



*Shri Shamrao Patil (Yadavkar) Educational & Charitable Trust's*  
**SHARAD INSTITUTE OF TECHNOLOGY, COLLEGE OF  
ENGINEERING, YADRAV, ICHALKARANJI**  
**Department of Civil Engineering**

**The Biannual Newsletter of civil engineering Department**

**(2019-2020): Vol: 5 Issue: 1**

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**HOD Message:**



Dr. K. A. Bhagate, HOD

I am Happy to interact with all stakeholders through this News bulletin “**Sthapathya Vaarta** “. This is outcome of all the activities conducted by the civil engineering department in the last semester. The editorial team has taken lot of effort in collecting and nicely presenting it in the News bulletin. On behalf of Civil Engineering department, I am thankful to Exe.Director Shri Anil A.Bagane and Principal Dr. S.A.Khot for continuous motivation to bring all the activities at one level.



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**List of DAAB Members**

Following are the DAAB members of the department

Sr. No.	Name of person	Designation	Email
1	Dr. K. A. Bhagate	Head of Department and Head of DAAB	kbhagate@gmail.com
2	Mr. S. A. Patil	Academic Coordinator and Secretary, DAAB	sapatil@sitcoe.org.in
3	Prof. Dr. S. N. Tande	Other Academic Institute Faculty-Member	sntande1@rediffmail.com
4	Prof. Dr. R. V. Raikar	Other Academic Institute Faculty-Member	rvraikar@gmail.com
5	Mr. S. S. Deshpande	Industry Person-Member	subhash81086@gmail.com
6	Mr. Nitin Patil	Industry Person-Member	nitinpatil2910@gmail.com
7	Mr. Shrenik Patil	Parent-Member	shrenikpatil67@gmail.com
8	Mr. Y. S. Patil	Programme Coordinator- Member	patil_yogesh1988@rediffmail.com
9	Mr. M. H. Mota	Senior Faculty & NBA Coordinator-Member	mhmota77@gmail.com
10	Mr. S. S. Chougule	Senior Faculty- Member	shashiraj_chougule@yahoo.co.in
11	Mr. R. M. Garud	Senior Faculty- Member and S.E Class Teacher- Member	ravindragarud65@gmail.com
12	Mr. R. V. Jugdar	T. E. Class Teacher Member	rvjugdar.1983@gmail.com
13	Mr. S. S. Magdum	B. E. Class Teacher Member	shantanumagdum1989@gmail.com
14	Vivekanad Kabade	Alumni- Member	vivekanandkabadi@gmail.com
15	Akshay Lotake	Alumni- Member	lotakeakshay25@gmail.com
16	Mr. Rushikesh Jadhav	Current student B.E. Class- Member	jadhavrushi191198@gmail.com
17	Ms. Shreya Gangadhar	Current student T.E. Class- Member	shreyagangdhar10008@gmail.com



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**Welcome to New Faculty**



**Prof. Tejas C. Patil**

**M.E. – Civil (Construction & Management)**

**Computer Proficiency:**

1. MS- Office
2. MS- Excel.
3. Power Point Presentation
4. Internet Application
5. Auto- CAD (2D)
6. Networking



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**STTP/WORKSHOP ATTENDED BY FACULTY**

<b>Sr. No .</b>	<b>Name Of Faculty Member</b>	<b>Name of STTP/Workshop/Training attended</b>	<b>Organizing Agency</b>	<b>Dates</b>	<b>National / International</b>
1	Dr. B. S. Patil	Writing Papers In Journal Of Reputes	ASPCOC, Vijayapur	27-28 October 2018	National
2	M. H. Mota	FDP On Padagogy Initiatives	SITCOE, Yadrav	13-17 November 2018	National
3	S. S. Chougule	Improvement In The Quality Of Assessment	SUK, Kolhapur	26-Nov-18	National
4	R. M. Garud	FDP On Padagogy Initiatives	SITCOE, Yadrav	13-17 November 2018	National
5	A. B. Patil	Skill Enhancement On Software-Microsoft Project	SITCOE, Yadrav	15-20 October 2018	National
6	R.V. Jugdar	The Future Of Making Things	DBATU, Lonere	24-Dec-18	National
7	Y. S. Patil	FDP On Padagogy Initiatives	SITCOE, Yadrav	13 Nov 2018 to 17 Nov 2018	National
8	A. D. Chougule	FDP On Padagogy Initiatives	SITCOE, Yadrav	November 2018	National
9	S. S. Magdum	FDP On Padagogy Initiatives	SITCOE, Yadrav	13-17 November 2018	National
10	B. B, Tikke	FDP On Padagogy Initiatives	SITCOE, Yadrav	13-17 November 2018	National
11	S. A. Patil	FDP On Padagogy Initiatives	SITCOE, Yadrav	13-17 November 2018	National



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<b>Sr. No</b>	<b>Title of Paper</b>	<b>Name of Author</b>	<b>Title of Journal / Conference</b>	<b>Year of Publication</b>
1	'Ground water analysis a case study of Haroli and Jambhali Village, Maharashtra.'	M H Mota	· National level conference on, Recent Advances in Civil Engineering, organized by KLE college of Engineering and technology, Chikodi.	9 <sup>th</sup> &10 <sup>th</sup> March 2018
2	'Performance Evaluation of Existing Water Treatment Plant in Urban Area'.	M H Mota	· National level conference on, Recent Advances in Civil Engineering, organized by KLE college of Engineering and technology, Chikodi.	9 <sup>th</sup> &10 <sup>th</sup> March 2018
3	Study of phyto technology in sludge treatment wetland	R.M Garud	5 <sup>th</sup> National Conference on emerging trends in Engineering, Technology	July 2018
4	Wetland Vegetation in sludge treatment wetland: A review	R.M Garud	Indian journal of environmental protection, Vol:39 (1)	1 January 2019



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**Best Teacher Award Winner**



**Prof. S. S. Magdum awarded as Best Teacher Award**



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**Our proud Toppers - 2018-19 (SEM-I)**

<b>Sr. No</b>	<b>Name of student</b>	<b>Marks (%)</b>
<b>B.E.(Civil)</b>		
1	Patil Aishwarya Mahaveer	78.75
2	Kharade Supriya Shivaji	77.125
3	Magdum Rutuja Pramod	73
<b>TY (Civil)</b>		
1	Katti Ekta Ishwar	68.88
2	Jadhav Shrinath Shantinath	68.0
3	Khond Rachana Ramchandra	67.13
<b>SY(Civil)</b>		
1	Chougule Manasi Shashikant	8.58
2	Dabade Mrunalini Anil	8.51
3	Chougule Arpita Rajendra	8.44





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**CESA COMMITTEE- AY -2019-20 –SEM-I**

Sr. No	Name	Post
1	Mr.Rajesh Ingale	Vice President
2	Mr.Akash Wadekar	President
3	Mr.Pranav Chandane	Treasurer
4	Prof. R.V. Jugdar	Faculty Co-ordinator



**Prof. Ranjit V. Jugdar**

**Faculty co-ordinator (CESA)**



**Mr. Rajesh Ingale**

**President, CESA**



**Mr. Akash Wadekar**

**Vice President, CESA**



**Mr. Pranav Chandane**

**Treasurer, CESA**





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**Summary of Activities carried out by CESA- AY 2019-20**

Sr. No.	Name of Activity	Date & Venue	Target Audience
1	CESA Reinstallation	28/08/18	Civil Seminar hall
2	Gurupournima Celebration	27/07/18	Civil Seminar hall
3	Teacher's Day	05/09/18	Civil Seminar hall
4	Nirmalya Collection Camp	18/09/18	Panchganga River
5	Water Testing Camp	04/09/2018	Kothali village
6	CAD Master and Quiz under technical event	30/09/2019	SVDDC

**Photo of CESA activities**





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**Photo of CESA activities**



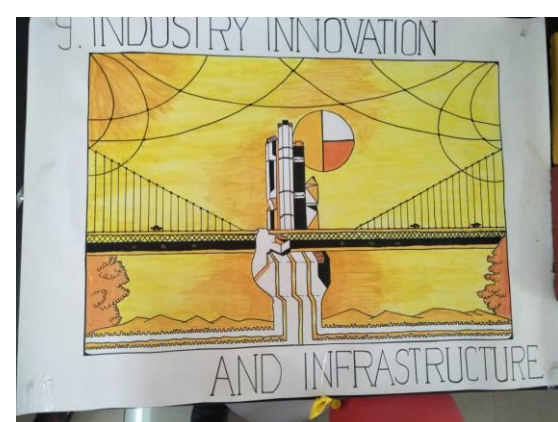
**Structural Audit for Flood affected Villages (Shirol Taluka)**





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**Project Exhibition in the Department**





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**Details of UG fellowship**

Sr. No	Name of Student	Class	University
1	Patil Shrishailya Anil	BE(Civil)	University of Rome,Tor Vergata ,Italy
2	Pallakhe Abhishek Avinash	SY(Civil)	University of Rome,Tor Vergata ,Italy
3	Patil Shrushtee Nitin	SY(Civil)	Teeside University,Middlebrugh, UK
4	Patil Purva Sanjay	SY(Civil)	Ural Federal University,Russia



**Photographs of Students under UG Fellowship**



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**Personality: *B G Shirke: A Vishveswarayya of Post-Independent India***



The policy of '**Total industrialization of civil engineering**' has surely the potential and capacity to solve country's acute and appalling housing and slum problems, without public funds. It also has the ability to contain and control other attendant well-known ills, evils and malpractices, which have today plagued the housing sector in India', says B G Shirke, an outstanding civil engineer, a pioneering entrepreneur and industrialist, a crusader for total industrialization of civil engineering, in short a visionary par excellence.

**B. G. Shirke** was born on August 1, 1918 in a village called Pasarni near Wai, a small town in Satara District of old Bombay Presidency. His father was Govindrao Sadashiv Shirke. He belonged to the Shirke clan, famous in Maratha history from the end of the 15<sup>th</sup> century. Chhatrapati Shivaji's wife Soyrabai whom he married in 1650 belonged to the Shirke clan. B G Shirke's mother came from the historic Mohite family in Sarkalwadi, a small hamlet in Koregaon Taluka in Satara District. After completing his primary education at Pasarni village and secondary education at Wai, B G Shirke went to Fergusson College in Pune in June 1936 for his college education. After passing the inter-science examination in March 1939, he joined the famous Pune Engineering College in June 1939. He passed his BE (Civil) in June 1943.

Right from the beginning, Shirke wanted to be his own employer. He started his first construction Company called the Supreme Construction Company on Vijaya-Dashami Day on September 1944. Shirke became a regular contractor for the Military Garrison Engineer's Offices and through a proven track record of efficiency, integrity and quality, he raised himself step by





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step from an eligible approved level of Rs.10,000 for doing labor contracts to a level of Rs 1,00,000 with the full approval and backing of the Army Authorities.

The turning point in his life was his marriage with Vijaya or Tai, daughter of Chimanrao Abajirao Shinde, one of the leading contractors of Kolhapur on 10 March 1947. She proved herself to be a great asset in helping her husband in enlarging his business through her good skills in management. She was a tower of strength to him till her death in 1980. The turning point in his life was his association with Shantanurao Kirloskar from 1962 to 1970. Shirke built one after another almost all Kirloskar factories in Pune.

Shirke became their most trusted turnkey contractor for all erection and construction activities. A landmark event was the grand opening ceremony at the Kirloskar Cummins factory with the Defence Minister, Y B Chavan, as Chief Guest in February 1964.

In order to give a concrete shape to his new ideas about total industrialization of Civil Engineering, Shirke formed Siporex India to manufacture Siporex as a Joint Sector Public Limited Company. In June 1966, he obtained the licence within six months by making 15 visits to Delhi. Commercial production of Siporex products began on February 20 1972. The most important products were un-reinforced blocks for load-bearing walls and partition walls, and reinforced slabs and lintels, all steam-cured under high pressure and temperature.



**Prefabs Building Technology in India**



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## **Incredible Modern Marvels of Civil Engineering**

Civil engineering tends to be massive in scale by its very nature, but some civil engineering projects are so impressive that they stretch the imagination of what is possible.

Here are some of the craziest, innovative, awe-inspiring Civil Engineering marvels that are an inspiration to all Civil Engineers across the world:

### **Burj Khalifa**



Burj Khalifa (that was known as Burj Dubai prior to its inauguration on January 4, 2014) is the tallest man-made structure of the world. 829.8 metre or 2,722 feet high, this sky scraper has become a symbol of Dubai in the United Arab Emirates. Chief Structural Engineer of this Dubai tower was Bill Baker.

Designed to be the centerpiece of Dubai and to help it diversify its economy from oil-based to service and tourism based, Burj Khalifa incorporates patterning systems of the Islamic





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architecture, and cultural and historical elements of the region. The spiral minaret rises from the flat desert base, has 27 setbacks in the spiralling pattern and grows slender as it rises.

To support the height of this tallest structure ever built, civil engineers developed a new structural system called the buttressed core - which has a hexagonal core reinforced by three buttresses placed in a 'Y' shape. This system provides lateral support to the building and keeps it from twisting. The central pinnacle pole that weights 350 tonnes was constructed from inside the building and taken up by more than 200 metre using a strand jack system. Burj Khalifa's primary structure is made of reinforced concrete.

To withstand extreme summer temperatures of Dubai, the cladding system of Burj Khalifa has 1,42,000 sq metre of reflective glazing and aluminium and textured stainless steel spandrel panels with vertical tubular fins. For exterior cladding, more than 26,000 glass panels were used. National Geographic, Discovery and Five channels have featured the unique design and engineering challenges of Burj Khalifa.

## **Capital Gate**



Another engineering marvel of the United Arab Emirates is the lean Capital Gate at Abu Dhabi. Inclined  $18^\circ$  to the west (four times than the leaning angle of the Leaning tower of Suurhusen in Germany), it is 160 metre (520 feet) high and has 35 storeys. Rivalling the Leaning Tower of



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Pisa, this masterpiece is also known as the Leaning Tower of Abu Dhabi. The Guinness World Records certified it as the 'World's furthest leaning man-made tower' in June 2010.

To counter the gravitational pull at the strangely leaning skyscraper, civil and structural engineers used a technique called pre-cambered core. This technique uses a concrete core reinforced with steel. The core is deliberately built slightly off-centre and is anchored to the ground using 490 piles drilled to 20-30m below the ground level.

It uses a diagrid (like the Beijing's National Stadium in China) to absorb and channel the forces built up by the gradient of the Capital Gale, wind and seismic loading. To achieve the inclination, the floor plates were stacked vertically up to the 12th storey and then, displaced one over the other by a difference of 300 mm to 1,400 mm. It took about four years to build the tower and it was inaugurated on December 21, 2011.

### **Gift City India**



India's answer to Downtown Dubai (of which Burj Khalifa is a part), Gujarat International Finance Tec-City (GIFT) city is under construction in the Gandhinagar District of Gujarat. A dream of our Prime Minister Narendra Modi, this under-construction GIFT City aims to set up new global benchmarks for Global Integrated City.



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It will have high quality physical infrastructure, such as electricity, water, gas, roads, district cooling, telecoms and broadband, to lure in finance and tech firms operating in Mumbai, Gurgaon and Bangalore and become the central business hub – not only of India but also for the World. It will include Special Economic Zone (SEZ), international education zone, entertainment zone, international techno park, Software Technology Parks of India, shipping malls, stock exchanges, service units and integrated townships.

Setting a new paradigm of Urban Planning, the GIFT City landmarks will include the GIFT Diamond Tower (expected to be completed by 2017), GIFT Gateway Towers which will have a rooftop restaurant and elaborate terrace gardens (inspired by Buland Darwaza), four GIFT Crystal Towers overlooking River Sabarmati, GIFT Convention Centre which will have an opera and a seating capacity of 10,000 people and a World Trade Centre.

The sophisticated planning is a test-bed to introduce several reforms and innovations in various fields, including sustainability, environmental protection, infrastructure development, delivery systems etc

### **Bandra-Worli Sea Link**



Also known as the Rajiv Gandhi Sea Link, the 8-lane Bandra-Worli Sea Link is a cable-stayed bridge that links Bandra in the western suburbs of Mumbai to Worli in the south of city. This Civil Engineering marvel is a part of the proposed Western Freeway that will ultimately link Western Suburbs to Nariman Point - the main business district of Mumbai. It was fully





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inaugurated on March 24, 2010. It has reduced travel time between Bandra and Worli from 60-90 minutes to 20-30 minutes during peak hours making the lives of commuters much easier.

One of its kind in India, it has two cable-stayed bridges. One is the 600-metre-long bridge at Bandra channel and other is the 350-metre-long twin tower at the Worli channel. Almost 43 storeys' high, its Cable Stay System uses 2,250 km of high-strength galvanized steel wires to support the 20,000-ton structure.

Built at a cost over 1,650 crore, it took 10 years for several teams of engineers from Canada, China, Egypt, Switzerland, Britain, Singapore, Thailand, Hong Kong, Serbia, Indonesia and the Philippines to complete this challenging project. Its lighting alone had a cost of Rs 9 crore and was done by Bajaj Electricals. Today, it saves about Rs 100 crore per day in terms of time and fuel.

### **Millau Viaduct**



An example of extreme engineering, le Viaduc de Millau in France is a cable-stayed road-bridge (with one summit at a height of 343 metre or 1,125 feet) across the valley of River tarn. Designed by structural engineer Michel Virlogeux and architect Norman Foster, it is the tallest vehicular bridge in the world.

The 4-lane steel roadway weighs 36,000 tons and is 2,460 metre or 8,100 feet long and 32 metre or 100 feet wide. It is also 4.2 metre or 14 feet deep making it the longest cable-stayed deck of the world. It is supported by seven concrete pylons. Each pylon has 16 framework sections and each section weighs 2,230 tons. These sections were assembled on site from 60-ton pieces that



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were 17 metre or 56 feet long and 4 metre or 13 feet wide. The pylons were then assembled and then, the decks were slide out across the piers using satellite-guided hydraulic rams. The decks were moved 600 mm in every 4 minutes.

There is a 3% slope from south to north curving with a 20-km radius. The viaduct was inaugurated on December 14, 2004 and was opened to traffic on December 16, 2004.

### **Laerdal Tunnel**



The World's longest road tunnel that has already been completed, Laerdal Tunnel connects the Norwegian cities of Laerdal and Aurland. Highway engineers dug through the solid gneiss rock the Hornsnipa and Jeronnosi mountains to make this 15 mile or 24 kilometre long road.

Besides excavation, one of the major challenges for engineers working on this road was how to make sure that motorists who go through this long, underground trek do not give in to highway hypnosis. Highway hypnosis is a mental state in which truck drivers or automobile drivers can drive to great distances responding to events on road appropriately but with no recollection of having done so. A study by Miles in 1929 suggested that these motorists fall asleep with their eyes open.

The Norwegian Public Roads Administration consulted a team of psychologists to make the roadway stimulating enough to keep the drivers awake. And hence, this tunnel has blue lights



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and gentle curves and is built in four sections to keep motorists engage through their 20-minute journey.

## **High Roller**



**Opened to public on March 31, 2014, the High Roller in Las Vegas holds the current Guinness World Record for being the largest observational wheel. 167.6 metre or 550 feet high, High Roller is nine foot taller than the Singapore Flyer and 107 feet taller than the London Eye.**

Located at the heart of the Last Vegas Strip, the High Roller has as many as 28 enclosed, roomy and air-conditioned spherical transparent pads that can hold 40 passengers at a time. Each pad or cabin weights about 20,000 kg. The pads have a couple of benches too.

The 30-minute ride is smooth and offers you in-cabin video and music shows on 8 flat-screen televisions and an iPod dock at the backdrop of 360-degree view of Las Vegas. The Wheel rotates on a pair of custom-designed spherical roller bearings that weigh about 8,800 kg each. The outer rim has 28 sections (each 56 feet or 17-meter-long) which have been held in place by four cables. High Roller was built by Arup Engineering, which were also consultants of the Singapore Flyer earlier.





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## **Nurek Dam**



Holding the current Guinness World Record for being the Highest Dam, Nurek Dam on River Vakhsh in Tajikistan is 300 meter or 984 feet high. It was completed in 1980. The Rogunskaya Dam across the same river was planned to be 335 meter or 1098 feet high but it has not been completed yet.

Unique in its own way, Nurek Dam has a central core of cement within a 304 meter or 997 feet high rock and earth fill construction. Located in a deep gorge, the dam includes 9 hydroelectric generating units that fuel 98% of Tajikistan's and 40% of Central Asia's power needs.

A symbol of former Soviet Union's infrastructure ingenuity, Nurek is one of the most complete RIS monitoring sites which see collaboration of both the USA and the USSR to monitor global seismic issues.





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## **Kailasa Temple at Ellora Caves**



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An engineering marvel reminiscent of the expertise of the master builders of ancient India, the Kailasa Temple is part of the rock-hewn monastic-temple cave complex called Ellora Caves. Believed to be built sometime in the 8th century, the gigantic Kailasa Temple was carved out of a single rock. It is an excellent example of Reverse Engineering and was chiselled from top down. It is believed that three huge trenches were bored into a cliff face and as much as 2,00,000 tons of rock was removed to reveal the temple. 164 feet deep and 109 feet wide, the temple has the largest cantilevered rock ceiling in the world.

There was simply no margin of error here. From its intricately carved panels to striking sculptural decoration, Kailasa Temple is a free-standing 2-storey temple with astounding complexity which is now a glowing example of civil engineering marvels.



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## **Washington Monument**



The Washington Monument is an obelisk built on the National Mall in Washington, DC to commemorate George Washington - the first President of America. Made of marble, granite and bluestone gneiss, it is over 169 meter or 555 feet high. Hence, it is considered the Tallest Stone Structure of the World as well as the Tallest Obelisk of the World.

Its base is 15 feet thick and its peak is just 7 inches thick. The monument does not use any reinforcing steel structure or mortar. Built like pyramids, the monument is kept together only by the weight of stones. Hence, it is also the Tallest Unreinforced Stone Masonry Structure in the World. First inaugurated in 1888, this engineering marvel was closed down in August 2011 when a 5.8-magnitude earthquake hit the Washington area and caused damage to it. It was opened again only in May 2014.

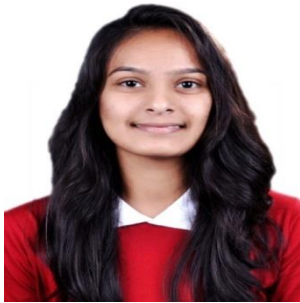


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**News Letter Committee**



**Prof. R. M. Garud, Faculty Co-ordinator**



**Ms. Sheya Gangaghar**  
**Ladies Representative**



**Ms. Shruti Patil**  
**Ladies Representative**



**Mr. Kunal Bhosale**  
**Student Representative**



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**SHARAD INSTITUTE OF TECHNOLOGY, COLLEGE OF  
ENGINEERING, YADRAV, ICHALKARANJI  
Department of Civil Engineering**

**Vision, Mission and Quality Policy and PEO OF Department**

**The vision of the Department**

To be a centre of excellence in various sub-branches of Civil Engineering like structural and environmental engineering to prepare professionally competent engineers with a lifelong learning attitude for the accomplishment of ever-growing needs of society.

**The Mission of the Department**

To prepare technically and professionally competent engineers by imparting quality education through effective teaching-learning methodologies and providing a stimulating environment for research and innovation

To develop professional skills and the right attitude in students that will help them to succeed and progress in their personal and professional career

To imbibe moral and ethical values in students with concern to society and the environment.

**The Program Educational Objectives (PEOs)**

**PEO1:** Demonstrate capabilities to develop an optimal solution to the real-world engineering problems by applying the theory-based practical approach of civil engineering and related engineering disciplines.

**PEO2:** Exhibit professional skills, ethical attitude and sensitivity towards society and environment

**PEO3:** Engage in life-long learning for successful adaptation to technological changes.