

DokaXpress

The formwork magazine Vol. 22 Issue 1

doka



Onward and Upward

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"This growth is all about Doka's commitment to improving service to our customers, so we can quickly respond to any needs as construction demands increase."

Doka Grows with the Industry – Onward and Upward!

As we march steadfastly into 2022, we see a changing world, both on a national and global scale. While there is a lot of uncertainty, forecasters continue to note that all aspects of construction — from planning, design, procurement, and construction to operations, maintenance, and renovation — face immense changes and an ever-increasing workload.

Of course, with increased work brings the challenge that has plagued companies since last year, specifically the inability to recruit new and committed talent. According to a model by the Associated Builders and Contractors, the construction industry will need to attract nearly 650,000 additional workers on top of the normal pace of hiring in 2022 to meet the demand for labor. At Doka, we are proud of our employee-centered culture that makes Doka a desired employer, which ensures we are able to continue to provide top service and quality products to our valued customers. Leading forecasters have also shared their views on construction market prospects in 2022 and beyond, and the good news was they saw a regained footing for construction cost inflation and a robust supply of work in the pipeline.

There will also be an increased focus for this year on environmental sustainability and engaging with employees. Doka has made a commitment to



AR Marker Symbol: Download the app at DokaAR.com, open the app on your smartphone or tablet device, scan the image with the AR Marker symbol to fully experience the latest developments of Doka USA!



News flash

New Doka USA Headquarters & Northeast branch office underway.

ensure a healthy concrete industry and a sustainable future for coming generations.

There is a lot of work to be done, and we know that the construction industry is eager for efficiency gains. In response to increased construction activity, Doka has engaged in a multi-part expansion of our offices to better serve our customers. Our “Pathway to Growth” is a series of exciting expansions throughout the year. It brings a new 23,000-square-foot home for our new USA headquarters, which will now be located in Kenilworth, N.J. This space will also house our Northeast Branch team and our Support office team. The Pathway to Growth plan also includes enlarged and renovated facilities for our Southeast Branch (Atlanta / Southern Region), where all operational excellence improvements are completed and on-going renovations will begin in Q3 2022.

Additionally, a new facility for the Southwest Branch (Houston / Southern Region) is scheduled for completion in December 2022. A new facility for the Florida Branch (Lake Worth / Southern Region) is scheduled for completion by mid 2023. This growth will focus on Doka’s commitment to improving service to our customers, so we can quickly respond to any needs as construction demands increase. As we streamline our operations, see just how Doka is helping the industry grow --- ever onward and upward!

Michael Kennedy,
CEO, Doka USA

As part of our “Pathway to Growth” strategy in the USA, we are upgrading and expanding our facilities across the USA to better service our customers. As part of the expansion, we have found a new home for our USA headquarters located in Kenilworth, NJ. Renovation and construction plans are currently underway on a 17-acre property to house our Northeast New York Branch team and our Support office team. The property includes over 10 acres of formwork storage capacity, reconditioning, and preassembly, including even more expansion. With 23,000 sq. ft. of office space, the new location will house our 150+ employees with additional space for new recruitments.

“We want our team to look forward to coming to Doka every single day. Our new home is designed to create a collaborative environment in a spacious and modern setting to allow creative thinking, innovative ideas, and engagement in teamwork. We take pride in providing the best solutions to contractors and will now be even more equipped to expand on this with the proper environment for our team,” stated Michael Kennedy, CEO, Doka USA, Ltd.

“With a target move-in date in this summer, the new facility is located just 20 miles from New York City and will support our team in delivering high-quality, innovative formwork solutions and services to clients across the Northeast from Maine to Pennsylvania,” stated Kennedy.



Pre-planning Allows for Seamless Flow of Activities

1

Superdek and Staxo help construct the medical facility in limited space without disrupting hospital activities





In uptown Pittsburgh, a medical structure for UPMC Mercy Vision Center Hospital was built in a busy, contained area. The construction site, which sits on one city square block, required intense pre-planning and coordination from the construction management team to coordinate how to receive deliveries, erect steel and place concrete without interrupting the emergency department or surrounding traffic.

The challenging logistics of the construction site included a four-lane highway that borders the south side of the site. The entrance to one of the busiest emergency department/trauma centers in Pittsburgh is positioned on the west side of the structure. The two main roads that run in and out of downtown Pittsburgh are located to the north and a residential area is situated on the east.

- 1 With varying floor heights between 15' to 27', a combination of Superdek slab formwork and Staxo shoring towers were used to maximize productivity and ensure seamless transitions.
- 2 The Doka Table Lifting System (TLS) is used for moving Doka tableforms and equipment up to the next floor. By making the crane unnecessary for both the horizontal and vertical repositioning operations, the TLS optimizes the logistics for the entire site, by eliminating unproductive and costly waiting times.
- 3 The flexibility of Frami handset formwork, allows fast forming of concrete walls, cores, foundations, and columns.



The Facts

Description/Intro: Medical structure in downtown Pittsburgh

Location: Pittsburgh, PA

General Contractor: Mascaro Construction Company, LP

Architect: HOK Architects, Inc. & IKM Architects

Type of structure: Cast-in-place concrete

Height: 203 feet

Stories: 10 stories

Sq. Ft.: 788,254 sq. ft. finished concrete floor

Construction time: 24 months

Products used: Core: Frami and MF240, Reshoring: Superdek posts / Shoring: Staxo and Superdek / Other: Doka Safety Nets, Doka Table Lift System (TLS)

The Challenge

During construction it was necessary to use three tower cranes operating simultaneously, as well as an MLC 300 crawler crane, in order to meet the workflow and production rate required for the schedule. By doing this, the cast-in-place concrete structure, steel structure and precast parking garage could all be completed at the same time. Doka was able to deliver the necessary equipment in a just-in-time manner to allow for maximum use of the site laydown area.

Other challenges of the project included 15 elevators in five elevator shafts and two levels of parking garage below the footprint of the building. The eight-level precast parking garage was constructed at the same time as the medical structure. There is a pedestrian bridge connecting to existing hospital and a 41,844 square-foot of one-sided perimeter wall.

The Solution

The floor-to-floor structure varied depending upon the floor. The parking garage floors were sloped while the hospital floors were flat. The normal floor-to-floor height was 15 feet, however, the mechanical floors at the 5th and 10th floors were 27 feet. This required the combined use of Staxo and Superdek throughout the project.

With the partnership of the Doka engineering team and the Mascaro field team, they were able to refine each floor design to maximize the productivity and material. This coordination allowed for seamless transitions from concept to production.

The Doka team was able to supply and remove material as needed to facilitate the concrete crews without interruption. Material was stored both onsite and offsite due to the limited amount of room onsite for all contractors. The careful planning coupled with experienced and knowledgeable workers allowed for a seamless flow of materials, construction activities and hospital activities.



Joe Armbruster, John A. Mascaro, Mascaro project team

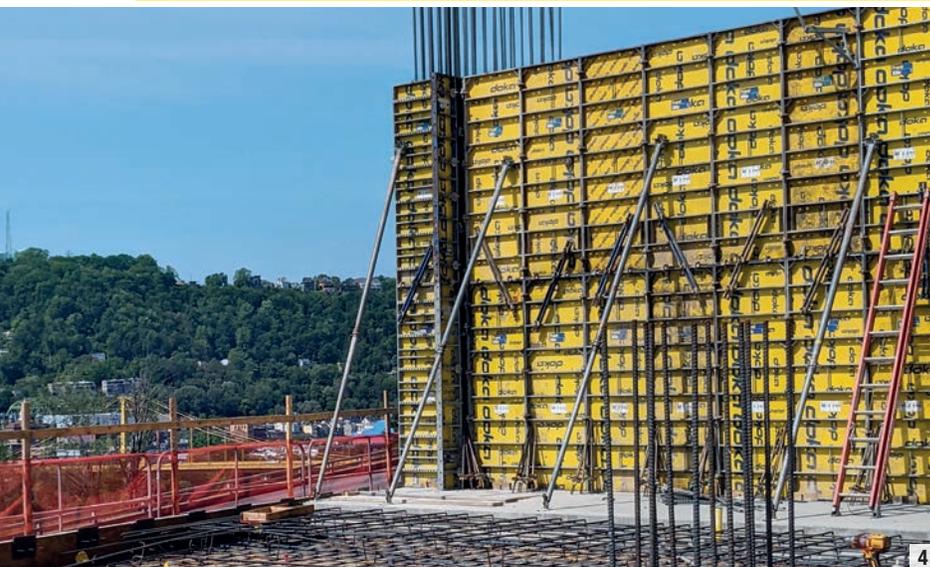


The Superdek and Staxo products were easy to work with and allowed for maximum productivity on our project. The project had numerous challenges and unique conditions that the Doka engineers were able to assist the project team with to develop the best outcome. The MF240 climbing system worked seamlessly for the four cores in the building. This allowed the cores to be jumped in sync with floor pours to create a smooth workflow.

Joe Armbruster, Project Superintendent,
Mascaro Construction



- 4 The Frami Xlife panels are lightweight and easy to handle, so they can be erected very quickly by hand, without the use of a crane. On sites with a crane, it is also possible to lift several panels at a time, in a gang-form. The ingenious modular design makes for optimum adaptability to all job site conditions.
- 5 The Top 50 wall formwork and MF240 scaffold are linked together as a single unit which can be repositioned in just one crane-lift.





PROJECT

Staxo Solutions Helps Revitalize Storey Park

Doka's high-capacity shoring system helps neighborhoods make a comeback with new mixed-use development in Washington's NOMA.

In Washington, D.C, it was time to revitalize the former site of a Greyhound bus terminal located in an industrial area. The architect, HKS designers, was hired to create a mixed-use development combining residential and hospitality spaces with street-focused retail and restaurants. Located in one of the area's fastest growing neighborhoods, the addition of this development will transform the area into an energetic 24-hour hub.

This development involved a 13-story mixed-use complex with a 461-unit residential tower. It includes a 235-room hotel, 50,000-square-feet of two-level retail space, and 130,000-square-feet of below-grade parking with service and loading docks.

With the many elements involved in this project, a safe, reliable and cost-efficient shoring system was needed. Doka was brought in because of the high efficiency of the Staxo shoring system that contains integrated safety features. Throughout the process, Doka's engineers collaborated with the customer's engineers on the design. Due to this partnership, Doka was able to supply and support the entire project with core, shoring and reshoring solutions at an economical price.



- 1 Load-bearing tower Staxo 100 was selected to support and form a 55' high bridge slab.
- 2 The rugged steel frames on Staxo 100 offer flexible height adjustment using the easy-to-operate screw-jack heads and feet for continuous adjustment, with fraction of an inch accuracy, even under high load.
- 3 Hole numbering, anti-handtrap and anti-dropout safeguards, forged nuts, galvanized finish, ergonomically shaped fastening clamps – these are just some of the features that make Eures floor props customers 1st choice.





The Challenges

Job conditions required a high-capacity shoring system to support and form a connecting bridge slab at a clear height of 55 ft. In addition to forming the bridge slab, the shoring system needed to support a King Post Truss and the seven floors above. This was necessary until tension rods could be set in place and the top floor cast.

The Solution

To provide the necessary support needed, Doka's Staxo was chosen for the ease of erection, high capacity of the system and integrated safety features. With its rugged steel frames, Staxo 100 is designed for both large shoring heights and high loads. Along with being fast-working, Staxo provides safety to a site, with slip-resistant ladders integrated in every frame, clear safety tie-off points, and the ability to be used as a stair tower. With an extremely high leg-load capacity of up to 22.5 kip per leg and an optimum adaptability to different layouts, floor shapes and loads, provides for precise height adjustment even when under load.



The Facts

Project Name: Storey Park

Description/Intro: Multi-unit apartment building in the heart of DC's NOMA District

Location: 1005 1st St NE Washington, DC

Concrete Contractor: Schuster Concrete Construction

Architect: HKS

Developer: Four Points LLC

Type of structure: Multi-unit apartment building

Height: 130 feet

Stories: 13 stories

Sq. Ft: 2,750 square feet of Staxo shoring

Construction time: Foundation work began August 2020 and topped out September 2021

Products used: Core: Frami, Reshoring: Eurex Post Shores / Shoring: 10k /Staxo Shoring / Other: D22 /A-Frames / Framax for one-sided foundation walls

PRODUCT

CONCREMOTE

Optimizing your construction.
Every time.



Save
time



Increase
safety



Enhance
concrete quality



Reduce
costs

Concremote

Concremote uses sensors to measure the temperature and calculates compressive strength of the concrete structure. Due to this method, you can plan your construction project better and no matter where you are, you have access to your real-time data at any time. As a result, you can gauge concrete performance and initiate the necessary measures at exactly the right time.

When is the **earliest possible stripping time**?

Which **concrete mix** will be the most **cost-effective**?

How can you plan in advance to **avoid follow-up costs**?



Universal usage

Slab



Wall



Mass Concrete



Calculation of concrete compressive strength in accordance with standards:

EN 13670, DIN 1045-3, ZTV-ING, NF EN 13670, BS EN 13670, BS 1881 part 201, ASTM C 1074 and ACI 228.1R

Airport Tunnel is Erected and Moved with Ease

Doka's top rate engineering and customer service help customer construct and move tunnel formwork

The Facts

Project Name: CDIA Coffey Creek Tunnel

Location: Charlotte Douglas International Airport

General Contractor: Thalle Construction

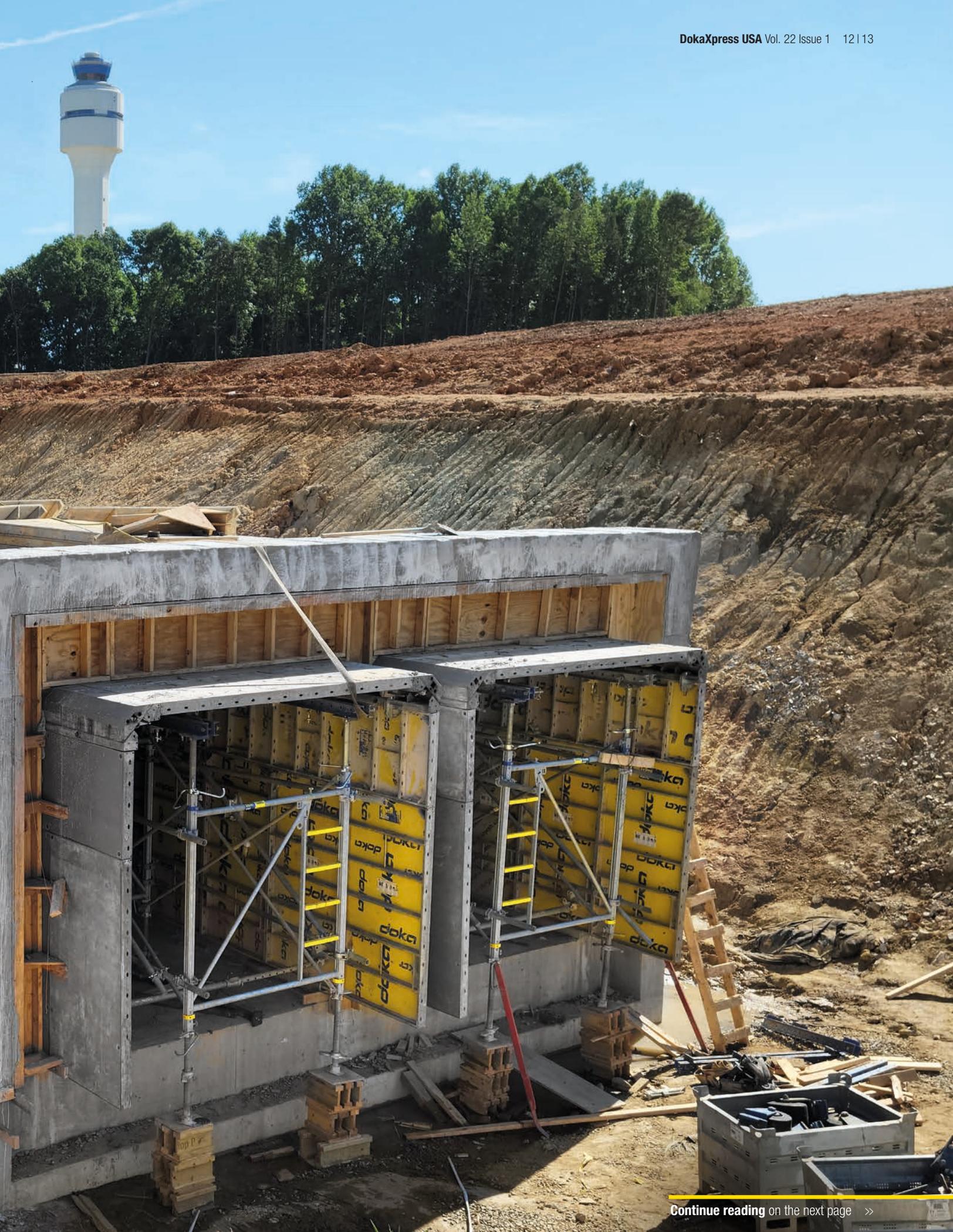
Concrete Contractor: Briegan Concrete

Type of structure: Tunnel

Structure: Two cell 10 x10-foot inside dimensions

Tunnel Length: 3,300 lineal feet

Products used: Foundation Walls: Frami supported by C5 Channel and WS10 walings / Tunnel Forms. Walls and roof: Frami with our bias-cut corners modified with a 4-inch chamfer / Shoring: Staxo with our Winch 125 and wheels



Charlotte Douglas International Airport is an international airport in Charlotte, N.C., and as of 2019, it was processing more than 50 million passengers. When it was determined that additional runways were needed at the airport, the City of Charlotte and the city's aviation department turned to reroute a creek to provide additional space.

The Coffey Creek Tunnel is an ambitious project that will reroute an existing creek and then backfill the area for new taxiways.

To do this, Doka provided four sets of foundation formwork so concrete contractor Briegan Concrete could always be actively pouring foundations. Doka also provided two sets of tunnel formwork – equaling four 70-foot-long tunnel forms – so Briegan could work in two different areas of the project.

To help the customer understand the process, Doka built a mockup of the tunnel section so it could be seen in full scale. This was an advantage since it showed the customer how Doka could help them visualize the process and have a successful project.



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The project schedule required a formwork system that allows the pour of walls and roofs monolithically and has a quick turn-around with less manpower. Doka's team provided a smooth and practical design that helped us meet our durations without compromising quality.



Chris Walsh, Superintendent, Briegan Concrete

- 1 Culvert foundation forms using Frami and WS10 Walers to support the 8" stub walls.
- 2 Frami on the outside of the foundations
- 3 Exterior Frami at the bell end of the culvert
- 4 Interior tunnel formwork pulled out after a pour.



The Challenges

The first challenge encountered was designing the foundation formwork so it could be moved using the limited amount of equipment available. In particular, the jobsite did not have access to a large crane. Then, Doka bias cut corners had to be modified to form the 4-inch chamfer in the top corners of the interior of the tunnels. These corners are used to help strip the interior forms. It was also important to design the formwork solution with minimum weight so the customer could move the complete, interior 70-foot-long tunnel section with the walls and roof attached.

The Solution

Frami was the ideal solution to form the tunnel sections due to its lightweight design. Part of the solution was to connect the panels with Frami clips instead of Frami clamps to cut down on the weight of the tunnel form. Frami was favored because the panels are lightweight and easy to handle, so they can be erected very quickly by hand, without the use of a crane. The ingenious modular design makes for optimum adaptability to all jobsite conditions. All of this was possible because Doka was able to provide unmatched service, from customer management to engineering.

To assist the customer in the correct alignment of the tunnel roof, all of the roof sections were assembled in Doka's yard. Additionally, by providing the modified bias-cut corners and the Winch 125 with wheels and a Trolley TT, it helped the customer move the 70-foot-long tunnel sections with relative ease.



Multiple Solutions for Complex Needs of Parking Garage

Long-standing relationship with contractor made Doka the number one choice

Building a parking structure requires using techniques to produce a strong and resilient structure. Efforts to make these structures more aesthetically pleasing can result in more complex design elements. When constructing a new parking garage for the Plumbers Local 130 in Chicago, the attractive seven-story structure featured a design that accommodates 502 cars and 36 bikes. Contractor W.E. O'Neil Construction has worked with Doka previously and was familiar with the exceptional formwork Doka provides. With the variety of solutions available, Doka could meet all the intricate requirements of this project.



Climbing formwork MF240 permits controlled, regular working cycles on all tall structures. It is extremely easy to set up, and can be tailored to meet a wide range of different requirements.





Facts

Project:

Plumbers Local 130 – Parking Garage

Location:

1275 W. Randolph Street, Chicago

Contractor:

W.E. O'Neil Construction

Architect:

OKW Architects

Type of structure:

Parking Structure

Height:

70 feet tall

Stories:

6 stories

Cycle time:

Slabs are broken in 2 pours per floor, 7 days per floor

Sq. ft.:

1,000,000

Construction time:

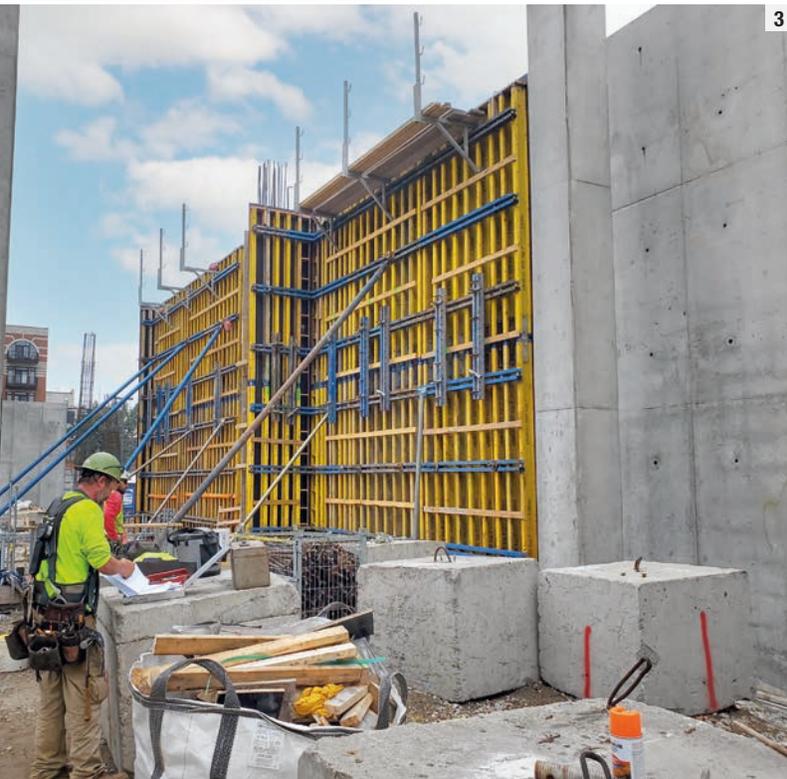
Job started in September; concrete finished in February

Products used: Core: Top50 formwork / MF240 platforms / Shaft platforms
 Facade: Top 50 formwork Reshoring: Doka props SD350 Shoring: Superdek / 10K shoring for perimeter beams and ramps, Staxo shoring for pour strip Other: Doka Lookout Platforms



Thank you for all the help with this project. We had 25' tall architectural walls with specified tie holes and plywood spacing coming out of the foundation. The Top 50 Panels were the perfect formwork for this application. With Doka's engineering, we were able to make numerous pours using the same panels and minimal re-work. Our client was very satisfied with the finished product. This was the first time we used SuperDek, and I cannot wait until we have another project to use it again. For flat decks under 12', this is the way to go. The 8'x 8' grid is key for installing square footage at a rapid rate and makes moving / storing materials under the deck a breeze versus other systems with smaller members. Stripping is just as fast.

Nick Brazzale, Superintendent, Plumbers Union



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The Challenges

Several design elements made the construction techniques used more remarkable on this project. The first challenge involved meeting the high finish requirements for the walls. There was also the configuration of the pour strip, which was located between two column lines and filled in after all the decks were poured.

Additionally, the cantilevered portion of the slab at the pour break could not be stripped until the building was completed. So, all floors of shoring in this area stayed in place until the roof was poured. The design was considered "top-down," meaning the shoring on the floor below had to take the load coming down from the top. Therefore, the spacing of the frames was much tighter in this area.

The Solution

Staxo, a high-capacity fast shoring system, was an ideal solution for the pour strips due to the thick slabs and high floor heights in this parking garage. The spacing of the frames is greater than if using 10K due to the engineered design of the material. With Staxo, a safety ladder and OSHA-approved tie points were built into the frames for added benefit and increased the efficiency of the laborers.

Framax column formwork was employed for the tall columns on the first levels and was lined with plywood to meet the high finish requirements. The Framax panels were quick to assemble and reset and provided enhanced safety.

The core walls and the exposed perimeter walls utilized Doka's large-area formwork Top 50. Known to be fast and efficient, Top 50 provided the speed and versatility necessary.

Doka's fast, safe and simple handset drop head slab system, Superdek, was used for the typical slabs, and enabled the contractors to reach a very high production rate.

- 1 SuperDek is a simple handset drop head slab formwork system. Large grid / prop spacing, up to 8' x 8' (64sf), interlocking joists and stringers and a unique slab edge forming solution will provide increased productivity with less labor and maximum safety.
- 2 Providing a high quality concrete finish was a project requirement. With the Top 50 wall formwork system, all architectural specifications can be fulfilled.
- 3 The Doka large-area formwork Top50 gives you ideal scope for adapting the shapes and sizes of the gangs to suit your structure. The tie-hole pattern and the incremental size-grid of the gangs permit ready adaptation to meet architectural demands. The large-area gangs and exact joints deliver perfect joint patterns.

PROJECT



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- 1 Panoramic view of the Bark Bar around the fire pit area.
- 2 The pre-assembly team built all the different "Pie" shaped elements to transfer to the job site for a direct installation.
- 3 Pre-assembled Panels arrived on trucks and got lifted directly in place on Staxo 100 Shoring Towers
- 4 The completed concrete structure of the Bark Bar area
- 5 Aerial view of the Bark Bar during construction showing half of the structure completed and the rest set up with the pre-assembled panels. The 4x4 lumbers were set up on boards for workers to have safe and easy access around the structure.





3

Customized services make unique park design possible

Combining Engineering expertise and preassembly capabilities to provide specialized formwork requirements.

A new 7-acre urban park under development in Cary will be the first of its kind in central North Carolina. With a nature-inspired play theme, the park will provide a variety of outdoor areas, including a pavilion, a children's play area, elevated walkways over green spaces, and a dog park containing a "Bark Bar." The dog-friendly Bark Bar will serve adults locally sourced brews and other beverages while the dogs are playing.

The unique design of the roofs for the Bark Bar called for Doka's engineering department to develop specialized solutions. The structure of the Bark Bar and the courtyard use a roof design that is broken into two parts. Doka was brought in on this project due to our ability to assemble the various shaped tables in our yards, saving space on the urban site. The two roofs and the ring beam of the Bark Bar called for using Dokaflex for the flat roof, and as well to support the bottom of the ring beam. Dokaflex ready-to-use tables were used to meet the geometry of the structure.

The courtyard area has a sloped gable radius roof. Doka's custom tables were supported by Staxo frames using custom wood wedges to sustain the sloped radius roof. With its easy-to-handle component parts and ability to fly entire pre-assembled units, it can speed up the progress.



5



6

- 6 Pouring the bar area roof.
- 7 Bark Bar structure poured completed, ready for shoring removal.
- 8 Rendering showing the area around the fire pit and its complex structure.
- 9 Installed Panels on Staxo 100 Towers showing the 4x4 lumber for the access at those steep inclinations.
- 10 Finished concrete pour with shoring still in place.



7

The Facts

Project: Cary Park Bark Bar

Location: 310 S. Academy St. Cary, NC

General Contractor: Balfour Beatty

Concrete Contractor: Briegan Concrete

Developer: Town of Cary, NC

Type of structure: Bark Bar – A dog park area with a bar that will serve adult beverages.

Construction time: Bark Bar – October to December 2021

Doka Team: David Ayscue, Account Manager and Adam Morse, Project Engineer.



8

The Challenge

Designing the structure was actually the largest challenge. The shape of the structure dictated our engineer to work closely with Briegan Concrete to get the correct information and then be able to design the structure.

The Solution

Doka designed and built the slab panels in our Lawrenceville, Ga., assembly warehouse. Since the roof is serpentine shaped, we were able to cut shaping timbers on our CNC machine to build the various shaped tables. Also, assembling the custom tables off-site, opened up space for the contractor to work.



Doka provided us with all of the materials we needed to ensure that we could finish this intricate structure. Our Doka rep was always available and able to answer any questions we had.



Tate Wheelin,
Superintendent, Briegan Concrete

Bridge formwork **ParaTop**

The bridge overhang bracket formwork system for steel-composite and pre-cast concrete bridges





2

- 1 Large 20ft long Paratop Overhang Platforms in use on a Steel Girder Bridge.
- 2 Fast setting and stripping of large, reusable Overhang Platforms helps to minimize traffic disruption during the construction process.
- 3 The 'open fork' design of the Paratop bridge hangers allows for the Overhang Platform to be hung into place very quickly.
- 4 The ability to set and strip the Paratop Overhang Platforms from above can eliminate the need for access from below in hard to reach areas.



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Key advantages

- Fast Cycling and reduced traffic disruption with large pre-built Paratop Overhang Platforms, up to 30'-0" long, that can be set, stripped and cycled in gangs.
- Enhanced jobsite Safety through ground installed guardrails and posts that allows for platform edge protection to cycle with each platform from use to use throughout the project.
- Increase Speed and Safety with a unique Paratop bridge hanger design that allows the anchors bolts to be pre-mounted to the Overhang Platforms and set, adjusted, and stripped from above.
- Flexibility that meets each specific jobsite requirement as the Paratop bridge hanger can be customized for attachment to fit any Concrete or Steel bridge girder.
- Safety on site as the wide pre-built Paratop Overhang Platforms can eliminate loose material falling onto traffic or pedestrian below.

Need assistance with an Infrastructure opportunity?
 Please contact your local Doka Account Manager or our
 Infrastructure Specialists

Brickell Plaza Tower

Hottest office building in Miami

Close collaborations yield multiple formwork solutions.

In Miami's Brickell financial district, the first Class A+ freestanding office building is under construction in over a decade. With Downtown Miami and Biscayne Bay views, the luxurious 830 Brickell Plaza offers premium accommodations for the world's leading companies, such as Microsoft, private equity firm Thoma Bravo, and Canadian asset management giant CI financial.

At 724 feet, occupying an area of just over one million square feet, 830 Brickell Plaza will be rising high in Miami as the city's fourth-tallest building after the Panorama Tower, the Four Seasons Hotel Miami, and the Southeast Financial Center. The floorplates offer multiple orientations for private offices and a variety of city and bay views, defined by tranquility, sophistication, and comfort.

Adrian Smith + Gordon Gill Architecture—the firm behind the Jeddah Tower and the Burj Khalifa—designed 55 floors and 1,030,000-square-feet of uninterrupted glass for the striking tower, all illuminated by warm bay colors the nocturnal brilliance of the area. An eight-story parking garage acts as the tower's podium and is wrapped in a kinetic wall reflecting movement and light.

A project of this magnitude requires a high level of trust among the contractors. G & E Florida Contractors had never worked with Doka. Still, when they saw Doka's engineered solutions and the yard where the material was readily available, they were confident in Doka's ability to handle the project. Doka always strives to find solutions that save time and labor using a safe and efficient approach. In many projects over the years, Doka's ideas and products have earned the trust of their customers.

For the unique design of Brickell Plaza, the owner and architect wanted the exposed west wall above the lower levels to have a finish and pattern that would create an exposed finish. To do this, Doka worked with the contractor and found steel sheets to integrate with the Doka's Framax and MF240 platforms already in place. The steel sheets were cut and fastened to the panels with added reveals to meet the demands and finish requirements. The panels also had to conform to safety restrictions due to the additional weight is imposed on the cranes.

With a stellar design and construction team, 830 Brickell's creative team sets the new standard in Miami for years to come.

After seeing the end product, this project proves why customers trust Doka to provide solutions that meet the demands of today's challenging structures.



- 1 The buildings on the west side show the impressive cantilever slabs starting on level 30.
- 2 This iconic project required a unique formwork design to provide our customer with the most economical and safest solutions.



2



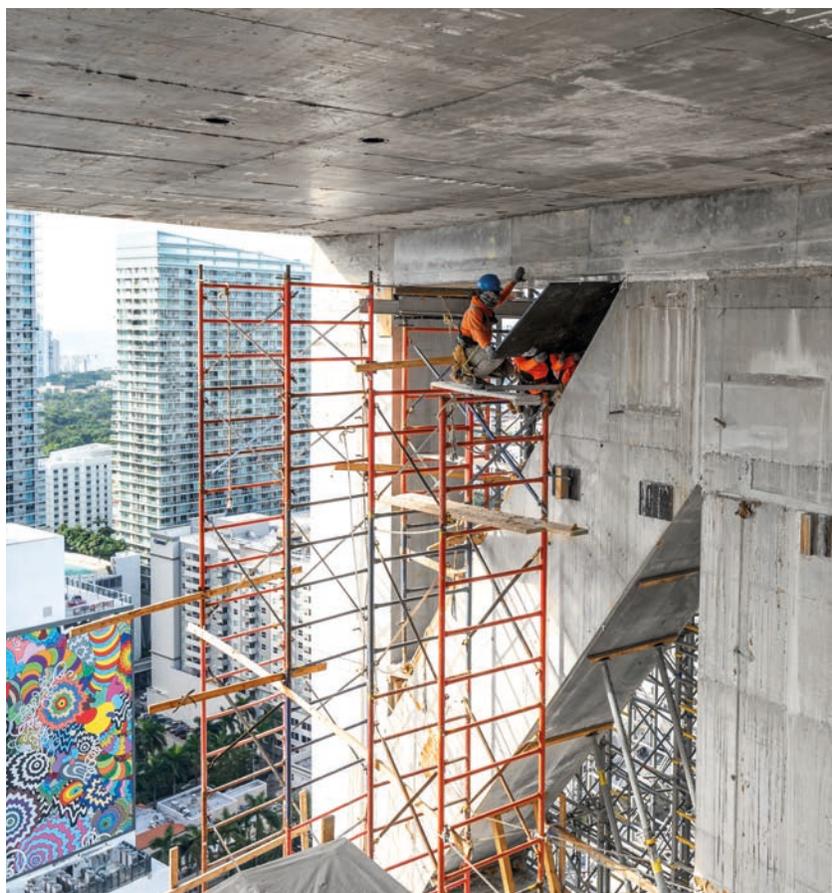


3

- 3 The Sky Lobby on level 30 introduced a cantilever on the southwest and northwest sides of the building— a maximum of 23-ft 8-in.
- 4 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.
- 5 A combination of Frami and Framax wall formwork were used to form varying columns heights/widths.
- 6 The strong collaboration and partnership between G&E Contractors and Doka from the start of the project played a vital role in a successful outcome.
- 7 (On the next page) This project required meeting the demands of the enormous volume by using various formwork solutions for the entire project



Scan the QR Code to see more on Youtube



Due to this project's high degree of complexity, we relied on Doka's engineering department to provide us with our forming solutions. After many meetings and collaborations with both our team and Doka's team, Doka was able to engineer for us a cantilevered system that is typically used in bridges and heavy industrial construction and made it adaptable so that we could implement it in our high-rise project. Doka not only met our expectations but also, in many ways, surpassed them.



Albert Barthelemy,
Project Executive G&E Florida Contractors

The Challenges

This project required meeting the demands of the enormous volume by using various formwork solutions for the entire project. To begin with, as it is an office building, each floor has the typical 13-ft 6-in. story height with 13-in. slabs.

The challenge included using more than 10k sq. ft. of Framax to form the center four-cell cores with the dimensions of 122-ft 11-in. x 32-ft 8-in. with one entire face in exterior shear on MF240 rollback frames. These carried loads of steel plates attached to the Framax to achieve the finish on the outer wall.

The Sky Lobby on level 30 introduced a cantilever on the southwest and northwest sides of the building—a maximum of 23-ft 8-in. This was in conjunction with the belt truss levels, which have massive steel imbeds encapsulated into all the shear walls, columns, and diagonal perimeter beams.

When pouring slabs on levels 30 through 32, not only did the cantilevers present challenges, but the slabs were 16-in. roller-compacted slabs that were not allowed to be released until getting past level 32. This resulted in cumulative loads that created difficulties for all trades. Window installment, as well as loads on lower levels, required incredible engineering solutions.

The Solution

The most challenging central truss belt levels required Doka to come up with solutions that addressed these various challenges and the proximity of building in the congested area. Worker safety was an issue, as they would be working outside the building, 30 floors above ground level.

Doka proposed installing Steel Girder panels from levels 27 to 28. These were to create the external platform that would be used to install Doka Staxo shoring to support the cantilever levels on levels 30 to 32. The solutions that solved the building challenges created additional issues due to the loads imposed on the lower levels. After many meetings and countless hours of close collaborations between Doka Engineering, DeSimone Consulting Engineers, G & E Florida Contractors, ANT YAPI USA, The RC Group, and PTE System, the issues were all successfully addressed, met, and overcame.



Facts

Project: 830 Brickell Plaza

Location: Miami, Florida

General Contractor: ANT YAPI USA

Shell Contractor: G & E Florida Contractors

Architect:

Adrian Smith + Gordon Gill Architecture

Developer: OKO Group

Type of structure:

Class A+ freestanding office building

Height: 724 ft.

Stories: 55

Cycle time: five-day cycle

Sq. Ft.: 1,030,000 sq. ft.

Products used: Core: Framax / Columns: Frami and Framax / Single side Walls: D22 Brackets / Facade: MF240 and Framax with steel plates / Reshoring: Eurex30 Post Shores / Shoring: Below grade and garage levels: 10k with Eurex30 Post Shore Dokaflex. Other levels: Doka truss / Other: Staxo Shoring over plate girders in conjunction with A-frames to address cantilevers on the Sky Lobby level 30

G&E Team: Albert Barthelemy, Marvin Sierra, Freddy Sierra, Adrian Araujo, Allan Lagos, Gustavo Jaramillo, Roberto Gestido, Erling Diaz

Doka Team: Fernando Doreste, Andrea Skorsch, Dinesh Patel, Tino Bretschneider, Mostafa Emar

Floor prop SD-350

Our new SD Prop is the first part we developed for our Superdek. The SD Prop is the first to utilize high-strength steel for the inner and outer tube.

The Prop allows us to keep the weight below 50 lbs. however, we can increase the capacity of each SD Prop up to 13.5 kips either fully collapsed or fully extended, you'll always have a safe working load of 13.5 kips. There are no load charts to follow and no risk to overloading in different rooms height, you'll always be safe utilizing 13.5 kips. Typically, our SD Props are galvanized inside and out, which means no rust on the inside to guarantee durability. The holes are numbered, allowing to pre-level the deck and cut downtime pre-leveling. The Superdek Prop is ready to be used when you are.

- SWL Loose: 11,250 lbs
- SWL Grid: 13,500 lbs**
- Prop extension range: min 6'-6", max 11'-6"
- Prop extension range includes drop head and plywood: min 7'-9", max 12'-7"



Scan the QR Code to visit the Online Shop

PRODUCT



Best load-to-weight ratio!



Super Climber SCP Solves Limited Crane Availability

California apartment building faced scheduling challenges for deliveries and crane



Located in San Francisco, this new 24-story apartment building overlooks the back of the San Francisco Giants Stadium. It is a part of a more extensive, first-of-its-kind vertical project that includes four towers with approximately 1,300,000 gross square feet of developed area. With 283 residential units, office and retail space, the building

is part of a larger development encompassing 11 parcels of mixed-use office, retail, parking and pedestrian-friendly green space. The new apartment building will pursue LEED credits around transportation since it is located close to existing infrastructure and will reduce the strain on the environment.





During project startup, Doka did a good job getting the material on the job when requested, despite our many schedule changes. Doka's field rep, Mike Hoge, was present and eager to help during the assembly of the core climber, answering any questions we had. Although we faced several challenges on the project, Doka's office and site support was involved and easy to reach and help resolve any issue.

Nick Prince, Assistant Superintendent, Webcor Concrete



The Facts

Project Name: Mission Rock Parcel A

Location: 1051 3rd Street, Block A, San Francisco, CA

General Contractor: Swinerton

Concrete Contractor: Webcor

Architect: Perry Architects, MVRDV and MKA

Developer: Public-Private Partnership: San Francisco Giants, Tishman Speyer, and the Port of San Francisco

Type of structure: Apartment Building

Height: 265 feet

Stories: 24 Stories

Cycle time: Four-day cycle on the core once it goes to typical levels

Sq. Ft: 451,000 square feet

Construction time: 11 months

Products used: Core: Main Core: Super Climber & Steel Girder; Annex Core: Top 50; Basement Walls: Framax & Construction Frames

The Challenges

The first challenge for this project was to schedule accelerated initial deliveries for the cores. Also, due to limited crane availability, if it was necessary that many of the picks to set the Super Climber SCP were done on overtime and after typical work hours.

The Solution

On this apartment building, Doka Steel Girder panel formwork was used to avoid pre-assembly, dis-assembly and the plywood purchase cost of timber formwork. Doka provided a panel rack for the exterior wall formwork gangs to be stored on top of the (+1) deck. Additionally, crane time on the core was eliminated through the hydraulic climbing benefit of the SCP. At the push of a button, all platforms, along with interior and exterior formwork for an entire floor was raised in one single cylinder stroke. This cost-effective solution reduced labor costs and provided a flexible forming solution with an adaptable design. Doka's stair tower provided access to lower (-1) level. An advantage was that the stair tower could be put together very quickly from frames and pre-assembled stairway elements. It was anchored to the structure and complied with the relevant safety regulations. Also, another advantage of Doka's solutions was that the formwork had the ability to roll back the inside formwork so anchors could be placed.

Doka was chosen for this project due to its competitive pricing for the formwork. It provided top-notch solutions, with the six-bracket core climber and steel girder formwork. Doka is well-known for its exceptional service with great customer service covering all areas: excellent sales, strong project management, knowledgeable engineering and helpful site support.

PROJECT

Curved concrete staircases? Doka engineering rises to the challenge!

When Smyrna Ready Mix Concrete decided to build a five-story, 84,000-square-foot corporate headquarters in Smyrna, Tennessee, the building design called for curving shapes showcasing the concrete material on which the company has been built. There are no 90-degree angles on any concrete element, and this includes a monolithic grand staircase in the open atrium of the building's main lobby.



The concrete staircase is designed so that it appears to float up to an intermediate landing and curve into a turn to continue upward to the second floor. Doka engineered the custom stair formwork for Nashville-based contractor Charter Construction. The specially designed formwork made the construction of the architecturally demanding staircase relatively effortless.

Designed and engineered for fast assembly

The goal was to create high-quality formwork with easily assembled pieces. Doka's engineering team wanted to enable in-house preassembly as much as possible to reduce the amount of manpower needed onsite to fit the forms together.

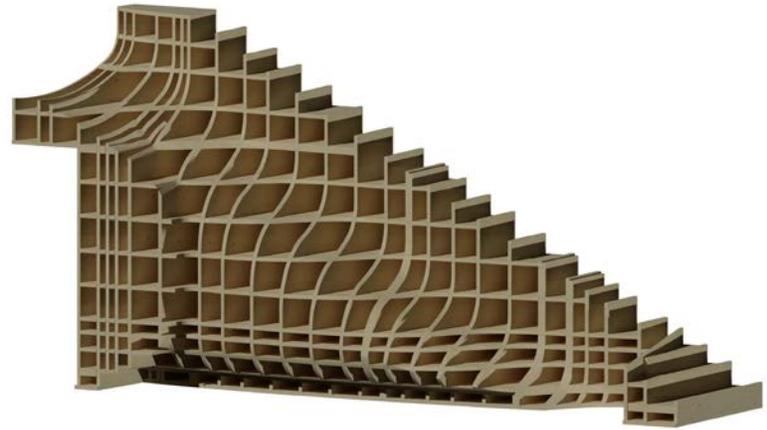
Leveraging the latest modeling technology, the engineering team's first step was to create a detailed 3D model according to drawings. With a solid foundation for the formwork design in place, the team could then divide the stair formwork system into five sections (forms) for easy transport.

Today's formwork is planned digitally, and formwork production is largely automated. For this project, the engineering team used AutoCAD computer-aided design software along with RSTAB 3D structural analysis software. The virtual designs were exported to files that a CNC cutting machine can read to create the interlocking shaping timbers used to support the curves and turns of the formwork shells.

Preassembly: Extraordinary teamwork and craftsmanship

Doka's engineering and preassembly teams worked together to optimize formwork efficiency. When the first form's shaping timbers went to preassembly, the team worked to cut the timber sheets, fit them together in a lattice pattern to hold the curved form's shape, and label and sequence them for nesting and easy construction onsite. They sent the engineering team valuable feedback >>

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- 1 The on-site assembly of the pre-assembled bottom boxes forms the complex wale fin and the intermediate landing.
- 2 3D Rendering in Autocad of the bottom stair box.
- 3 Forming timber sheets fit snugly together to create and support the form's curves. Notching the forming timber sheets helps to increase the ease of installation.
- 4 The bottom stair form is complete with four layers of plywood. The first layer was the most difficult to apply and staple down due to the multiple bends and curves of the form.



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- 5 All five pre-assembled custom boxes were put together on-site for the final pour support by Staxo 100 Towers.
- 6 Experienced Pre-assembly/Sales/Engineering Team Atlanta - Paul, Andrea, Clif, Christian, Hector, Javier, Oscar, Norberto.
- 7 Dedicated Engineering Team Austria Josef, Roman, and Lukas.
- 8 Jobsite Team finishing the pour of the Monumental stair.
- 9 Top view of the finished stair after removing the Formwork.
- 10 View from below after sanding the concrete by Charter.

>> about the process that led to additional improvements in the formwork design.

The preassembly team also spent hours planning and milling each form's plywood facing to achieve smooth, rounded shapes. Multiple layers of bending plywood were used for the facing, with each layer placed in a different pattern to strengthen the layer below and maintain the form shape. The forms for the bottom portion of the staircase were the most challenging to cover with plywood, as they had the most extreme curves.

For each form, a team of two to three people assembled the latticed forming timber (called a forming timber box) and prepared it for the rounded plywood facing. Each formwork element was milled, smoothed, sealed with epoxy and then put together.

Results

The stair formwork system was delivered to the project site as five separate form pieces, transported via two truckloads. Onsite assembly work was completed quickly and efficiently. When the epoxy-coated forms were removed, they left behind a smooth, unblemished concrete surface with minimal rework needed to achieve an excellent architectural finish.

For help with the bends, twists and turns of your concrete project, contact Doka!

Facts

Project: Smyrna Ready Mix

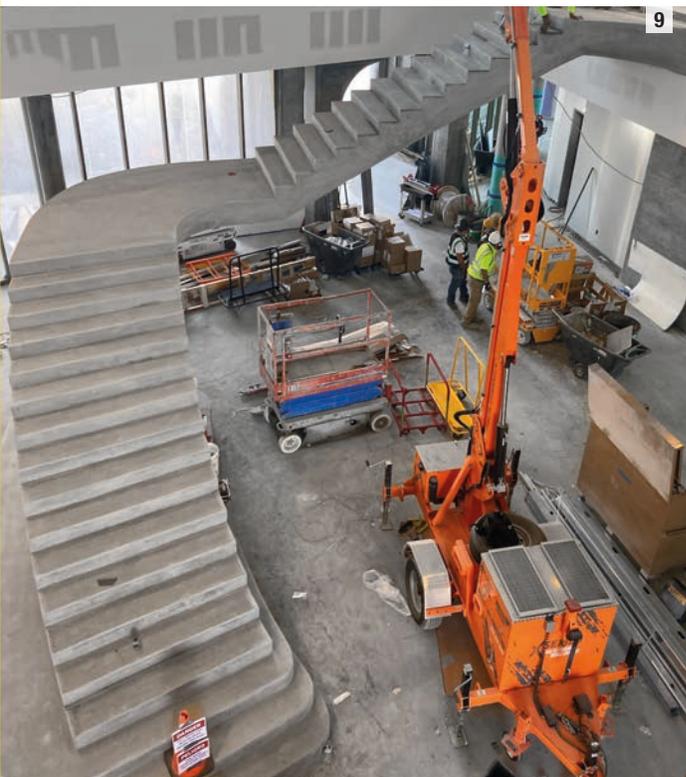
Customer: Charter Construction

Doka Team

Sales: Paul Campbell

Engineering: Andrea Skorsch, Lukas Braunhofer, Roman Katzengruber, Josef Bierbaumer

Preassembly: Christian Hurley, Hector Aguirre Gonzalez, Norberto Bustamante, James Nkansah, Brian Webster, Oscar Ortega, Clif Huff, Javier Resendez, Sergio Padilla





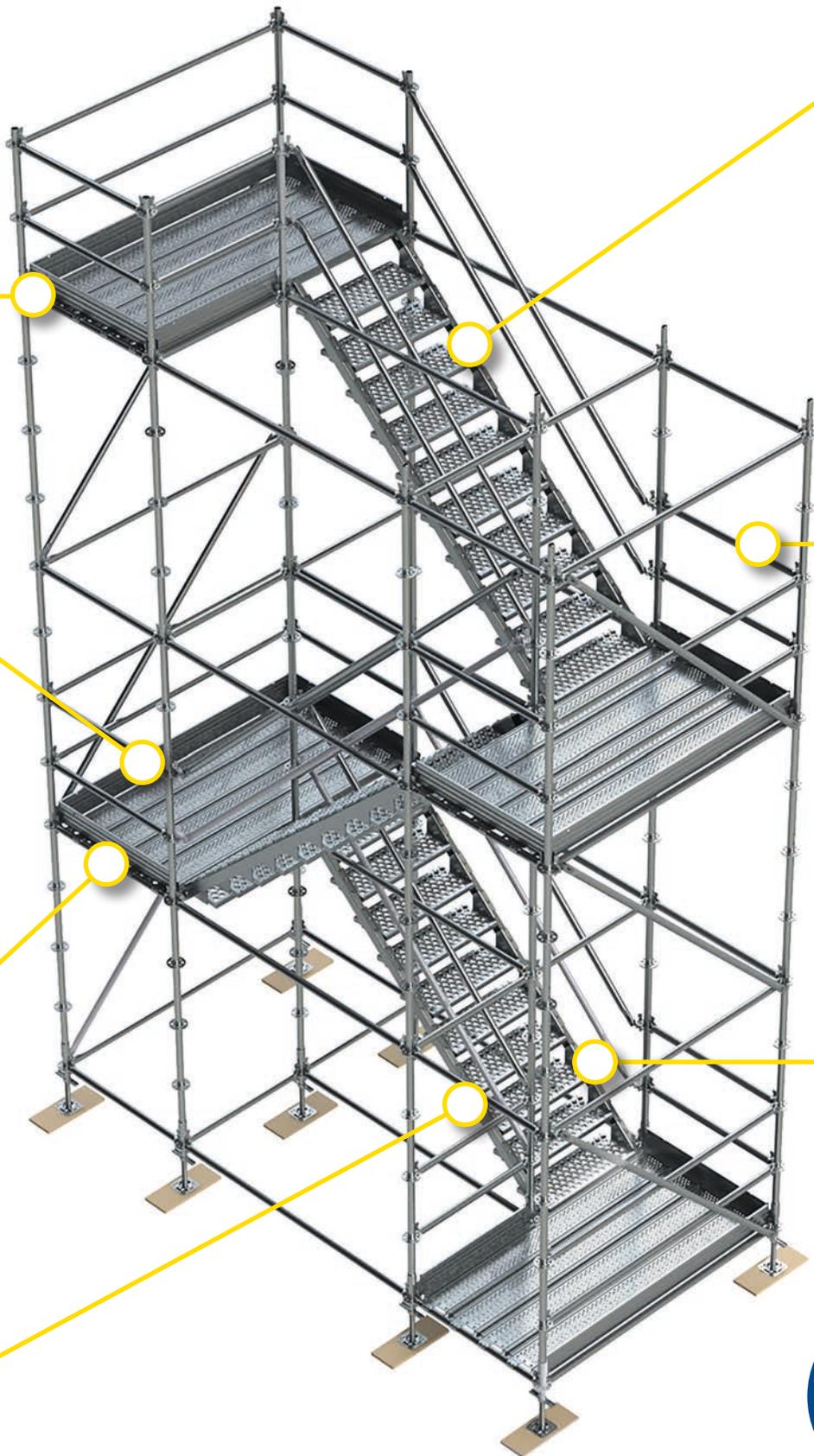
PRODUCT

Ringlock Steel Stair Tower

Safe, ergonomic and fast
access for all site applications

With its strategic partnership with AT-PAC, Doka has an experienced scaffolding manufacturer on hand and thus is now capable of providing complex scaffolding solutions for any construction project requirements.

The Ringlock Stair Tower is the main method of access for many construction job sites across the USA region. The Ringlock Stair Tower can be easily integrated within an existing scaffold or used independently. The stairs are designed for 6'-6" (2.0m) lifts, and an optional entrance or exit can be made at each platform level. The Ringlock Steel Stair Tower contains standard Ringlock system components plus the Stair Stringer and Treads. The Stair Tower can be easily craned and relocated around the jobsite providing labor and material requirements for customers.



Toeboards for safety: prevent kicking of objects and provide protection against slipping and falling from heights

Steps and landing areas with "rugged" decks to provide gripping

Ringlock Plank.
Robust Steel Plank with anti slip surface and holes for water run off.

Aluminum Staircases to provide lighter components and easy to maneuver

Stringer & Treads. Only addition required to provide stair access using Ringlock System Scaffold

Inclined Guardrails: with same inclination as the stairs, they provide a constant protection and allow for a "3 point contact"

Treads. Reinforced Tread with Key hole connection to Stringer. Fast and easy installation of treads.





Thanks for following us on social media

Doka USA is thrilled to have more than 27K+ followers currently on Facebook, and 10K+ on LinkedIn.

We want to thank everyone who follows our page and shares/comments on our content. We appreciate your support and enjoy engaging with you!

Our social media pages are essential for actively engaging with our customers and followers. Please help us reach a new milestone of 30K followers on Facebook with your likes, comments, and shares.

Not following yet, and looking to join the group? Following us on Social Media will allow you to:

#MoreThanFormwork

Be the very first to find out about our latest innovative solutions, get informed about new technologies, new features, customers' experiences, and other insights.

#DokaCareers

Learn about our new vacancies and opportunity to join our team.

#WeAreDoka

Keep up to date with our latest news, events, and key industry conferences.

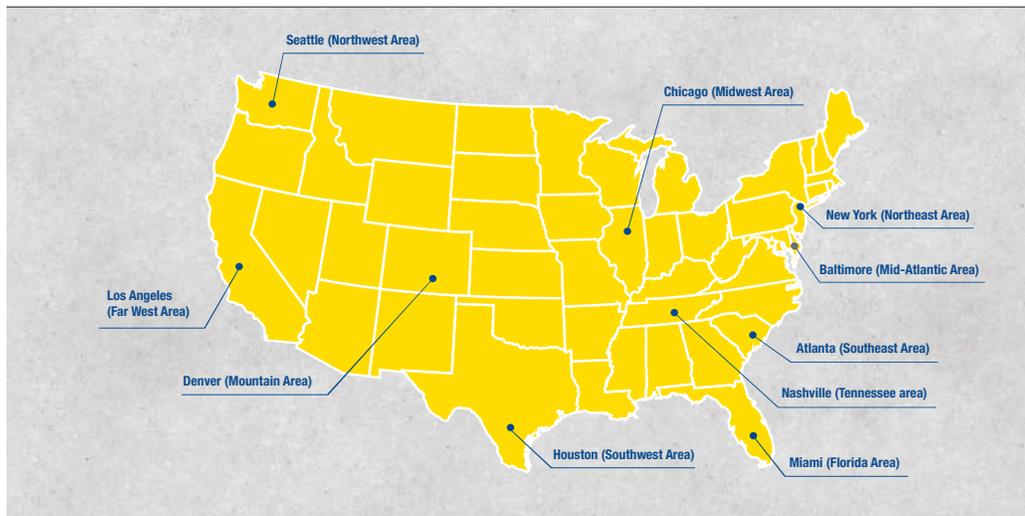
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