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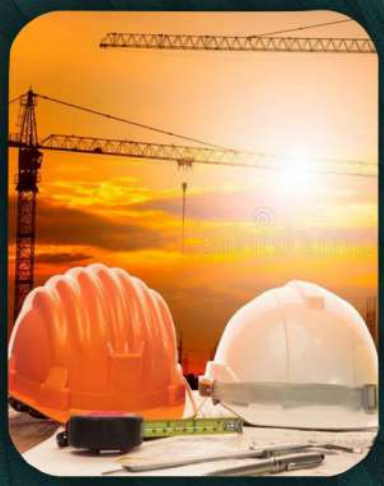
RVR&JC
COLLEGE OF ENGINEERING

JAN-JUNE 2024

INCEPTIA

CIVIL ENGINEERING



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ABOUT THE DEPARTMENT

The Department of Civil Engineering, established in 1985, offers both undergraduate and postgraduate programs, including an M.Tech. in Structural Engineering. Accredited with 'A' Grade by NBA multiple times, it has a strong faculty team of 4 Professors, 6 Associate Professors, and 24 Assistant Professors, all with advanced degrees and expertise in various specializations. The department is dedicated to providing high-quality education and hands-on experience, with faculty actively involved in national and international professional societies.

DEPARTMENT GOALS

- To develop the Civil engineering department a centre of excellence
- To undertake the need based research and consultancy
- To excel in class room interaction and to create an educational environment that prepares our students for a professional carrier in civil engineering
- To contribute for the socio-economic development of the region

VISION

- To develop the department into a centre of excellence in Civil Engineering education

MISSION

- To train the students in Civil Engineering possessing scientific and technological knowledge.
- To impart managerial and communication skills to the students.
- To inculcate ethical and environmental values in the students.

PROGRAMME EDUCATIONAL OUTCOMES(PEOs)

PEO1 *To provide basic scientific training to the students so as to solve Civil Engineering problems with scientific outlook.*

PEO2 *To provide training in basic engineering sciences so that students apply the concepts of basic engineering sciences to the solution of Civil Engineering problems.*

PEO3 *To train the students in the broad areas of Civil Engineering and interdisciplinary areas.*

PEO4 *To mould the students professionally competent with managerial/communication skills and possessing ethical values.*

PEO5 *To make the students aware of the impact of Civil Engineering activities on the environment and contribute towards sustainable development.*

PROGRAMME SPECIFIC OUTCOMES(PSOs)

PSO1 *Able to apply principles of Civil Engineering to solve problems of society and contribute towards sustainable development.*

PSO2 *Able to plan, design and execute various Zinfrastructure projects related to civil engineering.*

PROGRAMME OUTCOMES(POs)

PO1 *Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.*

PO2 *Problem analysis: Identify formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.*

PO3 *Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.*

PO4 *Conduct investigations of complex problems:Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.*

PO5 *Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including predication and modeling to complex engineering activities with an understanding of the limitations.*

PO6 *The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.*

PO7 *Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.*

PO8 *Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.*

PO9 *Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.*

PO10 *Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.*

PO11 *Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.*

PO12 *Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological changes.*

MESSAGE FROM HOD

Dr. A.Srinivasa Prasad
HOD,CE

It is with great pride and enthusiasm that I present to you the latest edition of our Civil Engineering Department Magazine. This publication reflects the continuous progress, innovative spirit, and collaborative efforts of our faculty, students.

Our department has always placed a strong emphasis on academic excellence, practical experience, and research driven projects. In this edition, you will find articles highlighting the hard work and accomplishments of our students, faculty research, ongoing projects, and various initiatives that strengthen our commitment to building a sustainable and resilient future.

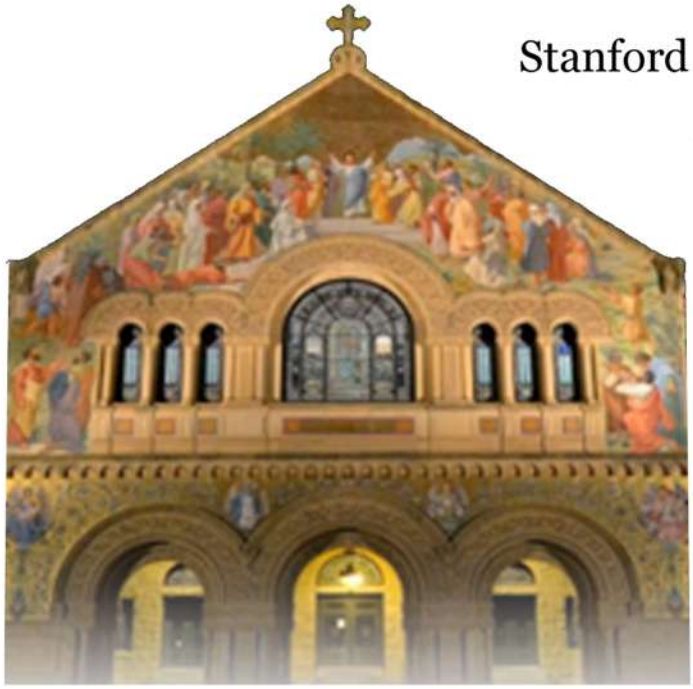
I on behalf of Civil Engineering Department extend my heartfelt thanks to all those who have contributed to this magazine.

SPECTACULAR UNIVERSITY CAMPUSES

-breath taking campuses of study

Narala Nikhil
Y23CE051

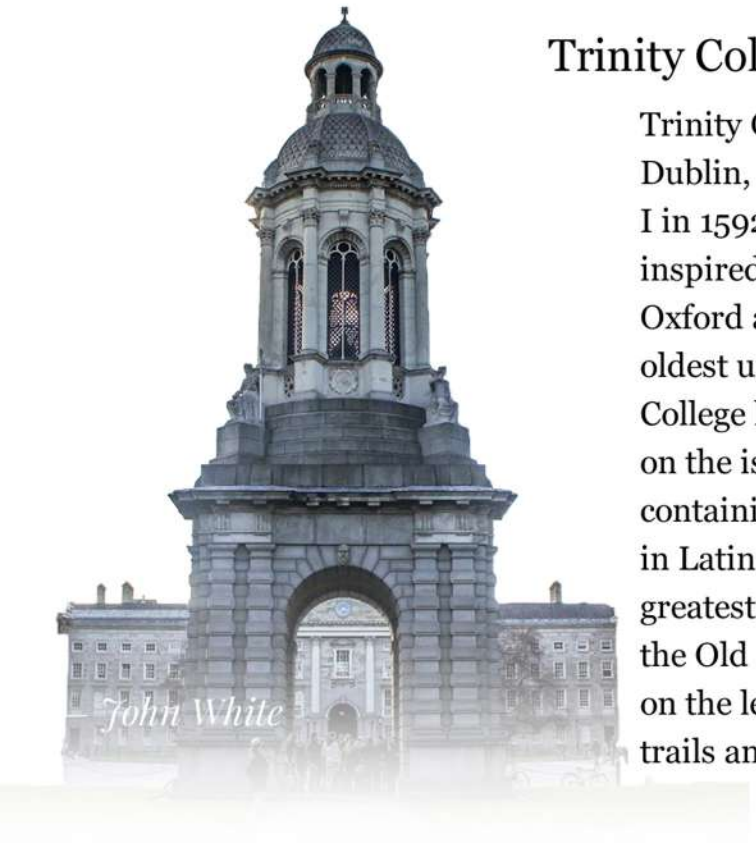
Stanford University, US



Stanford University has an exceptionally beautiful campus in Silicon Valley, California. Former California governor and senator Leland Stanford and his wife Jane Stanford founded this coed institution in 1885 in remembrance of their only child. campus showcases Romanesque and Mission Revival architecture; the place is dotted with several rectilinear sandstone buildings.With over a 33sqkm area comprising nearly 700 major buildings, the campus accommodates more than 16,000 students. Visitors and students are greeted by the one-km-long road lined with 160 Canary Island Palm trees.It serves as the entrance of the university.

BITS Pilani, India

This world-class institute in India started as a patshala in 1901 which was deemed as a prestigious university institute in 1964. Spread over almost a 1.33sqkm area with Lush and shadowy gardens, wooden pathways, a unique Saraswati Temple on the southern block and the striking visual of the clock tower at the top of the academic building make it one of the most beautiful university campuses in the world. The research university also encourages a sustainable environment by using solar panels on the rooftops, water conservation techniques and recycling domestic waste. This magnificent university ground is home to 4,500 students.



Trinity College, Ireland

Trinity College Dublin, also popular as the University of Dublin, was established by royal charter by Queen Elisabeth I in 1592. The style, design, and architecture were deeply inspired by the two long-established prestigious universities Oxford and Cambridge. With a No.1 ranking, Trinity is the oldest university in Ireland and The Library of Trinity College has the largest selection of manuscripts and books on the island. 1200 years old Book of Kells, the manuscript containing the four Gospels of the New Testament written in Latin and adorned with bright colours, is Ireland's greatest cultural treasure. Built between 1712 and 1732, the Old Library has a 65-metre-long main hall. The walks on the leafy squares, cobblestone walkways on the trinity trails and historic architecture will leave you spellbound.

Oxford University,UK

Oxford is the oldest university in the English speaking world. The historic and cutting edge modernized building attracts millions of tourists every year. The campus of the university comprises several colleges, institutions, museums and libraries. Medieval buildings and the gothic interiors of the chapel are definitely a highlight of the campus. The first public museum in Britain, the Ashmolean Museum, and the Oxford University Museum of Natural History exhibits many instances of neo-gothic architecture. This world-class university with a picturesque landscape is home to more than v26,000 students from all over the world.

1. ***M.L.N. Krishna Sai, S. V. Satynarayana***, **published a paper on "Predictive Analytics in Stock Markets: Unleashing the Power of IoT and Machine Learning" in International Journal of Intelligent Systems and Applications in Engineering, Vol. 12, Jan., 2024. (Scopus Indexed).**

2. ***R. Surendra Babu***, **Dr.T.Chandra Sekhar Rao, Dr.K.Srinivasu published a paper on "Simulation analysis of FRP- Strengthened RC Slab using ODLN_SSO Approach", Journal of Harbin Engineering University, SCI / SCIE, February 2024, 1006- 7043**

3. ***M. L. N. Krishna Sai, N. Tejaswini***, **published a paper on "Investigating the Mechanical Aspects of Natural Fiber-Based Structural Composite for Hybrid Energy Storage Applications", in Journal of The Institution of Engineers (India): Series D, March, 2024. (Scopus Indexed).**

4. ***R. Vaishnava Kumar*** **published a paper on "Optimization Process to Develop Tungsten Carbide Reinforced with Aluminium MMCs Using Surface Plots and ANN", in Journal of The Institution of Engineers (India): Series D, March, 2024 . (Scopus Indexed).**

5. **K Prasanthi, Katneni, Rao, *Kesava Rao Battena,* published a paper on "A Study of Composite Concrete Using Palm Oil Fuel Ash (POFA) as a Partial Replacement for Cement in Self Compacting Concrete "in journal of polymer & composites WoS March 2024 2321- 8525**

6. **Uppala Venkata Narayana Rao, *Namepalli Venkata Sairam Kumar, Chagarlamudi Kavitha, Yellinedi Madhavi, Ponduri Samatha Chowdary* published a paper on "Polycarboxylate Superplasticizers Used in Concrete: A review" in International Journal of Experimental Research and Review, April 2024.**

Contd..,

7. **Mr.A.Ashok Babu, *R.Chandramohan*, M.V.Ganeswara Rao, G Prasanna Kumar, G.N.Sowjanya Kurra Upendra Chowdary published a paper on "Python Based Convolution Neural Network To Detect Leaf Disease -An Implementation", in Journal of Theoretical and Applied Information Technology, April 2024.**

8. ***Bypaneni Krishna Chaitanya*, Ilango Sivakumar, *Yellinedi Madhavi*, Daniel Cruze, Chava Venkatesh, *Yenigandla Naga Mahesh*, Sonali Sri Durga published a paper on "Microstructural and residual properties of self-compacting concrete containing waste copper slag as fine aggregate exposed to ambient and elevated temperatures", in Infrastructures SCI / SCIE, May 2024, 2412- 3811.**

9. ***Yenigandla Naga Mahesh* published a paper on "Assessing and enhancing the seismic performance of existing RCC buildings", in REVISTAMATERIA SCI / SCIE May 2024, 1517- 7076.**

10. **Sandeep Kumar Hegde, Sujidha B., K. Vimala Devi, K. Maheswari, *K. Leela Krishna*, Pallavi Singh, Varsha D. Jadhav published a paper on "Hybrid approach for lung cancer detection based on deep learning/machine learning", in Journal of Autonomous Intelligence, May 2024, 2630- 5046**

11. ***N.Venkata Sairam Kumar*, Dudipalli Ramesh, published a paper on "Fire-Induced Spalling Behavior of Concrete: A Review" , International Journal of Computational Engineering Research, June 2024, 2250- 3005**

Contd..,

12. **Chereddy Sonali Sri Durga, Venkatesh Chava, Mukkala Priyanka, *Bypaneni Krishna Chaitanya*, B Naga Malleswara Rao, T Muralidhara Rao, published a paper on "Synergistic effects of GGBFS addition and oven drying on the physical and mechanical properties of fly ash-based geopolymer aggregates" in Journal of Sustainable Construction Materials and Technologies, June 2024, 2458- 973X**

13. **Chereddy Sonali Sri Durga · Chava Venkatesh· Ramamohana Reddy Bellum · *Bypaneni Krishna Chaitanya* · B. Naga Malleswara Rao · T. Muralidhara Rao published a paper on "Influence of Bacillus species on mechanical and microstructural properties of concrete", in Multiscale and Multidisciplinary Modeling, Experiments and Design, SCI / SCIE, June 2024, 2520- 8179**

14. **L. Ramaprasad Reddy, *B. Kesava Rao, R. Chandramohan, G. Sanijya*, B. Narasimharao, A. Mohan Rao published a paper on "Computational Analysis of Predicting Stress Intensity Factor Using HDMR Technique" in Journal of Electrical Systems Journal of Electrical Systems, June, 2024.**

15. **Dodda Ravikanth, Mallapuram Bala Chennaiah, Gangolu Vijay Kumar, Reddy Sreenivasulu, *Karnatapu Leela Krishna* published a paper on "Optimal Selection of Cutting Parameters during Drilling of AA 7075 Alloy Using Taguchi Method Coupled with TOPSIS" in International Journal of Engineering Trends and Technology, June 2024**

16. ***M Srikanth Kumar*, Naga Venkata Sairam, V Tara Chand, B Satish Babau published a paper on "The Potentiality of LHA Nanoparticle Reinforced AA2024 Composites: A Focus on Microstructure, Mechanical Properties", in ANNALES DE CHIMIE-SCIENCE DES MATERIAUX, June 2024, 0151- 9107, 1958- 5934**

Internships done by B.Tech Civil to enhance career prospects by involving real-world insights and networking opportunities.

ORGANIZATION	DURATION	TITTLE OF INTERNSHIP/ NATURE OF WORK	NO OF STUDENTS
south central railway vijayawada.	I-6-24 to 2I-06-2024	south central railway indian railway, women's welfare organisation vijayawada	I3
agile arch associates, guntur	3I-05-2024 to 27-06-2024	autocad	2
andhra pradesh education and welfare infrastructure development corporation, guntur	I/06/2024 to 2I/06/24	quantity estimation	I
annapurna architects, soundarya apartment, flat no 04, rajendra nagar, Ist lane, guntur	II/05/2024 to 07/06/2024	revit architecture	I
apewidc department, guntur	0I-06-2024 to 2I/06/2024	project on school buildings and estimation	I
ar constructions, devarapalli, east godavari dt	2/06/24 to 2I/06/24	construction of residential buildings	I
arihanth testing and research centre, guntur	I/6/24 to 2I-06-2024	testing of building materials	4
bharadwaj constructions, guntur	0I/06/2024 to 2I-06-2024	testing/etabs	4
c square ,vijayawada	0I/06/2024 to 2I-06-2024	construction of sump	I
ces consultancy in kurnool dist	0I-06-2024 to 2I-06-2024	site work and office work	I
gita associates	I-6-2024 to 2I-06-2024	planning, designing ,analysis and estimation of various civil engineering works	2
gurukrupa construction flat no. 50I. himaja tower-39, brodipet, guntur-522 002.	0I/06/2024 to 26-06-2024	building construction , using matarials,	I
happy home developers narasaraopet road,ntr colony sai baba temple backside. chilakaluripet	0I/06/2024 to 2I-06-2024	summer internship on site work/residential high-rise building & construction	3
janapriya projects limited, head office : keerthi & pride tower, hyderabad - 500034	I/06/2024 to 26/06/2024	planning, designing , analysis and estimation	5
kmv projects ltd. , hyderabad	I/06/2024 to 2I-06-2024	construction of hospital	I
kpc projects limited,amaravathi road near hindu pharmacy engineering college guntur	0I-06-2024 to 2I-06-2024	site work	I
lakshmi srinivasa associates, chilakaluripet.	I/06/2024 to 2I-06-2024	internship on autocad	I
lotus civil engineering laboratory , guntur	0I/07/2024 to 2I/06/24	testing of soils , concrete and bitumens	6
maatade infrastructure pvt.ltd. visakhapatnam	0I/06/2024 to 2I-06-2024	highway management	I
manyam associates, morrispeta , tenali	I/06/24 to 2I-06-2024	project on buildings	I
matrix technical services private limited , hyderabad.	I-06-2024 to 2I-06-2024	summer internship on quantity estimation	I
minaxi constructions, gujarat(s) , banakantha(d), palanpur (c) .	0I/06/2024 to 2I-06-2024	earth retaining structures in formation works of railway	I
muncipal office,macherla,palnadu district, andhra pradesh-522426	0I-06-2024 to 2I/06/24	town planning department	I
naga hanuman agro oils pvt ltd (denduluru)	0I/06/2024 to 2I/06/2024	foundation for 35tph boiler	I
o/o aee, r&b section, rajam	0I/06/2024 to 2I-06-2024	road and building works	I
onestop, bangalore , karnataka 560I02, in	0I-06-2024 to 2I-06-2024	autocad civil	3
p.r.i subdivision pendurthy(man),vishakapatanam(d), andhrapradesh (state)	I/06/2024 to 2I-06-2024	construction of beam and slab	3
panchayath raj engineering department, ipur	0I-06-2024 to 2I-06-2024	site work and office work	I
panchyatraj engineering dept.,karthapu ramesh, aee,sompeta pr subdivision, ichapuram, srikakulam.	0I/06/2024 to 2I-06-2024	repair and renovation of govt.schools and estimating quantities	I

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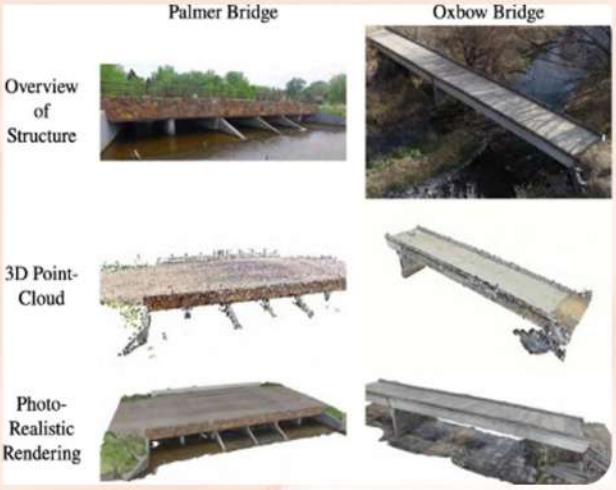
ORGANIZATION	DURATION	TITLE OF INTERNSHIP/ NATURE OF WORK	NO OF STUDENTS
pwd workshops division, seethanagaram, irrigation circle guntur, water resource department.	14.05.2024 to 14.06.2024	estimation of canal repair work	1
r&r infratech hyderabad	1-06-2024 to 21-06-2024	highway management and survey works	1
randomtrees data& ai innovations	01/06/2024 to 21/06/24	telecommunication design in autocad	2
rayalaseema constructions,guntakal to guntur section	01/06/24 to 21-06-2024	railway doubling works	1
s.v associates, guntur	31-05-2024 to 27-06-2024	autocad	1
sai krishna engineers & planers digital land surveyors , narasaraopet, palnadu district	02/06/2024 to 21-06-2024	plans and survey works	4
sithanagaram workshop .irrigation circle guntur	14-05-2024 to 14-06-2024	estimation of canal repair.	1
skill desire	13/05/2024 to 30-06-2024	revit architecture	79
src infra devleopers, bengaluru	01/06/2024 to 21-06-2024	construction of slabs and beams	10
sree anjana constructions , tenali,guntur	01/06/2024 to 21-06-2024	construction of high rise buildings	11
sri gita associate, narasaraopet, palnadu district.	01/06/2024 to 21/06/24	planning, designing, analysis and estimation of the various civil engineering construction engineering construction	12
sri karthikeya planners,machilipatnam	13/05/2024 to 17/06/2024	construction of residential building	1
srk architects, guntur	01/06/2024 to 21-06-2024	autocad designer	1
swastik constructions,brodipet 6/13,guntur	10/5/2024 to '10/6/2024	site manager	1
tejas infra, jangareddigudem	01/06/2024 to 21-06-2024	slabs and beams	1
unique survey solutions,vijayawada, benz circle	01/06/2024 to 21-06-2024	total station surveyor	1
unison constructions , dornal, prakasam dist	01/06/2024 to 21-06-2024	highrise buildings	19
veda yoshika planners, chilakaluripet	01-06-2024 to 21-06-2024	residential appartment buildings and individual buildings	2
water resources dept.	14-05-2024 to 14-06-2024	pwd workshops division	1
			214

Resilient Bridges: Engineering Innovations for a Changing Climate

As climate change accelerates, bridges, essential for transportation, face growing risks from natural disasters. Innovations in materials like High-Performance Concrete (HPC) and Ultra-High Performance Concrete (UHPC) enhance strength and durability, making bridges more resistant to cracking and erosion. Additionally, Shape Memory Alloys (SMAs) offer self-healing capabilities, particularly useful in earthquake-prone

In seismic regions, advanced technologies such as Base Isolation Bearings and Viscoelastic Dampers help reduce the impact of earthquakes. These solutions decouple the bridge deck from its supports and absorb seismic energy, minimizing damage. For bridges exposed to extreme weather, aerodynamic designs and wave-resistant piers protect against wind and water forces, while elevated foundations and smart drainage systems mitigate flooding risks.

Digital technologies are revolutionizing bridge design and maintenance. Tools like digital twins and IoT-enabled monitoring systems enable engineers to simulate disaster scenarios and monitor real-time structural health. These technologies provide critical data for early detection of issues, allowing for proactive maintenance and quick responses to emerging threats, ensuring bridges remain safe and functional.



Looking to the future, sustainable innovations such as self-healing materials and carbon-neutral construction methods will play a key role in further enhancing the resilience and environmental impact of bridges.By combining cutting-edge materials, seismic and weather-resistant technologies,and digital tools, engineers are creating bridges that can withstand the growing challenges of natural disasters, ensuring the longevity and reliability of infrastructure for future generations.

Battula Tejaswini
T24CIV012

Guest Lectures Conducted by the Department

Design Considerations for Municipal Waste Water Treatment by Prof. P. Venkateswara Rao, Water & Environmental Division, Department of Civil Engineering, National Institute of Technology Warangal (NITW), Telangana, India, to the II & III B. Tech., students on 3 Feb., 2024.

Guest lecture on 'Importance of Pavement Materials Characteristics' Prof. R. Srinivasa Rao, Department of Civil Engineering, Osmania University, Hyderabad, Telangana, India, to the III B. Tech., students on12 Feb., 2024.

Guest lecture on 'CAD Applications in Civil Engineering–Opportunities & Career Guidance', Mr. Nagu Kancharla Manager, CANTER CAAD India Pvt. Ltd., Guntur, Andhra Pradesh, India, to the III B. Tech., students on 24 April , 2024.

INDUSTRIAL TOUR

B. Tech Semester VI [Third Year]

(A & B Sections) students visited Dasaripalem prefabricated building on 22 & 23 March, 2024

POLAVARAM DAM PROJECT:

P. Mary Angelin Gold
L23CE143

SK. Nafiya
L23CE149

The Polavaram Dam Project is one of the most ambitious and significant infrastructural projects in Andhra Pradesh, India. It is designed to address multiple issues such as irrigation, flood control, and power generation while benefiting millions of people across the state. The history of the project dates back to researching solutions for regions frequently affected by floods and droughts. The idea of building a dam on the Godavari River was conceived as a solution to manage the river's water flow and mitigate the adverse effects of seasonal floods and droughts.

Civil engineers play a pivotal role in the success of the Polavaram Dam Project. Their expertise in structural design, geotechnical analysis, and environmental assessments ensures that the project meets safety and regulatory standards. Engineers are responsible for designing critical elements such as the dam structure, spillways, and canals, as well as integrating power generation systems. They also oversee risk mitigation strategies to address potential challenges like flooding, earthquakes, and structural integrity

Furthermore, civil engineers are involved in creating the necessary infrastructure for hydropower generation, ensuring the proper functioning of turbines and power distribution systems. Their work ensures the safety, efficiency, and sustainability of this multi-purpose project.

ORIGINS AND EVOLUTION OF THE POLAVARAM DAM

The concept of the Polavaram Dam was first introduced in July 1941 under the Madras Presidency. Initially, the dam was called the Rama Pada Sagar Project because the water stored in the reservoir would submerge areas near the Lord Rama Temple at Bhadrachalam. The dam is situated on the Godavari River near the village of Ramayya Peta in the Polavaram Mandal of Andhra Pradesh.

The project faced many challenges in the 1980s, particularly due to financial constraints, which delayed its commencement. However, the name of the project was later changed to the Polavaram Dam Project, and its scope was expanded to address not only flood control but also irrigation, power generation, and drinking water supply. By 2004, under the leadership of Andhra Pradesh's then Chief Minister, Y.S. Rajasekhara Reddy, significant progress was made. The project was estimated to cost approximately ₹8,200 crore, and work on the canal system began in that year, followed by dam construction in 2005.

KEY FEATURES OF THE POLAVARAM DAM

The Polavaram Dam is designed as a earth-cum-rock fill dam, with a length of 2,454 meters and a spillway capable of discharging a probable maximum flood of 1,41,435 cubic meters per second (about 50 lakh cusecs). The project also includes extensive canal systems—181.999 km of the left main canal and 178.1 km of the right main canal—designed to irrigate vast stretches of land in the region. The dam will stabilize 10.13 lakh acres in the Godavari delta and 13 lakh acres in the Krishna delta. It will also interlink the Godavari and Krishna rivers, diverting 80 TMC of water to the Krishna basin. Additionally, it will supply 23.44 TMC of water for industries and drinking purposes, including to the city of Visakhapatnam.

Special Features and Benefits

The Polavaram Dam is expected to have several long-term benefits:

- It will improve irrigation across East Godavari, Visakhapatnam, West Godavari, and Krishna Districts of Andhra Pradesh, increasing the agricultural output of the region.
- The dam will provide 960 MW of hydropower, which will help meet the state's growing energy demands.
- It will offer flood control, enhance water storage capacity, and improve transport connectivity in the region.
- The project will create new opportunities for tourism, with picnic spots and recreation areas near the dam.

DELAYS AND SETBACKS

The Polavaram Dam Project is poised to become a cornerstone of Andhra Pradesh's infrastructure. It aims to provide a reliable water supply, boost agricultural productivity, generate hydropower, and support sustainable development. Issues with forest clearances, political disputes, and administrative bottlenecks led to stalled construction efforts, with several key approvals delayed until 2009. Tragically, Chief Minister Y.S. Rajasekhara Reddy passed away in a helicopter crash in 2009, further slowing progress.

In 2014, under the leadership of the then Chief Minister N. Chandrababu Naidu, the project gained momentum again, with construction of the main dam beginning in earnest. However, local protests and environmental concerns, particularly the displacement of 276 villages due to the submergence of land, led to delays. The government assured the affected populations that compensation and rehabilitation would be provided, and construction resumed. While delays and challenges have hindered its completion, the project remains a crucial element in the region's future prosperity, benefiting millions of people across the state. With continued efforts from the government, engineers, and local communities, the Polavaram Dam promises to be a lifeline for the people of Andhra Pradesh.

CURRENT STATUS OF THE POLAVARAM DAM

Despite facing significant setbacks, the project has seen progress in recent years. By 2015, the works were handed over to the contractor Navayuga Engineering, leading to a faster pace of construction. The diaphragm wall and spillway works were completed, and around 90% of the canal works were finished. However, as of now, the project remains incomplete due to ongoing challenges such as technical difficulties, political disputes, and funding issues.The dam is crucial to the development of the state's irrigation systems, power generation capacity, and water supply infrastructure. The project aims to create a gross irrigation potential of 4,36,825 hectares, generate 960 MW of hydropower, and provide drinking water to 28.5 million people in 611 villages.

Conferences/ Workshops/Webinars/FDPs Attended by faculty

- **Y. Madhavi, ten hours FDP, "Deep Learning and Artificial Intelligence", Andhra Pradesh State Skill Development Corporation, 26 Feb.–01 March, 2024.**

- **B. Kesava Rao, B. Yellamanda Rao, G. Sanijya, P. Sri Lakshmi, J. Usha Kranti, Y. Naga Mahesh, one day workshop, "Sexual Harassment of Women at Work Place (Prevention, Prohibition, and Redressel) Act, 2013", Internal Complaints Committee.(ICC), RVR&JCCE, 3 April, 2024.**

- **J. Usha Kranti, M. L. N. Krishna Sai, N. Tejaswini, N. Venkata Sairam Kumar, P. Sri Lakshmi, R. Vaishnava Kumar, S. V. Satyanarayana, One-week national level FDP, "Applications of Advanced Techniques for Repair and Rehabilitation of RCC and Steel Structures", Department of Civil Engineering, Chaitanya Bharathi Institute of Technology, Hyderabad, 22–26 April, 2024.**

- **K. Leela Krishna, N. Tejaswini, P. V. S. Maruthi Krishna, Y. Naga Mahesh, one-week online FDP, "Emerging Trends in Geo-Technical Engineering", Vardhaman College of Engineering, Hyderabad, 22–27 April, 2024.**

- **R. Chandramohan, One week online FDP, "Ethics Model of Excellence Framework", Rani Anna Government College for Women, Tirunelveli & Globethics, South Asia Centre, Bangalore, 23–30 April, 2024.**

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Conferences/ Workshops/Webinars/FDPs Attended by faculty

- **B. Krishna Chaitanya, FDP, "Recent Advances in Structural Engineering", Department of Civil Engineering, Hindustan Institute of Technology & Sciences, Chennai, Tamil Nadu, 06–10 May, 2024.**

- **R. Chandramohan Five days online FDP, "Emerging research Trends in Civil Engineering", Department of Civil Engineering, Vishnu Institute of Technology, Raipur, 06–11 May, 2024.**

- **Y. Madhavi, Five-day FDP, "Advancements in Civil Engineering: Empowering Educators for Tomorrow's Challenges", Department of Civil Engineering, St. Joseph University, 13–17 May, 2024.**

- **B. Krishna Chaitanya, participated in the webinar on Innovations in Urban Resilience: Strategies for Climate–Proof Cities organized by Indian Concrete Institute, Coimbatore Center, 31 May, 2024.**

- **B. Krishna Chaitanya, webinar, "3D Printed Concrete: An Introduction", Indian Concrete Institute, Coimbatore center, 26 April, 2024.**

- **P. Samatha Chowdary, three-day online sessions, "Plenary and Keynote lecture", International Conference on Geo-Disasters and Construction Engineering (ICGCE 2024)", university of Waterloo, Ontario, Canada, June 07–08, 2024.**

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Conferences/ Workshops/Webinars/FDPs Attended by faculty

- **K. Leela Krishna, N. Tejaswini, P. Samatha Chowdary, P. Sri Lakshmi, one day workshop "Think Beyond: Validating Ideas (Aspire-2024)" R.V.R. & J. C. College of Engineering, Chowdavaram, Guntur, 15 June, 2024.**

- **B. Yellamanda Rao, G. Sanijya, P. Samatha Chowdary, Y. Naga Mahesh, one-week FDP, "Geo Informatics in disaster management", Department of Civil Engineering, Jorhat Engineering College, Jorhat, Assam, June 18–22, 2024.**

- **G. Sanijya, P. Samatha Chowdary, self-financed five-day STTP, "Recent Advances in Transportation Geotechnics: Industry Perspective (RATG-IP)", Department of Civil Engineering, Dr. B. R. Ambedkar National Institute of Technology, Jalandhar, in association with IGS Jalandhar chapter, 24–28 June, 2024.**

- **A. Srinivasa Prasad, B. Kesava Rao, B. Krishna Chaitanya, B. Yellamanda Rao, G. Sanijya, J. Usha Kranti, K. Leela Krishna, M. L. N. Krishna Sai, M. Srikanth Kumar, N. V. Sairam Kumar, P. Sri Lakshmi, P. V. S. Maruthi Krishna, R. Chandramohan, S. V. Satyanarayana, Y. Madhavi, Y. Naga Mahesh, five day FDP, "Building Resilient Infrastructure", Department of Civil Engineering, VVIT, Guntur, June, 24–28, 2024.**

- **N. Venkata Sairam Kumar, One-week STTP, "Civil Engineering Practices for Better Environment", Department of Civil Engineering, P. R. Pote Patil College of Engineering & Management, Amravati, 24–29 June, 2024.**

PLACEMENT STATISTICS
Jan-June 2024

ANVI ADVISORS — 06

SWATHI PRE ENGINEERED BUILDINGS MAKE, MOVE & MOUNT BUILDING — 03

srijay Engineering & Consultants — 10

Sri Infotech — 01

VAP ENGINEERS Pvt Ltd — 07

AADITRI CREATING LIFESTYLE — 05

Dokimi Geoengineering — 06

AVANI Consultancy — 05

SKYLINE MATRIX DESIGNER HOMES — 04

01

9 students won 1st, 2nd and 3rd prizes in AutoCAD Techie, Technical quiz, Model making competitions in Civil Carnival 2024 conducted by Department of Civil Engineering organized at RVR&JCCE on 16th February 2024.

2 students won 3rd prize in Bridge IT competition conducted by Department of Civil Engineering in the event AFOSEC 2024 organized at V.R.Siddartha Engineering College on 28th February 2024.

30 students actively participated in various technical events in Carnival 2024 conducted by Department of Civil Engineering organized at RVR&JCCE on 16th February 2024.

3 students participated in Technical event competitions conducted by Department of Civil Engineering in AFOSEC 2024 organized at V.R.Siddartha Engineering College on 28th February 2024.

4 students actively involved in Colorido 2024 event organized by RVR&JC CE on 15th, 16th & 17th February 2024.

3 students participated in Technical event competitions conducted by Department of Civil Engineering in AFOSEC 2024 organized at V.R.Siddartha Engineering College on 28th February 2024.

8 students attended NCC- B Certificate examination in March 3rd & 4th 2024, conducted by 10(A) Girls Bn organized at RVR&JC College Of Engineering, Guntur.

10 students attended NCC- C Certificate examination in March 17th & 19th 2024, conducted by 25(A) Bn organized at Vignan University, Vadlamudi.

4 students attended the three-day workshop and training program on Building Better Designs (3DBIMAI2024) organized by Department of Civil Engineering, Mahindra University from 28th March 2024 to 30th March 2024.

2 students participated in one day workshop on Differential Global Positioning System (DGPS) conducted as National Level Technical Symposium LUCENT 2K24, organized by Department of Civil Engineering, University College of Engineering, Narasaraopet (JNTUK).

CIVIL CARNIVAL

February 16
2024

The Civil Engineering Department recently hosted its much-anticipated Civil Carnival, a vibrant and dynamic event that brought together students, faculty, and industry professionals to celebrate the exciting world of civil engineering. The carnival was designed not only to showcase the talent and creativity of our students but also to foster a sense of community and collaboration within the department.

Throughout the event, participants engaged in a variety of activities, ranging from hands-on engineering challenges and interactive workshops to exciting competitions and exhibitions. The carnival provided a unique opportunity for students to demonstrate their practical skills, while also engaging in thought-provoking discussions on the latest trends and technologies shaping the future of civil engineering.

The success of the Civil Carnival would not have been possible without the active participation of students, faculty, and industry partners. We extend our heartfelt thanks to everyone who contributed to the event's success, and we look forward to even more exciting initiatives in the future.

This event has once again reinforced our department's commitment to excellence in education, innovation, and community building.

CARNIVAL GLIMPSES



Endowment Prizes

Quiz

TECHNICAL PAPER PRESENTATION

MODEL MAKING

TREASURE HUNT

4 Students won 2nd prize in Base ball match organized by ANU Inter-Collegiate Tournament conducted at RVR&JC College Of Engineering, Guntur on 31st Jan & 1st Feb 2024.

3 Students won 2nd prize in Volley ball in the event Colorido-2K24 on February 15th organized by RVR&JC College OF Engineering, Guntur.

3 Students actively participated in Volley ball match in UDGAM 2024 organized by SRM University, Neerukonda, Amaravati on 29th February 2024.

7 Students won 2nd prize in Soft ball match organized by ANU Inter-Collegiate Tournament conducted at Acharya Nagarjuna University, Nambur on 1st and 2nd March 2024.

CONCEPTUAL DESIGN OF THE CHENAB BRIDGE IN INDIA

INTRODUCTION:

A. Raj Kumar
Y23CE002

S. Tharun
Y22CE062

vttvIndian Railways is undertaking one of the most ambitious infrastructure projects with the construction of a new railway line running from Udhampur to Baramulla in the state of Jammu and Kashmir. This mega-project has been declared a national project due to its significant importance. The railway line will cross a highly rugged and mountainous terrain, posing major challenges in terms of construction due to the complex Himalayan geology. One of the most critical challenges is the crossing of a deep gorge of the Chenab River, which requires the construction of a long-span bridge.

In 2009, it was confirmed that the original route would be followed and the Chenab Bridge would be built as initially planned. However, the main span of the bridge was modified to a length of 467 meters. This article focuses on the conceptual and structural design of the Chenab Bridge, taking into account both Indian and international design standards

DESCRIPTION OF THE CHENAB BRIDGE

The Chenab Bridge is a steel railway arch bridge, one of the most remarkable engineering feats in the world. The bridge has a total length of 1,315 meters, comprising a 530-meter approach bridge and a 785-meter arch bridge. The main span of the bridge, which is 467 meters long, is made of steel and supports the bridge deck. This steel arch is among the longest in the world, and the deck itself is situated about 320 meters above the

The deck, which is 13.5 meters wide, accommodates two tracks for the railway. The entire design and planning of the bridge are primarily the responsibility of WSP Finland, with the detailed design of the steel arch being handled by the German engineering firm Leonhardt, Andrä und Partner. This international collaboration ensures that the bridge adheres to both Indian and global design and safety standards.

DESIGN OF THE BRIDGE

The design concept for the Chenab Bridge favors the use of a steel arch, a decision that was made after careful evaluation of several alternatives during the tender phase. During the process, different steel arch configurations and a cable-stayed bridge concept were considered. The Chenab Bridge is part of a larger railway network, and another similar steel arch bridge, the Anjikhad Bridge, will also be built nearby, but on a smaller scale.The steel arch bridge design is preferred for its ability to span long distances while maintaining stability in difficult terrains. The arch structure offers greater strength and load-bearing capacity, making it ideal for the heavy loads expected from the rail traffic.

CONSTRUCTION METHOD

Given the challenging terrain and the lack of adequate infrastructure, the construction of the Chenab Bridge faces unique challenges. The steel structures required for the bridge will be manufactured in specially-built workshops located in the mountains near the construction site. These workshops have been established due to the absence of a proper road network to transport large materials to the site. The longest parts that can be transported to the site are only 12 meters in length, so multiple workshops have been set up on both sides of the valley.

CONCLUSION

Designing the main arch of the Chenab Bridge involves several complex engineering considerations, including fatigue, global stability, second-order effects, and composite actions. The bridge must be designed to withstand a range of potential load cases, ensuring that the final structure is reliable and safe under all conditions. The design standards applied in this project are carefully aligned with construction standards to ensure consistency and safety throughout the entire process. Once completed, the Chenab Bridge will hold the record as the highest, longest-span, and largest railway arch bridge in the world. The design of the bridge has presented tremendous challenges for the engineering team, but the completion of this project will be a remarkable achievement for Indian infrastructure. This project will not only be a triumph of engineering but will also contribute significantly to the development of the region, improving connectivity and providing a vital transportation link in a challenging and strategically important area.

R.V.R. & J.C. COLLEGE OF ENGINEERING, GUNTUR, A.P.

KNOWLEDGE IS POWER

Estd 1985

INITIATORS

PROJECT DEVELOPERS

NETWORKERS

TECHNICAL TEAM

CIVIL ENGINEERS

INFRASTRUCTURE BUILDERS

EXECUTORS

Dr.A.SRINIVASA PRASAD
HOD

ARCHITECTURES