

**MANSON CONSTRUCTION CO.**  
BUILDING A NEW KIND  
OF HOPPER DREDGE



WE LEARN HOW MANSON CONSTRUCTION CO. IS CHANNELLING ITS VALUES INTO THE CONSTRUCTION OF ITS LARGEST, MOST STATE-OF-THE-ART HOPPER DREDGE YET.

# BUILDING A NEW KIND OF HOPPER DREDGE

PROJECT MANAGED BY: **TIM GARWOOD**

**Manson Construction Co. (Manson) is one of the leading dredging and marine construction contractors in the USA. Manson is known for its waterfront work building bridges, ferry landings, wharves and piers, but its other core service is dredging, which makes up about half of the company's business and includes clamshell, hydraulic and hopper dredging. After 116 years, Manson remains as one of the top three dredging contractors in the USA. The construction and dredging firm also provides offshore oil and gas industry support, with a fleet that includes derrick barges with lift capacities up to 1,000 tonnes for marine heavy lifting.**

Indeed, Manson's top-of-the-line equipment and vessels have proved to be the bedrock of its reputation.

"Manson has earned a great reputation over the years," says Henry Schorr, Manson Construction Co. Vice President. "It takes a long time to earn that and we will do everything we can to maintain it by staying

reliable, ethical and safe. Our equipment is specialised, highly sophisticated, well-maintained and compliant with all regulations."

"Our equipment fleet is highly developed for the very specialised marine construction and dredging markets," agrees John Holmes, President of Manson Construction Co. "Most of our equipment, which is uniquely designed and custom-built, has evolved through many years of collaboration between our operations and in-house engineering teams."

In its mission to provide the most modern and well-maintained equipment fleet, Manson is also incorporating technologies that are in line with the most stringent environmental standards. This is partly driven by the fact that, among other locations, Manson operates in California, a state with some of the strictest air quality requirements in the world. Older engines are now being replaced by clean-burning and more efficient power plants. Drive units that were once powered solely

by combustion-engines can now be also driven by electric motors, and even plugged into shore power using large cables.

## A RARE BREED OF TALENT

While the quality of Manson's equipment is inarguable, Schorr insists that it's the company's people who are its most important asset.

"The risks we have in our industry mean it's important to have long-term experienced people not just in management but among our craftsmen and engineers to do the work safely and cost-effectively," Schorr explains.

Of course, finding those people is a challenge, especially given the unique demands of Manson's workplaces on its crews.

"It starts with understanding what we need and – for us – that can vary by market type. Our dredge crews often work non-stop around the year, sleeping and working aboard the vessels while construction crews have varying and less predictable, but still demanding work schedules," says Jeff Arviso, Manson Senior >>



## World-Class Shipyard

Located in Brownsville, Texas, Keppel AmFELS is one of the most established shipyards in the U.S. We have a wealth of experience and strong track record in providing a wide range of solutions, including to the marine and renewable sector. As part of Keppel Offshore & Marine, we can harness the group's strengths in providing end-to-end solutions to meet the needs of our customers.

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### KEPPEL AMFELS

Keppel AmFELS is bustling with activity with several new and diverse projects. The yard has boosted its ship building expertise by upgrading its capabilities and enhancing productivity to be able to build a wide range of complex vessels. Keppel AmFELS is in the prime position to undertake engineering, procurement, and construction of specialized vessels for the Jones Act Market.

Two 2,525 TEU containerships are being constructed for Pasha Hawaii and will be ready to run completely on LNG on day one of service. These containerships will dramatically reduce the environmental impact with increased fuel efficiency. Upon completion, both LNG-fueled Ohana Class containerships will join Pasha Hawaii's fleet providing service to the Hawaii/Mainland trade lane.

Another ongoing project is the construction of the first offshore wind turbine installation vessel (WTIV) in the U.S. for Dominion Energy. The construction of this WTIV will provide significant American jobs and provide a reliable U.S. installation solution with capacity to handle the next generation of large-scale turbine technologies. This will better enable the offshore wind industry to bring clean, renewable energy to customers in the United States.

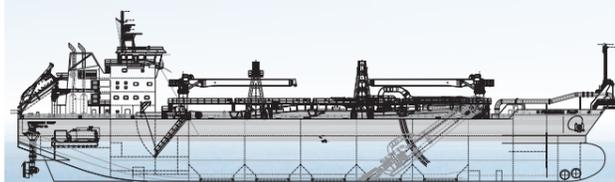
Manson Construction Co. has chosen Keppel AmFELS to build the largest self-propelled U.S. Hopper Dredge that will support the U.S. Army Corps of Engineer's mission of keeping the marine transportation highway open through the United States. When completed, the dredge will have a hopper capacity of 15,000 cubic yards and will operate primarily in the Gulf Coast and Atlantic Coast of the United States.

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AMERICAN DESIGNERS OF WORLD CLASS DREDGES



**HOCKEMA GROUP**



**Hockema Group's design of new 15,000 cubic yard hopper dredge Frederick Paup for Manson Construction Co.**

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Vice-President & Chief Engineer. "Regardless of whether you're talking construction or dredging, our work requires our teams to go to where the work is. In turn, it's very important that we be transparent in this demand when we hire."

Because Manson understands the demands it places on its people, it also takes its duty of care towards them exceptionally seriously.

"We recognise the commitment we require from our field teams, and our mission for management is to provide reasonable work rotations and have the proper staff to do that," Arviso points out. "We also want to make sure they have a good work-life balance with all the right resources and that they are fairly rewarded for those efforts."

Holmes adds, "Our culture is best summarised by our core values, and the first of those is that we take care of our people. They are committed to Manson and we treat them like family."

In fact, Manson is a family-founded business. "Our heritage is built on that but as we continue to grow and become a larger organisation the challenge will be in how to maintain a more family-style atmosphere which can be attractive to a lot of people," Arviso says.

**"MOST OF OUR EQUIPMENT, WHICH IS UNIQUELY DESIGNED AND CUSTOM-BUILT, HAS EVOLVED THROUGH MANY YEARS OF COLLABORATION BETWEEN OUR OPERATIONS & IN-HOUSE ENGINEERING TEAMS."**

Part of that atmosphere comes from the ownership structure of the company, which transitioned to an Employee Stock Ownership Plan in 2012.

Arviso explains, "We're an employee-owned company. For those eligible employees — almost all of our staff — we like to think that we're investing in our own company, providing an opportunity for those employees to have ownership in the company and a stake in the company's success."

### THINKING BIG

To ensure their capabilities expand to keep up with demand, Manson recently announced the construction of a 15,000 cubic yard hopper dredge with Keppel AmFELS, designed in collaboration with Hockema Group.

Named the FREDERICK PAUP, after the company's Chairman, the hopper dredge will be constructed at Keppel AmFELS' facility in Brownsville, Texas. It is >>

expected to be fully operational by Spring 2023 and when completed will be the largest US-flagged hopper dredge. Currently, Manson operates the GLENN EDWARDS dredge which now holds the title for the largest, self-propelled trailing suction hopper dredge in the United States.

“The GLENN EDWARDS was our starting point in designing this new dredge. We took that, reviewed it, learned lessons and made adjustments to keep employees safer, modifying the designs for environmental regulations,” says Schorr, who is overseeing the FREDERICK

PAUP project. “This required us to go to tier 4 engines with certain emission requirements to meet. We’ve gone with a diesel/electric hybrid design instead of straight drive diesel. The vessel is roughly the same size but with internal piping instead of on-deck piping and a much larger engine room to accommodate the larger engine.”

The larger engine and additional environmental protections have created challenges during the design of the hopper as all the components needed to fit within the ship’s hull.

**“WE WANT TO BE OUT IN FRONT OF OUR INDUSTRY ESTABLISHING TRENDS, SO WE WILL CONTINUE TO INVEST IN NEW TECHNOLOGIES TO ENSURE WE HAVE THE MOST ADVANCED AND EFFICIENT FLEET AND SUPPORT EQUIPMENT.”**



“With a hopper dredge, you want to carry as much sand volume and tonnage capacity as possible, so we had to expand the hull itself as it has additional machinery we didn’t have in the previous build,” Schorr says. “We went through a number of iterations in the design to make it more streamlined and get more efficiency in a hull of this size to meet the requirements we wanted.”

To carry a project like this out successfully required a great deal of planning, but also, Schorr insists, it is essential to bring the on-the-ground staff in at the earliest stage possible.

“It’s so important you put together a good plan and then vet at a high level with engineers to ensure that it’s feasible and safe,” Schorr says. “You need to be getting input from the people who will actually operate the ship, not at the last minute, but throughout the process.”

As the largest investment Manson has ever undertaken, it’s emblematic of the way the company works.

“It speaks for itself that the company is willing to step out and invest this kind of money,” Schorr points out.

The FREDERICK PAUP is arriving during a critical time for Manson, as the company is in the process of recharging its brand and key processes.

“We explored our rich history, our cultural values, and asked ourselves — ‘What is Manson Construction Co. today?’ We worked hard to define that, which resulted in the recent launch of our new brand messaging to prepare us for the future,” Arviso tells us.

“We want to be out in front of our industry establishing trends, so we will continue to invest in new technologies to ensure we have the most advanced and efficient fleet and support equipment.”



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