



SUSTAINABILITY

Inspire Eco Friendly Living

CIVIL ENGINEERING DEPARTMENT NEWS LETTER

2019-20 | JANUARY – JUNE2019 |

HOD s Message:



This newsletter published for the year 2019-20 is dedicated entirely to the subject of Sustainability. Especially eco sustainable practices in line with ancient monuments be it the roads or buildings or any other infrastructure projects. Current edition is entirely dedicated to the ideas that Inspire Eco Friendly Living



DEPARTMENT VISION

"To enrich the society through Civil Engineering education for socio-economic development and welfare of the people."



DEPARTMENT MISSION

"An integrated development of Civil Engineering Professionals with technological knowledge and managerial skills; possessing environmental, ethical and human values".



Program Educational Objectives

Upon graduation, students of the program will:

- I. To provide basic scientific training to the students so as to solve Civil Engineering problems with scientific outlook rather than mere continuation of traditional practices.**
- II. To provide training in basic engineering sciences so that students apply the concepts of basic engineering sciences to the solution of Civil Engineering problems.**
- III. To train the students in the broad areas of Civil Engineering and inter-disciplinary areas.**
- IV. To mould the students professionally competent with managerial and communication skills.**
- V. To train the students to mitigate natural /environmental disasters and to inculcate professional ethics and human values.**



Program Outcomes

- Graduates will have an ability to apply the knowledge of basic sciences like Physics, Mathematics and Chemistry for the solution of Civil Engineering Problems.
- Graduates will have sound knowledge in basic engineering sciences like Engineering Mechanics, Solid Mechanics, Fluid Mechanics to solve Civil Engineering problems.
- Graduates will have generalized knowledge in Civil Engineering and interdisciplinary knowledge to design and execute Civil Engineering Projects.
- Graduates will have an ability to design and conduct experiments as well as to analyse and interpret data.
- Graduates will have an ability to demonstrate knowledge and understanding of engineering and management principles and apply these principles in their profession.
- Graduates will have an ability to identify, formulate and solve engineering problems.
- Graduates will have requisite knowledge to pursue Post-graduate / Research Programmes and for life-long learning.
- Graduates will have computational and drafting skills.
- Graduates will be professionally competent with managerial and communication skills.
- Graduates mitigate environmental problems and natural disasters like earthquakes, cyclones and floods.
- Graduates perform professional duties with environmental, ethical and human values.
- Graduates will have broad education necessary to understand the impact of Civil Engineering solutions in global societal context.

*Glimpse of practices of eco
sustainable environment*

A look on sustainable eco-practices in ancient India

-hum kisse se kamnahin

Ajanta caves



The Ajanta caves, which form a series of 29 rock-cut caves from ancient India, demonstrate how the architects of those times would make optimal use of the available natural resources at hand. The vaulted ceilings of these rock cut caves had sun windows that would light up the prayer halls naturally. The Ajanta caves, unlike other rock cut caves, have low ceilings which were specifically designed to allow hot air from prayer halls to rise and move into the surrounding cells that held cool water. This hot air would then be cooled naturally, leading to the cooling of the entire cave.

Baolis, New Delhi



Baolis are man-made step-wells that were constructed to serve as underground water resources, and played a significant role in water conservation. The baolis provided villages with water for drinking, washing, bathing, and also for irrigation, especially during periods of water shortages in seasonal fluctuations. The common features for all types of baolis would generally be colonnaded levels or storeys, and a flight of stairs that led from the topmost level to the water below, which was primarily fresh groundwater. The baolis were also used for different ceremonial and religious purposes, and the shaded pavilions functioned as retreat rooms in the summers. The oldest example of water management in India is found from the proto-historic era in different Harappan sites exemplify the excellence of the water management system of those times.

Initiation of Department steps towards eco- sustainable environment

National Seminar Organized

A One Day National Workshop on 'Sustainable Materials and Techniques in Concrete Structures' was organized for the third and fourth year B. Tech students on 23 Feb, 2019 by Department of Civil Engineering, in association with Indian Concrete Institute student's Chapter. Resource persons, Er. Umesh, Former President ACCE, Prof. K.V. L. Subramanyam, IIT Hyderabad, Dr.T.Ch. Madhavi, Prof. & HoD, Civil Engineering, SRM University enlightened participants about 'Effect of Negligence at Site Leading to Deterioration of Concrete Structures, Cement free Concrete with alkali-activated flyash and slag and Copper Slag Concrete applications in Civil Engineering'

Small steps by faculty to generate awareness towards eco sustainable environment among peers

Guest Lectures Delivered by Faculty

Dr.M.Rama Rao delivered lectures on the following:

- ‘Case studies in Geotechnical Engineering Practices’ at one-day National Seminar on Case studies in Geotechnical Engineering Practices, organized by MalineniPerumallu Group of Institutions on 07 Jan, 2019.
- ‘A few case studies in Geotechnical Engineering Practices’ & ‘Mind Map-your key to success’ to third and final year B. Tech students of Universal Engineering College, Perecherla, Guntur on 13 Mar, 2019.
- ‘Foundation Practices in different types of Soils, Expansive soils’ to participants of Four Day Residential Training Programme on ‘Design of Bridges’ at AP HRDI, Bapatla on 07 May,2019

- 'Design of S.S Tank' to participants of Three Day Residential Training Programme on 'Water Quality Monitoring & Management' at AP HRDI, Bapatla on 15 May, 2019

Small to large research by department to create sustainable eco system.

Research Paper Publications

- P. SamathaChowdary, M. Rama Rao, 'Cost Benefit Analysis of Flexible and Rigid Pavements of Rural Roads using Rice Husk Ash and Stone Dust as Additives', International Journal of Engineering and Technology (UAE), pp.6252-6265, Vol.7, No. 4, Dec 2018-Jan 2019. (Scopus Indexed)
- J. UshaKranti, K. Srinivasu, T. Chandrasekhar Rao, P.Ch. Sanjeeva Rao, 'Experimental Work on Structural Elements of Concrete by the Replacement of Copper Slag with Fine Aggregate', International Journal of Recent Technology and

Engineering (IJRTE), pp: 692-699, Vol.7, No. 6, Apr, 2019.
(Scopus Indexed)

➤ P. SamathaChowdary, M. Rama Rao, 'Macro and Micro Level Investigation of Strength Enhancement of Expansive Soil Stabilized with Lime and Cement using Stone Dust as Additives', International Journal of Recent Technology and Engineering (IJRTE), pp:1951-1955, Vol. 7, No.6, Apr, 2019.
(Scopus Indexed)

➤ P. SamathaChowdary, M. Rama Rao, 'Macro and Micro investigation of Change in Curing Period on Soil Stabilized with Lime and Cement using Stone Dust and RHA as Additives', ARPN Journal of Applied and Engineering Sciences, pp:2020-2028, Vol.14, No.11, June, 2019. (Scopus Indexed)

Paper Presentations in Conferences

➤ Prof. A. Srinivasa Prasad presented a paper on 'Optimal Design of Looped Water Supply Network by Genetic Algorithm' in the International Conference on Recent

Inventions and Innovations in Mathematical Sciences (ICRIIMS-2019), organized by Andhra University, during 28 Feb - 1 Mar, 2019.

➤ Asst Prof. K. Leela Krishna presented a paper on 'Optimal Crop Water Allocation Coupled with Reservoir Operation by GA-NLP Hybrid Approach' in the International Conference on Recent Inventions and Innovations in Mathematical Sciences (ICRIIMS-2019), organized by Andhra University, during 28 Feb - 1 Mar, 2019.

➤ Asst Prof. B. Krishna Chaitanya, B. Vaishnav Kumar presented a paper on 'Study on Self-Compacting Concrete with Replacement of Coarse Aggregate by LECA on percentage variation' in the National Conference on Advances in Sustainable Construction Materials (ASCM 2019), organized by NIT Warangal, during 15 -16 Mar, 2019.

➤ Asst Prof. B. Krishna Chaitanya, B.Vaishnav Kumar, M.L.N Krishna Sai, S. V. Satyanarayana presented a paper on 'Study Feasibility and Mechanism of Bacteria based Self-healing

Concrete' in the National Conference on Advances in Sustainable Construction Materials (ASCM 2019), organized by NIT Warangal, during 15 -16 Mar, 2019.

➤ Prof. Kota Srinivasu, Asst Prof. J. UshaKranti presented a paper on 'An Experimental Study on Durability Properties of Normal Grade Concrete Containing Copper Slag as Fine Aggregate' in the National Conference on Advances in Sustainable Construction Materials (ASCM 2019), organized by NIT Warangal, during 15 -16 Mar, 2019.

➤ Asst Prof. P. SamathaChowdary, Prof. M. Rama Rao presented a paper on 'Macro and Micro Level Investigation of Strength Enhancement of Expansive Soil Stabilized with Lime and Cement using Stone Dust as Additive' in the 2nd International Conference on Advances in Civil Engineering (ICACE), organized by KL University, Vaddeswaram, during 21-23 Mar, 2019.

Small to large knowledge enrichment programmes attended by department faculty to create sustainable eco system.

Conferences/ Workshops/ Attended

- Prof. A. Srinivasa Prasad, Assoc Prof. P.V.S. Maruthi Krishna, Asst Prof. M. Srikanth Kumar, K. Leela Krishna attended a seminar on 'Case studies in Geotechnical Engineering Practices (CGEP-2019)', organized by MalineniPerumallu Group of Institutions, Pulladigunta, on 07 Jan, 2019.
- Prof. M. Rama Rao attended a Workshop on 'Construction of Culverts & Bridges', organized by IGS Guntur Chapter and PR Engineers Association at ZP Meeting Hall, Guntur, on 31 Jan, 2019.
- Asst Prof. K. Leela Krishna attended a National Workshop on 'Geo-spatial Technology for Development of Andhra Pradesh', organized by Acharya Nagarjuna University, on 20 Feb, 2019.

- Prof. A. Srinivasa Prasad, Assoc Prof. P.V.S. Maruthi Krishna, Asst Prof. K. Leela Krishna attended a two day Workshop on 'Fuzzy Logic and Applications in Civil Engineering', organized by BITS Hyderabad, during 15-16 Mar, 2019.
- Assoc Prof. P.V.S. Maruthi Krishna, Asst Prof. M. Srikanth Kumar, K. Leela Krishna attended a five-day FDP on 'Effective Teaching and Learning Practices for Design and Operation of Water Supply Systems', organized by NIT Warangal, during 20-25 May, 2019.
- Prof. M. Rama Rao attended a Workshop on 'Recent Trends in Geotechnical Engineering', organized by Department of Civil Engineering, National Institute of Technology Tiruchirappalli & Indian Geotechnical Society Trichy chapter, during 08 June, 2019.
- Asst Prof. B. Krishna Chaitanya, B. Vaishnav Kumar attended a workshop on 'Remote sensing and GIS', organized by Department of Civil Engineering, KKR & KSR Institute of Technology, Vinjanampadu, on 29 June, 2019

Industrial Tour

The III B.Tech students visited 'Well foundation works of Valiveru bridge', near Tsundur, Guntur Dist. and 'Rehabilitation of Pavement using Geogrid', at Kativaram, near Tenali, Guntur Dist. on 02 Mar, 2019 to have an insight of installation procedures of well foundation and various applications of geogrid in enhancing quality of pavement.

Ph.D Registrations

- Mr. B. Krishna Chaitanya, Assistant Professor, registered for Ph.D in Annamalai University.
- Ms. U. Pallavi, Assistant Professor, registered for Ph.D in Andhra University.

Faculty Recruitment

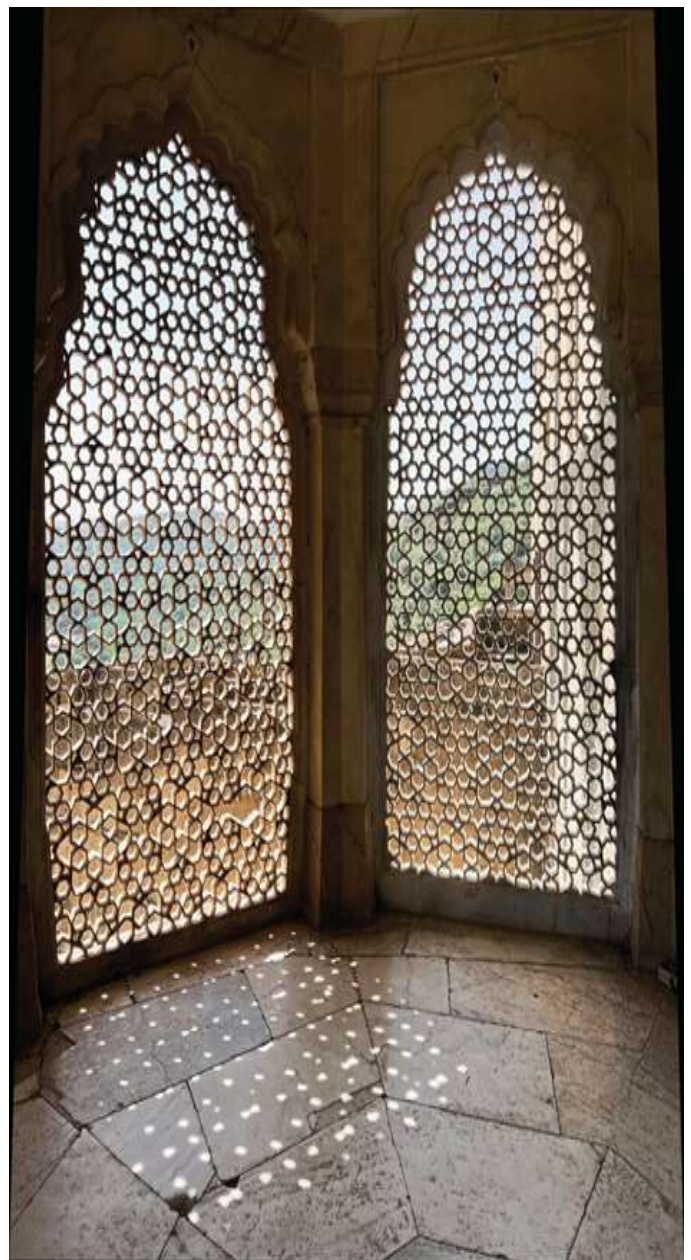
Dr. B. Kesava Rao was recruited as Assistant Professor in the Dept. in May 2019

A look on sustainable eco-practices in ancient India

-simple yet elegant and effective

TajMahal Jaliwork

In monumental buildings Jali is the ornamental feature provided in most of the palaces In Rajasthan. In TajMahal, Agra fort etc. Fresh air enters in the building through jali with speed as well as stone jali protects the enclosure from direct solar radiation. Jali cast the decorative shadow in buildings which is also helpful in reducing the



inside temperature.

*Courtyard of Havelis of Shekhawati,
Rajasthan.*



Courtyard was also an important design element in old residential buildings in hot dry climate including palaces. It was an element of passive cooling for regular fresh air supply and for day lighting. These interior courts - a common feature of Rajasthan architecture - optimize circulation of air during the 50°C summers. The rooms around courtyard are comfortable for use.

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