The Formwork Magazine

Doka Xpress

2/2011 ME · www.doka.com

Skyward Bound – CMA Tower, Riyadh

doka
The Formwork Experts

Editorial

Dear Customers,

Closer to the market – closer to our customers!

These are the key objectives of Doka's redefined long-term global strategy.

Doka's redefined Middle East Region will continue with the existing Doka offices in Saudi Arabia, UAE, Qatar, Oman, Kuwait, Bahrain, Lebanon and Jordan. Regional head office will be in Dubai.

In addition to the existing Engineering and Operation services in each country, part of the expansion will be to install and manage a globally recognised engineering and competence centre in Dubai. Furthermore, there is a new regional logistics hub in Dubai's Jebel Ali Free Zone with the largest regional stock availability and reconditioning services.

The new Doka set-up provides even closer, faster and more cost-effective solutions. Pathbreaking innovations in project-related services are meeting and exceeding stringent customer requirements as the most proficient. We look forward to engaging with our construction partners to ensure continued joint success on the most complex and inspiring future projects.

Sincerely,

Peter Vogel
Regional Manager Middle East

Doka News

Forming a dhow ▶

Kuwait – The Ministry of Education Headquarters Building will be a state-of-the-art facility. The project takes a dhow, an Arab sailing vessel, as its design metaphor. The dhow concept is implemented as two curved, intersecting buildings forming an interior atrium. Large-area formwork Top 50 met the challenging shape requirements.

▲ Reaching the sky in Beirut

Lebanon – Doka is once again reaching new horizons, this time the sky above Lebanon. The Formwork Experts supplied Automatic climbing system SKE50 together with Top 50 as well as the slab formwork for the tallest tower in Beirut – SAMA Beirut. The 50-storey tower will rise to a height of 250 metres.

▲ Barwa Financial District

Doha – Load-bearing towers Staxo 40 and Staxo 100 were utilised to cast the slabs of 10 office towers at Barwa Financial District (BFD). This 71,600 m² ensemble of ten buildings takes the shape of a twin nautilus shell and is designed to serve the global, regional and local financial sector.

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◀ **Logistical support from Doka is key for the ongoing build-up in Fujairah, a remote area of UAE.**

Building boom at Fujairah's gateway

In the scenic but sparsely populated northern UAE, the emirate of Fujairah is emerging with new construction activity. Alongside a new technology institute, retail spaces and a hospital, the most prominent ongoing activity is progressing at the Fujairah Commercial Complex site.

The AED 525 m project - located at the city's first major roundabout - will be a major shopping and commercial district, styled as a city-centre market, hotel, and retail park.

Safe and fast vertical climbing
Verticals (core and shear walls) – Large-area Top 50 elements in combination with Climbing formwork 150F and a telescopic beam shaft were lifted by crane in a 3-day cycle. The climbing system was used for the internal and external parts of the core wall in order to serve as safe working platforms.

Large slab-area with low costs
Dokaflex 20 and Load-bearing tower d2 (for slab support) were used to form the floor slabs. Fast and easy repositioning plus the large slab area covered made it the perfect economical choice for Commodore. For the 805 m² of slabs in the residential tower, a formwork cycle of 7 days per floor was maintained on the typical floors. For the huge 28,000 m² mall slabs, the three floors are split into 16 pouring zones and blocks, and casting was done by the contractors every 3 days using Dokaflex 20 and Dokaflex tables.

Flexible formwork that can even handle changes of plan
Among the biggest challenges of the project were several design revisions, which if not handled properly would certainly have led to delays. Remaining on schedule called for close coordination between Commodore and Doka engineers, and a solid system for quickly producing revised formwork designs. The quick turn-around combined with the excellent logistical coordination and technical supervision resulted in a successful build.

The facts

JOBSITE Fujairah Commercial Complex

LOCATION Fujairah, U.A.E.

CUSTOMER Commodore Contracting

CONSULTANT Architectural Consulting Group (ACG)

PRODUCTS USED Large-area formwork Top 50, Dokaflex tables, Climbing formwork 150F + telescopic shaft beam

REQUIREMENTS A 20 storey (805 m³) hotel/residential tower and 28,000 m³ mall to be built in a two-year span

The solution!

To build the mall and residential tower, Commodore Contracting is using Large-area Top 50 to quickly erect the in-situ core wall, Climbing formwork 150F for the shear walls, and Dokaflex tables to carry out the forming of slabs, as they are easy to use for quick casting and short cycle times.

Youssef Abouchlih, Project Director, Commodore Contracting

The professional

"Last-minute changes of plan regarding the layout have been a big challenge for us, but one that we've dealt with to the client's complete satisfaction every time, thanks to the great support given us by Doka. The great flexibility of the floor-slab formwork, and the speed with which it has been possible to adapt the plans, have been a big help in keeping work moving ahead smoothly."

▲ The impressive jobsite comprises three mixed-use towers in the space of one.

Fast forming on 1 Sheikh Zayed Road

Dubai Contracting Company LLC (DCC) is fast-tracking the $194 m Burj Al Salam mixed-use project in one of Dubai's most prestigious locations with Doka as its partner.

The facts

JOBSITE Burj Al Salam Mixed Use Development

LOCATION Dubai, U.A.E.

CUSTOMER Dubai Contracting Company LLC (DCC)

PRODUCTS USED
Large-area formwork Top 50, Dokaflex tables, Automatic climbing formwork SKE50

Surprisingly, not all land on Sheikh Zayed Road, Dubai is fully developed. Take the flagship project, Burj Al Salam, located on 1 Sheikh Zayed Road, a crowded urban area just a short way from the Dubai World Trade Centre. Dubai Contracting Company took over this mixed-use development from anoth-

er contractor in November 2010 and committed to delivery by 2012 – a very tight schedule to complete three towers, in the space of one.

Three towers, two challenges, one deadline
The hotel tower comprises four basement levels, a ground floor, a mezzanine, 54 additional floors and two mechanical floors. The residential tower has 54 additional floors and two mechanical floors. Lastly, the office tower has 50 additional floors and two mechanical floors. All three towers are linked at the base by a four-storey podium, plus will be again interconnected at level 10.

DCC is working on all three towers simultaneously, under major time and space constraints, completing four floors per month, with each floor covering 4800 m^2. A total of 2600 m^3 of concrete are being used on each floor.

Doka Gulf FZE offered a high level of professionalism in design and on formwork coordination onsite. According to Gerald Hoermann, Product Manager, “Design considerations were a primary concern from the beginning of our engagement with DCC. To meet DCC’s ambitious schedule of completing four floors in one month, we optimised our joint planning efforts to ensure we could plan formwork to meet their deadline. An additional challenge was the need for just-in-time deliveries due to there being virtually nowhere to stockpile formwork equipment onsite.”

Optimal workflow, extensive services
For the three core walls, 173 Automatic climbing formwork SKE50 units plus 2400 m^2 of Large-area Top 50 elements were adapted to cope with the geometry changes on higher floors. For the huge circular columns with diameters of up to 2 metres, Doka provided ready-to-use Large-area Top 50 elements. Furthermore 4800 m^2 of ready-to-use Dokaflex tables, for slab and beam support, were assembled onsite.

The core wall is running three floors ahead of the slab, in order to split the work between the verticals and horizontals - mainly to simplify site organisation and ease scheduling difficulties. This lets the work crew maintain a steady rhythm and allows them to work on separate floors.

Extensive services from Doka to ensure the schedule was maintained comprised a dedicated site-supervisor onsite through the project, plus certification training of DCC’s crew to operate the hydraulic SKE system and safety training for all managers.

Working around the crane
Due to the huge size of the construction site at Burj al Salam, three placing booms are sitting within the core walls themselves plus one additional boom placed in the slab. Three tower cranes are also being used onsite, posing an even greater challenge in terms of the formwork design around these parameters.

The solution!

For the three core walls, 173 units of Automatic climbing formwork SKE 50 plus 2400 m^2 of Large-area Top 50 elements were adapted to cope with the geometry changes on the higher floors. For the huge circular columns with diameters of up to 2 metres, Doka provided ready-to-use Large-area Top 50 elements. Furthermore, 4800 m^2 of ready-to-use Dokaflex tables, for slab and beam support, were assembled onsite.

Hatem Al-biss, Construction Manager, DCC

The professional

“With a huge slab area and extensive core walls there was no space onsite. Doka met us on a weekly basis to decide which materials were needed, and then delivered them on a just-in-time basis. Based on our experience with Doka on another project, I knew I could rely on their team for our schedule.”

◀ With deep roots for both firms in Dubai, DCC and the Doka Dubai branch maintain excellent project cooperation.

▲ The CMA Tower (right) is taking shape at the centre of the King Abdullah Financial District, a new development with more than 30 high-rise buildings currently under construction.

Financial hub rising out of the dust

The King Abdullah Financial District is an unparalleled development in the Kingdom of Saudi Arabia that is set to become the leading financial centre in the Middle East.

The facts

JOBSITE King Abdullah Financial District

CUSTOMER Saudi Binladin Group (SBG)

LOCATION Riyadh, Saudi Arabia

REQUIREMENTS More than 25 sites using Doka wall, slab and climbing formwork systems. Over 440 units of Automatic climbing formwork SKE50 and SKE100 to date

Being part of the overall economic diversification program and located to the north of downtown Riyadh, the district will house the large community of professionals working within the financial sector and related industries. Once finished, the development will have 3.5 million m^2 of floorspace.

Complex formwork solution for massive needs

The project comprises more than 77 new buildings, including over 30 high-rise towers, plus the necessary infrastructure. Almost all the buildings are more than 35 storeys high. Huge numbers of people and vast quantities of material are needed to keep the site operating continuously. Doka Saudi Arabia won several formwork contracts on this gigantic project, including one for the District's tallest building.

The formwork solution that Doka supplied for foundations, walls, columns and floor slabs saved the project owner, Saudi Binladin Group, huge sums in labour costs. The solution assembled very efficiently and without massive deployment of human resources, freeing up manpower to be used elsewhere. Large areas of fair-faced concrete are a dominant architectural feature of most buildings, and in some cases the effect is achieved using self compacting concrete (SCC).

The unique architecture, with many inclined planes, also called for superlatively high precision and load-bearing capability in the formwork. With Large-area formwork Top 50, Automatic climbing formwork SKE50 and cost-effective Framed formwork Framax Xlife, the project owner has been offered a top-notch solution that provides the highest standards of safety and time efficiency. The setup times calculated in advance were undercut by a huge margin, freeing up leeway for other tasks on site.

▲ Construction is progressing fast on another SBG project in the KAFD - 2 towers on Lot 5.05 are rising with SKE50. Staxo 40 Load-bearing towers support slabs reaching heights of up to 10 m in the lower floor levels

▶ To support the mega columns of 9x3.6 m starting at the basement, Doka dam formwork d 22 is being used to avoid through-ties on these heavily reinforced columns.

▶ All the slabs of the podium floors and inner shaft areas are being supported by Staxo 40 Load-bearing towers.

The solution!

Due to the rapid construction progress and logistics restrictions, the formwork solution was designed and delivered in all-pre-assembled element & platform sections for each of the 4 levels of working platforms. Due to its high adaptability to complex layouts, and the optimised arrangement of element sizes for a fast cycle, Large-area formwork Top 50 was ideal for these requirements. The Framed formwork Frami Xlife & Framax Xlife systems are being used with ready-assembled Folding Platforms K for various heavy retaining walls, watertank walls, columns and stairwell walls in the basement levels and the podium structure.

▶ Centre core wall is raised ahead of the exterior tower steel structure in a 6-day cycle per typical storey height of 4.30 m using Doka Automatic climbing formwork SKE100

CMA Tower - the biggest core wall ever

Standing tall at the heart of the project, the 385 m tall CMA Tower is characterised by its colossal nonagonal (nine-sided) structure core, measuring over 40 m in the diagonal.

Over 10,000 m³ of concrete went into the pouring of the tower foundations alone. Completing the massive CIP concrete core to be built on these foundations will take 100 casting sections and two years of construction work. Doka's SKE Project Manager Region 5, Martin Horlesberger, joined with Doka Saudi Arabia's technical team to spearhead the formwork deployment for this project. "The amazing thing about the core of the CMA Tower is its sheer dimensions. This is the most voluminous enclosed shaft core that Doka has ever formed. Its large dimensions remain unchanged all the way from bottom to top, making even just the shaft core of the CMA Tower the same sort of size as a whole conventional skyscraper! Around 3000 m² of Large-area formwork Top 50 and 105 Automatic climbers SKE100 are in use here. The automatic climbing system includes 3 concrete placing booms being raised together with the platforms", explains Hoerlesberger.

In September 2011, the core walls reached Level 13 to 14. The typical floor started from Level 6 and was completed in a 6-day cycle. To achieve this short cycle, the huge core structure was divided into three equal-sized pouring zones, each exceeding 1000 m².
A large quantity of reinforcement steel has been set in place as pre-assembled cages. The formwork system's design included individual self-climbing platforms along each side of the wall and each main shaft area, thus enabling installation of rebar at any time during the cycle, independently of the position of the platforms.

The building's exterior façade is starting as in-place erected steel columns filled in with concrete. All steel columns around the edge of the building are attached at the top of a set of 1.2 m steel plates that line the inside of the core wall. It was another challenge to make sure that all these outside steel columns tie into the frame of the steel structure. The steel columns all fed into the fifth floor, which is a horizontal matrix supporting the floors above.

The next major challenge met Doka at Level 10. The thickness of the heavy outer wall had decreased by 500 mm, which is almost twice the size of any other typical core wall reduction for a standard single step. Over-climbing such a step-back in the distance to the edge without the need for a crane assistance required the installation of specially designed, oversized Suspension shoes SKE100 that enabled safe raising of the climbing units in four climbing steps.

The facts

JOBSITE Capital Market Authority (CMA)

CUSTOMER Saudi Binladin Group (SBG)

LOCATION
KAFD, Riyadh, Saudi Arabia

PRODUCTS USED >3000 m² of Large-area formwork Top 50 (centre core walls), 105 units of Automatic climbing formwork SKE100, 16,000 frames of Load-bearing tower Staxo 40

REQUIREMENTS A huge polygonal core wall of 3000 m²: 3 zones, 6-day cycle for typical storey height of 4.30m

▼ The climbing platform for the tower's massive centre core wall is divided into 3 separate zones, with each of the shafts having its own platform. This enables reinforcement steel to be installed in prefabricated cages and permits a continuous workflow with one zone being poured every other day.

Bridge formwork for quay wall

Ras Laffan is a natural-gas processing and industrial complex founded in 1997 to the north-east of Doha in Qatar.

The facts

JOBSITE Ras Laffan Port Extension Quay Wall

LOCATION Qatar

CUSTOMER Consolidated Contractors Company (CCC) -Teyseer Trading & Contracting Co. JV

PRODUCTS USED Forming Wagon T, special heavy-duty climbing support units, forming carriage

VOLUME OF FORMING WORK around 21,500 m³

Ziad Kamel, Project Manager, Consolidated Contractors Company

The professional

"Yesterday it was a dream and today it has come true. The challenge of casting 21,500 m³ of concrete in the limited time of only 3 months can only be achieved by great teamwork. With its sky-high morale and strong determined commitment. Doka proved to be the right partner at every stage of this project with the right concept, on-time delivery and professional support."

The solution!

A forming carriage designed to make the best use of standard items such as Top 50 and SL-1, and special parts derived from the bridge-building sector, dealt with the high concrete loads of the cantilevered part of the cap.

The site has a 106 km² footprint and accommodates a large industrial port that is one of the world's largest facilities of its kind for handling liquefied natural gas. The continuing development of new sources of oil and gas in the area mean that the port's size and capacity have to be upgraded in step with the changing conditions.

Customised optimum formwork solution

Doka Qatar was commissioned by Consolidated Contractors Company (CCC)-Teyseer Trading & Contracting JV to supply a total of 24 special formwork units for building the 705 m long cap of a new quay wall. The construction schedule allowed only three months for the build. Concrete works were completed two weeks ahead of time and to the customer's complete satisfaction, thanks to Doka's innovative formwork solution. Two different formwork constructions of 12 units each were needed to cast this overhanging cap of the quay wall, in order to ensure optimum compliance with the requirements specified for the structure.

A forming carriage designed to make the best possible use of standard parts such as Top 50 and SL-1 and of special parts derived from the bridge-building sector was needed to deal with the high concrete loads of the cantilevered part of the cap. With its suspended platforms, the forming carriage provided full protection and workplace safety. The whole system could be shifted in two lifts only, allowing a continuous workflow and fast working cycle.

The Doka services package was rounded off with field support by a site foreman from the company's headquarters, deployed to ensure that Doka know-how would be utilised to full effect in the assembly and use of this atypical formwork construction. This was the first cooperation with CCC in Qatar, and Doka proved to be the right partner.

▶ The overhanging cap of this quay wall was built with a forming carriage designed for bridge-building projects.

◀ **Dokaflex tables are speeding up the construction workflow on the slab areas.**

The facts

JOBSITE Ghala Heights

LOCATION Muscat, Oman

CUSTOMER Al Adrak Trading & Contracting Company

PRODUCTS USED
Dokaflex tables

REQUIREMENTS
An 11-storey office building and hotel to be built in a very tight construction schedule with limited workspace

Praise for excellent service

Bausher district was one of the first areas in Oman's capital city to be extensively developed and transformed into a viable business location.

The solution !

Precise formwork planning and deliveries. Fast and easy working with Dokaflex tables by the well-trained site crew made forming of slabs almost 50% faster than with the traditional cuplock scaffolding system.

Located centrally in the district, the Commercial Centre at Ghala Heights will offer fabulous executive offices. Work on the eleven-floor building is progressing steadily with Doka's excellent support.

Optimum solution for tight jobsite
The main challenge apart from a tight schedule was the very limited working and storage space onsite, as the project covers the whole plot area. The contractor, Al Adrak Trading & Contracting Company, decided to use the Dokaflex table system. The site crew were trained onsite by a Doka supervisor and quickly appreciated the fast assembly and safe repositioning of the tableforms. Easy to set up and shift, Dokaflex tables are designed for the greatest stability and load capacity. The system proved to be the optimum solution, enabling fast progress and utmost safety on this compact jobsite.

Benefits of Doka's extensive support
As usual, Doka Muscat offered its technical and logistical expertise, with comprehensive planning services and rapid availability of the necessary formwork from the rental park in Muscat. Working together with the contractor, the local Doka engineering team designed the optimum material and time-saving formwork schedule. Its implementation resulted in less manpower being needed, and easier onsite operations. With focused consultancy and site supervision services, Doka systems paved the way for timely completion of the project, to the contractor's full satisfaction.

Mohammed Haneefa
Technical Manager
Doka Muscat

The professional

"The great flexibility of floor-slab formwork, and the speed with which it has been possible to adapt the plans, have been a big help in keeping work moving ahead smoothly. The contractor could meet the ambitious timetable benefiting from our consultancy and supervision services.

For this prestige project, Turkish contractors NUROL were more than satisfied with the change from traditional to Automatic climbing formwork SKE.

Opulence in Abu Dhabi: New prestige hotel

Location is everything for Abu Dhabi's newest elite hotel and apartment complex which is being constructed across from the opulent Emirates Palace Hotel and in proximity to the new UAE Presidential Palace.

To ensure the highest efficiency in the construction operations, the two concrete cores are being cast in advance of the floor-slabs using high-performing Doka Automatic climbing formwork SKE50.

Tamer Zouroub, Technical Manager, NUROL LLC

The professional

"Technically, we chose Doka because their team was able to show us that using the hydraulically lifted Automatic climbing formwork SKE50 in combination with Top 50 elements was far faster than the traditional crane-lifted formwork we had been using initially."

Dhabi branch proposed a much faster solution which drastically improved the formwork workflow and allowed Nurol to pick up the pace to meet their project deadlines for each floor.

For the core wall of the apartment block, 71 units of Automatic climbing formwork SKE50 were used along with 935 m² of Large-area formwork Top 50 elements. For the hotel core wall, 70 units of SKE were used along with 881 m² of Large-area formwork Top 50 elements.

Safe and rapid progress with SKE
Maximum safety was ensured by climbing with the SKE system because the climbing scaffolds are anchored to the concrete at all times; extra-wide working platforms were fully enclosed; and the climbing operations could be precision-managed by remote control. To help Nurol with the formwork deployment, Doka Gulf provided a full time onsite technician, conducted safety training and certification for SKE operators, and marked all safety precautions on the engineering drawings.

No space for the crane
For two of the core walls, Doka's design had to allow for 3 tower cranes and 2 (slab-supported) concrete placing booms. By allowing the additional crane to be removed from the tight project site, switching to Doka's SKE50 system was an excellent space- and time-saving move for the contractor.

Practical Tip

Smooth installation on higher floors

Because the climbing formwork had to be installed on a higher level of the structure, Doka designed a special installation method which used the existing formwork prior to installing the SKE system. An onsite technician saw the whole process through to ensure a smooth start of the project.

The facts

JOBSITE Bab Al Qasr Hotel and Serviced Apartments

LOCATION Abu Dhabi, U.A.E.

CUSTOMER Nurol LLC

PRODUCTS USED Large-area formwork Top 50 , Automatic climbing formwork SKE50

Doka's core wall solution for faster forming
The Bab Al Qasr project, valued at $350 m, entails construction of two 36-floor towers with a total built-up area of about 180,000 square metres and a typical floor area of 2755 m². The first tower will house a 412-room 5-star hotel, while the second will have 265 serviced apartments.

Initially, from the basement floors up to the fourth floor, Nurol had been using another formwork company's traditional crane-lifted formwork, which was proving to be difficult to manoeuvre in small areas, and too slow to transfer up to the next levels. Not to mention the extra space and costs of housing the extra crane needed to move the traditional formwork. Doka's Abu

◀ The structure's Moroccan-inspired design incorporated many challenging geometrical shapes.

The solution!

A 6-day cycle was maintained using Large-area formwork Top 50 elements and Automatic climbing formwork SKE50. For the core wall of the apartment block, 71 units of SKE50 were used with 935 m² of Large-area formwork Top50 elements, and 70 units of SKE with 881 m² of Large-area Top 50 elements for the hotel core wall. Work progressed three floors ahead, in order to maintain efficient zones.

In the construction work on Vienna's new Main Station, Doka provided an economically optimised formwork concept

Optimised solution for railway-station

Construction work on Vienna Main Station is moving ahead swiftly. The first section of the biggest rail-station project in Austrian history is scheduled to go into operation as early as next year.

The facts

JOBSITE
Vienna Main Railway Station

LOCATION Austria

CUSTOMER
JV of Strabag, Alpine, Porr, Pittel & Brausewetter.

PRODUCTS USED Framax Xlife, Dokamatic tables, Load-bearing towers Staxo 100, Large-area formwork Top 50

REQUIREMENTS
Huge volume of construction to be undertaken, tight timetable and in some cases, difficulty accessing the site.

To carry out the extensive in-situ concreting works, the 'HBF-Wien 01' consortium turned to an economically optimised formwork concept from Doka.

The new Main Station being built in Vienna is a development of epic proportions. A million cubic metres of excavated material, 300,000 cubic metres

of concrete, 38,000 tonnes of reinforcing steel – figures like these say it all. The huge volume of construction to be undertaken here, the tight timetable and the difficulties of accessing the site call for 100% commitment from all involved parties.

Materials-optimised forming operations and just-in-time deliveries
Working closely with the Site Management, Doka devised a detailed formwork concept that is rigorously geared to achieving materials-optimised forming operations with the aid of just-in-time deliveries. Apart from taking a lot of pressure off the site logistics, with their limited storage facilities, the main benefit of this concept is to avoid the costly 'just-throw-more-equipment-at-it' approach. A key ingredient of this integrated formwork planning is that the formwork equipment available on-site is scheduled to fit in exactly with the progress of work in the various casting sections. This ensures an optimum degree of equipment utilisation throughout the entire shell construction phase, leading to high productivity in the formwork operations as a whole.

Efficient solutions found to widely differing challenges
The main systems used to construct the voluminous transportation station, which extends across three storey levels, are Framax Xlife framed formwork panels and Dokamatic tableforms. The framed formwork system Framax Xlife comes into its own here with its versatile system-grid for easily and economically adapting to the varying layouts, and by being so easy to clean on-site. For forming the slabs, maximum speed is being ensured by the large-area Dokamatic tables. Also, the massively dimensioned (up to 2 m thick!) ground-source heat collectors on the shallow foundation structure were formed using Framax Xlife panels.

The track-bearing structures next to the above-ground distributing-concourse level of the transportation station, and the five approx. 12 m wide island platforms, are being cast using reinforced Dokamatic tables on extra-high-capacity Staxo 100 Load-bearing towers and with stop-end formwork made of Framax Xlife panels. This combination delivers great speed and efficiency.

JV Project Manager Georg Pleva.

The professional

"To make a success of handling a construction project as big as this one, you need not just perfectly organised site coordination, but also, and above all, professional partners with sufficient experience and capacity. The Doka Vienna Branch brings both of these to this project, and has more than met our high expectations"

The solution!

Materials-optimised forming operations and just-in-time deliveries. Doka's efficient rental park makes it possible to meet any unforeseen needs for extra equipment, that was not envisaged in the original plan, at short notice. This is essential if a construction project of this size is to be accomplished efficiently and without delays.

◀ The many flyover structures, and the track-bearing structures, are being safely shored by the extra-high-capacity Doka Load-bearing tower Staxo 100 system.

In brief

News, dates, media, awards

▲ **The new Doka website – more interactive than ever**

▲ **Doka Muscat showcased major innovations at the Big Show 2011.**

▲ **Ready-to-Use preassembly saves time, costs and onsite space.**

DOKA PUBLISHES FIRST-EVER SUSTAINABILITY REPORT

Doka is committed to acting in a responsible manner in its business environment, towards its employees, society at large and the physical environment. To acquaint our customers with this ongoing commitment, we have published our first-ever global sustainability report, presenting all accomplishments on the sustainability front, and highlighting our developments and innovations in this field.

PREMIERE OF DOKA GROUP'S NEW WEBSITE WWW.DOKA.COM

Doka's global expertise in formwork is successfully brought to our customers on Doka's newly redesigned website. Launched on 1st September 2011, the site is full of useful information with interactive product and service searches, access to references for all types of concrete projects, a newsroom with technical project press releases, and the ability for you, our customer, to interact with us on facebook, twitter, YouTube and more. The site is also optimised for smart phones!

CLOSER TO YOU

The industry looks to Doka as a leading global firm showcasing formwork innovations at major construction events. This year our Middle East teams were energised, welcoming an array of contractors, consultants, architects and governmental officers to Doka pavilions across the region. **Meet us at 'Middle East Concrete' at the Big 5 (21-24 November), Dubai, UAE**

NEW, EXCLUSIVE READY-TO-USE SERVICE

Doka Gulf recently launched its Ready-to-Use (RTU) Service. Contractors are already benefitting from the time, space and cost savings this brings. RTU simply means that formwork is custom-designed, pre-assembled and delivered – ready to start pouring! From simple floor slab tables to complex curved shapes, we can handle any assignment.

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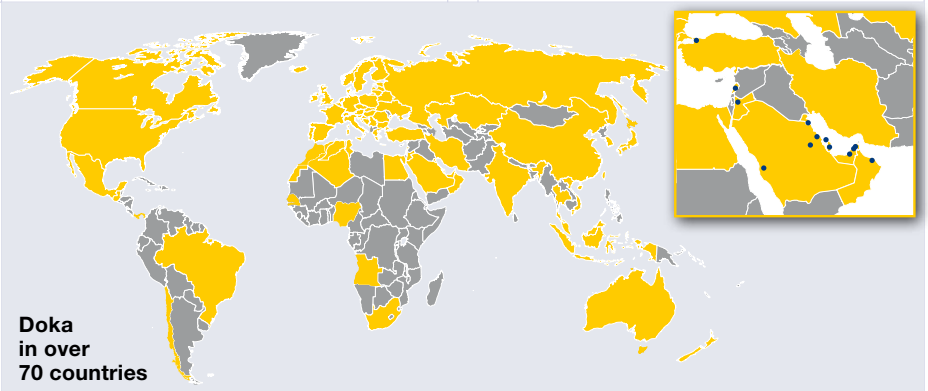

Impressum: Doka Xpress is a publication of the international Doka Group. **Publisher:** Doka GmbH, Josef Umdasch Platz 1, A 3300 Amstetten, Austria.
Editor-in-chief: Agata Orlowska. **Layout design:** Como GmbH, Linz, Austria
In some cases the site photos show the situation during formwork assembly and are therefore not always complete from the point of view of safety.

Simply give us a call! We´ll be pleased to advise you.

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