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AIM BEYOND THE HORIZON

Dr. Mahalingam College of Engineering and Technology
Department of Civil Engineering

VISION AND MISSION OF THE INSTITUTION

Vision

We develop a globally competitive workforce and entrepreneurs

Mission

Dr. Mahalingam College of Engineering and Technology, Pollachi endeavors to impart high quality, competency based technical education in Engineering and Technology to the younger generation with the required skills and abilities to face the challenging needs of the industry around the globe. This institution is also striving hard to attain a unique status in the international level by means of infrastructure, state-of-the-art computer facilities and techniques

VISION AND MISSION OF THE DEPARTMENT

VISION

To develop Competent Civil Engineers to meet the infrastructure challenges of India and the world.

MISSION

• To become one of the reputed departments offering Civil Engineering Program in the country.
• To produce excellent engineers to cope up with the changes through dynamic, innovative and flexible curriculum.
• To provide a conducive environment for teaching & learning and to develop leaders with effective communication skills.
• To conduct quality research driven by industry & societal needs and provide affordable engineering solutions.
The Programme Educational Objectives (PEOs) of our department are,

The Programme Educational Objectives (PEOs) of our department are,

The Graduate will

PEO 1 Technical Expertise: Have successful professional careers dealing with analysis, design and management of construction projects globally.
PEO 2 Lifelong learning: Exhibit attitude, professionalism, ability to communicate with team members and adapt to the latest trends by engaging themselves in continuous learning.
PEO 3 Ethics: Ethically apply their engineering knowledge and skills considering, societal, economic and environmental factors.

PROGRAM OUTCOMES

The graduates of Civil Engineering Programme will be able to:

PO1.Engineering knowledge: Apply knowledge of mathematics, science, engineering fundamentals and an engineering specialization in the field of Civil Engineering.

PO2. Problem analysis: Identify, formulate, analyse and solve complex problems in construction industries using principles of mathematics, natural sciences and engineering sciences.

PO3. Design/development of solutions: Design a solution for complex civil engineering problems and design system processes to meet specific needs with appropriate consideration for public health and safety, cultural, societal, and environmental considerations.

PO4. Conduct investigations of complex problems: Conduct investigations of complex problems including design of experiments, analysis and interpretation of data, and synthesis of information to provide valid conclusion.

PO5. Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling 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: Understanding the impact of engineering solutions in social environment and demonstrate the knowledge for sustainable expansion.

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

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 with engineers and society to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions related to civil engineering professionals.

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

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

PROGRAMME SPECIFIC OUTCOMES (PSOs)

PSO1. Design process:Design the fundamental elements of civil engineering systems, system components and processes considering safety, quality and cost consideration.

PSO2. Quality and standards:Able to plan and prepare design and construction documents such as specifications, contracts, engineering drawings and construction schedules

The remote grandeur of Chettinad

It was one of those moments that only India can throw up. Our Ambassador car slowed in the dusty street and we were told to step inside the home of a complete stranger. The owner was away, our driver explained, but he wouldn't mind. "Please, inside," he urged. Up the steps we walked, glancing at the curious statues of Queen Victoria and the Hindu goddess Lakshmi above the front gate. And then, encouraged by a somnolent housekeeper sitting on the porch, we pushed on the carved wooden doors and gasped.

There were no lights on, but enough mid day sun filtered in through the stained glass windows for us to take in the splendour: ornate chandeliers from Belgium, painted tiles from Holland, teak pillars from Burma and marble from Italy. Stern family portraits looked down on ivory trophies, as fans the size of oars stirred the midday air.

Chettinad can't boast the same opulence or dramatic desert settings as Rajasthan, but there is something about the region that takes the breath away. It consists of 75 villages, and is the cultural home of the Chettiars, a community that dates back to the Cholas and made its fortune as money lenders, merchants and jewellery dealers. There aren't many Chettiars in Chettinad now. Most migrated in the 19th and 20th centuries to Sri Lanka, Singapore, Burma, Cambodia, Vietnam and Malaysia, from where they sent back lavish fittings and furnishings for their ancestral homes. But the houses still stand – 30,000 of them at the last count – and what magnificent mansions they are.

An Indian magazine recently reported that Chettinad was one of the fastest growing holiday destinations in India. Visalam has only just opened and there is one other heritage hotel in the village. In five years, there will be many more.

To the credit of CGH Earth, which has leased Visalam from its owners (houses are part-owned by numerous members of a family and are seldom sold), the property still feels more like an ancestral home than a hotel. It has undergone a sensitive restoration and the past still lingers on in photos of Ramanathan Chettiar and his eldest daughter, Visalakshi, for whom he built the house in the Thirties. There is also a local woman employed in the kitchen, advising the chef on Chettinad cuisine (spicy, aromatic and dry), which is well known in India.

It's only when you set off for a cycle ride that you begin to appreciate the splendid isolation of these mansions. The surrounding countryside is empty and arid, heightening the sense of remoteness. In the villages, the vast mansions dominate the simple scenes of rural life, looming out of the undergrowth or standing proud on street corners. Some stretch back hundreds of yards, one courtyard after another, rooms stuffed to the rafters with generations of cooking pots.

There is, undoubtedly, something sad about the Chettiar story, but the nascent tourist industry and the presence of French Unesco staff, who are trying to ensure the buildings' long-term future, has brought renewed optimism, income and pride to the region.

The Chettiars have a history of generous hospitality and we are invited to a wedding in the village at the end of our stay. In the old days, 20,000 people would have been invited, but it's still a crowded affair. The kitchens are humming with activity, huge pans bubbling with rice, while outside the streets explode with firecrackers.

For a few days, the family home is alive, a glimpse of what life was once like and what it might one day be again.

G. HARISH KUMAR (15BCE043

Faculty Contribution

Mr. S. Krishnakumar, AP Ms. M. Ranjitham, AP Ms. P. Sathyabama, AP	Four Weeks Workshop on "Use of ICT in education for online and blended learning"
Dr. G. Jaisankar, Prof & Head Dr. R. Venkatasubramani, Prof Mr. A. Manikandan, AP	"Professional Delivery Systems in Indian Construction Industry – a Futuristic View" – 2 days Conference
Mr. L. Lokesh, AP	One Week STTP on "Challenges, Emerging trends & Recent Initiatives in Environmental Engineering"
Dr. G. Jaisankar, Prof & Head Mrs. D. Saranya Devi, AP	One day Conference on "Awareness of Today's Environmental Issues and a Poetry release on "Thanimarangal Thoopagum"
Ms. M. Ranjitham, AP	Two day Workshop on " Soil Structure Interaction Problems and Management"
Dr. G. Jaisankar, Prof & Head Dr. N. Natarajan, Prof	National conference on Energy & Environment
Dr. R. Venkatasubramani, Professor Mr. S. Syed Masoodhu, AP	One day workshop on "Foundation Engineering"
Mr. P. S. Sathish kumar, AP	FDP on" Research Methodologies in Project Management
Ms. S. Karthika, AP	Two Day Seminar on "OPTRIZ"

DEPARTMENT ASSOCIATION ACTIVITIES

INAGURAL FUNCTION OF BEAVERS

GUEST LECTURE ON " COMPONENTS OF BRIDGES"

Thanjavur Periya kovil

Thanjavur Periya kovil (also known as Brihadeeswarar temple) is a Hindu temple dedicated to Lord Shiva located in Thanjavur in the Indian state of Tamil Nadu. It is also known as RajaRajeswara Temple Rajarajeswaram and Brihadeshwara Temple. It is one of the largest temples in India and is an example of Tamil architecture during the Chola period. Built by Raja Raja Chola I and completed in 1010 CE, the temple turned 1000 years old in 2010.The architect and engineer of the temple, Kunjara Mallan Raja Raja Perumthachan is revered today as a father figure to all craftsmen in his homeland of present-day Central Kerala. The temple is part of the UNESCO World Heritage Site known as the "Great Living Chola Temples", with the other two being the Brihadeeswarar Temple, Gangaikonda Cholapuram and Airavatesvara temple.

The temple stands amidst fortified walls that were probably added in the 16th century. The vimanam (temple tower) is 198 ft (60 m) high and is one of the tallest in the world. The Kumbam (the apex or the bulbous structure on the top) weighs around 80 tons. There is a big statue of Nandi (sacred bull), carved out of a single rock measuring about 16 ft (4.9 m) long and 13 ft (4.0 m) high at the entrance. The entire temple structure is made out of granite, the nearest sources of which are about 60 km to the west of temple. The temple is one of the most visited tourist attractions in Tamil Nadu.

The solid base of the temple raises about 5 metres (16 feet), above which stone deities and representatives of Shiva dance. The big Nandi (bull), weighing about 20 tonnes is made of a single stone and is about 2 m in height, 6 m in length and 2.5 m in width. The presiding deity of lingam is 3.7m tall. The prakaram (outer precincts of the temple) measures 240m by 125m. The outer wall of the upper storey is carved with 108 dance karanas – postures of Bharathanatyam, the classical dance of Tamil Nadu. The shrine of Goddess was added by Pandyas during the 13th century, Subramanya Shrine by Vijayanagara rulers and the Vinayaka shrine was renovated by Maratha rulers. There were significant additions from the Thanjavur Nayaks.

R.KAMALI (15BCE032)

What is an Environmental Impact Assessment?

An Environmental Impact Assessment is a formal method of judging the impact that any new developmental project would have on the environment and its constituents. This can include changes that the project would create in the physical aspects of existing geography, chemical changes to the atmosphere including air and water, biological changes that affect plant, animal and human life, cultural impact of a project on the society in the area, and other socio-economic effects that the project can have.

Such an assessment allows problems to be foreseen, so that the design and planning of the projects is modified to reduce any negative effects. It is now fashionable to build green buildings which have a positive effect on the environment.

There is historical precedent for the now mandatory Environmental Impact Assessments (EIA). Past efforts by governments have resulted in bans on activities that caused noxious odors, garbage dumps were positioned at places far away from habitation, and commercial activities were restricted to town centers.

Objectives of Environmental Impact Assessment

The objective of an EIA is to predict the environmental impact project would have on all aspects of the environment. Once this is done, a study has to be made to see if the impacts can be reduced in any way. The project has then to be modified to suit the local environment and all predictions and likely options presented to decision makers for final decisions gain a better understanding of EIA by understanding how any typical project can affect the environment of a particular area.

The alignment of the road may require that certain lands have to be leveled or new embankments created. Cutting of the land and the new embankments would affect the geography of the area and probably upset its drainage pattern. This would require re-planning existing methods of treating the run-off and could cause existing watercourses to be modified. The new road may require the removal of existing green cover and this could affect the living conditions in that area. The traffic going through that area can cause pollution problems from vehicles which also includes an increase in sound pollution. The emissions from the vehicles can affect already existing atmospheric pollutants which in turn could affect human health, animal health and affect greenery in the area. The road may affect existing structures in the area which may have to be removed and can cause changes in the economic wellbeing of the persons who are using those structures.

For any environmental impact assessment, complete data on all these aspects as they are at present has to be made so that any changes can be reasonably judged to existing standards required for good living. The deterioration or increase in these living standards has then to be highlighted by the EIA before any final decision on the project can be undertaken.Before a building can be built, an environmental impact assessment needs to be performed to determine how the endeavor will affect the environment. This allows planners to make their projects more environmentally friendly and acceptable to all involved.

A. KARUNYA GRACE (14BCE003)

Students Participation in Activities

T.ANNBARASAN	CADD CONTESTT	Kongu Engineering College, Erode
N.Shanmuga Priya	Survey	Kongu Engineering College, Erode
G.Vanmathi	Poster presentation	KSR College of Technology
K.Manoj	Paper Presentation	Sri Krishna College of Technology, Coimbatore.
K.Surya	Model making	Nehru Institute of Technology, Coimbatore
T.Surendran	Treasure Hunt	Government College of technology, Coimbatore.
S.Muthu Ragavi	Floating Concrete	Government College of Technology , Salem
C.Praveen Kishore	Paper Presentation	Sri Krishna College of Technology, Coimbatore
E.Vinothini	Code Cracking	KSR College of Technology

Facts in Civil Engineering

1. The longest street in the world is Toronto's Yonge Street, listed as 1,178 miles (1,896 km) in length — roughly the distance from San Diego, California, to Seattle, Washington.

2. A civil engineer created the slippery part of the water slide. Without the right flow of water, there is no ride.

3. The Channel Tunnel is one of the greatest civil engineering projects of the 20th century, has an ultimate design capacity of 600 trains per day each way under the English Channel.

4. The Akashi-Kaikyo Bridge, also known as the Pearl Bridge, has the longest central span of any suspension bridge. The central span is a staggering 1,991 meters, or 6,532 ft.

5. It took a century to overcome deep waters, strong winds, and high chance of earthquakes to build the Rion-Antirion Bridge. Completed in 2004, it spans the Gulf of Corinth and won an Outstanding Civil Engineering Achievement award.

6. The Itaipu Dam, located at the Brazilian-Paraguayan border, is the largest operating hydroelectric facility in terms of annual generating capacity.

7. The Golden Gate Bridge is one of the longest suspension bridges in the world and has become an internationally recognized symbol of San Francisco and California.

8. The Empire State Building was built in just 18 months during the Great Depression and was one of the first to employ the then new fast track construction technique. Following the destruction of the World Trade Center in 2001, the Empire State Building again became the tallest building n New York City and New York State.

9.the Hoover Dam, standing 726.4 feet high, is one of the tallest concrete dams ever built and created one of the largest man-made lakes in the U.S.

10. The Burj Al Arab is a 5-star luxury hotel located in Dubai, United Arab Emirates. At 321 m (1,053 ft), it is the fourth tallest hotel in the world. The shape of the structure is designed to mimic the sail of a ship.

11. The Netherlands North Sea Protection Works is a marvel of coastal engineering created to protect a large area of land around the Rhine-Meuse-Scheldt delta from the sea.

12. The Millennium Force Roller Coaster in Sandusky, Ohio, is the world's tallest (310 feet) and fastest (92 mph) roller coaster, and is supported by 226 footers using 9,400 yards of concrete. It took 175 truckloads of steel to create the frame.

K R SABADHINI (13BCE001)

DEPARTMENT ASSOCIATION ACTIVITIES

HOW TO EXCEL IN SYMPOSIUM

ORIENTAION ON " DIGITAL CONSTRUCTION"

Climatic Impact on Vernacular Architecture of Kerala

India is the home for more than 1.3 billion people. Located in South Asia, it has unique traditions with interesting cultural landscape. There are more than 500 ethnic groups and each groups have their own languages, cultures and beliefs. India has 29 states and 7 union territories with significant diversity between each states and territories in term of lifestyle, language, prosperity and architectural tradition.. The climatic features such as natural resources, geographical location and topography play a significant role in professional and vernacular civic constructions.

This unique South-Asian country has four major climates: humid tropical, subtropical monsoon, dry tropical and alpine. Western part of India has a typical climate for desert with very rare rain periods. The central regions are more humid, while the northern part has closer climate to European. India has three main seasons: it is relatively cool and dry from November to February; the weather is hot and wet from June to October; the spring from March till May is very hot and dry. During the monsoon season, there falls around 80% of annual precipitation. The average temperature is around 25 – 27 degrees during all year, that is typical for southern and eastern parts.

All vernacular architects would consider basic characteristic of climate and weather during the construction of public and private building. In this regards, Indian vernacular architects developed highly architectural climate control in their civic constructions and houses. The houses were made from local materials, and they were inspired by previous traditions and technics of local people.□□ This unique South-Asian country has four major climates: humid tropical, subtropical monsoon, dry tropical and alpine. Western part of India has a typical climate for desert with very rare rain periods. The central regions are more humid, while the northern part has closer climate to European countries.

For more than two millenniums, local people were developing the architecture of Kerala, which has been influenced by the Vedic and Dravidian traditions and believes on Indian architecture. The unique examples of Kerala were impacted by different aspects: the climatic, geographical and historical factors. As a result, public and private constructions were built with considerations of climatic conditions, such as harsh tropical summers and heavy humidity. Heavy humidity evoked by the monsoon season.

Climatic Impact on Vernacular Architecture of Kerala

One of the most common vernacular type of house in Kerala is Venuu as a tribal community structure. Indian civic and vernacular architectures have many examples of highly climate control by applying science in the construction processes. Some examples can be seen in such distinguish features of Indian vernacular architecture, such as the widows' jallis, chajja and deep rectangular piers. The house was created as a Tharavad type (a system of joint family, which is practiced by Keralian people). The houses of Kerala characterized by the boldness and simplicity of forms, dominated by sweeping and red tiled roofs. Forms, materials and techniques are basically similar for all economic levels and classes of local society.

Most of Kerala architecture structures are characterized by long steeply sloping roofs, as a main prominent visual form. It was built to withstand heavy monsoons and also as a constructional walls protection. Another main feature is an extensive use of wood materials.Vernacular buildings, as community-based constructions, are environment-oriented. Local architecture attempts to implement regional traditions and interesting technics. A process of houses' creations was an interesting phenomenon all around the world, which is not varies only from a country to country but also between regions in the same country. India is the example where architectural characteristic differs from a region to region. Later nowadays constructional attributes were added or employed into Indian modern architecture with foreign influences and innovations of our modernity.

S KAVIN (13BCE011)

GREEN BUILDING

Among the primary concrete making materials, the emission of CO_2 is largely attributable to cement production. It is estimated that modern cements contain on an average of about 84% Portland cement clinker and the clinker manufacturing process releases about 0.9 ton of CO_2 per ton of clinker. The Concrete Industry World wide consume more than 3.5 billon tons of cement, so the carbon contribution of this industry is obviously quite large. Thus minimizing concrete consumption through innovative architecture and structural designs is one way to save on the use of cement. Another way is to use smart concrete mixture proportioning approach. This can be done through following approaches

1. Minimize concrete consumption through innovative architecture and Structural Design methods.
2. Use smart concrete mixture or i-crete as proportioning approach to save on cement in concrete mix.
3. Consume less Cement in concrete / mortar mixtures.
4. Consume less Clinker in Cement making by adding Pozzolana like fly ash or GGBFS in Cement or Concrete.

Characteristics of Green Building :

Building construction and its upkeep for livable conditions requires huge energy in lighting, air-conditioning, operation of appliances etc. Green Building i.e. energy efficient building is the one which can reduce energy consumption by at least 40% as compared to conventional building. The cost of constructing energy efficient building is estimated to be 15 – 20% higher as compared to conventional building without energy efficiency. However, this is more than compensated over the period of time i.e during life cycle cost and operation & living. Using green building materials and products, promotes conservation of non renewable resources internationally. In addition, integrating green building materials into building projects can help reduce the environmental impacts associated with the extraction, transport, processing, fabrication, installation, reuse, recycling, and disposal of these building industry source materials.

Green Building Products and Materials :

Building and Construction activities worldwide consume about 3 billon tons of raw materials each year. Using green building materials and products promotes conservation of dwindling non renewable resources. In addition, integrating green building materials into building projects can help reduce the environmental impacts associated with the excavation, extraction, transport, processing, recycling and disposal of these building industry source materials.

Bevin Lijo.J (15BCE037)

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