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Institution Making Students Ready for "Industry 4.0"

DEPARTMENT OF CIVIL ENGINEERING

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J.J.C.E.T NEWS

DEPARTMENT OF CIVIL ENGINEERING

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DEPARTMENT OF CIVIL ENGINEERING

We are glad to see you!

VISION

To impart latest knowledge and skills so as to kindle innovation and creativity among students

MISSION

- ·To provide quality Education by preparing a Strong willed, socially committed and Dynamic Engineers for the Future.
- ·To enrich their knowledge in the areas of academic, research and industry by moulding professionals in the field of Civil Engineering to build a sustainable world.
- ·To impart quality education and mould technically sound, ethically responsible professionals in the field of Civil Engineering.
- ·To prepare the students with a broad skill set of creativity, critical thinking and effective communication skills to meet the desired needs of the society.
- ·To develop state of the art infrastructure and research for effective teaching learning process.
- ·To strengthen soft skills especially for rural students through co-curricular and extracurricular activities.

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NEWSLETTER

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Shanghai residents passing through the city's eastern Huangpu district in October might have stumbled upon an unusual sight: a "walking" building.

An 85-year-old primary school has been lifted off the ground -- in its entirety -- and relocated using new technology dubbed the "walking machine."

In the city's latest effort to preserve historic structures, engineers attached nearly 200 mobile supports under the five-story building, according to Lan Wuji, chief technical supervisor of the project.

The supports act like robotic legs. They're split into two groups which alternately rise up and down, imitating the human stride. Attached sensors help control how the building moves forward, said Lan, whose company Shanghai Evolution Shift developed the new technology in 2018.

"It's like giving the building crutches so it can stand up and then walk," he said.

A timelapse shot by the company shows the school inching laboriously along, one tiny step at a time.

According to a statement from the Huangpu district government, the Lagena Primary School was constructed in 1935 by the municipal board of Shanghai's former French Concession. It was moved in order to make space for a new commercial and office complex, which will be completed by 2023.

Workers had to first dig around the building to install the 198 mobile supports in the spaces underneath, Lan explained. After the pillars of the building were truncated, the robotic "legs" were then extended upward, lifting the building before moving forward.

Over the course of 18 days, the building was rotated 21 degrees and moved 62 meters (203 feet) away to its new location. The relocation was completed on October 15, with the old school building set to become a center for heritage protection and cultural education.

The project marks the first time this "walking machine" method has been used in Shanghai to relocate a historical building, the government statement said.

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NEWSLETTER

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LA BORDA

The use of wood in architecture in Spain is enjoying a great boost in recent years. The increasing use of wood in decoration, interior design and, of course, architectural acoustics, is now joined by its use in construction and engineering.

In this post, we show you 5 examples of the good use of wood in architecture in Spain. You will see wood interior cladding, wood panels, wood slats, wood ceilings, etc., but that is not all. You will discover the path recently initiated by Spanish architecture to give back to wood that role of first-class building material it deserves. Hopefully, you can visit them in person soon. It will mean that, together, we have already beaten COVID-19 and recovered our normal lives, trips and getaways.

This project of 28 social housing units, designed by the Lacol cooperative of architects, is the tallest building made of wood in Spain. La Borda won the 2019 BBConstrumat Architecture Award and the special prize for innovation at the European Responsible Housing Awards 2019.

One of the singularities of the project is the participation of the user in all its phases, from the design to the construction and further management. Their involvement has been crucial for defining the environmental strategies, and for challenging standards and current regulations.

The first action to reduce the environmental impact during construction was to redefine the programme. The co-operative decided to not build underground parking for cars and estimated a saving, after 75 years, (construction and use) of 500-800 tonnes of carbon dioxide. This strategy also gives a direct benefit in sustainable mobility and reducing the inhabitants' ecological footprint. A change in the regulations was needed; this was made at city level and now applies to all new buildings. The second action was the use of wood for most of the structure; this became the highest building constructed from cross-laminated timber in Spain. The patio covered with a greenhouse allows solar radiation to be captured in winter, while the chimney has been designed to assist ventilation in the summer. A high level of air-tightness was specified in doors and windows. La Borda has a centralised system to generate hot water and heating using a biomass boiler, and solar panels will be installed in the upper terrace.

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NEWSLETTER

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HEYDAR ALIYEV CENTRE

This pioneering figure of 21st-century architecture is known for creating radical, flamboyant buildings across the globe. A British-Iraqi architect, designer, and artist, Zaha Hadid achieved great influence and received honours from worldwide academic and professional institutions. Her practice, Zaha Hadid Architects, is renowned for being at the forefront of innovation for almost 40 years..

A big personality, Zaha Hadid was always inventive and interested in advanced design and construction ideas. Her contemporary architecture often distorts form and perspective, she explored movement in architecture and wanted buildings to shape how space makes people move.

Hadid was very aware of a building's location and how it was to be used. Before her, architecture was dominated by straight lines and traditional materials, but Hadid was interested in exploring movement in architecture.

The technology brought new creativity to her mathematical skills, and she began to create ever more innovative designs, often involving sweeping curves.

Hadid's buildings often contain huge public spaces and curved lines, creating structures that appear to float. Her work became associated with the floating curve. Her structures were often built using concrete, glass, and steel.

Zaha Hadid made the UK her home for many years and her buildings here include the London Aquatics Centre built for the Olympics, which is now a neighbourhood swimming pool; Maggie's Centre, Kirkcaldy; The Glasgow Riverside Museum of Transport; The Evelyn Grace Academy Brixton which won the Stirling Prize in 2011, and restaurant and exhibition space at the Serpentine Sackler Gallery in London.

Hadid won an international competition to design the Cardiff Bay Opera House in 1994, but the Millennium Commission decided against it.

The Zaha Hadid Foundation revealed plans to open a permanent gallery and study centre in London six years after her death. The charity preserves and shows her work and supports talented architects from diverse backgrounds. Zaha Hadid has left a huge legacy on contemporary architecture and is widely regarded as the greatest female architect.

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NAAN MUDHALVAN

In the field of architecture, visualization refers to the practice of representing a new structure in a way that can be easily digested. Thought of as the language between the client and the designer, visualization generally takes place before the building process begins.

3D visualization is the most recent development in architectural visualization and refers to creating three-dimensional models of a structure using computer software. Clients can walk around a 3D model and view it from any angle. Elements such as carpets, furniture, paintings, and lights can also be added and their effects can be observed. The 3D models of today are detailed and highly accurate. They contain real-life elements like sunlight effects and shadows, making them look almost like photographs.

The future of 3D architectural rendering is exciting. Rendering software becomes more and more efficient and cost-effective every year, requiring fewer resources and less time to create high-quality models. Combined with the decreasing cost of processing power, even photo-realistic animations are accessible to new companies.

The increased efficiency of 3D architectural visualization allows for a design process that is more iterative. An architect can envision a project, get it quickly rendered, find places that need changes, and quickly make those changes to their model. Once these quick steps have taken place, the architect can then show the project to their client, the client can identify changes they want, and the changes will be made in an interactive fashion.

PUBLICATION OF TEXT BOOK

Our Civil Engineering Faculties, Mr. M. Gurusamy & Mr.B.Jose Ravindra Raj, have published " *Irrigation & Water Resources Engineering*" book.

Irrigation is defined as the science of artificial application of water to the land, in accordance with the 'crop water requirements' throughout the 'crop period' for full-fledged nourishment of the crops .

Irrigation water is supplied to supplement the water available from rainfall, soil moisture storage and capillary rise. However, in many cases, it is not possible to meet the full crop water requirement throughout the season due to limited water availability.

Besides meeting the crop water requirement, irrigation is also provided for field preparation, climate control (crop cooling and frost control), and leaching of excessive salts. Irrigation is very ancient practice and can be traced with the beginning of human civilization. Importance of irrigation in agriculture is very well documented in Namrada Smriti XI, 9 which states that "no grain is ever produced without water, but too much water tends to spoil the grain; an inundation is as injurious to crop growth as a dearth of water." Hence, irrigation is essential. Irrigation however has several advantages and disadvantages which are listed below:

Advantages

• Increases agricultural productivity and allows for multiple cropping during an year Provide jobs

. • Reduces risk of crop failures.

MAJOR PROGRAMS

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INTERNSHIP

Our students have been participated in the internship conducted with microsoft .
It has created ahuge impact among the students.

BIM WORKSHOP

Building Information Modeling (BIM) is the foundation of digital transformation in the architecture, engineering, and construction (AEC) industry. As the leader in BIM, Autodesk is the industry's partner to realize better ways of working and better outcomes for business and the built world.

JOURNALS AND PUBLICATIONS

You must learn a new way to think before you can master a new way to be. -Marianne Williamson inspired me for my publications

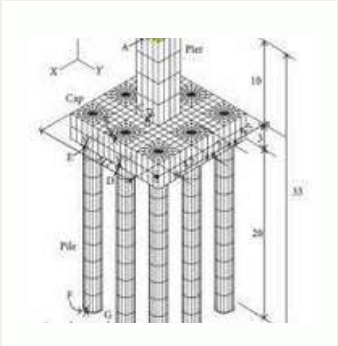
Dr.A.Ananthi

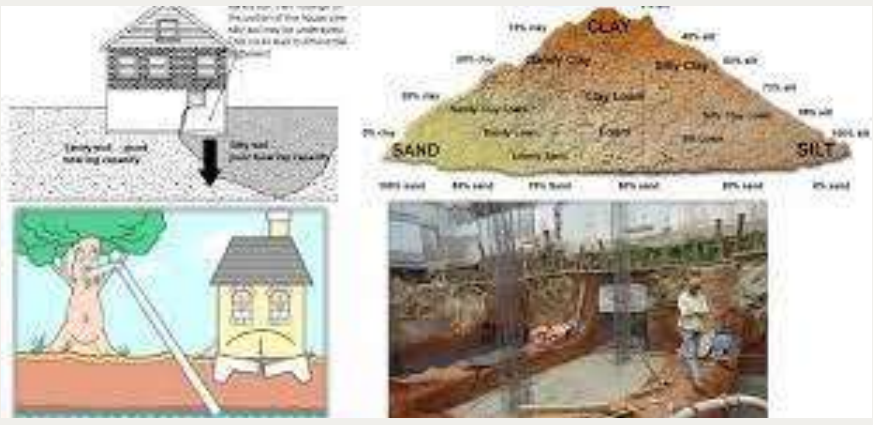
1) Strength Properties and water absorbtion of High Performance Concrete with Welding Slag as Fine Aggregetes.

by A.Anandhi

EXPERIMENTAL PERFORMANCE AND ANALYSIS OF BIT – PLASTIC ROAD

by M.Balaji





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international conferences

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publications

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webinats and FDP

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