Dear Customers and Colleagues,

As the 10th anniversary of 9/11 is upon us, it is hard not to take pause and reflect on that tragedy. While that day will never be forgotten, the enthusiasm that surrounds the construction at the World Trade Center is something that has inspired our entire team. We are very proud to provide formwork solutions and services on Tower 2, Tower 4, and the Memorial project.

Although our economy is still struggling to rebound, there are many examples of growth and innovation that create optimism and signal good times ahead. In Toronto, our new foldable Xclimb 60 protection screen helped keep workers safe and protected from any weather, while also protecting pedestrians from falling debris. Formwork innovation also was key to meet the extremely tight construction schedule of a medical building as well as for the construction of a new naval submarine pier. Each of these projects, detail the role of formwork in performing quick, safe and reliable construction.

Working together, we can achieve great things. As many companies continue to cut their R&D efforts because of the economy, our charge is to continually innovate in response to your requests to ensure we can help you meet the changing needs of today’s construction world. Let’s continue to innovate to build a safer, smarter and more creative world together.

Andrew Mair
Chief Executive Officer
Doka USA, Ltd. / Doka Canada, Ltee

― Doka Executives visit with contractors at the World Trade Center site.―

From left:
• Josef Kurzmann – Member of Umdasch AG Executive Board & CEO of Doka Division
• Antonio Rodrigues, Sr. – President, Roger & Sons Concrete, Tower 4
• Andrew Mair – CEO, Doka North America
• Andreas J. Ludwig – Chairman of the Board, Umdasch AG
• J.Jay Martino, Principal, JPC Builders LLC, Tower 2
• Rainer Spitzer – Managing Director, Doka Engineering & Sales
• Gerd Pechura – Head of Finance, Umdasch AG

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Keeping Toronto Safe

To keep the work area safe and protected from any weather, Doka’s new foldable Xclimb 60 protection screen is used. The screen protects the people in the busy Toronto area from falling debris from the work site.
The protection screen is wrapped around the entire perimeter of the building for four levels, and will climb up the 65 stories with hydraulics, no crane is needed. The top section of the screen was designed to fold down, which makes resetting of the slab formwork easier. The hinged top section of the protection screen is a big safety advantage in all stages of the project since the slab edges are protected with the screen as soon as the hinged section is set back in place after lifting up the slab formwork. In addition, the hinged section is completely sealed with rubber between the screens and also to the slab edges to keep heat in the required area.

In addition to the protection, Doka engineering designed loading platforms built into the screens to allow storage for the vertical formwork close to where the actual work is happening to reduce crane time.

One of the major challenges is the complicated slab edge outline. In the building’s design, the outside perimeter of the east side changes at every level. The edge of the building waves in and out irregularly. Then, starting on level 50, the slab edge in the center of the west side steps in and out every other level, approximately 19 ft.

The contractor, Hardwall Construction Ltd., was pleased that Doka provided a complete protection screen solution, which can take the changes in the building, is also able to hinge down and has loading platforms all the way around the building. ©

The Professional

The Doka Hinged Protection Screen has provided the jobsite with a safe and fast system. It accommodates on-site material storage, public safety and winter heating requirements.”

The Facts

JOBSITE
Shangri-La Hotel, Toronto, Canada

CONCRETE CONTRACTOR
Hardwall Construction, Ltd.

PRODUCTS USED
Foldable Xclimb 60 Protection Screen
When the crane is ready to lift the large formwork tables, the top section of the screen is folded down with hydraulic cylinders.

The safely guided system allows you to keep a tight cycling schedule because wind loads that can force a crane to shut down will have no influence to the work sequence of the system.

The screens and fold down sections can be easily moved by using the portable hydraulic unit.

The Shangri La Hotel is scheduled to open in spring 2012.
The MF-240 climbing system offered quick and easy adaptability to the changing pour heights.

**The Facts**

**JOBSITE**
Pikeville College Osteopathic Medical Building, Pikeville, KY

**SQUARE FOOTAGE**
82,000 sq. ft.

**GENERAL CONTRACTOR**
Codell Construction Co.

**CONCRETE CONTRACTOR**
Rising Sun Developing, Inc.

**PRODUCTS USED**
Framed Formwork Frami, climbing formwork MF-240

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**Fast Rising Cores For Rising Sun Developing, Inc.**

Meeting the extremely tight construction schedule of an 82,000 sq. ft. medical building for an expansion to Pikeville College meant running two working crews and two cranes, six days per week.

The project, cut into the side of a mountain of rock, had to be excavated and pile drilled, which consumed an immense amount of the construction schedule. To get back on track, a quick system was needed to form three elevator cores and five levels of foundation work. Distinctive features include a 30 - 50 ft. high retaining wall, along with three cores at 187 ft. high.

The site has very little staging area and limited access to enable handling of the formwork and the steel for the project. For concrete contractor Rising Sun Developing, Inc., streamlining the forming process on their cores, while staying on schedule, was the biggest challenge. A fast and reliable system to use on their cores and walls was required.

The solution came in the form of the crane-lifted climbing formwork MF-240 and shaft platforms, as well as framed wall formwork Frami for three cores. The system offered fast and easy assembly with minimum crane time. One of the main advantages was the quick and easy adaptability to the changing pour heights. Additionally, the lightweight Frami system allowed Doka to stay under the maximum capacity of the crane as well as reduced the number...
The Solution

To meet tight deadlines, minimal crane capacity and limited staging room, Doka's Frami framed formwork, used with the MF 240 climbing system, was chosen to form three concrete elevator cores.

The Professionals: See what first-time Doka formwork users have to say:

Jason Akers, President, Rising Sun Developing Inc.

We were able to turn a large three cell core in six days, pour to pour, and this was our first time using the Doka system.”

Jack Hammon, Superintendent, Rising Sun Developing, Inc.

In the last year of using Doka formwork, we have increased our speed concerning our core formwork projects. This increased speed allows us to meet tighter deadlines and schedules, which allows us to improve our bottom line.”

David Robinette, Construction Manager, Codell Construction Company

Once we got started, the formwork never had to hit the ground again until the core was topped out. This system offered advantages over other systems we could have used and they were noticeable on the job.”

Practical Tip

For fast stripping of corners, use the Doka stripping corner. Strip from one location, one corner, at the top of the core with no need to loosen or retighten bolts. The core will come completely separated from the concrete, and the entire shaft can be lifted as one unit without further disassembly. The time savings are enormous.

I like your MF-240 platform and shaft system. It felt safer than any other system that I have used. This was my first time using your system and we finished on schedule, even with very bad weather. Also, the drawings we received from your engineer were the most complete and accurate drawings I have ever received.”

– Tim Newsome, Rising Sun Developing, Inc., Superintendent
Radius Serpentine Concrete Walls

Foothill High School Auxiliary Gymnasium is under way under the leadership of General Contractor Barnhart Balfour Beatty and Concrete Contractor Guy Yocom Construction, Inc.

▲ Guy Yocom's crew included excellent wall finishers that made the corded radius look like a smooth architectural finish. The Circular H20 Smooth radius forms were integrated with the corded radius and straight wall Frami Panels as required.
Guy Yocom had previously been a traditional form user looking for a new formwork system to construct the north and south retaining walls, leading into radius walls with serpentine shaped construction.

The walls were running parallel at different heights, slopes, stepping conditions and intersection transitions. Many areas of the wall required an architectural finish that would be visible. Traditional lumber built radius forms typically involve excessive and experienced labor and costly lumber. Therefore, an innovative and fast radius system was required. In order to accomplish this goal, Frami formwork panels were selected as the best solution for inside and outside wall forms. The system adapts to all steps, height changes, transitions and sloping conditions on the project.

The Frami Cored Radius System was very efficient for the serpentine radius changes as it incorporates fillers for the gain of the outside panels. The Frami panels were united with Circular H20 radius forms by standard profile adapters for clamp connections on the tighter radius scope.

In addition to standard forming requirements, special pilaster forms were designed and incorporated for use in other areas requiring pre-cast concrete tilt-up panels. The pilaster forms incorporated with these 42-ft.-high tilt-up panels included hinged corner pour windows for access during full height pouring and vibrating. Producing the desired finish was no problem, since the standard Frami system uses a special plywood facing.

Overall, 1,500 LF of formwork were used on the entire project for walls and pilasters ranging from 6 ft. to 42 ft. high.

For the concrete contractor, the biggest benefit was the savings they realized on labor, schedule and materials. Support was provided by Doka’s onsite field service team in order to drastically reduce the learning curve of using the new system.

The Facts

Jobsite
Foothill High School Auxiliary Gymnasium, Santa Ana, CA

General Contractor
Barnhart Balfour Beatty

Concrete Contractor
Guy Yocom Construction, Inc.

Products Used
Wall formwork Frami with Circular H20 Radius forms

The Professional

“Even though this was the first time Guy Yocom Construction used the system, the learning curve was minimal and efficient production was achieved. The Doka forms use less manpower and have us ahead of the form building schedule. For us, this means not only savings in labor, but also time. In this economy, the result will be a profitable project that gains respect for my crew and I.”

Tony Molina, Superintendent, Guy Yocom Construction, Inc.
Doka was brought in during the early stages, prior to bidding the project, to develop a suitable overall plan for construction. From that point, Doka worked with Precision Concrete throughout the bid stage, including participating in discussions related to cycling, scheduling and overall proposed durations for the equipment, based on experience, to ensure a successful project.

Factors Affecting Construction
Three of the structures were adjacent to one another, with each scheduled to start at different times. Furthermore, each structure

Support From Bidding To Completion

Construction on the new $117 million Douglas County Adult Detention and Law Enforcement Center is underway. The jail is being built on a 40-acre site with Turner/New South Construction and Concrete Contractor Precision Concrete Construction.

Doka was brought in during the early stages, prior to bidding the project, to develop a suitable overall plan for construction. From that point, Doka worked with Precision Concrete throughout the bid stage, including participating in discussions related to cycling, scheduling and overall proposed durations for the equipment, based on experience, to ensure a successful project.

Factors Affecting Construction
Three of the structures were adjacent to one another, with each scheduled to start at different times. Furthermore, each structure
has varied floor elevations. A strict Class A exposed finish were also required in multiple areas, as were different elevated slab designs, and shoring heights exceeded 21 ft. In addition, there were crane capacity/access problems, poor site soil conditions, multiple severe weather storm systems that hit the area, and more than 75 percent of the slab-on-grade left out due to the underground not being completely designed.

**Formwork Solution**

In order to meet pours exceeding 21 ft. in height, Doka’s formwork solution included more than 4,000 sq. ft. of Framax large area wall formwork for the foundation and retaining walls. Further, Frami Framed formwork was used for the columns, which were hinged at one corner to allow them to be quickly and easily opened for cleaning and resetting. Approximately 3,000 sq. ft. of columns, some as high as 18 ft., were poured every other day during a four month schedule. More than 80,000 sq. ft. of pre-assembled Dokamatic Tables were also utilized as they provided a complete floor for each building, allowing the tables to cycle straight up vertically, without any horizontal repositioning. Finally, more than 4,000 Eurex 20-550 supporting props were utilized with the Dokamatic Tables to support the tall shoring.

**Safety First**

To ensure safety measures along with high productivity, several hands-on product demonstrations were held at the Southeast Doka branch facility to clearly show the speed, level of expertise, and quality of the solutions recommended.

“Once the project started, we held regular site safety meetings with the general contractor, providing them a step-by-step guide on safe use of all of products onsite. Bi-weekly “Toolbox Talk” meetings were held onsite with the entire labor force in order to answer questions as well as highlight any unsafe working conditions found during routine project site visits. In addition, frequent weekly project site visits were conducted to provide specific advice on safe operation of Doka equipment onsite — first hand,” stated JC Thomas, Doka Account Manager.

“The productivity of the Doka systems was an integral reason they were able to secure the order. Doka is considered as a partner on this project – with all efforts focused on on-time completion of the project,” stated Millard Farmer, Superintendent, Precision Concrete.

**The Facts**

**JOBSITE**

Douglas County Adult Detention and Law Enforcement Center, Douglasville, GA

**SQUARE FOOTAGE**

approximately 500,000 sq. ft.

**GENERAL CONTRACTOR/ARCHITECT**

GC joint venture, Turner/New South JV / HOK

**CONCRETE CONTRACTOR**

Precision Concrete Construction

**PRODUCTS USED**

Framax large area wall formwork, Frami Framed formwork, Pre-assembled Dokamatic Tables

**The Solution!**

Doka wall, slab, climbing, and safety solutions together with support and services every step of the project.

▶ The Dokamatic Table helps save on labor and crane time. The system is optimized for minimal forming times on medium and large deck projects and deals easily with varying requirements in terms of slab thickness and geometry.

▶ The entire project, consisting of five buildings, started in January 2011 is expected to be completed in December 2012.
This U.S. Navy project, Pier 31, is located at the Naval Submarine Base (NSB) in New London, Groton, Conn. The scope of work includes the demolition of an existing pier, construction of a new 550-ft. long x 67-ft. wide naval submarine pier with associated utilities, fender system and other amenities.
The pier is supported on 116 concrete filled steel pipe piles, each 36 in. in diameter. Of this total, 61 will be driven and secured with drilled rock sockets, while the remaining piles are friction. The pier is constructed of a complex honeycombed cast-in-place concrete substructure of pile caps, duct banks and mechanical chases and will be topped with a cast-in-place concrete deck. American Bridge (AB) is self-performing the demolition, piling, precast erection, cast-in-place concrete and fender system, along with other miscellaneous items.

Based on experiences gained from AB’s work on Pier 6 at this location, revised construction methods were incorporated to ensure smoother flow of work, allow the ability to multitask and provide more productive flexibility. To meet these challenges, AB and Doka worked together to engineer, design and fabricate a structural false-work deck system to support the live loads to place the cast-in-place concrete substructure monolithically. One key element of the solution was procuring enough false-work materials to construct a platform for more than half the pier. This will provide the opportunity to gang-form much of the structure, reducing installation time and labor costs. As portions of the work are completed, the false-work will be lowered onto floats and reused to complete the remainder of the pier.

“This was a complicated Pier with a challenging formwork system due to the underside of the pier affected by the tidal waters. This tidal sequence made it challenging to come up with the right system to be practical to strip,” said Kevin Moynihan, Project Manager, American Bridge Co.

### Forming Against The Tide

The Deck tables are located right at the tide line. American Bridge can only cycle the Deck at low tides, which occur twice per month, known as “spring tides” when the sun, earth and moon all form a straight line. Another challenge, were the tables and support system needed to be engineered to handle a wide range of pile deviations 6 in. to 8 in. in any direction. Additionally, the pier has concrete duct banks that run in both directions along the entire pier. Since these locations aren’t typical, the customer chose Frami with its lightweight and versatile design, due to the ability to efficiently change the configuration of the formwork from bay to bay.

When complete, the pier will service our troops for years to come.

> **The Professional**

“...approximately 24,000 ft. of custom tables were used with about 3,500 Doka H20 timber beams to form just more than half of the total pier soffit.

Kevin Moynihan, Project Manager, American Bridge Co.

We used wooden floats to float out the 21-ft. x 73-ft. form panels from the underside of the pier. Where we could not use a float, we installed Styrofoam on the Doka panels so they would float out on their own.”

> wooden floats were used to carry formwork to the underside of the pier.
However, with a strong commitment to energy efficiency and the environment, they did not want a building that uses today’s traditional heating systems nor is straddled with high ongoing maintenance costs. The result is their new South Campus.

As with most projects, schedule and equipment availability were key elements outlined for the success of this project. The design also required innovative solutions as the building had no typical levels, so the formwork needed to be designed to be flexible to adapt to the changing slab layout. In response to these challenges as well as based on prior experience with the customer, Doka was selected to supply all formwork.

The new building includes a large overhang on the perimeter of level four that needed to be supported from the main floor. Doka’s
This project was completed using 100% Doka products for the concrete work.
Frami Xlife wins Most Innovative Product Award

An award program showcased annually at the World of Concrete, the MIP award recognizes new and innovative products in the industry. The MIP program allows attendees a chance to vote for products they judge as innovative. Frami Xlife won the attendees’ choice award in the form-work category. The system is an ideal wall formwork solution for foundations, high-rise shear walls and cores, high-rise columns, low wall and footing portions of heavy construction projects. Frami Xlife is light enough to be man-handled, yet strong enough for crane-assisted forming, while producing a smooth concrete finish.

Doka North America is now on Facebook!
Visit us and become a fan of our page by clicking the “like” button. Send us your contact information via the contact us form and receive free carpenter pencils.

See us at the ASCC Annual Conference & the ASBI Convention
The American Society of Concrete Contractors (ASCC) Annual conference will be held September 14 – 18, 2011 in Grand Rapids, Michigan. Register for the event at www.ascconline.org.
Visit our booth at the 23rd annual American Segmental Bridge Institute (ASBI) convention held at the Marriott, Wardman Park, November 7 – 8, 2011 in Washington, D.C.

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