

**Govt. College of Technology, Coimbatore 13**  
*Technical Magazine from the Department of Civil Engineering*

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**CE-Build info**

**Theme: Tall Structures**

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**January 2020**



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### *HC's message*

I am very happy to bring out the Technical Magazine "CE-Build Info". This magazine throws light in technical advancements in the field. This particular issue is released with the theme of Tall Structures. This issue also focuses about the various activities of our faculty members involved in Consultancy also. It is great to find a considerable number of articles, technical quiz and general useful information to students that certainly prove that our staff and students are adequately equipped and possess necessary skill sets to express their talent. Sincerely congratulate the editorial team of the department for their unrelenting efforts in compiling this Magazine.

### *About the Institute:*

Government College of Technology started in 1945 is one of the premier Engineering Institutions of the Country having a very large contribution to the academic and technological developments. Ever since that prestigious moment, it has set the standard of recognition standing out as outstanding Institutions with technical expertise. This Institution offers nine UG programs and eleven PG programs with recognized research supervisors to pursue M.S. (by Research) and Ph.D. Programs in all the above disciplines. All departments have well qualified staff members and excellent infrastructural facilities. This institution was granted autonomy from the academic year 1987-1988 by the University Grant Commission. It is affiliated to Anna University, Chennai. This Institute is supported by TEQIP funding; now it is provided with fund of Rs.7 Crores by TEQIP-III. As a green energy initiative, this institution has installed solar power panels under CoE- Alternate energy.

### *About the Department:*

The Department of Civil Engineering offers UG programme and PG programs in Structural, Environmental and Geotechnical Engineering. The UG programme was accredited with 5 years and PG Structural Engineering with 3 years by NBA under Tier I. The department is provided with a Centre of Excellence in Environmental studies with funds of about Rs.5 Crores under TEQIP-III. The long term goal of CoE-ES is to develop a centre which is conducive for R&D activities and to enhance revenue generation through better Industry – Institute Interaction. The short term goals are to impart better education through continuing education programs to carry out academic and sponsored research leading to Masters and Doctoral degrees in Environmental Biotechnology and Nanotechnology. The research is carried out on a wide range of topics in Structural, Geotechnical and Environmental Engineering. The department is actively engaged in testing and consultancy activities.

# Vision and Mission of the Institute

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## Vision

To emerge as a centre of Excellence and eminence by imparting futuristic technical education in keeping with global standards, making our students technologically competent and ethically strong so that they can readily contribute to the rapid advancement of society and mankind.

## Mission

- To achieve Academic excellence through innovative teaching and learning practices.
- To enhance employability and entrepreneurship
- To improve the research competence to address societal needs.
- To inculcate a culture that supports and reinforces ethical and professional behaviour for a harmonious and prosperous society.

## Vision and Mission of the Department

### Vision

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Marching towards the centre of excellence in Engineering and Technology with sustainable development to bring out professionals with futuristic vision.

### Mission

- To mould the students to be good planners, designers, executors and ethical Engineers to serve the society and strive for the development of the nation.
- To make Civil Engineering department a renowned high-tech consultancy centre for various Civil Engineering activities.
- To create a nodal centre for providing consulting services during natural calamities.
- To make this department a centre for research and development activities with field interaction.

## Program Educational Objectives

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**PEO 1:** Graduates will achieve a high level of technical expertise in the subjects related to Civil Engineering and also good in communication skills that help them to achieve and succeed in various positions.

**PEO 2:** Graduates will have a strong understanding in Mathematics and Sciences which are needed for the application of Civil Engineering principles to do Post Graduate programmes and competitive examinations.

**PEO 3:** Graduates will get interest on the learning processes and inculcate in them professional ethics, moral values and social concern.

## Technical Article

### **Statue of Unity: Construction Features**

The Statue of Unity is the world's tallest statue, with a height of 182 metres (597 feet),[3] located in the state of Gujarat, India. It depicts Indian statesman and independence activist Vallabhbhai Patel (1875–1950), who was the first deputy prime minister and home minister of independent India. In Gujarat the statue is found on the Narmada River in the Kevadiya colony, facing the Sardar Sarovar Dam 100 kilometres (62 mi) southeast of the city of Vadodara.[4]

The project was first announced in 2010, and construction of the statue started in October 2013 by Indian company Larsen & Toubro, with a total construction cost of ₹2,700 crore (US\$422 million).[5] It was designed by Indian sculptor Ram V. Sutar and was inaugurated by the Prime Minister of India, Narendra Modi on 31 October 2018, the 143rd anniversary of Patel's birth.[6]



*Statue of Unity* under construction in August 2016



The statue under construction in January 2018

## Construction

Narendra Modi, then serving as the Chief Minister of Gujarat, laid the statue's foundation stone on 31 October 2013, the 138th anniversary of Patel's birth. The total cost of the project was estimated to be about ₹2,063 crore (equivalent to ₹28 billion or US\$350 million in 2020) by the Government.

L&T employed over 3000 workers and 250 engineers in the statue's construction. The core of the statue used 210,000 cubic metres (7,400,000 cu ft) of cement and concrete, 6,500 tonnes of structural steel, and 18,500 tonnes of reinforced steel. The outer façade is made up of 1,700 tonnes of bronze plates and 1,850 tonnes of bronze cladding which in turn consists of 565 macro and 6000 micro panels. The bronze panels were cast in Jiangxi Tongqing Metal Handicrafts Co. Ltd in China as facilities large enough for such casting were unavailable in India. The bronze panels were transported over sea and then by road to a workshop near the construction site where they were assembled.

Construction of the monument was completed in mid-October 2018; and the inaugural ceremony was held on 31 October 2018 (143rd birth anniversary of Vallabhbhai Patel), and was presided over by Prime Minister Narendra Modi. The statue has been described as a tribute to Indian engineering skills.

## Features

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The Statue of Unity is the world's tallest statue at 182 metres (597 ft). It rises 54 metres (177 ft) higher than the previous record holder, the Spring Temple Buddha in China's Henan province. The previous tallest statue in India was the 41 m (135 ft) tall statue of Lord Hanuman at the Paritala Anjaneya Temple near Vijayawada in the state of Andhra Pradesh. The statue can be seen within a 7 km (4.3 mi) radius.

The monument is constructed on a river island named Sadhu Bet, 3.2 km (2.0 mi) away from and facing the Narmada Dam downstream. The statue and its surroundings occupy more than 2 hectares (4.9 acres), and are surrounded by a 12 km (7.5 mi) long artificial lake formed by the Garudeshwar weir downstream on the Narmada river.

The statue is divided into five zones of which only three are accessible to the public. From its base to the level of Patel's shins is the first zone which has three levels and includes the exhibition area, mezzanine and roof. The first zone also contains a memorial garden and a museum. The second zone reaches up to Patel's thighs, while the third extends up to the viewing gallery at a height of 153 metres. The fourth zone is the maintenance area while the final zone comprises the head and shoulders of the statue.

The museum in the first zone catalogues the life of Sardar Patel and his contributions. An adjoining audio-visual gallery provides a 15-minute long presentation on Patel and also describes the tribal culture of the state. The concrete towers which form the statue's legs contain two elevators each. Each lift can carry 26 people at a time to the viewing gallery in just over 30 seconds. The gallery is located at a height of 153 metres (502 ft) and can hold up to 200 people.

## Some Amazing Tallest Buildings in India



**World One - 442 m Tall**

World One is the tallest building in India with a height of 442 m height comprising of 117 floors. Currently, World One is on hold as it is not yet approved from the Airport Authority of India.



**Imperial 3 - 392.6 m Tall**

Constructed in 2010, Imperial 3 is a twin tower residential skyscraper building in Mumbai. Built-in Tardeo, former slum land, Imperial 3 is one of the most recognized complexes till date.



**Namaste Tower - 316 m Tall**

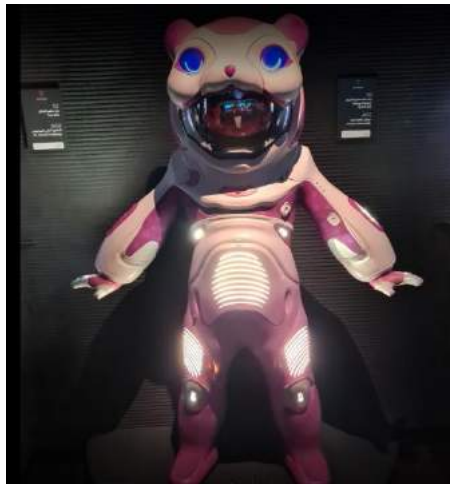
Designed by Atkins architectural firm, Namaste Tower is a 316 m tall skyscraper building comprising of 63 floors. The design of the Namaste Tower resembles the namaste gesture.



**The 42 Tower - 249 m Tall**

42 Tower, a residential building located in Kolkata. Regarded as the first tallest building in Kolkata, the skyscraper has 65 floors comprising of 56 ultra-luxury flats.

## Glymsus of Museum in Future Dubai



Alumni Contribution: International webinar by our Alumni of Civil Dept.



# International Webinar

On

**CAREER GUIDANCE FOR BUDDING ENGINEERS  
and inauguration of**

**STUDENTS QUALITY CIRCLE(SQC)**

**Organized by  
IQAC, Student Support Team of  
Government College of Technology, Coimbatore - 13**



Career Guidance Talk by  
One of our renowned Alumni Dr. S. Neelamani  
Senior Research Scientist

## Organizing Committee :

Patron	:	Dr. P. Thamarai, Principal & Chairman
Convenor	:	Dr. R. Thenmozhi, Professor & Director - IQAC
Coordinator	:	Dr. O. Saranya, Asso. PECE(CAS)
Co - Coordinators	:	Dr. A. S. Wincy Ponanna, APEIE Mr. R. Surendran, APME Mr. Rakesh Gowtham, APME

### REGISTRATION LINK:

<https://docs.google.com/forms/d/e/1FAIpQLScwLVDaemx6jvL2j48DnYzT Svs8KW3aWAQI2nZLLLzCmzo-4Q/viewform>

GOOGLE MEET LINK: <https://meet.google.com/wuw-seid-bac>

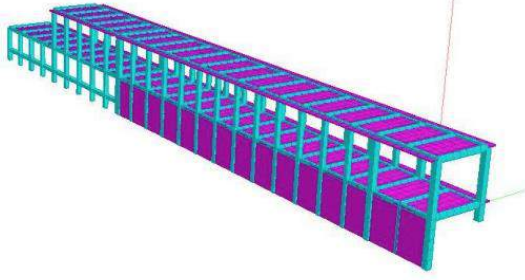


**Faculty Contribution in construction industry**

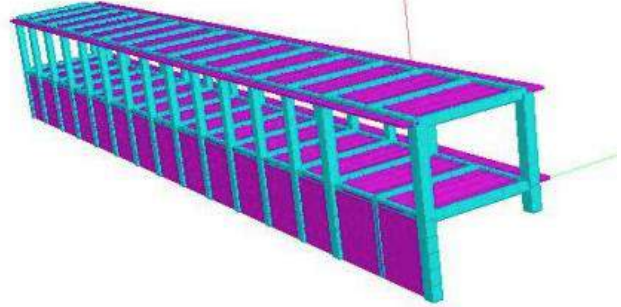


**Issue of Demolition Certificate for a shopping complex in Coimbatore**

		
Rebound Hammer test- Beam	Rebound Hammer test- Slab	UPV Test on beam
<b>Structural stability report for corporation middle school, M.G.R nagar, Thadagam road</b>		



Pragram mandapam



North-west Pragram mandapam

**Design Vetting by the faculty of GCT for a Proposed construction of praharam mandapam at Arulmigu Vetrivelayudha Swamy Thirukoil, Kaithamalai, Uthukuli, Tirupur dt- 638752.**

## TECHNICAL QUIZ

1.	<b>The rocks formed from molten magma, are called igneous rocks</b>
2.	<b>Black marble is generally found in the district of Jaipur</b>
3	<b>The curvature of the earth's surface, is taken into account only if the extent of survey is more than 260 sq km.</b>
4	<b>If two forces of 3 kg and 4 kg act at right angles to each other, their resultant force will be equal to 5 kg</b>
5	<b>When two plates butt together and are riveted with two cover plates with two rows of rivets, the joint is known as double riveted double cover butt joint.</b>
6	<b>The shape of the bending moment diagram over the length of a beam, having no external load, is always linear</b>
7	<b>A long vertical member, subjected to an axial compressive load, is called column</b>
8	<b>In C.G.S. system the unit of viscosity is poise</b>
9	<b>The sewerage system originates from house sewers</b>
10	<b>Water formed transported soil is alluvial</b>
13	<b>A concrete having a slump of 65 cm, is said to be plastic</b>
15	<b>If diameter of a reinforcement bar is <math>d</math>, the anchorage value of the hook is <math>16d</math></b>
16	<b>According to the Sustainable Development Goal 13, the biggest threat towards development is: Climate change</b>
17	<b>The Greenhouse Effect is the rise in the surface temperature on Earth</b>

## Few top level Construction Companies in India to know...

- **L&T Engineering & Construction Division (L&T ECC), Chennai. ...**

L&T Construction, India's largest construction organization and ranked among the world's top 30 L&T is one of the leading construction company names in India. Its capabilities span the entire gamut of construction – civil, mechanical, electrical, and instrumentation engineering – and its services extend to all core sector industries and infrastructure projects.

- **Tata Projects Ltd, Mumbai. ...**

Tata Projects is one of India's fastest-growing and most admired infrastructure companies. It is one of the top construction company names in India. It has expertise in executing large and complex urban and industrial infrastructure projects. The Company provides turnkey solutions for constructing [roads](#), bridges, fully integrated rail & [metro systems](#), commercial buildings & airports, setting up power generation plants, [power transmission & distribution systems](#), chemical process plants, [water](#) and [waste management](#), and complete mining and metal purification systems.

- **Shapoorji Pallonji & Co Ltd, Mumbai. ...**

SPCL is a well-diversified business house with clients in over 60 countries, delivering complex and challenging projects for over 150 years. SPCL operates in 6 major [business areas](#) with 13 group companies and a strong team member base of over 60,000 people from 40+ nationalities.

- **GMR Group, Mumbai. ...**

Explore GMR Group, its businesses, vision, impact, and more. GMR Group is a top global player committed to creating an institution in perpetuity. It is one of the leading construction company names in India.

- **Hindustan Construction Company (HCC), Mumbai. ...**

H.C.C. Group delivers world-class engineering & construction services. H.C.C. is the pioneer in the Indian infrastructure industry. H.C.C. is responsible for landmark projects that have defined the country's progress.

- **Afcons Infrastructure Limited, Mumbai. ...**

Afcons Infrastructure Limited is part of the [Shapoorji Pallonji Group](#), the second-largest Engineering & Construction group in India. It stands proudly as one of India's top infrastructure development companies, with its presence in various parts of the world.

- **J.M.C. ...**

J.M.C. Projects thrives on its technical capabilities, built over the last several years, and strong willpower to provide value to customers. This is the premise for establishing a culture of engagement in J.M.C.'s credo.

- **Gammon India Ltd, Mumbai.**

Gammon India Limited is the largest [civil engineering construction company in India](#). Headquartered in Mumbai, it was founded in 1922 by John C. Gammon. It is one of the top construction company names in India.

- **IVRCL, Hyderabad**

IVRCL – A renowned Indian Infrastructure company is undertaking Water Projects, Transportation Projects, Industrial Infrastructure Projects, Power Transmission.

## SOFTWARES USED IN FIELD OF CIVIL ENGINEERING



MS excel

Staad Pro



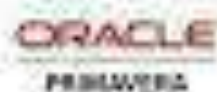
**ETABS** ETABS

SAP2000 **SAP2000**



Auto Cad

Primavera



MS project

Revit



AUTODESK  
REVIT



ArchiCad

Autodesk Civil 3D



AUTODESK  
CIVIL3D

**ANSYS**

ANSYS

ArcGIS

