KKR & KSR INSTITUTE OF TECHNOLOGY & SCIENCES
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PRAJWALAM

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A NEWSLETTER OF CIVIL ENGINEERING DEPARTMENT

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EDITOR'S VOICE:

Development of vegetation concrete technology for slope protection and greening Infrastructural construction typically leaves bare slopes that are susceptible to soil erosion, water runoff and have potential for shallow landslides. The result of this runoff can have adverse impacts on both the slope and its surroundings . Many approaches to negate these unfavourable effects have been developed as a form of slope protection. Some methods that are used for surface protection include vegetation, hydromulch, geotextiles, wire mesh, soil stabilising agent as well as inorganic methods of slope protection which primarily involve using concrete including shotcrete, precast, concrete canvas and masonry.

Inorganic methods are typically designed for functional purposes, providing structural stability based on geotechnical investigations . However, inorganic methods have high initial costs due to both production and application of the slope protection system. Furthermore, although exhibiting durable characteristics, these methods still require general maintenance over time and succumb to a design life whereby extensive restoration or total replacement may be necessary, incurring large costs.Besides, the soils within the frame of grid beams are vulnerable to be washed away during heavy rain. One of the fastest and most environmentally

friendly techniques to forbid and remedy a runoff on a slope is to vegetate it. Vegetation's aesthetic role as a natural component of the landscape is of irrefutable importance socially and culturally. The positive role of vegetation on slope protection and the effect of vegetation removal on slope stability have both been well documented. However, flowing excess water, such as storm water, melt water or water from other sources over the slope surface may still result in the surface runoff.

ABOUT DEPARTMENT :

Civil engineering is a professional engineering discipline that deals with the design, construction and maintenance of the physical and naturally built infrastructure for fulfillment of Basic Needs of human race including Transportation, Communication, Energy production, Religious, Cultural, Sports and Community and Social and Developmental activities like bridges, roads, canals, dams and buildings.Department is the foremost in imparting Civil Engineering education in KITS. Well qualified and experienced faculty is one of the salient feature of the department and acute care is taken to ensure that students acquire essential engineering concepts with in-depth understanding In addition to, the civil department is well equipped with required departmental laboratories with tools and equipments.

Vision of the Department:

Create a congenial learning environment for imparting knowledge, skills and values.

Mission of the Department:

DM1 Providing state of the art facilities for learning and practicing.

DM2 Providing additional skills and training to meet the needs of the industry.

DM3 Inculcating professional and ethical values and serve the industry, society and environment.

WORK SHOP

A HANDS ON EXPERIENCE ON AUTO CADD REVIT ARCHITECTURE - COLLABORATION WITH **CPLR**

RESOURCE PERSON: Mr.Prabhu, Manager CPLR Solutions CHENNNAI.

The aim of this seminar is to tell the students the importance of Autodesk Revit in construction industry and the role of civil engineers at different levels. The role of Autodesk Revit and its future scope was dealt to motivate the students towards upgrading trends in construction sector at the execution level.

About Software:

Autodesk Revit is building information modeling software for architects, landscape architects, structural engineers, mechanical, electrical, and plumbing (MEP) engineers, designers and contractors. The original software was developed by Charles River Software, founded in 1997, renamed Revit Technology Corporation in 2000, and acquired by Autodesk in 2002. The software allows users to design a building and structure and its components in 3D, annotate the model with 2D drafting elements, and access building information from the building model's database. Revit is 4D building information modeling capable with tools to plan and track various stages in the building's lifecycle, from concept to construction and later maintenance and/or demolition.

Work Session Mr. Prabhu has trained the students on the following topics

A HANDS ON EXPERIENCE ON AUTO CADD REVIT ARCHITECTURE - COLLABORATION WITH CPLR

Day one: Introduction to Autodesk Revit Architecture

Introduction Building Information Modeling, Revit Architecture, History, Features, Revit File, Types: Exploring, User Interface, Building Elements, Start a New Project.

Day Two: Difference between BIM & Revit Architecture

To Start a Project, Drawing Aids, Project Units, Levels Adding Levels, Modifying Levels, Creating New Level Element Type, and Constrain Level lines, Remove Constrains, Remove Level lines, drawing a plan as per Dimension Walls, Location Line, Creating Walls, Tips for Creating Wall Practice Hands on.

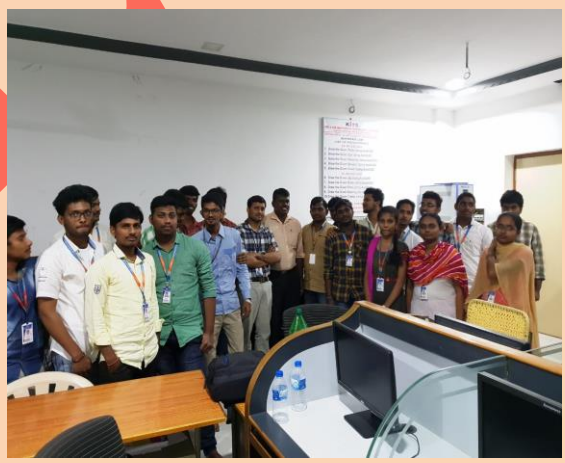
Day Three: More in Detail Wall Compound Structure, Wall join, Wall Layer, Wrappings, Vertically Compound Walls, Layer Assignment Guide Lines, Sweeps and Reveals, Wall Shapes and Openings, Stacked Wall, Guidelines for Vertically Stacked Walls.

Day Four: Structural Modelling Structural Column, Beams, Beam System, Brace, Trusses, Opening in Structural Elements Structural Walls, Foundations, Structural Floor Rooms Schedule keys, Area, Color Schemes Legend Views, Keynotes, and Practice: Find out the total area, Place rooms and prepare room schedule.

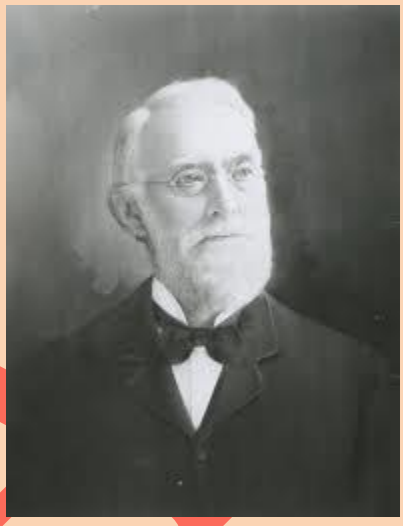
Day Five: Site DesignTop surfaces, Sub region, Split Surface, Merge Surface, Building Pad, Graded Region Parking Components, Site Components, Contour line Labels Family Creation With Adaptive Components, Grill Design, reporting Parameter, Family enhancements Family Creation, Creating Arched Window, Creating Furniture Family.

Day Six: Updates, user Interface Enhancements, Graphics Enhancements, Updates in Massing, Updates in Materials sheet Enhancements, Floor Enhancements, Sun Path Analysis, Background Images in Rendering.

Day Seven: Family Creation, Staircase Customization Stair Nosing, Custom Handrail, Custom Balusters, Family Creation with Adaptive Components, Adaptive Components, Creating Curtain Panel Pattern & Practice.



SCIENTIST OF THE MONTH



LESTER ALLAN PELTON

Lester Allan Pelton (September 5, 1829 – March 14, 1908) was an American inventor who contributed significantly to the development of hydroelectricity and hydropower in the American Old West as well as world-wide. In the late 1870s, he invented the Pelton water wheel, at that time the most efficient design of the impulse water turbine. Recognized as one of the fathers of hydroelectric power, he was awarded the Elliott Cresson Medal during his lifetime and is an inductee of the National Inventors Hall of Fame. Pelton's ideas for improving the turbine water wheel came from his studies of mining equipment and operations in California's gold rush country. Summary descriptions of the local technology observed by Pelton, and of the science by which his turbine water wheel extracts kinetic energy from a coursing mountain stream.

Steam-heat powered much of local mining activities but required a lot of wood for fuel; nearby forests were routinely decimated. Turbine water wheels also were used to supply power, but these were inefficient in converting the kinetic energy of mountain streams to horsepower. D.P. Stern reports: "According to a 1939 article by W. F. Durand of Stanford University in Mechanical Engineering, Pelton's invention started from an accidental observation some time in the 1870s. Pelton was watching a spinning water turbine when the key holding its wheel onto its shaft slipped, causing it to become misaligned. Instead of the jet hitting the cups in their middle, the slippage made it hit near the edge; rather than the water flow being stopped, it was now deflected into a half-circle, coming out again with reversed direction. Surprisingly, the turbine now moved faster. That was Pelton's great discovery. In other turbines the jet hit the middle of the cup and the splash of the impacting water wasted energ