

# TCE Expression

House Magazine of TCE



**TATA CONSULTING ENGINEERS LIMITED**

*Engineering a better tomorrow*

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(team visuals in the last page)

*Dear TCEites*

*It gives me great pleasure to be a part of the re-launch efforts of the TCE Newsletter.*

*The overwhelming response to the 'Give Me A Name' Contest was a testimony to the sense of belonging we share with the organisation.*

*Engineering is in the air we breathe, the water we drink and the food we consume. While God has engineered this world with the utmost care, we continue to re-engineer it with 'good' and 'not so good' results, everyday.*

*Most times we engineer and innovate a better world for ourselves. Some times we are stymied by the efforts of our own engineering and bear the brunt of pollution, explosions and destruction. We learn from both experiences and so it shall be...*

*Our endeavor is to connect TCEites across offices and sites to join hands in sharing, learning and communicating the magic of "Life at TCE".*

*Happy Reading,*

*Yours Truly*

*Sowmya Raghu Raman*

*Editor-In-Chief*



**Corporate  
Communiqué**



**Theme  
Talk**



**Project  
Patchwork**



**Business  
Brief**



**Global  
Glimpses**



**Corporate  
Sustainability**



**Lighter  
Liaisons**



**Creative  
Clique**



**Voice of  
Victory**



**Technovation**



## **Revival Reflections**

*It is heartening to note that the TCE Newsletter is back in circulation. This was made possible by team work spanning all locations and offices which is the hallmark of TCE's work culture. TCE is soon to complete 50 years of its historical run and the revival of the newsletter is symbolic of the five decades of communication that has set the direction for years to come.*

*The diverse content and style of the magazine reflects the diversity in TCE and its ability to weave a unifying tapestry of engineering and technology.*

*TCEXpression is also meant to serve as a two-way communication conduit, at a time when ambitious initiatives are afoot for taking us to the next level of our ascent.*

*My first few months in TCE have given me a glimpse of the rich blend of talent and expertise that will be the driver for the organization's success.*

*TCEXpression intends to showcase the potential of TCE as well as TCEites that will help strengthen its 'DNA' for Engineering a better tomorrow.*

**Rakesh Gupta**

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***"Communication is the real work of leadership."***

***Nitin Nohria***  
***(Dean of Harvard Business School)***



The September'11 cover page design is a tribute to Sir M Visveswaraya and his notable expertise in irrigation and flood protection systems. *Sir MV*, as he was fondly called, was an engineer, scholar and statesman par excellence. He is best known as the creator of the KRS dam across the river Cauvery, which formed the biggest reservoir in Asia, when it was built. As the Diwan of the erstwhile Mysore State (now Karnataka), Sir MV founded the Mysore Soap Factory, the Parasitoid Laboratory, the Mysore Iron & Steel Works (now known as Visvesvaraya Iron and Steel Limited) in Bhadravathi, the Sri Jayachamarajendra Polytechnic Institute, the Bangalore Agricultural University, the State Bank of Mysore, The Century Club, Mysore Chambers of Commerce and numerous other industrial ventures. He was a visionary who encouraged private investment in industry and was known for his sincerity, time management and dedication to a cause.

Every year, Sir MV's birthday 15th September is celebrated as Engineer's Day in India in his memory.

**TCEXpression wishes all its readers a Happy Engineer's Day, *everyday*...**

# Delhi

## Project: 3X3 MW BUSERUKA HYDRO POWER PROJECT (BHPP), UGANDA

TCE has been entrusted by M/s Hydromax Ltd. with the job of Design and Engineering works and assistance in the supervision of the construction activities of 3x3 MW Buseruka HPP at Hoima District in Uganda which is in the process of implementation. The project comprises of weir, intake, desilting basin, power channel, forebay and powerhouse. The

detailed engineering of all the civil components has been successfully completed by TCE Delhi and overall 56 % progress of work has been achieved at site. Based on the outcome of TCE's performance, Hydromax Ltd. has entrusted TCE with another job for preparation of technical feasibility report followed by detailed engineering of "Waki Small Hydro project" in Uganda.



# Kolkata

## Project: Assessment of the Moira Madhujore Coal block Mineable reserves occurring below Aerotropolis Project Area for West Bengal Industrial Development Corporation.

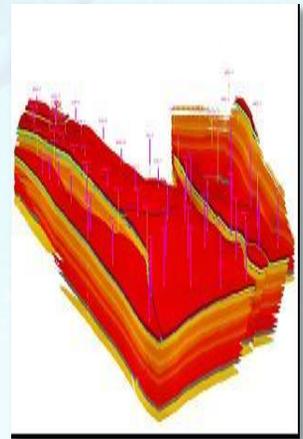
subsidence. With the help of this design and presentation made by TCE to the members, Ministry of Coal, Ministry of Civil Aviation and West Bengal Government the hurdles of implementation of both the Aerotropolis and coal mining was removed.



## Project: Preparation of Geological Report and 3D modeling for Ichapur Coal Block Raniganj Coal Field West Bengal for JSW Natural Resources Bengal Ltd.

Seismic Survey) for the first time in TCE using some innovative techniques.

Geological Report (GR) for Ichhapur Coal Block has been prepared compiling data generated from conventional core drilling method in conjunction with HRSS (High Resolution



Scientists dream about doing great things . Engineers do them. James A. Michener



## Jamshedpur

### Project: TATA steel

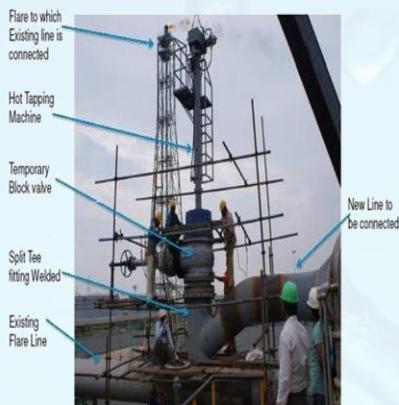
The cold rolling mill complex of 0.25 MTPA capacity at TATA Steel ,along with 0.5 MTPA Push Pull Pickling Line, 0.5 MTPA Acid Regeneration Plant and Roll Grinder was successfully commissioned at Tata Steel, Jamshedpur. TCE’s substantive role included EIA study, basic engineering, detail engineering, commercial functions, supervision of construction and PMC services for the entire project.



## Mumbai

### Project: EPCM Consultancy services for EURO-IV project at Manali Refinery of CPCL, Chennai

Chennai Petroleum Corporation Limited has three existing refineries at Manali, Chennai; each having one flare system to burn flammable off-gases from various refinery units during normal and emergency venting / de-pressurizing operations. New process units to produce cleaner fuels meeting Euro-IV emission norms are being set-up. Hence the new DHDT unit flare header (pipeline) had to be connected to existing Refinery-I flare header (pipeline), before commissioning. But economical constraints prohibited the Client from Refinery-I shutdown to carry-out this hookup for another year. TCE reviewed the possibility of connecting the new header to the existing header by hot tapping with the existing header in operation. With its implementation, the Client managed to avoid 16 days shutdown of Refinery-I, thus saving 5.8 crores.



### Project: Mumbai Harbour Channel and JN Port, Maharashtra

TCE is providing Project Management Consultancy Services (PMC) to Jawaharlal Nehru Port Trust (JNPT) for carrying out deepening and widening of Mumbai harbour channel and JN port channel for phase 1, which is by far the biggest capital dredging project in India. For the first time in the history of dredging tendering (in India), the costing of Capital Dredging (comprising of 61.25 million m<sup>3</sup> of soil and 0.5 million m<sup>3</sup> of undersea rock blasting in a 33.5 km long approach channel) has been scientifically done following the Construction Industry Research and Information Association (CIRIA) guidelines.

### Project: Solid Waste Management (SWM) & Treatment Facility at Taloja, Maharashtra

Mumbai Metropolitan Regional Development Authority (MMRDA) in association with National Environmental Engineering Research Institute (NEERI) has conceptualized a first of its kind regional landfill site with an integrated Solid Waste Management (SWM) & Treatment Facility at Taloja, MH, catering to 13 Urban Local Bodies (ULB). TCE was appointed to carry out Techo-Commercial Feasibility for this project by providing best combination of available technologies for SWM and processing inline with legal, commercial and technological viabilities.

**Project: Consulting Engineering Services for Proposed Tyre Manufacturing Plant at Perambalur, Trichy- Tamilnadu for MRF Limited**

The design engineering and construction management for this plant was successfully accomplished by TCE in a record time of 15 months. Few highlights of the project include three storied multilevel structural steel buildings (2 nos.) for mixing plants with highest elevation of 27m, 12,500 MT of steel fabrication work, 80,000 Cu. m of concrete work, approximately 4Km of structural steel internal pipe / cable rack. This project has been sent for LEED Certification and may get Gold rating.



## Construction

**Project: 2x600MW Kalisindh Thermal Power Project of M/s Rajasthan Rajya Vidyut Utpadan Nigam Limited at Jhalawar.**

Generator Stator (weighing 266MT) of Unit - 1 of 2x600MW Kalisindh TPP, Jhalawar has been successfully lifted and placed over STG Deck by Strand Jack Method on 11-07-2011. Lifting commenced at 10-15hrs and completed at 16-00hrs.

Other activities include boiler drum erection, condenser erection & alignment, ESP erection & alignment, rotary equipment such as air pre heaters, coal bowl mills, PA fans, SA fans, FD fans, ID fans, boiler feed pump, condensate pump, make up water pump erection and alignment, coal handling systems including wagon tippler, conveyors, bunkers (CHS) and Ash Handling System (ASH)



# Chennai

## Project: Consultancy services- Manufacturing plant for Toshiba-JSW Turbine and Generator Pvt Ltd, Chennai Tamil Nadu.

The plant will manufacture Sub critical and Super Critical Steam Turbines and Generators with capacities of up to 1000 MW. The plant consists of blade shop, main plant, administration building, canteen, miscellaneous structures, roads, drains etc. The total built up area of the Plant buildings is about 53500 sq. metres. TCE's services include project scheduling, monitoring, procurement, inspection and construction management supervision services. The Client has also awarded PMC services to TCE.

### Turbine & Generator Manufacturing Plant For Toshiba JSW Turbine & Generator Pvt. Ltd.



# Bangalore

## Project : 4000 MW Mundra UMPP, Gujarat

Mundra Ultra Mega Power Plant is the first 800 MW class supercritical plant consisting of 5 units of 800 MW each, set up by TATA power at Gujarat. The detail engineering of the plant was awarded to TCE which covers complete civil engineering of TG building, plant associated structures, cooling water intake and outfall, chimney design, high pressure and low pressure piping engineering, balance of plant, coal handling and vendor drawing review. The boiler island has been designed and supplied by Doosan, Korea and the Turbine island by Toshiba, Japan. Few highlights of the project include high steam temperature of 565°C-595°C and pressure 242 bar, implementation of ASME A 335 P 92 piping material for main steam/hot reheat systems, 2 X 50% motor driven boiler feed pumps-first in India with TCE actively involved in getting Regulation 281 of IBR amended, 60000 Cu.M/Hr concrete volute pumps-largest in India used for power plant

application, 7km long dredged CW intake channel, communication capabilities of numerical relays and elimination of hardwired cabling to DCS and many more. Unit#1 has been commissioned and awaiting synchronization. Work in other units is progressing at tremendous pace and TCE has been providing constant support vide design engineering, construction and commissioning support to the client to ensure cut-throat deadlines are met.



## Project : Bangalore Water Supply and Sewerage Project - Stage IV, Phase II

BWSSB Project (II) envisage augmenting Water Supply to Bangalore City by an additional 500 MLD to improve the per capita water supply from 105 to 150 litres and to increase the wastewater treatment facility from 650 MLD to 1053 MLD by installing waste water treatment facilities of 405 ML capacity. The project also comprises of distribution improvement component which aims at reducing the unaccounted for water from the present values to 16% in an area of about 300 Sq Km covering 3 lakhs connections, providing individual Water Supply and Sanitary Connection to Urban poor people residing in 362 notified slums of about 1 lakh connections, provision of Management Improvement Component namely SCADA to existing water and waste water treatment facilities under I, II & III Stage and expanding networks & Kaveri E-com bill payment facilities to provide customer friendly initiatives. Project also includes component to enhance customer relations and public awareness on water supply system and Human Resources Development. TCE's scope of services include detailed design engineering for the water supply, sewerage and distribution development, construction supervision and inspection services.





**TCE Raj Plaza** was awarded the detailed design engineering (PDMS 3-D Modelling ) against stiff global competition by METSO CORPORATION .

The following Work Packages were awarded to TCE

- White Liquor Plant ( WLP) by MESO, Sweden
- Pulp Drying Machine ( PDU) by METSO, Finland

Project site is located at Curitiba in Brazil. The project will be one of the world's biggest pulp mill in single location of capacity 1.5 million tons per annum .The Project is set up by Suzano Papel Cellulose, Brazil .Project Manager : Mr K Rammohan



**TCE Pune** office has now entered in to a new segment of providing design engineering for water treatment plant , and will be working on the project of WTP of capacity 500 MLD for "Pune Municipal Corporation".

"Centre of Excellence" for Industrial Business **TCE Pune**, got an opportunity to serve one of the largest industrial conglomerates in the world "GE Industrial Group" in India .This was an outcome of sustained market intelligence and relationship building by TCE Pune.



**TCE Bangalore** had acquired the Framing of Policy document in respect of monitoring particulate emission across Industries for JAYPAL Institute in the month of July 2011.

MEIL-Meghna Engineering & Infrastructure Ltd. is setting up a 50 MW Solar Thermal Power Plant at Ananthapur, Hyderabad. **TCE Bangalore** has been appointed as a consultant for this job. This is the 1st time that TCE is working on a Solar Thermal Power Plant.

**TCE Bangalore** has also been made Consultant for the Renovation and Modernization of existing power plant by Torrent Power Ltd for 110 MW E & F unit at Sabarmati Power Station-Gujarat.





★ MIDDLE EAST  
★ AFRICA  
★ ASIA

<p>Client - Doha Petroleum, <b>Qatar</b> Projects: EPIC of Flexible Intermediate Wax Tank for Oryx GTL EPIC of Tie into Common Sulphur Project for Dolphin Client: Dar Al Riyadh - <b>Saudi Arabia</b> Project: Ras Az Sawr Aluminium Smelter Project – 380 kV Transmission Line Client: MSCEB - <b>Saudi Arabia</b> Project: Residential city in Ubhor / Jeddah</p>
<p>Client : Hydromax Limited - <b>Uganda</b> Project: 3 x 3 MW Buseruka hydro electric project Client: Itezhi Tezhi Power Company Ltd - <b>Zambia</b> Project: 120 MW Itezhi Tezhi Hydro Power Project Client: ZESCO Ltd - <b>Zambia</b> Project: 360 MW Kariba North Bank extension hydro project</p>
<p>Client : Asian University of Women- <b>Bangladesh</b> Project: Campus Phase I Project</p>

## Community Services

TCE with the help of organizations like The Madras Voluntary Blood Bureau, Sanklap India, Voluntary Blood Donors Association, Jharkhand & Jamshedpur Blood Bank, TATA Memorial Hospital organized blood donation Camps. More than 200 TCEites from various locations participated by rolling up their sleeves for the good cause.



## Engineering Services

### Samarthanam, Bangalore

Samarthanam Trust for the disabled is constructing a school complex for the blind in Bangalore. As a part of CSR activity, TCE is providing consultancy services that include design of architectural and structural drawings, preparation of tender documents for geo-technical investigation, civil, electrical and mechanical works, evaluation of technical bids and identifying the agency to execute the works. Routine site visits are under taken during execution of the work.

### Ramanashram, Thiruvannamalai

Ramanashram is an old home institution at Chennai and TCE is involved in providing technical services for the installation of two numbers of 5TR AHU's for the archives building of the Ashram at Thiruvannamalai. Also the commercial offer submitted by the Lightning protection system (LPS) contractor for reinstalling of the damaged lightning protection conductors and spikes of the old DG building was reviewed and approved by TCE.

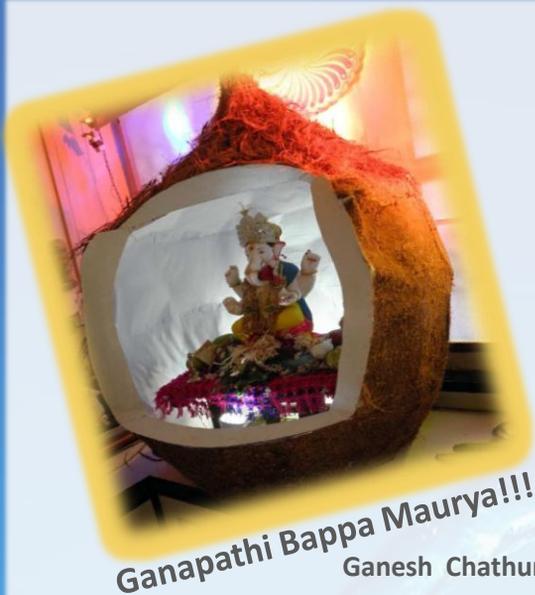


## Educational Services



TCE Employees have delivered lectures, presentations to engineering and Ph.D students. They were also part of assessment panels, external examiners and moderators at the various prestigious Engineering Colleges like IIT Mumbai, University of Mumbai, M N M Engineering College Chennai, UVCE Bangalore DCME, Pune. Also the TCE Construction Team conducted awareness on safety and health at various project sites and also aided in setting up of school for laborers children. Employees have donated old technical and non technical books to Noida Public Library, Noida.

*"This reflects the commitment of TCEites across the organization to CSR. Giving back to society is a noble gesture that comes from the values that we cherish at Tata Consulting Engineers".*



Ganesh Chaturti Celebrations in Johannesburg, South Africa

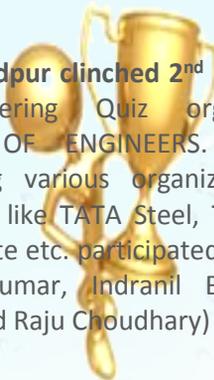
The Indian community in Johannesburg celebrated Ganesha Chaturthi on 4<sup>th</sup> September. Mr. Ravi Naik based in Johannesburg, TCE-South Africa, participated in the celebrations, which had a gathering of nearly 100 members.



Celebration Committee of TCE-Chennai conducts Special Friday every second Friday of the month, where all the employees gather and have lots of fun with games. Felicitation of outstanding performers of that month is done. The events conducted during June & July 2011 are Online Quiz, Queen of Sheeba, Random Quiz & Felicitation of outstanding performers. The theme for felicitation of outstanding performers is "If you are rewarded, I am proud of you, because we are a team."



**TCE Jamshedpur clinched 2<sup>nd</sup> POSITION**, in an Engineering Quiz organized by INSTITUTE OF ENGINEERS. 25 teams representing various organizations from Jamshedpur like TATA Steel, Tata Motors, NML, Tinplate etc. participated. (TCE Team: V.Naresh Kumar, Indranil Basu, Sachin Apturkar and Raju Choudhary)



In the spirit of keeping our Staff in good health both physically and mentally, TCE –Bangalore conducted the Carrom and Chess tournaments during the months of July-August 2011. The winners of the Tournaments will represent TCE at the impending Inter TATA tournaments that are going to be conducted soon.

The pictures of the tournaments do not really do justice to the crackling electricity and the shouts of exultation that was rang in the air. The winners were heartily congratulated and the promise of a bigger tournament was prize enough for them!

Shuttle badminton and Table Tennis tournaments are also slated for the forthcoming quarter and the excitement is already palpable in the office.

**MUTHU, ARE YOU NOT COMING TO SCHOOL TODAY?**

My mother’s scream shook me out of my bed. It was still dark in the house, as it was only quarter past five in the morning. Only the lantern kept near the kitchen provided some light to find my bearings. I quietly made my way to the road side.

The village was still asleep. I sat near the gate and watched with admiration the rangoli done by my mother with pure rice powder. Few ants lined up around the rangoli to have a taste of the rice powder. A squirrel also came from somewhere to share this delicacy. I was fascinated by the sight of the bushy tail and the striped back of the squirrel. I was wondering how this small squirrel could have helped Lord Rama to build a bridge across the ocean, as narrated by my teacher the other day.

As I was engrossed in this, few bullock carts passed by. The spotlessly white bullocks with neatly shaven horns were unassumingly drawing the rice bag laden carts without any fuss. At the same time, they seemed to enjoy the musical sound of the jingle bells tied round their necks.

The chirping of the birds, the buzzing of the bees, the flutter of the butterflies, the beauty of the red rose, the fragrance of the jasmine – all from the nearby garden filled my heart

with joy, wonder and admiration. A black stray dog came along after its morning walk, looked at me, wagged its tail with affection, moved a few feet away and rested. There was some commotion on the road and I noticed a cloud of dust. Through the cloud of dust, I could see a flock of sheep. As the flock came close to our house, I saw Muthu, my class fellow, behind the flock. He was wearing nothing above his waist, but he had an oversized half trouser below the waist. He had a long stick in his hand, with which he was efficiently controlling the flock. I shouted, “Muthu, are you not coming to school today?” Muthu happily replied, “No, I am not. My father is unwell. I have to take care of the flock. If my father gets well tomorrow, I shall come.” After saying this, he turned his attention to his flock. I was wondering, “How nice it would be, if I was like Muthu taking care of the sheep!” I shuddered to think of the stern arithmetic teacher giving me drab mental sums of additions and subtractions, which I never liked. Instead, how nice it would be to be with the flock of sheep and count the number of sheep, as Muthu must be doing. I kept looking at Muthu and the flock of sheep, till they turned towards the river side and vanished out of my sight.

*Mr. K.Gopalakrishnan, TCE Chennai*



**Born an Engineer**

“Creation”, constant process, dawn to dusk and dusk to dawn  
 “Destruction”, everlasting one, dawn to dusk and dusk to dawn  
 “Almighty”, Creator of Creations, beautiful universe  
 Designed one by one, beautify wonderful universe!

Born a Marvelous piece of art; amazing piece hidden in skillful art  
 Born ‘The Man’ wonderful design, His marvelous piece in adept art  
 Amazed His own creation, blessed “The Man” art of creation,  
 Watched His amazing creation, rested glancing The Mans’ creation!

Dreaming comfort, designed perfect designs enjoy life  
 Imagining designs, designed precise designs enjoy life  
 Invented marvelous pieces, attain total comfort  
 Created numerous pieces, treasure eternal comfort!

Born among “The Man” design creations meet all his needs  
 Born “The Engineer” among Man achieve all his needs  
 Man marked a day, triumph his own excellence in life  
 Man identified “Engineers’ Day” admire all his excellence in life!

May good wishes pours on this day; attain peace each moment and step  
 May waves of blessings embrace this day; attain love and bliss each moment and step

May blessings pours on your way; attain enduring happiness in life  
 May blessings showers all creations alike; attain eternal peace and comfort in life!

The English language has some wonderfully anthropomorphic collective nouns for the various groups of animals.

We are all familiar with a Herd of cows, a Flock of chickens, a School of fish and a Gaggle of geese.

However, less widely known is a Pride of lions, a Murder of crows (as well as their cousins the rooks and ravens), an Exaltation of doves and, presumably, because they look so wise, a parliament of owls.

Now consider a gathering of Baboons. They are the loudest, most dangerous, most obnoxious, most viciously aggressive and least intelligent of all primates.

And what is the proper collective noun for a group of baboons?

Believe it or not a Congress!

*Collected by Ms.Vidya Desai, - TCE Raj Plaza*

*K K Jayakrishnan – TCE , Bangalore*

## Wild South Africa

### *A Sojourn Through Lens*

I had heard a great deal about Johannesburg. When landed on an assignment, I was not disappointed. The lively OR Tambo airport, attractive skyscrapers and the multi-lane highways were just eye-catching. I remembered Gandhi's days from one of his books. A lot has changed.

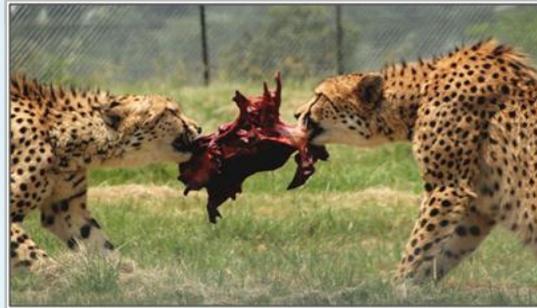
What remained unchanged was my fascination with the natural world and with wildlife. Reading 'Life' and watching 'Living Planet' made me increasingly aware of our planet, the living wonders and how special they are.

South Africa is wonderfully filled with natural beauty and wild life. If you love nature, this is your delight. I couldn't wait long. My camera prodded me to take a step forward. I did.

Lion Park near Johannesburg is neither a game reserve nor a zoo. Split into two areas, one for the herbivores such as zebra, giraffe, antelope and several other grass-eating animals, and the other area for the carnivores. I could capture a few great moments of animals freely roaming about. Threatened by our presence, a couple of zebra started running away.

In the carnivore camp, I was so close to the lions that I had difficulty in focusing. Nevertheless, the image I clicked was that of two lions sharing their prey. But in a 180 degrees departure, the cheetahs started fighting for their share of food. My camera went busy again and the outcome was fascinating.

I wasn't satisfied with my experiment on camera. The photos I shot can be taken by anybody. Nothing great about them. I wanted to click an image with wow factor. Patience paid and I did get an opportunity. On a Saturday, Sridhar requested me to accompany him to Nanhua temple in Bronkhorstspruit, about 100km from Joburg. I readily agreed for the opportunity to see vast open lands often sprinkled with animals like zebra, blesboks, giraffe etc. Visit to the temple was uneventful; me being closer to an atheist. Temple architecture was typical Taiwanese, nothing prodigious. Spending few hours there was a difficult task. As sun started settling, we were on our way back to Joburg. Shortly thereafter, I literally cried for halt. Sky was shimmering orange red. I could see a few Blesboks grazing. A heard of zebra was also seen in the distance. Sun was going down rapidly. I have had no time. But I clicked, clicked and clicked. Result: superb moments of exaltation.



*Text and Photos by : Ravi Naik  
Johannesburg, September 2011*

## AN EMOTIONAL FOOTPRINT

I was a part of the team that successfully climbed Mt. Deo Tibba (6001 m) in May – June 2011 as part of 50th Anniversary of Travellers Guild, Basirhat. It is situated in the Pir Panjal range of mountains in Manali, Himachal Pradesh. Our expedition team consisted of ten members with three HAPs (High Altitude Porters) and one cook. We left Howrah station by Kalka mail on 29<sup>th</sup> May 2011 and reached Chandigarh on 31<sup>st</sup> May. On the same day we reached Manali, On 2<sup>nd</sup> June, after finishing our packing we left for Chikka (with 19 loads and personal sacks) by a private vehicle and reached Power House via Jagatsukh and Khanol. The load which was about 430 kilograms excluding our personal gear was distributed between 6 mules. We started the trek for Chikka and established our first transit camp at the height of 10,365 ft on the left bank of Jagatsukh Nala.

We shifted to Seri on 3<sup>rd</sup> June and established our BC (Base Camp). Next three days we did 'load ferry' to ABC (Advance Base Camp). On 6<sup>th</sup> June four members of the team shifted to a higher camp and established our ABC at the height of 14,500 ft. with a mixed terrain of snow and ice, on the left side of Jagatsukh Nala. From ABC we started to negotiate the route with the HAP's and moved our loads from the lower camp to the higher camp for the next two days. On 8<sup>th</sup> June we (Sudip Roy and myself with three HAPs) moved to Camp-1 (summit camp) at Duangan Col with lots of load consisting of camping gear, food and utensils. After crossing a long snow field with some humps we moved to the steep slope section towards the rock pinnacle. At this section we found mixed structures of rock, snow and ice along the entire wall. The route crosses the Deo Tibba Glacier, with the gradient varying



ABC at the height of 14,500 ft.



Camp-1 at Duangan Col (16,500 ft.).



Waved the National tri color along with our Club & TCEs flag



from 70 to 75 degrees for around 500 meters. We fixed a 300 meters rope in this section for our climbing. Finally we established our camp on the north ridge of Norbu's Peak at an altitude of 16,500 feet.

We decided to directly attempt the summit through West ridge without establishing camp-2 and approached from the west ridge. On 9<sup>th</sup> June we got ready for our summit bid at 3 am. It was very cold and we were shivering even in feather jackets and wind proof gear. The sky was not clear. At that time there was light snowfall. We started at 3.55 am and reached base of the steep slope after 55 minutes of journey. Above Camp-1 snow & ice condition was good for climbing except the steep slope gradient varying from 75 to 80 degrees for around 600 meters. We fixed a 450 meters rope in this section. Below the wall there was hard ice covered with powdered snow. At the end of the wall it became almost vertical. At that time the weather was good but very windy. We enjoyed our climb with a majestic view of the Himalayas. Soon after climbing the wall we moved onto the snow field. After crossing three humps we did a 'Rope Up'. Below the summit gradient it was a 60 degrees climb on soft snow. There was an open crevasse in the ice fall. Keeping the hidden crevasse on the right, we used a 100 Meters fixed rope in the last section of our climb. Our adrenalin kept rushing upwards, heartbeats kept pounding faster and heavier, a feeling of joy and achievement was embracing us as we (Sudip Roy and myself with Harsh Thakur, Bhumi Dev Sharma and Ghanshyam) were moving inch by inch towards the peak. At 11.00 am we were at the top of Mt. Deo Tibba. We waved the National tri colour along with our Club & TCE's flag and took photographs of the neighboring peaks. After spending 25 minutes on the summit we descended one by one from the slope and safely reached Camp-1 at 3.30 pm. The weather had turned very bad and the visibility poor.

On 10<sup>th</sup> June we descended to BC via ABC from Camp-1 after winding up and cleaning the camp site. The others member at BC were waiting eagerly for our success as they had already got the news from the HAPs who reached earlier. We embraced each other and shared the success with tears of pleasure.



**Mr. Biplab Mohanty , and Ms. Shweta Das** of TCE Jamshedpur have been appreciated by TATA Steel for their contribution in the 'Value Engineering study in Power Sourcing to River water pump House" and "CRM BARA Complex respectively"

As a part of Professional development & membership Indian Institute of Valuers (IIV)-Pune had requested **Mr. Mr.Kannadhassun** to inaugurate their student forum in RCET (Roever College of Engineering & Technology). Mr. Kannadhassun inaugurated the event on 25th Aug'11 with a talk focused on "Value Engineering as a Career". The program was organized by the RCET college, Civil Engg. Department.



**Dr. Poonam Ahluwalia** - TCE- Delhi published a book (co-authored by **Dr. Arvind Nema** of IIT Delhi) titled, "Water and Wastewater Systems: Source, Treatment, Conveyance and Disposal" in August 2011.



Congratulations!!! **Ms Sangeeta Kapoor** – TCE-Delhi for winning the prize in slogan writing contest II ,organized by TATAWORLD held in World's Environment Month (June 2011).

**Slogan**

*"Be healthy and walk and sprint  
Save fuel to have green footprint  
Going green will save us power  
It is the need of this hour"*



Congratulations!!! **Ms Divya M N**-TCE-Bangalore for winning the prize in Eco Quiz contest IV, organized by TATA WORLD held in World's Environment Month (June 2011).



**Papers & Journals**

A paper titled, "A grey system approach for forecasting disposable computer waste quantities: a case study of Delhi" authored by **Dr. Poonam Ahluwalia TCE-Delhi** (& co-authored by Preeti Loonker Kothari -Degrémont Limited and Arvind K. Nema - IIT Delhi)has been published in International Journal of Business Continuity and Risk Management (Vol. 2, No. 3, 2011) in August 2011.The paper is part of her Phd work.

A paper on 'Selectivity of circuit breakers in low voltage switch gear' authored by **Mr. K C Keshre and Ms. S. Shelly** –TCE-Delhi has been published in "International Conference on Deregulated Environment and Energy Markets, DEEM - 2011" organized by Department of Electrical Engineering, Chitkara University.

A paper on "Utilization of Communication Capabilities of Numerical Relays and Meters in Controlling and Monitoring Power Systems " authored by **Mr. S. Jagadish,** and **Ms. D. R. Shanthi,** TCE-Bangalore has been published in "ELECTRICAL INDIA" magazine in September 2011 issue.

**Mr. Gharat and Mr. Venkatesh** from 247 Park – Presented paper on "Learnings from India's First Roller Compacted Concrete Dam at Ghatghar"

**My Journal**

On the occasion of the Silver Jubilee of the 2.3m Vainu Bappu Telescope, **The Indian Institute of Astrophysics** honored TCE for pioneering contribution in the success of the 2.3m Vainu Bappu Telescope and Observatory at Kavalur, Tamil Nadu. Dr. Vainnu Bappu was the father figure of Optical Astronomy in India. TCE, represented by Mr. Mohan Murthy, Mr. Suresh Shankarnarayana and Mr Arun V Ashtikar, participated, received the Citation (Certificate of Appreciation) and a memento at the hands of Prof. MGK Menon. Founder's Day Lecture was delivered by Prof. M G K Menon, followed by series of lectures on topics in astronomy and the indigenous development of 2.3 m Optical Telescope and Observatory at Kavalur in Tamil Nadu. TCE provided Concept to Commissioning Services - design engineering, construction supervision and commissioning services for the Observatory building, Dome and its drives, 2.3 m Optical Telescope with the Horse Shoe Mount and Mirror Grinding Machine. These services were provided from Special Project Group in TCE.



**Bhavini-Bharatiya Nabhikiya Vidyut Nigam Limited** (A Government of India Enterprise) had applied for the **PFBR Nuclear Island Building (500 MW PFBR)** for the ICI (TNCC) - UltraTech Award for Outstanding Concrete Structure of Tamilnadu - 2011. This was selected and the award was received on the Concrete day 6th September 2011 in Chennai. On this occasion, the contractor, consultant and technology developer was also recognised and awarded the certificate of appreciation.

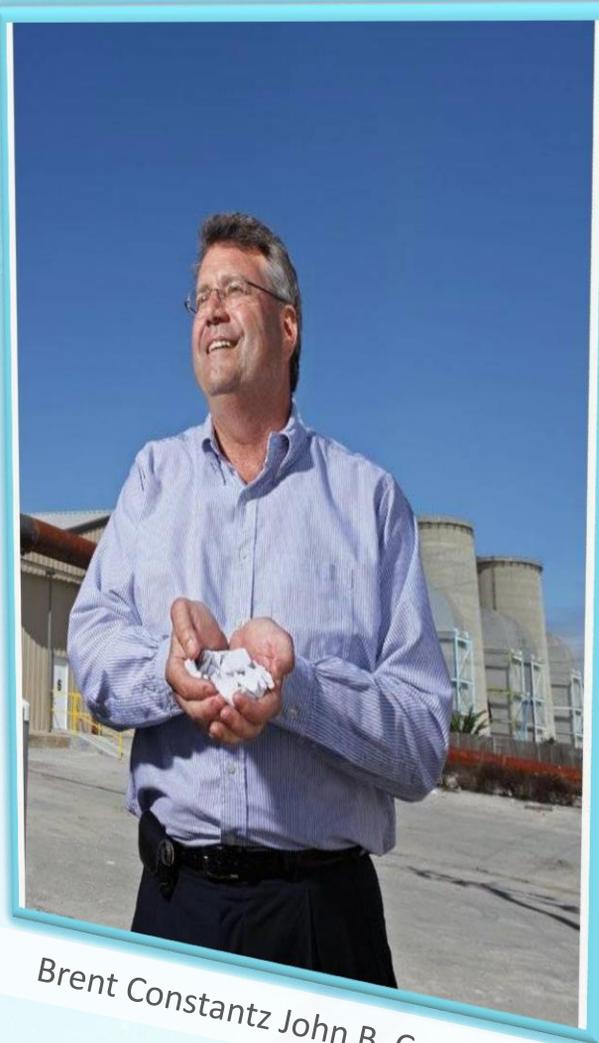
TCE was awarded "Award of Appreciation" as a consultant for the 500 MW Fast Breeder Reactor project, Kalpakkam". This is indeed a proud moment for TCE with the first integrated NICB structure designed by TCE being recognized.



## CEMENT FROM THIN AIR

A biologist's plan for radically reducing carbon emissions

Ever wondered how corals simply materialize their stony colored form underwater from nothing more than seawater? Well this is what boggled Brent Constantz a marine-biology student in the 1980s. Corals simply combine the calcium and bicarbonate already present in seawater into calcium carbonate, which crystallizes into an exoskeleton. Constantz spent the next couple of decades probing, developing and applying a similar trick in patching human bones; took out more than 60 patents, started two companies and now his bone adhesive is used worldwide. But this profound success did not stop him from thinking about the coral and in 2007 that very same thinking led him to an astute perception about another form of cement we use in the construction industry. We do know that limestone cement crystallizes in water, like coral. Add an aggregate like sand or gravel to the mix and the end product is cheap and durable concrete. But making cement requires heating limestone to about 2600 °F, which causes the limestone to release carbon dioxide. Reports from the US Department of Energy say that cement production beats fossil fuel consumption as the largest source of US carbon dioxide emission. And the demand is not reducing worldwide especially in developing countries like India and China where the migration of people from smaller towns and villages is thriving at peak magnitudes and the current infrastructure is struggling to keep pace with the development. Constantz notes as well that, unlike other sequestration schemes, his plan for capturing carbon emissions is proven. For at least 600 million years, sea creatures have been “sequestering” carbon dioxide in their skeletons, which have compacted over time to form all the limestone on Earth—the very stuff we now heat to make cement. Instead of turning stone to carbon dioxide, we can turn carbon dioxide into “stone,” locking it away forever in the concrete foundations of our cities. “When we think of climate change,” Constantz says, “the main lever we have is putting carbon back in the geologic record.”



Brent Constantz John B. Carnett

Source:

<http://www.popsci.com/bown/2010/innovator/cement-thin-air>



Divya



Sridevi



Asish



Shalini



Suhail



Dave



Arivalagan



Shamira



Khanchan



Kavitha



Tilotama



Vivek



Oindrila De



Anrishi



Punam



Monarao



Karthik



Bopanna



Maria Nancy



Sowmya



Shahameer



Rakesh



Soman



Poorva



Sharvari



Dhiral



Sukanya



Agashe



Anusuya h



Bharathi



Amit



Shushreela



Chandrika



Aneesh



# TCE**Expression**

## House Magazine of TCE

TCE**Expression** Magazine is a quarterly communication channel and an in-house newsletter for Tata Consulting Engineers, Pvt. Ltd., that strives to capture the happenings across TCE and keep every TCEite (& the world beyond) informed, inspired and involved.

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