

HELMET



Environment



Health



Safety

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“FOR US,
IT’S BUSINESS
AS USUAL!”





Anantha Sayana
Chief Digital Officer, L&T

Foreword

When we started our journey of Digital Transformation at L&T Construction four years ago, fully realizing that Safety was such an important function in our business, we asked ourselves, what we could do to improve Safety with Digital Solutions. After several discussions with our Safety leaders and brainstorming and thinking internally, we now have a bouquet of Digital Solutions that help our Safety function in many ways.

Our Augmented Reality / Virtual Reality modules have taken safety training to another level; experiential, immersive, and intensely impactful. Simple 3-minute modules with speech in local languages delivered over the VR glasses at the sites to workmen without any other complex technical infrastructure have conveyed a powerful message to them that has been acknowledged as leaving a lasting impact.

The Safety App rolled out in different forms across all the businesses and project sites, covers every aspect of the safety process. It ensures that everything is recorded at the source, the site, by the person on

the field in real-time, verifications and approvals done online to improve safety process compliance significantly.

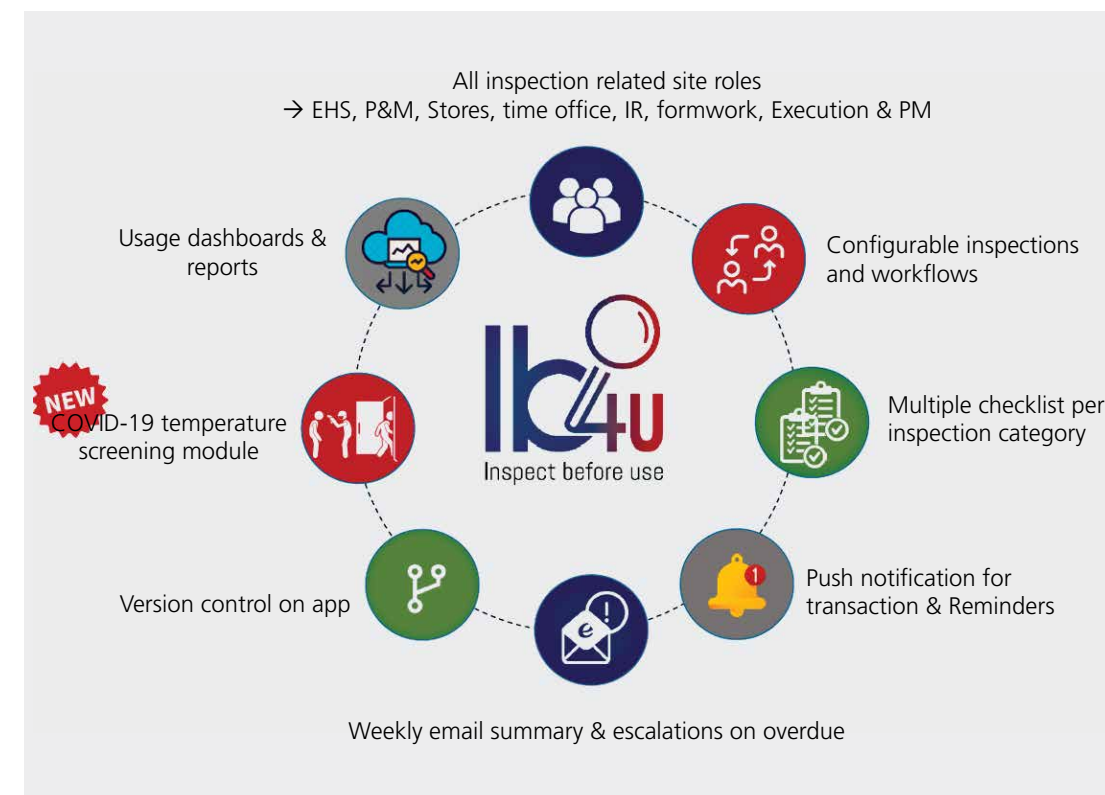
The Ib4U App - Inspect Before Use – helps to inspect every harness, block, tackle, wire, and equipment before they are used to ensure their safety and adherence to specifications.

Our WISA (Workmen Induction and Skills Availability) App using face recognition can inform a supervisor about a workman's profile in real-time whether he has the necessary skill sets and certification to perform a particular kind of work.

It is heartening to note that all these solutions have been widely and well adopted and have become the norm. The dashboards and analytics provide very good inputs during periodic reviews to enable ongoing improvements.

Back to where we started this article. We started thinking about how we could help our people to be “safe” during the pandemic and have developed COVID modules in our solutions to take care of these requirements.

The Ib4U App has a module to record the temperatures of workmen during screening with a thermal gun.



After several discussions with our Safety leaders and brainstorming and thinking internally, we now have a bouquet of Digital Solutions that help our Safety function in many ways.



It is heartening to note that all these solutions have been widely and well adopted and have become the norm.

The current Covid-19 situation brings with it many challenges in the working of our people at our project sites. It is time to be extra vigilant on Safety during these times and communicate with workmen and employees to ensure our care. Please make use of the digital solutions to assist you in a small way in this endeavour.

Be Safe and take care!

Best wishes!

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TO MAINTAIN 'BUSINESS AS USUAL', SAFETY WAS AN IMPERATIVE FOR TI IC



The COVID-19-induced lockdown disrupted lives across the world and, more particularly, in our country; new ways and means of working evolved. “It is interesting that the lockdown actually forced us to work remotely which is the best form of social distancing,” observes Subhamoy Maitra, Head – EHS, RREC, TI IC. “In fact, with Microsoft Teams, we had a unified communication and collaboration platform that brought us together with continual workplace chat, video meetings with project teams and other



Subhamoy Maitra
Head – EHS, RREC,
TI IC

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Preparing for battle

With the prime objective of keeping employees, workmen, families, and communities safe, TI IC facilitated a uniform standard of COVID-19 precautionary measures across all their offices, establishments, and project sites. “We created SOPs based on our business needs and expectations to manage the risks arising out of COVID-19,” remarks Subhamoy, “with special emphasis on SOPs to be followed while restarting

activities across all projects once the lockdown was lifted.” The procedure, that supplemented and not replaced the requirements stated in the L&T Corporate HR guidelines and those issued by the Central, state & local government authorities, set out the minimum requirements to be followed across projects, though sites were urged to exercise additional stringent measures depending on the locally prevailing conditions. As soon as the lockdown was imposed, the Railways SBG EHS-HQ



Alok Sharma
Head – EHS,
Railways SBG

Our EHS teams swiftly integrated with Emergency Response Teams at the project level to implement COVID-19 measures detailed in the SOP released by corporate HR in alignment with local district level regulations.

team triggered an Emergency Management Plan (EMP) across 21 active projects spread across western, eastern, northern and southern parts of India with massive scale and speed focused on health and safety of all. “Our EHS teams swiftly integrated with Emergency Response Teams (ERT) at the project level to implement COVID-19 measures detailed in the SOP released by corporate HR in alignment with local district level regulations,” informs Alok Sharma, Head – EHS, Railways SBG.

The exhaustive SOPs for TI IC involved the formation of SOP implementation & surveillance committees, daily monitoring through video conferencing with key members, regular fumigation, sanitization of all premises, thermal temperature screening & health check-ups, setting up of touch-free hand sanitizers & hand washing facilities, arrange for isolation rooms, manage groceries, PPEs and other essentials, conduct daily awareness drives, display awareness posters, organize awareness programmes and ensure maintenance of hygiene especially at the labour camps.



Yobu Paul
Manager - Systems

Our responsibility was to provide remote desktop support for all the TI IC employees in the shortest time possible. Working from home was new to many of our colleagues but with our help and prompt action, they were able to adjust quickly, and resume work.



Setting up offices at homes

Perhaps, a critical step to keep business rolling was to quickly set up offices at various homes of executives for which the IC's systems personnel rose to the occasion and delivered despite several restrictions and roadblocks. "Our responsibility was to provide remote desktop support for all the TI IC employees in the shortest time possible," says Yobu Paul, Manager - Systems. "We had to ensure the availability of hardware like laptops for the junior cadre staff and desktops at home, wherever laptops were not available. Working from home was new to many of our colleagues but with our help and prompt action, they were able to adjust quickly, and resume work."

In fact, the systems team got cracking within an hour of the declaration of the lockdown as Assistant Manager - Systems, Bibhuti Bhushan Mishra adds. "Apart from the massive exercise of mobilizing IT hardware (desktops & laptops) to individual houses and guesthouses for teams to work from home, we set up a VPN for users to

access their database remotely again in a day's time. We even efficiently enabled IT infrastructure for a team of 150 - 200 Design Engineers to help them work from home," he says with a wide smile.

Deployment of new EHS tools & guidelines:

"Following our philosophy of continuous improvement, we developed various new EHS tools to plan for work resumption," shares Alok. "The STARRT Card incorporated COVID-19 mitigation measures aimed at visual check points and administrative controls for safe work

start-up. Apart from a COVID-19 screening tracker for staff/workmen, we also conducted a safety reboot series of webinars on critical hazards related to railway construction activities to cover last mile EHS staff." The team expanded access for the digital safety app (PREPS App) among project staff for virtual EHS inspection and permit systems and encouraged the extensive use of the Arogya Setu app at both project sites and offices.

Work resumption and a new 'Normal'

"Since our EHS processes were sound and effectively implemented at the



Obtaining permits from the local authorities for any emergency work was one of our most critical deliverables and that depended to a large extent on the nature of relationships we had built with these authorities.

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Head - EHS, Railways SBG

With employees and workmen stranded at various points along project alignments, a unique challenge for both road and railways projects were to ensure permits for people to reach those stranded and to reach essentials across to them. "Obtaining permits from the local authorities for any emergency work was one of our most critical deliverables and that depended to a large extent on the nature of relationships we had built with these authorities," points out Alok. "In most cases, they worked out well and we also had an emergency vehicle always on standby, 24x7, to deal with any kind of emergency."



ground level we were ready to start running as soon as the lockdown was relaxed,” says Alok brightly. “Clients and district authorities promptly granted various permissions for work resumption and by the end of May’20, all our RBG projects commenced work in green and non-hot zones and are progressively achieving business as usual at our project sites.”

“Stakeholders and various clients have applauded our efforts and milestones achieved in the COVID-19 environment,” Alok’s sense of achievement is evident. “On 4th June’20, one of the key customers (DFCCIL) presented us with an appreciation certificate at WDFC CTP-14 project for achieving 12 Million safe man hours and for the special efforts taken during the lockdown for the wellbeing of workmen.”

As a reach out measure, EHS teams have been part of COVID-19 PPEs distribution to local government hospitals and communities across project sites.

DNV.GL – External audits

TIIC was successfully certified by M/s DNV to continue its certification on ISO 45001 (OH&S) & 14001 (EMS). The scope of the audit was Management of Implementation and Compliance with Environmental, Occupational Health and Safety Requirements at Project Sites and Offices. It is noteworthy that, due to the lockdown and travel restrictions, a Remote Audit was planned instead of the regular audit process. “This is the first time we have conducted a remote audit and

“**With a proactive EHS management system in place, we are always on the front foot and with the support of our senior management and our resilient project teams, we will continue to abide by stringent protocols for a safe work place.**

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**NO CONTACT.
ALWAYS CONNECTED.**

PHYSICALLY, KEEP A SAFE DISTANCE BUT
VIRTUALLY LET’S STAY CONNECTED WITH
THE WORLD AND YOUR WORK.

successfully achieved the intended outcome of the Management system,” shares a visibly happy Subhamoy.

Alok chips in, “Recently, our EDFC CP 204 project (Allahabad) was virtually audited by DNV for external surveillance audit related to ISO 45001 (OH&S) and ISO 14001 (EMS) which was satisfactorily conducted totally through remote mode. Customers are also carrying out virtual EHS inspections at work locations through face time and Skype,” he adds.

“With a proactive EHS management system in place, we are always on the front foot and with the support of our senior management and our resilient project teams, we will continue to abide by stringent protocols for a safe work place,” affirms a determined Alok. ■

HOW B&F PROJECT SITES ARE PREPARING FOR THE NEW NORMAL!

The world has realized and accepted that it must learn to live with COVID-19. Returning to work, especially at construction sites, is fraught with risk as P Nagarajan, Head – EHS, B&F IC, explains. “There are directives from the Central Government, various State Governments and local authorities to be religiously followed. On ground, we have had to prepare our sites for the new normal with several additional controls to deploy workmen and staff including improve infrastructure facilities both at the sites and habitats, thoroughly sanitize all vehicles for transportation, verify

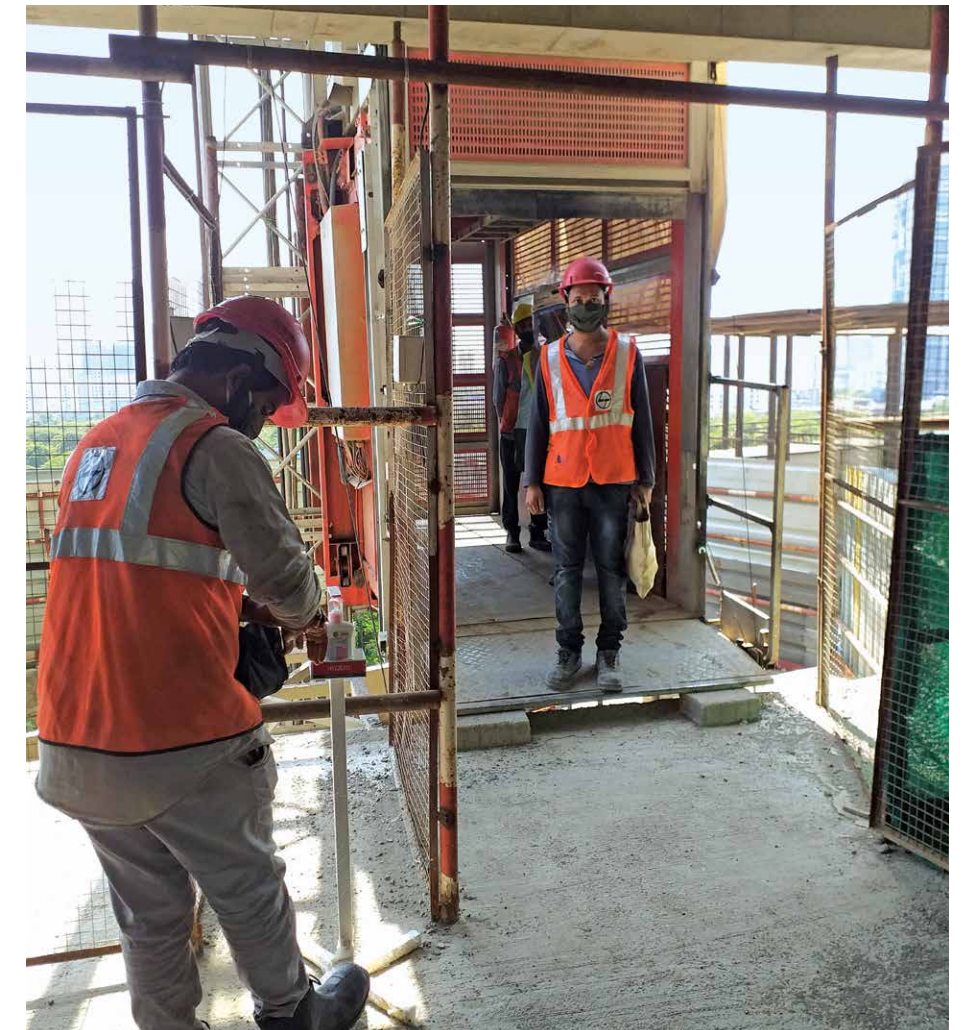
compliance to safety standards, manage social distancing, integrate risk management of COVID-19 to the existing EHSMS, implement & review and monitor through virtual safety audits.”

At cities, with only in-situ workmen allowed, deploying new ones is far tougher as M Nachiappan, DGM – EHS shares. “Considering the additional COVID risks, it requires the approval of the Project Director or Project Manager. We have to avoid workmen from known hotspots or containment zones, allocate separate rooms for them, ensure the availability of a

medical practitioner at the workmen habitat, obtain self-declaration forms from them, medically check and finally give them an EHS induction.”

Preparing the ground

Preparing sites for the post COVID-19 phase involves some big, overarching measures as mentioned earlier and a number of smaller changes in the facilities: at site offices, canteens, P&M and carpentry workshops, stores, to keep people safe from infection. “We have made changes in seating arrangements, marking entries and exits, staggering the works,



treating other high-touch surfaces and put up several contactless hand sanitizer dispensing systems,” mentions Manager – EHS, N Gabriel Fernandez. “We have increased space in canteens wherever possible, introduced staggered timings for dining, prepared quarantine rooms, rearranged accommodations, made arrangements to prevent workmen from venturing outside their camps and are vigorously promoting self-hygiene and cleanliness.”

Before allowing workmen inside the project site, all the workplaces must

be verified for safe condition of work. After the lockdown, resumption of operations can pose several hazards such as cranes left unattended, material on walkways, shuttering boards in half de-shuttered stage, excavations that have developed some seepage and the like. “A comprehensive compliance verification process is warranted,” stresses Nagarajan and enumerates some of the areas that require clearance: safety in accessway, fall protection arrangement, P&M, temporary electrical installations, excavations, formwork, scaffolds and working platforms.



Marrying COVID risk mitigation and the overall EHS management system

Considering its impact, it was crucial to consider COVID-19 as an additional risk in all activities & processes and use existing EHS Management Systems to mitigate it in an integrated and effective manner in all phases of the PDCA cycle. These include screening workmen, obtaining self-declaration forms, doing medical check-ups, and slightly revising the EHS induction programme. “The number of workmen participating are restricted and the number of programmes increased,” informs



M Nachiappan
DGM - EHS

Nachiappan, “including an in-depth programme on COVID-19 itself.” Training modules have been developed and shared with sites and risk assessments are reviewed with respect to COVID-19 related controls. ‘Safe to Start’ card includes several additional checks such as whether social distancing is being maintained, whether any workmen are showing

The number of workmen participating are restricted and the number of programmes increased, including an in-depth programme on COVID-19 itself. ‘Safe to Start’ card includes several additional checks such as whether social distancing is being maintained, whether any workmen are showing symptoms, whether high-risk spaces have been disinfected.

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A vital component of this process is Emergency Response / Business Continuity that now includes reporting of suspected cases from site, quarantine of suspected individuals, isolation & treatment, reporting to local authorities, disinfecting areas worked by the suspected individual,



P Nagarajan
Head - EHS, B&FIC

The advantages of VSAs (Virtual Safety Audits) are many: 59 projects were audited in just 20 days including some located in the north-east and in rural areas, some of which may not have been covered if things were normal.



contact tracing of people who have worked with the suspected individual and reporting to Cluster / HQ for further coordinated response.

Safety audits, virtually

With travel restrictions, B&F has introduced Virtual Safety Audits (VSA) to monitor activities at the various sites. The EHS – Head or the Cluster EHS Manager collects information on critical activities at projects, then schedules, and conducts audits on MS Teams involving key members including Cluster Project Managers. “We sometimes call for surprise audits too which is now possible,” chips in Nagarajan. “Compliance verification is with the same mechanism. Cluster EHS Managers have been given a target of 10 audits a month,” he adds. Direct interaction with the employees is feasible to understand their levels of awareness and implementation and improvements at various locations can be verified too. The advantages of VSAs are many: 59 projects were audited in just 20 days including some located in the north-east and in rural areas, some of which may not have been covered if things were normal.

Implement & review

Based on comprehensive inputs from across the board, SOPs were developed and rolled out across the IC followed by a slew of meetings to familiarize them, drive understanding and implementation. “Action plans with clear accountability and responsibility matrixes were ready even before we resumed operations,” informs Nagarajan. There were quizzes, special review and monitoring meetings and targeted inspections to ensure complete compliance to the SOPs.

Fighting to keep safe in dangerous cities

“A little knowledge is always dangerous,” warns D. G. Patil, Manager – EHS at Mumbai’s Crescent Bay project site who has been keeping his 450 workmen

calm and safe by having medical facilities readily available at site. COVID Response Team Leader and EHS Officer, Arpan Dey is much in the same boat at the Emerald Isle (Phase – II) project in Powai, Mumbai, managing his 850-strong workforce. “Being too big a group for us to approach all together, we deal with smaller groups of 10-20 to drive the need to strictly follow all precautionary measures. Doctors from famous organisations visit our site to spread awareness,” he mentions. “We even instituted a Social Distance SCOPE Award for our COVID Warriors to motivate them.” Both sites have remained free of positive cases.

Awards seem to be following Senior Engineer-EHS, Nallasivam B. When posted at Omkar, Worli, the project won the 5 Star and Sword of Honour award; now at Piramal Aranya project, he has





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P Nagarajan
Head - EHS, B&F IC

helped the project win not only a Sword of Honour but a RoSPA Gold Award too that are reflective of Nallasivam and team's effective monitoring and implementation of safety measures.

Young, dynamic, and self-motivated Prateek Kataria is the EHS Officer at the Gomti Enclave site at Lucknow, where he is referred to as 'Safety Sahib', shares, "I realized that the workmen were afraid of the virus spreading at the camp due to their ignorance of precautionary measures and the negligence of others." Hence the efforts of Prateek and the COVID Response Team backed by CPM, Subhashis Panja, Cluster EHS Manager, Dr. Sanjai Srivastava and Project In-charge, Manoj Kr. Mishra have been to ensure that the measures were well understood and strictly followed at site.

The need for re-training

A similar ploy was successfully adopted by EHS Engineer, M Sandheep at the Raintree Boulevard project. "We resumed operations on April 27th though our real challenge has been to ensure social distancing for which we have formed a special team to impart special training."

"Workmen, supervisors, EHS managers all need to be re-trained to this new normal," reminds P Nagarajan. "Maintaining social distancing is a new concept for people to understand and implement."

"One of my biggest strengths is my ability to stay calm under pressure," declares EHS Officer, M C S Chauhan at the Indira Gandhi Hospital project

at Dwarka in New Delhi; a perfect trait when faced with a crisis, one might say. "We started to spread awareness during the 'Nation Safety Week 2020' by training our workmen and supervisors using various digital modes and social media platforms." An additional responsibility for Chauhan and his team was to oversee the conversion of a part of the facility into a COVID-19 quarantine centre.

Managing large gangs

The Hyderabad Airport project site had 2424 workmen spread across three workmen habitats when the lockdown was announced. "For 45 days, we kept them engaged and in good health," declares a battle-hardened EHS engineer, S D Lovaraju. "We followed the guidelines issued by the Government Authorities, Client and HQ. I was also a member of the COVID Controls implementation verification committee to daily verify COVID controls and update the COVID Emergency Committee Members." Being a brownfield project, work on some fronts like rapid exit taxiways, baggage management area and roof sheeting repair works had to be taken up with restricted workmen for restricted hours which were carried out without incident.

EHS Engineer, Ankit Kumar's day at the CAPFIMS Hospital Project, begins with a purpose: to ensure the health and safety of his 1950 workmen. "We have successfully kept diseases at bay thanks to our dedicated efforts," he says triumphantly. Apart from arranging 5000 masks and 200 hand sanitizers, Ankit and team connected with the Construction Medical Officer (CMO) and tied up with the Cronus Multi Specialty Hospital for medical



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G. Raja Sekar
EHS Engineer, Adora De Goa Project

treatment for staff and workmen during the lock-down. At the C-17 Beddown Infrastructure Facilities, AFS Hindan (Ghaziabad), EHS In-charge, Anup Sharma is thrilled that his clients, the Indian Air Force and Boeing, have given him the go-ahead to restart operations, a reflection of his wonderful efforts during the lockdown to keep everyone safe and healthy at site.

"I joined the Adora De Goa project at the beginning of 2020," shares an excited EHS Engineer, G. Raja Sekar, "and for a month I was completely involved in embedding Behavioural Based Safety (BBS) among the employees and 616 workmen. Almost immediately thereafter COVID-19 came to us." Raja feels that his efforts bore fruit in their fight against the virus in which they were supported by a local NGO, and the health department. "If the right amount of information is shared at the right time, people's perceptions can be turned right and used as a tool to influence behaviour that goes a long way to help implement a positive EHS culture at the workplace," he counsels seriously.

The threat is alive even away from the cities

Rural-based projects like the MVDC Test Track project have their own unique challenges as EHS In-charge, C. Vijayanandan shares. "Since our project comes under the Thiruvannamalai District, we had to follow some very stringent guidelines from the Collectorate about the COVID-19 preventive measures and, in the process, met the expectations of our client, Mahindra & Mahindra too," he shares. "When we restarted work, managing the new local workmen was a big task with regard to safety culture and adherence to preventive measures for which our dynamic Corona Prevention plan helped greatly," he smiles with satisfaction.

"Having resumed operations, the challenge now is to be sharp to follow the various directives," says P Nagarajan in summation. "Constant monitoring of compliance and daily reviews are imperative. The engineer at site is responsible for safe starts every day and our emergency responses must be quick and prompt. It calls for an entirely new mindset, but we are prepared," he concludes confidently. ■





HEAVY CIVIL SEEKS A NEW SAFETY MINDSET TO COMBAT COVID-19

Even as the country gradually emerges from complete lockdowns, it is increasingly apparent that COVID-19 is not going anywhere and that it would be infinitely better for human beings to learn to live with the virus. At construction sites, work has resumed but requires an entirely new safety consciousness to perform,

according to Michael Sanderson, Head – EHS, Heavy Civil IC. “It is important not only to fully implement COVID-19 checks before starting work, but all necessary safety checks must be completed, before workmen use any equipment, with special focus on high risk activities such as work at height, excavations, working in confined spaces



Michael Sanderson
Head – EHS,
Heavy Civil IC

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and the like. Returning to work requires a change of mindset,” Michael asserts, “from one which has been in lockdown to one of restarting work, putting the likelihood of injury at its highest during this period.”

Digital solutions to the fore

For a Safe Start at all projects, a COVID-19 checklist is an imperative. Currently, every project is completing this checklist but to make the process easier to report a project’s status and to measure data, the Digital team, along with the EHS team, has created a platform using the EHS App. It is now a requirement to complete the COVID-19 checklist using the EHS App. The project Admin/IR team

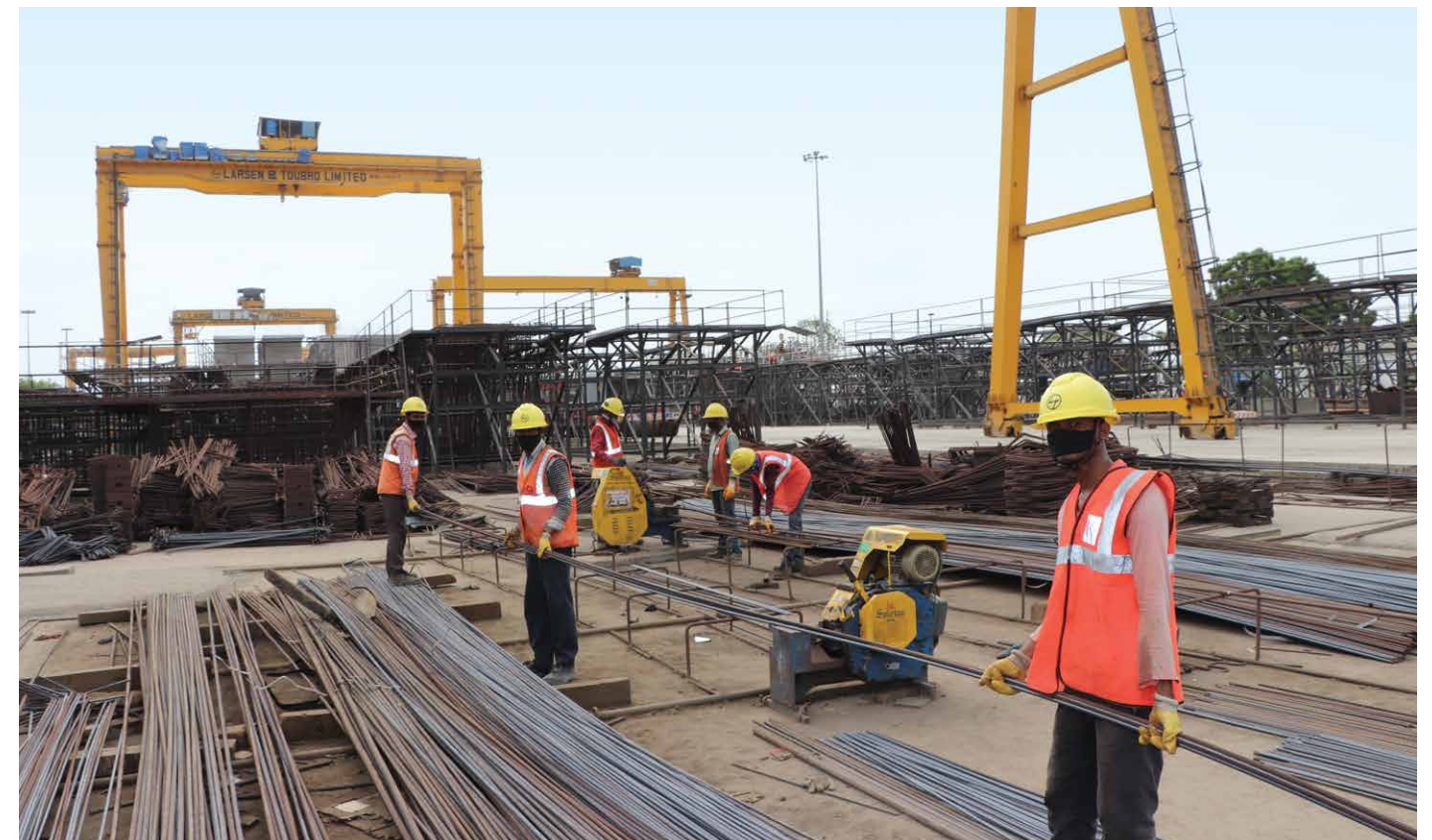
will submit the checklist in the EHS App for the EHS In-charge’s review and approval. In addition, an EHS App has been launched to ensure compliance with the Corporate SOPs on re-starting projects, that requires to identify any Risk and ensure that the necessary Controls are in place before safe restart of activities. “The goal of our EHS strategy is ZERO HARM,” reminds Michael, “and it is when resuming operations after the lockdown that accidents are more likely to occur.” This checklist ensures that the required safety controls are in place to avoid any incident or even, loss of life.

Working with the EHS team, the Digital team has released an upgraded version of the Ib4U App (version 2.2 build 7) that has an additional feature

of ‘Temperature screening’ to record the temperature of a workman by scanning the QR code on a WISA card or by entering his WISA ID number. This App is already being widely used at almost all projects.

Facing the threat of working during the lockdown

The two packages of the Mumbai Coastal Road project did not face much of a lockdown as pre-monsoon preparatory work continued almost continuously, which gave rise to several issues. At the firing end, Senior Manager – Accounts & Administration, K Hari Narayan, quickly felt the heat. “Remobilisation after the first few days of the lockdown was difficult as lots of administrative issues





S Sairam
EHS In-charge,
Kakrapar Atomic Power
Project Unit 3 & 4

We spent just INR 850 to make it (in-house fabricated hand sanitizer) while the same thing is available in the market for INR 1,600.

cropped up and day to day affairs were difficult to manage due to the lack of manpower especially during the initial stages." After having sourced the extra labour, people like Jai Sharma, Assistant Manager – IR & Accounts had several other challenges. "We had to arrange for their food, provide adequate PPEs, support staff movement from residence to site and provide for all the necessary facilities to ensure work at site. All this in the middle of Mumbai which is the most severely affected place. We also had to face so many restrictions and take so many precautions without much support," he shakes his head. Some of the skilled workmen were even accommodated at site to avoid their exposure to the virus during their commute to and from the site.

An interesting safety precaution taken by the Mumbai Metro, Package 7 under the leadership of Project Director H Jayarama, to be primed for a quick resumption of operations was to maintain the station box and tunnels to prevent mosquitos from breeding and keep them continuously dewatered to prevent water stagnation. These measures helped because as soon as the lockdown was relaxed, Jayarama's project team was one of the first off the blocks.

Necessity is the mother of invention

Frequently washing hands with soap is accepted as a potent weapon against the virus which has prompted several



Our first line of defence is a set of simple measures like maintaining social distancing, following strict hygiene norms and respiratory etiquette, sanitizing contact surfaces and self-monitoring our health and if these are religiously and rigorously followed we should be OK!

Michael Sanderson
Head – EHS, Heavy Civil IC

sites to set up foot-operated hand wash stations. In fact, at the KAPP Unit 3 & 4 project, unable to face the delay in supply, the project team fabricated their own wash station from the material and scrap available at site which was then set up at several locations. "We spent just INR 850 to make it (in-house fabricated hand sanitizer) while the same thing is available in the market for INR 1,600," remarks a satisfied, EHS In-charge, S Sairam. An added

advantage of this system is that it can save a lot of water too.

Door handles are perhaps the most touched surfaces, carrying the risk of spreading the virus. "How many times can you disinfect a door handle?" asks Sairam, "So, we in-house fabricated and fixed a foot puller to open and close doors at our office with which we have reduced the threat of transmission to a great extent."

Ensuring the new normal

Project teams across Heavy Civil are ensuring that the new normal is maintained during operations that include staggered duty schedules and mandatory safety inspections before start of work. Other measures include daily medical check-ups by the project doctors, daily temperature monitoring of the site and office staff and workmen, daily disinfecting the premises, fumigation, sanitization of vehicles, hand sanitizers for equipment operators, using biomedical waste bins for the disposal of used face masks and hand gloves, distribution of immunity boosters, and frequent awareness lectures to the workmen and employees by project doctors and paramedic staff. As a matter of abundant precaution, at the P1 Project, only workmen from the safe zones are called for duty after obtaining self-declarations from them, thereby ascertaining their health condition, travel history and contact history with any outsiders, family members and/or neighbours.

"As we move into a new phase to support a safe return to work, all of us have accepted the challenge of adopting preventive measures to help achieve a safe and healthy workplace and contribute to mitigate the transmission risk of COVID-19," Michael sums up. "Our first line of defence is a set of simple measures like maintaining social distancing, following strict hygiene norms and respiratory etiquette, sanitizing contact surfaces and self-monitoring our health and if these are religiously and rigorously followed we should be OK!" He smiles. ■





PT&D EVOLVES REGION-SPECIFIC PLANS TO STAY SAFE FROM COVID-19

The Corona virus is often referred to as a 'novel' virus with good reason because apart from the manner it infects, the challenges it keeps posing the whole of mankind is vexing and different with the result countries

across the global are adopting various methods to combat it. This has posed some serious concerns for a business such as PT&D that is executing projects across various geographies – India, Middle East, Africa, and ASEAN - with



V Ramanathan
Head – EHS,
PT&D IC

While we did have an over-arching strategy that was common for the entire business, we had to tweak it to suit country specific requirements and conditions so in effect we had to adopt a multi-faceted charter, while always adhering to all the stringent guidelines laid down by the various governments and authorities and our corporate guidelines as well.

some projects even straddling different countries. “We could not depend on a uniform mitigation safety plan,” shares V Ramanathan (VRN), Head – EHS, PT&D IC, shaking his head. “While we did have an over-arching strategy that was common for the entire business, we had to tweak it to suit country specific requirements and conditions so in effect we had to adopt a multi-faceted charter, while always adhering to all the stringent guidelines laid down by the various governments and authorities and our corporate guidelines as well.”

Several countries have their own unique impediments in their fight against

COVID-19 that had to be factored in too. In Tanzania, for instance, Manager – EHS, Edson Thangwana initially faced a serious shortage and non-readiness of Health Institutions to respond and test the virus. “Test kits and PPEs were unavailable due to supply chain constraints,” he complains, apart from having to overcome the barriers of language and cultural diversity. Amidst the hot sands of Saudi Arabia, a strict curfew threw life completely out of gear for both employees and staff and put loads of extra responsibility on the shoulders of Officer – EHS, Joseph Bagalay. “There were issues of changed work timings, difficulties in purchasing food at the stores but perhaps my biggest challenge was to convince the maintenance team for work permits.”

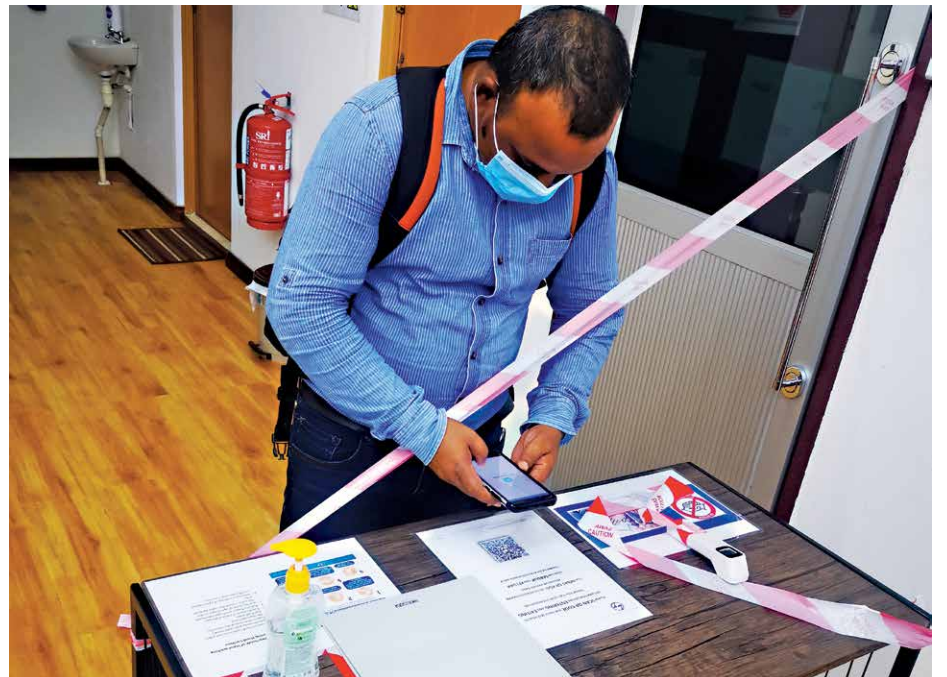
Digital solutions to up the safety ante

As soon as COVID-19 became a clear and present danger, the first step was to form

dedicated Emergency Response Teams (ERTs) across projects with members drawn from the Admin, IR and EHS departments to agree upon the SOPs, share them with the employees and workmen, monitor workmen camps, implement services of healthcare, security, sanitation, wellbeing and conduct awareness programmes.

Once the mitigation plans were in place, implementation and monitoring the precautionary measures became critical; a tough ask too for VRN and his central team as getting data from all the remote corners was difficult. “We developed and implemented a COVID-19 business continuity plan focused on minimising risks to the extent possible and use digital solutions to improve our safety quotient,” he says.

A QR Code based App developed by EHS teams in Malaysia facilitates contact less attendance registration with temperature recording that is





Tarinee Prasad
Sr. Manager (SCM)-
ASEAN BU

The rapid testing for employees in Philippines and swab test for all workmen and employees across Malaysia projects we organised were both first-of-their-kind in the company.



uploaded onto the cloud for real-time tracking of workmen and employees. Further, considering the location of the projects and their sensitivity to 'hot' zones, the EHS teams initiated on-site tests by roping in local medical teams. "The rapid testing for

employees in Philippines and swab test for all workmen and employees across Malaysia projects we organised were both first-of-their-kind in the company," informs Tarinee Prasad, Sr. Manager (SCM)-ASEAN BU.

Ignorance breeds a lot of fear about the virus especially amongst the workmen and hence one of the primary tasks was to create awareness but to achieve that with a mixed group drawn from different countries, coming from varied backgrounds and speaking different languages was going to be tough, admits Antonios Papadopoulos, Head EHS & Quality - PT&D Middle East BU. "Our EHS teams in the Middle East came up with a novel method by creating awareness



Antonios
Papadopoulos
Head EHS & Quality -
PT&D Middle East BU

Our EHS teams in the Middle East came up with a novel method by creating awareness parks across all our projects in the Middle East with key visuals highlighting the core messages to effectively convey the do's and don'ts, precautions to be taken, methods to maintain self-hygiene and the like.



parks across all our projects in the Middle East with key visuals highlighting the core messages to effectively convey the do's and don'ts, precautions to be taken, methods to maintain self-hygiene and the like. At one go, we could brief workmen on the various risks involved and even clarify some of their queries."

We have implemented the corporate guidelines along with SOPs throughout our projects and offices and so far, our sites have had minimum impact mentions Siseko Wycliff Mdllokolo, Head EHS - PT&D Africa BU. "However, it is a long battle ahead and it is important to be vigilant all through, enhance our screening and monitoring methods, make use of digital interventions wherever possible while taking up works across fronts. In line with our safety mission, we observed the L&T Safety Day with a 'Stop the Pandemic' theme, reinforcing our commitment towards creating a safer workplace under the new normal," he shares.

In Thailand that did not go in for a complete lockdown thereby putting extra pressure on the management and people to remain safe, EHS - Supervisor, Theerawat Haramee mentions the COVID tracker app to help identify the most affected areas in that country.



Siseko Wycliff
Mdllokolo
Head EHS,
PT&D Africa BU

It is important to be vigilant all through, enhance our screening and monitoring methods, make use of digital interventions wherever possible while taking up works across fronts.



Across India, the respective BU EHS Heads - PV Kaliyappan, SM Ravi, Alope Chatterjee and J. Johnson David ensured that the SOPs were implemented in line with the MHA guidelines. Further, the EHS lead team played a key role in the resumption of activities across 145 sites by mobilising around 20,000 plus workmen in a safe manner.

Digital solutions helped eliminate a few risks from some of the vital factory testing certifications. "A large part of the credit for enabling the remote factory tests especially across the ASEAN and Middle East projects goes to the respective Cluster Heads and their project teams who convinced their clients for a first-of-its-kind industry initiative," highlights Tarinee Prasad.

Banking on other secure interventions

Apart from the mandatory SOPs, EHS teams came up with many timely safety interventions based on specific needs of the sites. Across some projects, select workmen crews were formed to reduce interaction among the workmen and Ramanathan is glad that the ploy paid rich dividends. "Instead of a supervisor telling the workmen to maintain social distancing, we had a workman to convey the message which was more readily accepted by the larger group." Another step was to allocate different work slots to subcontractors to reduce interaction with L&T employees and workmen.



At the same time, a feel-good factor was created with emphasis on 'We care for our workmen.' "Initiatives such as staggered timings to access labour camps, provision for essentials and hygiene kits, engagement of third party services for sanitization, medical screening and pep talks contributed to our larger goal of workmen wellbeing and safety," smiles VRN.

Returning to work with increased emphasis on safety

With the Indian government relaxing the lockdown from April 20th, several PT&D sites in the 'green zones' prepared to resume operations. "With many of our projects being cross-country in nature, the role of the ERT team was redefined to facilitate works across fronts with the

EHS members ensuring 24/7 safety," points out VRN.

Apart from rigorous implementation of the already established preventive measures, 'Back to site' entailed pre-employment screening for all new employees, establishment of separate accommodation within labour camps and guesthouses for the newcomers, additional isolation rooms and washrooms, allocation of different work timings, limited occupancy in vehicles and buses to ensure social distancing, re-scheduling of operations across sites, liaison with social help groups for more testing and continued monitoring of recognized websites (WHO, CDC, etc.) to stay abreast of new knowledge and developments.

For an international flavour, Theerawat Harammee explains that, "In Thailand,

all new workmen before resuming site work have to go through a mandatory pre-screening to understand their work movements and check for symptoms. Some are even sent back and sometimes considered after a mandatory 14-day quarantine procedure."

A 'Safe to Start' card is being used for all employees and workmen as they commence their daily tasks which is followed by a detailed pep talk. Virtual monitoring of all tasks enables the project team to plan and prepare a work front charter in line with the new normal conditions.

"We have to stick to our new safety fundamentals to stay safe, overcome this huge threat and yet keep the business ticking," sums up VRN, highlighting the need to keep performing in this new normal. ■

CLOSE CALL

Transit mixer hits a road barrier

Scenario

A transit mixer, transferring concrete from a batching plant to a site location, hit a road side barrier and toppled into a pond.

What was the cause?

1. Lack of visibility on the road bend.
2. Less reaction time to control the vehicle due to foggy conditions.
3. No adequate provision to alert the driver.

What precautions need to be taken to prevent a recurrence?

1. Installation of speed barriers, speed humps, caution signages.
2. Adverse weather driving training to be provided.



PHEW!

WET IC VIEWS EHS SERIOUSLY TO COMBAT COVID-19



By the very nature of their projects, teams of WET IC are involved in various activities that bring them in close contact with the public. With social distancing and contact avoidance being the main weapons to combat the threat posed by COVID-19, site managements and EHS Managers have had to re-align their sites, their working styles, and their people to the new normal. Lockdown or no, people require water 24x7 and the onus on the IC has been to ensure that water systems are functioning uninterrupted for which personnel had to be arranged, ensuring all the safety precautions.

“Our concerted efforts to create and use digital solutions came in



K S Sudheesh Kumar
Head - EHS,
WET IC

Our concerted efforts to create and use digital solutions came in very handy when taking up the fight against COVID-19. Digital platforms like VIEW EHS and SafeArmZ have proved to be boons for us.

very handy when taking up the fight against COVID-19,” observes K S Sudheesh Kumar, Head – EHS, WET IC, with a small smile, “although we never thought that we would have to use them to fight a pandemic. Digital platforms like VIEW EHS and SafeArmZ have proved to be boons for us. While VIEW EHS helped maintain the EHS requirements at the project sites, the standard workmen habitats, EHS trainings, PEP Talks, awareness programs, frequent interactions and meetings with employees and workmen are all conducted through MS Teams that helped us face COVID-19 very systematically.” Sudheesh adds that the Webinars involving senior management, ATL training on WFH,

EHS Head meetings with all EHSOs, and many interactive sessions with the workmen by the EHSOs and Site Management have boosted everyone’s morale including that of the migrant workmen at sites.

Digitally combating COVID-19

The effective digital implementation using View EHS, enabled sites to adhere to and monitor all the necessary safety measures throughout the lockdown period while analysis through Power BI dashboards helped track their implementation across sites. An EHSO could add the observations of unsafe acts, unsafe conditions and unsafe

behaviours from the sites, findings from the EHS Walkthrough, action points from Project EHS Committee meetings and EHS Inspection findings into the VIEW EHS Module.

Irrespective of the lockdown, some sites continued execution works with the Client’s permission or that of the respective State governments, thanks to certain digital solutions. To start work, a Safe Execution Card (SEC) is essential and VIEW EHS became an important tool to raise a SEC without any human intervention or use of paper. “Site engineers could raise a SEC on their mobiles and submit using digital signatures,” informs Sudheesh. “The Section in charge could review the submitted SEC on his mobile and approve it using a digital signature and finally, the SEC could be approved by the EHSO. This way we avoided human intervention to a certain extent.”

Digital tools and platforms became essential tools to conduct EHS Training programs and the EHS Department





A Elango
Project Manager,
Satna-Bansagar
Multi-Village Rural
Water Supply Scheme

Our planning was spot on because not only did we come out of the lockdown with zero positive cases but since our resumption plan was in place we could restart with full vigour.



completely migrated to virtual trainings. The COVID-19 precautionary and control measures to be adopted were communicated to all sites through a daily bulletin called 'EHS Today' and periodic 'EHS Alerts'. EHS Alert training was imparted at sites to all levels to ensure a proper understanding of the prevailing pandemic situation among

both the employees and the workforce. All training migrated from classroom to virtual mode that, as Sudheesh shares, received extremely encouraging response. He mentions a very successful session on Stress Management training. "I explained the Kubler Ross model very simply and the team members were able to understand a complicated topic in a single session. We all had a very lively and interactive session," he chuckles.

Keeping the josh at sites

The Satna-Bansagar Multi-Village Rural Water Supply Scheme is executing a drinking water supply scheme targeting to reach water to 17 lakh people in 1,019 villages of Madhya Pradesh's Satna District. For Project Manager, A Elango,

Cluster Head, Shaik Yesdani Ahmed and the EHS team of M Saravanan and Sandeep Singh, the challenge was to safeguard the health and safety of their 48 employees and 604 workmen. "Our planning was spot on because not only did we come out of the lockdown with zero positive cases but since our resumption plan was in place we could restart with full vigour," exults Elango. He has reason to be exultant because he and his team celebrated the resumption of operations by achieving a milestone of laying 2,200 kms of DI and HDPE pipeline in less than a year.

Under the leadership of Project Manager, Pratik Raj, the Moga water supply scheme project team is striving to provide water to 85 villages in the district of Moga in Punjab. COVID-19 put a big spoke in their wheel, "but we took



this pandemic in our stride," remarks Pratik, "and had our mitigation plan in place to not only keep our 17 employees and 120 workmen safe but also continue working ensuring that our people were well protected." Apart from conducting a safety drill to fight the virus, eminent practitioners from the government were invited to present to the workmen about safety precautions. "Before resumption of work, SOPs were shared virtually with all," informs CHESM, Rashmikant Chauhan. "Apart from distributing the best of PPEs, we implemented the use of an ergonomically designed COVID Safe Key that saved the staff from touching potential germ-carrying surfaces." Pratik is proud of a letter of appreciation

that the Department of Water Supply & Sanitation presented to him and his team including Construction Manager, Navdeep Kumar Sharma and Coordinator, S Anantha Prasanna Venkatesh for their sterling effort during the lockdown and even post it.

In a remote corner at Kolgur, some 60 km from Hyderabad, Project Manager, K S Viswanatham and Assistant Manager, EHS, Puttapalli Hazarath Harish Babu, are driving safety at the Mallanna Sagar Reservoir Project site to keep their 210 workmen safe. "Our lockdown lasted for just 3 days after which the Government of Telangana instructed us to resume operations," informs Viswanatham.



Muhammed Rushaid
Assistant Manager - EHS,
Seoni Multi Village
Water Supply Scheme

The new normal has brought about a conscious shift towards hygiene and that is for the overall good. While, as an EHS officer, I introduced small value additions such as in-house fabricated hand sanitizers and ensured compliance to EHS monitoring and inspections through the VIEW EHS app.





Yagana Khan
EHSO,
Udaipur Integrated
Project

It's tough since our site activities are predominantly along narrow roads and by-lanes, but with effective communication and ensuring minimum interface, we are succeeding.



Keeping the workforce at site and committed were their other concerns and using a carrot and stick approach, Harish Babu proudly shares that “we might be the only site across L&T to have successfully retained our entire workforce!” One of their interesting initiatives was to identify areas and source soil for their embankment work in and around the site to eliminate the risk of travel and exposure.

Meanwhile, over at the Seoni Multi Village water supply scheme, Assistant Manager – EHS, Muhammed Rushaid is busy keeping his 140 workmen based in 3 camps, the staff at guest houses, office, site, and open excavations safe. “The new normal has brought about a conscious shift towards hygiene and that is for the overall good,” he remarks, “while, as an EHS officer, I introduced small value additions such as in-house fabricated hand sanitizers and ensured compliance to EHS monitoring and inspections through the VIEW EHS app.” Similarly, EHSO, Ms Yagana Khan, with her Project Manager, Vipin Kumar Tyagi and team are focused on keeping their 1,200-strong workman force safe. “It's tough since our site activities are predominantly along narrow roads and by-lanes,” she says, “but with effective communication and ensuring minimum interface, we are succeeding,” she smiles.



Keeping the O&M commitments going

Through the lockdown, to honour their O&M commitments, projects teams had to continue supplying water for drinking and irrigation and treat waste water as STPs and WTPs remained operational. Implementation of SOPs for pathogenic infection prevention was ramped up, the result of meticulous random audits across O&M sites that addressed all possible situations. For eg. for situations when an employee is working alone in a pump station at a remote location, particularly outside normal and night working hours. COVID-19 prevention compliances and EHS review meetings were separately conducted for all the O&M segments across the country.

“At the end of the day, it is the vigour of our practices and the versatility of our digital platforms that have kept us



At the end of the day, it is the vigour of our practices and the versatility of our digital platforms that have kept us ahead.

The war is yet to be won against the pandemic, but we are winning a few battles!

K S Sudheesh Kumar
Head – EHS, WET IC

ahead,” rounds off Sudheesh. “The war is yet to be won against the pandemic, but we are winning a few battles!” ■

CLOSE CALL

Toppling of a crane during a lift

Scenario

A 40t telescopic crane was in the process of lifting pier tables during some de-shuttering work. When lowering the shutter, the crane's rear outrigger on the right side started to settle into the soil and with the wooden sleepers getting embedded, the outrigger jack slipped from the sleeper into the soil. Subsequently, with the front outrigger jack getting into the PCC layer, the crane toppled over. The boom of the crane came to rest on the C- frame that is connected to the shutter that tilted the crane. Fortunately, there was no injury or loss of property.

What was the cause?

1. Lack of ground stability.
2. Outriggers not positioned on a firm base.

What precautions need to be taken to prevent a recurrence?

1. It is imperative to create a stable base during such operations.
2. Special care should be taken if it has rained to ascertain a firm footing to position the outrigger.



Incident scene



Rear out rigger



Front out rigger

PHEW!



STAYING CONNECTED WAS THE KEY!

How L&T GeoStructure sites stayed safe from COVID-19

Speak to any Project Manager from L&T GeoStructure and chances are that you will hear them singing the same tune about how they prepared themselves and their respective sites to combat the threat of COVID-19. “The situation was unprecedented and the kind of issues that were arising were completely new but by being coordinated and concerted in our overall approach, we were able to face and overcome most challenges,” says a very determined looking K P Ravinath (KPRn), Head – EHS, L&T GeoStructure.



K P Ravinath
Head – EHS, L&T
GeoStructure

The situation was unprecedented and the kind of issues that were arising were completely new but by being coordinated and concerted in our overall approach, we were able to face and overcome most challenges. Staying connected was critical.



“Right from day one, we remained connected, speaking to each other daily, discussing each problem threadbare and evolving solutions that had everyone’s buy in. Staying connected was critical,” he asserts.

Calming the agitated workmen

As news of the pandemic layered with a substantial dose of rumours and fake news started making the rounds, the agitation amongst the workmen was



Sreejith Menon
Project Manager,
1X660 MW Panki
Thermal Power Plant

Communication is key in such situations and our first task was to secure the work force and keep them safe from any infections by educating them about the seriousness of the situation and train them to follow a healthy lifestyle.



only to be expected. For Junior Engineer – EHS, Vibin Mathew at the Chennai Metro Rail project, these were hugely testing times. “As a safety professional, we faced several challenges during the lockdown, the most critical being to monitor and control our thousand odd workmen.” The task was tougher for Vibin and team as the number of positive cases in Chennai was steadily climbing and their workmen were located across five different locations some of which were red hot zones like Tondiarpet and Royapuram and with no work, it was extremely difficult to prevent them from wandering out of their camps. “Initially, they were unaware about the virus and

its impact which was why they were agitated so our first task was to calm them down by making them understand about COVID-19, about the prevailing situation and what L&T was prepared to do for them,” says a very practical Vibin.

Project Manager, Sreejith Menon at the 1X660 MW Panki Thermal Power Plant at Panki, Kanpur, Uttar Pradesh echoes Vibin. After arming himself with all the relevant information from reliable sources about the pandemic, Sreejith shared it with his staff and workmen. “Communication is key in such situations and our first task was to secure the work force and keep them safe from any infections by educating them about the seriousness of the situation and train them to follow a healthy lifestyle.”

“It is difficult to communicate with an agitated mind,” interjects KPRn, “and hence our effort across projects was first to calm the workmen down to bring them to a state in which they would listen to us. Once we were satisfied that we had achieved this first objective, we started on our next step to educate them through pep talks, awareness programmes and personal interactions.”





Rajaneesh Rai Kumar
Project Manager,
Navigational Lock
Project

We took several serious steps to educate even the subcontractors and the manpower of suppliers in advance, to maintain discipline in their daily meetings, practice social distancing and take other precautionary measures at the workplace.



Safety in distance and hygiene

The one line brief for every employee and workmen across all sites was to maintain social distancing at every point – at work, when traveling to and from the site, at the camps, at homes – and follow strict personal hygiene norms. “We took several serious steps to educate even the subcontractors and the manpower of suppliers in advance,” says Rajaneesh Rai Kumar, Project Manager - Navigational Lock project at Farakka, West Bengal, “to maintain discipline in their daily meetings, practice social distancing and take other precautionary measures at the workplace.”

Maintaining good health of the employees and workmen was top priority for all EHS managers as it was

for M Arun, EHS In-charge of the Panki Powerhouse project. “Apart from regular medical camps for the entire workforce we put in place a clear SOP,” he points out. All newly inducted workmen were necessarily quarantined for 14 days and engaged to work at site only after a medical check-up. “Our existing workmen who were put up at our camp were thermally temperature scanned daily before being allowed into the site while those who stayed outside were medically checked every day before start of work.” The stringent measures instituted by Arun and team at site have yielded excellent results: zero reported cases from their site!

Staying prepared to restart

“The TN government’s initiative to start various businesses is a welcome move



Tulasi Das Govvada
Project Manager,
JSW Site

Suddenly stopping work would have adversely affected the safety of the coal handling terminal we are constructing, so we had no alternative but to continue work albeit with minimum resources and with strict adherence to all the COVID-19 directives and other safety measures.



as we have to quickly adapt to the ‘new normal’,” says Senior Engineer – Execution, M Adarssh with great gusto from the Chennai site but resumption of operations has been fraught with challenges with the exodus of a large number workmen and the construction industry is hoping for a reverse migration for work to return to full gear.

“Although everything stopped during the lockdown, we could not afford to,” declares Project Manager, Tulasi Das Govvada at the JSW site at Paradip. “Suddenly stopping work would have adversely affected the safety of the coal handling terminal we are constructing, so we had no alternative but to continue work albeit with minimum resources and with strict adherence to all the COVID-19 directives and other safety measures.

We only operated essential and critical works deploying the necessary manpower on a rotation basis to monitor the construction.” Tulasi Das’s steps have been spot on because not only have they negotiated the lockdown but have continued forging ahead even after the relaxations were announced.

Staying connected pays

“We established good PR with all the local administrative authorities taking them into confidence like the local police departments, BDO, the local MLA and political parties who supported the team during the crisis,” shares Rajaneesh, “and each department head has taken the initiative to interact daily with their team before start of








**SHARE INFORMATION.
DON'T SPREAD
MISINFORMATION!**

**RUMOURS AND FAKE NEWS ARE MORE
DANGEROUS THAN THE VIRUS.
DOUBLE CHECK THE VERACITY OF ALL
THAT YOU SHARE ABOUT COVID-19.**



R Ravikumar
Project Manager,
Sea Water Intake Project

For me personally, staying back at site actually helped because I was able to continuously follow up with my client for an early start, received permission to restart on 26th April and started all activities the very next day.

work which has become a practice now. We also maintained excellent relationships with the client that has also stood us in good stead,” he smiles. Project Manager, R Ravikumar, at the Sea Water Intake Project in Uppur shares the same sentiment. “For me personally, staying back at site actually helped because I was able to continuously follow up with my client for an early start, received permission to restart on 26th April and started all activities the very next day,” he says with an obvious sense of achievement.

Constant communication worked very well even for the project team. “As a matter of fact, by motivating them, I kept myself motivated,” says Assistant Manager – Planning, Nikhil Pasari from the JSW site with a smile, “and it drove me to do my best to provide comfort and motivation to all my colleagues.”

“The overall situation across the world is still grim more so in India,” remarks KPRn. “The COVID-19 threat is still very alive and our message to all Project and EHS Managers is not to lower their guard even for a moment because although safety of all at site is important keeping the business going is equally critical.” ■



ALWAYS PREPARED FOR THE UNEXPECTED!

How EHS Managers at
MMH are coping with
COVID-19

As the pandemic rages across the world, it has become fashionable to call these ‘unprecedented times.’ Although the description is spot on, EHS Managers however are dreading the term as it presupposes several unforeseen and hitherto unencountered risks for which EHS teams must be ever prepared to address. “While the whole situation is novel and we would have taken care of all the big issues, sometimes it is the smaller ones that can throw everything out of gear,” remarks K N Sen (KNS), Head – EHS,



K N Sen
Head – EHS, MMH SBG

While the whole situation is novel and we would have taken care of all the big issues, sometimes it is the smaller ones that can throw everything out of gear. At the best of times, the pressure on EHS teams is high, but during these days of COVID-19, it is critical, and our speed of reaction has had to be far quicker than normal.




As soon as realization dawned, we started to act, and since this was the first time all of us were doing it, we were learning and course-correcting as we went along.



Hare Ram
 Project Director,
 Mansourah Massarah
 Gold Project

the accommodation housing some 700 workmen had to be completely rearranged immediately. “As soon as realization dawned, we started to act,” says Project Director, Hare Ram, “and since this was the first time all of us were doing it, we were learning and course-correcting as we went along.” Controlling the entry of people into the site was deterred by a huge 38-km perimeter. “We addressed this issue by establishing an outpost about 5 km from the site,” informs, Assistant Manager – EHS, Rahul Mohan “to adequately screen people before they entered our site.”

Another vital weapon to combat the virus is communication, both upward and downward and sites that have kept their channels of communication open and well-oiled have fared better than others. With the Saudi Arabian authorities issuing several instructions, advisories, and strictures, it was essential for the team to deal with them and the Saudi officials, especially the medical staff. “Most of them did not speak English or Hindi which initially put us in a spot,” Rahul says with a tight smile, “but we overcame that problem by quickly appointing English-speaking PRO and GRO.”

Overcoming the challenge of remoteness

“It was such a paradoxical situation,” observes KNS, “while on one hand, we were striving to maintain social distancing, on the other, physical distance was throwing up several challenges for many of our sites.” While the MMGP team had to contend being 500+ km from the capital city, Riyadh, and 200+ km from the nearest town of Taif from where their

supplies came, the Khargone Thermal Power project was facing a similar issue of isolation being far away from civilization as Assistant Manager – EHS, S P Tamilarasu explains. “We were suddenly hit by several safety issues. The first was that since our site was far away from both Indore (100 km) and the district town of Khargone (60 km), getting essentials like food, medicines and PPEs was very difficult. When the lockdown was announced, we had about 950 workmen stranded at our labour colony; all of them were migrants from various states mostly Bihar, UP, Jharkhand, Orissa, partly from MP and to keep them calm was a huge task.” Another issue for Project Manager, Mukesh Kumar, Tamilarasu and team was that the employees were accommodated at Sanawad some

45 Km from site due to the lack of proper facilities at Selda, which was tantamount to opening a new front to their battle. “It was a Herculean task involving multi-tasking and ensuring that all our bases were covered,” admits Mukesh, “but the team came together and delivered,” his pride in his team obvious.

Keeping huge gangs safe

Sites across L&T Construction with large gangs have had to evolve strategies on a war-footing to tackle the challenge of keeping large workforces safe like the site team at the JSW, Dolvi site that had a workforce of 8,000, spread across various camps. “The first task was

to get the workmen into the right mindset,” remarks KNS. “To impress upon them that this was a novel virus that warranted novel ways to fight it.” The primary task for EHS Manager – Satish Chandra Yadav – and team was to prevent the workmen from straying outside the safety of their camps. “Not only did we provide all their essentials inside the camp,” points out Assistant Manager – IR, Purushottam Sawant, “but we even arranged for money withdrawal and transfer facilities with an ATM set up.” Satish cleverly used the workmen to further his EHS mandate by empowering them to blow the whistle on others who were not toeing the safety line. “It has worked wonders,” smiles a satisfied Satish, “and it is a wonderful best practice to follow going forward.”





Bhanu Pratap Singh
Project Director,
JSW, Dolvi

All our efforts of forming Emergency Response Teams, assigning clear roles and responsibilities and keeping track of developments were all focused to one end: be ready to resume operations as soon as the lockdown was relaxed.



Returning to site

“All our efforts of forming Emergency Response Teams, assigning clear roles and responsibilities and keeping track of developments were all focused to one end: be ready to resume operations as soon as the lockdown was relaxed,” says Project Director – JSW, Dolvi, Bhanu Pratap Singh, with a purposeful set to his eyes. “Very early in the piece, we drew up an exhaustive list of SOPs,” informs KNS, “but the critical part was to meticulously follow them across sites for which there were frequent reviews and constant follow up. We also put in place a robust procedure to thoroughly check and escort to ensure limited exposure apart from thorough sanitization and social distancing.”

Their checklist included signing of self-declaration forms, thermal checking of body temperature, ready supply of PPEs, installation of hand sanitization points, personal hygiene precautions, awareness training for workmen, re-drawing of workplace and common area layouts to ensure social distancing, reorganization of working hours, access control, plan for proper transportation, visitor management, regular disinfecting, health surveillance, protection of vulnerable workmen and immediate steps to treat symptomatic cases.

Several other initiatives were adopted by MMH teams to reaffirm their commitment to ensure a safe working environment before resuming operations at site. “The first step was to form a team of senior staff from

various departments,” shares KNS, “that conducted multiple walkthroughs around sites to verify the condition of the workplaces based on which reports were submitted to the site leadership that helped them to declare ‘GO’ and ‘NO GO’ areas to ensure a safe working environment for our workmen.” Another major initiative was to reverify the skill levels of the workforce who had not practised their respective skills during the lockdown which helped the site team to determine the vulnerable workforce and re-train them on certain skills.

Staying connected

Daily EHS review meetings through MS teams ensured that the EHS teams across sites always remained connected for daily updates on site progress. The meetings focused on day-to-day updates, implementing COVID-19 control measures, challenges in complying to EHS requirements, competency development through e-learning, developing new solutions.






DON'T GET UNNECESSARILY HASSLED!

THESE ARE DIFFICULT TIMES;
STAY CALM AND LEARN TO TAKE THE
ROUGH WITH THE SMOOTH.

These have clocked 90+ meeting hours thus far and still counting. The EHS team members benefitted too by building their competencies through online courses, practising new assessment tools on ergonomics such as Ovako Working Posture Assessment System (OWAS), Rapid Upper Limb Disorder (RULA) etc. and adopting best practices on COVID-19 control measures from other industries.

“The important thing was to remain committed to our efforts without any let up,” sums up KNS, “and the result is all there for us to see. Most of our sites have resumed operations safely and our effort is to keep our safety track record intact,” he concludes confidently. ■

SMARTLY BRIDGING DISTANCES DURING THE TIMES OF COVID-19



As soon as movement started to get restricted due to the lockdown and State governments, civic and police authorities started realizing that the only way to stay connected to monitor, communicate and control COVID-19 related operations was going digital, the pressure on Smart World & Communications (SW&C) teams across cities pan-India mounted to quickly connect cities with their smart solutions. While the lockdown drove most of the country into the safety of their homes, SW&C teams were forced out into their workstations at all hours of the day and night to keep things ticking over 24x7.

The fight being fought from war rooms

Almost overnight, Command & Control Centres and City Operation Centres across cities were converted into War Rooms to become base of operations for the authorities. "The first task was to complete the conversion but the bigger one was to ensure that they functioned seamlessly, without hassles 24x7," shares Project Manager – Raipur Smart City, Santosh Kumar Potnuru, who's working hours have stretched way beyond the normal. His primary responsibility was the safety and wellbeing of his team of 70 who were risking their lives every day.

Apart from procuring special passes for travel during the lockdown every other precaution was taken to stay safe – using separate vehicles, donning face masks and gloves, keeping social distance at the workplace and the like. "As the situation evolved, our customer's requirements kept changing so we had to constantly think on our feet, have frequent meetings that were unavoidable and deliver. Thus far, there have been no escalations," smiles a relieved Santosh.

Over at the Nagpur Smart City project, Senior Engineer, Priyanka Debnath is feeling the heat running two 12-hour shifts to cover a range of

critical activities in the War Room like managing public announcements, monitoring VMDs & CCTVs and cyber security checking all IT systems. "With almost all the top bureaucrats in the War Room, we couldn't afford to let up even for a moment," she remarks, citing an incident that was resolved at 1 am. Though equally stressed, Assistant Manager – Field & O&M, Farman Ali is more at peace with himself at the Pune Smart City project where by extending Wifi coverage to isolation and quarantine centres, "we were able to give the patients a feel-good experience of being remotely in touch with their loved ones while recovering."

"We have to monitor 124 viewing centres, facilitate helpdesk activities, manage DIAL 100 transactions and several other vital functions," says Project Manager – Mumbai City Surveillance project, T S Senthil Kumar from the hottest of hot zones. "We had to realign cameras in

containment zones with video analytics, deploy ANPR cameras to monitor vehicle count, enhance viewing centres including one in the CM's bungalow and set up 34 cameras in a temporarily converted COVID-19 hospital and integrate them into our network. Each task was full of risk, but we stuck to our guns and delivered safely."

Even as people like Senthil Kumar, Priyanka, Farman and a host of others are focused on delivering smart solutions, they have to be constantly aware of taking all precautionary measures to keep themselves safe and healthy.

Charting a safe mission

"Apart from providing technical support round the clock across the control centres, a critical task was to source and provide adequate number of PPEs to safeguard our warriors,"





D.P. Shinde
Head – Safety & Quality

Within days, we had worked out a comprehensive safety charter covering hazard identification, environmental assessment, impact and significance register which was quickly shared with project teams to plan control measures in line with identified risks and impact thereof. All our good work enabled site teams to evolve their own Emergency Response Plans, do mock drills, conduct simulation exercises and be prepared for any unlikely situation.

points out D.P. Shinde, Head – Safety & Quality. Taking on the responsibility, the EHS Department adopted a centralized process to source the PPEs by standardizing procurement and directly despatching to sites. The team prepared a Biological Waste Management Plan too that was followed at all sites. Based on the local conditions, sites adopted various sustainable approaches to dispose off

the used PPEs by tying up with waste management agencies and hospitals as per government guidelines.

Elaborating on his safety mission, D.P. Shinde says, “Within days, we had worked out a comprehensive safety charter covering hazard identification, environmental assessment, impact and significance register which was quickly shared with project teams to

plan control measures in line with identified risks and impact thereof.” A pep-talk document based on the SOP was shared across sites to standardize cascading to workmen and technicians.

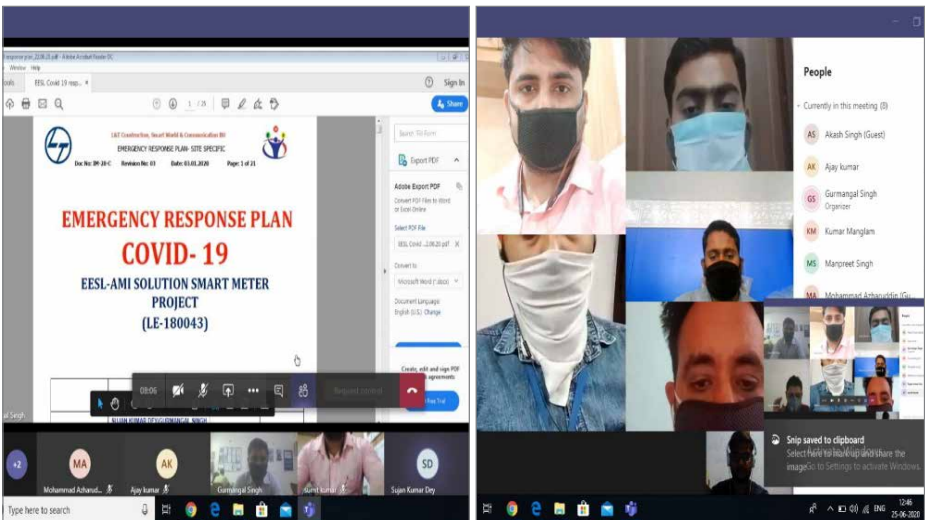
Digitalization lends a smart edge

When physical interaction is not advisable except when unavoidable, digital solutions can win the day as D.P. Shinde found to his delight. “All key safety documents were uploaded into ‘ViewEHS’ and made available to all as a ready reckoner. At the same time, various online inspection checklists and forms were available on digital dashboards to monitor the frequency of inspections, safety training conducted, workmen inductions, compliances



and even aspects like whether proper disinfections and fumigations were done at sites.” All EHS meetings and reviews were in the virtual mode and as D.P. Shinde adds, “All our good work

enabled site teams to evolve their own Emergency Response Plans, do mock drills, conduct simulation exercises and be prepared for any unlikely situation.”



Well-armed to repair smart meters

A desperate call from the client turned Project Manager - ESSL AMI Solution Smart Meters Project, Rajveer Singh Shekhawat’s lockdown upside down as 8,000 smart meters were malfunctioning that could not be fixed remotely. With a team of 40, he set about attacking close to 2,900 households in Gurugram. “We had to be doubly careful entering various housing societies and houses, but we were always fully armed,” he pumps a fist. And armed they were with face masks, face shields, gloves, helmets, safety shoes and reflective jackets or aprons. “We negotiated all the risks and completed the task without a single positive case but it took a lot of doing,” he admits with a nod, “a lot of morale boosting and pep-talking,” he smiles. While Rajveer had the relative comfort of being at ground zero to manage the situation, Manager – O&M, Anurag Bhargava was stuck in a containment zone, away from his team as they attended to complaints of faulty meters. “Managing 9 teams of around 100 members largely from the O&M agencies across 12 towns was a huge task but we managed.” He almost throws his hands up in triumph.

The leaders of several state governments, municipalities and police departments have commended the sterling effort of the SW&C personnel. Although the country is slowly unlocking, the pressure on D.P. Shinde and his EHS teams will remain to keep their people safe even as we learn to live with the pandemic. ■



Helmet congratulates the following sites for achieving million and more LTI free safe man-hours

BUILDINGS & FACTORIES IC

- 32 Wipro IT SEZ Project, Bengaluru**
Million Safe Man Hours
December 2016 to June 2020
- 28 Crescent Bay Project, Mumbai**
Million Safe Man Hours
January 2016 to June 2020
- 25 DLF Cyber Park Project, Gurgaon**
Million Safe Man Hours
December 2015 to June 2020
- 22 IICC Dwarka Project**
Million Safe Man Hours
February 2018 to June 2020
- 21 Cricket Stadium Project, Motera**
Million Safe Man Hours
January 2017 to June 2020
- 20 One ICC and Two ICC Bombay Realty**
Million Safe Man Hours
November 2017 to June 2020
- 20 Rustomjee Crown Project, Mumbai**
Million Safe Man Hours
April 2010 to June 2020

- 16 Oberoi Sky City Project, Borivali**
Million Safe Man Hours
June 2016 to June 2020
- 16 TATA Housing Project, Kolkata**
Million Safe Man Hours
September 2014 to June 2020
- 16 Prestige Song of the South Project, Bengaluru**
Million Safe Man Hours
April 2016 to June 2020
- 14 IGH Dwaraka Project, Delhi**
Million Safe Man Hours
September 2014 to June 2020
- 13 Raintree Boulevard Project Bengaluru**
Million Safe Man Hours
September 2016 to June 2020
- 12 Statue of Unity Project**
Million Safe Man Hours
March 2018 to June 2020
- 11 Oberoi Eternia Mulund Project, Mumbai**
Million Safe Man Hours
January 2017 to June 2020



- 10 BIAL T2 Airport Project, Bengaluru**
Million Safe Man Hours
August 2019 to June 2020

TRANSPORTATION INFRASTRUCTURE IC

- 22 Western Dedicated Freight Corridor Corporation CTP - 1**
Million Safe Man Hours
August 2017 to June 2020
- 20 Delhi Agra Road Project**
Million Safe Man Hours
July 2016 to June 2020
- 19 Hospet Chitradurga Road Project**
Million Safe Man Hours
May 2017 to June 2020
- 13 Yadgiri Warangal Road Project**
Million Safe Man Hours
June 2016 to June 2020
- 13 WDFC CTP-14**
Million Safe Man Hours
February 2017 to June 2020
- 10 Mumbai Nagpur Expressway MNEP**
Million Safe Man Hours
November 2018 to June 2020

- 10 EDFC - CP-303**
Million Safe Man Hours
March 2018 to June 2020
- 9 BIAL Runway**
Million Safe Man Hours
December 2018 to June 2020
- 9 Baharagora Singhara Road Project**
Million Safe Man Hours
November 2017 to June 2020
- 8 Mukkola - KL/TN Border Road Project**
Million Safe Man Hours
June 2016 to June 2020
- 7 Manwath to Beed Road Project (EPC)**
Million Safe Man Hours
December 2014 to June 2020
- 7 Bidkin Industrial Area (Package - I)**
Million Safe Man Hours
July 2017 to June 2020
- 6 Raipur Bilaspur Road Project-Pkg-II**
Million Safe Man Hours
September 2016 to June 2020
- 6 Delhi Airport II (TI IC)**
Million Safe Man Hours
April 2019 to June 2020

Safety

Roll of Honour

- 6 **Villukuri Kanyakumari Road Project**
Million Safe Man Hours
September 2016 to June 2020
- 6 **Bar Bilara Jodhpur Road Project**
Million Safe Man Hours
April 2017 to June 2020
- 6 **Western Dedicated Freight Corridor Corporation CTP - 2**
Million Safe Man Hours
December 2019 to June 2020
- 5 **Chandigarh Kharar Elevated Corridor**
Million Safe Man Hours
August 2016 to June 2020
- 5 **Pragati Maidan**
Million Safe Man Hours
December 2017 to June 2020
- 5 **Aurangabad to Karodi**
Million Safe Man Hours
October 2018 to June 2020
- 3 **Ghoshpukur Salsalabari Road Project**
Million Safe Man Hours
September 2019 to June 2020
- 3 **Dept Code - Central Office TI -RKJLRP (Jabalpur MP)**
Million Safe Man Hours
January 2019 to June 2020

- 2 **WDFC CTP 3R**
Million Safe Man Hours
November 2019 to June 2020

RAILWAY SBG

- 11 **OPGC MGR Project**
Million Safe Man Hours
July 2015 to June 2020
- 9 **Riyadh Metro Project**
Million Safe Man Hours
December 2015 to June 2020
- 4 **Roha Verna Railway Electrification Project**
Million Safe Man Hours
May 2017 to June 2020
- 3 **WDFC EMP-4**
Million Safe Man Hours
May 2015 to June 2020
- 3 **WDFC EMP - 16**
Million Safe Man Hours
May 2016 to June 2020
- 3 **DMRC CE-07**
Million Safe Man Hours
July 2013 to June 2020
- 2 **EDFC CP 204**
Million Safe Man Hours
June 2016 to June 2020

Safety

Roll of Honour

- 2 **Delhi Core Project**
Million Safe Man Hours
July 2018 to June 2020

POWER TRANSMISSION & DISTRIBUTION IC

- 6 **250 MW ACEPL SPV Plant MP**
Million Safe Man Hours
January 2018 to June 2020
- 5 **765 KVD/C Ranchi- Medinipur Transmission Line ERSSTL 01**
Million Safe Man Hours
September 2018 to June 2020
- 5 **Erection Job for ODSSP PH II PKG 4**
Million Safe Man Hours
January 2016 to June 2020
- 5 **ODSSP Phase-III Package-4**
Million Safe Man Hours
August 2016 to June 2020
- 4 **UG Cabling works under Advance Scrips Project**
Million Safe Man Hours
October 2016 to June 2020
- 4 **R-TL-Trans Scheme-Consulatancy Serv-JSEB-PCGIL**
Million Safe Man Hours
April 2013 to June 2020

- 3 **TW01 for 800 kV HVDC Raigarh Pugalur-PGCIL**
Million Safe Man Hours
September 2017 to June 2020
- 3 **Allahabad Kaushambi**
Million Safe Man Hours
May 2018 to June 2020
- 3 **RE works at Ghazipur Chandauli**
Million Safe Man Hours
September 2018 to June 2020
- 3 **Rural Electrical Work under DDUGJY (WESCO) PK-4**
Million Safe Man Hours
January 2017 to June 2020
- 3 **765 kV D/C MJTL ERSSTL 02**
Million Safe Man Hours
May 2019 to June 2020
- 3 **RE works at Basti Sant Kabir Nagar and Siddharthna**
Million Safe Man Hours
May 2018 to June 2020
- 3 **Kanpur IPDS**
Million Safe Man Hours
November 2016 to June 2020

Safety

Roll of Honour

- 3 **Saubhagya Cluster-1**
Million Safe Man Hours
May 2018 to June 2020
- 3 **K-TL-132kV D/C JUSNL NIT-42**
Million Safe Man Hours
April 2017 to June 2020
- 3 **Erection Job for ODSSP PH II PKG 3**
Million Safe Man Hours
February 2017 to June 2020
- 3 **RE works at Gorakhpur Deoria**
Million Safe Man Hours
May 2018 to June 2020
- 2 **Saubhagya Cluster-2**
Million Safe Man Hours
May 2018 to June 2020
- 2 **100 MW(AC) SBE SPV Plant Bhadla**
Million Safe Man Hours
March 18 to June 2020
- 2 **RGGVY Jammu - PGCIL**
Million Safe Man Hours
April 2018 to June 2020
- 2 **C-SS-UG cabling works in Vishakapatnam (Pkg-2)**
Million Safe Man Hours
February 2018 to June 2020

- 2 **K-SS- DDUGJY Birbhum (WBSEDCL)**
Million Safe Man Hours
February 2018 to June 2020
- 2 **K-SS- DDUGJY North 24 Parganas (WBSEDCL)**
Million Safe Man Hours
January 2018 to June 2020
- 2 **Jaunpur-RGGVY**
Million Safe Man Hours
December 2015 to June 2020
- 2 **K-SS- DDUGJY Paschim Midnapore (WBSEDCL)**
Million Safe Man Hours
January 2018 to June 2020
- 2 **Saubhagya-Lakhimpur Kheri**
Million Safe Man Hours
April 2018 to June 2020
- 2 **IPDS Works in PESU(West)- SBPDCL**
Million Safe Man Hours
February 2018 to June 2020
- 2 **132 kV / 66 kV Tower Package TK02 Sikkim PGCIL**
Million Safe Man Hours
March 2016 to June 2020

Safety

Roll of Honour

- 2 **K-SS- DDUGJY Nadia (WBSEDCL)**
Million Safe Man Hours
July 2017 to June 2020
- 2 **Meerut DDUGJY**
Million Safe Man Hours
October 2017 to June 2020
- 2 **K-SS- DDUGJY Purba Midnapore (WBSEDCL)**
Million Safe Man Hours
August 2017 to June 2020
- 2 **Electrification Works under IPDS Scheme**
Million Safe Man Hours
November 2017 to June 2020
- 2 **K-SS- DDUGJY Hooghly (WBSEDCL)**
Million Safe Man Hours
July 2017 to June 2020
- 2 **DDUGJY RE Works in Madhubani - NBPDC**
Million Safe Man Hours
March 2018 to June 2020
- 2 **MPPTCL KFW TR101**
Million Safe Man Hours
November 2017 to June 2020
- 2 **Saubhagya- Aligarh & Hathras**
Million Safe Man Hours
May 2018 to June 2020
- 2 **NTPC Mouda & Solapur**
Million Safe Man Hours
February 2015 to June 2020
- 2 **IPDS BEST Mumbai**
Million Safe Man Hours
May 2018 to May 20
- 2 **Saubhagya-Firozabad, Mainpuri**
Million Safe Man Hours
May 2018 to June 2020
- 2 **DDUGJY RE Works in Nalanda District - SBPDCL**
Million Safe Man Hours
May 2017 to June 2020
- 2 **DDUGJY Hazaribagh (JBVNL) - Jharkhand**
Million Safe Man Hours
September 2017 to June 2020
- 2 **K-TL-PKGAF 220 kV Transmission Line**
Million Safe Man Hours
April 17 to June 2020
- 1 **Saubhagya-Rai Bareilly District**
Million Safe Man Hours
June 2018 to June 2020

Safety

Roll of Honour

- 1** **NPCIL FPI**
Million Safe Man Hours
May 2013 to June 2020
- 1** **K-SS- IPDS Nadia (WBSIEDCL)**
Million Safe Man Hours
April 2017 to June 2020
- 1** **DDUGJY RE works in Vaishali - NBPDC**
Million Safe Man Hours
August 2018 to June 2020
- 1** **MPPTCL KFW TR103**
Million Safe Man Hours
January 2018 to June 2020
- 1** **220 kV 132kV MPPTCL 107**
Million Safe Man Hours
April 2019 to June 2020
- 1** **MPPTCL KFW TR-104**
Million Safe Man Hours
January 2018 to June 2020
- 1** **R-TL-220kV / 132kV lines -NIT15 - PKG D-BSPTCL**
Million Safe Man Hours
August 2015 to June 2020
- 1** **220kV/132kV MPPTL lines (TR-208)**
Million Safe Man Hours
January 2019 to June 2020

K-SS- DDUGJY Murshidabad (WBSIEDCL)

- 1** Million Safe Man Hours
January 2018 to June 2020

K-SS- DDUGJY Jalpaiguri (WBSIEDCL)

- 1** Million Safe Man Hours
May 2017 to June 2020

HEAVY CIVIL INFRASTRUCTURE IC

- 104** **Riyadh Metro JV**
Million Safe Man Hours

- 51** **Doha Metro JV**
Million Safe Man Hours

- 18** **Kakrapar 3&4 Main Plant**
Million Safe Man Hours

- 15** **Medigadda Barrage**
Million Safe Man Hours

- 13** **Vizag Vessel**
Million Safe Man Hours

- 11** **Kalpakkam - WMP & Allied**
Million Safe Man Hours

- 9** **Kudankulam HTS**
Million Safe Man Hours

Safety

Roll of Honour

- 9** **Kudankulam KKNPP 3&4 RB**
Million Safe Man Hours
- 7** **Chennai Metro UG 02**
Million Safe Man Hours
- 6** **Barapullah Bridge**
Million Safe Man Hours
- 6** **WDFC 15 A**
Million Safe Man Hours
- 6** **CTP 14 Bridge**
Million Safe Man Hours
- 6** **Punatsangchuu HEP,Bhutan**
Million Safe Man Hours
- 6** **AFA - Hyderabad**
Million Safe Man Hours
- 6** **KAPP-IDCT**
Million Safe Man Hours
- 6** **KAPP-NDCT**
Million Safe Man Hours
- 5** **VIH Project**
Million Safe Man Hours
- 5** **Kalpakkam - FRP**
Million Safe Man Hours

- 4** **Kachchi Dargah Bridge**
Million Safe Man Hours

- 4** **Mumbai Metro UGC07**
Million Safe Man Hours

- 4** **RAPP**
Million Safe Man Hours

- 4** **Seabird Phase II**
Million Safe Man Hours

- 3** **Dry Dock - Cochin**
Million Safe Man Hours

- 3** **ZF Shillong**
Million Safe Man Hours

- 3** **ISWAR GUPTA**
Million Safe Man Hours

- 3** **Mandovi Cable Stay Bridge-Goa**
Million Safe Man Hours

- 3** **Mumbai Metro UGC01**
Million Safe Man Hours

- 3** **WDFC 15 B**
Million Safe Man Hours

- 3** **Singoli HEP**
Million Safe Man Hours



- 3 **Khulna Mongla Bridge**
Million Safe Man Hours
- 2 **MTHL Pkg1**
Million Safe Man Hours
- 2 **KAPP-CSP**
Million Safe Man Hours
- 2 **Bangalore Metro RT-02**
Million Safe Man Hours
- 2 **WDFC 15 C**
Million Safe Man Hours
- 2 **ZH1 Port Blair**
Million Safe Man Hours
- 1 **ZB Ambala**
Million Safe Man Hours
- 1 **MTHL Pkg3**
Million Safe Man Hours
- 1 **Mumbai costal Road Pkg-04**
Million Safe Man Hours
- 1 **Bangalore Metro RT-03**
Million Safe Man Hours
- 1 **Kalpakkam - FRFCF**
Million Safe Man Hours

- WATER & EFFLUENT TREATMENT IC**
- 12 **Sumail Industrial Estate**
Million Safe Man Hours
 - 10 **Laying of Sewers at Cuttack**
Million Safe Man Hours
 - 9 **Bhatpara Sewer Network and Waste Water Treatment**
Million Safe Man Hours
 - 7 **Bansujara Irrigation Scheme**
Million Safe Man Hours
 - 6 **Sewerage Scheme in Varanasi City**
Million Safe Man Hours
 - 6 **Integrated Sewerage Work - Pali (Design and Build)**
Million Safe Man Hours
 - 6 **Banswara District & Pratapgarh District WSS**
Million Safe Man Hours
 - 6 **DHOLERA SIR**
Million Safe Man Hours
 - 5 **O&M for Sri Sathya Sai Water Supply Anantapur**
Million Safe Man Hours



- 5 **DWSP**
Million Safe Man Hours
- 4 **Water Supply Scheme to Erode Corporation**
Million Safe Man Hours
- 4 **Nellore UGDS**
Million Safe Man Hours
- 4 **WS Scheme- Balasore/Bhadrak/Keonjhar/Puri/Bolangir**
Million Safe Man Hours
- 4 **Infrastructure Works in Bidkin**
Million Safe Man Hours
- 4 **Execution of Lift Canal System of UIIP Kalahandi**
Million Safe Man Hours
- 4 **Pune ESR and GSR**
Million Safe Man Hours
- 3 **Rourkela WWS**
Million Safe Man Hours
- 3 **9 Nos LIS in Cluster-VI in Cuttack Dist**
Million Safe Man Hours

- 3 **Tanzania Water Supply Scheme Dept Code**
Million Safe Man Hours
- 3 **Chhaigaonmakhan LIS**
Million Safe Man Hours
- 3 **Barrackpore Sewerage Integration Work**
Million Safe Man Hours
- 3 **Ranchi Urban Water Supply Scheme**
Million Safe Man Hours
- 3 **ISP - Kalisindh Ph I MLIS**
Million Safe Man Hours
- 3 **Koppal WSP**
Million Safe Man Hours
- 3 **Development of IT City**
Million Safe Man Hours
- 3 **MLIP Cluster XII**
Million Safe Man Hours
- 3 **WTP for NMDC**
Million Safe Man Hours
- 3 **Vijayawada SWD**
Million Safe Man Hours

Safety

Roll of Honour

- 3 **Providing Sewerage Facility in Mohan Garden**
Million Safe Man Hours
- 3 **Hogenakkal - PKG V - O&M**
Million Safe Man Hours
- 3 **Sikar Alwar Bhiwadi Cluster Sewerage Project**
Million Safe Man Hours
- 3 **Kundalia Irrigation Project- Right Bank**
Million Safe Man Hours
- 2 **Cuttack Water Supply Project**
Million Safe Man Hours
- 2 **IMT Rohtak Phase III**
Million Safe Man Hours
- 2 **Water Supply and Distribution to GHMC**
Million Safe Man Hours
- 2 **Cuddalore PH.I**
Million Safe Man Hours
- 2 **Udaipur Integrated Infrastructure Project**
Million Safe Man Hours

- 2 **Rehab Works at Colombo**
Million Safe Man Hours
- 2 **Moradabad Sewerage Scheme**
Million Safe Man Hours
- 2 **Cuttack Sewer Scheme Phase-2 Construction**
Million Safe Man Hours
- 2 **Lnt Passavant JV Dept Code**
Million Safe Man Hours
- 2 **Alirajpur LIS**
Million Safe Man Hours
- 2 **Kakrapar LIS**
Million Safe Man Hours
- 2 **Bharatpur Gangapur Hindaun Sewerage Project**
Million Safe Man Hours
- 2 **RRWSFMP-Package 7 (Nagaur CDS-04)-Degana**
Million Safe Man Hours
- 2 **Water Supply to Karimnagar and other Municipalities**
Million Safe Man Hours

Safety

Roll of Honour

- 2 **IASTW Phase 3A**
Million Safe Man Hours
- 2 **ISP - PARWATI Phase I and II MLIS**
Million Safe Man Hours
- 2 **BDA NPKL Package 1**
Million Safe Man Hours
- 2 **Improvement of Water Supply to Greater Berhampur**
Million Safe Man Hours
- 2 **Beur Sewerage Network-Patna**
Million Safe Man Hours
- 2 **MLIP Cluster IX**
Million Safe Man Hours
- 2 **O&M East and West Godavari**
Million Safe Man Hours
- 2 **Hogenakkal - PKG III O&M**
Million Safe Man Hours
- 2 **12 Nos LIS in Cluster-XI in Jajpur and Kendrapara**
Million Safe Man Hours
- 2 **O&M for Adilabad Project**
Million Safe Man Hours

- 2 **Water Supply facilities to Bommanahalli Zone**
Million Safe Man Hours
- 2 **HPCL Vizag - ETP**
Million Safe Man Hours
- 2 **RRWSFMP-Package 6 Nagaur CDS-03-Deedwana**
Million Safe Man Hours
- 2 **13 Nos LIS in Cluster-VIII in Anguldeogarh Sunderg**
Million Safe Man Hours
- 2 **RRWSFMP-Package 5 (Nagaur CDS-02)-Makrana**
Million Safe Man Hours
- 2 **Narmada Kshipra Multipurpose Project**
Million Safe Man Hours
- 1 **O&M for Khammam Project**
Million Safe Man Hours
- 1 **VSP Reservoir**
Million Safe Man Hours

Safety

Roll of Honour

- Allahabad Sewerage Network**
1 Million Safe Man Hours
- O&M for Bhagirathi WTP, Delhi**
1 Million Safe Man Hours
- Chhatarpur WSS**
1 Million Safe Man Hours
- 24X7 Water Supply to Tumakuru City**
1 Million Safe Man Hours
- Saidpur Sewerage Network**
1 Million Safe Man Hours
- Moga WSS**
1 Million Safe Man Hours
- Kirulapone-WWS**
1 Million Safe Man Hours
- Indore-UWSS**
1 Million Safe Man Hours
- Integrated WS and WW Sri Ganganagar Project (DB)**
1 Million Safe Man Hours

- Keonjhar Water Supply Project**
1 Million Safe Man Hours
- Mohanpura MVRWSS**
1 Million Safe Man Hours
- Nandawadagi LIS**
1 Million Safe Man Hours
- Kanpur Water Carrier System**
1 Million Safe Man Hours
- KPCL-WSP**
1 Million Safe Man Hours

METALLURGICAL & MATERIAL HANDLING SBG

- Hot Strip Mill, RSP, Rourkela**
39 Million Safe Man Hours
- Coal Handling Plant, RRVUNL, Chhabra**
19 Million Safe Man Hours
- Coal Handling Plant, Khargone**
11 Million Safe Man Hours
- Slab Caster, Bokaro**
9 Million Safe Man Hours
- LTEW, Kanchipuram**
9 Million Safe Man Hours

Safety

Roll of Honour

- Coal Handling Plant, Khandwa**
7 Million Safe Man Hours
- Pet Coke Evacuation Project, IOCL, Paradip**
5 Million Safe Man Hours
- Coal Handling Plant, Lingaraj**
5 Million Safe Man Hours
- JSW, Dolvi**
4 Million Safe Man Hours
- Beneficiation Plant at SK Mines, Phase-III, Dariba**
3 Million Safe Man Hours
- Maintenance of Machines, NLC, Neyveli**
3 Million Safe Man Hours
- Civil and Structural Works, UAIL, Rayagada**
2 Million Safe Man Hours
- Coal Handling Plant and Ash Handling Plant, Tanda**
2 Million Safe Man Hours
- Coal Handling Plant, MCL, Bhubaneshwari**
2 Million Safe Man Hours

L&T GEOSTRUCTURE

- JSW - Paradip**
3 Million Safe Man Hours
January 2017 to June 2020
- IWAI - Sahibganj**
3 Million Safe Man Hours
December 2016 to June 2020
- BHEL – Ennore**
2 Million Safe Man Hours
November 2017 to June 2020
- TANGEDCO – Uppur**
2 Million Safe Man Hours
May 2018 to June 2020
- JSW- EQ1-EQ2- Paradip**
2 Million Safe Man Hours
January 2018 to June 2020
- NTPGC**
1 Million Safe Man Hours
May 2015 to June 2020
- MTHL - Mumbai**
1 Million Safe Man Hours
September 2018 to June 2020



Vision Zero Accident

Plan | Prevent | Protect

VIR S

BREAK THE CHAIN. STAY SAFE!

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