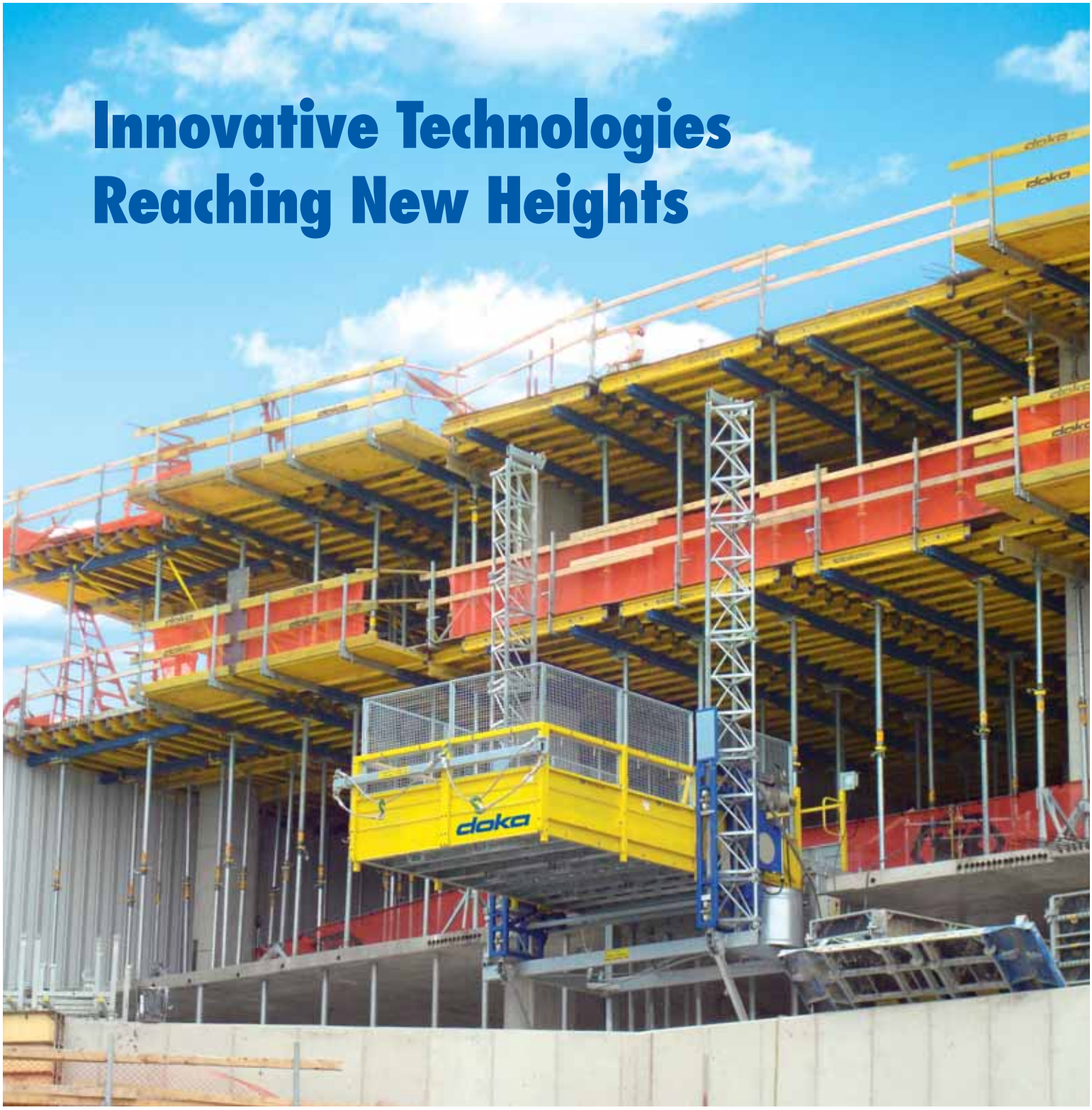
# Formwork News

**US Site Review**
01/2008

doka
The Formwork Experts

## Innovative Technologies Reaching New Heights



# Editorial

Jim Hughes

*Dear Customers and Colleagues, We hope that you enjoy this special World of Concrete issue of our Formwork News. Congratulations to those customers and employees whose projects are featured in this issue. Congratulations also to our marketing team and our sales force for their efforts in making each issue of Formwork news interesting and informative. All of us at Doka are excited about our future. We firmly believe that we offer the best package of technology and service in the industry. We strive to surround and support our customers with our account managers, our engineers and technicians and our customer service representatives working together as a team to afford our customers the best service in the industry. We are also striving constantly to be a better partner with our customers and have made substantial investments in both our people and our physical plant. We have invested heavily in training at all levels of our company and are committed to have the most competent staff in the industry. We have also undertaken construction of new more modern facilities around the country to improve our operations and service. Our Goal is clear: We want to be the first choice for any customer in the formwork industry. We thank all of our existing customers and invite all those who haven't experienced our Doka products and service to give us a try. We will not rest until we are considered number one in the US for formwork products and services.*

*Sincerely, James H.J. Hughes III,*
*Executive Vice President, Doka USA, Ltd.*

## Contents



***To achieve a successful changeover from non-typical to typical floor heights, Doka's Framax framed fromwork to Top 50 large-area gang formwork was a smooth transition.***

### *Fontainebleau Resort, Las Vegas, NV*

# Unique Formwork Solution Aids in $2.8-Billion Construction

**Colasanti Specialty Services selected Doka USA to provide formwork for all three of the project's major components: the 725-foot-tall tower, a garage and nine cores within the podium.**

In Spring of 2007, 94,000 square feet of Framax formwork was delivered to the job site to create the tower foundation and main core (including three stair cores and one elevator core), the garage foundation walls, and the podium cores. To accommodate varying heights on the first five levels of the tower, Doka used 68,000 square feet of Framax for the structure's initial pours, then switched to the Top 50 large-area formwork system to create the building's main 63 levels. The ability to meet both of these needs with a single supplier also helped reduce labor.

"Doka was instrumental in helping us achieve a successful changeover from non-typical to typical floor heights," said Paul Eberhard, Superintendent, Colasanti Group. "We changed from the modular Framax system to Doka's Top 50 formwork with much success due to the foresight of the engineering design to accept both systems and Doka's field service personnel. Our success has continued with the use of spuds to help pre-set our close-up panels prior to our slab pours. This allows us to pour slabs and vertical construction on the same day. With Doka's technology, engineering and support, we look forward to a successful job." ■

***Paul Eberhard, Superintendent***
***Colasanti Group***

***Devil's Slide Bridge, CA***

# Doka's Unique Forming System Speeds Construction

**A bypass consisting of two tunnels and a 1,000-foot bridge spanning the valley north of the tunnels is currently under construction on Highway 1, along California's coastline. The balanced cantilever design of the bridges consists of two sets of twin piers, from which concrete box sections are being constructed outward.**

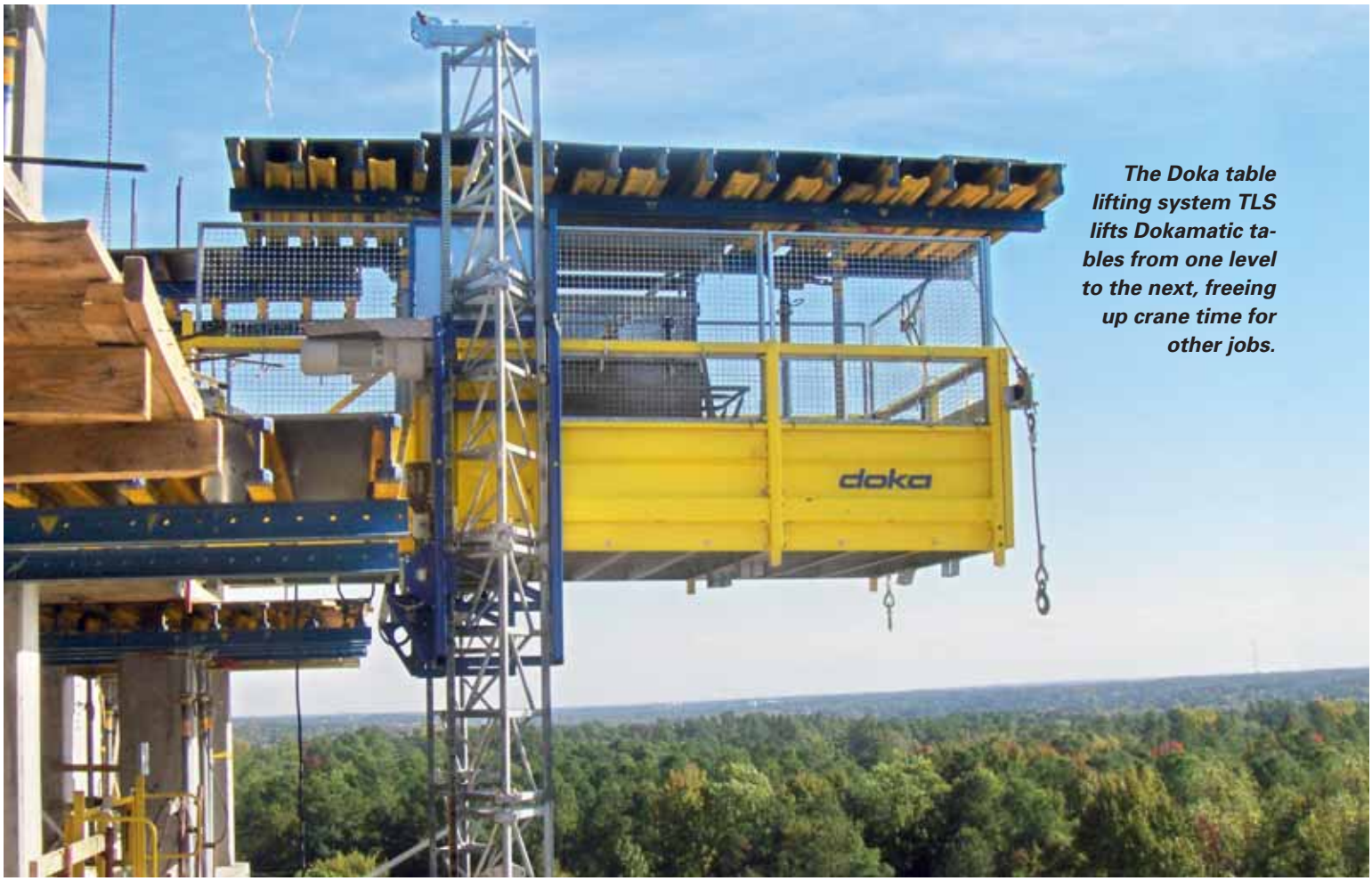
*Rick Disney, President, Disney Construction*

To help build the bridge, general contractor Disney Construction relied on Doka USA's Top 50 forming equipment, which is designed to provide easy and efficient forming sequences for large-area projects. Doka also supplied custom fabricated parts to handle the geometric conditions and proper strength of the formwork.

The Top 50 system's ability to adapt to any type of architectural requirement, form facing, formwork pressure, and tie-hole pattern also came in handy on this project. The unusual geometry on this bridge design, including a radial curve with a varying cross slope from 2 to 10 percent, as well as a super-elevated bridge deck, made detailing each pour crucial for maintaining proper control. In addition, because the bridge didn't feature the typical wings that most cantilever bridge designs do, attaching formwork to the previous casting required additional anchorage points. Doka's ability to conform standard components to the unusual design of the bridge and adapt to quickly changing conditions made the transitions from pour to pour simple.

Rick Disney, President of Disney Construction, stated "Doka's performance on our project was exceptional. They delivered a great product, which included detailed shop drawings with an eye for detail. In addition, the pre-assembly and on-site support was a great benefit in getting the project started properly. We look forward to partnering with them on future projects." ■

***The Top 50 system can be configured to meet the unique demands of individual projects, and for the bridge's fast-paced schedule, that meant designing the system for fast and safe stripping of the formwork, after which the interior forms were immediately reconfigured and rapidly re-set into the next casting.***




*The Doka table lifting system TLS lifts Dokamatic tables from one level to the next, freeing up crane time for other jobs.*

### *Innovative Technology Speeds Construction in Michigan and North Carolina*

# Success with TLS

**The first U.S. use of Doka's Table Lifting System (TLS) in conjunction with pre-assembled Dokamatic Tables has proven to save time and labor on two high-profile projects: the River House Condominiums in Grand Rapids, Mich. and the Renaissance Hotel in Raleigh, N.C.**

Dokamatic, the fast pre-assembled slab formwork system that has become the standard for forming slabs on many construction sites in Europe, was introduced to the U.S. market in 2004. Because the completely assembled (including plywood) system saves manpower and crane time, the Dokamatic Tables quickly gained popularity for medium to large single- and multi-story cast in-place slabs. Since the system is available in standard table sizes, it can be moved by just one field worker with the aid of a powered drive unit and shifting trolley. Large pre-assembled work platforms mount directly to the Dokamatic Table, which provide an extremely safe environment for working at the slab edge and also help increase overall production. Plus, when combined with the flexible handset system, Dokaflex S, it provides a fully engineered system that covers all slab areas and can adapt to any building plan.

The system has now been enhanced with the development of the Doka Table Lifting System (TLS). The TLS is an electric powered lifting platform that allows Dokamatic table forms to be cycled between floors without the need for a crane. The system is adaptable to any building structure and can be used from the ground floor up. It attaches to the previously cast slab with embed-

ded anchors and cantilevers from the building as a mechanical outrigger platform.

"Crane time is a valuable asset on concrete building projects, and if not planned for properly, it can be the driving force of production on any jobsite," said Michael Schaeffer, Product Manager of Doka. "The Doka TLS was designed with this in mind and takes the crane completely out of the formwork cycle schedule, thereby increasing production and greatly reducing bottom-line costs."

Construction of the River House Condominiums, a 36-story horizontal and vertical post-tensioned concrete structure began in 2006.

Concrete contractor Kent Companies of Grand Rapids is constructing the concrete frame for River House. For non-typical floors 1 through 5, Kent utilized the versatile Dokaflex system. Dokamatic Tables were then introduced with the start of typical Level 6 and the Doka's Table Lifting System on Level 7. More than 30,000 square feet of tables have been supplied and all tables and loose Dokaflex formwork is being cycled from floor to floor, independent of the crane, with the TLS.

"Without the TLS, we would not be as far along on the project as we are," said Paul Bowne, Kent Companies Project Manager.

***By using the shifting trolley, Dokamatic tables can be lowered and shifted hydraulically, quickly and safely, to the next section on the same level. The attachable drive unit enables an easy repositioning of the Dokamatic tables.***

The TLS also proved beneficial for the Renaissance Hotel, a new 10-story hotel structure with a post-tensioned slab built over two levels of parking under construction at North Hills, a new three-city block mixed-use district in Raleigh, N.C. Construction is underway with an anticipated opening in 2008. By installing the Table Lifting System to the structure in order to move the tables from floor to floor, the crane was free to move the shear wall formwork and rebar as well as unload trucks for all contractors at the same time. Juvenal Ibarra, General Superintendent of United Forming, said, "I like the TLS for two reasons -- it takes less labor and no crane time to move the tables, and it is much safer then pulling them out with a crane."

***A comprehensive safety package ensures fast, safe work procedures, both for operating the table lifting system and for repositioning.***

# Doka's Formwork System Ensures Project Success

*Doka's Top 50 modular gang form system*

**Precision Concrete selected to use Doka's Top 50 gang formwork on the largest classical monument in America, since the Jefferson Memorial.**

The project requirements were to provide an as-cast finish inside the tower and to achieve American Concrete Institute (ACI) vertical tolerance for walls less than 100 feet. "Precision's Project Management team felt that the Top 50 system with the MF 240 platform system would give us the best chance to meet the project requirements and to provide our employees with the safest working environment. Precision Concrete prides itself on providing the highest quality and service to our clients. We know from our continuing relationship with Doka that they are capable of helping us fulfill these goals" said John Galasso, Sr., Field Operations Manager for Precision Concrete.

The foundation walls were constructed using 4,000 square feet of Framax formwork, while the column forms required 1,500 square feet of Frami Universal panels. Precision Concrete Construction also used 10,000 square feet of 10k shoring along with the Dokaflex shoring system to handle four elevated floor slabs and beams of differing heights. To ensure safety on the job site, Precision used 12 of Doka's MF240 platforms on the exterior of the shear walls, giving crews enough room to maneuver safely and efficiently.

*John Galasso, Sr., Field Operations Manager, Precision Concrete*


***To provide the Class A concrete finish required by the project's considerable exposed concrete, the contractor used 8,000 sq. ft. of Doka's Top 50 forming system to create the shear walls for the elevator and stairs.***

*Mike Vail, Superintendent, B. Piertrini & Sons.*

***The Top 50 modular gang form system is constructed out of standard parts that can be assembled in any configuration for a wide range of applications. Shape, size, tie pattern, and plywood can be adapted to suit your jobsite requirements.***

***Walnut Street housing project, Philadelphia, PA***

# Fair-Faced Concrete Finish Accomplished with Doka Formwork

**As more and more building owners begin to embrace the architectural possibilities of concrete, achieving a high-end concrete finish has suddenly become a top priority on many job sites.**

Such is the case on a mixed-use student housing project currently under construction on the University of Pennsylvania campus, where the copious exposed concrete on the 14-story structure demanded a specific architectural finish.

B. Pietrini & Sons, the concrete contractor for the Walnut Street housing project, turned to Doka USA to provide a variety of formwork for the job. Not all of the building's levels were the same height – four of the 14 floors varied in height up to 36 feet tall. Framax Xlife was used to form all of the columns on these floors. The columns for the remaining 10-foot floors were formed using the lightweight Frami system, while the shear and core walls were all formed using Top 50 large-area formwork, along with MF-240 climbing platforms, which were mounted on all of the exterior walls to ensure safe working conditions. The main entrance of the building is set off by two V-shaped columns, which were also formed using the Top 50 system.

"We chose Doka USA to supply this project because we needed a supplier to furnish extensive engineered drawings, good quality equipment, and on time deliveries" stated Mike Vail, Superintendent, B. Piertrini & Sons. ■

***Framax Xlife´s birch plywood panels have a plastic coating on both sides, which ensures a smooth concrete finish.***

***Doka Excels with 3 projects at CityCenter with Perini, Ceco, and Urata, Las Vegas, NV***

# Major Time and Money Savings at CityCenter - a 76-acre complex

***Detailed layout drawings supplied from Doka helped Perini plan the formwork for the concrete decking around several steel I-beams that punctuated the pour site.***

To help construct one of the projects more unique and challenging structures, the Veer Towers, general contractor Perini Building Company selected Doka USA's Top 50 large-area formwork and SKE 100 self-climbing system, as well as pre-assembled Dokamatic tables and Dokaflex S formwork to form 60,000 square feet of concrete decking for a 500,000-square-foot high-end retail development on the building's ground level. The twin Veer Towers lean 5 degrees from upright position, in opposite directions, an architectural detail that required each level to have a loss or gain of 10 inches on either side all the way up the structure. To account for this shift, Doka adjusted the slab formwork by adding or removing 10-foot segments every 11 stories. In addition to providing the buildings' plentiful exposed concrete with a superior finish, the Top 50 system was used in conjunction with special "trailing channels" to allow the large wing walls attached to the elevator and stair cores to be lifted by crane in just one lift. In the main elevator cores of each tower, SKE100 climbing system was used to lift the entire core form and a concrete placing boom that supplied concrete to the tower's core walls, wing walls, columns and slab.

***Dokamatic tables were delivered pre-assembled to the job site and were reused for each of the three 20,000-square-foot forming sequences, giving concrete contractor Urata & Sons considerable savings on build-up, cycle time and materials.***

Ceco Concrete is building the Harmon Hotel Tower for Perini. Ceco's choice for the very complicated cores on this structure was Doka's SKE 100 self-climbing system in conjunction with Top 50 gangs. The core is being poured at the same time as the deck, saving Ceco considerable time and money throughout the construction. In addition to lifting the core formwork, Doka's SKE climbers have been designed to lift the massive concrete placing boom that services the entire floor.

Urata & Sons is also constructing a part of the CityCenter project, referred to as the retail level. Doka has helped them with this structure by designing and supplying pre-assembled Dokamatic tables which were delivered to the job site and reused for each of the three 20,000-square-foot forming sequences, saving considerably on build-up, cycle time and materials. In fact, Urata & Sons was so impressed with the Doka formwork that they also relied on Doka shoring to help them construct a tunnel junction at the Harmon Hotel. For this project, Doka used its 10K shoring system to create deep beams, and Dokaflex S formwork to form the 16-, 12- and 8-inch-thick slabs. ■


*To ensure a smooth concrete finish, Perini Building Co., selected Doka's Top 50 gang formwork system*

***Cosmopolitan Resort and Casino, Las Vegas, NV***

# Doka Gains VIP Access to the Las Vegas Strip

**Doka is proud to be part of the construction of the $3 billion Cosmopolitan Resort and Casino in Las Vegas.**

Located directly south of the Bellagio and directly north of the City Center Project, the Cosmopolitan will include two full-service high-rise hotel and condo-hotel towers (extending 52 floors and rising about 600 feet); a five-level underground parking structure for up to 3,800 vehicles; more than 150,000-square-feet of convention/meeting space; a 75,000-square-foot casino; 300,000-square-feet of retail, restaurant, and entertainment space; as well as a 1,800 seat theatre. According to Jack Oldfield, Doka Account Manager, "Perini Building Company selected Doka's Top 50 system as an efficient means to achieve the desired architectural finish on the project." In order to efficiently produce two slab levels on the west core, the contractor is using preassembled Dokamatic tables and Dokaflex S. With no measuring required and only five parts to move, all operations can be performed with one crew member using Dokaflex S. Most important, the elimination of most cross bracing keeps the open deck space to a maximum and allows for a safer environment with greater ease of movement. Pre-assembled to save time, only one worker is needed to reposition the Dokamatic Tables with a hydraulic shifting trolley and drive unit.

A total of 13 of Doka's SKE 100 self-climbing systems were used on the West tower. The inside of the core was completely surrounded with working platforms, allowing storage of materials, easy pouring operation and rebar setting. Overall cycling time is faster because both interior and exterior formwork can be stripped, cleaned, closed, and raised without a crane.

"Doka was brought onto the job because of our well-established relationship with the contractor and a proven track-record of excellent service," said Oldfield.

The project is expected to open in the first quarter of 2010. ■

# Doka Girder helps build Longest Cable-Stayed Bridge North America

*Jett Walker, Project Manager,*

**The bridge will be an elevated structure of about two miles of highway over the Mississippi River – connecting New Rhodes and St. Francisville (located in the rural parishes of Pointe Coupee and West Feliciana, LA).**

This landmark project consists of twin 500-foot H-shaped pylons towers (which will support a total of 136 cable stays) and a 76-foot-wide composite concrete deck. In total, the four lane bridge and it's approaches will stretch over 2 miles. The design build team – Audubon Bridge Constructors, a joint venture comprised of Flatiron, Granite Construction Co. and Parsons Transportation Group – needed a design solution to meet the project's unique pier cap forming requirements. Based on experience working on many of the world's most unique and largest bridges, Audubon Bridge Constructors selected Doka's self-spanning Steel Girder form system to construct the pier caps on this project. With a quick turn-around of drawings and solutions from Doka, about 8,700-square-feet of Doka Steel Girder forming system was purchased and used throughout the project.

Jett Walker, Project Manager of Audubon Bridge Constructors, stated that "Doka offered solutions allowing maximum reuse and utilization of the forming material required, resulting in substantial savings. Doka provided strong technical support including an on-site field service technician who assisted key field superintendents in the initial set up and placement of the forming system. In addition with the pre-assembly option offered and utilized by Audubon Constructors, were significant factors in Doka being the successful formwork supplier of choice." ■

***When completed in 2010, John James Audubon Bridge in Louisiana will be the longest cable-stayed bridge in North America.***

***Steel Girder Forms can be used to both form concrete and support concrete loads on structures such as beams, or bridge pier caps. The form will span large distances without any additional support or shoring***

*Mike Catrama, General Superintendent, Interstate (left)*
*Ron Forcino, General Superintendent, Interstate (right)*

***Over 25,000 sq. ft. of Frami was used on over 5,000 lineal feet of walls ranging in height from 6' to 34' with over 85,000 yard of concrete was poured.***

## *Yankee Stadium, Bronx, NY*

# The House that Frami Built

**Yankee Stadium, since its 1923 opening, has hosted 37 of 83 World Series, with the Yankees winning 26, and is commonly referred to as the most recognized sports venue in the world.**

Interstate Industrial Corporation selected Doka's lightweight clamp system Frami to form approximately 75,000 square feet of walls for the new Yankee stadium. Because of limited access caused by the construction sequence, Interstate opted for a system that would work fast and efficiently assembled by hand. With ever changing grades, they desired a system that was easily adaptable to the various site conditions. With walls ranging in height from 6' to 34' they required a system that could be assembled by hand and cycled in gangs. Doka's Frami is a complete system for typical low height forming but also easy to set by hand and rugged enough to be moved in gangs by crane, making it a perfect solution for Insterstate.

"Frami was a great fit for us on this job. It had all the advantages of a gang form, but we were able to set it by hand when we needed to. It held up really well to some rough use and worked great in a lot of different areas. It was fast and flexible, definitely the right form for the job " stated Mike Catrama, General Superintendent, Interstate.

Construction on the new $1.02 billion Yankee Stadium began on August 17, 2006 and is expected to be complete by April 2009. ■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## *Doka to Debut Guided Climbing System with Protection Screen at WoC*

# New Climbing Formwork Xclimb 60


***Xclimb 60 has been selected to be used on the Legacy project at the Millennium Park in Chicago.***

**Doka has added the new guided Xclimb 60 system to their line of climbing products. In addition Doka has broadened its safety products by introducing the new Doka Protection Screen, which is used in combination with the Xclimb 60 for full multi story perimeter protection on high-rise buildings.**

Whether it is a crane-lifted or a self-climbing project, Doka's new Xclimb 60 climbing system is designed for cost-effective universal use for climbing formwork applications. The system is designed for ultimate climbing safety and is utilized for small to midsized climbing applications. The guided system is always connected to the wall with a self-locking mechanism. It is capable of fast operation – with lightweight hydraulic units, lifting up to four brackets at a time. Already a proven solution on many projects in Europe, the Doka Xclimb 60 system is designed for formwork applications of typical shear walls and cores for high-rise-buildings and piers in bridge construction.When used with formwork its enhanced durable roll-back system, provides lots of space and adjustability for efficient formwork handling. The long profiles and guided shoes of the climbing system allow for the ability to climb over wall openings while the system is always connected to the building. The system is also designed to allow preassembly of large sections.

The Xclimb 60 system can be used in combination with Doka Protection Screen to provide full high rise perimeter protection for the working floor and three floors below. This results in improved safety and improved productivity. Work proceeds at all levels protected from wind, weather and the fear of falling. The Xclimb 60 protection screen can be raised either by crane or by hydraulics. Xclimb 60 outrigger loading platforms are available which also climb on the exterior of the building together with the protection screen to allow easy cycling of slab formwork. To avoid the adverse impact of climate changes, Doka offers two types of protection screen sheeting – a perforated sheet for warm weather conditions and a solid sheet for colder climates. The screen can be used on all types of slab perimeters and high-rise buildings, with any upturn or downturn beams, or with optional built-in working decks to operate hydraulics for post-tensioned slabs. The first use of this system, in North America, will be on Legacy project in Chicago with Walsh Construction.

If you are looking to increase production, reduce weather dependency and project costs, as well as improve safety, stop by Doka's booth (C5812), at the World of Concrete to learn more about the Xclimb 60 climbing system. ■

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