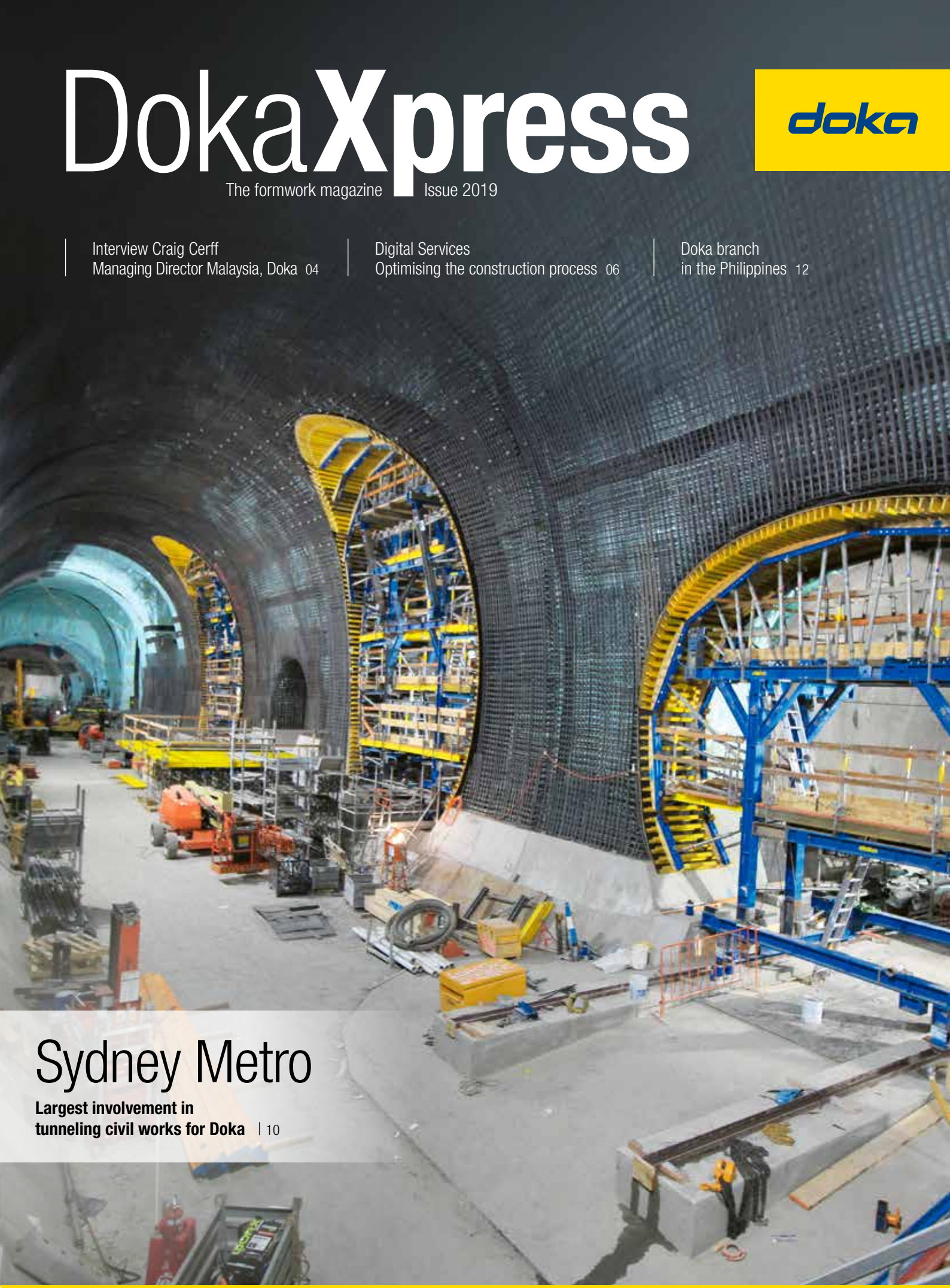
DokaXpress

The formwork magazine | Issue 2019

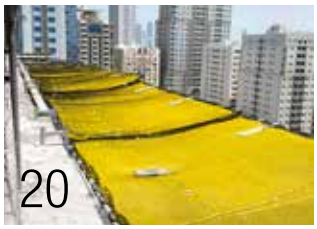


Sydney Metro

Largest involvement in tunneling civil works for Doka | 10

2019

Content



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In some cases the site photos show the situation during formwork assembly and are therefore not always complete from the point of view of safety.

Dear customers, dear readers

It is an absolute pleasure to welcome you to the latest edition of our Doka Xpress. As the year is almost coming to end, we would like to take this opportunity to share with you the happenings in the Doka world with a strong focus on East Asia Pacific. In this diverse part of the world, where construction is booming, you will find that Doka provides solutions in many of the countries where we have offices, branches and agents.

In this edition, we place a strong focus on the civil sector, with many exciting projects in the pipeline. The Sydney Metro being one of Doka's largest involvement tunneling civil works where we are working intensively to produce unique formwork solution for the project.

We are also excited to share that in line with our continuous efforts to expand in the region, we have successfully signed a partnership with channel partners in Nepal and Sri Lanka to enable distribution of Doka's products.

This year, Doka once again participated in the largest tradeshow of the year, bauma 2019. We had the opportunity to welcome visitors from all over world including several key players from our region to 'Doka Campus'. It served as an excellent platform to display our latest innovations and technologies to our visitors.

I hope you enjoy reading all the articles. On behalf of Doka, I take this opportunity to thank you for your invaluable support throughout this year and I look forward to your continued support in the coming years.

Stefan Schedel
Managing Director, East Asia & Pacific, Doka

Newsflash

The Philippines Roads, Bridges, Tunnel Construction and Development Summit

From 24 – 25 September Doka participated in the Roads, Bridges, Tunnel Construction and Development Summit in the Philippines. Many visitors were interested in our latest projects and how we reshape the infrastructure sector with our systems and technologies. ▪

Doka Customer Experience Centre in Australia

The Customer Experience Centre showcased the wide range of Doka products to current and potential customers. Experts from Doka showed, among other things, Concremote and the advantages of the technology. ▪

Doka AR-VR app: This edition of the Xpress is supported by the AR-VR app, meaning you can use our free app to maximise your experience and fully unlock our interactive experience, which includes images, videos and 3D models.

AR Marker Symbol: Use the AR markers to find even more content. Open the AR-VP app on your smartphone or tablet device, scan the image and fully experience the latest developments of Doka EAP!

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INTERVIEW

Interview with Craig Cerff, Managing Director Malaysia, Doka

The construction industry in Malaysia is booming

How have Doka's operations in Malaysia evolved over the years?

Financially, 2018 was a good year for Doka Malaysia. Our top line growth was spectacular and came together with healthy earnings. Furthermore, we secured a number of projects toward the end of 2018. Compared to our competitors, our presence in Kuala Lumpur City Centre was quite limited, but we have now secured seven projects, four in Kuala Lumpur City Centre and three furhter out of the City Centre. Locally, we are mainly focusing on high-rise construction however, we are diversifying into the infrastructure industry aggressively. We have secured a number of stations for MRT Line 2 stations which included Kg. Baru North, KLCC East, Tun Razak Exchange and Bandar Malaysia South station, to name a few.

Architects are becoming increasingly creative with building designs. What does this mean for formwork suppliers, and how will innovation change the industry moving forward?

In the Malaysian context, the visual architectural aspects are still not extremely dominant in building designs. Doka was one of the first movers in high-rise construction technology and makes construction easier. Some projects that are architecturally challenging or slightly different, such as PNB 118. PNB 118, a diamond-shaped skyscraper that symbolized the diversity of the Malaysian people. At 2,113 feet (644 meter), PNB 118 will be the

Craig Cerff holds a bachelor's degree as well as a master's degree in Wood Science from the University of Stellenbosch, South Africa. In addition, he obtained an MBA from the Edinburgh Business School in 2000. In 2018, he joined Doka East Asia & Pacific as Head of Sales. Six months later he took over the Managing Director position at Doka Malaysia. During his previous role, Craig has been responsible for sales across nine local branches and four overseas branches (Namibia, Mozambique, Tanzania and Nigeria). He has more than 14 years of outstanding national as well as international Sales Management experience with Peri in South Africa.

The Exchange 106

The Park 2 Pavilion Bukit Jalil

tallest building in Malaysia and Southeast Asia when fully completed in the year of 2024. The main challenge is the curvature of the building, which is a diamond-shaped tall skyscraper. With our innovative solutions and advanced technology, it simplifies the construction of the structure with a high safety standard.

There are many players in the market, but we are still seen as the leader in high-rise. Besides PNB 118, we have also secured a project in Kuala Lumpur City Centre called KL Metropolis, which is a tall building with verandas and other architecturally pleasing features that will involve some technical challenges.

Besides the existing expertise, Doka creates added value with Virtual Design and Construction (VDC) and Building Information Modelling (BIM) methodology. In VDC/BIM methodology, the entire building is digitally modelled from the beginning to the end before construction even starts. Errors and problems are spotted in the digital twin and eliminated before they can disrupt the progress on construction sites, which will be contributing significantly to the success of the creative building designs.

How do you assess the current shape of Malaysia's construction sector?

The outlook for the construction industry in Kuala Lumpur and all around the country is incredible. The large cities and metropolitan areas are experiencing an astronomical amount of construction. Malaysia is not afraid to think big with high-rise buildings and elevated highways, and it is a fantastic example of what can be done in a developing country. The development here has been enormous, both from a building and infrastructure perspective. There is still a 4% growth rate projected for the country over the next two years, followed by a further increase. The elections in 2018 were a massive change for the country, and have had an impact on the confidence in the construction industry. It has put a dampener on the enthusiasm among contractors, who have a bit of a wait-and-see approach now. However, in my opinion, the construction sector is in slow recovery and getting back on track in overall.

> « Diversification is the key word in our strategy going forward. »

What are your plans and strategic objectives for 2020?

Diversification is the key word in our strategy going forward. One form of diversification will be geographic, mainly by strengthening our sales team and putting the right tools and resources in place to be able to tackle more projects in East Malaysia, particularly in infrastructure. We also want to diversify into the scaffolding market as the government is enhancing its safety specifications. This is an opportunity for us, because our modern scaffolding system DokaScaff, which we launched end-2018, is up to the highest safety standards for access systems as well as forming and reinforcing works. We believe that we are on the right track for continued growth. ▪

DIGITAL SERVICES

Digital services from Doka increase productivity on construction sites

Optimising the construction process


1

Doka goes one step further when it comes to increasing productivity: New digital services and applications related to the construction process increase the added value on the construction site.

The question of "digitisation in construction or the future of construction" is inextricably linked with the question of "How can we help our customers to build even faster and more economically?" Doka is working intensively on this and, with "upbeat construction - digital services for higher productivity", is focusing on digital solutions that aim to optimise construction site procedures and thus make a significant contribution to increasing productivity on the construction site. The digital range of services is offered in three areas - Smart Construction Site, Smart Assistants and Smart planning. The creation of added value is the key for the customers and the optimisation of the overall construction process - from the planning phase, construction measures on site and the analysis of your own performance.

upbeat construction

digital services for higher productivity

1 **upbeat construction:** Doka has a focus on digital solutions and offers numerous services and applications, which aim to increase productivity on construction sites. Generating added value for our customers and optimising the construction process in general is of utmost importance for us.

2 **Contakt:** With a proprietary developed platform and sensors at the site, Contakt provides live data from the construction site.

3 **AR-VR app:** With the Doka AR-VR app, customers can experience selected Doka solutions in augmented and virtual reality.

3

2

Software and sensors for more productive construction processes

How can you ensure that you have the most productive takt planning, team allocation and material disposition during planning and construction? In addition, how to ensure that the best solutions are systematically identified on construction sites and made available to everyone in the company during the construction of similar projects? The sensor-supported software solution Contakt provides direct support during execution on the construction site. With it, foremen and site managers can plan, allocate and compare personnel at the takt level, and draw valuable conclusions from them. Sources for all the actual data to be recorded are a sensor unit attached to the formwork and the construction workers. It communicates independently with the software platform, on which all teams work much more productively. The teams benefit, among other things, from automatic progress reports and early detection of deviations.

Real-time monitoring for construction progress

The innovative service Concremote is already an indispensable partner on numerous construction sites. The unique digital measurement and decision system, which determines the concrete strength on site in real-time, provides several new features in software and hardware. Among the highlights are the new web portal features FORECAST and SCENARIO, as well as the new Concremote app. FORECAST predicts the strength development of concrete, which supports short-term planning of personnel, equipment and upcoming work steps. Different concrete mixtures can be compared using SCENARIO and thus, it can be purchased more accurately. »

DIGITAL SERVICES

»

Increased efficiency through automated formwork planning in BIM

In addition to the solutions for the construction site described so far, planning in accordance with BIM (Building Information Modeling) naturally also plays an important role at Doka in the digitisation. In concrete terms, customers can benefit from up-to-date building information available at any time and simulations that can be run to measure construction progress, costs and safety. The collaborative methodology for the automated exchange of data and information across the trades is now regarded as the standard of the future. Significant time savings and greater planning security are the main advantages of the methodology.

Advantages of integrated digital formwork planning

A considerable added value of continuous 3D planning for construction companies are also 3D visualizations on a larger scale and 4D simulations. If required, Doka can visualise complex formwork sequences and, for example, illustrate the timing or feasibility of formwork tasks. This enables companies, for example, to monitor the flow of formwork material and the formwork utilisation for time-critical operations such as the implementation of the formwork. In addition, the 3D planning data can be can be used directly for the construction site with the AR-VR app.

The takt determines the progress and speed of construction. It is unity and driver of productivity in innovative construction projects. Leading consulting companies agree and certify construction projects with coordinated takt planning more productivity. It is precisely here that we need to start to improve efficiency and this will also result in a sustained increase in the margins of our industry. Only those who are open to innovations of digitisation will be successful tomorrow. ▪

You have a question regarding upbeat construction or our digital services?

Visit our website and get in contact with us!

https://www.doka.com/en/solutions/upbeat-construction

4

5

6

BIM with Doka - the advantages at a glance

- Increased productivity on the construction site thanks to efficient formwork utilisation and logistics
- More reliable planning thanks to BIM supported risk management and collision control
- Reduced effort in execution planning through direct export from BIM models
- Seamless and smooth collaboration thanks to comprehensive compatibility of the BIM platform
- Automatic formwork planning in the BIM environment using DokaCAD for Revit

4 **Remote Instructor:** Remote Instructor facilitates efficient exchange between customers and Doka experts and can be used hands-free via a head-mounted tablet.

5 **BIM with Doka:** For Doka, virtual construction means that thanks to VDC/BIM, formwork solutions can be aligned even more accurately with the construction process for a building.

6 **Concremote:** Concremote enables users not only to plan construction projects better, but also provides access to real-time data from any location around the clock. This makes it possible to draw conclusions about concrete performance and take the necessary construction steps at the right time.

PROJECTS

Sydney Metro - Australia's biggest public transport project

Largest involvement in tunneling civil works for Doka

The new standalone railway will deliver 31 metro stations and more than 66 kilometres of new metro rail, revolutionising the way Australia's biggest city travels. Doka supplies formwork engineering services, material and equipment supply for the mined tunnel concrete lining construction at Martin Place, Pitt Street and Victoria Cross Station sites.

The Facts

Project: Sydney Metro

Location: Sydney (New South Wales), Australia

Type of project: Mined tunnel metro stations

Owner: Transport for New South Wales (TfNSW)

Customer: John Holland, CPB Contractors, Ghella Pty Ltd

Formwork use: 07/2018 – 09/2020

Construction start: Q1 2018

Construction end: Q1 2024

System in use: Doka heavy-duty supporting system SL-1

Services: Engineering

When Sydney Metro is extended into the central business district (CBD) and beyond in 2024, metro rail will run from Sydney's booming North West region under Sydney Harbour, through new underground stations in the CBD and beyond to the south west. Sydney's new metro railway will have a target capacity of about 40,000 customers per hour, similar to other metro systems worldwide. Sydney's current suburban system can reliably carry 24,000 people an hour per line. Sydney Metro, together with signaling and infrastructure upgrades across the existing Sydney rail network, will increase the capacity of train services entering the Sydney CBD – from about 120 an hour today to up to 200 services beyond 2024. That's an increase of up to 60 per cent capacity across the network to meet demand.

The project has become a showcase for Doka's heavy-duty supporting system SL-1; a modular system, which provides complete formwork solutions for widely differing tunnel cross-sections, regardless of shape and load. As the company's largest involvement to date in major tunneling civil works, Sydney Metro has drawn on other Doka strengths.

Doka Global Expertise Centre (GEC) for tunnel infrastructure, based at the headquarters in Austria, has been heavily involved in the project. It will account for more than 20,000 engineering hours to design formwork sub-structures for the concrete, which will line and support the massive underground station caverns and tunnel intersections. Doka's ability to turn around

1 Martin Place station intersection formwork which Doka designed unique formwork solutions.

2 Sydney Metro has become a showcase for Doka's heavy-duty supporting system SL-1

engineering solutions quickly, by drawing on its own design expertise in another hemisphere where time zones allow such collaboration, has been a success.

Unique formwork solutions for tunnel intersections

Standard but specialised Doka SL-1 components and modules have been employed for most requirements, but Doka Australia has also drawn on its parent company's expertise to design and manufacture custom accessories. Doka worked intensively to produce unique formwork designs for all mined tunnel intersections, pedestrian and service adits at Martin Place, Pitt Street & Victoria Cross Station sites.

Each individual mined tunnel profile and intersection requires unique designs for off-site pre-assembly and on site installation for the in-situ concrete pour.

Doka's team is in constant communication, meetings and workshops with the JHCPBG site engineering teams and subcontractors. This approach ensures all parameters and requirements are considered in finding the best solution to increase the efficiency and safety of the work.

The deliveries started in early 2019 and Doka materials will be used through to late 2020 when construction of concrete lining finishes. The Doka heavy-duty supporting system SL-1 is extremely adaptable. SL-1 beams, walings and struts can be arranged in variable configurations, enabling optimum use to be made of each item of equipment, with short set-up times and Heavy-duty supporting-unit components. Built-in safety systems ensure high workplace safety including integrated work platforms and ladderways. ▪

« Doka has demonstrated a willingness to tackle the complex and unique challenges of our project, which has resulted in a high level of collaboration between the construction teams and Doka's local and international branches. »

Benjamin Russo, Planning & Engineering Manager – Mined Tunnels

FOCUS PHILIPPINES

Doka branch in the Philippines

Doka Philippines, Inc.
Km. 21 West Service
Road, 25b Villongco Road,
Brgy. Sucat
1770 Muntinlupa City

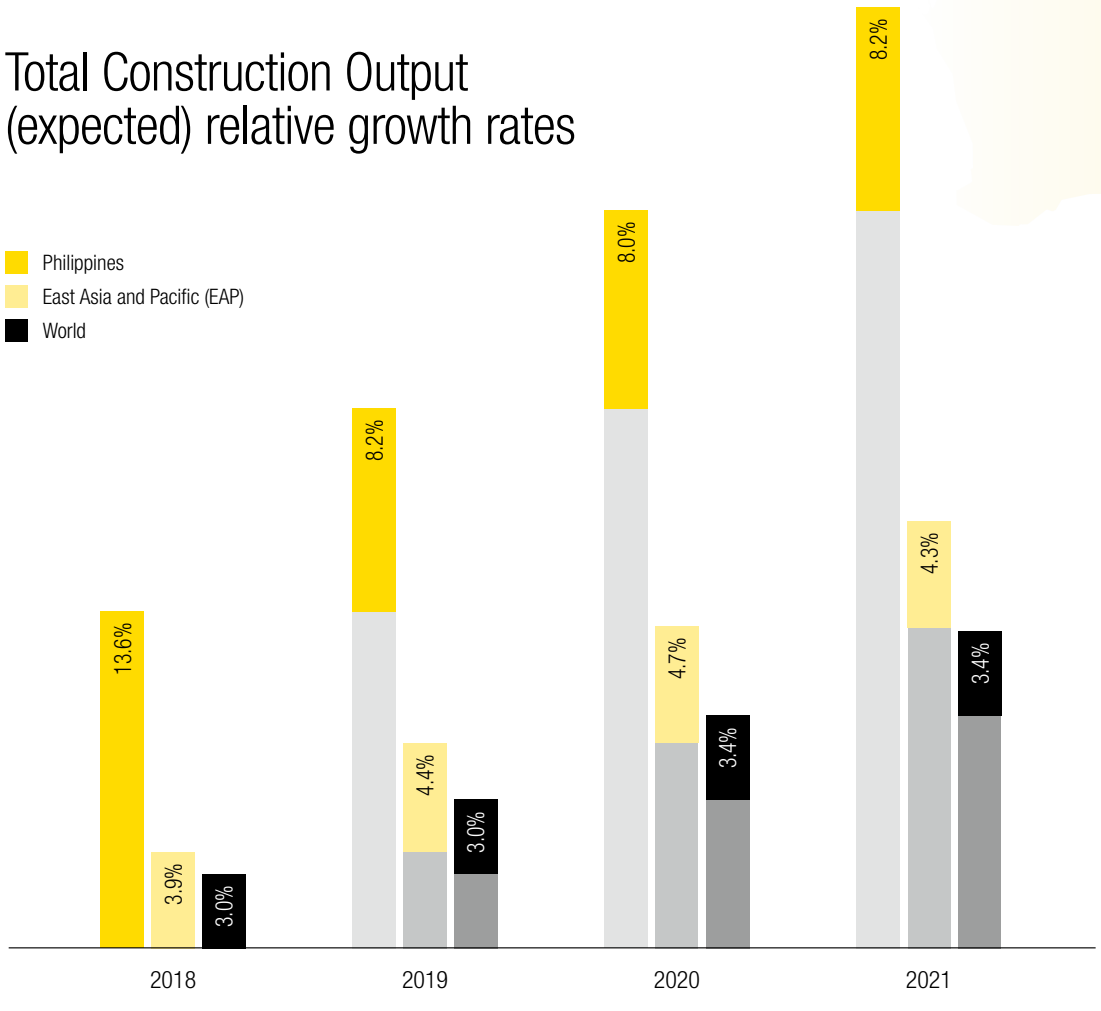
The large market potential offers many opportunities for a formwork supplier

The EAP region accounts for a large proportion of global construction output, measured by Total Construction Output (TCO), which is the sum of the residential construction, non-residential construction and civil engineering. The high TCO level is accompanied by high dynamics: Annual real growth rates of around 4.4% per annum are expected for the period 2019 to 2021 for the EAP region. For comparison: The World-TCO real growth rates are expected to rise by 3.3% per year in this period.

Within the EAP region, the Philippines is one of the fastest-growing countries with annual growth expectations of the TCO of over 8% between 2019 and 2021. According to this, the TCO in the country is growing almost twice as fast as in the already above-average dynamic EAP region. The highest expected absolute TCO growth 2019 in the EAP region falls by far to China, ahead of India and Indonesia. The Philippines follow in 6th place. The total construction project pipeline in the Philippines – as tracked by GlobalData, and including all mega projects with a value above US$ 25 million – stands at US$ 361.6 billion. The pipeline, which includes all projects from pre-planning to execution, is skewed towards early-stage projects, with 55.0% of the pipeline value being in projects in the pre-planning and planning stages as of April 2019.

Civil Engineering (Infrastructure, Energy & Utilities) is the most important TCO sector with a TCO share of 37% in 2018. The residential sector (single-family, multi-family housing) has a TCO share of 33% and the Non-residential sector (Commercial & Leisure, Institutional, Industrial) a share of 30%.

Total Construction Output (expected) relative growth rates



Stefan Schedel
Managing Director, East Asia & Pacific, Doka

Stefan Schedel

What potential does the Philippines market offer?

The Philippines registered a construction gross value of about $ 43.7 billion in 2018, 13.6% growth from 2017. The industry is expected to grow at 8% compound annual growth rate (CAGR) from 2019-2023, driven by public and private sector investments in infrastructure, residential, and commercial. There is also a huge demand to improve local energy resources driving investments to energy infrastructure. According to the Department of Budget and Management, the government plans to invest US$ 686.5 million on ten flagship infrastructure projects in 2019. This includes five railway, three bridge and road projects, and two flood control projects. The current formwork utilization is still low, but there is an opportunity to convert the market. There is a current need to accelerate methods of construction considering the pipeline of projects and quantity/quality of local contractors.

What are the challenges?

Unlike established international market players such as Peri, EFCO, Ulma and RMD Kwikform, Doka is a newcomer to the Philippine formwork market. Local formworks are well entrenched with the contractors and some customers already have their own formworks. Local conditions has delayed our capacity to operate as planned.

Why is it a good idea to establish a Doka branch in the Philippines?

There are many potential projects in the market for the next ten years, both public and private. While there are many players operating in the Philippines, there is still room to capture the growth, considering the growth in the market. The easy accessibility for the customers with the branch office strengthens our presence in the country.

Roland Temper

Why did you move to Manila to set up a new office there?

This is an exciting challenge and opportunity to be part of a growth strategy and starting up a new location for Doka. The Philippines has one of the highest economic growth rates within the Asia Pacific region (2018 its GDP had over 6.2% according to the World bank). Even though the work is hard and involves long hours, but I have been always intrigued to be part of new start-ups within the company.

What potential does the market offer?

The market potential is huge. According to GlobalData the construction industry increased in 2018 by 13.6% (US$ 38.5 billion in 2017 to US$ 43.7 billion in 2018).

What are the challenges?

The big challenge is the bureaucracy in this country. This slows everything down to get things done including winning and executing projects.

Why is it good for Doka to set up a branch in the Phlippines?

The latest government is working hard to improve the country's overall situation and trying to improve the living conditions. It is still a long way to go, but the Phillipines is one of the safer places out of the developing countries in the Far East, hence investing here makes sense. ▪

Roland Temper
Head of Operations Country, Doka Philippines

PROJECTS

Alveo Park Triangle in Taguig City, Phillipines

Climbing with Lubeca Jumpform

Alveo Park Triangle Tower, strategically situated at Park Triangle District which offers a prime selection of contemporary workspaces. Alveo Park Triangle Tower is a newest corporate tower that pierces the skyline of the country's progressive and creative financial district. Client requested a 3.80 m casting height for its corewall and a climbing platform that can store construction materials on the top of it in order to reduce materials movement. Apart of that, high safety requirements are a top concern for this project. A tailored-made formwork system named "Lubeca Jumpform" was provided to this project. It is integrated with Large-area formwork Top 50 with 5 different working platform levels. To meet client's requirements on accessibility, a storage area that can store up to 250 kgs/m^2 of construction material was installed, which greatly increase site progress by reducing the crane usage to move the materials. With fully covered screen, it provides a high safety working environment to the site workers. ▪

Facts

Project Name: Alveo Park Triangle

Location: BGC, Taguig City, Philippines

Project Type: Office Building

Number of storeys: 28

Building height: 120 m

Main Contractor:
Makati Development Corporation

Systems in use: Lubeca Jumpform integrated with Large Area formwork Top 50

Mumbai Metro Line 3, India

Bringing metro closer to the doorsteps of the people

The Mumbai Metro Line 3 is almost entirely built underground, and is 33.50 km long, with 27 stations (26 will be underground and one at grade). The metro line will connect the Cuffe Parade business district in the south of Mumbai with SEEPZ and Aarey in the north. It will also pass through the Domestic and International airports of Mumbai. Upon completion, it will have interchanges with the planned Line 6 at SEEPZ, Line 1 at Marol Naka, Line 2 at BKC, Central Line at Chhatrapati Shivaji Terminus, Mumbai Monorail at Mahalaxmi (Jacob Circle), and Western Line at Mahalaxmi, Mumbai Central and Churchgate. Doka India supplied wall and column formwork systems to its three stations Mumbai Central, Science Museum and Worli. The timely engineering support and the tailored formwork concept fitting the customer's requirement supported the project execution. ▪

Facts

Project Name: Mumbai Metro
(Line 3: Mumbai Central, Worli and Science Museum)

Location: Mumbai, Maharashtra, India

Project Owner: Mumbai Metro Rail Corporation Ltd. (MMRCL)

Contractor:
DOGUS – SOMA Enterprise Ltd.

Systems in use: Wall & Column Formwork Systems:
Frami Xlife, Top 50 & H20 Beams

HDB Rivervale Shores in Sengkang, Singapore

Combination of cast-in situ and precast method

Rivervale Shores is Build-To-Order (BTO) flats developed by Housing & Development Board, Singapore. It comprises 16 residential blocks that range from 8 to 18 floors in height with 2,500 residential units. The development is served by the Bakau and Rumbia LRT stations, which connect residents to a wide range of transportation networks and facilities in Sengkang Town Centre.

The construction method for concrete structure in this project combines the cast-in-situ and precast method. Thus, the shoring has to consider both the load from the cast-in-situ and precast elements. Load-bearing tower d3 with the high capacity up to 94 kN are well utilized in the project. Dokaflex system is easily assembled in the area with space constraint and infill zones are managed easily to accommodate walls and columns.

Project management is key to the success of the project as the construction of all 16 residential blocks are running at the same time. Thus, the project management team follow up closely with the client to cater for the engineering and delivery of materials. Formwork Instructor is on-site to support the project providing comprehensive training to the client. This helps the client to increase their efficiency and construction speed. ▪

Facts

Project: HDB Rivervale Shores

Location: Sengkang, Singapore

Type of Project: Residential

Contractor: LC&T Builder (1971) Pte Ltd

Start and scheduled end date of work: December 2018 to Q4 2020

Systems in use: Large-area formwork Top 50, Column formwork Top 50, Load-bearing Tower d3, Dokaflex, Folding platform K

Doka India's Inauguration Ceremony

1

In April this year, Doka India officially inaugurated its new office in the presence of the Management Board and other officials from Austria and EAP region.


2

The opening of this new office is a part of the company's expansion to increase its presence in key growth markets and enhance Doka brand in India. East Asia Pacific region is one of the fastest-growing region and India being the major emerging market in this region has a special focus.

Starting office operations to this new premise aims to assist the company in realising its vision of being high performing and inspiring team as well as having a nice workplace for Doka India. This will eventually contribute to improving the standards of work quality and environment for the employees.

The occasion became memorable with the official unveiling of the Doka logo by the management team from Austria, EAP region and India. To imbibe the Indian culture and have a great beginning, the traditional Indian lamp lighting ceremony took place followed with the keynote addresses by the guests for a dialogue with the employees was completed.

The facility has been carefully designed to give a sneak peek of Doka products and service offerings. Also, it will empower employees with better infrastructure and a more professional work environment that will contribute to enhancing their productivity and effectiveness. The new office is an important footstep towards "making Doka India a pleasurable place to work". ▪

Expanding beyond boundaries

Doka India on boards its official channel partners in Nepal and Sri Lanka.

3

4

1 Insta-selfie moment
2 Formal ribbon cutting initiated the moving-in ceremony
3-4 The new facility will empower employees with better infrastructure and a more professional work environment
5 An important part of the official opening was the traditional Indian lamp lighting ceremony

5

Doka India has joined hands with M/S SLJ Holdings Pvt. Ltd.- Sri Lanka and M/s. Nepal Construction & Engineering Company Pvt. Ltd. – Kathmandu, Nepal, as its official channel partners. This strategic partnership represents a new opportunity for Doka India to succeed and have enhanced penetration in Sri Lanka and Nepal.

The agreement involves the distribution of the wide range of Doka products. Thus shall ensure smooth availability of Doka products, solutions and technical support in Nepal and Sri Lanka, to address the upcoming industry needs. Alongside, it contributes to the formation of a robust foundation, of a high-performing distribution network, that will support Doka to cater better within the East Asia Pacific region.

Doka's top priority when working in any market is to understand the demand and deliver suitable, cost-effective solutions that make construction sites safer, while ensuring projects are delivered on time. With M/S NCEC Pvt. Ltd., Nepal carries over more than 60 years of a sustainable partnership with its client base and has been a reliable service-oriented partner for various construction solution in the Nepal Market. M/S SLJ Holding Pvt. Ltd., Sri Lanka brings rich expertise of serving customers group over more than a decade. They are the specialist to serve the growing needs of the building and construction industry in their country and now will be sharing great value with their customers by introducing Doka products.

This partnership represents a sustainable framework to cater to the increasing demands for suitable formwork, solutions and services in all areas of construction. With this association, the company will be contributing towards the development of a region that includes some of the growing economies in the world. ▪

PROJECTS

Facts

Project: Piramal Aranya

Location: Byculla, Mumbai, India

Type of Project: Residential

Number of storeys: 72

Developer: Piramal Group

Main Contractor: Larsen & Toubro Limited

System in use: Lubeca Jumpform

Start and scheduled end date of work: 2016 to 2021

Doka has supplied Lubeca Jumpform for the concrete core and blade wall of the North & South Tower.

Piramal Aranya, India

The residential skyscraper with botanical garden on the doorstep

Piramal Aranya is the flagship project of the Piramal Group located in Byculla, in the heart of Mumbai, India. It is spread across 7 acres and has breathtaking views of the 60 acres of lush botanical gardens on the west and the picturesque Mumbai skyline and Harbour on the East. The project primarily contains 3 & 4 BHK Apartments. Reaching approx. 70-storey high, the residential skyscraper will be amongst the tallest buildings in the city. Doka has supplied Lubeca Jumpform for core and blade wall of North and South Tower of the project. The Lubeca Jumpform system is one of the fastest system in the world with full height vertical steel cladding and mesh protection, surrounding the system. It is assembled as one complete single unit. ▪

Transmission Gully Motorway, New Zealand

Complex construction with difficult and steep terrain

The Transmission Gully Motorway is a 27 km four-lane motorway under construction in Wellington, New Zealand. The four-lane motorway is part of the 110 km Wellington Northern Corridor and will run from Mackays Crossing to Linden, through Transmission Gully. Multiply formwork systems from Doka were provided for the 36 m tall hollow pier columns and the mass concrete foundations of the bridge. Working at heights was always the biggest safety hazard during construction. The limited working space on site and remote access affected all aspects of construction, including towing heavy vehicles in and out of the gully. ▪

Facts

Project:
Transmission Gully Motorway

Location:
Wellington, New Zealand

Type of Project: Bridge

Client:
New Zealand Transport Agency

Main Contractor:
CPB Contractors

Systems in use: Framax – Walls, Frami – Foundations, Dam Formwork – Pier Foundations, MF240 Climbing formwork – Pier Columns, Top 50 – Infill pieces, Shaft platforms – Pier Columns

Double Tree Hotel in i-City, Malaysia

Pure contemporary luxury

DoubleTree by Hilton is spreading its wings to i-City, to cater exceptional hospitality within one of Malaysia's most renowned tourist attraction. The four star hotel offers 300 rooms which occupies the bottom half while the top half will be made for serviced residences. It is designed as a statement to inculcate a sleek-and-chic corporate concept. The building has an irregular shape and site has a high safety requirement. The construction method of the client is challenging our capability in term of formwork design due to their short time frame. With Protection Xclimb 60, the client is able to optimise his casting cycle. For the irregular building shape, Protection Xclimb 60 has a high flexibility and adaptability climbing protection panel. ▪

Facts

Project Name: DoubleTree by Hilton @ i-City

Location: Shah Alam, Malaysia

Project Type: Hotel

Number of storeys: 43

Main Contractor: HAB Construction Sdn Bhd

Eaton Residences, Malaysia

Kuala Lumpur's highest cantilevered sky pool

Eaton Residences is one of the most luxurious high-rise developments that located in the vicinity of Kuala Lumpur City, Malaysia. The residential tower will house 632 leasehold exclusive and luxury units with unobstructed panoramic views of Kuala Lumpur's skyline. One of the most prominent features of Eaton Residences is the sky pool, Kuala Lumpur's first, highest, and longest cantilevered sky pool at level 50. The challenge for Doka was to provide a solution that fits the oval-shaped building with a safe working environment and prevent objects from falling to the pedestrian and heavy traffic roads. The protection screen ensures a safe working environment at great heights by providing a good protection from wind loads. The climbing system enables the client to realise ▪

Facts

Project Name:
Eaton Residences

Location: 28 Jalan Kia Peng, Kuala Lumpur, Malaysia

Project Type: Residential

Number of storeys: 52

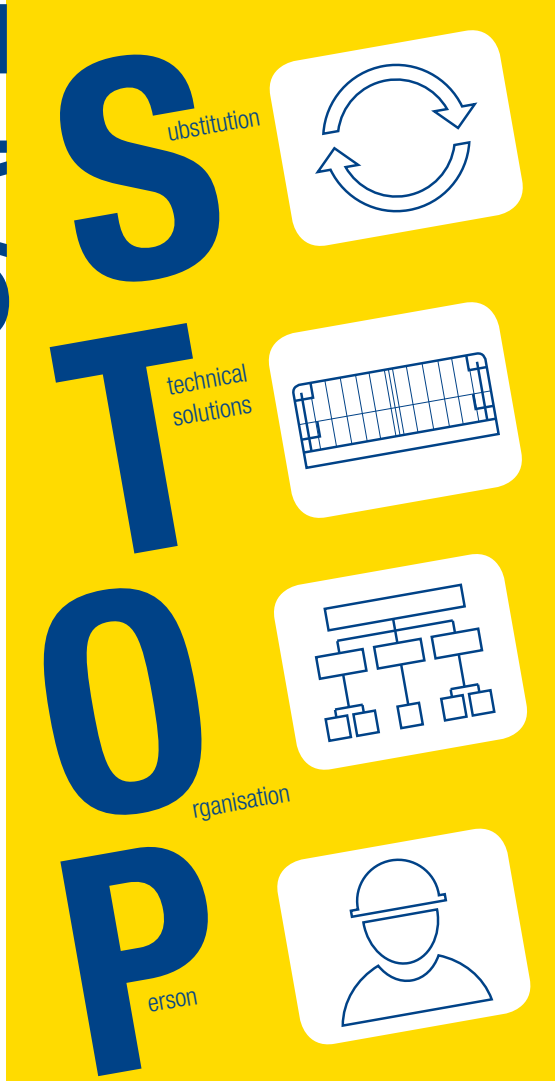
Expected Date of Completion: December 2020

Main Contractor:
Pesona Metro Sdn Bhd

System in use:
Protection Xclimb 60

SAFETY

The **STOP principle**



Safety starts in the mind

Safety is associated with a high level of responsibility. Compared to other industries, construction sites are certainly among the most dangerous workplaces. However, occupational safety does not start at the construction site rather it starts much earlier.

Construction workers are exposed to high accident and health risks in their daily work, because construction projects grow and are continually changing the work environment. The site crew often has to work under considerable strain, in difficult weather conditions and under major time pressure. In order to avoid dangerous situations in the best possible way and to make construction sites a safe place to work, the appropriate measures must be taken. What exactly this means can be illustrated quite well by the inverted STOP principle.

The **person (P)** is at the centre of all goings-on and activities. Accidents on construction sites are often caused by behaviour. It is therefore important to know where dangers lie and to make the site crew aware of these dangers. The correct assessment of risks and estimation of consequences are essential skills.

The second aspect involves the **organisation (O)**. The issue of occupational safety must be anchored firmly in the corporate organization, and lived and supported by the entire company. Corresponding guidelines and people who drive the issue forward are critical to success.

The right **technical solutions (T)** are another point. The focus is on protective measures and facilities that make the workplace safe. On the construction site, falls can usually be prevented with the right safety devices, such as railings, protection screens or non-slip surfaces. Choosing the right products and the right safety features is the key. Formwork and safety systems must always comply with the latest standards and regulations, and may only be operated by trained personnel. Products that can no longer be used must be replaced in a timely manner. On the construction sites, Doka supports its customers with ergonomic solutions. For example, ease of use for formwork is of prime importance. Doka systems are designed to save both time and effort. Health is an indispensable prerequisite for performing safe, productive and high-quality work.

With **substitution (S)**, the primary objective is to prevent hazards and risks from arising in the first place. This is where the impact can be felt from regular safety checks and the proper maintenance of products, but above all also training and education. Well-trained employees are the best precaution for ensuring safe construction sites with high productivity.

Doka offers a comprehensive training programme that keeps construction companies up to date with the latest developments in formwork technology, construction-related topics and occupational safety. User information, operating instructions, safety data sheets and application videos, which can be downloaded from www.doka.com, also ensure the correct and safe operation of Doka systems on the construction sites. ▪

Did you know …

… that you can book Doka Special Training all year round? No matter which topic you choose, the focus on safety is integrated into all our seminars.

www.doka.com/training

1


2

1 Protection screen Xclimb 60
2 DokaScaff
3 Dokadek 30 panel slab formwork
4 Edge protection system XP
5 Safety Net Fans


3


4

Systematic Safety

Doka understands safety as a holistic concept.
Safety starts with product development and extends from safety consulting to a comprehensive range of formwork planning, safety products, and services.

Installation of safety systems at a construction site is often associated with an inhibition threshold due to the additional work required. For this reason, Doka has developed quick and easy-to-operate safety innovations for every type of forming assignment. Many Doka complete systems for slab, wall or column formwork already incorporate safety features such as working platforms with edge protection or access systems. This ensures safety right from the outset.

The Protection screen Xclimb 60 carries out construction work in the top building-levels of high-rise projects in great safety, and protects from the weather. It is a hydraulically climbed system that can also be quickly repositioned by crane, if sufficient craneage is available.


5

DokaScaff is the ideal add-on for all Doka formwork systems at your construction site: With this rentable working scaffold system, reinforcement operations can be carried out safely and quickly. It is also suitable for use as a stair tower or a mobile scaffold tower.

The Dokadek 30 panel slab formwork ensures ergonomic, fast and safe forming of slabs. The panels are erected from a safe base, i.e. the construction workers do not have to enter the slab formwork. This ensures particularly safe working. The excavation safety device integrated into the Dokadek 30 head prevents elements from falling down accidentally.

The edge protection system XP is the universal safety solution for all edge protection needs. It fits in ideally with Doka systems – be they wall or floor-slab formwork – for safeguarding slab-edges or as fall-arrest barriers on the structure shell. In addition there are the **Safety Net Fans** which are pre-assembled unit that can be used on any structure and can be adapted to any shape. The system is available in two models: standard width and extra wide to safely catch objects and debris. Different sizes are available to perfectly adapt the system to your requirements and applications. ▪

bauma 2019

bauma 2019

Doka Campus – The multi-faceted world of formwork

From April 8 through to April 14, Munich was once again the largest international meeting place of the construction sector.

You can find more details about bauma under **https://www.doka.com/en/news/fairs-events/bauma-2019**

With 620,000 visitors from 200 nations, bauma 2019 managed to attract the largest number of visitors in its 65-year history, making the event a bauma for the record books yet again. Roughly 3,700 exhibitors from 63 countries presented their range of products and services on an area covering approximately 614,000 m². On Doka's stand measuring 4,700 m², visitors were beckoned by Doka yellow – including around 30 customers from the East Asian & Pacific region.

Every three years the dimensions and figures of bauma continue to grow – as does Doka's presence at the trade show. More than 650 employees from 48 countries, more than 49 exhibits weighing a total of roughly 260 t and more than 30 product innovations: these are but a few examples that Doka presented a versatile range to visitors. Doka's focus was on providing customers with the best possible support in the form of innovative and digital solutions that help boosting productivity on construction sites.

« bauma 2019 was a complete success for us, our national and international customers and prospects. The Doka Campus allowed us to present all of our innovative theme worlds. Above all, we were surprised by the enthusiasm among our visitors for our digital contributions that are meant to support their future productivity on their construction sites. We are happy to be able to not only demonstrate these new services but also make them available to our customers soon for their practical work. »
Harald Ziebula, *Chairman of the Executive Board Doka*

AR-VR: the ultimate experience
With the Doka AR-VR app (www.doka.com/ar) the Campus was transformed into a digital showroom which allowed expo attendees to discover a wide range of digital contents and applications. For instance, so-called "AR markers" were placed onto the exterior facade of the Doka Campus. Once these "AR markers" were scanned with the Doka AR-VR app, visitors were able to see additional images, videos and even 3D models. In the 16 m high Engineering Tower, visitors had the opportunity to experience different scenarios from the Highrise, Infrastructure and Energy sectors up close using Virtual Reality (VR).

Digital services for increased productivity on site
In the area "upbeat construction – digital services for higher productivity", the latest digital solutions and services from Doka were available for testing. The digital service offering was presented in three areas: Smart Site, Smart Assistants and Smart Planning. ▪

Gary Lim

Senior Technical Manager,
MCC Overseas (M) Sdn Bhd

*"An unforgetable bauma event. A truly rich experience being a part of many visitors that Doka has to offer in its seamless technological advanced exhibition hall. Doka has been and always will be the leader in the forming systems, provided endless effort to its customers with excellent services. A prominent global brand indeed" **

Low Seah Sun and William Low

Managing Director and
Executive Director,
Rimbaco Sdn Bhd

*"Our purpose of this visit was to understand and learn more about Doka expertise and to keep up with latest technologies in formwork systems that will contribute to our projects. We are impressed of the Doka area, which is well-organised and stands out due to the professional communication at the booth." **

Ong Tien Ling

Executive Director,
HAB Construction Sdn Bhd

*"Doka Campus is always the 1st booth I would visit when I attend bauma in Munich, Germany. Products on display are not only uniquely advanced in its design and techology, but more importantly, offers simplicity and ease of operation compared with other competitors. As a builder specializing in highrise construction, Doka is our go to system formwork supplier when we undertake any projects where speed and good quality must go hand in hand." **

* The pictures are not related to the quotations

doka

The Formwork Experts.

DokaScaff

DokaScaff is the ideal add-on for all Doka formwork systems at your construction site:

With this rentable working scaffold system, reinforcement operations can be carried out safely and quickly. It is also suitable for use as stair tower or mobile scaffold tower.

www.doka.my

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