Cape Design Engineering Co.

REDLINES

Company Newsletter - Winter 2015

Turning the Page

A look into CDE's role in the construction of the new Headquarters Building at Kennedy Space Center - Page 5

Inside this edition of:

REDLINES

Winter 2015

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The Executive Message

Cape Design Engineering has been in business going on 19 years. Where has the time gone? Even better questions might be: Was the time used effectively? What have we learned? What does the future hold?

Time flies when we work. Over the years there have been easy projects, very difficult projects involving various extensive technical details, some fun projects, and some that were just work that needed to be done. There have been moments of complete clarity where absolute directions were easy to make out and follow. Conversely, there have been times where we have had to knuckle down and do homework, research, and sometimes use our blood, sweat, and tears to get things done – but done they were, and done well! As a result, CDE as well as its individual employees have received numerous awards for excellence.

On a personal level, our lives have also changed. Some lives have had very difficult events – family discord, health crisis, deaths and financial problems. As a company, we grieved with those who grieved. Others have had new and refreshing things happen in their lives – the birth of a child, new houses or cars, and new hopes. As a company, we rejoiced with those who rejoiced. In the course of all of the events, corporate lives and private lives became increasingly entwined. There is no escaping that one side of life affects the other. What started out as a simple idea of having a company that does engineering and construction has grown into a living, breathing entity with emotions, desires and goals that must encompass the individual needs for the better of the whole.

Peggy Mized is the C.F.O. and Human Resources Director of Cape Design Engineering.

This entwining of all aspects of life is a universal theme. We are all connected – good or bad, right or wrong – regardless of race, creed or religion. While each person has his or her own needs, wants or problems, individuals are not as different as we may believe. Humanity has a basic need for respect and dignity. We all hurt over the death of a loved one, natural disasters or violent eruptions in society – no matter who we are, where we come from or what we believe. We all rejoice over healthy babies born into a good home that is safe and loving, getting new housing or even new cars. We all want to earn a living, pay our bills and raise our families in safety and love. We are not so different or individual after all.

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CDE Restructures Management Personnel

Lutfi Mized and Kannan Rengarajan have been the face of Cape Design Engineering since they founded the company more than 18 years ago. During that time the engineering and business management duo has firmly established CDE as a premier design and design/build firm in the Florida. With the marching of time obviously comes change. With that said, CDE will see some organizational changes in 2016 that will help improve the business operation as well as improving the quality of our product. We thought it would be good to introduce you to some of those changes.

A new management team consisting of existing CDE employees will be put in place to run day-to-day operations. One thing should be made clear: Lutfi and Kannan aren't going anywhere. Lutfi and Kannan are still the owners of CDE and will play a vital role mentoring the new group of managers while participating in all design activities.

Without further delay, CDE would like to introduce those in the new management team and give you a little information about them, their role, and their background.

Philip Thomas, P.E.
New Role: Director of Engineering
Philip has been with CDE over 15 years and has demonstrated excellent management abilities as a Senior Mechanical Engineer. He consistently receives praise from our clients for his skills and abilities. Communication skills are one of Philip's strongest qualities, which is valuable in the fast-paced world of design engineering. As the new Director of Engineering he will be responsible for interacting with clients and managing all engineering projects that come through CDE. Want to learn more about Philip? We invite you to read more about him on Page 5.

Laura Varley
New Role: Engineering Project Coordinator
Impressed with her work ethic, motivation and drive she was hired as a receptionist and administrative assistant. Over the past five years, Laura has gradually taken on more and more responsibilities, all while applying herself to continuing education and training. Laura has proven herself to be highly dependable and an important gear in the machine. As the new Project Coordinator she will be moving away from the general office and reception work to assist on the management of engineering projects in the office under the leadership of the Director or Engineering.

Mark Lueders, CBC, CMC
New Role: Director of Construction Operations
Mark has been with CDE since 2007, managing construction and design/build projects. Over that time, Mark's expertise and knowledge has lead to the completion of many successful projects with the Department of the Navy, NASA, Florida Power & Light and others. As the new Director of Construction Operations he will be fully responsible for all aspects of the Construction division including acquisition, bidding, management and interfacing with clients.

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Turning the Page

The year was 1961. The space race was on between the USA and the Soviet Union and it showed no signs of slowing. On May 25th of that year, just 20 days after Alan Shepard became the first American to reach outer space, President John F. Kennedy gave a speech before a special session of Congress that would forever change the landscape of manned space flight. He said:

"First, I believe that this nation should commit itself to achieving the goal, before this decade is out, of landing a moon on the moon and returning him safely to earth."

With that speech, Kennedy challenged the American scientific and engineering communities and supercharged America's role in the space race. Within 10 years of that speech NASA landed not just one American on the moon, but several.

Ultimately, America won.

The race to space and the moon required a specific infrastructure to accomplish its goals. Some of that infrastructure is a collection of buildings only found at NASA's Kennedy Space Center. Facilities such as the LCC, the VAB, and LC39 are probably what most ring a bell with people. (For those not familiar with NASA-speak, LCC is short for Launch Control Center, VAB is short for Vehicle Assembly Building and LC39 is Launch Complex 39). There is one building, however, that may be overlooked by most: the NASA Headquarters Building.

This 439,446 square foot facility was completed in 1965 and is currently still in use. Walking through the Headquarters Building gives one a sense of wonder – considering that presidents, foreign dignitaries, scientists, engineers and astronauts have walked the facility's hallways! Walking through the Headquarters Building is also like walking through a time warp with its aging walls, restrooms, PA horns and emergency lights. If Kennedy were alive today and were to come back to the Headquarters Building, it wouldn't look much different than what he remembered – with perhaps the exception of computers on desks. It seems eternally stuck in the 1960s.

Yes, 50 years later the old place is showing its age. It has even made it to the AARP club of buildings – the National Register of Historic Places by the National Park Services on January 21, 2000.

In efforts to reorganize and redirect itself for the next wave of space travel NASA developed a new master plan for Kennedy Space Center. This plan includes the design and construction of a new seven-story, 200,000-square foot Headquarters Building and the subsequent retirement and demolition of the existing HQ building. On October 7, 2014 ground was broken and the project was set into motion.

What is CDE's role in this project? While CDE did not design the new Headquarters Building, nor are we involved in its construction, we are serving as the Threshold Inspection Agent during its construction.

So, what exactly is a Threshold Inspection? What is its purpose? Why is it important? To find the answers to these questions we interviewed structural engineer Victor Benziger about CDE's role in the project.

Q: In simple terms, can you explain exactly what Threshold Inspection is and what it includes?

A: When a building in Florida meets a certain criteria, based on height and occupancy, it is a requirement by the Florida Building Code that a special inspector routinely inspect the structural elements of the building throughout its construction phases.

Q: What is involved in performing the Threshold Inspection?

A: To begin with, we have to have a clear understanding of the contract drawings and specifications, as well as the threshold inspection plan provided by the engineer of record. That's the beginning part of the project. After that, there are routine notifications of elements as they are being constructed. Typically, this means that the contractor would notify us with an

inspection notification, which we would then follow through on. As we do this, we review shop drawings and compare them to the contract documents. After that, we go to the site for field work to verify that the construction is in accordance with contract documents.

Q: What happens if you find something that fails inspection?

A: That depends on the severity of the non-conformance. If it can be corrected during the inspection, then we'll see that process through and then approve it. If it is not something that can be field corrected while we're present, then the inspection will fail and the contractor will correct the issue and send us a follow-up notification for re-inspection.

Q: How much responsibility does CDE carry by serving this capacity?

A: Per the Florida Building Code, we are responsible for signing and sealing the threshold reports and certify that the structure has been constructed substantially in accordance with the plan.

Construction on the new Headquarters Building is scheduled to be finished in late 2016.

It is undeniable that looking at the old Headquarters Building creates a sense of nostalgia. That same nostalgia is a reason why CDE is proud to be involved in this project. In the years ahead, CDE is confident that the presence of many more presidents, scientists, engineers and dignitaries will grace the new Headquarters Building as new heights are reached for space flight.

Yes, CDE is proud to have a part in writing the next generation of NASA history. ■■■

Photos Clockwise: 1.) Current panoramic view of the construction going on. 2.) Concrete being pored in forms. 3.) A pile cap ready for concrete to be poured.

A Proper Introduction: Philip Thomas & Brian Williams

For Philip Thomas, the Space Coast was a place on a map that looked good from a distance – that distance being Denver, Colorado, where he was a mechanical engineer for Cator, Ruma & Associates.

He was burned out. Not on engineering, but on skiing. His previous job had been in Dallas, where he had worked three years, also as a mechanical engineer, for Halff Associates. After growing up in Mississippi and earning his degree from Louisiana Tech, Philip was ready to be near water – and especially water that was easily accessible.

"I looked at a map, and started looking at places along the East Coast of Florida," he said. "I didn't want to be too far south into Miami, and I didn't want to go to Jacksonville."

The Space Coast seemed like a good place to be.

A woman Philip was dating at the time knew Li Li, a senior mechanical engineer at a fledgling engineering firm known as Cape Design Engineering. Li Li passed Philip's résumé onto CDE CEO Kannan Regarajan. A phone interview led to a face-to-face interview which led to a job interview which led to Philip relocating to right where his finger had pointed to on a map.

> When a client wants to know if we can meet a certain deadline, I'll know what it takes. I know it's going to be a challenge, but I look forward to it.

Going on 15 years later, he is still with CDE, though no longer in the role of mechanical engineering. Philip, 45, was promoted to Director of Engineering in September, with the full brunt of the position taking effect January 1. In his new role, Philip will ensure that CDE continues to do work to the quality that clients have come to expect of the firm. On the management side, he'll be hands-on, running the office, hiring and making sure CDE has the resources and tools to do existing work, as well as finding new work.

Said Philip, a personable type who likes interfacing with clients and fellow employees: "I enjoy dealing with people more so than the technical aspects. I can see where someone who knows how to do the technical side and can do the management side is a plus. When a client wants to know if we can meet a certain deadline, I'll know what it takes. I know it's going to be a challenge, but I look forward to it."

His mind has always worked well on the mechanical side. Even as a child, Philip noticed himself gravitating toward machines.

"As a kid, I was always tinkering with stuff, fixing stuff – go-karts, little engines, remote-controlled airplanes that used to have actual engines and not electrical engines, lawn mower-type engines, computers, things like that."

As an engineer, Philip has a knack for seeing a structure in a unique way.

"I like putting a building together," he said. "In mechanical engineering, our machine happens to be a building. When you look at a building, people don't see moving parts. But I see moving parts. Air conditioning, plumbing, so many things. A lot of things go on behind the scenes; a lot of work goes into making a building functional and comfortable. I enjoy doing that work, and I'd like to think I'm good at it."

In his spare time, Philip enjoys doing the things that gravitated him to Florida – kayaking, paddle boarding, enjoying the water. He'd like to buy a sailboat, possibly in 2016, and dreams of living on a boat someday.

On dry land, he is an avid movie buff, particularly enjoying Star Trek and Star Wars flicks. Being involved with NASA projects has been a special career perk. Philip also enjoys cooking, woodworking and Legos. Yes, Legos. "The same thing as a kid version of Legos," he said with a smile, "except now you don't have to ask anyone for money or permission."

What he enjoys about working for CDE is that, after working for larger firms, being a part of a smaller firm is more personalized, like a family. President

Lutfi Mized and CEO Kannan Rengarajan encourage employees to have outside interests and a meaningful life away from the office.

"Working for Lou and Kannan is a blessing because of the family atmosphere," Philip said, "which is why I've stayed and never considered leaving." ■■■

He doesn't come across as a stereotypical engineer, what with his blond dreadlocks and surfer vibe, which is probably what attracted CDE to Brian Williams. That, of course, and his expertise in electrical engineering.

Early in 2015, CDE was looking for a young, energetic and vibrant electrical engineer. Meanwhile, Brian was looking to end his commute from Indian Harbour Beach to Maitland, where he worked for EXP. He also wanted to work for a smaller engineering firm, one that would have more of a team atmosphere rather than the feeling that you're just another cog in the wheel.

Mr. Brian Williams, E.I.

"I'd been an engineer for five years," said Brian, 33. "I liked the idea of trying a smaller company. With larger companies, when you get good at something, they tend to keep you at that. The ability to grow in your career is not always available. You tend to get pigeon-holed into a certain task. For instance, I'd gotten good at lightning protection, but I wanted to do more with power distribution, which would be more challenging. Being able to do that, to grow, is not always available."

Meanwhile, CDE was looking for an electrical engineer that they could grow within the company.

"The interview, I'd like to think, went well," Brian recalled. "Lou and Kannan seemed like really nice guys. I liked their enthusiasm and excitement, and that they were looking for somebody like me. The other thing I think was important is that I was completely honest with what I didn't know. They took a chance on me, and I'd like to say that things are working out well."

With his dad in the Air Force, Brian traveled a lot as a child, but mostly in Florida. He graduated from University High School in Orlando and then got a two-year degree in AutoCAD. Brian's first job was with RLF Architects. His work in electrical drafting piqued his interest in design, and he soon found himself taking courses at UCF toward an electrical engineering degree.

"I remember, while doing redlines, asking questions, developing an interest," Brian recalled. "That's when I went back to school while I was still working."

After earning his degree, Brian got an engineering job and, to no surprise, found that he enjoyed the work. What he enjoyed just as much, if not more, was living on Florida's East Coast, where he could pursue his interests in surfing, hanging out at the beach and working out. What he didn't like, however, was the commute to Maitland.

When Brian learned that CDE had an opening, he pursued it. With CDE, he's enjoyed his growth as an engineer.

"Working in electrical is complicated," Brian said. "It works your brain. You have to think and take into consideration a lot of things. It keeps the mind fresh. I like it."

He especially enjoys getting into the field, which working at CDE has afforded him the opportunity to do.

"I do a lot of work on existing facilities, which takes more thought, investigation and problem solving," he said. "You have to figure out the best way to power something or route something. It might seem straightforward, but isn't. I enjoy doing that. I like being in field. It's rewarding to figure out something that doesn't seem as if it's going to work, but it ends up working out fine."

With his easy smile and personable disposition, Brian interfaces well with clients and has integrated seamlessly with fellow CDE team members.

"From the day I started with CDE until now, I feel I'm a much better engineer than I was before," he said. "And it's only been six months." ■■■

Continued from Executive Message

So what is the lesson? Over the years, there have been many great technological advances in science, health and engineering. But many things that should make our lives brighter have somehow missed the mark. Why? Because these advances have failed to take in to account humanity with its basic need of respect and dignity. The lesson of respect for each other's well-being and existence must be learned, and learned quickly. Whether we have materially more or less – we must give each other respect and dignity. We must strive to grieve together over sadness, and we must rejoice together as new good heights are found. We must learn to see each other as fellow humans with emotions, needs and goals. We must elevate the life of the individual for the good of the whole. We must do this and allow no barriers to stop us.

Cape Design Engineering is not a huge player on the world market, but we've learned a thing or two over the years. We've learned gratitude for hard work, loyalty – through hard times and good times – and appreciation for a job well-done. We've tried to be humanitarian in our treatment of all people we've come into contact with – from customers, employees, vendors, or just everyday people. No, we cannot solve the world's troubles, but with one person at a time we can show respect and dignity. We have tried to raise our employees' lives, make their living better, and encouraged them to do the same for those around them and in our community.

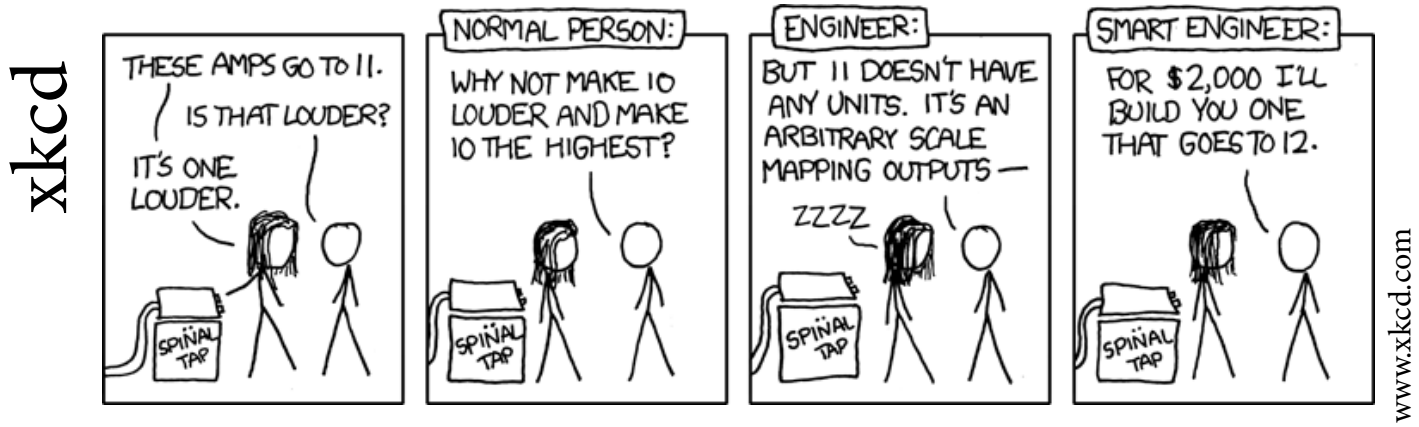
The future, for some, may look bleak; but for others it looks bright. Choose a bright outlook! Choose to see good qualities in humanity. Choosing to treat all with respect and dignity makes everyone feel better. Remember that we are all entwined. Our company pledges to bravely move forward, looking for ever brighter markets to explore and participate in. We look forward to meeting the challenges before us from the design and construction world – trying to go "green" in more ways than one. It is a big adventure out there and we are well-equipped to make the journey together with all of our dedicated, talented employees.

We are excited for the future and our business.

Cape Design Engineering Co. hopes you also will see the future with bright hopes and excitement.

Good things are coming!

Engineering Humor - XKCD and Random Facts



Random Facts:

1. - A giraffe can clean its own ears with its tongue. (It's tongue is about 21 inches in length)
2. - The brand name Jeep is actually derived from the Army acronym GP, or General Purpose vehicle.
3. - The soft drink 7-Up originally contained Lithium - a commonly prescribed drug to treat bipolar disorder.
4. - The last time an Olympic Gold medal was actually real gold was in 1912 (They are now silver gold plated)

NASA Exceptional Public Achievement Medal

It was the most technical and advanced building Cape Design Engineering ever designed and constructed, and upon its completion, NASA recognized a job extremely well done.

Both CDE President Lutfi Mized and CEO Kannan Rengarajan recently received the prestigious NASA Exceptional Public Achievement Medal, honoring them for their excellent work on the Space Station Processing Facility (SSPF) Science Annex building, which was an intricate design-build project that produced a high-tech biological science laboratory.

CDE was charged with the complex assignment of building a concrete-block structure where science lab work could be carried out with excruciating and exact precision. The challenges were manifold, and NASA recognized how outstandingly CDE met and conquered those challenges.

Specifically, NASA cited Mized for "exceptional leadership, patience, vision, and guidance in successfully constructing the Space Station Processing Facility Science Annex." Rengarajan was cited "for outstanding leadership and skills in leading the Cape Design Engineering Company design build effort to construct Space Station Processing Facility Science Annex on KSC."

The well-attended award ceremony took place on July 28, 2015 at the Kennedy Space Center Visitors Complex. KSC Director Robert D. Cabana, presided over the ceremony and personally awarded Mized and Rengarajan their medals. The start of the program even showed a special video presentation that featured Rengarajan. The video is now viewable on NASA's YouTube channel.

This prestigious NASA medal is awarded to any non-Government individual or to any individual who was not a Government employee during the period in which the service was performed. The award is for a significant specific achievement or substantial improvement in operations, efficiency, service, financial savings, science, or technology which contributes to the mission of NASA. ■■■

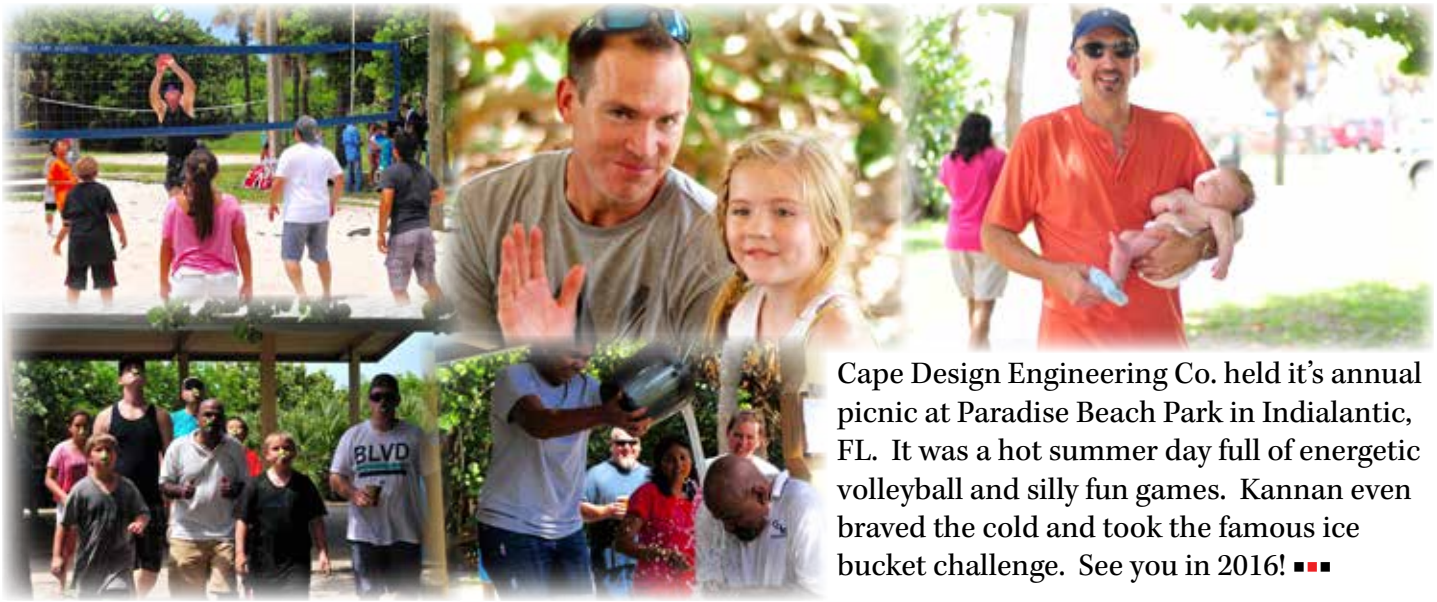
Continued from CDE Restructures Management Personnel

Otto Herrera, CGC
New Role: Regional Construction Manager
Otto is the face of CDE's construction division in North Florida. Otto has led all construction projects in the North Florida/Georgia areas and has proven himself to be an extremely capable and efficient manager. His interaction with our clients at the Navy has proven to be invaluable. As the new Regional Construction Manager he will assist the Director of Construction with acquisition, bidding, management, and interfacing with clients, as well as managing CDE's construction projects in North Florida and Georgia.

Joan Sottoriva
New Role: Construction Project Coordinator
Over her years at CDE, Joan has demonstrated her expertise in simultaneously managing and coordinating multiple construction projects. In simple words – Joan gets it done. As the project coordinator she will be working more closely with the Director of Construction Operations and will be assisting in the flow of all projects in Central and North Florida. Joan's knowledge of the construction industry and her goal-oriented drive enables her to be a vital member of the construction division.

Sami Mized
New Role: Manager of Marketing and Information Technology
Son of Lutfi Mized, Sami has been with CDE since its inception. His skill set and education is specialized in IT field and for many years he has been the guy behind the scene that makes all the technology work. Inadvertently, CDE discovered that Sami also has a proficiency in marketing and proposal writing. As the new Manager of Marketing, Sami will be directly in charge of all proposal development and marketing efforts. Also as the Manager of Information Technology he will continue to maintain existing and assisting in introducing new technologies to CDE.

A Lookback at our 2015 Annual Picnic!



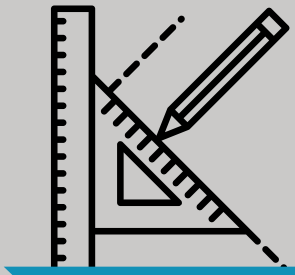
Cape Design Engineering Co. held it's annual picnic at Paradise Beach Park in Indialantic, FL. It was a hot summer day full of energetic volleyball and silly fun games. Kannan even braved the cold and took the famous ice bucket challenge. See you in 2016!

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.

JUST AWARDED

- UCF Chemistry Building Plumbing Renovation and Repair Design
- Concrete Caisson Seal Replacement Construction at NSB Kings Bay, GA
- UCF Engineering II Lab Exhaust Renovation Design
- M/E/P Upgrades Study for the King Center for the Performing Arts (Eastern Florida State College)
- UCF Engineering II Lab Exhaust Renovation Design
- Structural and Mechanical Design of the Fire Training Facility for Eastern Florida State College

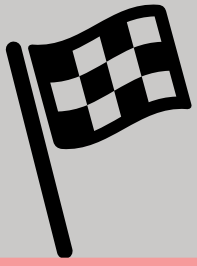


UNDER DESIGN

- 3 Megawatt Central Electric Plant with Integrated PV and Power Distribution for REEF Boutique Hotel Resort at Anguilla BVI
- UCF Liquid Nitrogen Distribution System for Engineering I Building
- Chiller Plant Upgrades for Palm Beach State College Belle Glade Campus
- Various Upgrade Projects for UCF Engineering I Building
- UCF Medical City Campus Generator Design

BEING BUILT

- Renovations to Eastern Florida State College Baseball & Softball Complex
- New Health Sciences Building at Eastern Florida State College Melbourne Campus
- REEF Boutique Resort Hotel at Anguilla BVI
- UCF Chemistry Building Plumbing Renovation and Repair Design
- 2.5 Megawatt PV Projects for NEXTera
- Chiller Plant Upgrades for Daytona State College



FINISHED PROJECTS

- VAB Stairway Fire Study for NASA/KSC
- Renovate Hospital Dental Clinic for NAS Jacksonville
- Wharf Crane Corrosion Repair for NOTU Canaveral
- Various HVAC Repairs at SCIF, Naval Support Activities Facility Orlando
- Design/Build High Pressure Fuel Skid Jet Engine Test Stand and Feed
- Build NAS Pensacole Bike Path
- Complete Hot Water Loop Build for NSB Kings Bay, GA

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!

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