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SUPERSTRUCTURE

Comprehensive Veterans Medical Care

Returns to the Gulf Coast

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CLARK CONSTRUCTION

Photo by: Dominique Muñoz

PREPARING FOR THE FUTURE

THROUGHOUT OUR COMPANY'S HISTORY we've seen 'the future' in many forms. The future is in automation! The future is in technology! The future is in virtual reality!

Countless movies, books, and thought leaders have speculated on what the future will hold and how companies should prepare. Many organizations, including us, explore and implement futuristic technologies to maximize efficiency, safety, and quality. At Clark, we realize the role new technologies and tools play, but we also know they are not the key to our success. It is the human element, our people, that provide the promise of a brighter future.

We pride ourselves on attracting the best and the brightest people to our organization. Once here, we are committed to challenging, training, and preparing them to be future leaders. Providing our employees with the best place to grow and develop is one of our core values—one that has kept us stable, successful, and focused on continuous improvement. You can see evidence of this throughout this issue of Superstructure, but perhaps nowhere is it more apparent than in our recent corporate executive promotions. Two employees, one who started as an intern, the other shortly after graduating college, now lead our national operations and talent management efforts.

This issue takes a deeper look at the opportunities available to our employees and the efforts we take in training and career development. A first-person account from one of our interns details how he brought his graduate-level research to life on one of our project sites, and what he learned from the experience. One of our largest projects—Rail to Dulles—is providing significant opportunities to engineers early in their careers.

By recruiting, retaining, and developing our people, we are laying the foundation for a bright future.

This edition also explores one of the ways we pass decades of institutional knowledge through generations. Our Façade Quality Control class, offered to newer employees, is a unique combination of in-class and hands-on education, taught by quality control personnel with decades of experience. This training program is one way we ensure the quality of the projects we deliver for our clients.

You can't predict the future, but you can prepare for it. And by recruiting, retaining, and developing our people, we are laying the foundation for a bright future. ■

SUPERSTRUCTURE

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CLARK CONSTRUCTION

SUPERSTRUCTURE

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FEATURES

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ON THE COVER

Situated on 34 acres in New Orleans' Mid-City neighborhood, the Southeast Louisiana Veterans Healthcare System is designed to serve the estimated 70,000 veterans in the region.

Photos by: Sean Airhart/NBBJ

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Atkinson—and Driller Mike—Playing a Key Role in Atlanta Water Supply

Guy F. Atkinson Construction, in a joint venture with Technique Concrete Construction, was awarded an $83 million contract by PC-Russell for the Atlanta Water Supply Program Phase I Extension project. Through the multi-phase initiative, the City of Atlanta will ensure a 30-day supply of fresh water for area residents.

The Phase I Extension will connect the Bellwood Quarry to the Hemphill Water Treatment Facility. At the Bellwood Quarry site, the project team is constructing four shafts and approximately 1,000 linear feet of adit tunnels connecting the shafts to each other, and the quarry. The main water conveyance tunnel will run approximately 5,500 linear feet from the quarry to the Hemphill Water Treatment Facility, where the project team will construct five additional small-diameter well shafts.

The Tunnel Boring Machine—dubbed "Driller Mike"—is 400 feet long and features a 12-foot rotating diamond head.

The project's main tunnel is being excavated by a Tunnel Boring Machine (TBM) dubbed "Driller Mike" in honor of Atlanta hip-hop artist Killer Mike. Driller Mike was assembled through the non-traditional Onsite First Time Assembly (OFTA) approach. Tunnel boring efforts began in August and completion of the full project is scheduled for winter 2018.

The project is designed to achieve LEED® Silver certification. ■

Rendering courtesy of Shalom Baranes Associates

Mixed-Use Campus Takes Shape in Tysons

This fall, Clark began construction on The Boro: Blocks A & B, a critical component of a planned 4 million square-foot mixed-use complex in Tysons, VA. Under a contract from KETTLER and The Meridian Group, Clark is building three residential towers, ranging in height from 12 to 32 stories, a five-story office tower, and two levels of below-grade parking. The Clark team also will install an outdoor amenity space on the ninth floor terrace that connects the residential towers, and perform streetscaping and related infrastructure work.

When complete, The Boro will be a vibrant mix of 316,000 square feet of retail space, 1,500 residences, 1.8 million square feet of office space, and 250,000 square feet of hotel space adjacent to the Greensboro Metro Station. The community's retail will be anchored by a 70,000 square-foot Whole Foods and a 15-screen luxury movie theater. The outdoor Boro Park will feature seating, kid-friendly splash pads, and visual art.

The Boro: Blocks A & B are designed to achieve LEED® Silver certification. Substantial completion is scheduled for December 2019.

Shalom Baranes Associates is the project architect. ■

New Contracts

Across the country, and in a variety of markets, Clark Construction Group, and our subsidiaries, have recently been selected to deliver a number of new projects. This quarter, our new work includes:

RESIDENTIAL

West Lane
Construction of a 165,000 square-foot, seven-story residential building with 112 apartment units and two levels of below-grade parking
Location: Bethesda, MD
Company: Clark Construction Group
Client: SJG Properties
Architect: SK+I
Contract Amount: $30 million
Completion: Spring 2018

St. Matthew's Redevelopment
Construction of a 320,000 square-foot structure containing an 11-story apartment building and two levels of below-grade parking, as well as an adjacent church on the ground level
Location: Washington, DC
Company: Clark Construction Group
Client: Trammell Crow Company's High Street Residential/CSG Urban Partners
Architect: Shalom Baranes Associates
Contract Amount: $60 million
Completion: Fall 2018

Rendering courtesy of Flad Architects

CIVIL

355 Crossing
Construction of a new below-grade pedestrian tunnel under Rockville Pike connecting the National Institutes of Health campus with the Walter Reed National Military Medical Center Campus
Location: Bethesda, MD
Company: Clark Civil
Client: Montgomery County Department of Transportation
Engineer: Rummel Klepper & Kalh, LLP, KGP Design Studio, and Meuser Rutledge Consulting Engineers
Contract Amount: $81 million
Completion: Summer 2020

SCIENCE

Argonne Materials Design Laboratory
Construction of a 110,000 square-foot laboratory containing open and collaborative spaces with vibration- and EMI-sensitive operations
Location: Argonne, IL
Company: Clark Construction Group
Client: Argonne National Laboratory
Architect: Flad Architects
Contract Amount: $65 million
Completion: Spring 2019

HIGHWAY

I-95/Route 630 Reconstruction and Widening
Reconstruction of the existing interchange as a diverging diamond interchange with two parallel bridges
Location: Stafford, VA
Company: Shirley Contracting
Client: Virginia Department of Transportation
Engineer: Dewberry Consultants
Contract Amount: $100 million
Completion: Summer 2020

National Museum of the United States Army, Roads and Infrastructure Improvements
Construction of a signalized intersection at Fairfax County Parkway, as well an entrance road to serve the museum
Location: Fort Belvoir, VA
Company: Shirley Contracting
Client: United States Army Corps of Engineers
Contract Amount: $20 million
Completion: Fall 2018

Route 640/Minnieville Road Widening
Widening and reconstruction of Minnieville Road from Route 234 to Spriggs Road
Location: Woodbridge, VA
Company: Shirley Contracting
Client: Prince William County
Contract Amount: $29 million
Completion: Fall 2018

Rendering courtesy of Shalom Baranes Associates

Ballston Quarter Residential Tower
Construction of a 455,000 square-foot, 22-floor building containing 406 residential units and 66,000 square feet of retail space
Location: Arlington, VA
Company: Clark Construction Group
Client: Forest City
Architect: RTKL
Contract Amount: $114 million
Completion: Winter 2019

COMMERCIAL

Ballston Quarter Retail Renovation
Renovation of 310,000 square feet of retail space in the existing Ballston Common Mall
Location: Arlington, VA
Company: Clark Construction Group
Client: Forest City
Architect: Cooper Cary
Contract Amount: $64 million
Completion: Summer 2018

Company Moves to New Helmet for Greater Workforce Protection

Being a leader in safety means continuously evaluating the way we build and challenging the status quo to identify better means of keeping our people safe. Through this commitment, we have identified a new style of hard hat, the KASK Zenith helmet, that exceeds industry standards and provides our workforce with increased safety and comfort. Clark recently adopted this helmet as our standard head protection companywide.

A recent study by the National Institute of Occupational Safety and Health noted that construction workers sustain more traumatic brain injuries than workers in any other industry in the United States. Falls are the leading cause of these injuries. While hard-hats provide protection, a chinstrap must be worn to prevent your hat from coming off your head during a fall.

A collaborative group, including members of our Safety and Research & Development Departments, and Superintendent Steering Committee, researched numerous hardhat and chinstrap options to find a helmet that provides optimal protection for our workforce. After extensive evaluation and field and laboratory testing, we selected the KASK Zenith as the ideal head protection system for the Clark team. ■

INCREASED SAFETY AND COMFORT

The KASK Zenith features a sleek design and uses a molded polystyrene inner shell to provide the highest level of safety. Standard with an integral four-point eco-leather chinstrap with adjustable straps, the new helmet also features:

- A high-density foam liner to attenuate impact energy and provide side impact protection for the head
- A center ratchet wheel and two side wings, allowing users to adjust the suspension for a custom fit
- An optional visor, which may be worn in place of safety glasses
- Attachments for a lamp and earmuffs
- Removable and washable padding
- A Class E (electrical) rating

Bringing Cutting Edge Research and Practice Together

By Gustavo Garcia

The web-based Visual Production Management system uses images and videos to continuously reconstruct and visualize the project digitally in 3-D.

This summer, I was fortunate to have a fantastic intern experience with Clark. I am a civil engineering graduate student at the University of Illinois at Urbana-Champaign and my studies focus on exploring the synergies between Lean construction and Building Information Modeling (BIM). Clark's collaborative relationship with the university provided this unique opportunity to evaluate how Lean principles and Virtual Design and Construction (VDC) impact the reliability of both long-term and short-term plans. I spent the summer on site with the construction team building the 40-story, 1,200-guest-room headquarters hotel at Chicago's McCormick Place Convention Center. During that time, I also had the opportunity to work closely with Clark's Research & Development (R&D) Group.

In school, I am part of a team that developed a Visual Production Management system that aims to improve planning, coordination, and communication on construction sites. This web-based platform uses images and videos to continuously reconstruct and visualize the project digitally in 3-D. By integrating this platform with BIM that is tied to the project schedule, we can better measure progress and productivity, and analyze risk for delay. Further, putting schedule tasks and project performance data in a visual context for the entire team provides transparency in project execution and helps project teams better plan, coordinate, and communicate.

I worked with my fellow project team members and Clark's R&D personnel to pilot this system on an active construction site and collaborate with industry front-runners in project controls, virtual design and construction and safety. As important as testing the technology was, through this internship, I also got real on-site construction management and safety experience, which is difficult to learn by staying in an academic environment. On the McCormick Place project, I learned first-hand that effective planning, project controls, and safety are three crucial elements in successfully delivering a project on time, within budget, and safely. What I also learned is how emerging technologies can play a valuable role in enhancing coordination and communication between field personnel and project management teams. This observation is something I will take back to graduate school as I continue my studies.

My summer internship provided me with invaluable experience that cannot be replicated anywhere but on a construction site. As much as I enjoyed the hands-on experience, I also liked being exposed to the different facets of the Clark organization—from the R&D and VDC teams, to the senior management personnel in Chicago. During the academic year, I spend much of my time thinking of, developing, and testing ways to improve the construction process. To spend time with a company that also has resources dedicated to innovation—and encourages the use of new technologies and ideas on its jobsites—was an unforgettable experience. ■

The 40-story, 1,200-guest-room headquarters hotel at the McCormick Place Convention Center rises into the Chicago skyline.

__Gustavo Garcia__ is a graduate student at the University of Illinois. He is pursuing a master's in business administration with a concentration in real estate and strategy, and a master's in civil and environmental engineering with a concentration in construction management.

SMALL BUSINESS SPOTLIGHT

Alameda Construction Services

Kevin Ramsey's path to owning a construction company started on a car sales lot in south Los Angeles in 1992. He was selling cars when a friend approached him about getting into residential renovations. Kevin was a construction novice, but relished the opportunity to start a new enterprise. In the early days, his friend, Harry Edwards, did a majority of the field work as Kevin learned and handled administrative duties. There was a steady stream of projects in those early years, which allowed Kevin to gain valuable experience. When Harry had a stroke, Kevin suddenly found himself running the small firm.

Kevin spent the next two years finishing the work in his pipeline; he was ready to move on from the company, but not from construction. In 1997, he started Alameda Construction Services and continued to focus on smaller residential projects. When Harry recovered, Kevin hired him to manage field operations. Kevin explored public work as a means to expand his businesses. Among his first public contracts was an award for portions of the Alameda Rail Corridor, a freight rail track between Los Angeles and Long Beach. The contract size was relatively small, but the experience proved invaluable. That project brought Alameda Construction Services into the public works arena and helped the company expand its services to include concrete sitework—now its specialty.

The Compton-based company grew slowly, incrementally picking up more work and expanding its workforce to meet the demand. Kevin began attending subcontractor outreach meetings for larger projects, which is where he first met Clark personnel. He doesn't recall the first project Alameda performed for Clark, but he remembers his first signature project with the company.

"Our first big project was the USC Galen Center," recalls Kevin. "That project was exciting for me personally because I am a graduate of the school, but for the company, it was our first million dollar job. We did all of the site concrete outside of the building footprint."

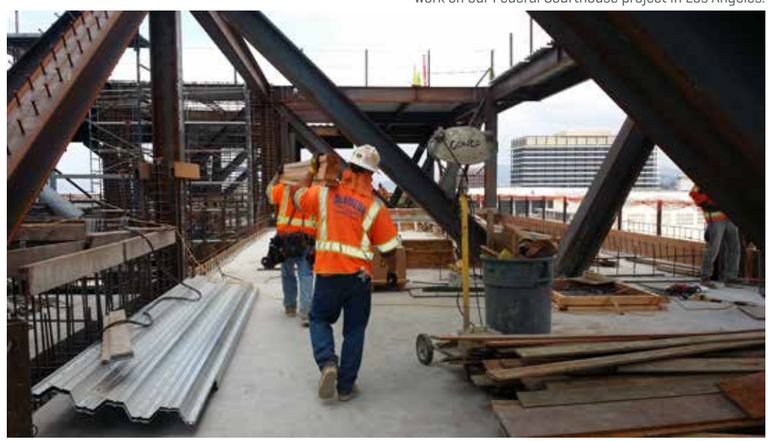
Kevin stayed in touch with colleagues at Clark and when the company introduced the Strategic Partnership Program to Southern California in 2011, he was part of the inaugural class. The experience helped him better understand the role of a general contractor.

"Beyond all of the subject matter on topics like estimating and safety, what really stood out for me was completing the Capstone project at the end of the program," Kevin says. "As a subcontractor, you get accustomed to just turning in a number and, if chosen, you go out to do the work. You might not be aware of how bids and contract awards come together. The Capstone project required me to draw on all of the things I had learned throughout the program and stand up and make a pitch."

Since graduating from the program, both Kevin's company and his relationship with Clark have continued to grow. Alameda Construction Services performs approximately $12 million of work each year. This year, the company reached another significant milestone on a Clark project; they completed their largest contract, a multi-million dollar scope of work on the Los Angeles Federal Courthouse that included placing and finishing concrete on all floors, as well as the loading dock.

As he has done since his first days in the industry, Kevin makes certain that Alameda is positioned for success now and in the future. "We are bidding a good amount of work, but want to make sure that we maintain the values that got us here. I want clients to trust us to do the job and if anyone has any issues, they always can call me." As for Kevin, himself, he's already working on another big project, earning a law degree from the University of West Los Angeles. ■

Above: Kevin Ramsey founded Alameda Construction Services in 1997. Below: This year, the company completed their largest contract, a multi-million dollar scope of work on our Federal Courthouse project in Los Angeles.



Hands-On Class Prepares New Engineers for **Quality Construction**

Superintendent John Rivera teaches a two-part Façade Quality Control course that leads engineers through the 12 most typical areas that cause façade failures.

OVER THE COURSE OF HIS CAREER, which includes nearly 10 years with Clark and decades of industry experience, John Rivera has amassed a portfolio of quality control best practices and lessons learned. As a superintendent in our Quality Control group, John works with project teams across the Mid-Atlantic Region to identify and mitigate potential infiltration issues in a building's envelope.

John has become an invaluable asset to our company and clients, not only for his ability to quickly identify and neutralize potential quality issues, but for his passion and commitment to sharing his knowledge and expertise with Clark's next generation of leaders. John and his colleagues recently debuted a new initiative to prevent common building envelope issues before they occur in the field. This new internal training program highlights the areas of greatest concern on a typical project, details how to properly identify potential issues, and shows how Clark's thorough quality control process yields a higher quality product for our clients.

The class, and the mission of our Quality Control group, is to ensure that our work is executed brilliantly. Aimed at the company's newer employees, the two-part Façade Quality Control course leads engineers through the 12 most typical areas that cause façade failures. John's instruction goes beyond the classroom; he has built full-size mock ups for each type of potential issue to provide participants with hands-on learning. This experience prepares employees to identify and mitigate similar situations in the field before they become a potential issue that affects our clients and their tenants or residents.

Quality issues commonly arise in specialized areas like lobbies or penthouses, John explains. These areas often are constructed later in a project's schedule and include unique finishes. When coupled together, these factors can result in quality issues. His series of mock ups include many traditional elements of a penthouse and the typical problems that are repaired under warranty including door thresholds, through-wall flashing, and expansion joints.

"Preventing an issue from arising will always protect the budget, the schedule, and, most importantly, our client's investment. Through this class, we're sharing decades of experience in an effort to maintain a consistent quality of work from project to project."

John Rivera, *Superintendent*

John uses full-size mock-ups for each type of potential issue to provide young engineers with hands-on experiential learning.

So far, more than 150 engineers have participated in one of these interactive sessions and learned from John's experience. He teaches how to properly sequence and manage trade contractors for maximum quality, and also how to view work critically. In one of his examples, a window appears to be installed and functioning correctly, but upon closer inspection, its improperly terminated edge requires an adhesive metal strip, which is missing. This minor mistake leaves the window susceptible to leaks and the building prone to water damage. A thorough review of the window's installation and design would help an engineer quickly catch the missing element.

"One of the most critical components to quality construction is simply installing materials in accordance with the manufacturer or designer's specifications. It is incumbent on our teams to ensure our subcontractors and craftsmen are familiar with proper installation sequencing and processes to avoid issues," he says. "Even the most minor misstep can cause a significant amount of re-work. That's what I impress on our employees; preventing an issue from arising will always protect the budget, the schedule, and, most importantly, our client's investment. Through this class, we're sharing decades of experience in an effort to maintain a consistent level of quality on all our projects." ■

THE "DIRTY" DOZEN

According to John Rivera and Clark's Quality Control group, the 12 most common areas for a potential issue in a building envelope are:

1. Mechanical Penthouses
2. Lobbies
3. Storefronts
4. Masonry
5. Air Shafts
6. Windows
7. Precast
8. Pools and Water Features
9. Expansion Joints
10. Below Grade Leaks
11. Balconies
12. Corners

Comprehensive Veterans Medical Care Returns to the Gulf Coast

Situated on 34 acres in New Orleans' Mid-City neighborhood, the 1.7 million-square-foot medical center is designed to serve the estimated 70,000 veterans in the region.

Photos by: Sean Airhart/NBBJ

ON DECEMBER 5, the Southeast Louisiana Veterans Healthcare System (VA New Orleans) opened its new 1.7 million square-foot medical center to patients, returning comprehensive medical care for veterans to New Orleans for the first time since 2005. The campus—dubbed Project Legacy for the positive, lasting impact it will have on the 70,000 veterans in the Gulf Coast—replaces critical medical infrastructure irreparably damaged in the aftermath of Hurricane Katrina. Clark led the Clark/McCarthy Healthcare Partners (Clark/McCarthy) joint venture team that successfully delivered the medical center to the United States Department of Veterans Affairs.

Located on a 34-acre campus adjacent to the new University Medical Center New Orleans, Louisiana State University Health Science Center, and Tulane Medical Center, the new VA New Orleans medical center is part of an expanding medical district, called the bio-district, on the edge of New Orleans' central business district.

The nine-building campus includes the restored, historic Pan-American Life Insurance building, now housing VA New Orleans administrative staff, and new construction of a diagnostic and treatment building, inpatient building, outpatient building, transitional living facility, central plant, patient parking garage, and staff parking garage. In 2017, Clark/McCarthy will complete construction of the campus' final component, a new research facility which incorporates the historic Dixie Brewery building.

A central concourse organizes the campus, linking it through central corridors and large program blocks using wood ceilings and color coding to assist in wayfinding. The blocks are further subdivided into smaller buildings and separated by green courtyards that resemble the gardens of the French Quarter. In total, the new campus includes 200 inpatient beds, 370 outpatient exam rooms, 21 procedural suites, 8 operating rooms, ambulatory clinics, emergency and imaging departments, mental health services, patient education facilities and outpatient rehabilitation services. The institution's educational mission is advanced through state-of-the-art technology, including smart classrooms and conference rooms, integrated cameras in the operating rooms, robotic surgery, and wireless technology.

Functioning much like a city street, a central concourse organizes the entire campus, linking atriums that open into the various medical departments.

The medical campus supports inpatient, diagnostic and treatment, outpatient, transitional living and rehabilitation, research, and administration units.

RESILIENT, REDUNDANT, RELIABLE

Designed and constructed for maximum resiliency, the medical center can remain fully operational during a major storm or natural disaster; an on-site 6,000 square-foot warehouse can store provisions and supplies to accommodate up to 1,000 staff and patients for five days. The campus is equipped with complete backup power, water and sewer systems and can expand to handle double the inpatient capacity if necessary. To ensure the campus remains operational during rising waters, critical healthcare functions, including the emergency room, are located on the second floor—at least 21 feet above the base flood elevation—and the vehicle ramp leading up to the entry doubles as a boat launch. Through a series of tunnels and enclosures, travel from building to building can take place entirely indoors.

MAINTAINING THE CLIENT'S SCHEDULE

Planning for the project's successful delivery began during the pursuit process when Clark/McCarthy proposed a phased construction schedule. Turning over the project in segments allowed VA personnel more time to commission, activate, and move into their new buildings. In 2014, the project's first building, the renovated and restored historic Pan-American Life Insurance building, was turned over to the VA for its administrative offices. The remaining eight buildings were turned over upon completion, the most recent being the diagnostic and treatment building in October 2016. To maintain the client's target date for medical care, Clark/McCarthy further phased construction to turn over critical portions of the facility before buildings were fully complete. The team turned over the main computer room in the diagnostic and treatment building 10 months before the remainder of the building to allow VA medical center personnel to expedite the installation and activation of much of the campus' technology infrastructure.

LEAVING A POSITIVE IMPACT ON THE COMMUNITY

Maximizing opportunities for small, local, disadvantaged, minority-owned, and veteran-owned businesses was a Clark/McCarthy priority throughout construction. The team's phased approach allowed subcontracting packages to be divided into smaller scopes that were more manageable for small firms. A typical project of this size would have between 70 to 90 subcontractors; this effort had nearly three times as many. More than $230 million of contracts were awarded to small businesses.

The contracting team further increased opportunity for local businesses by hosting two, six-part training sessions to help educate small businesses on federal contracting and construction best practices. Approximately 50 companies completed this CMU Building Blocks program.

As construction progressed on the project, the Clark/McCarthy team became part of the local fabric of the community by finding ways to give back. The many service projects the team took on made positive improvements on the neighborhood surrounding the medical center and the city at large. Over the course of construction, members of the team renovated a local VFW Hall, restored a home destroyed by Hurricane Katrina through Rebuilding Together, hosted a backpack drive to collect school supplies to an area high school, volunteered for the Hope House social service agency, and partnered with national non-profit Notes for Notes to build a 500 square-foot recording studio in a local Boys and Girls Club.

In addition to Clark, the joint venture team includes McCarthy Building Company, and local partners Landis Construction and Woodward Design+Build. The project's lead architect is Studio NOVA, a joint venture between NBBJ, Eskew+Dumez+Ripple and Rozas Ward Architects. ■

Color, material, and spatial cues address concerns such as post-traumatic stress disorder and color-blindness, putting visitors at ease and helping them navigate the facility.

BUILT BY VETERANS, FOR VETERANS

Constructing the VA New Orleans medical center was a point of pride for each member of our team, but for these 20 veteran-owned small businesses, the project took on added significance. Thank you for your dedication to making this project a success.

Athena Construction • BFM Corporation • Eagle Insulation
Gil's Carpet Sales • Hernandez Consulting
JHC Fire Containment Solutions • L&R Security • Northlake Concrete Pumping
Northshore Crane & Equipment • On-Site Occupational Health and Safety
Patriot Fireproofing • Patriot Material Sales • Quality Metalcraft
Satellite • Supply Patriot • T&B Electric
The Nion Group • TKTMJ Incorporated • TriMark Construction

EMERGING TALENT SHINES AS SILVER LINE TAKES SHAPE

THE DULLES CORRIDOR METRORAIL PROJECT Phase 2, Package A (Rail to Dulles) is one of the most notable current projects in Clark's current portfolio. As the lead member of the Capital Rail Constructors (CRC) joint venture team that also includes Kiewit Infrastructure and Shirley Contracting, Clark is extending the Washington Metropolitan Area Transit Authority's (WMATA) Silver Line 11.4 miles from its current terminus at Wiehle-Reston East Station to Washington Dulles International Airport and into Loudoun County, VA. The project will leave a lasting impact on the Washington, DC area for generations—and also is providing significant opportunities for some young engineers. This design-build effort, which includes new track, six new stations, and guideways, is providing valuable hands-on civil experience to our employees, and they are meeting the challenge head on.

On any given day, nearly 1,000 individuals can be found working on this mega project, roughly 300 of whom are Clark or Shirley employees. In order to maximize teamwork and efficiency within such a large workforce, the CRC team is divided into five distinct groups: Civil, Structures, Track, Facilities, and Systems. Through this unique project and team structure, some younger employees have quickly become leaders in the office and the field, as they gain invaluable on-the-job experience.

The Rail to Dulles Civil Team is subdivided into specific scopes of work. Project engineers Travis Featherby and Colleen Kerins are part of the team managing Shirley's storm drainage and wet utilities installation efforts. This scope of work consists of 83,000 linear feet of reinforced concrete stormwater pipe, 11,000 linear feet of water line, and 7,000 linear feet of sanitary sewer.

Travis and Colleen are responsible for ensuring that crews have everything they need to be productive each day, including drawings, survey layouts, equipment, material, and adequate trucking. They also are responsible for communicating to the foremen how much work must be installed each day. They have found success by building strong relationships with Shirley's crews, in particular the foremen. These connections have proven fruitful when the occasional obstacle arises in the field.

"I knew it was going to be a learning experience," says Colleen of her role on her role on Rail to Dulles, "and as the project has moved forward, I've taken on more responsibility." Travis and Colleen work closely with the foremen to find a solution to build around undiscovered rock or undocumented utilities, then collaborate with the design team on the most efficient way to implement the change.

For Travis, his experience on Rail to Dulles helped him better identify his career path. Working with Shirley's crews gave him a better understanding of how production and cost work within the construction schedule. He made a point to know each applicable scope of works' specifications inside-and-out. This has helped him transition into a new role in field supervision. "I'm now working as an assistant superintendent building the Reston Station," he explains. "It is refreshing to be out here and my experience on the Civil Team will help me in building relationships with the crews that I will be working with on this site as well."

Another facet of the Civil Team's work are the project's guideway walls that stretch 78,000 linear feet. These walls function as traffic barriers and allow for a grade difference between the roadway and the track bed. Project Engineer Thomas Massman is involved in numerous facets of constructing the guideway walls, including excavation, grading, waterproofing, and concrete.

In the office, Thomas helps plan the work, reconcile change orders, and work through design issues; in the field, he communicates with crews about daily plans, including issues related to safety, quality, and schedule.

Part of Thomas' day-to-day activities include working with Tavares Concrete on their innovative slipform process. In this method, low slump concrete is extruded into a custom-built mold, which is slowly and continuously moved along the length of the track bed, leaving behind a trail of newly formed concrete guideway wall. Because it is a continuous process, slipformed walls can be built 15 times faster than more traditional form-and-pour concrete walls. They also have the additional benefit of being stronger and producing fewer cracks.

As a member of the project's Structures Team, Project Engineer Eric Boor worked with his team to schedule field crews and collaborate with subcontractor foremen. "Not only did this role give me experience in the field, but working with both subcontractor and internal crews, I have a better understanding of how to track production within the schedule," explains Eric. "Managing the work of our own crews and learning how to analyze how work is performed helps me better understand what's important to a subcontractor. I'm able to relate more to their concerns and what is important to them."

Following his work with the Structures team, Eric has transitioned to a new role, helping manage the construction of the Silver Line's westernmost station, Route 772/Gateway to Loudoun.

Project Engineer Jake Buttz work on the project's Track Team—the team responsible for laying down 11.4 miles of track. Track work requires managing $50 million of subcontracted work and materials, in addition to overseeing internal crews installing 41,000 track feet of direct fixation track along the aerial guideway and 17 pieces of direct fixation special track. CRC crews also will install 120,000 linear feet of cast-in-place and precast cable trough, and 132,000 linear feet of contact rail and coverboard.

Because the Track Team begins their work only after the Civil and Structures Teams have completed theirs, track work in the field has just begun and will continue through the first half of 2018. With this work still in the early stages, most of Jake's efforts have focused on planning for the work ahead, including procuring materials and contracting suppliers, planning for safety, and keeping the scope within budget and on schedule.

He also collaborates with the Civil, Structures, and Systems Teams to ensure that quality work is put in place throughout each stage of the project as each team turns over their portion of the work to the next team. His experience and relationship-building will serve him well as the Track Team moves from the offices to the field and Jake focuses on collaborating with the front-line self-perform workers and subcontractors.

Work on Rail to Dulles will continue until substantial completion in late 2019. The system will then be turned over to WMATA for testing before opening for service. As the team moves forward, its success can be attributed to the dedicated and diligent work of some of Clark's talented engineers. The on-the-job experience they have received will not only help CRC deliver a quality product, but will prepare them for success throughout their careers. ■

Pictured, left to right: Travis Featherby, Colleen Kerins, Thomas Massman, Eric Boor, Jake Buttz

Why I Give Back

By Rick Solomon

For the past eight years, I have participated in Bike MS: Bay to Bay to raise money for the National Multiple Sclerosis (MS) Society. While there are thousands of people who participate in this 100-mile bike ride from Irvine to San Diego (or one of the more than a dozen similar rides across the country), I am probably the only one who does it on a bright red, steel-framed, 1986 Schwinn.

When my dad was diagnosed with MS back in 2004, neither of us knew much about the disease or its implications. As we did our research, we learned that there are over two million people living with the disease and as of now, there is no cure. One of our most trusted resources was the National MS Society. The organization provides support for people who are suffering from MS, as well as their families, while also funding research with two main goals: improving the quality of life for those afflicted with MS and discovering a cure.

When I was an intern with Clark, working on the USC University Gateway project, I saw a flyer for the Bike MS: Bay to Bay event. I didn't have much money or even a bicycle, but that didn't matter. I saw this as a way I could help spread awareness about MS while raising money for an organization that provides such important services for the MS community. I needed to participate.

That first year, it was just me. I was a broke college kid, so I had to be pretty resourceful. Luckily, Clark was willing to sponsor me in the event, and they even gave me a company cycling jersey. I bought a second-hand, purple 1985 Schwinn off Craigslist. I spray painted it black, then rode that 20-year-old bike from Irvine to San Diego. The following year I was a full-time Clark employee, so I wanted to make a few improvements. I doubled the size of my team (two people!) and upgraded my ride. I went back to Craigslist and found a red, 1986 Schwinn. "Big Red" and I have completed every Bay to Bay ride since.

Over the past eight years, riding in the Bike MS: Bay to Bay has become an annual event for Clark in Southern California. We completed this year's event in October and raised $5,000. In all, I've helped raise more than $30,000 for the MS Society through the Bike MS program. I am thankful to Clark for supporting me in this and to all of the people who have participated on our team over the years. I have been lucky to get to know more of my colleagues, who are now friends, through my involvement with the Clark team.

Although I had barely been on a bike since I was a kid when this all started, I have met some amazing cyclists through my involvement with Bike MS who have taught me about the sport; I have listened carefully to all of their advice, but I don't always take it. When they plead with me to upgrade my bike and get something lighter, especially to deal with the infamous hill at Torrey Pines, I stick to my guns. Not only is Big Red my teammate, she is a constant reminder about how and why this all started. I did this to give back to an amazing organization. I did this to raise awareness about MS. I did this for all of the people living who can't ride themselves. I did this for my dad. And I will continue to do this for as long as I am able. ■

Top to bottom: Rick poses with "Big Red"—his red 1986 Schwinn; Rick rides in honor of his dad, who was diagnosed with MS in 2004; Bike MS: Bay to Bay has become an annual event for employees in Southern California.

VOLUNTEER EFFORTS FEED THOUSANDS

As Thanksgiving approached, our teams stepped up to collect, donate, prepare, and package food to ensure that thousands of families would have enough for the holiday—and beyond.

In the Northern Region, 19 Clark employees and their families worked together at an event through Feed My Starving Children, which provides nutritionally complete meals specifically formulated for malnourished children. Working with other volunteers, the Clark team helped pack over 150,000 meals for children around the world.

A group of 15 volunteers in the Mid-Atlantic Region partnered with So Others Might Eat to prepare and serve lunch to nearly 400 underprivileged residents in Washington, DC. Team members from Human Resources and Safety came together to cook and serve.

The A. James Clark Hall team held a week-long food drive to benefit the local College Park Community Food Bank. After five days, the team had collected 1,300 non-perishable food items.

In Northern Virginia, our Rail to Dulles team continued their annual Thanksgiving Dinner Drive and collected nearly two tons of food for local non-profits Loudoun Hunger Relief and Reston Cornerstones. In all, the team raised $8,345 and 3,810 pounds of food to provide Thanksgiving dinners to those in need. ■

CLARK HELPS UNDER ARMOUR REVIVE A BALTIMORE COMMUNITY CENTER

The UA House, a state-of-the-art community center managed by Living Communities, began serving East Baltimore residents in November. The 30,000 square-foot facility replaces a small, antiquated building previously on the site. Clark, working with Under Armour, helped manage the renovation process and bring this modern facility to life.

The UA House offers community-based education, job training, athletics, and health and wellness programs to children and adults. The facility serves as a hub for several other community centers in the area; Living Classrooms currently serves 2,000 people in the area. Through the UA House and future renovated centers, Living Classrooms estimates it will provide much-needed services to more than 9,000 adults and students on a regular basis. ■

TEXAS TEAM CONTINUES TO GIVE BACK

As our presence in Texas grows, so too does our ability to give back across the state. Members of our Houston office formed a team to support the city's annual Heart Walk in October and raised more than $5,500 for the American Heart Association.

In El Paso, members of our Fort Bliss Replacement Hospital team's best practices group for women dedicate the first Friday of each month to mentoring fifth grade girls at nearby Aoy Elementary School. The volunteers, who call themselves "Builders at Bliss," help and encourage the girls to explore the fields of science, technology, engineering, and math.

Recently, the Builders at Bliss challenged their mentees to build tall structures strong enough to withstand being pushed one foot across the table, using only popsicle sticks and tape. The girls learned the necessity of a strong foundation, as well as the importance of teamwork, critical thinking, and planning. ■

PROJECT MILESTONES

This quarter, our project teams across the country reached some exciting building milestones:

BREAKING GROUND

2311 Wilson Boulevard

Our team broke ground on Carr Properties' 2311 Wilson Boulevard project in October. Located near the Courthouse Metro Station in Arlington, VA, the project features a 297,000 square-foot, eight-story core and shell office building with three levels of below-grade parking, ground-level retail space, and a daycare facility.

TOPPING OUT

Marymount University Ballston Campus

Clark is building two structures for The Shooshan Company on Marymount University's Ballston Campus in Northern Virginia, and both topped out this fall. The 15-story tower will house residential units, amenities, and retail, while the adjacent nine-story academic building will include six levels of university space and three levels of office space.

1244 South Capitol Street

Baseball season is over, but there was plenty to celebrate when 1244 South Capitol Street topped out this fall. Located just steps from Nationals Park in the heart of the booming Capitol Riverfront district, 1244 South Capitol Street is a 13-story mixed-use residential building with ground-level retail and two levels of below-grade parking.

The Confluence

Just before Thanksgiving, The Confluence team, working with subcontractor Baker Concrete, placed the last yards of concrete on the structure's 36th and highest level. The project, named for its location at the confluence of the South Platte River and Cherry Creek, will offer 288 apartments and 8,000 square feet of retail space.

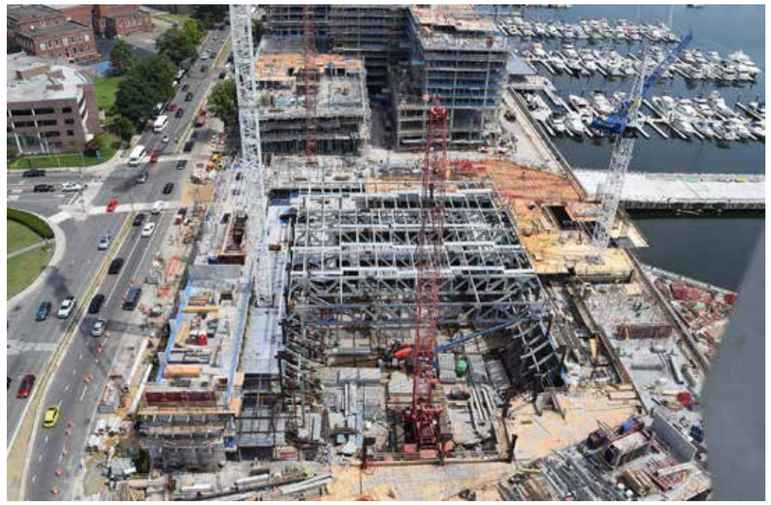
On DC's Waterfront, The Wharf Takes Shape

In November, Clark completed the final structural concrete pour at The Wharf, the mega mixed-use project transforming the Potomac riverfront in southwest Washington, DC. The fourth, and final structure to top out was Parcel 2, a 501-unit apartment building wrapped around a 5-level concert hall.

Parcel 2 is the most unique structure within The Wharf community. The building's 6,000-person capacity music venue is comprised of 1,500 tons of structural steel, which required the team to engineer The Wharf's plaza concrete slab and 2,000-foot-long bulkhead to accommodate the load of a 300-ton crane. The concert hall is acoustically isolated from the rest of the structure by a two-inch expansion joint and 175,000 concrete masonry units.

In addition to Parcel 2, the 19-acre complex includes a luxury apartment building with rooftop amenity spaces, a 225,000 square-foot office building, 12-story hotel, and a 98-slip marina.

Clark Concrete spearheaded the project's cast-in-place concrete work, placing 55,000 cubic yards of concrete to complete The Wharf's skyline.



With concrete operations complete, the project team has turned their attention to completing the building envelopes, installing interior finishes, and achieving substantial completion, which is scheduled for October 2017. ■

PARK TOWER CONCRETE POUR

The most impressive feature of the 605 foot-tall Park Tower at Transbay office building might be what lies beneath. To anchor the tower firmly into bed rock, our team placed 10,300 cubic yards of concrete and placed 4 million pounds of rebar for the structure's 13-foot-thick mat foundation. ■

TWO CHICAGO PROJECTS REACH MILESTONES EARLY

Maybe they were bracing for a harsh winter building season, or maybe there was just something in the water, but two projects in Chicago recently hit significant milestones one month ahead of schedule.

Just eight months after breaking ground, our 215 West Lake Street project team completed structural work on the 34-story apartment building in Chicago. The first of the building's 265 units is scheduled to be turned over in May 2017.

Five miles north, our team reached an early substantial completion on 3218 North Clark, a nine-story mixed-use building. The 150,000 square-foot structure in Chicago's Lakeview neighborhood includes 90 apartments and 35,000 square feet of retail and office space. ■

Clark Announces New Corporate Leadership

Clark is pleased to announce a new executive organization that will strengthen the company's leadership structure and is designed to maintain a platform for continued operational success.

Brian Flegel has transitioned to Senior Vice President—Talent and will be responsible for all recruiting, training, talent management, staffing, resource planning, and employee engagement. Brian will focus on attracting and retaining the best and the brightest and on accelerating growth in our employees. He will coordinate people resources across the country and will lead our nationwide team of HR Business Partners and Recruiters.

Chip Hastie is Senior Vice President—Operations and will be responsible for Clark's building operations nationwide. He will work with our business units to monitor project performance, ensuring that client, cost, schedule, safety, and quality goals are achieved. He will lead project plan, joint venture, and quarterly review meetings. Chip will also lead our Research & Development, Sustainability, and Virtual Design & Construction teams. Chip will focus on ensuring that we execute brilliantly and drive for competitive advantage in all aspects of our business.

Susan Ross has become the President of 1906 Group working with Chairman Dan Montgomery. 1906 Group is a privately-held investment company engaged in construction, real estate development, and asset management, and is the key investor in Clark Construction and Shirley Contracting. Susan will continue to serve as Executive Vice President of Clark Construction and will also serve on Clark Construction's Board of Managers.

Hal Roach has been named a Manager of Clark Construction's Board. He will continue as Chief Operations Officer and Executive Vice President and will focus on critical issues facing the company as well as long-term business and strategic initiatives. He will continue to lead our Safety, Scheduling, Quality Control, Logistics, and Equipment Departments.

IN MIAMI, ONE MILLION HOURS AND ZERO LOST TIME

Shortly before reaching an important construction milestone, the Miami Beach Convention Center (MBCC) project team hit an even more critical safety milestone: one million hours worked with zero lost time incidents.

Since breaking ground last year, more than 2,250 people have worked on the MBCC project; currently, the project averages more than 600 people on site each day. Given the large workforce and the number of subcontractor firms on site, Clark's safety team put a premium on properly onboarding new workers. The team hosts daily safety orientations and no one is allowed to begin work before attending.

The $500 million expansion and renovation effort will modernize the three-decades-old facility and transform it into a state-of-the-art convention center. The project is phased in order for approximately one-half of the facility to remain operational at all times. All construction will stop for two separate three-week periods to allow for full use of the convention center during the annual Art Basel Show. ■

LAX CUP EARNS NATIONAL DESIGN-BUILD HONORS

The Los Angeles International Airport Central Utility Plant Replacement project (LAX CUP) was named one of the nation's top design-build projects. Completed earlier this year, the project earned a National Merit Award in the Aviation category of the Design-Build Institute of America annual awards program. The award recognizes our team's effort to replace LAX's aging CUP with an efficient, state-of-the-art facility, all without impact to passengers and daily operations at the world's fifth largest airport.

Over the past five years, the Clark/McCarthy joint venture team constructed and commissioned a new 75,000 square-foot, steel-framed CUP with a 20,000-ton cooling capacity. The CUP features two natural-gas-powered combustion turbine co-generators and an above-grade thermal energy storage tank with capacity for 1.6 million gallons of water and 15,500 ton-hours of cooling. The team also replaced 18 miles of ductwork and piping, all within the airport's Central Terminal Area. They completed the project $44 million under the owner's original budget, while successfully managing 475 expanded scope change orders, accommodating numerous client-requested design enhancements or unforeseen field conditions.

The project is considered the first sustainable utility plant at an American airport. Heeding the client's call for "a greener LAX," the team exceeded expectations by reaching LEED® Gold certification; original plans called for the project to earn Silver. ■

THE WAY WE WERE

We have a long tradition of investing in our people and have developed numerous programs to train and prepare the next generation of company leaders. One of our most successful programs is Boot Camp, an intensive week-long exercise that prepares new engineers for the next steps in their career. Boot Camp attendees receive in-depth training in many facets of project management, develop problem solving and leadership skills, and build relationships with their colleagues. The first Boot Camp, pictured below, was held in 2002. Many of the 44 inaugural participants remain with the company, leading major projects and business units across the country. ■

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