

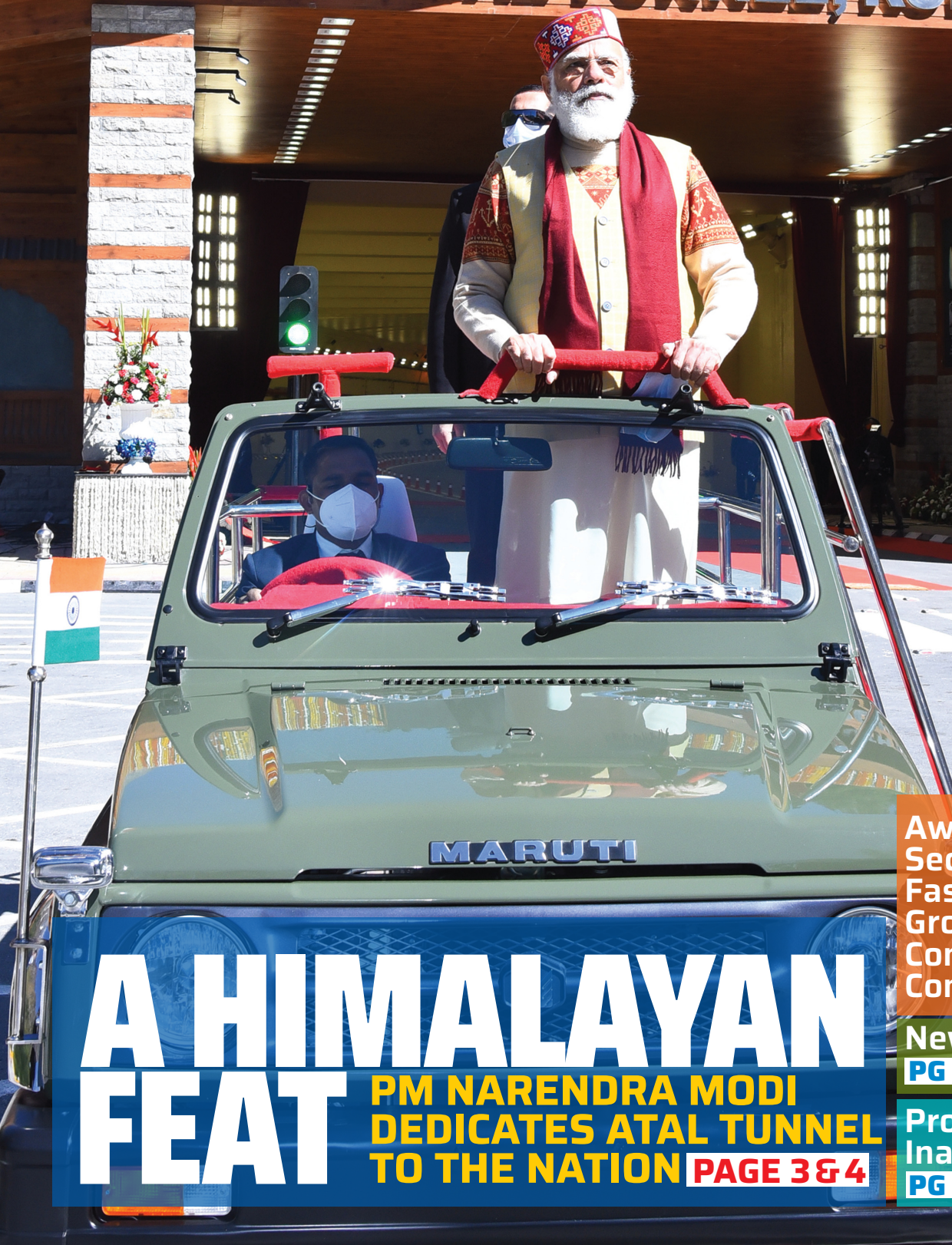
INSIGHT

AFCONS

VOLUME 10 ISSUE 4 OCTOBER 2020

Shapoorji Pallonji
Built to last... since 1860

SOUTH PORTAL
ATAL TUNNEL, ROHTANG



**Award for
Second
Fastest
Growing
Construction
Company** **PG 8**

New Projects
PG 6

**Project
Inaugurations**
PG 5

A HIMALAYAN FEAT

**PM NARENDRA MODI
DEDICATES ATAL TUNNEL
TO THE NATION** **PAGE 3 & 4**

Returning to a re-imagined world

Dear Afconians,

I hope all of you are taking care and have found your ways to cope with the pandemic. There is no need to panic as with little care and attention we can deal with the virus. Strangely, we're passing through a period where pain and progress seems to dwell in an alternating montage. On one hand, the Covid-19 outbreak continues to spread without any visible pause. On the other, we have collectively emerged as a faster and stronger organisation.

The past few months have been eventful. We have bagged several new projects, India's deepest Metro vent shaft was completed in Kolkata, the western flank of the iconic Mahatma Gandhi Setu was reopened for vehicular traffic, president of Zambia His Excellency Edgar Chagwa Lungu inaugurated the country's first flyover, and, honourable Prime Minister of India Shri Narendra Modi dedicated the Atal Tunnel to the nation. What is significant is that all these happened during the pandemic and the unequivocal support and satisfaction expressed by all stakeholders is pleasing to say the least. I take this opportunity to thank and congratulate you for catapulting Afcons to this level with your skill and hard work.

The Atal Tunnel, Rohtang, is probably a game changer for India in the Himalayan region. The prosperity it will bring to Lahaul-Spiti valley and the all-season connectivity for civilians as well as the Army is an advantage-cum-blessing. Bihar's Mahatma Gandhi Setu is another unique case study. For the first time, the concrete superstructure of a bridge is being demolished and converted into a steel superstructure while keeping the substructure intact. There are many more projects in the pipeline that, I am confident, will bring similar recognition to Afcons.

I urge everyone to take inspiration from these mind boggling projects, and take pride in the work we do.

Take Care & Stay Safe

K Subramanian



making **headlines**



FIGHT AGAINST COVID-19

Afconians stood by the Indian government in their efforts to manage and beat Covid-19 by contributing towards Prime Minister's Covid-19 Relief Fund. Managing Director Mr S Paramasivan handed over Afcons' contribution to the Union Defence Minister, Shri Rajnath Singh, in New Delhi, on October 12, 2020.

Ghana president visits railway project

Honourable President of Ghana His Excellency Nana Addo Dankwa Akufo-Addo visited the Tema-Mpakadan Railway Project on August 5, 2020. He inspected the construction of Volta Bridge and took a stock of the progress of the 97-km railway project, possibly the largest such project in the country. Project Manager Udai Veer Singh led the Afcons team in assuring His Excellency that the Covid-19 pandemic will not delay the project.



Minister of Public Works visits Mozambique project

Honourable Minister of Public Works, Government of Mozambique, His Excellency Joao Osvaldo Moises Machatine, visited the Road Project on August 21, 2020. He took a stock of the construction of bridges, piling, cement stabilisation, bituminous works, casting yard and also visited the Buzi Major Bridge site.



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EDITORIAL

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Honourable Prime Minister of India, Shri Narendra Modi (centre), inaugurates Atal Tunnel, Rohtang, in august presence of honourable Defence Minister Shri Rajnath Singh, Himachal Pradesh Chief Minister Shri Jai Ram Thakur, Union Minister Shri Anurag Thakur, and, DGBR Lt Gen Harpal Singh, at Manali, on October 3, 2020

VERTICAL

Atal Tunnel constructed by Strabag-Afcons JV becomes world's longest highway tunnel 10,000 ft (3,000m) above sea level

The winter of 2020 is going to be a totally different experience for the people of Lahaul-Spiti valley. The inauguration of the Atal Tunnel, Rohtang, by Honourable Prime Minister of India,

Shri Narendra Modi, on October 3, 2020, brings an end to the haunting reality of the ominous Rohtang Pass that tears apart an entire region by disconnecting it from mainland every year.

The 9.02km-long world's longest road tunnel, at an altitude of 10,000 ft (3,000m above sea level), finally eliminates the danger of Rohtang Pass by providing all-season connectivity to the people of Lahaul and Spiti. Constructed by a joint-venture of Strabag and Afcons, Atal Tunnel surpasses the 2.72 km Eisenhower Tunnel, in Colorado, USA, and becomes a testament to



ATAL TUNNEL, ROHTANG

India's engineering prowess, and, a firm determination in the face of extreme challenges.

Human Factor

The harsh winters bring in heavy snowfall coupled with landslides and avalanches in the Himalayan region. The snow-covered Rohtang Pass renders the Manali-Sarchu-Leh Road inaccessible for six months every year. The people of Lahaul and Spiti valley have no choice but to wait for the nature to comply. Every year, lives, livelihood and futures used to be compromised because of lack of infrastructure facilities.

During the inauguration, Prime Minister Narendra Modi affirmed that the opening of the Atal Tunnel is an important step towards boosting infrastructure along the Indian border. A safe passage for people and goods round-the-year would usher in significant socio-economic progress promising to change the face of the region.

This unique and awe-inspiring engineering marvel has been made possible due to the long and untiring efforts of the Border Roads Organisation (BRO) and Strabag-Afcons JV (SAJV). Satish Paretkar, Director, Hydro & Underground BU, Afcons, credited the Strabag-Afcons JV and BRO for supporting each other in this epic tunnel project. "Atal Tunnel, Rohtang has been the most challenging project in terms of tunnel construction due to its geographical conditions, harsh weather, limited working time, geological surprises, and logistics. All credit goes to SAJV and Border Roads Organisation (BRO)," he said.

The need and importance of the

tunnel was evident soon after its breakthrough in 2017. Back then, it would be opened for access during emergencies, with the agencies stationing well-equipped teams to carry out rescue operations. Since then, every winter, thousands of locals and tourists have been either rescued or rushed for medical emergency through the then under-construction tunnel.

Tough Journey

The Atal Tunnel project has been no less than a roller-coaster ride. While SAJV was prepared for all eventualities, given the geographical location and difficult

threat with over 20 avalanche zones surrounding the tunnel portals.

Logistics was another major challenge in the project. "In peak tourist months almost 4000 to 5000 vehicles travelled through Rohtang Pass everyday. The heavy traffic often held up our material and equipment for hours and even for days. This forced us to transport material and equipment at night which was extremely risky considering the treacherous nature of the pass," recounted Mr Sunil Tyagi, Project Manager, Atal Tunnel.

Modern Technology

The tunnel boasts of many firsts, including the deployment of the ROWA Conveyor System, which facilitated working at inverted levels. It is also the country's first tunnel to have an escape tunnel within the main tunnel. Generally, escape tunnels are built separately

along the main tunnel. The tunnel is horseshoe-shaped, with single-tube and two lanes. The Drill & Blast technique for excavation as part of New Austrian Tunnelling Method (NATM) has been used for its construction.

Bright Future

The Atal Tunnel is unique in terms of engineering and human endurance. It is not only important from a strategic point of view but also provides a major boost to tourism in Lahaul-Spiti thereby promising an economic prosperity in the region. The fact that the tunnel provides a safe and secure passage to a region that seemed inaccessible in winters is a bold statement of India's infrastructure prowess.

The Atal Tunnel, running at the base of Rohtang Pass in the eastern Pir Panjal range, connects Lahaul-Spiti with Manali, and even Leh, throughout the year



PICS: BRO/AFCONS

topographic profile, excavation was possible only through two portals out of which the north portal at Lahaul side was only accessible for six months. The construction of shafts and adits was not feasible due to limited access points.

Extremely heavy water ingress of up to 8,000 litres per minute at the 587-meter stretch of Seri Nalla fault zone proved a major setback. Few construction teams have tackled such a long stretch of adverse geological conditions dealing with fractured and pulverised rock and gushing with riverbed material.

The North Portal was no less difficult as activities were restricted to only six months due to the closure of the Rohtang Pass during winter.

There was constant avalanche

INDIA

Western flank of MG Setu reopens for traffic

A major milestone achieved by Afcons during the ongoing pandemic is the Inauguration of the western flank of the historic Mahatma Gandhi Setu in Bihar. Honourable Minister of Road Transport and Highways & Micro, Small and Medium Enterprises, Shri Nitin Gadkari, inaugurated the bridge on July 31, 2020. Shri Nitin Gadkari hailed the project as “an engineering marvel” and a “lifeline” for the masses. According to the minister, the technological research for MG Setu will be a case study for other complex bridge projects in future.

Afcons' project team, led by Project Controller,

Mr Vijay Singh Yadav, and, Project Manager, Mr Santosh Kumar Misra, was also present during the inauguration. The MG Setu is one of the oldest and the third longest bridge in the country (5.6km approx). The bridge connects Patna with Hajipur. For the first time a balanced cantilever bridge is being dismantled and converted into a simply supported bridge in the country. The weakening concrete superstructure was replaced with a steel deck superstructure, keeping the sub-structure intact. Such a project has never been envisaged by the Ministry of Road Transport and Highways (MoRTH) or any state government before.



Afcons is ranked 13th in the bridge sector globally by the Engineering News-Record (ENR), USA survey

PROJECT STATUS

AT PRESENT, AFCONS IS WORKING ON THE EASTERN FLANK OF THE BRIDGE



ZAMBIA

Zambia gets its first flyover

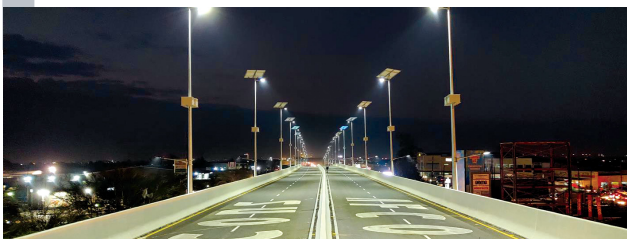
Vehicles began easing along Kaufe Road in Lusaka, with the inauguration of Makeni Flyover by His Excellency Mr Edgar Chagwa Lungu, the Honourable President of Zambia, on August 3, 2020. The 934m, four-lane flyover is the first structure of its kind in the country.

This structure is part of Lusaka City Roads Decongestion Project that involves rehabilitation of 91.4kms of roads and 29.3kms of dedicated bus lanes. This ambitious project aims at easing the movement of people and goods in the Zambian capital and is part of the government's vision to transform the country's economy by boosting infrastructure.

During the inauguration ceremony, His Excellency Mr Edgar Chagwa Lungu thanked the Government of India for consistently supporting Zambia as well as commended Afcons for the efficient execution of the project. As part of this project, Afcons is also constructing three more flyovers and five At Grade Junctions in the city.

“On behalf of the Zambian government, let me express my deep gratitude to the Indian government for the continued support and partnership. I extend my gratitude to Afcons for the good works executed thus far. I assure you such support will not go unnoticed.”

EDGAR CHAGWA LUNGU, THE PRESIDENT OF ZAMBIA



1ST PRIZE



PHOTOGRAPHY CONTEST WINNERS

3RD PRIZE



Karthikeyan Krishnan, Pakal Dul

3RD PRIZE



Amith S Kandkur -
Samruddhi Mahamarg



THE BEST SHOTS

2ND PRIZE



Koushim Ghosh,
Mozambique

3RD PRIZE



Nirmal Samrat, Chenab

A photography contest, HandPICed, was held for all sites in July as a platform for shutterbugs to showcase their talent. The competition was tough as over 530 entries came in from 35 sites around the world. The winners were declared on World Photography Day (August 19, 2020). Apart from the Top 3, Chenab Rail Bridge Project team got a special mention for maximum number of good entries.

COMMUNITY INITIATIVES

PLASMA DONATION IN KOLKATA

When the West Bengal Government issued a request for voluntary plasma donation, Afcons came forward to show solidarity in the fight against Covid-19. Two team members from the East-West Metro Project team, who beat the virus, were encouraged by the project team to donate blood at the Calcutta Medical College, in July. The team enrolled Subhnanayan Sah, Operator, CPE, and Mohammad Nizamuddin, Dumper Operator, in the Passive Immunisation using Convalescent Plasma (PICP) Programme. This is a collaborative clinical trial initiative by the Council of Scientific and Industrial Research and the state government. Project Manager Satya Narayan Kunwar hopes this move will help save lives as well as encourage more convalescent plasma donors to come forward and join in the fight against Covid-19.



FOOD DONATION IN LUSAKA

As part of its ongoing support to local communities during the Covid-19 crisis, the team of Lusaka City Roads Decongestion Project organised a food donation drive in Copperbelt Province, on September 10, 2020. Kits containing cooking oil, mealie meal shima, soya, beans, salt and soap were distributed among 500 families in the region.



KMRC TEAM REPLANTS 100-YR-OLD TREE

In a bid to preserve ancient and rare trees, the Kolkata Metro team replanted a 100-year old African's Baobab (also known as Kalpabrikha) at Acharya Jagadish Chandra Indian Botanical Garden, Howrah. This initiative was undertaken in association with our client, Kolkata Metro Rail Corporation Ltd (KMRC).



NEWS

SEGMENT ERECTION BEGINS AT TIRUPATI

Afcons team began the activity of segment erection on the 7-km long elevated corridor at Garuda Varadhi, Tirupati, on July 31, 2020. Tirumala Tirupati Devasthanams (TTD) Chairman YV Subba Reddy launched the final stage of erection of segments after performing a pooja. Speaking on the occasion, the TTD Chairman reiterated their commitment to support the project.

KANPUR METRO TEAM ERECTS 1ST U-GIRDER

The Afcons team erected the 1st U-Girder for the Kanpur Metro project on August 11, 2020, in the presence of top government dignitaries including Uttar Pradesh Chief Secretary Mr Rajendra Kumar Tiwari, UPMRCL Managing Director Mr Kumar Keshav and UPMRCL Project Director Mr Arvind Singh. The U-girder has been placed on Piers 17 and 18 near IIT Kanpur on the Priority Section.

NEW PROJECTS

ROAD PROJECT IN GABON

Afcons has been awarded a new job to rehabilitate and upgrade a two-lane national highway on RN1 in the Republic of Gabon by Societe Autoroutiere Du Republic of Gabon.

ROAD PROJECT IN PATNA

Bihar State Road Development Corporation Ltd has awarded Afcons a project to construct an 8.86-km elevated/at grade road in Patna, on EPC mode. The project is located between Mithapur and Ram Govind Singh Mahuli Halt, along the eastern side of Patna-Gaya Railway line in the capital of Bihar.

WATER PROJECT IN TANZANIA

Afcons has been awarded the job of rehabilitation and improvement of water supply system in the Chalinze region of Tanzania. The task involves completion of balance works for rehabilitation of Chalinze Water Treatment Plant, supply and installation of secondary and tertiary distribution network and construction of reservoirs in the villages in the region.

IN CONVERSATION

Satya Narayan Kunwar

Afcons constructs India's deepest vent shaft



The East-West Metro, in Kolkata, celebrated another historic milestone with the casting of the base slab of India's deepest Metro Ventilation Shaft by Afcons, in August, this year. The vent shaft is 43.5m deep, almost equivalent to a 15-storey building. It is an honour for me to lead a team, and to represent an organisation that has given the nation its deepest underground Metro Station, the country's first underwater Metro tunnels, and, now, a vent shaft which is India's deepest — all in a single project. If this is not Extreme Engineering & Construction then what is?

The construction of the vent shaft was not easy at all. Located very close to river Hooghly and abutting Kolkata's Circular Railway track, the shaft is situated between the two tunnels. At Howrah Station, from where the tunnels start entering the river, the tunnel invert is 30m deep. From there, they go deeper till 37m invert level while crossing the riverbed. Consequently, the Diaphragm Walls had to be 55m from ground level as per the base demand of the

geometric profile of tunnel alignment. This necessitated the ventilation shaft to be the deepest. It comprises a 10.30m inner diameter circular lining wall of minimum 500mm thickness and of concrete grade minimum M40 circumscribed by 1m thick Diaphragm Walls all around.

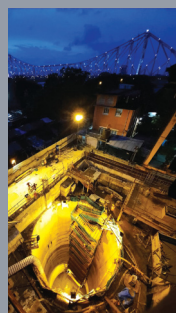
Innovative engineering techniques and methodology were adopted to avoid any significant impact on the circular railway track. Besides due to its close proximity to the river we encountered multiple challenges due to ancient alluvial deposition and river course transformations. We also had to factor in the foundation information of

old buildings at the location.

Stringent quality measures were undertaken during the construction of the D-Walls after which 43.50m deep excavation was done by adopting top-down strutting method, which involved simultaneously casting of 1.50m deep in-situ rings of concrete grade M40 which itself functioned as struts to the excavated area. Innovative approaches were adopted when finalising the construction sequence, keeping in view the geological challenges and the site proximities. Also, adequate precautions were taken as the twin tunnels were already in place.

Throughout its construction safety was paramount for us. We installed inclinometers on D-Walls during construction, surface settlement and track settlement markers to denote any occurrence of settlement on the surface and tracks during excavation. Besides, we also implemented the necessary hygiene and safety protocols in the wake of the Covid-19 pandemic.

Satya Narayan Kunwar is the Project Manager of East-West Metro Project, Kolkata



WHAT IS A VENT SHAFT?

A ventilation shaft also called an escape shaft helps in evacuation of passengers during emergencies, air circulation, and, venting out smoke in case of fires

ENGINEER'S DAY 2020

SITES, HO COME TOGETHER IN FIRST-EVER VIRTUAL CELEBRATION

Afcons embraced the new normal and adapted the Engineer's Day celebrations this year to bring together Afconians across sites and Head Office to mark this special day. Conducted on a virtual platform for the first time ever, a thought sharing session was organised on September 15, wherein thought leaders as well as project teams shared their experiences and encouraged the viewers to keep adapting and innovating with the changing times.

As a run-up to Engineer's Day, like every year, this year too several events were organised that saw overwhelming participation. While Paper Presentation, Bridge Building, Logo Making and Poster Making contests were open to everyone, the Engineer's Day Quiz Contest (E-Quizzeria) (pic left) was held virtually for Afconians at the Head Office.

Special events were organised at sites to mark the day that celebrates the engineering acumen of Sir Mokshagundam Visvesvaraya and takes inspiration from his work.



HR CORNER

MANAGEMENT DEVELOPMENT

JMDP (Phase I) – Afcons HO: The first phase of Junior Management Development Programme for 2020-21 was held virtually between September 14-16, 2020.

SOFT SKILLS TRAINING

Business Writing Skills: A workshop was conducted on July 19-20, 2020, via MS Teams by external faculty and was attended by employees from sites & HO

BEHAVIOURAL COMPETENCY WORKSHOP

Personal Effectiveness: A virtual training programmes on personal effectiveness was conducted for Bhutan sites by internal faculty (HRD). The program was conducted in multiple batches.

WHOLE WELLNESS

Orientation Training: Orientation training programmes on the Whole Wellness Model were conducted for different sites including Ghana, Zambia, Bhutan, Ahmedabad Metro by Director, HR, Ms Bhakti Prasad and HR Manager Ms Tejaswini Joshi.

AWARDS

HONOUR FOR AFCONS

Afcons has emerged as the Second Fastest Growing Construction Company (in large category) at the Construction World Global Awards 2020. The winners were chosen following a survey undertaken by the publication. Managing Director Mr S Paramasivan received the winner's trophy on behalf of Afcons



SCAN
FOR
VIDEO



ICC INNOVATION AWARD FOR KOLKATA METRO

Kolkata Metro Rail Project has been adjudged the winner of "Managing worker gathering, meeting, etc." category at the Indian Chamber of Commerce (ICC) Innovation Contest. Afcons emerged winner among 35 entries based on leadership engagement and special HSE initiatives and support provided to all stakeholders amidst the Covid-19 pandemic

CII AWARDS FOR TWO PROJECTS

The Confederation of Indian Industry (CII) gave a Special Recognition Award to Afcons for Chenab Railway Bridge at the 7th CII Northern Region Inter Industry Competition on Environment, Health and Safety Management (EHS). The Katra-Dharam Bridge Project was also honoured with the Best Health & Safety Practice Award at the 7th CII EHS Inter Industry Competition

WOMAN POWER

Ms Prabhavati Mishra has made Afcons proud by winning the Woman in Safety Leadership Award at the Global Safety Summit 2020. Ms Mishra was handpicked as the winner among 33 women HSE leaders across the country



ALERTS

Scan the code to visit Afcons' YouTube channel and stay tuned with the latest videos

