additives can make it set or harden faster or slower depending on the needs of the design. Another very important material is glass. As the steel skeleton now supports the main loads of the building, the outer skin only serves to keep the weather out and let light in. So glass walls were used as they are weatherproof while providing ample natural light and also because they are so much lighter and cheaper than masonry or concrete.

As the buildings became taller and lighter, there was a problem with the wind and the skyscrapers started to sway. Engineers came up with a solution to this problem too. They installed diagonally braced steel trusses between central elevator shafts to create a stronger core, and then moving most of the beams and columns to the outside edge of the walls in order to make a stiff tube. Another unusual way of counteracting sway forces called 'tuned mass dumper' was also devised. It consists of a concrete block or weight with springs and shock absorbers on a lubricated plate. It is designed to sway like a pendulum in one direction when the computer senses that the structure has begun to move in the other.

In the early 20th century, corporations built skyscrapers for name recognition. Among the early skyscrapers in Manhattan were the Metropolitan Life Insurance Tower, the Woolworth Building, the Bank of Manhattan, Chrysler Building and the Empire State Building. The newer scrapers include the Petronas Towers, Taipei 101 and the Burj Khalifa.

India has seen its own share of skyscrapers. Mumbai has seen more number of skyscrapers than any other city in India. Some of the remarkable high risers in Mumbai include the Imperial Towers and the World Crest. However, some cities like Chennai lack notable high risers because of corporation guidelines restricting buildings taller than 60 m. This is because the Indian Government has installed the Weather Radar in Chennai at a height less than 60m. In the past few years, the guidelines have been relaxed in the outskirts of the city which has lead to the development of skyscrapers in those areas. Many other projects are still under construction and the skyline of Chennai is expected to finally look up.



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