Doka **Xpress**

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Forming Efficient Solutions

EXHIBITOR AT

CONEXPO-CON/AGG 2014

IF IT'S NEW, IT'S HERE!

The newest equipment, technology and product breakthroughs will be featured in our booth at **CONEXPO - CON/AGG 2014** in Las Vegas. Doka will be presenting solutions for achieving success for super high-rise buildings to complex infrastructure projects.
We invite you to visit Doka Booth 1093 in the Gold Lot, March 4-8.

The Formwork Experts.

doka

Editorial

Dear Customers and Colleagues,

As our economy continues to rise once again, there is great optimism that spending will increase in both infrastructure and commercial construction. For many, this optimism is appearing in the form of new projects that are characterized with unique designs. At Doka, we have the pleasure of working on several new projects that are scaling new heights or being constructed using very intricate floor plans. The construction professionals working on these projects, as well as up and coming projects , are seeking formwork engineering solutions that help to deliver innovative designs that offer maximum cost efficiency and ultra-high safety standards. Our modular formwork solutions continue to lead the industry as the answer to meet these important requirements.

A case in point is a high-rise project in Toronto where there will be more than 36,000 sq. ft. of trusses on the project during the construction process. This 14-story condo project required coordinating the logistics of moving an 80-ft. long truss to fly from the ground safely. This solution in Toronto provided significant labor savings for the contractor. A further example is the formwork used on a Baltimore highway project. Doka's solution ensured easy re-use of the expensive formliner, saving a great deal of time and money for the contractor. Our further work in Hawaii allowed us to showcase the SKE 50 plus hydraulic climbing shaft system, which, along with using the Super Climber, allowed for a reduction in crane picks for the cores. In New York City, Doka's formwork is being used for the highest residential project in the Western hemisphere. Our Super Climber and Staxo 100 support system are being used to provide top-level safety on this high-profile structure. Unique formwork solutions were key in offering added value to the many contractors involved in all of these projects and at Doka we are proud to be involved with innovative contractors who are behind all these high profile projects.

In addition to our proven solutions that are trusted around the world, we have introduced a new product designed for maximum versatility on high-rise jobsites, Doka's Super Prop. The strong, yet light-weight prop is designed with exstensive adjustment range and its capacity allows for even greater spacing that reduces the number of props required on a jobsite. Please let us know if you are interested in learning more about this new offering from Doka.

We look forward to helping you meet your challenges in today's construction world.

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

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Doka News

World Trade Center Tower 3 is finally on the rise ▸

Tower 3 at the World Trade Center site in New York City will continue construction and rise to its full 80-story height. The tower will consist of a reinforced concrete core with steel structure outside the core, and clad in an external structural steel frame. Doka is proud to be the formwork supplier of choice by Roger & Sons Concrete for the concrete construction of this structure.

Las Bambas copper mine ▸

The site of the new Las Bambas copper mine is in one of the most remote regions of the Andes. The work on building the ore-extraction infrastructure is currently the biggest construction project in Peru, comprising of several crushing plants, tunnels and a dam.

◂ Doka's Super Climber to make second debut on Honolulu skyline

Construction has begun on this 400 foot highrise that will boast views of the Pacific Ocean, Diamond Head and downtown Honolulu.

▲ All formwork and placing boom rise at the push of a button with Doka Super Climber.

Waters of the Earth

Waihonua, a Hawaiian name that translates as "waters of the earth," is described as a community where everything is in symmetry: earth and water, old and new, work and play. This includes not only the surrounding community achieving symmetry, but making sure the building itself is in balance and meets precise standards.

When Doka began work on the $206 million high-rise building in Honolulu, Hawaii, it was the perfect opportunity to expand into the Hawaiian market. This was also the first project in Hawaii to showcase both of Doka's new single stroke climbing formwork for cores and small shafts. Doka is proud to have been selected.

Waihonua is a planned 341-unit, 45-floor upscale condominium high-rise that will provide contemporary one-, two- and three-bedroom residences. Features include a recreation deck with an infinity edge pool, a spa, barbeque dining pavilions, a fitness center, a private movie theater and two visitor guest suites. In addition to the luxurious amenities in this tropical paradise, this high-rise offers close proximity to the Ala Moana Center, the largest shopping mall in Hawaii. Located just a block away, the mall is the 15th largest shopping center in the United States and the largest open-air shopping center in the world. The project is slated for completion in September 2014.

Excellence in formwork

The contractor for the project, Hawaiian Dredging Construction Co., is credited with construction of more than 8,500 condominium units since 1985. This experience translates into very high quality requirements, especially in terms of material control. Doka was able to offer a full package of material for each part of the jobs including columns, core walls and shoring.

The Facts

Location: Honolulu, Hawaii

General Contractor: Hawaiian Dredging Construction Co.

Type of project: Upscale condominium high-rise

Start date and scheduled end date: January 2013 – September 2014

Products: Frami, Super Climber, SKE, Platform K, Dokaflex/Dokamatic Tables and Table Lifting System

Square footage of material used: 6,780 sq. ft. Frami panels, 4,600 sq. ft. large-area formwork Top 50, 13,500 sq. ft. shoring

The Challenge

Port restrictions only allowed containers to be shipped once per week, which made organization and material control extremely important. Also, there was limited space available both inside shipping containers and in housing the containers on the site. Finding a one-stop solution for these challenges was key for the contractor.

The Solution

Doka was able to offer a full package of material for each part of the project including columns, core walls and shoring. In addition, Doka was able to provide engineering, on-site field service and project management to support in achieving the contractor's goals.

▲ Top50 wall formwork is built to meet the specific dimensions and concrete finish requirements of the structure.

Highlights of Doka formwork used include:

- Frami, lightweight clamp form that can be handset or crane lifted with no additional hardware.
- Super Climber, a self-climbing core system designed with single-stroke cylinders that support and climb all formwork, allowing all of the formwork for an entire story to be raised independently of the crane.
- SKE 50 plus shaft platform, crane independent solution that is ideal for small cores
- Platform K, wide working platforms delivered to the site fully pre-assembled.

This project was the first time Doka used the SKE 50 plus shaft system, which, along with using the Super Climber, eliminated crane picks when cycling the core formwork.

Meeting, overcoming challenges

Because of the project location, shipping was a new challenge. The general contractor arranged to send shipping containers to Doka's yard in Riverside, Calif., where Doka could help the contractor send the correct amount of material for the project. This was paramount because of limited space in the containers and on the site. Port restrictions also only allowed containers to be shipped once per week, which made organization and material control extremely important.

Once the material was onsite, Doka kept field service on the site for about 40 working days to ensure the material was used safely. A shipping log detailing dates, cargo and flat rack numbers was used to meet the port restriction guidelines and make the most of the available container space.

Because this was the contractor's first time working with Doka, the goal was to go above and beyond expectations in terms of communication. Clear communication was facilitated by setting up regular conference calls for progress reports, allowing the customer to feel at ease with Doka. In addition to the onsite field service, detailed drawings and pictures were developed to communicate handling, assembly and cycling of equipment on the jobsite. As Doka and Hawaiian Dredging worked through the design, communication, and logistical requirements of this project that is 2,500 miles away from the mainland, a process was designed that will effectively allow Doka to execute future work on the island in an even more efficient manner.

The Professional

"The new systems and solutions that Doka introduced to the Hawaiian construction market for this project required a change in previously used methodology. Once this change was embraced by the professionals on site, they quickly realized a major gain in efficiency and labor savings."

Dave Monnot, Key Accounts Sales Manager

Engineering best practice at Willow Island Project

The Willow Island Hydroelectric Plant project located on the West Virginia side of the Ohio River near St. Mary's, W.V., will add 35 Megawatts (MW) of new, renewable generation to the area. Upon completion, the plant will divert water from the locks and dam through a powerhouse to generate an average annual output of nearly 239 million kilowatt hours (kWh).

The new estimated 302,739-sq.-ft. facility is being constructed to comply with the U.S. government's mandate for renewable energy. It will include an intake approach channel, a reinforced concrete powerhouse and tailrace channel.

Because of the Doka's prior experience on hydroelectric plants as well as all the workable solutions to provide safe and cost-effective concrete construction, this project was a perfect match. Doka's engineered systems have been proven to work on similar projects such as the Meldahl and Cannelton Hydroelectric Projects, making it clear on where and how to implement best practices for the formwork used on this project.

The project design called for two large conical shaped horizontal draft tubes. Doka utilized 3D modeling design and its experienced Channahon, IL preassembly factory carpenters to meet the close tolerances and ensure the project was completed on time. Construction of the draft tubes began using Top 50 Formwork, a loose form system constructed from standard parts that can be assembled in any configuration for a wide range of applications. To increase concrete construction on the jobsite, all conical Top 50 gangs were preassembled and delivered onsite for immediate installation.

The Facts

Location: Near St. Mary's, West Virginia

General Contractor: The Ruhlin Co.

Designer: E.L. Robinson Engineering

Products: Large Area Top 50 Formwork, Staxo 100, Framax XLife, Dam Formwork D22

Start date and scheduled end of date: Groundbreaking July 2011 - Scheduled commercial operation will begin in 2015

The Challenge

To design, supply and construct a complex concrete structure in a remote location along the Ohio River.

The Solution

Doka designed the complex concrete shapes in a 3D model and then transferred this design to initial reality in its Channahon, IL formwork preassembly factory. Preassembled modular gang formwork, each marked for a specific location, were then delivered to the jobsite for final in-place assembly.

▲ The high load capacity of Staxo100 provided support for the heavy concrete loads and reduced overall material requirements.

▲ Dam Formwork D22 and Framax are the perfect combination for these tieless one sided walls.

Pre-assembly

All Top 50 gang formwork that form the interior conical shape of the draft tubes were built and preassembled at Doka's facility in Channahon, IL.
Doka's experienced staff and state-of-the-art carpentry shop worked day and night to construct each individual gang. Since each gang had a specific shape and location within the tube, all were individually numbered and shipped according to its pour ID number to provide maximum efficiency at the jobsite.
A grill of walers and beams was first dimensioned and assembled for each gang. Then, the shaping timbers were constructed, utlizing Doka's CNC wood cutting technology machine, to precise dimensions, and attached to each grill along with a plywood form face. Next, the gang was labeled and the plywood face was covered with plastic for storage in Doka's yard to provide quality and just-in-time delivery at the jobsite.

Load-bearing Tower Staxo 100

Doka's Staxo 100 shoring was installed prior to the roof formwork assembly. This high performance, load-bearing tower is quick and easy to assemble and can be completed in a variety of ways to fit a wide range of field conditions. In addition, the flexibility of the system allows for maximum optimization of equipment and a reduction in necessary material.
Three quarters of a million pounds of Staxo 100 Shoring was delivered specifically for onsite pre-assembly of each level and segment.

Challenges and construction innovations

This project involved many complex features including tear drops, draft tubes, stay cones, intake beams, trash rack walls, emergency closure gates, J-Walls (retaining walls), an access shaft, a base mat with more than 50 individual pours, a power house, tail race, lift key walls, staircases as well as others.

One of the key challenges with constructing a facility such as this is coordination and communication among each of the teams involved. Doka had multiple engineering, pre-assembly and global logistics teams coordinating to deliver this project and communicate details with the Ruhlin team. Doka's on-site field service provided instructions and training to the jobsite team on the most efficient use of the systems, along with real time communication back to the Doka team working on the details.
In addition to being one of four new hydroelectric power plants constructed along the Ohio River, the Willow Island Power Plant Site Development Project is notable for its significant boost to the local economy. It is responsible for creating nearly 400 construction jobs throughout the project and seven to nine permanent jobs.

http://amppartners.org/generation-assets/hydroelectric/willow-island-project/

▲ Once complete, the project will be the longest rapid transit system in Canada

The Evergreen Line

When the Province of British Columbia needed to provide a transportation solution that would reduce automobile use and create an alternative to single occupancy vehicles for a neighborhood in Vancouver, plans were made to construct the Evergreen Line Rapid Transit Project.

The Evergreen Line extension, along with its six new stations, will provide a much needed transportation method for the communities of Burnaby, Coquitlam and Port Moody.

As part of an expansion of Vancouver's SkyTrain system, the 11-km (6.82-mi) light rail transit will connect with and extend the existing SkyTrain System by approximately 79.6 km (49.4 mi). Once complete, the system will become the longest rapid transit system in Canada.

Solving the challenges

The project required extensive road reconfigurations, relocation of existing utilities, building at-grade and elevated guideways, construction of tunnels and stations; as well as installing train operating systems. As such, general contractor, SGJV – A joint Venture of SNC Lavalin Constructors (Western) Inc. & Graham Building Services, needed a formwork solution that would meet their strict safety regulations at the same time as meeting their tight time constraints.

Doka provided 64-in. diameter round column forms and Steel Girder Forms to form the 10 station bents at the Burquitlam Station. The modular Steel Girder Forms can be ganged and picked in very large sections. The 10 post-tensioned bents range from 44 to 52 ft. in length, 6 ft., 6 ¾ in. wide and 6 ft., 10 ¾ in. deep. The Doka Girder Formwork was supported by 140 kip support brackets approximately 24 ft. above grade. Most of the assembly work was done safely at ground level without relying on expensive crane time. This kept the productivity high and costs low.

Custom steel octagonal column forms were also supplied along with custom steel tulip caps to form the 50 A1 Piers required for the Evergreen Line. The A1 octagonal

The Facts

Location: Vancouver, British Columbia, Canada

Products: Steel Girder Forms, Custom Steel columns

General Contractor: SGJV-SNC Lavalin Constructors (Western), Inc. (Joint Venture of SNC Lavalin Constructors (Western) Inc. & Graham Building Services)

Overall project cost: $1.4 Billion USD

Start date and scheduled end of date: spring 2013 – spring 2016

The Challenge

The project required extensive road reconfigurations, relocation of existing utilities, building at-grade and elevated guideways, construction of tunnels and stations; as well as installing train operating systems. The general contractor needed a formwork solution that would meet strict safety regulations at the same time as meeting tight time constraints.

The Solution

Doka's Steel Girder Formwork was used in conjunction with 140 kip support brackets approximately 24 ft. above grade. Assembly work was performed safely at ground level without relying on expensive crane time, keeping the productivity high and costs low.

According to Warren Calderone, Account Manager, Doka North America, many of SGJV's crew hadn't worked with Girder Forms before. "Doka shares SGJV's concern for the safety of their workers. With this in mind, Doka took a hands-on approach to field service. This involved the pre-planning, training of crew, assembly instruction of the formwork and erection of the Girder Forms ready for concrete," said Calderone.

▲ A project's success always lies in the hands of professional teams. Thanks Guys.

▲ The modular Doka Steel Girder Forms can be ganged and picked in very large sections.

columns ranged in height from 28 ft. and were 5 ft., 3 in. wide on each side. To provide a distinct look, the octagonal columns were furnished with a custom reveal that ran the entire length of the column.

Flexibility

Columns were built in modular sections, allowing SGJV the flexibility to meet the multiple height requirements. The custom 9-ft., 8 1/8-in.-high tulip caps flared from 5 ft., 3 in. at the base to 11 ft., 9 ¾ in. by 8 ft., 9 ½ in. at the top. This design provided a unique esthetic touch that blended with the existing SkyTrain line.

Custom Steel A2 columns measuring 6 ft., 6 ¾ in. were poured up to 30 ft. high. Doka supplied 2-ft., 8-in. custom filleted corners for a unique aspect.

When completed, the Evergreen Line will provide a fast, reliable transportation solution while supporting environmental goals to reduce car trips and preserve green space. The project is slated for completion in the summer of 2016.

Doka's custom steel formwork is designed to accomodate flared columns with varying dimensions.

The Residential Hit of Toronto Flies Toward Completion

The Facts

Location: Toronto, Canada

Products: Doka Super Prop and DokaTruss table, 15,000 sq. ft. of Framax panels

General Contractor: Coll-Form, Ltd.

Project Start Date and Scheduled End Date: 2012 – 2014

The Challenge

The 14-story, mixed-use office and residential building called for high shoring areas on the second floor and transfer beam and slabs on the seventh floor. What's more, Doka was tasked with coordinating the logistics of flying an 80-ft. long truss table from the ground, with pedestrians, hydro wires, light posts, and automobiles traveling along Wilson Road, into the podium area of the building.

The Solution

Framax was used for all 15,000-sq.ft. of vertical formwork to help the contractor quickly erect the panels. DokaTruss table and aluminum Super Prop were used for horizontal construction. This helped the contractor use fewer props resulting in a decreased need for equipment and, ultimately a 20% labor savings.

The Station Condominiums project in Toronto, Canada is located next to the Wilson subway station and just minutes from the Yorkdale Shopping Center. The 14-story building features an east and west tower with a combined 388 units.

The Station Condominiums project in Toronto, Canada, dubbed as the city's "newest hit production," has given Doka a leading role and let it shine with use of some starring products used for the first time in a city project. Located next to the Wilson subway station and just minutes from the Yorkdale Shopping Center, the mixed-use office/residential space, which started construction in January 2013, is slated to open in January 2015.

◂ The high-capacity Doka Super Prop helps save time and money as the lightweight aluminium prop maximizes leg spacing and greatly minimizes overall re-shore requirements leading to labor savings.

Addressing challenges

High shoring areas on the second floor of the building and the need for transfer beam and slabs on the seventh floor presented a challenge for the mixed-use office and residential building. What's more, Doka was tasked with coordinating the logistics of flying an 80-ft. long truss table from the ground, with pedestrians, hydro wires, light posts, and automobiles traveling along Wilson Road, into the podium area of the building.

DokaTruss is available in 24-ft. or 12-ft. segments that can be connected end to end up to a 100'-0" long truss table. The manufacturer's truss provides 6-ft. leg spacing, a foot more than the average size of competitors. This means fewer props, resulting in a decreased need for equipment and, ultimately a 20% labor savings.

To keep the project on track, Doka worked closely with the general/concrete contractor Coll-Form Ltd., part

The Professional

"Working with Doka has been a benefit to our organization. The Doka formwork experts have been a great resource from the tender phase through project delivery. Intuitive design, product training and reliable customer service are hallmarks of the Doka brand."

David Mazza, Project Manager and **Andrey Shurygin**, General Superintendent, Coll-From Ltd.

▲ An 80 foot long DokaTruss table was easily cycled throughout the project to reduce crane picks and labor costs.

of Collavino Construction Co., a general contracting organization specializing in heavy civil and large cast-in-place concrete projects.

Bi-weekly meetings were held between Coll-Form and Doka to coordinate the scheduling of the project, but with daily support and field service provided as needed. Careful attention to detail and coordination with the site engineers and office staff helped to ensure safety in the field.

Doka installed an 80-ft. truss table in the building's center 10-story podium area, which was a unique situation. A truss table this long has been done before, but it is a rare approach.

Crane location typically dictates size of the truss tables. When the crane trollies out to pick up the equipment, crane capacity is needed at the tip to carry the truss. The tower crane can pick up one massive truss table to save half of the labor with the 80-ft. truss, as compared to two 40-ft. trusses and additional labor. However, for this solution to work, all parameters must fit.

As the building shifts and changes, support needs can vary. "We just redesign as we go and provide this support on a daily basis with planned bi-weekly meetings," said Frank Trimboli, Senior Account Manager. Doka.

Distinct formwork

Doka supplied the majority of formwork from perimeter walls to shear walls. This is notable because it is the first project in Toronto that has been awarded slab and vertical solution with only one supplier – Doka.

Fourteen-story towers back up to either side of the center podium. At some point during construction, there will be more than 36,000 sq. ft. of trusses on the project. This is a huge footprint when compared to a typical building. Although this is not an extremely tall building, it is a significant footprint.

Framax was used for all 15,000-sq.ft. of vertical formwork to help the contractor quickly erect the panels. Doka's aluminum Super-Prop was also used for reshorings on this project, the first jobsite in the area for which this had been used. This is noteworthy because Super-Prop has a 20% higher capacity than competitive products. Extension – i.e. length – is longer which ultimately means fewer props are needed. This translates to savings on money and labor and less equipment being handled, and in turn, benefits Doka's customers.

▲ Major Baltimore Highway formed by highly efficient Doka formwork solutions

Doka's Flexibility and Efficiency Provide Labor Savings

The I-95 Express Toll Lanes/MD 43 (White Marsh Boulevard) Interchange located in Baltimore, Md. required an innovative solution that ensured continuation of the high traffic volumes for the active interstate highway during construction.

Construction for the roadway expansion includes seven new bridges with abutments, wing walls, piers, pier caps and 3,000 ft. of soldier pile retaining walls. The project specifications call for a 2.5-in.-deep architectural formliner on the retaining walls, bridge abutments and wingwalls.

The solution came in a design-build approach with labor-saving formwork solutions integrated into the project. The general contractor, Cherry Hill Construction, a subsidiary of the Tutor-Perini Corporation, selected Doka to design formwork solutions that would reduce construction time. Since the project required building

The Facts

Jobsite: I-95 Express Toll Lanes/MD 43 (White Marsh Boulevard) Interchange

Location: Baltimore, Maryland

Products: 15,000 sq. ft. of Doka Framax Xlife formwork, 8,000 sq. ft. of Steel Girder formwork, 10 kip shoring, Frami Xlife

General Contractor: : Cherry Hill Construction, a subsidiary of the Tutor-Perini Corporation

Overall project cost : $197 Million USD

Start date and scheduled end of date: 2012 – 2014

The Challenge

To ease traffic congestion in and out of Baltimore with an innovative solution that ensured continuation of the high traffic volumes for the active interstate highway during construction.

The Solution

Doka worked with the design-build team to provide a one-stop solution for the supply and design of formwork required for the wide range of structural requirements. Framax provided fast-forming times and high efficiency that helped the construction team meet the architectural requirements and provided a high-quality concrete finish on all exposed structures.

▲ Doka's Steel Girder form is stripped in modular u-shaped sections when forming hammerhead pier caps.

"Doka is always my first call for formwork," said Ed Seeley, Structures Engineer for Cherry Hill Construction. "We chose to work with Doka on this project because we needed a formwork supplier that we could count on to respond to the demanding engineering requirements, and someone who could provide the efficient and cost-saving formwork solutions we needed to ensure an on-time and on-budget completion. Doka offers the variety of labor saving solutions that allow us to save money. We've used Doka formwork for years and expect it to continue that way in the future."

and incorporating all of the structures, while maintaining the high traffic volumes for the busy interstate, the design-build team asked Doka to provide a one-stop solution for the supply and design of formwork required for the wide range of structural requirements.

Meeting the Challenge with Efficiency

The project design called for up to 15,000 sq. ft. of Doka's Framax and 7,000 sq. ft. of Framax with attachable supporting construction frames. The fast forming times and high efficiency that results from using Framax helped the construction team meet the architectural requirements and provided a high-quality concrete finish on all exposed structures. The Framax form panels, when combined with attachable supporting frames, allowed the customer to form the one-sided soldier pile walls in a single full-height pour (up to 29 ft. high) with no ties in the wall. This allows all the concrete pressure to be transferred to anchors cast in a continuous footing.

"The Framax form panels with the X-Life plywood provided a fast and efficient solution to attach, remove, and re-attach the formliner panels as the equipment was re-used from structure to structure. The quick clamping panel connections and wood faced panels were the right choice on this project," said Bill Publicover, Senior Account Manager, Doka. "The labor-saving solutions provided by Doka were also cost-effective because they allowed the contractor to reuse the formwork on site to form the various structures with high productivity and efficiency."

▲ Modular Framax and Supporting Construction Frames are easily assembled into large units at the jobsite.

The use of Framax also extended the life of the architectural formliner panels, which are very expensive, and prevented the formliner from being penetrated with wall ties, a critical element in the appearance of the finished concrete.

"With an investment of more than $150,000 in formliner, it's extremely important to get as many re-uses as possible," said Publicover.

Doka also provided Steel Girder forms for the "hammerhead" piers and caps. The Steel Girder form system – an all steel, modular form system that can span large distances without any intermediate support and also support the weight of fresh concrete. In addition, the majority of larger bridge abutments and wingwalls were formed with Doka's Framax X-life system. 10 Kip shoring towers were used to support some of the pier caps and Doka's Frami Xlife formwork was used on the smaller pile caps and structures.

When completed, this new expansion will dramatically increase the traffic volume and flow on a major interstate highway, while reducing delays and commuter travel time. The I-95 Express Toll Lanes/MD 43 Interchange project is 65 percent complete and is on-track to be completed on time and under budget.

▲ The Framax panels were re-used from structure to structure which made forming super cost-effective.

The Facts

Location: 432 Park Avenue, New York, N.Y.

Type of structure: Residential building

Contractor: Roger & Sons Concrete, Inc.

Start date and scheduled end date of work: September 2011 - 2016.

Products Used: Super Climber, Framax Xlife, Custom steel column and beam formwork, Staxo 100, Table Lifting System (TLS)

The Challenge

The soaring height of this building required extreme safety practices on the site.

The Solution

Doka's load-bearing Staxo 100 is being used because of its ability to unite high-load capacity and safety. In addition, Doka's Super Climber combined with Framax is being used as the self-climbing core formwork. It provides safe wide working platforms for the interior and exterior of the core construction to provide safety during working operations and for up-and-down access.

▲ At completion, 432 Park Avenue will be the tallest residential building in the city.

Tallest residential building in Western Hemisphere

New York City's 432 Park Avenue high-rise will be the tallest residential building in the city and in the Western Hemisphere when complete. The 1,398-ft.-tall skyscraper will make the Empire State Building look like just another tower.

http://www.432parkavenue.com/new-construction-in-NYC/

Building such a high structure requires top-level safety procedures, both as a good business practice and because of its high profile.

"This building will be a landmark…rising out of Midtown like a pencil sticking up in the air twice as high as anything else in the neighborhood," says Antonio Rodrigues, President of Roger and Sons Concrete.

Distinctive design trends

This high-end, residence-only luxury condo building is notable as part of the emerging trend of constructing super slender towers for the ultra-rich. Located on what is dubbed as "Billionaire's Row," 432 Park Avenue is a 90-ft. by 90-ft. square being erected up more than 1,400 ft. high. The height does not come at the expense of luxury. The price tag on the luxury 96-story, 104-unit building's condos range in price from $7 million to $95 million and is so exclusive that it will include an 8,500-sq.-ft. private restaurant that will serve three meals a day only to the condo owners and their guests. Other notable building features and amenities include trademark square windows, private helicopter landings, separate service entrances, 12.6-ft. ceilings, and a 75-ft. indoor swimming pool.

◂ Pointing to the greatest heights at the City's newest defining structure.

Not only is the building distinctive, but innovative construction techniques are also being used. Custom architectural formwork with stainless steel facesheets are being used to form the column and spandrel beams around the perimeter of the building.

Roger & Sons Concrete, Inc., the concrete contractor on the project, selected Doka based on their ability to provide the high-end formwork solutions and fast service on an as needed basis to keep the project on schedule.

Safety systems

Doka's load-bearing Staxo 100, designed for tall shoring heights and high loads, is being used because of its ability to unite high-load capacity and safety. The system's very high load-bearing capacity – up to 22,500 lbs. per leg – has optimized use of equipment for this project.

Staxo 100 features built-in protective features include safe up/down access assured by ladders with slip-resistant rungs integrated into the frames; individual safety aided by defined anchorage points for personal fall arrest systems; and safe erection and dismantling ensured by "mounted-ahead" railings.

Doka's Super Climber is also being used in the 432 Park Avenue project for its integrated platforms, stair towers and ladders to provide safety during working operations and for up-and-down access. The Super Climber uses a single stroke cylinder to move the core with forms, concrete placing boom and multiple levels of working platforms up to the next casting step. All of the formwork for an entire story is raised independently of the crane. The system allows the inside and outside forms to be hung from the gantry, which enables the contractor to roll forms away from core walls, while erecting and stripping. There is no need to strip forms into units, which keeps the core forms as a single unit. This cuts down on labor costs and speeds up construction cycle.

For a time lapse video showing construction progress, please go to http://www.432parkavenue.com/new-construction-in-NYC/

▲ Super Climber interior ensures safe and smooth work flow.

The structural concrete core is being constructed two stories above the slab. All interior and exterior formwork is hung from gantry beams and supported by brackets anchored into previous cast concrete.

In Brief

News, Dates, Media, Awards

CONEXPO 2014
We invite you to visit Doka at Conexpo 2014, March 4-8, 2014, Booth 1093 in the Gold Lot. Come and see a variety of innovative formwork and shoring solutions to help you achieve success.

Launch your career now – at Doka.
Doka is positioned and focused on expansive growth in North America. We offer exciting opportunities to work with the largest contractors on the most prestigious construction projects throughout the US and Canada.
Engineering
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Sales Management
Field Service
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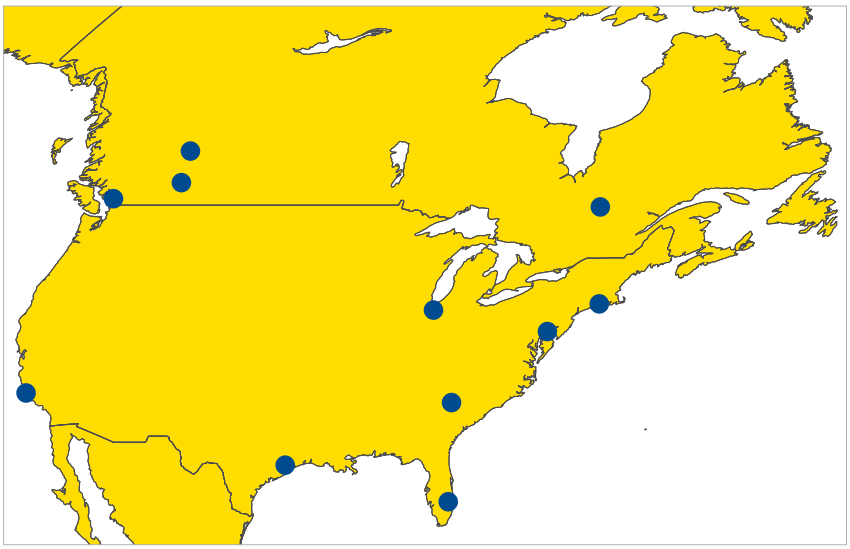

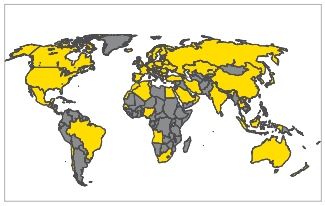

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In some cases the site photos show the situation during formwork assembly and are therefore not always complete from the point of view of safety.

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