Cape Design Engineering Co.



News Briefs

School District of Indian River County

CDE continues its proud history of working with public school districts, recently adding the School District of Indian River County as one of its newest clients. CDE has performed K-12 designs with Brevard Public Schools, St. Lucie Public Schools, Lake County Public Schools, and most recently Flagler County Public Schools. The new continuing services contract to provide MEP engineering services is mostly design work. CDE is excited to work with the School District of Indian River County and help it achieve its mission statement, which is to "meet the vision of educating and inspiring every student to be successful."

Flagler County Public Schools

The team of DLR, CDE, and DJ Design was recently awarded a contract by the Flagler County Public Schools to create a master plan for the Flagler Auditorium. The 26-year-old venue features a 1,000-seat auditorium and is Flagler County's premier performing arts center. The contract includes the renovation and expansion of the venue, as well as the adjacent high school's arts-related classrooms and rehearsal spaces. CDE is providing MEP services to Flagler County Schools and looks forward to expanding our relationship with them and with our teammates - DLR and DJ Design.

Revitalizing one of Brevard's Oldest High Schools



Conceptual rendering of the new Cocoa High School expansion classroom building being designed by SchenkelShultz and CDE. Rendering courtesy of SchenkleShultz Architects

Of all the projects CDE does, among the favorites are working with educational institutions, especially local. Recently, CDE has been working with Cocoa High School on several projects, helping the school renovate several old facilities and move forward with some new ones.

Cocoa High has 17 buildings on its campus and, considering that the school opened a half-century ago in 1968, some of the infrastructure is now outdated. Overall, CDE is doing considerable MEP renovation designs. For example, there are several electrical panels that are so old that replacement parts are not available, therefore making them unserviceable. The same concerns exist with aging mechanical and HVAC equipment throughout the campus. Much of the equipment in place is inefficient and at its end-of-life expectancy. An overriding goal is improving the air quality for the faculty and students. This involves replacing air handling units and updating and improving the school's central energy plant.

There has always been a campus building that was meant to be dedicated to vocational studies. But through the years, it became an overflow catchall from other buildings. It is now going to be repurposed and dedicated to vocations such as auto mechanics, automobile painting, carpentry, and welding. This means that about 40 percent of the walls will be repurposed in order to maximize the utilization of space. A locker room will also be eliminated and its restrooms upgraded.

Finally, CDE is doing the design/build on a new campus building (pictured above), which will be 18,000 square feet, housing 11 classrooms and a wellness center. When CDE completes all the projects, part of the end goal is that it will also improve the flow of students across the campus, while allowing better access to fields and outdoor seating spaces.

CDE Overseeing Space Florida Projects

Sometimes it almost seems as if CDE has a home away from home at Space Florida's Launch Complex 46 at the Cape Canaveral Air Force Station – and that's a good thing.

Several important projects at Complex 46 are under CDE's care, starting with analyzing, designing and retrofitting the launch pad. The projects have an eye on future use for rockets while also accommodating new Air Force safety requirements. One of those new requirements is a Lightning Protection System, or LPS, for the launch pad. To meet that initiative, CDE is designing a dual tower system to shield launch vehicles.

There is also a need for a support structure that NASA is calling the Ground Umbilical Structure, or GUS. The GUS will be used to hold critical equipment for the testing of NASA's Launch Abort System, known as LAS. The purpose of LAS is to test the new emergency abort system for the new Orion rocket.

NASA is providing the structure that will be used for their flight test vehicle and requires a new foundation for support during launch. CDE's role is to perform an investigation on the existing foundations and infrastructure and use that data to design a new foundation for the GUS.



Left top to bottom: Launch mount finite model in software; Launch mount in real life; Rendering of the Lightning Protection System. Right: Mobile Access Structure

Another need at Complex 46 is analysis of the launch mount stand that support rockets for launch. Space Florida tasked CDE to perform a finite element analysis on that support stand for various types of launch vehicles ranging from 230- to 325-thousand pounds. The launch mount must meet the latest Air Force safety requirements from its design manual.

Finally, there is the work CDE is doing on the Mobile Access Structure, or MAS, which is used to work on rockets. CDE did an analysis on the steel tower and platforms that encircles vehicles, allowing workers various access points to connect cables, piece parts together and in general do whatever is needed to prep a vehicle for launch.

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State of Florida Department of Management Services

CDE's relationship with the DMS continues with a new two-year contract that includes a two-year option from the state. The DMS is the business side of the Florida government and CDE will primarily work with its Real Estate Development and Management division, which will mostly include the design of new facilities and renovations of existing facilities – such as municipal buildings, courthouses, etc.

USAF TRACES Contract

CDE has teamed with Rhodes+Brito Architects and Nelson Engineering on a five-year, \$46-million contract with the department of the Air Force, primarily the 45th Space Wing, to provide engineering, design and construction management services. CDE's main role is structural engineering along with construction management and inspection services. The contract covers all Air Force assets – at Cape Canaveral Air Station, Patrick Air Force Base, Jonathan Dickinson Missile Tracking Annex, the Malabar Missile Tracking Annex, and Ascension Island.

Trident Wharf Revitalization

At the secure pier designed for the Trident submarine, CDE is in the middle of a year-and-a-half-long design-build project to replace all the piping, save for a small segment of PVC piping. This includes piping for potable water, sewer, oily waste, demineralized water, fire water, and low-pressure compressed air piping. CDE is also replacing the compressed air dryer.