



Vidya Vikas Education Trust's

Universal College of Engineering

Gujarati Linguistic Minority Institution

Approved by AICTE, DTE, Maharashtra State Government and Affiliated to Mumbai University
Accredited with "B+" Grade by NAAC



The Benchmark

JULY 2021

Vol 04

Edition 01



Patrons

Dr. Jitendra B. Patil
- Campus Director

Mr. Rajesh Dubey
- H.O.D., Civil

POST BEARERS

Mr. Rahul Patil
- General Secretary

Ms. Takshika Bhut
- Joint Secretary

Mr. Chirag Gangani
- Treasurer

Mr. Brijesh Chauhan
- Technical Head

Mr. Praneeth Hegde
- Documentation Head

Mr. Rohan Talekar
- Creative Head

Ms. Sakshi Dubey
- Discipline Head

Ms. Vrushti Makwana
- Hospitality Head

Mr. Dhruv Parmar
Ms. Pranali Gudekar
- Marketing Head

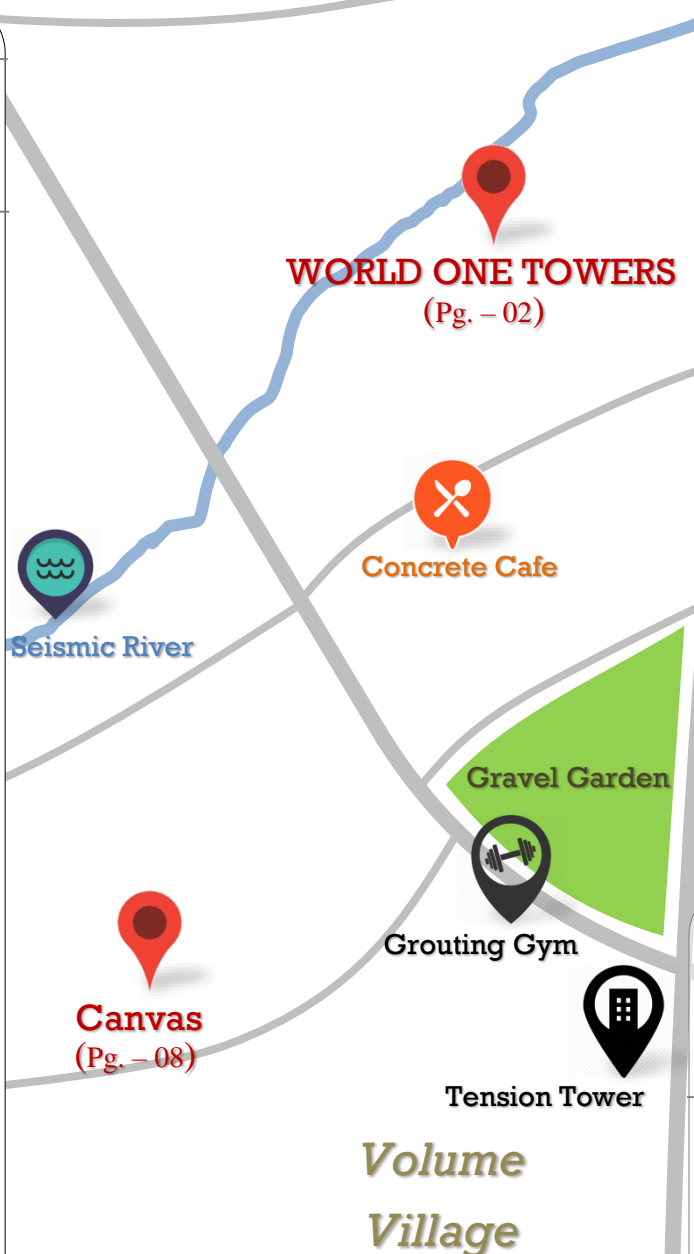
Mr. Yagnesh Jamvecha
Ms. Khushi Patil
- Public Relation Officer

EDITORS

Mr. Brijesh Chauhan
Ms. Kalpita Chafekar

FACULTY ADVISORS

Ms. Swapnali Onkar



Department Vision

To excel in every area of Civil Engineering, inculcate research oriented study to explore hidden talent. Providing Opportunity to display creativity, out of the box thinking & innovativeness, aimed at providing cutting edge technology for sustainable development.

Department Mission

Providing qualified, motivated faculties to deliver the content using updated teaching methodology, inviting industry experts from various areas to disseminate subject knowledge in Civil Engineering. Motivating students to undertake the Research Oriented studies, participate in competitions at all levels, grasping new techniques and methods which can be improved on further. Conducting and participating in seminars, workshops and training programs with a view to make the students industry ready and improve their employability factor for global career ahead. To create quality professionals capable of planning, designing and analytical skills for better infrastructural development in the field of Civil Engineering.

Editor's Desk

We are pleased to present July 2021 edition of Benchmark. In this edition you will an article on World One Tower and contribution by Students and Faculty members of Department of Civil Engineering highlighted in the month of June. News update and departmental activities are the part along with Canva.

WORLD ONE TOWERS

Overview

World One is a 280.2 m (919 ft) skyscraper in Mumbai, India. Currently, it is the tallest completed building in India. It is on the 7.1-hectare (17.5-acre) site of the defunct Shrinivas Mill. The site also houses two other lower towers: World View and World Crest. The complex was developed by the Lodha Group.

World One was being built at an estimated cost of over US\$321 million. When the construction began, it was expected to be 442 m (1,450 ft) tall. As the developer failed to obtain approval from the Airports Authority of India for that height, the project stalled for few years. Following the hiatus, the project was redesigned to the current height and completed.

World One's architect is Pei Cobb Freed & Partners, the structural engineer is Leslie E. Robertson Associates & MEP engineer is Buro Happold Engineers. The whole project i.e. The World Towers consists of three towers. There were two construction civil contractors involved: Arabian Construction Co. and Simplex (World One), Muscovite Group (World Crest, World View).

The contract to construct World One was awarded to a joint venture between UAE-based Arabian Construction Company and Simplex Infrastructure. Construction on World One began in 2011. By December 2014, about 75% of civil construction on the project had been completed. By June 2015, 70% of the tower was complete, with 83 floors having been built.

Apartments at World One start at ₹150 million (US\$2.1 million) for a 3BHK. The Lodha Group opened bookings for apartments at World One on 29 November 2011. When the first round of bookings were closed on 14 December 2014, Lodha had received ₹5 billion (US\$70 million) worth of bookings, at an approximate rate of over ₹70,000 (US\$980)–₹80,000 (US\$1,100) per sq ft. The tower is composed of 3 and 4 BHK apartments. Lodha began offering apartments at World One for sale in London in February 2015. The company hired London estate agent, Wetherell Estates, to market and sell homes in the tower. Lodha particularly hoped to target high net worth Indians living in Mayfair, London.

The developer failed to obtain approval from Airports Authority of India for 501.33 m (1,645 ft) height in 2010 and 453.29 m (1,487 ft) height in 2015, so as of 2018 World One still has approval for 285.06 m (935 ft) height only (approximately 76 floors). The project was redesigned for that height.

There are 2 other towers under this project:

Photos

World Crest: The World Crest is a 60 floor residential tower with a height of 222.5 m (730 ft). Construction of the tower began in 2011, and was completed in 2017.



World View: The World View is an 73-floor residential tower with a height of 277.6 m (911 ft). Construction on the tower began in 2015, and was Completed in 2020. As of June 2021 the tower is the second tallest in India.

DID YOU KNOW?

In 2008, a man in Japan bought a nearly black Densuke watermelon for ¥650,000 or \$6,125. The specialty fruit is only grown on the island of Hokkaido and, according to a Japanese agricultural expert in the Los Angeles Times, is crisp and hard with "a different level of sweetness" than the watermelon we're used to eating.

To know more about world ones tower, Scan the QR Code



IMPACT OF COVID-19 ON CONSTRUCTION AND ENGINEERING SECTOR

In today's globalized world, there is hardly any place that has remained unaffected by the severity of the Novel Coronavirus or the Covid-19 pandemic. Almost every commercial activity is suffering at the hands of the ruthless Covid-19.

Because of the inherent nature of business activity, some industries may unwittingly prosper under the pandemic, while some would weather the storm, albeit with much difficulty, but of the hardest affected, construction and engineering sector is definitely on the wrong end of the curve.

Construction and Engineering sector, which was already reeling with multiple challenges from lack of capital and credit avenues to insolvencies, multiple frauds and regulatory burden under the Environment Laws and the Real Estate (Regulation and Development) Act, 2016, is now marred by the Covid 19 pandemic, with no likely relief in sight.

In the construction sector, hordes of workmen toil together to meet the timelines. However, due to the restrictions put in place by the Government, all the construction activity and most of the business activity across the country has halted.

There are multiple consequences of the lockdown, which would further stretch the troubles for the sector like reverse migration, disruption of supply chains, amongst others. Cumulatively, the above circumstances would cause hindrance in meeting the obligations under the construction and engineering contracts and would lead to multiple legal wrangles for the industry post lifting of the current restrictions.

The problem for the construction and engineering sector in India is aggravated and difficult to address as there is no standard form or format for contracts followed by the industry. There could be innumerable variations in as many General and Special Conditions of a Construction and Engineering Contract.

How civil engineering can adapt to the current COVID-19 crisis

Together with a series of professionals, we look at how civil engineers can help to mitigate the impact of the current health crisis and what it means for working practices within our industry.

The COVID-19 pandemic looks set to change the way many of us work for good, but for civil engineering, it also affords the opportunity to fully embrace implementing digital software into working practices - and to optimize remote working where possible. Further development of digital technologies could help the sector deal with future pandemics and global catastrophes.

There is currently a public debate around whether the construction industry should continue to function considering the limited opportunities for social distancing for workers on-site.

A [New Civil Engineer](#) article recently highlighted the opportunities digital technology affords for remote working. Technology company Sensat has developed Mapp, a digital means of interacting with and remotely facilitating construction activity. Mapp produces live digital twins. Effectively, these are virtual replicas of the physical world – and provide means that could transform the way physical industries operate.

“What we're trying to do is reduce the amount of time people spend on site,” Sensat co-founder and chief data officer Harry Atkinson told NCE. “This means that people can make decisions on the project remotely – if they've got up to date and real time information, they can work remotely.”

Meanwhile [Bachar Hakim](#), Head of Pavement Design and Asset Management & Transportation at AECOM says the industry should adapt its skills to react to the current crises.

*“If your dreams don't scare you, they are too small.”
- Richard Branson*

"Working remotely with good digital infrastructure might be easy for designers, consultants, educators and students but more difficult for large construction site workers and network maintenance operators," says Bachar. "Hence, the first priority is to improve the digital infrastructure and communication skills, followed by offsite construction and automation."

We hope that we don't lose focus on outstanding issues like mitigation and adaptation to climate change; as well as the impact of GHG emissions.

Winnie Lai, Chairman of ICE Hong Kong Association, Graduates & Students Division, says the current crisis affords the industry the chance to advance the application of technologies. "The use of software such as Zoom, Skype and Microsoft Teams allows staff to be more flexible," says Winnie.

"Hard copies of documents and drawings could be replaced by the use of digital copies, BIM (Building Information Modelling) and VR. Not only are these methods more environmentally friendly, they are more effective and well-rounded for presentations, discussions and solution of issues.

"In some projects, skilled-workers could be substituted by robotic mechanisms such as welding with robotic arms. It could increase productivity and accuracy but some might express concern as robots currently lack the power of a person's mind to make instant changes or decisions."

Umar Malik, a civil engineering apprentice with AECOM, says the company has taken steps to further the use of digital technologies. "One significant development is the use of 360 cameras to digitally capture site conditions," says Umar.

"This effectively creates a street view tour of your construction site. All that is required is an operative to carry out the survey, then all stakeholders will have access to a site tour – without needing to leave the office."

"This outbreak has acted as a catalyst for our industry to adopt new digital technologies," says Umar. "Now that we have proved that this model works, we should hopefully see the adoption of new technologies in the future that will yield multiple benefits and increase our efficiency."

Conclusion:

To say that the companies engaged in the construction and engineering sector, would be affected due to the current unprecedented situation would be an understatement. The various restrictions put in place by the Governments to control the effects of the virus may trigger shortage of raw material and manpower, disrupted supply chain, further creating handicaps in performing contractual obligations. Contraction in consumption demand should be the least of the worries for the sector. Some elements in construction and engineering are imported from countries, which may be more badly affected, creating a domino effect on the entire sector. However, one must safeguard against the inevitable by adopting corrective measures in time



-Ms. Mitali Poojari
Asst. Professor UCoE

Scratch Your Head!!

- 1) It is easy to give an example, but it is difficult to become AN EXAMPLE

Ans:- _____

DIGITALIZATION FOR RAPID GROWTH IN CONSTRUCTION INDUSTRY

The construction industry, despite being one of the world's largest, has been notoriously behind on technological advancement.

In a 2016 report by KPMG, it was found that the biggest contributor to this sluggishness was that industry practitioners were reluctant to take the first step to adopt technologies, preferring to wait for competitors to do so.

Nevertheless, the industry is actually ripe for disruption in these times, in part due to how the Covid-19 pandemic has affected the way operations are carried out.

Singapore's cautious, but promising progress

In 2019, Singapore took a huge step towards digitization, with both public and private sectors collaborating. This was in line with the government's plans to transform the construction industry. This transformative plan spurred further progress in Singapore.

The same year, the government's housing development board (HDB) sought to use artificial intelligence (AI) and drones to make sites safer for workers.

In 2020, the private sector worked together to adopt AI, virtual reality (VR), 3D technology, and digital platforms to streamline operations and improve safety.

Southeast Asia a high-growth market

Recently, NYSE-listed Procore, a leading construction management software, announced plans to expand into Southeast Asia (also known as the ten countries that comprise the ASEAN region).

This move comes on the back of their rapid growth across Australia and New Zealand (ANZ) over the past four years. "ASEAN is a high-growth market, and we are looking forward to partnering with the industry to uplift its digital capability and provide value to all stakeholders in construction. We already have talented people based in Singapore and are accelerating hiring in the region to better serve the industry.", shared Tom Karemacher, the APAC VP of Procore.

Procore has a growing customer and partner base across ASEAN, with regional customers such as Obayashi Corporation, Sime Darby Property, and Precise Development.

Digitalization is still the future

According to Deloitte, the engineering & construction (E&C) industry is expected to grow three percent annually through 2021, although profitability and margins remain persistently slim.

Digital technologies hold untapped promise to address this challenge, especially the use of IoT to enhance connectivity.

One particular strategy that has been fundamental in the transformation process is the integration of all construction processes using multiple technology solutions – more commonly known as the Integrated Digital Delivery (IDD).

IDD typically promotes the use of smart solutions, advanced information communication systems, and Building Information Modelling (BIM) — a three-dimensional (3D) technology.

Eventually, digital construction will transform the E&C industry, and it is imperative that the greater ASEAN private construction sector collaborates with their respective public sectors to drive growth as a whole.



-Mr. Shreyans Dodia
Asst. Professor UCoE

DID YOU KNOW?

Just one drink can quickly go to your head, whether you feel it or not. Researchers at Heidelberg University Hospital found that just six minutes after consuming alcohol, changes are already taking place in the brain. So even if you don't feel tipsy right away, you're definitely not totally sober either.

News Bulletin

❖ **1st global pics of Mars' discrete auroras captured by UAE's Hope probe**

The first global pictures of Mars' "ghostly glowing" discrete auroras have been captured by United Arab Emirates' (UAE) Hope probe, which is the first-ever Arab interplanetary mission. Discrete auroras, which are only visible in ultraviolet light, are caused when charged particles from the solar wind smash into the gas molecules in Mars' thin atmosphere.



❖ **Over 3,000 people celebrate International Yoga Day at Times Square in New York**

Over 3,000 people celebrated the seventh International Yoga Day at the Times Square in New York on Sunday. Consulate General of India, New York partnered with the Times Square Alliance to host the 'Solstice in Times Square' event. "Yoga was born in India but is part of global heritage today," said Randhir Jaiswal, Consul General of India in New York.



❖ **Confident of EMA's approval for Covishield in a month: SII's Poonawalla**

Serum Institute of India's (SII) CEO Adar Poonawalla on Wednesday said that his company is confident of receiving approval from the European Medicines Agency (EMA) for the COVID-19 vaccine Covishield in a month. "The EMA is absolutely correct in asking us to apply, which we have through AstraZeneca," he said. "And that process has to take its time," he added.



❖ **IIT-Delhi to start 'Master of Public Policy' course from 2021-22 academic year**

Government has recommended the six-minute walk test for mild and moderate COVID-19 patients to check if they've low oxygen level. Patients are advised to walk around their room for six minutes with an oximeter attached to their finger. If the patient's oxygen saturation drops below 94% or he/she feels unwell during or after the test, they should consult a doctor.



Scratch Your Head!!

2) The sea sand used in structures causes?

Option :- a) Dampness b) Disintegration
c) Efflorescence d) All of these

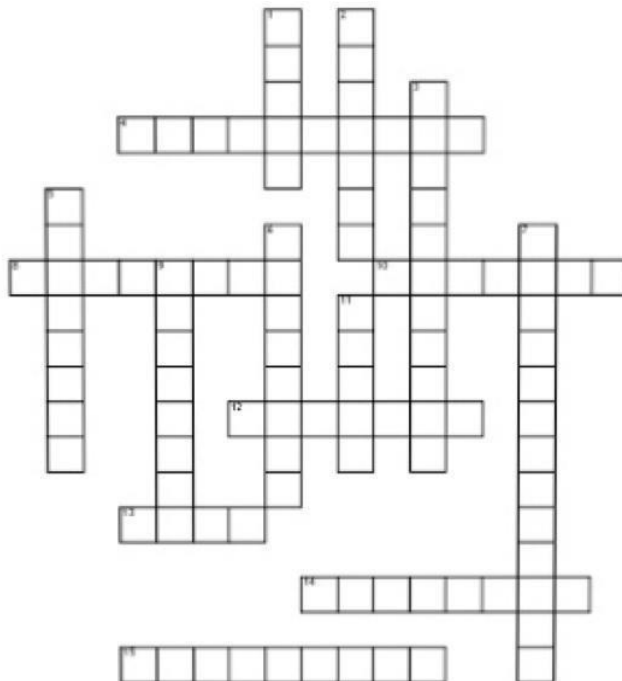
❖ **Sony plans to use robots to produce TVs, smartphones, cameras**

Sony is planning to use robots to manufacture televisions, smartphones, cameras in future. The installation of unmanned production lines are expected to cut costs by 70% at Sony's TV factory in Malaysia by 2023, compared with 2018, Kimio Maki, head of Sony's electronics businesses, told Financial Times. The acceleration of factory automation will also help reduce product defects, he added.



❖ **India's 1st cryptogamic garden situated at 9,000 ft altitude inaugurated in Dehradun**

India's first cryptogamic garden with nearly 50 different species was inaugurated in Deoban area of Dehradun district in Uttarakhand on Sunday. The garden is situated at an altitude of 9,000 feet and is spread over an area of three acres. Cryptogams are those primitive plants that do not reproduce through seeds and include algae, mosses, ferns, fungi, and lichens.



Across

4. Which type of bridge can span the longest distances?
8. An arch bridge's shape is held together with a _____
10. A force that is a mixture of tension and compression
12. An action that twists a material
13. Which bridge is the most susceptible to the bending force?
14. The weight of items on a structure
15. To strengthen an arch bridge, what is used?

Down

1. Cable bridges are made mostly of what material?
2. A force that stretches material apart
3. A force that squeezes a material
5. A force that makes materials slide past one another
6. The weight of the structure itself
7. To strengthen a rectangle, what is used?
9. The strongest and most rigid shape
11. Which bridge uses a triangular design to improve strength?

*"The key to success is to start before you are ready."
- Marie Forieo*

CANVAS



-Mr.Rahul Patil
B.E. CIVIL



-Mr.Rahul Patil
B.E. CIVIL



-Mr.Rahul Patil
B.E. CIVIL



-Mr.Sanket More
B.E. CIVIL

ANSWERS to "Scratch Your Head"
1) Anonymous 2) All of these