Doka **Xpress**

Vol. 18 Issue 1





Editorial



Director's Message

2018 is off to an exceptional start across most of the construction industry and at Doka in particular.

This year marks a major milestone for Doka. As part of the Umdasch Group, we are celebrating 150 years in business globally. Thanks to the Umdasch Group's leadership and founding principles, Doka has become an internationally known brand, helping construct iconic structures around the world.

I believe we've achieved our international reputation largely due to our commitment to the science and safety of formwork. We are dedicated to advancing the technology and most importantly, keeping our customers safe and efficient. Our growth and success has opened up many career opportunities within many roles and business locations. We encourage interested applicants to join our team, by visiting our website for the latest openings.

As a leader the formwork, we have the privilege to work with some of the most innovative owners, developers, engineers and contractors in the world, on some of the industry's most challenging and innovative projects.

This year we are excited to be part of challenging and complex projects that include the construction of higher education facilities that spark innovative healthcare solutions, major transit systems to improve connections, and urban residential development to support growth.

One of the products you'll read more about in this issue is Dokadek 30, our beam-less, hand-set formwork system. Martineau Coffrage, a formwork and civil construction firm in Quebec, has adopted the Dokadek 30 formwork solution across all of its projects, because of the technology's ease of use and high level of safety.

Stay tuned for more advancements later this year, including a new slab system technology and safety solutions.

Andrew Mair CEO Doka USA, Ltd.



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News from DOKA



\$1.5 billion expansion of Seminole Hard Rock Hotel & Casino, Hollywood, FL ►

Designed to resemble back-to-back guitars, with guitar faces, necks and brightly lit guitar strings that reach 450 feet into the sky on both sides, the iconic Hard Rock guitar tower is under construction.



▲ #LetsFormWalls

Telus Sky taking off in Calgary

The 725 ft. tall tower is formed with Super Climber SCP and protection screen Xbright. When complete, this 58-story structure will be the tallest building in Calgary.



National Frami Day

Save the date, Monday June 4th and stay tuned for events and promotions across North America.



Project Name: Health & Science Innovation Building Location: University of Arizona. Tucson AZ **General Contractor: Kitchell Construction** Concrete Contractor: Baker Concrete Construction Architect: CO Architects Developer: University of Arizona Type of structure: Higher education Height: Approx. 100'-0" **Stories:** 10 Cycle time: Varies, average 1-pour per week Sa. Ft: Top 50 13.500 sq-ft. Framax 7.000 sq-ft.





The

"With the focus on the architectural finishes, Doka's engineering team was extremely proactive and was able to adjust to the ever changing schedule. Baker received great sales and field support. Ultimately the finished product was some of the best concrete finish this architect has seen".

Shay Lawrence, Project Manager, **Baker Concrete**

Health & Science Innovation Building (HSIB)

The HSIB, located on the University of Arizona Health Sciences campus, will be a state-of-the-art education facility with clinical labs, simulation centers and large, medium and small group/team learning areas.

The facility will support simulated practice situations and interaction between multidisciplinary teams of students, faculty and health professionals in medicine, nursing, pharmacy and public health.

The Challenge

- Tie patterns and architectural finishes required.
- Accelerated engineering and fabrication schedule.
- Complexity factor: Clarity on architectural form faces using dual layer plywood for outside of walls, back-screwed so that a very clean concrete finish is the result. Single layer plywood utilized on inside of cores.

Products used

- Core: **Top50** & **MF240** platforms for East Triple core, and West Elevator, Stair #2, and Stair #3.
- Other: Telescopic shaft platforms

► Large-area formwork Top 50 is a modular gang form system constructed from standard parts that can be assembled in any configuration for a wide range of applications.







▲ Climbing formwork MF-240 permits controlled, regular working cycles on all tall structures. It is easy to set up, and can be tailored to meet a wide range of different requirements.





Why was Doka selected as the formwork supplier?

- Relationship with the contractor.
- Doka solutions facilitate architectural requirements

◄ The formwork and climbing scaffold are linked together as a single unit which can be repositioned in just one crane-lift. On structures with straight walls, climbing formwork MF-240 permits casting sections that are up to 20 ft. high.



▲ Contractors on the One Vanderbilt project in NYC select Framax wall formwork with supporting construction A frames to pour 48' tall walls.

Single-sided Walls + A Frames = 48' Tall Poured Concrete Walls

Supporting construction frames enable the concreting forces to be safely transferred by way of diagonal anchors in cases where it is not possible to tie timber-beam elements or framed formwork panels through the concrete. Combining Framax Xlife panels with the supporting construction frame makes it possible to pour even very high walls in one continuous operation.



Project Name: One Vanderbilt Location: One Vanderbilt, New York, NY General Contractor: John Civetta & Sons, Inc. Concrete Contractor: Anchormen Construction LLC Architect: Kohn Pedersen Fox Associates Developer: SL Green Realty Corp. Type of structure: High Rise Height: 1301 ft.

The Challenge

- High concrete fluidity and resulting pressure
- One faced walls at 48' tall and SCC concrete requirements.
- No linear direction of work. Formwork needed to move around project depending on concrete readiness.

One Vanderbilt

One Vanderbilt is a skyscraper under construction in New York City on the corner of 42nd Street and Vanderbilt Avenue in midtown Manhattan

The Solution

- Framax Xlife with supporting construction frames and diagonal anchors enable the safe transfer of concreting forces. This technique is particularly useful in cases where it is not possible to tie timber-beam elements or framed formwork panels through the concrete.
- Modular system for easy reconfiguration and movement of ganged material from one section of the jobsite to another.
- Folding Platform K preassembled scaffold platforms, .
- Folding Platforms shipped in preassembled units.



▲ Due to customer allocated construction joints, which prohibited simple Framax and A-frame units, the engineering team developed an efficient strategy for setting and cycling forms from pour to pour.





▲ Supporting construction frames enable the concreting forces to be safely transferred by way of diagonal anchors in cases where it is not possible to tie timber-beam elements or framed formwork panels through the concrete.



▲ Doka wall formwork systems are modular for easy reconfiguration and movement of ganged material from one section of the jobsite to another.

Products used

- Framax Xlife wall formowrk
- Frami Xlife wall formwork
- Supporting Construction A Frames
- Folding Platform K

- Strongest modular formwork system on the market.
- Experienced engineering team.
- Excellent account and on-site service by the management team.



Roosevelt Station / Northgate Link Extension

The Northgate Link Extension is a 4.3-mile light rail project designed to provide fast, reliable transit through a highly congested area of Seattle. Part of the project is to develop the Roosevelt Station to serve the surrounding neighborhoods and the Roosevelt business district, including Roosevelt Square. By the year 2030, Sound Transit expects approximately 8,000 people a day to board the light rail at Roosevelt Station.



The Facts

Location: Roosevelt Station, 12th Avenue, NE & 65th Street, Seattle, WA 98125

GC/Concrete Contractor: Hoffman Construction Company (Doka working directly with Masons Supply Company (Seattle, WA dealer)) Architect: Jacobs Associates (Engineers/ Consultants)

Developer: SoundTransit / Central Puget Sound Regional Transit Authority

Type of structure: Subway Station

Height: Approximately 88'-0"

Stories: Approx 9 underground.

Cycle time: 42'-0" first lift, approx 1 pour per week.

Sq. Ft: Concrete area approx 97,200 sq-ft. Formwork area provided approx 5,300 sq-ft.

The Challenge

- 1-week cycle for advancing and hitting schedule.
- Very tall form height required innovative engineering to ensure safe construction.
- Customized requirements for construction joints.

The Solution

- Quantity of Framax units with A-frames allowed for pre-assembled sections to fly easily from one pour to the next.
- When customer requested additional walkway level midway between 42' A Frames, Doka created walkway solution with standard tubular parts.
- Large central pilaster areas were set up as pre-assembled sections for ease of shifting on-site.

- Supporting construction frames are able to brace concrete pressure, even at very high pour heights.
- Supporting construction frames can be cantilevered on a wall to support the final pours of the wall.
- Close working relationship between Doka and Seattle-based dealer (Masons Supply Company) to deliver customized solution.
- Coordination and collaboration capabilities.
 Doka Engineering provided design and technical support, Operations provided all equipment and coordinated with Masons.
- Tall A-frame solutions fully maximized the largest Pigtail anchor solution and provided an economical and practical solution.





Project: Canvas Location: 1600 NE 1st Ave., Miami, FL Type of structure: 37-story reinforced concrete structure Architect: Cohen, Feedman, Encinosa & Assoc. Architects, PA Concrete Contractor: Net Construction

The Challenge

 Provide a complete turn key solution for the complete shell in order to work with one supplier for the entire structure.

Canvas Condos

Canvas Condos is a luxury residence tower, soaring 37 stories above Miami's Arts and Entertainment District, and encasing 513 inspired residential units. The nearly all-glass facade is a window to the inspired landscape immediately north of downtown Miami.

The Solution

- On the bottom floors of the parking garage 10k shoring design we were able to go with a 10' cross brace spacing using our new Alu-Box beams and minimizing frames for the contractor.
- SCP on the main core was used in conjunction with the Framax Shearwall Formwork and Frami Columns in order to store all vertical formwork eliminating the need to fly the formwork to the ground speeding up the cycle times but more importantly not losing any days during the windy days when no flying occurs.
- One complete level of Doka Truss was provided for all the slab formwork.

Products used

- Core: Framax panels on all shear walls / Frami Xlife, Super Climber SCP on the main core
- Columns: Frami Xlife and Framax Xlife
- Reshoring: Eurex30 Props
- Shoring: 10K on lower floors, **Doka Truss** Tables on typical floors



▲ NET Project Super: Robert Valdez (2nd from right) NET Project Manager: Aldo Perguero (center) Congratulations to NET Construction and Stiles Construction Teams on a successful project.



Super Climber SCP on the main core and Framax Xlife wall formwork on the shear walls.





▲ The DokaTruss table represents the fastest method to set and strip large slab formwork. This flying table form is a must to handle today's demand for high speed construction cycles.



- NET Construction gave us the opportunity to perform on a complete job basis.
- Complete turn key package solution from shoring, vertical, climbing, re-shoring, and field service to train the personnel and assure a successful project.



Martineau Coffrage Forming Montreal

Martineau Coffrage is a formwork and civil engineering construction company serving clients in the residential, commercial, industrial & institutional sectors of metropolitan Quebec.

In 2016, Martineau Coffrage partnered with Doka for all of its formwork needs. The main interest of Martineau Coffrage was initially on slab formwork Dokadek 30 which, afterwards, was completed by wall formwork Framax S Xlife. The Protective XP Grating, part of the Dokadek 30 solution, offers a high level of safety that Martineau Coffrage wants to implement in all its jobsites. So far, the company has completed four projects using with Doka systems and three more are under construction.



- High product quality
- International proven expertise and renown of Doka.
- Efficiency of Doka products (Speed execution)
- Material availability

Location: Station Sud, 40, St Sylvestre Street, Longueil, Quebec Canada GC/Concrete Contractor: : Martineau Coffrage

Architect: Formes Studio Architecte

Developer: Innovim / Prével

Type of structure: Residential building Stories: 7 floors, 12,415 sq-ft.

Cycle time: Pouring a slab every 5 days. Sq. Ft: Concrete area approx 97,200 sq-ft. Formwork area provided approx 5,300 sq-ft.

The Solution

- Assembly and erection of Dokadek 30 from ground level insures a high level of safety during formwork erection.
- Doka Protective XP Grating offers a higher level of safety with a full perimeter protection.
- Quick striping provides faster access to the lower slab to execute other works (Conventional shoring stays in place 4 consecutive floors)
- Dokadek 30 handset system that needs only a few crane cycles
- Nice concrete finish, thanks to Dokadek's bigger panels 4'x8'.



▲ Dokadek 30 is a beam-less, hand-set formwork system designed as a lightweight steel structure with yellow coated frames faced with timber/plastic-composite sheeting.



▲ The typical zones are formed simply by tilting up the beam-less panels, each of up to 32 sq.ft. in area.



▲ Uncluttered logistics, as there are only 2 sizes of panel: 8' x 4' and 8' x 2.7'



"We are proud to partner with Doka, for its product quality, continuous availability and collaboration with its representative".

Jonathan Martineau, **Owner Martineau Coffrage**





Location: Vic & Lambert, 295, boul. Riverside Drive, St-Lambert, J4P 1A5, Quebec Canada

GC/Concrete Contractor: : Martineau Coffrage

Architect: Jean-Pierre Bart Developer: Sotramont / EBC

Type of structure: Residential building

Stories: 10 floors, 9,500 sq-ft.

Cycle time: 1 slab every 5 days

Sq. Ft: Concrete area approx 97,200 sq-ft. Formwork area provided approx 5,300 sq-ft.

Construction time: Project Started on 01/10/2017, Project completed on 09/05/2017



▲ The large gang forms and wide tie spacing reduce the forming times for large areas.



▲ The galvanised and yellow coated steel frame of the panel with riveted-on Xlife sheet is long lasting and permits many re-use cycles without changing the form-facing.

Products used

- Panel floor formwork Dokadek 30
- Framax Xlife wall formwork
- Dokaflex slab system for infill zones
- Superprop

The

Protective XP Grating





"We feel a personalized treatment from its representatives, which is very important for a family company."

Veronique L'Abbé, Operations Manager, Martineau Coffrage

Location: Savannah, GA

GC/Concrete Contractor: Aquaterra Contracting, Inc. **Architect:** U.S. DOT Federal Highway Administration

Type of structure: Bridge Length: 1,295 Lineal Feet



Products used

- Standard 25kip Friction Collars
- Custom 25kip Friction Collars for Battered Piles
- Pre-Assembled Bent Cap Soffits as support and work deck
- Framax Wall Formwork for Abutment Walls and Bent Caps
- Custom Designed Hanger Platforms for Intermediate and Bent Cap Diaphragm Walls
- Bridge Overhang Brackets
- Pre-Assembled Articulated Waler Wall Formwork for the Radius Wing Walls



Fort Pulaski National Monument Entrance Bridge Replacement

The original park entrance bridge, which is still in use, is a fully wooden structure built in the 1920's. With continuous use, and almost 100 years of fluctuating tides (almost 7' between high water and low water), the bridge has outlived its design life. The new 1,295-foot-long bridge will be constructed from pre-cast pile, cast-in-place bent caps, pre-cast concrete girders, cast-in-place diaphragm walls, abutments, and wing walls. The new bridge will be located 6' to the west of the existing bridge.







The Challenge

- Low elevation of bridge cap and support structure (under water during high tide), pre-assembled together to protect the materials and work space for the contractor.
- Battered piles in different directions limit support structure locations on bridge caps.
- Required custom friction collars to hang on the battered piles, and support decks designed to work around the battered piles.
- Cast-in-place intermediate diaphragms needed to be supported over the water and needed to allow working space and safety.

The Solution

- Customized designed pile cap soffits utilizing standard rental gear and Framax wall formwork supported by standard and custom Friction Collars
- Suspended Top 50 Forms for CIP diaphragms
- Diaphragm wall support that hangs from the precast girders

Location: Washington, Missouri GC/Concrete Contractor: Alberici Constructors, Inc. Architect: HDR, Inc. Developer: MoDOT Type of structure: Bridge Construction time: Summer 2016 – Nov. 2018



New MO-47 Bridge

The Route 47 Missouri River Bridge is a vital link for both Franklin and Warren Counties with about 11,000 vehicles a day using it. The Missouri DOT is building a new bridge to replace the old deteriorating bridge. The approximately \$43 million, 2,560ft bridge, located west of the existing bridge, will have two 12-ft lanes with 10-foot shoulders. It will also have a 10-ft bike/pedestrian path that will connect to the KATY Trail in Warren County.

Products used • Steel Girder Formwork



The Challenge

- Architectural concrete finish
- Not permitted to use standard gang formwork
- Limited amount of time in schedule to build custom boxouts

The Solution

- Custom Steel Girder Formwork prebuilt and delivered to the site ready for use
- Custom Girder that provided the desired architectural concrete finish
- A combination of standard and custom Steel Girder forms that were prebuilt and delivered to the site ready for use.

- Ability to meet tight jobsite schedule requirements
- Solution provided achieved the desired architectural concrete finish
- Doka engineering provided 3D drawings to provide a visual understanding and support with assembly onsite.







Location: 1010 NE 2nd Avenue Miami, Fl. 33132

GC/Concrete Contractor: M.C. Velar Construction Architect:O'Donnel Dannwolf and Partners

Architects, Inc.

Type of structure: Residential Tower Height: 699' ft Stories: 58

Cycle time: 1 floor per week

The Challenge

- Critical construction benchmark dates
- 4 day cycle for advancing
- Not permitted to use traditional truss shoring due to proximity of site to major highway
- Shear wall construction restricts movement of shoring material through building
- Limited spaced on ground for staging and storage of material
- 3m deep transfer slab suspended 12m above floor below

The Solution

- Pre-assembled Top 50 wall formwork
- Pre-assembled platforms for all Super Climber working areas
- Main Core Top Platform Designed for Vertical Form – Re-Bar Storage
- Pre-Assembled Platforms for all SKE Platforms
- Facilitated simultaneous formwork climbs.
 Pumps helped speed cycling times with minimal manpower.

Why was Doka selected as the formwork supplier?

 After previously using the Doka's Super Climber, M.C. Velar once again chose Doka SCP to maximize production while minimizing the construction crew.



Paramount Tower

Paramount is a signature luxury condo tower part of the 27-acre Miami Worldcenter development. The 60-story tower, on the north side of downtown Miami at 700 N.E. 1st Street, will have 512 units atop ground-floor retail.

Due to the large size of the main core on the building (29'-2" x 71'-0), Doka proposed pre-assembled Top 50 wall formwork with Super Climber to support construction of the main core. The combination of formwork solutions allowed the main core to be completed ahead of time, and removed from the critical construction path schedule. As a result, the customer was able to stay ahead of the slab construction

The smaller north and south cores utilized the SKE100 plus climbing systems in order to carry the concrete pumps including the Framax core wall formwork carry the pump and provide a completely enclosed safe working environment for the crews which in turn improves production and reduces overall construction schedule.







The Professional

"Using Doka's automatic selfclimbing formwork solutions has made our project safer for the guys and made our vertical run smoother."

Tommy Hudson, General Superintendent, M.C. Velar Construction





Products used

- Main Core: Large area **Top 50** wall Formwork with **Super Climber SCP**
- 2 Secondary Cores: Framax Xlife with SKE100 Plus to carry the pumps inside the cores.
- Reshoring: Customer Owned **Eurex 30** 400 Supporting Props
- Columns: Framax Xlife and Frami Xlife

Location: Miami, FL GC/Concrete Contractor: M.C. Velar Construction Architect: Cohen & Friedman Developer: CIM Group of Los Angeles and the Falcone Group Type of structure: Reinforced Concrete Tower Height: 450' Stories: 42 Cycle time: 4 day cycle Sq. Ft: 12,000 sq. ft. per floor on typical floors

Single site craneFast-track construction schedule

The Challenge

The Solution

- Pre-assembled Top 50 Walls Forms
- Pre-assembled Platforms for all Super Climber working Areas
- Pre-assembled Protection Screens for Perimeter Enclosure
- All climbs simultaneously including the pump speeding up the process of cycling times with minimal manpower.
- With a single crane on the jobsite and a tight schedule, the contractor decided to use the SCP on the main core and take it ahead and therefore eliminating the vertical portion from the critical path of the schedule. The center core has dimension of 33'-10" x 58'-6" and was fully enclosed in X-Bright protection screen, allowing the workers to be fully enclosed, safely working and maximizing productivity. Provisions were made to allow the pre-cast stairs to be flown in to the interior working core and suspended from the working platform in order to minimize crane time while placing them into the respective locations.



Miami World Center Block G East Tower

Miami Worldcenter is one of the largest private master-planned projects in the United States, featuring a diversity of urban land use, including retail, hospitality, and residential space. Located in the core of downtown Miami, the 10-block, mixed-use development is situated immediately north of the Central Business District and is surrounded by world-class amenities and boasts convenient access to transportation.

Block G East tower is a 42-story, 700+ft. tall complex that will feature 470 residences with a full suite of amenities, including a pool deck overlooking downtown, a fitness center, covered garage parking and concierge service. It is targeted at bringing more affordable living to Downtown's Park West neighborhood.



▲ M.C. Velar Construction Team





▲ Due to the large size of the main core on the building (33'-10" x 58'-6) Doka proposed pre-assembled Top 50 main core material with a fully enclosed Xbright Protection Screen on the SCP Climber.

Products used

- Core: Large Area Top 50 with Super Climber SCP
- Exterior: Xbright protection screen
- Reshoring: Customer owned **Eurex 30** 400 Post Shores
- Columns: Frami Xlife and Framax Xlife wall formwork

Why was Doka selected as the formwork supplier?

 After previously success with the Super Climber SCP system, M.C. Velar once again chose it to maximize production while minimizing labor.

In Brief

Doka USA launches new Augmented Reality App

DokaAR allows anyone with an mobile device to view 3D models in augmented reality. Visit www.dokaAR.com for more info.

#MoreThanFormwork

Did you know we offer 3D printing technology, customized wood cutting servies, and services such as in-house professional engineering, preassembly, on-site training, and



field service? Take a look at our latest company video and see what we have to offer. http://bit.ly/Doka2018Video

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See it in Augmented Reality

App Stop

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