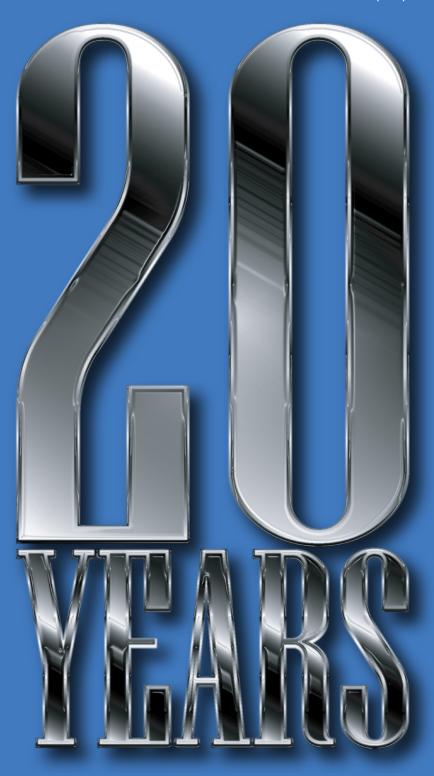
Cape Design Engineering Co.

# REDLINES

Company Newsletter - Winter 2017





**20 Years Later!** - A quick look back at CDE.

Page 1

Engineering for Education - We can help you on your next educational facility design!

Page 3

**Employee Spotlight -** Meet some of the CDE family!

Page 5

The Future Of Engineering -Learn a little about current and future technologies that shape the way we design!

Page 9

The Project Board

Page 10

**Construction Stories: Tales from the Field -** A glimpse into some of our recent construction and design/build projects

Page 11

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Page 4 - University of Central Florida - UCF Wayne Densch Rendering

### A Reflection on 20 Years

In its first year of existence, CDE was at an ordinary ribbon cutting ceremony at Kennedy Space Center when Director Roy Bridges, standing in front of what would soon be an award-winning building called the NASA Technical Records Center, looked around at all the NASA officials, dignitaries and contractors.

"I want you to know," Bridges said, "that this whole project was designed and built in just six months."

It was a tip of the cap – and a big one at that – to CDE, which explains why co-founders Lutfi "Lou" Mized, Kannan Rengarajan and Herb Wasserman beamed with pride.

With those few words, CDE knew it had turned the corner from a fledgling engineering company to one that had arrived. But arriving and actually sticking around are two different things.

Fast-forward and CDE is celebrating its 20-year anniversary, with the company continuing to grow bigger and better than ever.

Proof of that came in 2015, when CDE got more than a head-nod, shout-out of praise from NASA, as nice as that is. This time, due to its work on the SSPF Science Annex, CDE was awarded NASA's Exceptional Public Achievement medal, which is about as prestigious as it gets. The award is for a significant achievement or substantial improvement in operations, efficiency, service, financial savings, science or technology which contributes to the mission of NASA.

"That has been one of the high points for the company and for me personally as well," Lou says. "Getting that award is a big, big deal. It's extremely prestigious."

And so things keep rolling along for CDE, founded in 1997 when Lou and Kannan left what Mized calls "cushy jobs" to start their own company with Wasserman as the third leg of the three-legged stool. At the time, they had no clients and no contracts. Instead, what they had were their smarts, their work ethic and – as Lou says – "a different vision for running a company." The standards they set for themselves were high:

- Provide Brevard County with the best engineering services.
- Hire a creative, innovative and energetic staff that would take ownership of the company, rewarding them with bonuses based on the company's success.
- Create a horizontal management philosophy with a true opendoor policy.
- Never take customers for granted. Instead, offer excellent customer service and state-of-the-art innovative engineering at a reasonable cost.

- Seek and embrace challenging projects.
- Have fun. Enjoy the work and have a passion for it.

They knew they didn't want to take shortcuts, either. When the partners met at Lou's home, they agreed that the core of who they were would be honesty, integrity, ethical and moral business practices as well as fidelity to family. In Lou's years working as an engineer he'd seen more than his share of the seedy side of the industry. "I was going to flip burgers before resorting to any of that," he says.

The first six months saw the men operating the company out of their pockets. "We were basically running the company with our own money, from our savings," Kannan says.

As the business has grown through the years, so has CDE's home, from humble office beginnings to its current office space inside the SunTrust building in front of the Merritt Square Mall.

But CDE isn't just concerned with its own growth. It enjoys giving back and helping other growing companies. In concert with that, CDE has taken to mentoring their friend Inga Young's company, 8-koi, as it branches into construction.

CDE also established a \$25,000 scholarship for Eastern Florida State College's Health Science program. It struck Lou when he recently underwent a heart procedure that he "encountered several nurses who were either EFSC graduates or soon-to-be graduates. So when we committed to giving that scholarship, it was nice to know that not only were we doing something to help young people in our community to achieve their goals, but also those of us in the community who are older and who will need their medical care."



The CDE Home Office Team: (Top Row from Left) Victor Diaz, Lance Beck, Mark Lueders, Kannan Rengarajan, Lutfi Mized, Philip Thomas, Victor Benziger, Sami Mized (Bottom Row) Steve Steven, Rebekah McCauley, Li Li, Laura Varley, Joan Sottoriva, Brian. Not Pictured: Peggy Mized, Peter Root, Matthew Charmburry, Trevor Baumann, Robert & David McGowan

It should be noted, too, that it was CDE that did extensive MEP work on EFSC's Health Science Institute, which is a state-of-the-art facility that can handle an overflow from local hospitals should there ever be an emergency need to do so.

It's these types of relationship that CDE particularly prides itself in. When clients come back to them again and again, not because they are looking for the lowest bidder, but because they're looking for professional, high-quality work at a fair price, it gives the company an immense sense of gratification.

For instance, after Hurricane Matthew blew through the Space Coast, it was CDE whom NASA turned to for help. CDE assisted in forming an emergency response team where they walked the facilities, assessed the damage, quantified the damage and did a cost-estimate that NASA was able to take to Congress. It's those types of partnerships that CDE takes pride in.

And more partnerships and future relationships are developing all the time. In the months ahead, CDE will begin work on upgrades and expansions at Cocoa High School. It also is teaming with AECOM to design a lightning protection system for the Space Florida Launch Pad at the Cape Canaveral Air Force Station.

"We have great clients and an amazingly talented & dedicated staff and with all the latest engineering tools and we plan to take CDE to a much higher level in the next five years" Kannan says. While no one knows exactly what the future holds, no doubt CDE will be at the forefront of engineering and construction.

# **Engineering For Education**

Of all the work CDE does for all the various industries, the company takes the most pride and gratification in working with educational institutions, knowing that it is improving the environment where tomorrow's minds are being educated today.

In the last three years, Eastern Florida State College has built three new buildings, with CDE directly involved with two of them on the Melbourne campus – the Health Science Institute building and a new Student Union that was redesigned to make the campus more student-oriented. The Health Science building is where future nurses, radiologists and physical therapist will get their training. At those buildings, CDE performed the design work for mechanical, electrical, and plumbing systems.

On EFSC's Cocoa campus, CDE brought in a heat recovery chiller that, because of its energy efficient design, will eventually save the school millions of dollars.

Because of all the close work done with EFSC through the years, CDE developed not only a relationship with the college but with the people at the college. Thus, the company was especially saddened when Todd Robinson, EFSC's Assistant Director of Plants, Operations and Maintenance, passed away last November 1 at the too-soon age of 49.

Further south at Palm Beach State College, CDE renovated the school's welding lab. At PBSC's Lake Worth campus, CDE cutting-edge design work assisted in energy conservation. Specifically, the school was able to add a new building without increasing its energy costs. And at the school's Loxahatchee Groves













campus, CDE is helping with a net-zero energy complex study to ensure that the campus produces the same amount power that it uses.

To the north, at Daytona State College, CDE along with Florida Architects, designed the 66,000-square-foot Mori Hosseini Center, which houses the school's hospitality and management programs. CDE was responsible for the complete structural, mechanical, electrical and fire protection. And even more recently, CDE assisted in the study and design of a new 2.5-million gallon thermal energy storage system that has been proven to save the college over \$200,000 in energy costs annually in addition to the \$1.1 million in incentives received from Florida Power & Light.

#### It doesn't end there.

CDE now is partnering with UCF on the design and construction of the university's new, 36,000-square-foot Wayne Densch Sports Center expansion, which will be centrally located as a hub for all the school's athletic programs, coaches, and student-athletes.

That's sort of indicative of how CDE feels about its ongoing and rewarding work with all its college and university partners. The company enjoys being at the middle of where the minds of tomorrow are being educated today.

#### Top of Page 3 Down:

- 1. Eastern Florida State College Health Sciences Institute
- 2. Palm Beach State College Belle Glade Technical Education Facility
- 3. Daytona State College Mori Hosseini Center

#### Top of Page 4 Down:

- Indian River State College Brown Center
- 2. University of Central Florida Wayne Densch Athletic Complex Expansion
- 3. Daytona State College 2.5-million gallon TES system

## **Employee Spotlights**

They key to any business is having an excellent supporting staff. CDE fully believes that our success is a largley related to of our dedicated and hard-working team members. While you may know them on the surface, we want to help you to get to know them even more.



Laura Varley - When CDE was located in Cape Canaveral, a popular lunch taco joint was the Beach Hut across the street on A1A, where a hard-working young woman with a delightful British accent was employed. Laura Varley was in her mid-20s at the time, just trying to make her way along with her boy-

friend, living in a new country.

"Even though it was just a taco joint, you noticed Laura because she was always working so hard and always very friendly and kind," says Sami Mized, who was CDE's IT man at the time. The company was looking for a receptionist who could do clerical work.

"I told my mom (Peggy Mized, in charge of human resources) that we should think about Laura," Sami adds. They did. But when Laura came in to interview with Lou Mized, she thought she did terrible.

"I knew all the guys because they all ate at the Beach Hut," she says. "So I showed up in jeans and a t-shirt." Laughing, she adds, "At least it was a nice pair of jeans."

She's convinced Peggy pulled some strings to get her hired.

Regardless, she immediately applied herself to her new job, taking on anything and everything that needed to be done. As she took on more and more roles through the years, she eventually two years ago received her own office and the title of Engineering Project Coordinator.

But that's the way she has always been. Growing up in the northern England town of Halifax, Laura, now

32, started working at a Woolworth's when she was 15 and eventually worked her way up to store manager. She later started working at a bank as a cashier and eventually worked her way up to a customer advisor.

When she followed her boyfriend to America at the age of 22 she didn't know what kind of work she would get into, but she knew what she could offer an employer – hard work, dedication, loyalty and a perseverance and tenacity to stay at a task until she knows that it's not only done, but done right.

Initially, those traits fit into the Beach Hut, but CDE soon found that those traits especially fit in well with their company, as did Laura, with her pleasant personality and her eagerness to take on any task necessary. Soon she was seguing from receptionist and clerical work to administrative responsibilities.

"Whatever they asked me to do, I did," she says.

If Laura didn't know or understand something, she'd ask, always learning. She took an online course and became a Microsoft Certified Professional.

"It's just been a natural progression," she says.

Two years ago, that progression took her into her current role. You might say that Laura is the heartbeat of the company, with just about everything flowing in and out of her office. She assists in generating proposals, setting up projects and making sure that all the subcontracts are issued. She also either generates or coordinates with leads to get schedules and make sure projects flow smoothly. On the front-end, that means setting up kickoff meetings. On the back end, Laura knows what the deliverables are and makes sure that they are indeed delivered.

"She's one of the hardest-working, if not the hardest-working, person with the company," Sami says. "She's definitely one of our success stories."

CDE is now home, as is America. Not too long after they arrived, Laura and her boyfriend, Garry Varley, married, with Peggy as notary handling the honors of officially marrying them. It was Garry's dream in coming to America to become a licensed helicopter pilot, which he now is, flying and managing Beachside Helicopters, taking tourists for rides along the Space Coast.

Although she's not quite the adrenaline junkie that her husband is, Laura has often ridden along to shoot photos. Back on solid ground, Laura enjoys crafting, sewing and quilting, along with making jewelry and handbags. While most of her family is back in England, her sister Vicky lives in Brevard County, close enough to where Auntie Laura can spend time with her 6-year-old niece, Darcy, and 5-year-old nephew, Brody.

It's good to have some family close, although Laura looks at her CDE coworkers as family, too.

"Working for CDE you definitely feel that you are part of a family," she says. "You're an individual instead of just another sheep in the herd. And I like that we have such an eclectic mix of people. I laugh sometimes and say that we're like the United Nations of engineering."

It's true. And representing England, as well as CDE, is Laura Varley.

Lance Beck - Lance Beck remembers the words as if they were spoken to him yesterday. He'd been working as a pizza cook since he was 16. But now he was in his mid-30s, wondering what he might like to do next. He thought about owning and operating his own restaurant, but he knew that wasn't him. Perhaps he



could manage restaurants and leave the ownership headaches to someone else. But that didn't appeal to him either.

"I'd worked at several of the different Kelsey's Pizzerias in Brevard County and even five years at Pizza Hut," says Lance, 47, a 1988 graduate of Merritt Island High School. "One day I was talking to the Kelsey's owner and the line I'll always remember him telling me was: 'If you don't like where your life is headed, start making different choices.' "But what would those choices be?

Lance thought back to his high school days and an interest he had in computer-aided design, or what is commonly known as CAD. He grew up in a home where his dad, who was a systems engineer for Interstate Electronics, always had techie gadgets around, which Lance would fiddle with. It helped, too, that he always had an interest in and a knack for computers and did graphics and Photoshop work on the side.

One night at a friendly social gathering, Lance met Philip Thomas, who is now CDE's Director of Engineering. Former CDE employee Paul Montgomery was also there. He picked both their brains and he learned from them that a career in drafting would be a good fit, specifically focusing on 3D design.

"That's when I decided that I was going back to school," Lance says. "I went to what was then Brevard Community College – it's now Eastern Florida State College – and took all the core CAD courses. I found that I was more interested in the 3D stuff and decided to take as many courses as I could."

Lance thought that perhaps he might work for an architectural firm. But then, about 10 years ago, he was talking to Thomas at another social gathering. CDE was about to begin work on NASA's Constellation program and Thomas said they were looking for someone who was proficient in Pro-E software, or Pro/ENGI-NEERING, now known by the moniker PTC Creo.

"I told Phil that I'd just taken a couple of courses in Pro-E," Lance says. One thing led to another which led to a hire. Now it's 10 years down the road.

"It's great to work here, it really is," Lance says. "I've had a lot of growth with CDE. You're always learning and that keeps you going. For instance, we're incorporating Revit software more and more into our company's workflow, which is where the industry appears to be going. Plus, on top of everything else, the people are great to work with."

Lance appreciates that CDE also values what goes on beneath the surface of a building, which is something he really enjoys. For instance, whenever he drives by the new Health Science building at Eastern Florida State College's Melbourne campus, he thinks about all the work CDE did on the interior of the building.

"I think of buildings as organisms," he says. "Everybody notices what they can see. I think about what you can't see. What I do is help bring that building to life. I look at HVAC as a respiratory system, plumbing as circulation, electrical as the nervous system and structural as the skeleton that keeps the building standing. There is a lot of satisfaction in what we do. So when I drive by the Health Science building, I say to myself, 'Yeah, I was a part of that.'

Away from work, Lance and his wife Sabrina, who is a veterinarian technician at an animal eye clinic, enjoy their two dogs – a Border Collie named Shelby and a Standard Poodle named Mosby. With Mosby, the Becks have trained him in agility drills and now enter him in competitions.

And then there are the occasional times when Lance harkens back to his younger days and gets a hankering to dig his hands in pizza dough again.



Victor Benziger, E.I. - It wasn't too long ago when Victor Benziger was a typical teenager, wondering what he'd be when he entered the real world. Attending public school at Edgewood Junior/ Senior High School on Merritt Island, he knew he had math skills and an aptitude for science. He also had a construction background,

working summers for his father, who is a general contractor. But how to put all that together?

"One day I was talking to a family friend and he suggested engineering," Victor says. "He thought I had an engineering mind. That made sense to me."

He took pre-engineering courses at Eastern Florida State College (then called Brevard Community College) and found that he liked it.

"By the time I went to UCF to finish up, I didn't have any hesitation," he says. "I knew by then that engineering is what I wanted to do." But what specialized field of engineering?

The Mizeds, part-owners of CDE, are family friends.

While speaking one day to Peggy Mized, Victor learned that there was a need for structural engineers.

"So I pushed toward civil engineering, structural," he says. "It seemed natural for me because I've always had an interest in building construction." An internship at CDE in 2013 led to Victor's hire.

Initially Victor's role was that of a superintendent, running projects and helping on the design side. Eventually he pulled back into engineering. He particularly enjoys coming up with designs that are easy and the most efficient to construct.

"I like the engineering side, and I also like doing site work," he says. "It provides a change of pace and a nice balance." He especially likes working for CDE.

"The work can be demanding, but the people are reasonable and easy to work with," he says. "I like the people I work with. We all try to help each other. We work well together. It's a real good atmosphere."

A lot of what he has learned came into play when Victor bought his first house in 2014, a fixer-upper. It was a total remodel. "I like to figure things out," he says. He soon found himself tearing out walls and opening up rooms and essential remodeling the layout, while also doing most of the electrical himself. A big man with a big heart, Victor eventually had two of his younger siblings move in with him.

During his spare time Victor enjoys spending time on the water fishing. He also stays active with friends from his congregation on weekends playing soccer, football, basketball, volleyball and Ultimate Frisbee.

Born in America, Victor is the child of Vietnamese parents. "I'd like to relearn the language," he says. "I could speak when I was little and I regret that I didn't keep up with it. I have aunts and uncles who only speak Vietnamese."

But there is a more pressing project before him. Now that Victor has been in the industry the prerequisite four years, he's eligible to take the test to become a Professional Engineer. "That's something I want to do and something they want me to do here at CDE," he says. "I want to keep learning, keep improving."



Robert McGowan - He's a Southern boy through and through, with a solid old school work ethic and values. In other words, Robert McGowan is the perfect guy to be a superintendent on CDE's construction sites that in recent years have mostly come in North Florida and Southern Georgia.

Otto Herrera noticed those desirable attributes in Robert years ago when Otto owned his own construction company. Robert was a guy he came to rely on, a no-nonsense worker who could go into problem sites and clean up messes.

More and more, when Otto had a problem, he'd turn to Robert to sort it out.

Says Otto, "What I noticed about Robert is that regardless of the situation that was going on, he was always solution oriented in regards to the quality and completion of the project timeline. He is a very apt troubleshooter when conditions become abnormal. He has exceptional problem-solving skills."

Oftentimes, those types of guys are hard to come by – straight-shooting problem-solvers who aren't just delegators but also roll-up-their-sleeves workers. So when Otto became a Regional Construction Manager for CDE it wasn't long before he was tapping into Robert and bringing him onboard. That was almost four years ago.

"I wanted those attributes I saw in Robert when I had my own company to translate to CDE," Otto says. "He knows that not only is the company bottom line important, but so are the customer's expectations and our relationship with the customer."

It all comes down to a simple motto that Robert, 58, lives by. "I like to get to work on time. I like to get the work done on time. And I like to do it under schedule and under budget."

Satisfaction? "That comes at the completion of a project and the customer is ecstatic," Robert says. "That's what I enjoy about what I do."

Sometimes, though, that means leaning on the subcontractors to make sure that they deliver the kind of quality that the client wants.

"I have a way of dealing with troublesome subs and getting 110% out of them," Robert says. "Sometimes it's just a matter of saying, 'Here's how I would do it. Let me help you.'

Robert gravitated toward the construction field after he graduated from Jacksonville's Andrew Jackson High School. Initially, most of his work was in residential, but through the years he's done commercial and now with CDE it's been commercial and industrial.

He considers himself a jack-of-all-trades. "I do pretty much anything, stopping short of killing myself," he says.

On the industrial side with CDE Robert has found himself on the types of projects totally unique to anything he's done in construction.

"One of those projects was a where they flood a basin to float a submarine," he says. "There is a concrete caisson we had to replace that goes in after the basin is flooded and then the caisson is set, or plugged. The basin is then drained. The caisson keeps water from coming into the basin. The concrete caisson is the backup. We also had to strip the old rubber seals and replace them with new seals. And this was no ordinary plug. It was about 60 feet by about 20 to 30 feet. It was interesting and definitely challenging."

Robert's other interests are fishing, deer hunting, and also rooting on his beloved Florida Gators.

"You can usually find me on the water," he says, "but you won't find me in the woods. Not where I go."

He has a son, Joshua, who is in the Coast Guard and stationed in Minnesota. He and his wife Debbie have been married for 15 years.

"I enjoy working for CDE," he says. "Otto is a good guy and CDE is a good company to work for. But no matter who it is, I take a lot of pride in what I do. I have a lot of pride in my name and reputation."

# The Future of Engineering

There already are cars that can drive themselves. What about engineering that can be performed on its own? That time is coming, say industry insiders and CDE is preparing for that future.

For years, the way engineering was conducted was fairly straightforward. A client would come to a firm with a design concept, engineers were sent to the site where all the site planning and the filling in of the blanks were done. And now?

"The same technology that is used for self-driving cars is being used to take engineering into the future," says Philip Thomas, CDE's Director of Engineering.

Here is how the future is shaping up:

- A client comes to an engineering firm with a design concept. Instead of painstaking site planning, the firm relies on LIDAR, or Light Detection and Ranging, which is a remote sensing method that uses light in the form of a pulsed radar to measure ranges. All of that data bounces back to create a point cloud. Already readily in use for interior design, using it on a site "has passed from science fiction to reality," says Philip.
- The other technology that comes into play is GPR, or Ground Penetration Radar, giving a firm a three-dimensional view of what is below grade. That point cloud data is imported into a 3D modeling software program, like Revit. The program then can give recommendations for things like duct layout, pipe layout and rough load calculations. Other software packages can get even more specific with detailed load calculations and energy usage. This will obviously help a firm to know more precisely what its material costs will be while also building more energy efficient structures.
- The real emerging technology is software that can aptly be described as artificial intelligence. It's already out there, and it is expensive and ever-evolving. These software programs will

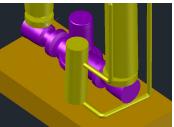
know all the codes and disciplines, as well as all the routings and sizes. It takes all the data and gives engineers the most efficient way – costwise and otherwise – to construct a building with exact details and dimensions.

• One of the things that can slow down a project is not having the materials in place and on time. In the future, that will no longer be a problem. Software will know what is needed and when, and will automatically order and have those materials delivered on time. Basically, it will let the construction side know what is needed and when.

Will this mean less of a human element and fewer jobs? Yes. But that's the way engineering, as well as all industries in general, has been heading for years. Where a company like CDE might need seven people doing CAD drafting 10 years ago, it now only needs two. In the future that number might be ...

"We'll have to wait and see," says Philip. "You're always going to need some type of human element. The important thing is not to be left behind. Technology is changing the future and if we're smart, and we'd like to think that we are, we are changing with it."









Surveying & documentation

Orthophoto or

Distances, surfaces, volumes, DTM, profiles and more











# **The Project Board**

It's been a very busy year here at CDE for both the Engineering and Construction divisions. We thought that we would share a little infographic with some information about new projects, projects underway, and those that have recently been completed. Of course, this isn't all that CDE has done this year, but these are the most recent happenings at our offices.





UNDER DESIGN



BEING BUILT



FINISHED PROJECTS

- Design/Build Cocoa High School Comprehensive Renovation
- UCF Wayne Densch Facility Sports Complex Expansion Design Phase 2
- Critical Lightning Protection System for SLC-46
- Bunnel ElementarySchool Building HVAC3 Renovation
- Palm Beach State
  College Gym Facade
  Enhancements
- ULA Firing Room Jumbo Screen Frame Design

- CCAFS Trident Wharf Mechanical Utilities Replacement
- HVAC Replacement Projects at the Naval Submarine Base, Kings Bay
- Port Orange City Hall HVAC Renovations
- Volusia County Courthose Parking Garage
  Evaluation
- Flagler County Sherrif's Training Facility
- Intersil/Renesas Cooling Tower Foundations
- NASA Hanager AF Area Roof Upgrades

- Eastern Florida State
  College Melbourne
  Campus New Student
  Union Building
- NAS Jacksonville
  Facility 2090 Roof Replacement
- Construct Break
  Room for NAS Jackson-ville Building 724
- Dr. Ditz Suntree Medical Building
- UCF Transgenetic Animal Facility HVAC Renovations
- NASA Building 831
  Expansion at Vandenberg AFB

- New Health Sciences Building at Eastern Florida State College Melbourne Campus
- School of Hospitality and Beverage Science Remodeling at Daytona State College Mori Hosseini Center
- Construction Services for NASA SSPF Roof Replacement
- NASA PropellantsBuilding Roof Upgrade
- Chiller replacement at Palm Beach State College Eissey Theater
- NASA Hangar AF Hurricane Damage Assessment and Repair.

Cape Design Engineering Co. would like to thank all of its clients and partners for their continued patronage! We look forward to another great year working with all of you as we accomplish great things!

### **Construction Stories: Tales From The Field**

It's been a typical busy and productive year for the construction side of CDE, where no job is too small or insignificant. To be sure, though, there were some big jobs to be handled.

CDE's ongoing relationship with the Kings Bay Naval Submarine Base in Kings Bay, Georgia, kept the company especially busy in 2017. One of the main challenges was replacing a 48-inch valve that is critical for controlling the flooding of the dry dock that houses Trident submarines. Specifically, the valve is part of the systems that regulates filling the dry dock.

A 48-inch valve might not seem like much, but this one weighed more than 500 pounds. And getting it down to the correct level where it needed to be was particularly tricky.

Also at the same dry dock, CDE replaced a key support system for three large pumps used to de-water the large dry dock basin. Because of the brackish, silty nature of the water and how water adversely affects the pump seals, which has constant pressure on it, CDE changed how the supply line was routed and controlled. This essentially changed the system design while simultaneously replacing the pipes.

Finally at Kings Bay, CDE's construction side did extensive work on the Auxiliary Sea Water System at the dry dock. The system is used for maintaining auxiliary sea water flow while a Trident submarine is in dry dock. There are times, while the submarine is in dry dock, when the cooling of internal systems is necessary. But how much cooling is needed? The amount is specific to the submarine's system load, and it's critical that only that exact amount of sea water that is needed is drawn in.

One of the main problems, though, is that along with sea water silt was getting forced through pipes causing abrasion and erosion. So CDE replaced key sections of piping with HDPE – high-density polyethylene – piping. The benefit of HDPE is that it is less susceptible to abrasion. CDE also replaced relief valves with pressure-regulating valves, which are more durable for the application.

When CDE's construction folks weren't rooting

around valves, seals and piping, they were walking roofs. Specifically, they were on the roofs at the Naval Ordnance Test Unit at the Cape Canaveral Air Force Station. When Hurricane Matthew blew through in early October, it did enough damage to three buildings to require attention. CDE came in and did the necessary roof replacements needed.

Around the same time it was noted that NOTU's bathrooms and breakrooms at the TOF were in major need of a refurbishing. Specifically, the sewer lines were not draining properly, something that had even stumped plumbers. When CDE's workers cracked into waste and vent piping, the scene looked like something out of "The Mummy." The pipes were full of roaches and roach debris. All of it needed to be replaced.

Sometimes old buildings need new roofs and pipes. And sometimes they need a new look. That was the case with Building 101 at the Naval Air Station Jacksonville, which is the depot where Naval planes along the east coast are refurbished. Specifically, Building 101 is the headquarters for FRCSE, or Fleet Readiness Center Southeast.

CDE did the landscaping, giving Building 101 a more modern and less industrial look. That meant replacing and redoing the landscaping in front of the building, which included removing old shrubbery and trees and replacing them with more attractive palm trees and shrubbery. A new sprinkler system was installed to help all the new grass that was laid to grow.

The pipe vault in front of the building was also pressure-washed and received a fresh coat of paint, making it look as good as when it was first set in place.

**TOP:** NASJAX Building 101 Exterior Improvements

MIDDLE: Re-roofing CCAFS Hangar Y after Hurricane Matthew

**BOTTOM:** A renovated bathroom at the NOTU facility



Out with the old...



...In with the new



Old roof removed



Getting ready for new roof



Prior to complete demo



After renovation



engineering ::: design/build construction

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