

SAVING WATER

The ASAP Group is playing an important role in the C-43 project, a massive undertaking aimed at easing some of Southern Florida's water problems

By Mark Halsall

In southwest Florida, freshwater is a vital resource that not only provides sustenance for human and animal life but is also essential to the region's agriculture industry and the ecological health of the Florida Everglades and other natural areas. Protecting this resource, however, has become increasingly challenging in recent years.

Nutrient runoff from farmers' fields is fueling an increase in harmful algae blooms along the Gulf Coast and in inland waterways, and as a result of saltwater intrusion into southwest Florida's freshwater zone, salinity issues are on the rise throughout much of the region. Many areas also suffer from having too much water during the rainy season and not enough during the dry season.

The South Florida Water Management District has just embarked on a new half-billion-dollar initiative which it hopes will resolve some of these water quality and supply problems.

This initiative is called the Caloosahatchee River West Basin Storage Reservoir

Photos courtesy of ASAP Group | Water graphic: maypong/t23RF





ASAP SHEETPILERS

Simon Den Tuinder, president of the ASAP Group, says that for the C-43 project, his company will be relying heavily on a piece of equipment called the Sheetpiler.

The Sheetpiler is a 75-ton machine designed and built specifically for the installation of steel sheet pile, H-pile and casings. Because of its innovative design that incorporates both vibration and pressing, the Sheetpiler is able to boost production by up to three times compared to conventional methods, according to Den Tuinder.

“The unique part of this machine is that it uses vibratory installation with hydraulic downforce,” said Den Tuinder. “Because everything’s hydraulically connected and it has a telescopic boom, the Sheetpiler can put 15 metric tons of downforce on the sheet.”

Den Tuinder says that also means it’s easier for the Sheetpiler to penetrate harder soil layers, as well as to keep sheet piles plumb while they’re being driven.

“Typically, if you’re using conventional methods, when a sheet goes out of plumb, you have to pull it back up a little bit and then drive it back to make sure that it stays plumb. We don’t have to do that,” he said.

According to ASAP, the Sheetpiler is also economical to operate, since it only requires a three-man crew, and there isn’t any support equipment needed to set up or break down the machine when it’s on a job site.

Den Tuinder notes the Sheetpiler was invented by a Dutch company that had been driving pile since the 1870s. ASAP now holds a patent on the Sheetpiler in the United States.

Den Tuinder says ASAP plans to utilize one or two of its custom-made Sheetpilers for the C-43 project but it has other machines available if needed.

“We have five of them right now and we’re building a sixth one. We have enough resources,” he said.

Project, or C-43 as it’s more commonly known. The project, which is part of the Comprehensive Everglades Restoration Plan for restoring, protecting and preserving the water resources of central and southern Florida, involves the construction of a massive reservoir east of Fort Myers, Fla.

The purpose of the reservoir is to capture, store and manage stormwater runoff as well as water coming down the Caloosahatchee River and surrounding waterways, reducing excess flow into Gulf Coast estuaries.

The C-43 project is expected to improve the salinity balance and ecological health of the Caloosahatchee Estuary by controlling peak flows during the wet season and providing essential flows during the dry season. It will also supply much-needed irrigation water for farmers.

Construction has just started on the project and it is expected to wrap up in 2022. Once completed, the C-43 reservoir will encompass more than 10,000 acres and will hold in excess of 55 billion gallons of water. Its maximum depth will range from 15 to 25 feet.

The reservoir will be connected to a system of perimeter canals, and two large pump stations and more than a dozen water control structures will be constructed to enable the movement of water into and out of the reservoir.

The C-43 is largest project ever undertaken by the South Florida Water Management District. It’s also the biggest one to date for the ASAP Group, which has been contracted to perform the piling, tieback and tie rod systems work on the project.

Based in Miramar, Florida, the ASAP Group is comprised of three sister companies that are collaborating on the project – ASAP Engineering, ASAP Installations and ASAP Specialty Foundations.

Simon Den Tuinder, president of the ASAP Group, says landing a project this large is a real feather in his company’s cap. It’s also special because it’s the first time all three ASAP firms have worked together on a single project this size since two of the separate companies, ASAP Engineering and ASAP Specialty Foundations, were formed last year.

“The fact that we have our three companies combining forces is the reason why we can be very competitive in projects like this,” said Den Tuinder. “We’re very much in control of our own performance. We’re not



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depending on other people. For me, this is proof that it was wise to diversify, so we can present the full package to our clients. This is a new step in the growth of our company.”

Creating cofferdams

For the C-43, ASAP will be building a dozen cofferdams to support the construction of the pump stations and water control structures. In addition, it will be installing piling for a number of permanent structures as well as a canal retaining wall.

ASAP Engineering is designing and engineering all the temporary sheet pile structures that ASAP Installations and ASAP Specialty Foundations will be installing for the project. ASAP Installations is supplying and installing the sheet piling, and ASAP Specialty Foundations is supplying and installing tiebacks, tie rods and wales.

According to ASAP lead engineer Rafael Garcia, almost 12,000 feet of sheeting will be installed over the course of the project. For the temporary structures that ASAP is building, he says, a total of 1,330 pairs of sheet piles are needed, and that for the permanent structures, 1,334 pairs of sheet piles will be required. The sheet piles will range from eight to 52 feet in length.

Garcia says that the clay layers typically found below the dredge line have challenged the ASAP engineering team, adding that the team has also taken into consideration

the generally high water table in southern Florida and the de-watering efforts that will be required once the cofferdams are completed. To reduce seepage, he says, ASAP is installing hot rolled sheet piles so that the cofferdam structures are as watertight as possible.

“We’re using this type of piling, because they have the best interlocks for controlling water seepage. They’re more expensive, but

as far as de-watering goes, they’re the best solution,” said Garcia.

According to Garcia, the excavation of the cofferdams will range from nine to 30 feet deep. The cofferdams’ performance is critical given their proximity to the new dams being built, Garcia says, and for this reason, some of the cofferdams will be considered as sacrificial to mitigate any potential settlement due to the removal of the piles.



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– Simon Den Tuinder

Den Tuinder estimates 15 to 20 ASAP workers will be required for the job but says they won’t be on site the entire time. That’s because C-43 structures are being built in phases, which will require multiple mobilizations for ASAP crews. It also means they can reuse much of the sheet piling material

that is brought on site to build the temporary cofferdams.

“We will be on site about half the time, either installing something or removing something,” said Den Tuinder. “For this project, I think the big challenges will be the scheduling and logistics. Because there

are so many different structures, we have to make sure everything is always moving along in the right order.”

Den Tuinder says because much of the work is taking place in undeveloped areas, the ASAP crews will need to be mindful of wildlife.

“There’s going to be a lot of wildlife. We have to be careful with that,” he said. “We’ve done many of these types of projects before in the Everglades and we know exactly what we’re up against. But that doesn’t mean that you don’t have to keep your eye out all the time.”

Steve Dimino, vice president of ASAP Specialty Foundations, agrees.

“There’s always some kind of wildlife concern on these jobs [involving] tortoises, indigo snakes, alligators, panthers, whatever else.”

Dimino says with all their experience working in southern Florida, ASAP crews are well versed in the correct procedures for minimizing environmental and wildlife disturbance.

“We want to be stewards of the environment [and] make sure we’re not making big impacts wherever we go,” he said. ▼

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