DokaXpress

The formwork magazine Vol. 20 Issue 2

doka

Turning Formwork Concepts into Reality

VOL. 20 ISSUE 2

Content

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Let me first stress my wish that you and your family as well as your employees are all safe. So much has happened in our world since our last issue of the Doka Xpress, and it is challenging times like these that cause us all to pause and check in on our fellow team members. We value all members of the Doka family and wish you and your team health and prosperity.

As we all navigate the uncertainties of the future construction market due to the pandemic, let me assure you that Doka is committed, as always, to being responsive to the changing landscape. Although approximately 73 percent of contractors in a recent survey noted that the industry will continue to experience work delays through this year and most economists are predicting that it will take several months for our industry to return to pre-pandemic spending, there are some silver linings. Approximately one-third of contractors noted they plan to hire more workers and 48 percent said they will maintain their existing workforce. It is our hope that you are busy and your employees have become adjusted to the "new normal."

While efficiency has always been a hallmark of our products, improving productivity is a key Doka principle to help contractors in these uncertain times. Doka has long offered easy, accessible formwork solutions and our commitment to providing these products continues through a variety of pandemic modifications including social distancing, online ordering and easy

> Improving productivity is a key Doka principle to help contractors in these uncertain times

shipping direct to the jobsite. As your one-stop shop for formwork, Doka now offers various construction plywood solutions as well. And for those that have grown to depend on our on-site field assistance and training, we continue to provide this service through social distancing and have also ramped up our online educational efforts through regularly scheduled webinars.

We invite you to browse through this issue and see the many examples of how we work with our customers on challenging building designs. You'll see several solutions using Superdek and SuperClimber for residential buildings, such as a 30-story luxury rental apartment tower in Miami, a mixed-used apartment complex in Los Angeles, 50-story luxury condo towers in Sunny Isles, Florida, as well as luxury apartments in Houston. This issue also features the intricate Doka solutions for a large high-performance computer data center in Wisconsin and a wastewater plant in West Virginia.

As we look ahead to the second half of 2020, we hope you'll join us in celebrating Construction Safety Week in September and wish all great success.

Be safe.

Michael Schaeffer,
Vice President, Doka USA, Ltd.

News in safety

CONSTRUCTION SAFETY WEEK

Join us for Safety Week now scheduled for sept. 14 – 18

Every day when we walk onto a job site, we know what's on the line. The work. Our reputations. A paycheck. But most importantly, what's really on the line are the lives and livelihood of every person on the job site. That's why we will do everything in our power to ensure that every one of us is safe. Our commitment to safety is a promise to ourselves, our co-workers and the families who rely and count on us. Safety Week is our opportunity to recognize and celebrate that promise to do whatever it takes to send everyone home safely every day. **Learn more: ConstructionSafetyWeek.com** ▪

Mask On and Pour On

Covid-19 has not slowed North Perimeter Contractors at the I-285 & GA-400 Interchange Replacement Project in Atlanta, GA. Staying masked up and pouring concrete has become a way of life. Using Frami has allowed NPC to cycle formwork from footings to straddle and multi-stem caps, to hammerheads. **#DoMoreWithFrami** ▪

Doka Safety Webinars – Register Today!

PROJECT

1

Building Luxury Apartments with Superdek

A new luxury residential midrise community – Alta River Oaks – is in the highly affluent River Oaks area of Houston, Texas. Alta River Oaks is a subtle blend of modern sophistication and high-end luxury. The development has a total of 364 units in a mix of 1-, 2- and 3-bedroom floor plans with a cast-in-place apartment.


2


3

1 The new Superdek grid system is a simple hand-set drop head slab formwork system with large grid / prop spacing — up to 8x8-feet.

2 Superior stability with integrated uplift lock and early removal of joists and stringers. Safety and productivity in setting and stripping building perimeters all being set from down below and 4 feet away from slab edge.

3 Patented wedge design provides minor effort to drop the deck.

4 Superdek allows for a much cleaner and safer jobsite. Workers were able to store equipment under the shoring without shoring legs getting in the way. With less equipment laying out in the open, workers had more space to safely move around.

The Challenges

At the Alta River Oaks apartments there was limited access to get material out of the first level basement. Levels 2 and 3 had an area of about 100,000 square feet to be formed. Concrete Contractor, Building Concrete Solutions needed a shoring system that would enable increased productivity.

The Solution

Building Concrete Solution's formwork manager wanted to try out the new Superdek grid system from Doka. Superdek is a simple handset drop head slab formwork system with large grid / prop spacing — up to 8x8-feet. With interlocking joists and stringers, and a unique slab edge forming solution, it provided increased productivity with less labor and maximum safety. There was a maximum flexibility in standard lengths, faster production with less material, and the Superdek drop head allowed for early removal of joists and stringers for faster cycling to the next area.

« We like how safe and easy it is to install and strip the perimeters by doing all the work from below. The 8x8-foot spacing allowed us to minimize the amount of material on site and increase our productivity. »

Ivan Castillo, Formwork Manager,
Building Concrete Solutions

The Facts

Name: Alta River Oaks

Location: Houston, Texas

Type of structure:
Garage / Residential Apartments

General Contractor: Wood Partners

Concrete Contractor: Building Concrete Solutions

Architect: EDI International

Developer: Wood Partners

Height: 11-foot typical ceiling heights

Stories: 3 Elevated Concrete Slabs

Cycle time: 4 days

Square feet:
Approximately 100,000 square feet per floor

Construction time:
4 months for the concrete structure

Construction Started: July 2019

Estimated Completion: Fall/Winter 2020

Products used:
Core: Frami Xlife & Framax Stripping Corners
Reshoring: Eurex Props,
Shoring: Superdek

PROJECT

From Customer Challenge to Concept to Reality = Innovation

Situated on the pristine sands of Sunny Isles Beach, The Estates at Acqualina will be comprised of two, 50-story luxury condo towers, dubbed 777 Via Acqualina and 888 Via Acqualina.

Preassembly of Doka Truss Tables onsite shows leg braces and table tops with plywood beign flown on them.

Acqualina which will feature 45,000 square feet of unprecedented amenities certain to provide a unique experience for everyone. Villa Acqualina will include a fitness center and wellness spa, a world-renowned 10,000-square-foot 5-star restaurant and Circus Maximus which is a full floor of amenities including a Formula-1 simulator, an ice skating rink with a mural of the ocean, 4 bowling lanes, golf simulator, movie theater, billiard room, kid's play room and Wall Street trader's club room. The Estates at Acqualina will also feature 6 pools – a rooftop social pool, lap pool with spas, infinity-edge pool overlooking the stunning ocean, zero-entry kid's pool, kid's pool with water slides and a FlowRider pool, soccer field, Bocce court, running path, dog park, basketball court and volleyball court. The Estates at Acqualina amenities are certain to impress everyone.

Construction is underway on both 50-story towers of the $1.6 billion project at 17901 Collins Avenue. In October 2018, developer, Trump Group, signed a $600 million contract with Coastal Construction to complete both towers and the amenity villa of The Estates at Acqualina, ranking as the largest contract for a condominium project in South Florida.

1st of it's kind construction solution

Concrete contractor R&S South challenged Doka to come up with a solution that would combine the safety of Doka's protection screen, with the speed of Doka Truss Tables. The Doka engineering and operations team from the South East came **>>**

The Facts

Project Name: The Estates at Acqualina

Location: 17901 Collins Avenue, Sunny Isles Beach, FL

Concrete Contractor: R&S South Inc.

General Contractor: Coastal Construction

Architect: Rafael Portuondo

Developer: Trump Group

Type of structure: two, 50-story luxury condo towers, dubbed 777 Via Acqualina and 888 Via Acqualina

Stories: Each tower is 50 stories

Cycle time: 1 floor per 4 days.

Sq. Ft: 22k per level on south tower typical levels and 16k sq ft on north tower per typical level.

1

2

>> up with a unique solution, used for the first time that would make this possible. What started out as a concept quickly turned into a mock up at the doka branch office in Atlanta, Ga. In turn this brought the customers wishes into reality by incorporating protections screens directly on Truss tables overall an effective and safe solution plus a victorious team effort for all involved.

The customer requested that Doka pre-assembled not only the protection screens but also the Doka truss segments and the truss table tops and ship them to site in order to speed up the process. This set off a complete team effort with a lot of co-ordination between our customer and our team. It was an all hands on deck that required thousands of not only working dwgs but also pre-assembly dwgs from engineering in order to keep our pre-assembly team meeting the timely needs of the project.

Doka Protection Screen Xclimb 60 with frame enclosure Xbright with mesh inlay were used on the two levels below the working level in order to provide the additional protection required on the non-active levels were incorporated outriggers into the design in order to maximize access to all floors.

The protection screens provided an enclosure around the Truss tables enabling all work to be carried out in complete safety, protecting not only the personnel working below but also the two adjacent properties, which was a pre-requisite by the projects owner.

Additional formwork in use includes Frami wall formwork to form the architectural arches that are visible on this project. Doka 10k shoring was used to support and pour the architectural arches on the façade of the towers providing a smooth concrete finish. For the garage area, Dokamatic Tables, and single-side wall formwork was used on the basement walls, along with Frami column formwork.

"Dokas formwork helped expeditie our work giving us not only an economical and productive formwork system but a complete safety solution enveloping our work with a rail climbing screen", stated John Longarini, Project Manager, R&S South Inc.

Construction is slated to be completed by end of 2020. ▪


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6

1 Doka's Engineering and Operations team took customer R&S South's concept and turned it into realistic solution combining Protection Screen with Doka Truss Tables.

2-4 Fast Cycling and Ultimate Safety: The solution was custom designed specifically to meet the contractor's needs. Combining the ultra-fast Doka Truss tables with the protection screens enabled all work to be carried out in complete safety, protecting not only the personnel working below but also the two adjacent properties, which was a pre-requisite by the projects owner.

5-6 Before/After: Architectural arches formed with Frami Xlife and 10k shoring.

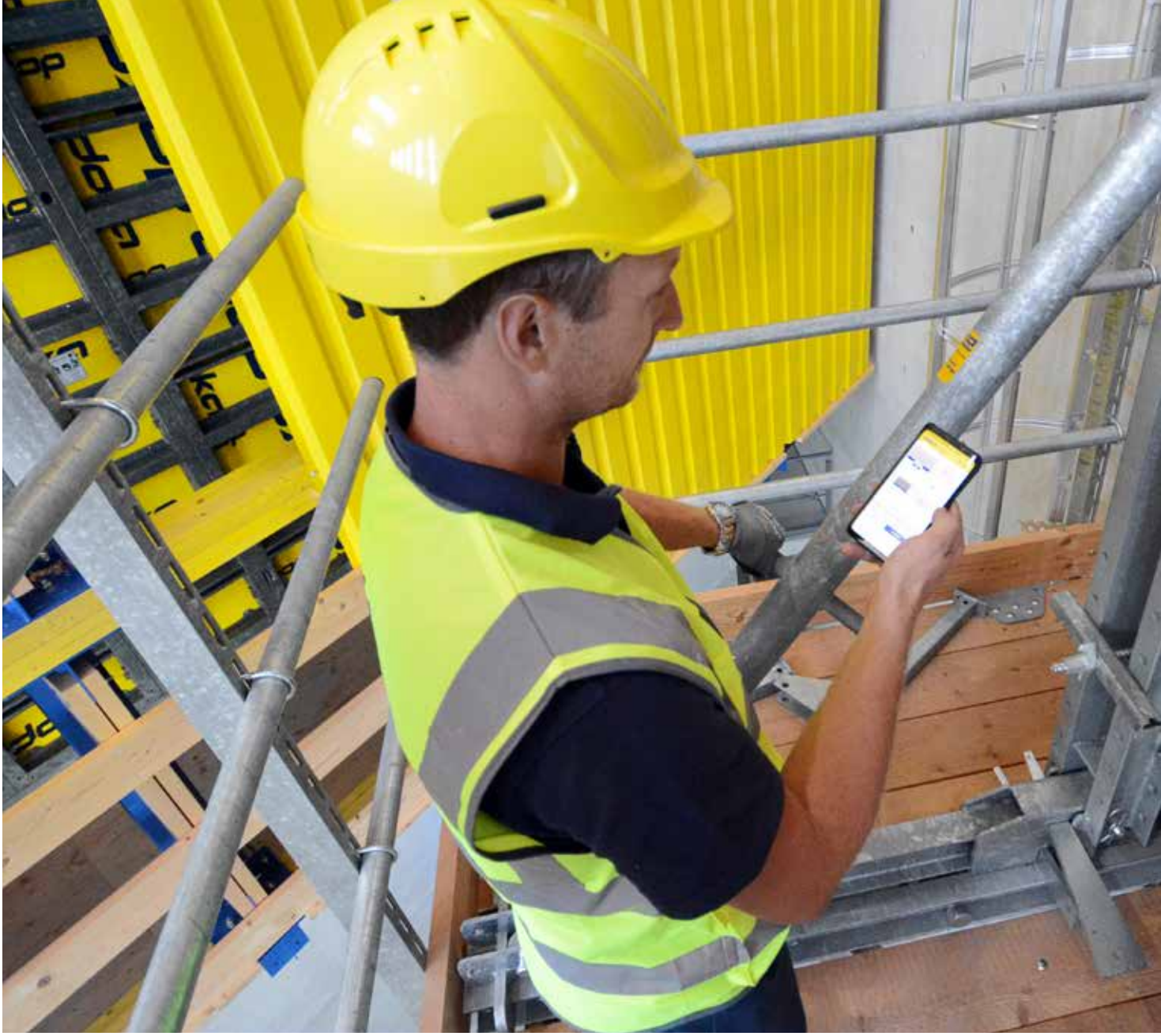
This was a challenging project from the very beginning, not only meeting the customers' expectations and challenging solutions that required our complete Doka Team to rise to the challenge, but also executing the plan along the way on a project of this magnitude with so many working areas has made me proud and thankful for the team that we have.

Fernando Doreste, Account Managers Doka Miami.

We chose Doka for a complete vertical and formwork solution on such a large project based on the past performance of Doka on our projects here in South Florida and New York City, stated John.

John Longarini, Project Manager (left)
Nuno Barrosa, Project Superintendent (right)
R&S South Inc.

PRODUCT



Sensor system for positioning and aligning wall formwork of highrise cores

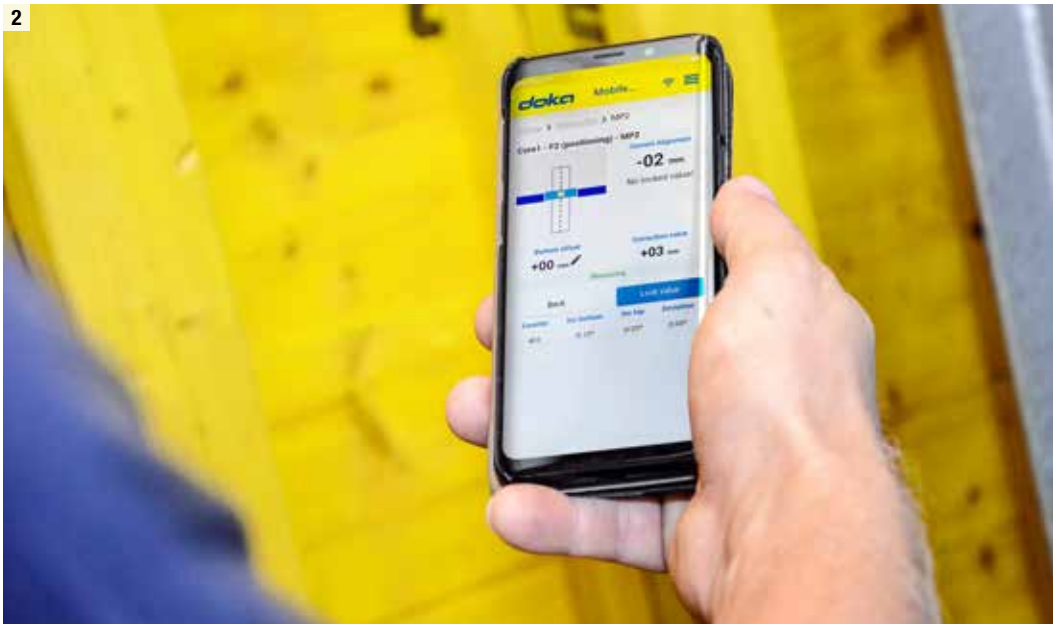
DokaXact – Forming with pin-point precision

DokaXact is the first interactive sensor-based system for precise positioning of wall formwork elements for highrise cores. With this new product, Doka offers an important component for digitizing construction site processes and in doing so takes an important step toward smart construction sites.

DokaXact is a tool for surveyors and crews, which allow site teams to quickly and precisely plumb and align wall formwork used with core formwork climbing systems. It consists of a wireless centralised processing unit, which communicates with multiple sensors attached to defined surveying points of the wall formwork.

When calculating the required position of formwork elements, the actual known as-built of the preceding casting section serves as the base, then the DokaXact app provides the site crew with instructions during the positioning process so that the formwork is plumbed and aligned with pin-point precision for the next casting section.

1



2

3

By accessing the cloud, all stakeholders are able to view and record the live information related to plumbing and alignment, regardless of location.

The live monitoring function can also show how all measuring points in the same formwork section change when individual measuring points are plumbed and aligned. This is not an option when aligning formwork points with traditional sequential methods. The sensor system is accurate down to ± 1/16th of an inch, therefore allowing the structure to be built more easily within the predefined structure tolerances. Time-consuming finishing work and resulting expenses for subsequent trades, such as from lift installers, are reduced.

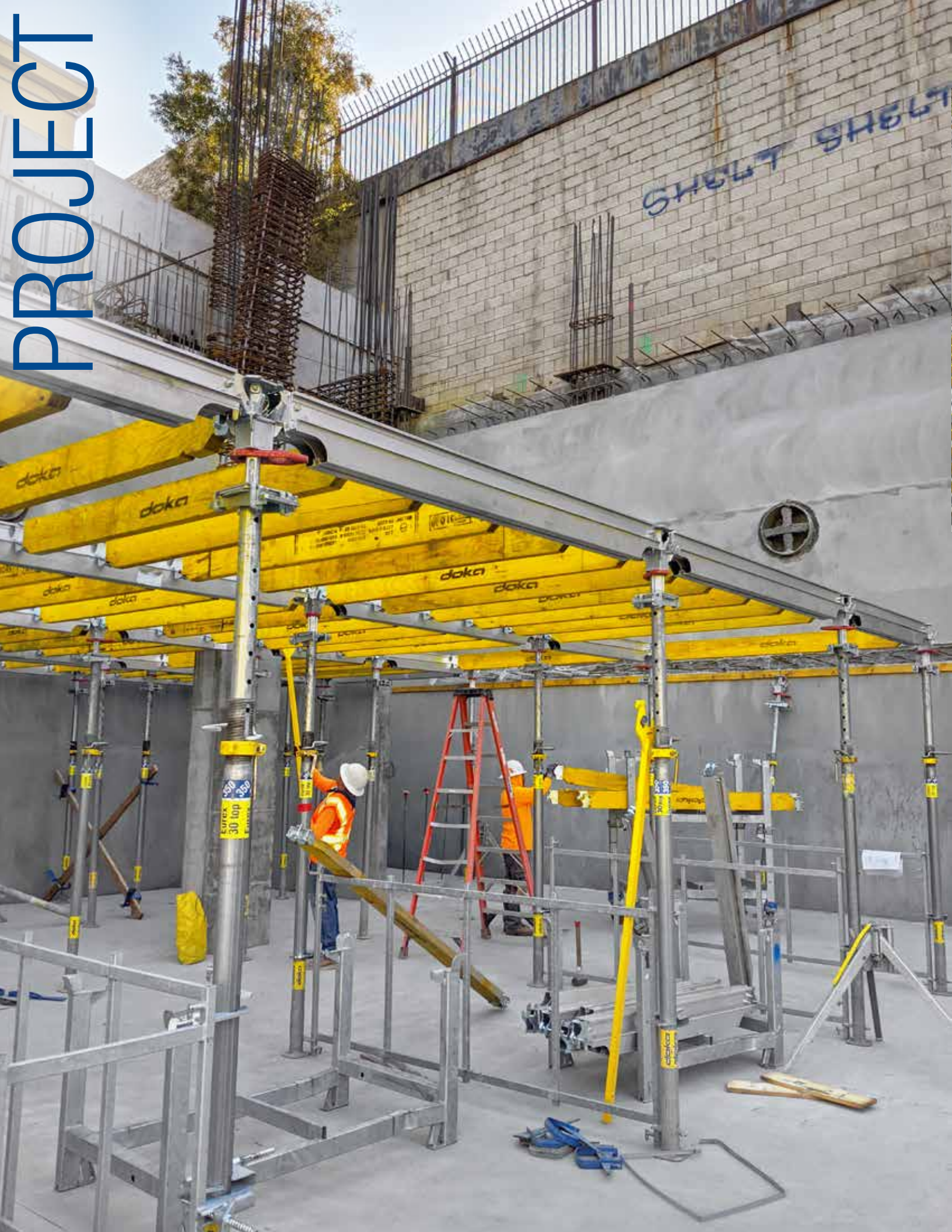
The system's intuitive operation gives site crews more autonomy when plumbing and aligning formwork of highrise cores. This process yields up to 75% savings in surveying services, as the majority of plumbing work can be undertaken without the need for a surveyor. The surveyor is most typically only required now for the as-built surveying, thus accelerating casting section production and potentially reducing downtime while inspectors attend. Digitising the process of plumbing and aligning the formwork also allows for seamless documentation that can be accessed by defined user groups regardless of time and location. ▪

1 DokaXact takes an established process and enables the construction companies to form concrete cores with a state-of-the-art technology.

2 When using the DokaXact app, formwork can be positioned and aligned for the next casting section with pin-point precision.

3 Multiple sensors attached to defined surveying points of the formwork measure reduntantly the actual inclination of the formwork and communicate wirelessly with a centralized processing unit.

PROJECT



The Facts

Name: Emerald

Location: Los Angeles, Calif.

Type of structure: Mixed use

Construction work: Shangri-La Construction

Architect: MVE Partners

Developer: Jade Enterprises

Height: 92 feet

Stories: 7 stories plus the roof

Cycle time: 16 days

Square feet: 102,000 square feet of Doka's scope

Construction time: 9 months

Products Used:
Superdek slab formwork

Designed with a large grid / prop space up to 8-foot-by-8-foot in size, Superdek immediately reduces the number of parts and pieces on site and significantly reduces the quantity of props required for the active deck and each re-shore level below.

Superdek Helps Emerald Hasten Schedule

Emerald is a mixed-use apartment complex in Downtown Los Angeles.

The project, which replaces an L-shaped parking lot, will consist of a seven-story building featuring 154 apartments and approximately 10,700 square feet of ground-floor retail space. This is located above a two-level basement parking garage with accommodations for 158 vehicles. The customer learned about Doka's Superdek by visiting the Riverside yard for a demonstration and was impressed by the all the features and benefits it allowed. This included increased productivity as well as improved safety, particularly when it came to striking the drop heads and stripping out the stringers and joists, all from the ground. Customer is very impressed with product ease and speed of installation. They were able to accelerate the schedule by two weeks. ▪

« We like the Superdek product very much because of the ease and speed the material is installed and stripped. »

Alex Perez, Superintendent, Shangri-La Construction

The Challenges

For the underground parking it was necessary to cycle material up through itself. There were changes in slab thickness and height, as well as difficulty getting the perimeter pour strip to stay in place. All this led to a very difficult cycle plan to try to maximize the re-use of Superdek material while accounting for the changes.

The Solution

The large 8x8-foot grid size allowed the customer to move material to next level by using a forklift. This provided a faster cycling time than using pallets jacks when using a smaller grid size. The drop head feature allowed posts to stay in place for re-shoring, leading to improved cycling of material. The customer was able to accelerate the schedule by two weeks.

PROJECT

Data Center Foundation Rises with Custom Radius Top 50

Foxconn Technology Group continues construction at the future Wisconn Valley Science and Technology Park in southwestern Wisconsin. The entire complex will ultimately be a manufacturing and research campus on close to 3,000 acres. Foxconn has completed the Multipurpose Building and is at work on the High-Performance Computing Data Center. It is to be a nine-story, globe-shaped, metal-and-glass structure that will serve as a network operations center.

Challenges

There were four main elements that made the radius foundation walls especially challenging from a formwork aspect:

- The radius foundation walls had inconsistent pilasters on the interior wall of the design. Some pilasters were 8-feet wide while others were 2-feet 6-inches wide. Some had spacing of 4 feet in between pilasters while others were 10 feet or more. To top it off, the face of the pilaster needed to have a radius as well.
- The foundation walls were 27 feet tall with a concrete slab going over the top of the wall at 15 feet. The formwork needed to be flexible enough to tackle a 15 foot wall and then break down enough to pour a 12 foot wall so there would not be 3 feet worth of reach down to finish the wall.
- A Class A Finish was not a requirement; but the walls needed a formwork system that left a good finish.
- The project had a tight schedule. A custom wall solution was going to be required since the general contractor did not have the time to build gangs on site.

Solution

Doka's Custom Radius Top 50 Wall Formwork was the perfect fit. Utilizing the flexibility of Top 50, Doka was able to design gangs that would easily splice together and move around as needed from pour to pour. Additionally, we were able to create a removable 3-foot upper portion of the formwork so that it would work for both the 1st and 2nd jump. Doka Engineering collaborated with Mortenson to produce a formwork layout that minimized the amount of rework in between each pour and maximized the formwork on site. Doka Preassembly Services produced fully preassembled gangs utilizing CNC cut shaping timbers built to the exact radius needed on site. The Wall Forms were able to come off the truck and put right into use. This saved countless hours in the field. ▪

1

1 Frami handset wall formwork in combination with climbing formwork MF240 on the outside of the building core.

2 Formwork set in place: Top 50 radial formwork is a practical circular formwork system that delivers smooth, curved walls from radius of any size.

3 Formwork stripped: The shape, size, tie-hole pattern and form-facing on the Top 50 can be adapted to suit any requirement.

4 The 8'-0" (2.40 m) wide platforms on Climbing formwork MF240 provide plenty of space for safe working inside a fully enclosed platform.

2

3

Doka was able to tackle a very challenging foundation wall job with ease. Using these solutions allowed Mortenson to be well ahead of schedule.

Andrew Lerg, Account Manager, Doka

The Facts

Name: Foxconn Data Center

Location: Mt. Pleasant, Wis.

Type of structure: High-tech manufacturing facility

Construction work: Mortenson Construction

Construction management: GilbanelExyte

Stories: 9 stories

Formwork rental duration: 4 months

Products Used: Foundations: Custom Radius Top 50

4

SAFETY

Introducing the Newest Innovations in Safety

Every day, we walk onto construction sites with one goal in mind – get the job done safely. We take great pride in the role we play shaping the communities in which we live, work and play. But even more than that, we feel an unwavering responsibility to one another, our families and friends to make sure we all return home safe every day. We invite you to explore our latest innovations in jobsite safety, register for one of our upcoming webinars or contact us for a customized experience. Doka is here to provide live onsite demonstrations on various **#DokaSafety** solutions in addition to hosting an online safety meetings for your team.

Falpro
The mobile fall protection anchor point

Construction projects continue to become more and more challenging and at the same time have shorter completion schedules with tighter budgets. However, sacrificing safety, is unacceptable. The current safety regulations in slab-formwork construction only condition- ally satisfy the requirements of health, safety and ergonomics. Falpro with its unique engineered anchoring design, closes this safety gap. It reduces the need for a safety monitor or a temporary cable lifeline system on leading edge deck construction and is the ideal combina- tion of safety and freedom of movement for the user. ▪

Safety Net Fans
The ultimate debris net system for any building structure

Doka's Safety Net Fan are pre-assembled units which can be used on any structure and adapted to any shape. The system is available in two models: standard width and extra wide to safely catch objects and debris. Different sizes are available to perfectly adapt the system to your requirements and applications. ▪

Meet Safety Jon

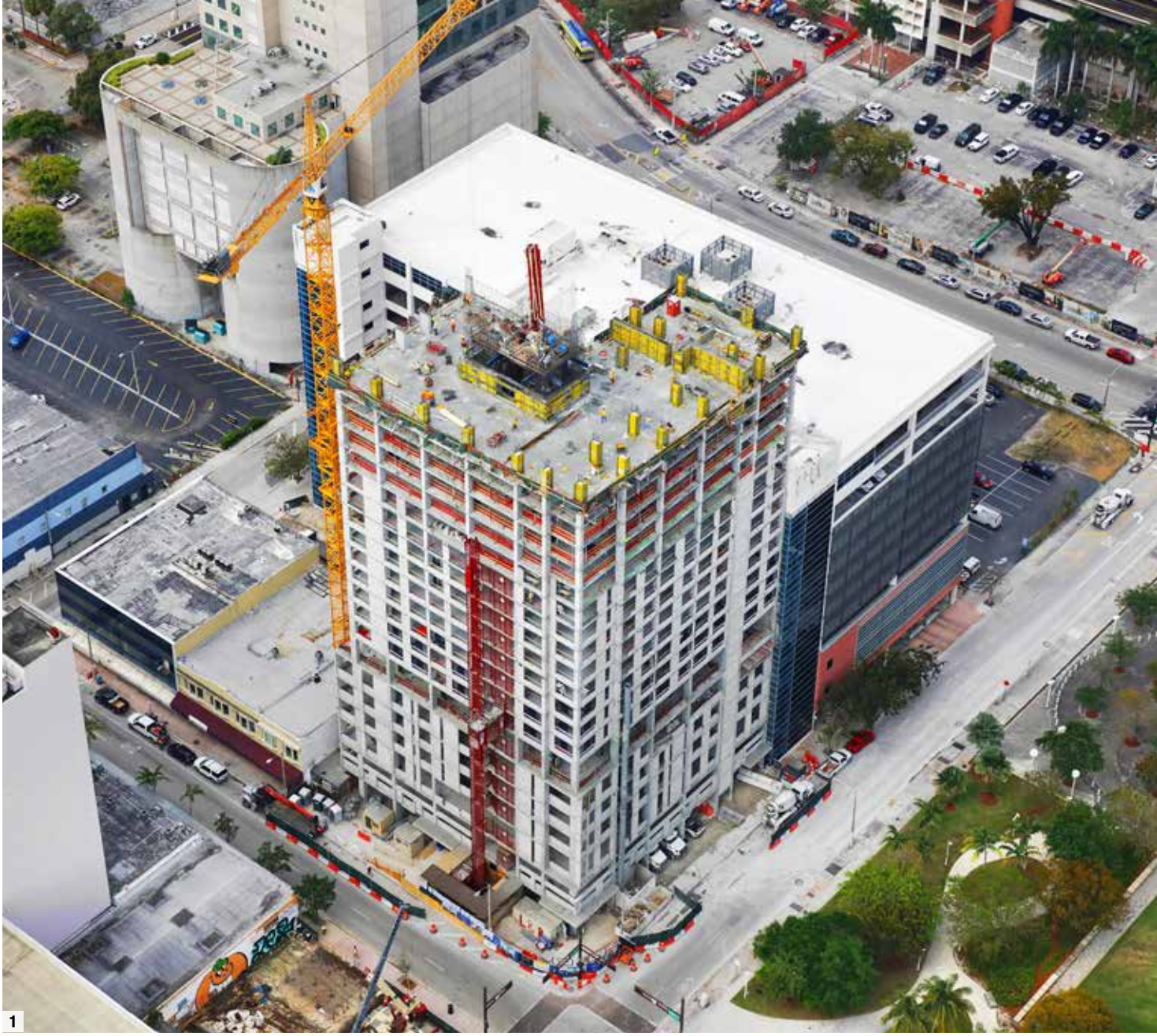
Jon Hammond, Doka Senior Safety Specialist is available for complimentary on the job demonstrations, virtual learning, and customized training on all Doka safety solutions.

Contact Jon.Hammond@doka.com for inquiries.

Smart Edge
The innovative edge protection/guardrail system

Engineered Edge Protection for increased safety, reduced labor and simplified site logistics at perimeter edges, internal openings, elevator shafts and stairs. ▪

PROJECT



1

Grand Station tower project in downtown Miami rises with SuperClimber

The 30-story building will have 300 luxury rental apartments, about 4,000-square-feet of ground-floor retail space and will provide an additional 350 parking spaces for the parking authority on top of the Courthouse Center Garage. The rental tower will also include an amenity deck with a gym, pool and spa and a community work room.

2

1 The construction costs of the project are estimated to be roughly $50 million. Grand Station is expected to be completed in the Spring of 2021.

2 The Superclimber SCP was adjusted to run with the slabs still allowing the outside formwork to hang from the gantry system without running ahead.

3 Framax Xlife in use on the Sheer walls. The large gang forms and wide tie spacing reduce the forming times for large areas to a minimum.

> Almost 12,000 sq. ft. per deck on typical levels was being achieved on a 4-day cycle prior to Covid. Once new covid regulations were implemented into the work schedule L&R was still able to achieve a 5 day cycle and finish 2 months ahead of schedule, stated Alejandro.

Frank Rodriguez, Project Superintendent (left)
Alejandro Alvarez, Project Manager (right)
L&R Structural Corp.

3

Free the Crane

L&R Construction biggest challenge on this project was access to only one tower crane for the duration of the project. Utlizing automatic climbing formwork Super-Climber SCP allowed them to remove the vertical formwork out of the cycling process and freeing the crane. In addition the SuperClimber was adjusted to run with the slabs by pouring the interior landings secondary and trailing behind the interior formwork.

Mastering Column Forming

L&R developed a unique and effective method for pouring columns. Utilizing doka's frami handset formwork, the team ties rebar double the height, allowing them to reduce the overall crane picks of the entire structure in half. Unlike traditional methods this has proven success over and over for L&R.

Additional systems in use include, Framax Xlife used on the sheer walls. The construction costs of the project are estimated to be roughly $50 million. Grand Station is expected to be completed in the Spring of 2021. ▪

The Facts

Project: Grand Station Parcel B

Location: 40 Northwest 3rd Street in Downtown Miami

Concrete Contractor: L&R Structural Corp

General Contractor: Ortega

Architect: Zyscovich Architects

Height: 30-stories, 322'

Cycle Time: 4-day pre-Covid

PROJECT

Wastewater Plant Benefits from Doka's One Supplier Solutions

Improvements were needed on the Star City Wastewater Treatment Plant Digester No. 1 in Star City, West Virginia.

Interior of the clarifier showing DokaScaff Stair Tower, Top-50 radius forms and MF240 platforms.

The 90-foot-tall structure contained true radius walls, sloped radius roof and 45-degree sloped radius hopper floor slab. The customer needed unique solutions that allowed them to pour the structure in a safe and quick manner so they could stay true to the project's critical path timeline. This project also had very a stringent level of safety requirements.

Doka was able to provide several things in one package for the customer. Through a series of meetings with the contractor and owner, Doka was able to come up with solutions for each of the unique areas of the structure, as well as efficient systems that allowed the structure to be completed on time. Doka provided several additional areas of support, such as engineering, onsite tech support, quick and efficient delivery of the different systems. Doka also offered a level of safety that met the requirements of this unique job and high safety standards of the customer. Ulliman Schutte was able to get all that from one supplier source.

The Challenges

The footprint for this wastewater treatment plant is very narrow, necessitating a very tall, narrow structure for the clarifier. This is a unique structure in that the roof cap slab and the cone shaped hopper floor are both radius and sloped. The sloped roof structure had to be poured before building the 45-degree sloped hopper floor. All shoring material for the roof had to be crane lifted out of a 12-foot opening 95-feet high, and the shoring and formwork for the hopper floor had to be lifted in through the same opening. The 45-degree floor slab was problematic because the hopper had to be a true radius. The walls also had to be a true radius system, not chorded with panels.

>>

The Facts

Project Name: Star City Wastewater Treatment Plant

Location: Star City, W.Va

Type of structure:
Radius clarifier for a wastewater treatment plant

General Contractor: Ulliman Schutte, Miamisburg, Ohio

Architect: Strand Associates, Cincinnati, Ohio

Owner: Morgantown Utility Board, Morgantown, W.Va.

Height: 90 feet

Square feet:
approx. 35,000 square feet including walls, roof & hopper slabs

Construction time: approx. 12 months

Products used:
Clarifier Walls: Radius Top 50 w/shaping Timbers & MF240 Platforms; Roof Cap Shoring: Staxo 100 Shoring & Radius Top 50 gangs w/shaping timbers; Hopper Cone Shoring: Staxo 100 Shoring, Bridge Overhang Brackets, T Series spindles & Radius Top 50 gangs w/shaping timbers; Roof and shoring access: DokaScaff Stair Towers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>> The Solution

Doka's Radius Top 50 system was used for the radius digester walls with shaping timbers, set on our MF240 platforms. Custom brackets connected the MF240 platforms in a radius configuration, both inside and outside the walls. The Top 50 wall gangs were made to a custom height so the entire clarifier could be poured in five lifts, and provided Doka with an opportunity to pre-assemble all of the radius formwork gangs. An onsite Doka technician helped with platform and formwork assembly.

The solution for the roof cap slab was to use Doka's Staxo 100 shoring system to pour a slab that was not only round, but sloped upward to a center opening of 12 feet. This required a platform level or "dance floor" to be constructed just below the roof slab elevation to allow safe access to assemble the radius sloped formwork that set on the shoring. The capability of Staxo to be lifted in tower sections made removal through the small opening easier during stripping.

Access to the upper wall pours and the roof shoring was accomplished using two separate DokaScaff stair towers that allowed for double egress. This met the rigid safety requirements for the jobsite.

The most challenging portion of the project is the sloped hopper floor of the clarifier. With a 45-degree slope, the heavy slab had to be poured with a true radius top, because this is a fluid holding vessel, and had limited access. Because the roof slab had to be poured first, all of the material had to be lifted in through the small opening in the roof, and the few small door openings at the base. This was accomplished by using multi-tiered Staxo 100 shoring combined with T-Series spindle struts. The upper portion of the hopper cone was supported by bridge overhang brackets where the hopper met the radius digester walls. The shoring was decked with our Top 50 radius gangs using shaping timbers for both the underside and top of the slab. The hopper cone slab was poured in separate "pie" pieces to make finishing easier. ▪

4

1 A Doka technician helps with platform and formwork assembly onsite.

2 The Top 50 wall gangs were made to a custom height so the entire clarifier could be poured in five lifts, and provided Doka with an opportunity to pre-assemble all of the radius formwork gangs.

3 The most challenging portion of the project is the sloped hopper floor of the clarifier. With a 45-degree slope, the heavy slab had to be poured with a true radius top, because this is a fluid holding vessel, and had limited access.

4-5 Access to the upper wall pours and the roof shoring was accomplished using two separate DokaScaff stair towers that allowed for double egress. This met the rigid safety requirements for the jobsite.

5

Buy formwork online.
Visit Shop.doka

We bring the Superdek demo and training to you!

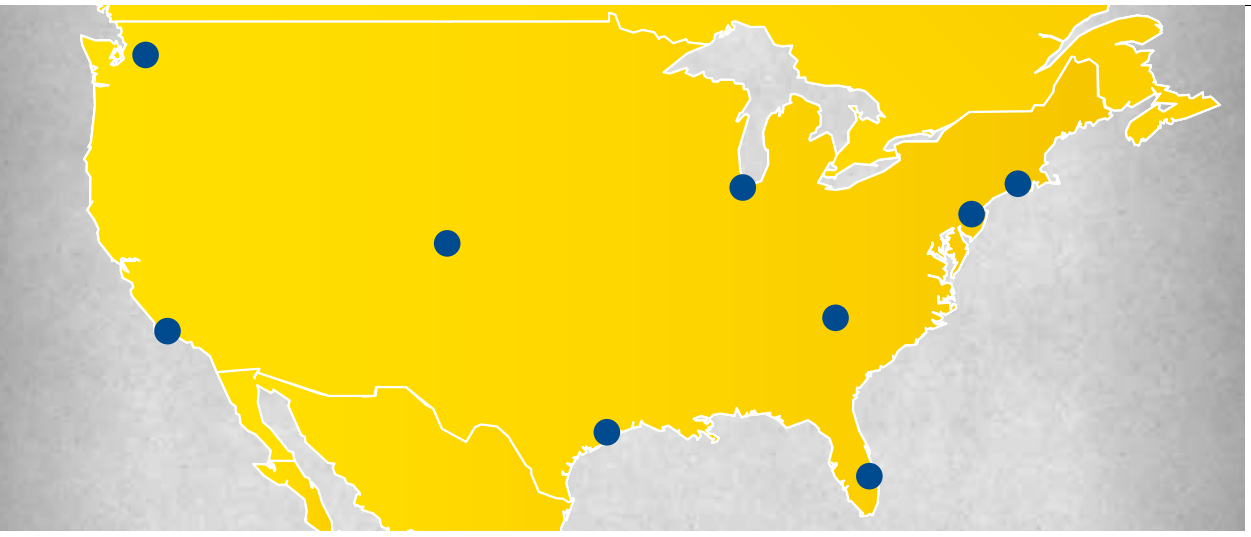
Check out our latest training with the SouthWest Carpenters Union in Los Angeles. Recently the team learned hands-on about our Superdek slab formwork and shoring system. Training OFF-site ensures additional SAFETY and SPEED ON-site. Call to schedule a complimentary training session with us! ▪

https://bit.ly/SuperdekTraining

https://bit.ly/DokaWood

Got Wood?

We now offer various construction grade plywood ready to ship throughout the United States. Contact your local Doka representative to schedule pick up or delivery. ▪



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