TATA

TCExpression

TATA CONSULTING ENGINEERS LIMITED

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Smart• city

The city with brains

TATA CONSULTING ENGINEERS LIMITED

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TCE Corporate Communications

Engineering A Better Tomorrow

A note from the Editor

Tata Consulting Engineers' DNA is its strong value systems and the spirit of innovation. The TCE core values mean everything to the organization. We cherish our values and celebrate our spirit of innovation in this edition of TCExpression.

We would love to hear from you. Do send us your thoughts and ideas to TCExpression@tce.co.in

Mallika Sriraman

TCExpression
Volume 51, Issue 3 - December 2014

Reflections

The passion of every engineer at TCE is manifest in the creative inputs in the engineering solutions to customers. The process of innovation at TCE is more a quest for creative problem solving, a pursuit to provide smart solutions to customers. At the core is our customer and we weave our innovative pursuits around this very core. We believe this pursuit has won the confidence of our clients and helped us to become thought leaders in our sphere. Today we stand on the threshold of a vibrant growth story that spans several geographies ready to pitch in and add value with smart engineering. This issue of TCExpression talks about our pursuits in the smart city space, our challenging customer engagements in Gamsberg and other happenings.

Our focus for the year 2014 was Innovation. We gained recognition at the Tata Innovista and we were also positioned amongst the top 26 innovative companies at the CII Innovation Awards. We bid adieu to 2014 with a celebration of our innovative pursuits. Join me in welcoming 2015 on an optimistic note with so much promise. Here's wishing you all a very Happy New Year!

Sincerely yours,

J P Haran
Managing Director
Tata Consulting Engineers

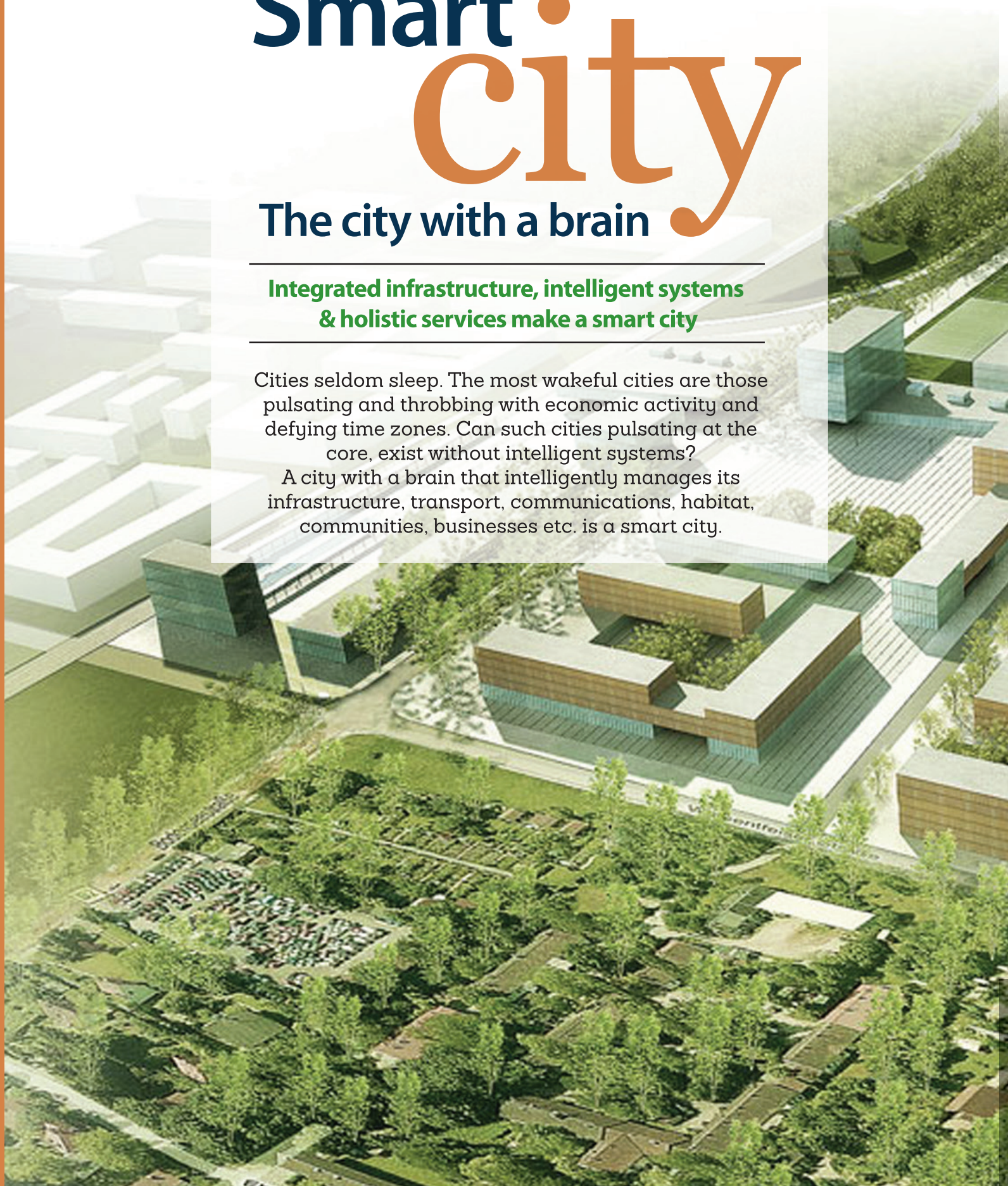
Contents

Smart city

The city with a brain

Integrated infrastructure, intelligent systems & holistic services make a smart city

Cities seldom sleep. The most wakeful cities are those pulsating and throbbing with economic activity and defying time zones. Can such cities pulsating at the core, exist without intelligent systems?
A city with a brain that intelligently manages its infrastructure, transport, communications, habitat, communities, businesses etc. is a smart city.



Smart cities nevertheless conjure up images with futuristic capsules and shuttles zipping through the air - a bionic era when the common man is nowhere in sight. This is far from reality. A smart city co-exists for the common man, various communities and businesses while paving the way for sustainable use of resources, for economic growth. Smart cities are built with the premise that we have one planet and we need intelligent systems to serve the voracious needs of a growing urban populace.

"A Greenfield smart city is a dream of an opportunity for any design engineer and master planner. However the real challenge is in the Brownfield smartcity, built by retrofitting intelligent systems and design into the existing ecosystems and legacies. The challenge is in weaving smart concepts into the socio-economic and cultural fabric of communities," says Dilip Sonwane, urban development expert, Infrastructure Business Unit, TCE.

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- Dilip Sonwane,
urban development expert,
Infrastructure Business Unit, TCE.

Building a smart city

The concept of smart city involves three phases – developing the integrated infrastructure, the incorporation of technology systems such as ICT systems to optimize the built infrastructure and service mechanisms to optimize the use of the infrastructure and technology systems. The infrastructure development phase consists of smart solutions in efficient built environment planning, water management, waste water and solid waste management, smart grids and sustainable energy management including renewable energy sources and transport planning and management. Establishing technology systems streamlines revenue collection mechanisms for utilities provided such as water and power, data management systems to bring about efficiencies in disaster management, maintenance, etc. The next phase is the services and facilities management for the population. Healthcare amenities, institutions, housing, recreation etc. are also part of the smart city hub. It is a concept of integrated living managed efficiently.

A city is as smart as it is sustainable. A smart city's ultimate stress test is its masterplan and engineering, designed with a 40 to 50 year window.

Making a smart city self sustaining

Do we need smart cities in India is an often debated point. A large developing country like India definitely needs to get its cities smartened in order to improve the livability standards. Chitranjan Kaushik, COO, Ecofirst Services Limited (a subsidiary of TCE), opines, " IT-enabled cities are construed to be SMART. However, it is rather the smartness in functionality that deems a city smart such as energy efficiency, smartly managing the peaks in energy demands through integrated systems, managing land and water resources efficiently etc. Smart city should be built based on a master plan and smart

engineering concepts. It is an integrated approach in design engineering to ensure a wholly integrated state-of-the-art city."

In the wake of huge capital investment costs in building smart cities, the service phase helps bring in the return on investment in a smart city. Greenfield projects such as the Delhi-Mumbai Investment Corridor (DMIC) are being made efficient right at the masterplan and design stage to be made economically viable. Dilip Sonwane, Infrastructure Business Unit says, " Greenfield projects like the DMIC is dependent on the economic opportunities the corridor generates. The Vikram Udyogpuri smartcity, (Ujjain, in the DMIC corridor that TCE helped to plan,) was originally conceived as a knowledge city. However, based on the prefeasibility studies, the corridor was fashioned as an industrial and knowledge city. Being a Greenfield project, our masterplan solutions were valuable for ensuring economic viability of the smart city right at the planning stage. However, Brownfield cities are made smart by bringing in integrated computer technology solutions to streamline revenue generating services. ICT investment provides valuable data for decision making, prefeasibility planning, and helps in finding gaps in transformation of existing cities into smart cities."

Smart cities are the open road to direct investments and economic upgrade of a region. An integrated township with infrastructure and service amenities for communities invites investment and provides direct and indirect economic opportunities. With well planned infrastructure and ICT systems, the city's capex expenditure can generate revenues through the services deployed, making it sustainable in the long run.

In India, developing smart cities as an extension of the existing cities will de-congest the existing urban cities. This approach is prudent in a country with a huge rural belt that can be brought closer to mainstream development and growth. Developing smart city hubs closer to major cities and linking them with efficient transportation systems is an option to consider. Today's C towns in India are likely to be the smart city hubs in the next decade. The smart city is a complex hierarchy of infrastructure, technology and service which require complex engineering, visionary planning and confluence of various entities with diverse capabilities.

"It is rather the smartness in functionality that deems a city smart such as energy efficiency, smartly managing the peaks in energy demands through integrated systems, managing land and water resources efficiently etc"
- Chitranjan Kaushik, COO, Ecofirst Services Limited (a subsidiary of TCE)

The backbone of a smartcity – Urban Transportation

Smart cities cannot exist as islands of excellence. The economic impact of the city relies on its connectivity to the rest of the land. In the Indian context, TCE's past experience in working with smart cities indicates that the key challenge of smartening a Brownfield city can be overcome by developing tier II cities and building connectivity through intelligent transportation systems. These satellite cities become the extended links of existing cities such as Delhi- Jaipur, Delhi Chandigarh. Linking the smart cities with the existing cities will decongest metro cities.

Vivek Singh, Head, Urban Transportation at TCE has some thoughts on the India-specific requirements of transportation systems for smart cities and its connectivity. "In several countries across the world connectivity through buses serve the purpose. In a highly populated country such as India, the pace and potential for development of even small cities cannot be underestimated. We have to plan for 40-50 years ahead. A small city may well grow to become big hubs in the future. The Delhi metro is among the most successful among urban transportation in the country. What is very critical are two aspects. One is the last mile connectivity between metro rail connections and the other is the linkages between satellite smart cities to the main towns and metros.

Indian cities with dense population should consider the Peak Hour in Peak Direction (PHPD) which is the maximum number of passengers that can be transported in the peak hour in peak direction while planning transportation systems.

For instance, Delhi Metro has a PHPD of 60,000 while buses have about 20,000 PHPD. In Mumbai, the suburban Churchgate - Virar project is planned with 90,000 PHPD. Thus a rail based system is a good solution for India, provided the last mile connectivity is planned efficiently and holistically. Presently, the last leg of the travel distance is missing in most urban towns were metro rail systems have been introduced. A holistic approach to connect several modes of transport will free congestion from the roads and reduce pollution as more people will use public transport."

Tata Consulting Engineers recently completed a Detailed Project Report (DPR) for rail system in Jaipur. According to Mr Singh, given present conditions in Jaipur, a light rail system would suffice. However, such infrastructure planning needs to be done with a 40 to 50 year horizon. The Delhi metro rail is a case in point when the populace of Delhi increased due to the improvement in connectivity

with a state of the art transport system. In essence, improved infrastructure by way of better transportation urbanises the city and increases economic activity.

The concept of bullet trains to interlink smart cities, satellite towns and metro cities is a solution being considered. At the same time the planning has to be done such that, different rail systems are sustainable by themselves, generating revenue and servicing the public well. Multi Modal transit hubs are required wherein all the modes of transport are integrated, enabling switching of one mode to another mode easily. These systems will be very beneficial for Indian cities . "A unified Transport Authority in India, which oversees all transport modes is required for each city so that, they have low carbon transport solutions which can be implemented," says Mr Singh.

TCE's past experience in working with smart cities indicates that the key challenge of smartening a Brownfield city can be overcome by developing tier II cities and building connectivity through intelligent transportation systems.

-Vivek Singh, Head, Urban Transportation

An indigenous approach for India

India has a huge growth potential and its requirements are unique. There is scope for a global company such as TCE to create a visionary plan for building a network of smart cities. TCE has worked with global partners in several smart city projects, and a combination of foreign and Indian partners will work well to build efficient systems required for a smart city in the Indian context.
Mr Singh cites is an example – "Running trains at 300 kmph will cost Rs 100 crore per km which is the outlay for bullet trains. The Indian railway technology for 200 kmph will not cost more than Rs 30 crore. Value of time in India is not as high as it is in other countries. In place of 300 kmph, dedicated tracks with trains running at 200 kmph can cover the commute between Jaipur and Delhi in 1 ½ hours while a bullet train will cover the distance in one hour at an additional expense of 70 %. "

India requires more R & D on railway to upgrade to increase speed and developing local capacity utilization. Indian cities are diverse and require unique approach in planning which will bring a substantial difference to the capex cost. TCE has often developed unique solutions to bring about cost efficiencies without compromising on standards. Combined with a self-sustaining, opex plan, a hub of smart cities with world-class connectivity can be a reality.

Mr Singh says," a smart city is one which uses mobility, and the space used for mobility, effectively. Like PHPD which clogs roads, the need of the hour is not more number of roads and subways but a well-planned approach to reduce the cars on the roads and encourage public transport. This can be done through planned infrastructure that helps people to walk the last mile connectivity, build paved pathways for cyclists and pedestrians and provide an inter-linked network of bus and rail rapid systems, prevent clogging of roads by putting a premium for peak hour driving and parking. Such measures will unclog the roads from cars, ease the life of city dwellers, address pollution problems in cities and make life easy for the common man.
A smart city is truly smart if it is self sustaining and at the same time, convenient and affordable to the common man."

Jitesh Brahmkshatriya, Masterplanning expert from Ecofirst Services (a subsidiary of TCE), sums up with a functional definition, "SMART Cities are:

- **Sustainability focused,**
- **Mobility oriented,**
- **Affordable,**
- **Resource efficient and**
- **Technology driven".**

Some observations on smart cities that TCE was part of:

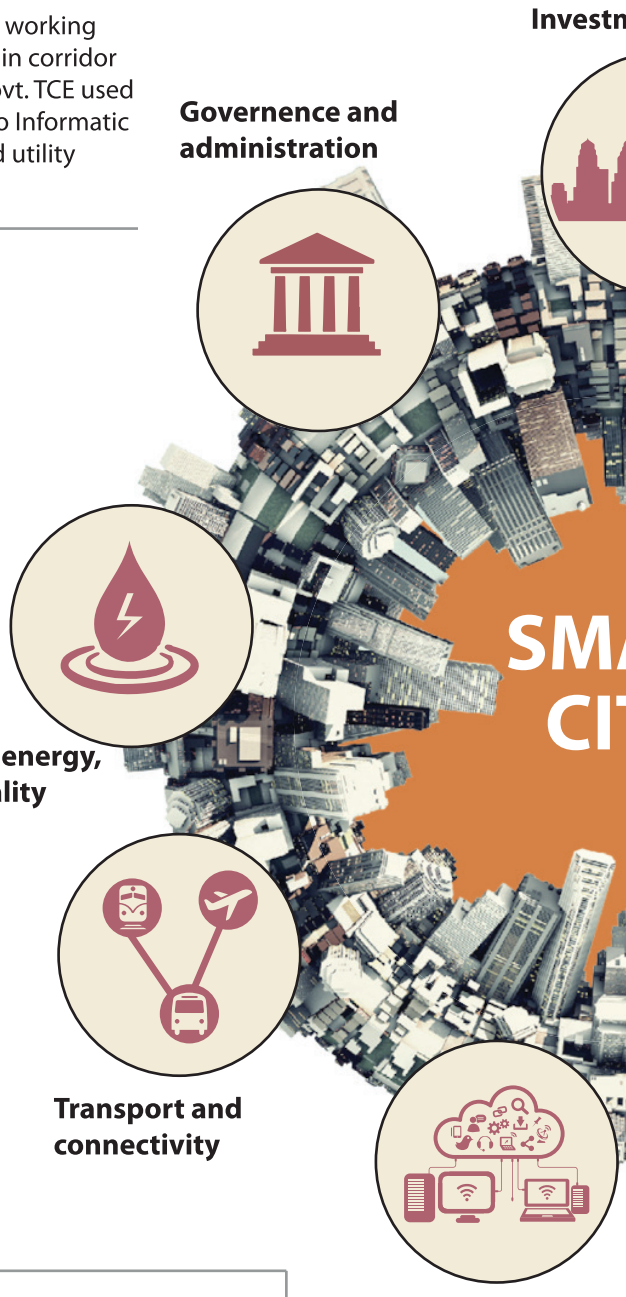
01 Smart city masterplan and engineering challenges involve working alongside several stakeholders. The Vikram Udyogpuri Ujjain corridor involved DMIC, the developer and the Madhya Pradesh Govt. TCE used advanced technology systems such as GIS substations, Geo Informatic Systems, Digital Terrain Modeling, 3D modeling, integrated utility planning, smart city ICT systems, etc.

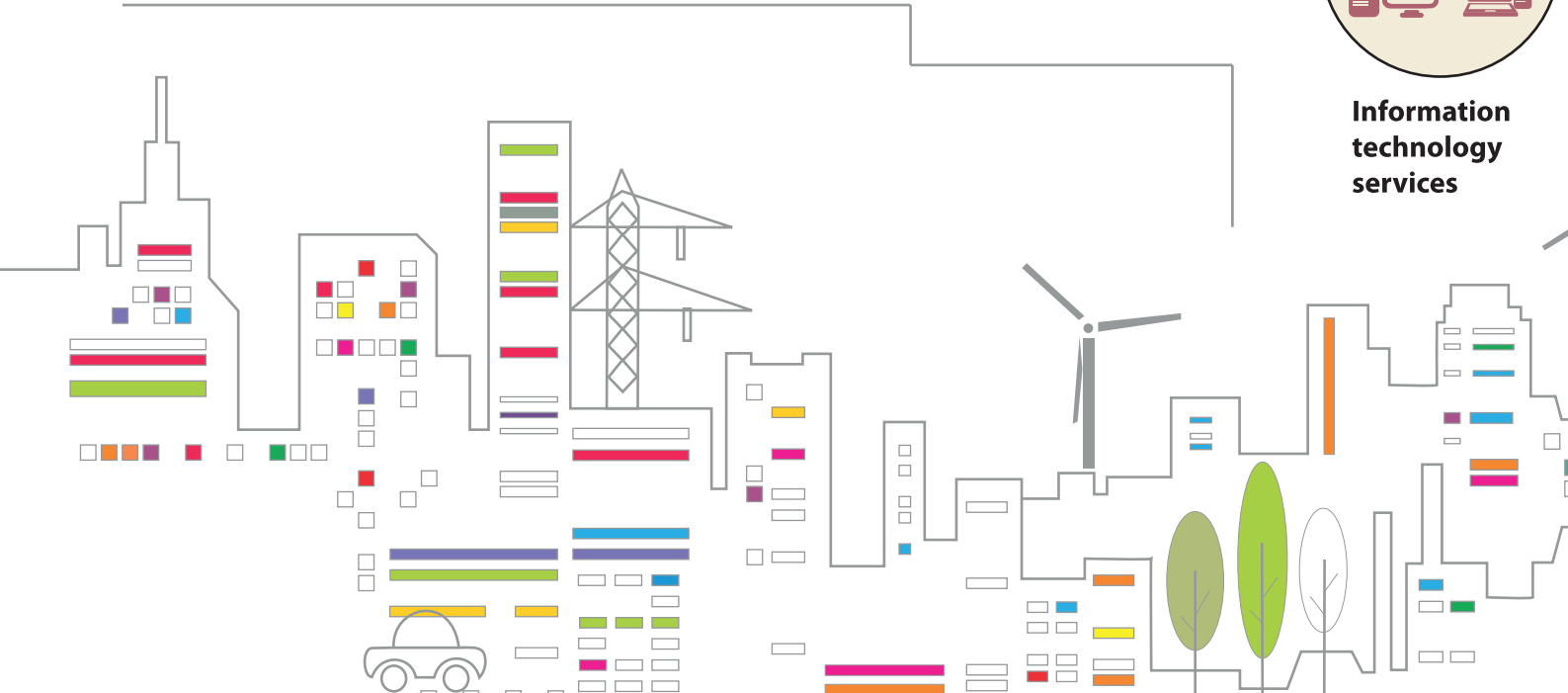
02

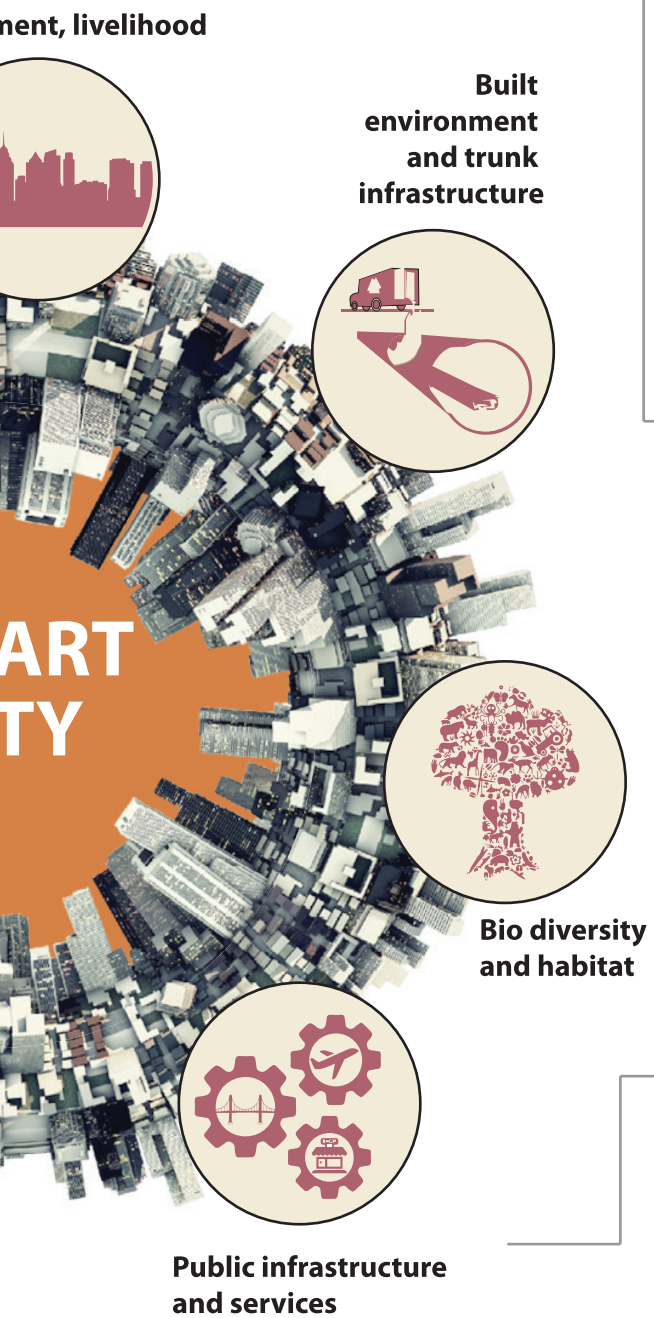
Still more complex is the EPCM aspect. Pre-bid challenges have to be ironed out at grassroots level administrative bodies extending to government offices. Working with multiple entities with specialized skills in order to transfer concept to reality is a challenge that TCE has managed well in the past. Such projects are supported by Government and international funding agencies, where documentation and standards are aligned to international requirements. TCE has worked successfully with the Madhya Pradesh Government, DMIC and funding agencies such as Japan International Cooperation Agency (JICA) and Japan Bank for International Cooperation (JBIC) etc to ensure smooth alignment of documentation as per international requirements and approvals with the local government.

03

The Gujarat International Financial Tech City is another master plan marvel of a smart city. TCE is associated with this prestigious project which is deemed among the world's most innovative projects in KPMG's list. The largest district cooling systems proposed for this project is a first of its kind in the country. Several innovative approaches have been incorporated in the design such as underground tunneling systems, etc. and TCE continues to add value to this smart city as engineering consultants.







04

The Durgapur Aerotropolis, comprised 1,700 acres planned adjacent to the airport and flanked by two major rivers. This posed a challenge in design and project management by way of integrated infrastructure for the township covering water, sewerage, drainage, solid waste management, fire, disaster management, electrical distribution, telecommunication, safety and security aspects. The solution proposed included rainwater harvesting and water management designed to retain 22 ponds covering over 11 hectares of area. These ponds are being preserved and over 300 ml of rainwater will be harvested in these ponds. The drainage system has been planned to route the surface water run-off through these ponds.

05

The Rajasthan Urban Infrastructure Development project stood out for its design and master plan of the cities concerned which won TCE the CNBC award for best engineering design. Problems and challenges in Indian cities are unique to each locale. Hence Brownfield smart city projects in India require solutions from the Indian perspective. The problem of unaccounted water in the water management and distribution, including leakages, pipe bursts and water pilferage, lead TCE to think of a solution that could be implemented by optimising space to replace the old pipelines and re-use some. Tanker technology, a unique solution employed successfully in Hyderabad, Chennai and Kathmandu, saw the company isolate the affected area from the supply network to inhibit the flow of the water. Later, a tanker of water was pumped into the distribution supply to create pressure in the system to detect the leakage.

Reported by Jyoti Prabha, Mumbai

Zincing In -

The Gamsberg mine story

The Gamsberg deposit is endowed with the element zinc, atomic number 30.
Strangely, it is after 30 years that this deposit is preparing for mining activity.

Aggeneys, is a little oasis of a town tucked away in South Africa and surrounded by peaks, hills, and imposing inselbergs. The town of Aggeneys, surreal with its planted trees, lawns and golf clubs, supports the Black Mountain mines. This little town exists amidst arid zones and inselbergs with the most complex geological strata. Inselbergs are isolated mountains that rise abruptly from the plains. Among the most incredible terrain is the Gamsberg inselberg, a highly complex and diverse geological structure with concentration of zinc and lead.

Black Mountain Mining (Pty) Ltd , a subsidiary of Vedanta Resources plc who are world leader in zinc production. The company plans to mine the Gamsberg zinc which is one of the world's largest undeveloped zinc deposit project. The Gamsberg deposit has been in existence for 30 years with several feasibility studies tendering the mine to be an economically unviable proposition.
Tata Consulting Engineers was appointed to do a definitive feasibility study and evaluate recommendations for developing the mine.

Aggeneys, a green oasis in a mining desert.

Bridging the gap between geological complexities and economic realities

The prime challenge that made the zinc-rich ore a near but far-fetched dream to Black Mountain Mining was the complexity of the terrain. The ore itself was positioned at a depth of 200 m. cutting through the overburden to get to the ore implied a high capex expenditure. The deposit of zinc, concentrated as it were, was low grade zinc and high in manganese content. The market imposes a penalty for manganese which affected the margins severely making the mining operations economically unviable. The challenge here was bridging the gap between economic realities in terms of price forecasting through the life expectancy of a mine, addressing technical realities due to the diverse and complex geological structure, engineering design possibilities and on ground commissioning.

"The mine has remained unexploited for 30 years. Previous studies focussed on a step by step approach. Tata Consulting Engineers focussed on technological interventions to turn around the project. Dr Tapan Choudhury, Head, Steel Metals & Mining, Business Unit, TCE, Kolkatta and his team have spent months on this project to come up with their recommendations.

"As we see it, the two major bottle-necks to project viability arise from the capex expenditure for excavation to get to the ore and the low margins in selling price of the ore extract due to manganese. For the first problem we have applied mine planning software and geomodelling systems to determine the mining techniques relevant to the terrain. This will help us get to the ore in a cost effective manner. The other plan is to apply mineral beneficiation techniques and operation strategies to extract high zinc concentrate and manganese concentrate management. In effect, TCE has recommended a mine planning strategy to reduce capex costs for excavation, a mineral beneficiation strategy to comply with South African regulatory standards and ensure margins on the end product and finally use technology innovations to effectively recycle waste.

Bracing for the Challenge

TCE has brought with it a consortium of experts to carry out its recommendations and manage the project from concept to commissioning. TCE completed the detailed feasibility report (DPR) and the recommendations serve as a benchmark for the planning phase.

"The mining industry in South Africa has some unique regulatory standards that need to be adhered to. The mining location itself is on a mountain and there are safety challenges as well. Aggeneys is a remote location and finding specialised skills is extremely difficult. Added to this is the critical mandate of execution within planned capital outlays and timelines. The entire TCE team has geared to take this project head on and show the world nothing is impossible. This has always been the spirit and passion with which teams at TCE work. Several measures are in place to ensure easy logistics and handling the softer aspects of the project management. Sukanya Chakraborty, who has been managing the studies so far says, "The project involves working in a multi-cultural environment and working out of different time-zones. The BMM team was operating from Aggeneys and Johannesburg, South Africa, TCE team works out of the TCE Kolkata office and are joined by other partners from South Africa and Polannd. We have established communication channels to manage time zones and updates on project. Workshops have been conducted to facilitate and sensitise the teams to each other. This is an exciting opportunity for us. The teams are looking forward to see the project through".

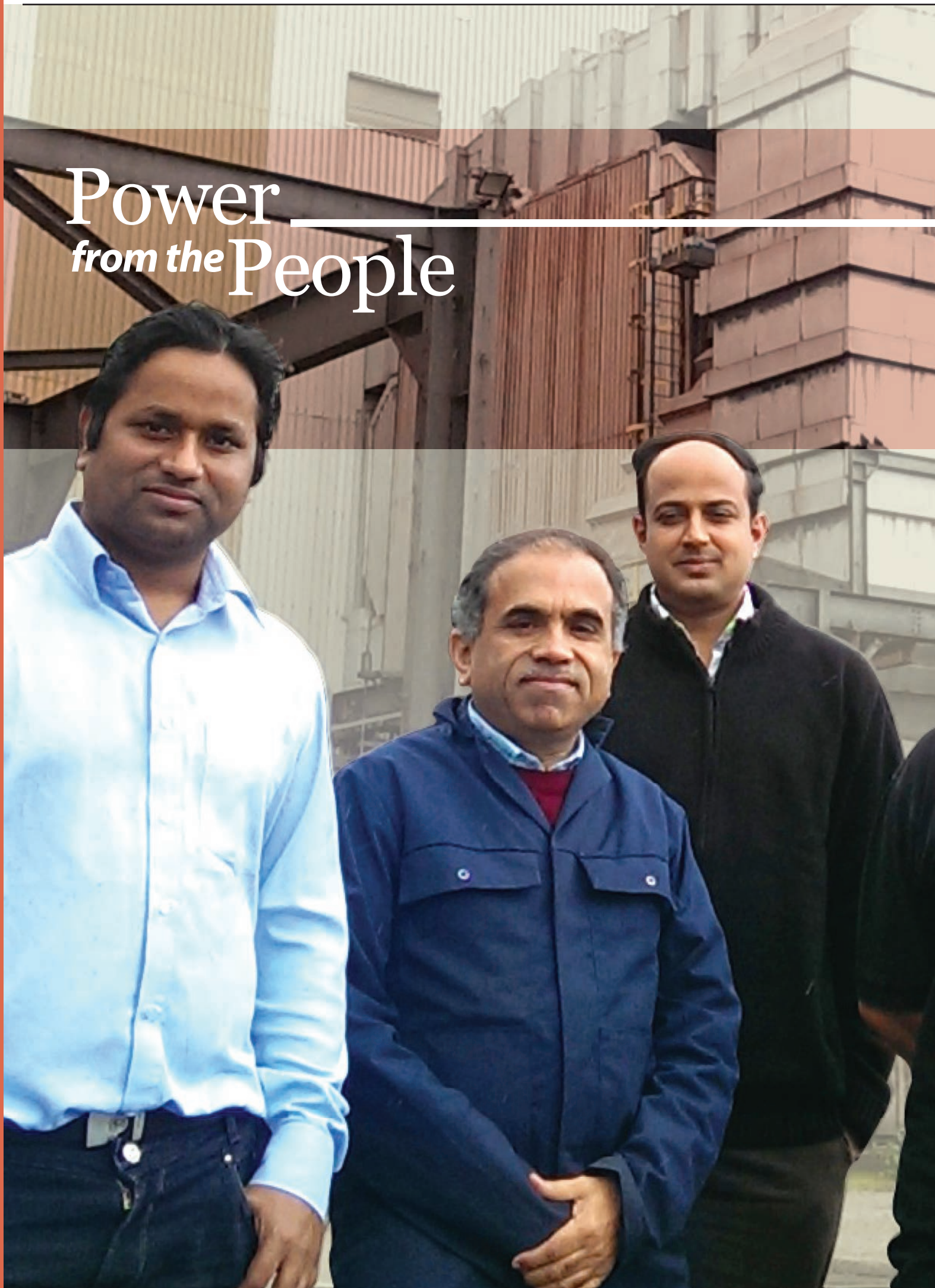
On a reassuring note, Dr Tapan Choudhury says, "This is indeed a project on a grand scale. We are absolutely certain that this will turn out to be a standing example for innovation and smart engineering. Our engineers are truly excited. Even at the DPR stage, the engineers worked with great dedication and passion to come up with innovative solutions. The value engineering we provide in this project will set a benchmark for all such projects. "The benchmarks for TCE are set high and so are the expectations in terms of imaginative engineering.

TCE's core innovation to make the Gamsberg mine a profitable one is through mine planning strategies to get to the zinc ore 200 m deep cost efficiently; introduce process technology in plant engineering to upgrade the zinc.

Tata Consulting Engineers is on the threshold of yet another landmark story, the teams are geared to zinc-in to Aggeneys in the remote inselberg of Gamsberg.

Reported by Sukanya Chakraborti, Kolkata

Power *from the* People



Tata Steel Europe undertook upgrade of its power plant at Port Talbot last summer. TCExpression brings to you a story on the experience of the teams from Tata Steel Europe and TCE at the Port Talbot facility. The story is reproduced from Tata Steel Europe's newsletter, 'The Journey'.

A team from Tata Consulting Engineers spent six months at Tata Steel - Europe, Port Talbot power plant, to help bring the area's processes back to benchmark standards. Group leader Ravi Shankar, said: "We have each come from different parts of the company in different parts of India – the first time we came together was at the airport! But we all bring different skills and different areas of expertise, including some from Tata Power directly. People here (Port Talbot) have been very willing to accept our help and our expertise – There is a real sense of people here having a thirst for knowledge. "A boiler is like the human body – You can't just put anything in it and expect it to perform at its best! We now operate with different fuels such as Basic Oxygen Steelmaking (BOS) gas, but the standard operating procedures have not kept up." Jeff Lugg, project engineer, said: "These guys have fitted in brilliantly. They've spent lots of time with the boys at the sharp end in the control room, understanding what they do and why. They've really opened our eyes as to how to get the best out of our existing assets and have helped understand the effects of our actions – good and bad". And the benefits are flooding in already, with an extra 1.5 MWH being produced from boilers six and seven. And it's not just in power output, "We're using 25% less water and 10% fewer acids and chemicals in the treatment of incoming water, which we turn into steam." Simon Powell, operator in the power plant, added: "We'll be sorry to see them go – they've been a fantastic help to us.

We've kept all of their contact details in case we need to check anything out once they've gone!" And what about the legacy that the team leaves behind? Ravi smiles: "It is in the hands of the people here," he says. "I think they have more knowledge now, and they are certainly more confident about the decisions they are taking. I think they have better processes and better capability through some of the training we've taken them through." Ravi said that the team's time in Wales has been very rewarding: "We have been made to feel incredibly welcome, not only in work but also In the Port Talbot community, where we've all been living. "It has been fantastic to be part of this team, and we'll miss people here. We're hoping to come back and see that they've taken the place even further forwards". Energy Works Manager, Martyn Garrett added: "We will continue the relationship with TCE in the future; We have just started our journey in improving our understanding of the process and equipment. Many thanks to the TCE team and best wishes for a safe return home."

"We have each come from different parts of the company in different parts of India – the first time we came together was at the airport!"
-Group leader Ravi Shankar.

"We will continue the relationship with TCE in the future"
-Martyn Garrett

Tata Consulting Engineeers Limited has helped smarten several cities and also build new ones. The Rajasthan Urban Infrastructure Development Project (RUIDP) by TCE was recognized for best design. We have also left our mark in India's pride - The Gujarat International Financial Techcity and the ambitious Delhi-Mumbai Investment Corridor. Whether it is planning for an aerotropolis or holistic urban transport or building sustainable townships - we do know a thing or two on how to plan and engineer cities with a brain. Greenfield or Brownfield, we help in master planning cities that are:

S. sustainable
M. mobility focussed
A. affordable
R. resource efficient
T. techonology driven

TATA CONSULTING ENGINEERS LIMITED

TATA

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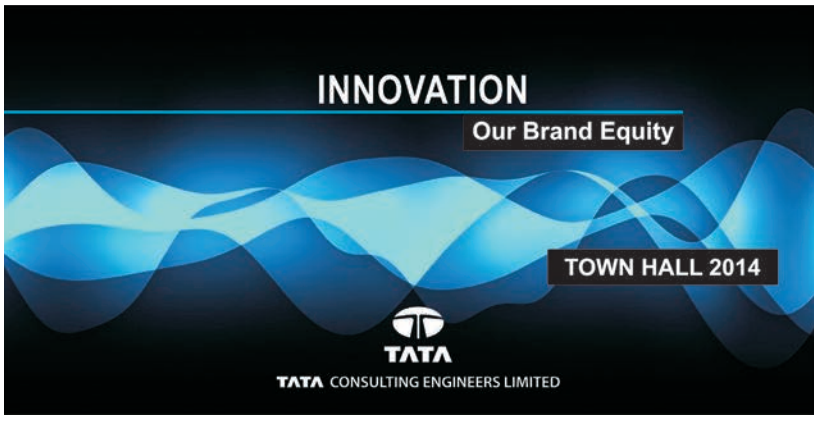
TCE buzz

The Annual Townhall meet, a forum for two-way interaction between employees and management was held across locations.

Delhi

Mumbai



Delhi

Jamshedpur

Mumbai

Business Brief

Twittering about and Like-gating

Social media channels like Facebook & Twitter make it easier to connect with a diverse populace around the globe, providing a human voice to the organisation. TCE has devised a social media strategy to leverage these powerful interaction forums to drive its goals. The Facebook page was launched with a CSR campaign to sensitise people to personal safety. The campaign, "What's your PSP", post your "Personal Safety Pledge" on the timeline reached over 2500 people (organically) between 5th to 18th Sept. The TCE volunteering post engaged about 1300 people in two days. The Likes have seen organic growth of about 100% month on month since launch in mid-September. Facebook serves as a platform for direct engagement to build a community around the company's interests.

The Twitter page launched as a beta version, though in a nascent stage of engagement, has a steady following and retweets. The TCE Twitter handle is @TCE_New and serves TCE news, information and knowledge.

CSR – A Way of Living

Mr. J.P.Haran, Managing Director TCE shared insights on the fundamentals of CSR with students and managementat the conference on CSR- Approaches and Practices for Inclusive Growth held at Shri Dharmasthala Manjunatheshwara Institute for Management Development (SDMIMD), Mysore. As the keynote speaker, Mr. Haran drove the importance of bringing about a transformation in the mindset towards CSR and carry the responsibility of upholding CSR practices in the corporate world.

Project Patchwork

Mumbai

TCE is appointed by a multinational company for carrying out detailed engineering activities of civil / structural works, mechanical, electrical, automation and other engineering, procurement and construction activities for a Greenfield paper project.

TCE will undertake overhauling & refurbishment of the existing de-inking plant, for Hindustan Newsprint Limited. HNL has appointed TCE as a Project Management Consultant (PMC) for the successful implementation. TCE will carry out a study of the existing system and a brief report has to be submitted with proper scope identification and cost estimates to HNL. TCE will provide recommendations to implement the project in a cost effective manner and help increase the output capacity of newsprint grade pulp from 100tpd to150tpd.

Hazel Mercantile Limited (HML), a part of 'Groupe Veritas' [GV], is focused on International Trade & Distribution of Chemicals - Petrochemicals / Polymers / Paper & Paper Boards / Rubber / Heavy Distillates. The Subsidiary of HAZEL MERCANTILE LIMITED, Hazel Middle East FZE has appointed TCE to carry out Detail Project Report and Detailed Engineering for their Chemical Trading Terminal in Dighi.

The 700MWe Pressurized Heavy Water (PHWR) type nuclear power plant being set-up by Nuclear Power Corporation of India Ltd (NPCIL) located near gorakhpur in haryana, TCE has been appointed as the engineering consultant for the project. TCE's scope includes engineering services for design and engineering of specified portion of civil, process, mechanical, piping, electrical, control & instrumentation, ventilation & air conditioning, piping stress analysis, supports, embedded parts etc. and 3D modeling for GHAVP-1&2.

Delhi NCR region

Ukai High Level Canal Small Hydro Power Project, Gujarat

M/s Ronak Hydro Energy Private Limited has envisaged development of Ukai High Level Canal Small Hydro Power Project (UHLC SHPP) in the Tapi district of Gujarat under the existing policy framework of the Energy and Petrochemicals Department of the Government of Gujarat, and entrusted engineering consultancy services to Tata Consulting Engineers Ltd. UHLC SHPP would be constructed immediately on the downstream of an existing Head Regulator of Ukai High Level. The installed capacity of UHLC SHPP would be 3.26 MW with two S-type full Kaplan turbines. TCE will carry out detailed studies of the project, assess techno-Economic viability of the project, and prepare a Detailed Project Report and EPCM services.

Jharkhand Urban Infrastructure Development Company Limited (JUIDCO) and Tata Consulting Engineers sign agreement for sewerage and storm water drainage systems in Jharkhand

This will be first large scale sewerage and stormwater drainage project in Jharkhand by TCE. Tata Consulting Engineers Ltd will provide Detailed Project Report and Project Management Consultancy for integrated sewerage and storm water drainage systems for 13 towns in Jharkhand. Out of the 13 towns, 8 towns are around Jamshedpur while the remaining 5 towns are around Dhanbad. The agreement was signed between Mr P K Sinha, Project Director and Chief Engineer, JUIDCO and Mr Vikram Bapat, Business Unit Head-Infrastructure in the presence of Mr Santosh Paswan, Hon. Minister for Urban Development and Mr Ajay Kumar Singh, Secretary for Urban Development, Govt of Jharkhand. The Hon. Minister, Mr Singh briefed media on the importance of this project, which would go a long way in improving the infrastructure in these 13 towns. Kick off meeting was conducted in presence of Secretary, Project Director, Urban Local Bodies (ULBs) and TCE team.

Jamshedpur

Tata Consulting Engineers assignment for Design Review; Project Management & Construction management service for Coke Oven Project, Battery#2 at TATA Steel Limited, Kalinganagar is under Phase –I of 6 MTPA expansions and Battery#2 is nearing commissioning stage.

Bangalore

Bajaj Hindusthan Limited (BHL) has retained the services of Tata Consulting Engineers Limited (TCE) to provide Owners Engineering Services for installing a 3 x 660 MW coal fired supercritical thermal power plant in and around villages of Mirchwara and Burogaon in tehsil Mahroni, district Lalitpur, in the State of Uttar Pradesh. Further TCE shall also provide services as separate assignments for:

a) Preparation of a Project Status Evaluation Report [PSER- Due Diligence] to enable LPGCL to obtain additional funding from domestic Financial Institutions.
b) Basic and Detailed Engineering including procurement support for Augmentation of Raw water intake system

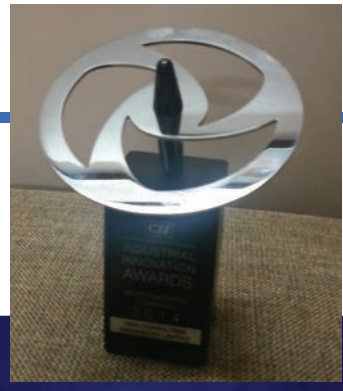
In this Project, TCE has introduced/conceptualized several innovative designs, which are likely to become industry practice in India.

NCC Power Projects Limited has appointed TCE as an engineering consultant for its 2 x 660 MW Super Critical Units at Nellore district. TCE scope includes pre-contract engineering services and post EPC contract award engineering services covering review of contractors engineering documents, review of procurement documents and review of quality assurance.

In this project, new technologies such as Stacker reclaimer using bend conveyors, electrical GIS system for online gas monitoring system in transformer and probes to calculate life of the transformer, sea water intake using HDPE pipe from offshore point instead of regular channels and electro-chlorination system for various BOP packages are being implemented by TCE.

TCE triumphs

TCE recognized at the CII Technology Innovation Awards 2014



Left to right: Mr Kris Gopalarishnan giving away the certificate and trophy to Mr Mahesh Marve & Mr Anjan Bhattacharya of TCE

Tata Consulting Engineers Limited was presented with a certificate and trophy as a contribution to innovation at the CII Industrial recognition Awards 2014 held at the Technology Summit & Knowledge Expo at Noida. Over 100 companies participated in the awards program. The first round of elimination selected 65 companies. In the final round, about 26 companies were called for a presentation to a grand jury. TCE was among the final list of companies recognized for its innovation. Congratulations to the Technology team and all others who contributed to the Grand Jury presentation and Knowledge Expo!

Dr Sakthivel's technology presentation ranked No. 2 in Hottest Articles in Sciencedirect

Technical article presented by Dr. S. Sakthivel on Synthesis of solid state of nano mineral particles was selected and ranked 2nd position on the TOP 25 Hottest Article by Sciencedirect Team, Elsevier Publisher, Netherlands.
Nano-particles find application in several areas including ceramics, paints, cosmetics, microelectronics, sensors, textiles and biomedical, etc. The article reviews nano-particles synthesis and a few common strategies to overcome stability issues.


ScienceDirect

THIS CERTIFIES THAT

S. SAKTHIVEL

SOLID STATE SYNTHESIS OF NANO-MINERAL PARTICLES
INTERNATIONAL JOURNAL OF MINING SCIENCE AND TECHNOLOGY - VOLUME 22, ISSUE 5

FEATURED IN THE

SCIENCEDIRECT TOP 25
LIST OF MOST DOWNLOADED ARTICLES

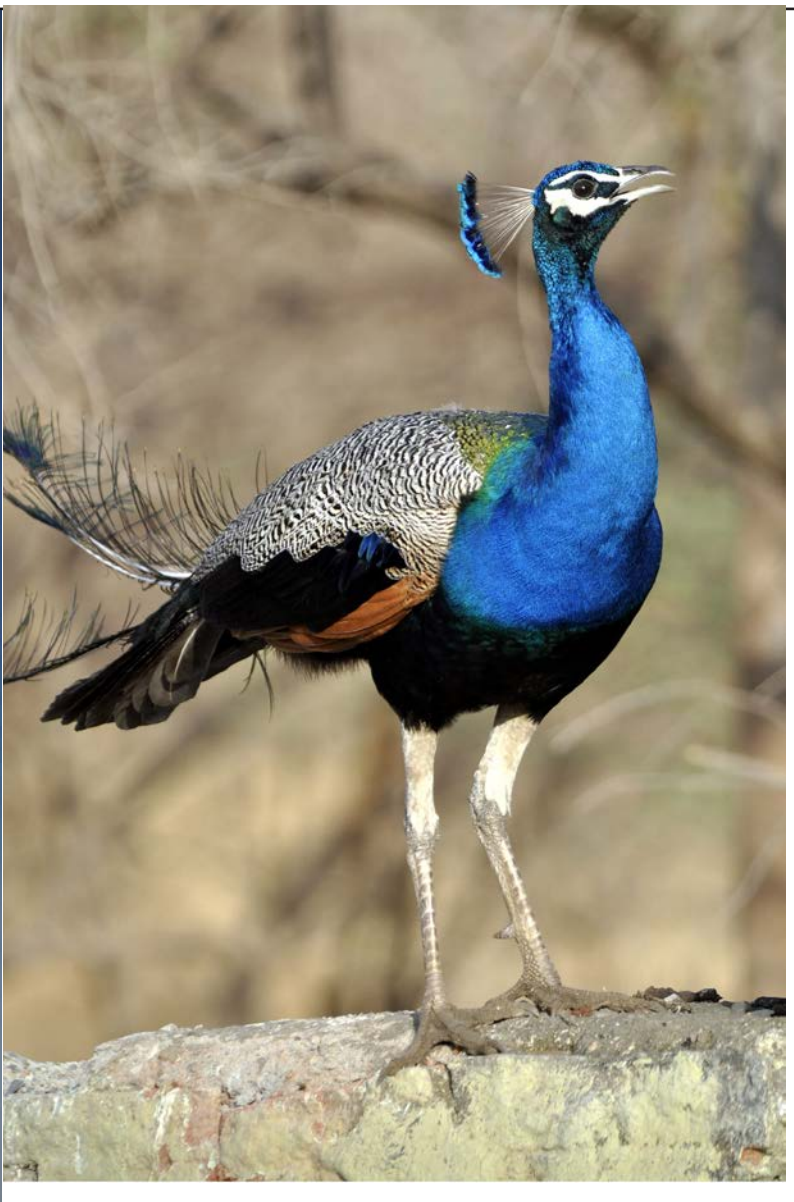
RANKED 2ND ON THE TOP 25
FOR INTERNATIONAL JOURNAL OF MINING SCIENCE AND TECHNOLOGY - JANAURY TO MARCH 2014

SCIENCEDIRECT TEAM
ELSEVIER B.V., AMSTERDAM, THE NETHERLANDS

TCE & the GSLV Mark III Launch

TCE is proud to be part of India's largest rocket GSLV Mark III Launch. India's space agency ISRO, launched its heaviest rocket ever - the 630-tonne, three-stage Geo-Synchronous Satellite Launch Vehicle Mark III (GSLV). TCE provided Design Engineering & Construction Management services for the entire manufacturing plant for Solid Propellent Rocket. Work also involved design & automation of various special machines used in handling explosive material. Additionally TCE was involved in the prestigious project of design & analysis for the Mobile Launch Pedestal (MLP) used for GSLV Mk III.

TCE's Chemical division in Mumbai along with Special Projects Group & Construction division had executed these projects.



The " i-val-U" Contest-winners

The "i-val-u" contest was conducted across TCE offices and was meant to capture the five core values of TCE on camera. The judges' selections are presented here.

Lines by Rabindranath Tagore from Gitanjali "When the mind is without fear and the head is held high...." And I found this one as a perfect match for self respect and dignity,
- Mr. Purushottam Atkare

Busy male baya weaver bird building a unique nest before the breeding season. Female baya weaver selects the partner on the basis of build quality of nest. This competition in nature represents technical excellence with professional ethics.
-Mr. Prasanna Sidhaye

TCExpression recognised at the Brand & Corporate Communicators Meet 2014

TCExpression was adjudged Best Publication Print- Internal engagement at the annual Brand & Corporate Communicators Meet 2014, where the collective marketing and communication initiatives from across Tata Group companies from around the world are showcased. The prize winners in this award category included TCExpression from Tata Consulting Engineers, Confluence from Tata Chemicals & Team Talk from Jaguar Landrover.

An adventurous journey to the Himalayas

We trekked for 11 days starting from our base camp in Kasol - a small village in the hills of Himachal Pradesh. The highest point of the trek was a frozen lake in the Himalayas, called Sar Pass. In fact the trek itself is named after it, which is 13700 ft above the mean sea level.

These are some beautiful moments that I enjoyed during the trek. Now that it is over, I can safely say that I am living an easier life - I don't have to wear four sets varied outfits all the time or carry a six kilogram bag on me throughout the day or worry about wild animals while on for nature's calls!

Fun is a part and learning is another. The following are three things that the trek taught me and is of most use in everyday life too.

- Carry only the absolutely essential things. Lighter you are, easier your life!
- Never worry about things that are not under your control. Let God play with them!
- Before your next step, make sure you are strong enough to stand. You don't want progress at the expense of losing your balance!

It is a beautiful world out there. Hope we make the best use of it!

TCEndeavour
Care-Share-Restore

Anganwaadi at Dunger, Rudraprayag & Toli, Pithoragarh

TCE is part of the rehabilitation program at Uttarakhand and working with the Tata Trust & Group companies to provide engineering and project management services for the construction of Anganwadi centres to benefit children.

A total of three anganwadis were constructed with the one at Damar fully operational. Two anganwadi's at Dunger & Toli became fully operational with 16 and 18 nos of children respectively attending the centres. The anganwadi consists of 1 play area, child friendly toilets, kitchen and covered porch. Each centre is a pre-fabricated structure with solar lighting system, complete with learning aids, toys, story books. The completed centres were handed over to the respective district administrations.

Aanganwadi at Toli.

Aanganwadi at Toli.

Inauguration of Aanganwadi at Dunger

TATA ENGAGE volunteering week II

"It was a wonderful experience to be a part of the beach activity post ganesh Visarjan. Made me think about the need to reduce the number and size of the idols. This will definitely be helpful in terms of pollution control and the hazardous effects on the ecology"
-Purushottam R Atkare, CBU

"Teaching the kids was an enriching experience. It made us reminisce our childhood!"
– Dheerak K S, Mechanical, CBU

TATA engage
be the change

Mumbai

Chennai

We gave them what we had; They gave us what we didn't have- heart filled happiness
- Mr. Ramprakash Balakrishnan

It was a good experience and I remember the quote "Children will not remember you for the material things you provided but for the feeling that you cherished them"
- Ms. Geetha Lakshmi

Jamshedpur

Everyday's is business as usual. But once in a while there are these opportunities that come by. It may just be half a day away from work. But this makes a huge difference to someone for whom day-to-day existence is struggle.
- Srivardhan Reddy

Felt my importance and could understand the purpose of me being on planet earth and a child of mother nature. Shall continue to be present and spearhead all future endeavors
- Sumit Sankar

Delhi- NCR region

Self Defence training for female employees

TCE's safety committee at Delhi- NCR organised Self Defence training for female employees. The training was conducted by Mr. Rajender nair - Head admin & corp, Tata Power Trading Co. Ltd. The training was provided to about 20 female employees. The response from the participants was very good and many of them requested to make such trainings a routine affair. In addition to this, the expert also shared knowledge about women's legal rights and how they should deal with police and authorities, in case of an emergency.

Pune

Softskills training for girl students

A lecture on how to face and prepare for campus interview / recruitment process was delivered to girl students in engineering colleges around the rural areas of pune in association with NGO-Katalyst. A total of 53 girls benefited from the lecture.

Safety awareness campaign program was delivered for Sahyadri international school children during Tata Engage Week II. 60 students benefited from the program.

Basic CAD Training was delivered to Aundh ITI students. Theoretical and practical knowledge was shared with the students in a three day training program. A certificate of training was presented to each student. Two batches have been covered under the program. This is a regular activity carried out by TCE Pune. The program enhances employability with practical knowledge of CAD. 40 students benefited from this program.

Bangalore

Distribution of food to all the construction workers working near the office, distribution of sarees by the TCEites to the woman construction workers and chocolates & swaeters for the children of these workers was a part of the Tata Engage II.

A visit to ABALASHRAMA which is a home to care for woman above 16 yrs of age. This ashram also has a vocational training institute for training in cooking, tailoring , beautician courses , computers and other skills which can enable the young girls to start their own means of earning or can fetch them employment. TCE distributed travel bags for the girls and conducted a games for all the girls.

Donation of computers to ASHA School - (Academy for Severe Handicap & Autism) and to other ASHA Centre for Developmental Disabilities.

A visit to KRUPA Foundation / Samabhava Foundation by volunteers for all the stray animals. These animals have been rescued from roads, accidents or suffering from diseases and taken care of.

"We believe that taking care of animals also is our responsibilty and so we chose this activity"
-Divya Banagalore

Reported by Anindya Chatterji, Mumbai

Delhi

"If you want happiness for a life time, help the next generation."
- Anudeep Srivastava

Kolkatta

As a part of the Tata Engage Volunteering team at Tata Consulting Engineers Limited, I took the opportunity of spending half a day with the much neglected part of our society, the senior citizens at an old age home. The time I spent with them was memorable and worth treasuring
- Ms Pousparna Pal

Road accidents that occur at the rate of
one every minute
need more than high tech transport systems to control

It takes **Smart Transport Engineering** solutions to –

- Ensure safety to vulnerable urban commuters
- Lower cost of transit systems through automation
- Take the cars off the road through planned last mile connectivity
- Save energy & fuel

Tata Consulting Engineers now has an Urban Transportation Vertical that brings expertise in urban transport planning & management, Rail & Mass Rapid Rail system recommendations, feasibility studies for urban transport management and more.

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