

UNIVERSITY OF VERMONT SELECTS CHARTWELL MARINE, BAE SYSTEMS AND DERECKTOR SHIPYARDS FOR PIONEERING RESEARCH VESSEL

Chartwell Marine selected to design and specify build for new low emission university research vessel, in collaboration with BAE Systems

Build contract has been awarded to US-based Derecktor Shipyards

Vermont, 1st December 2020 – Chartwell Marine, a pioneer in next generation vessel design, has announced that it has been selected by the University of Vermont (UVM) to design a market-first hybrid research vessel. The 19-meter catamaran, designed in collaboration with hybrid propulsion specialists at BAE Systems, will be capable of low-emission, low-fuel-burn operations and is set for launch in April 2022. Following a competitive vessel build tender, the contract has been awarded to Derecktor Shipyards, renowned for its expertise in commercial craft and yachts.

As public institutions, port authorities and private offshore operators in the USA and worldwide begin to adapt to future emissions regulations, and look to reduce their own carbon footprints, vessel design is becoming an increasing area of innovation for hybrid propulsion technologies. To provide operators with these next generation hybrid craft, however, several design challenges must be overcome, ranging from hull form to low-speed efficiency.

Chartwell Marine's hybrid design, which is powered by two Cummins QSB 6.7m 306hp diesel engines and two BAE AC traction motors, will provide the University with a new research and instruction platform to facilitate its advanced research operation. The hybrid propulsion method will enable all-electric operation for trips less than two hours in duration, which represents 60% of all current UVM voyages.

This will provide a number of benefits – not only reduced engine maintenance costs, as its diesel power plants see usage fall by 55%, but also improved low-speed manoeuvrability, a

quieter operating platform with less vibration for students, and also a less intrusive vessel for studying marine life.

This innovative survey suite will be further bolstered by InterOcean Systems, in partnership with the Woods Hole Oceanographic Institute. Together IOS & WHOI have developed a unique new winch system, which will enable UVM to operate more efficiently than ever before from both personnel and power perspectives. The winches are directly driven to reduce drivetrain losses and can be operated using a single wireless joystick. With its novel, compact design, this critical element represents another building block that establishes the hybrid science vessel as a transformative frontrunner in its class.

These benefits will be made possible by an advanced new catamaran hull form that has been optimised via Computational Flow Dynamics modelling to minimise resistance at low speeds, accommodate battery storage, and ensure maximum stability.

The University envisions three main uses for the vessel: a mobile ‘classroom’ for undergraduate field trips; a platform for graduate students researching the Lake Champlain environment; and a way for engineering students to study the future of hybrid vessel design.

As part of the design process, Chartwell Marine provided services including concept design, preliminary design, technical specification drafting, and technical auditing of the shipyard tender process. Chartwell continues to provide production information and support to Derecktor Shipyards. The build began in October 2020 and is set to be completed by April 2022. Derecktor was selected due to its technical expertise in hybrid vessel production and its strong tender response.

“The future of vessel procurement will look quite different to its current form today, as operators worldwide begin to respond to increasingly stringent requirements for low emission craft,” said Andy Page, Naval Architect and Managing Director, Chartwell Marine.

“The USA in particular is taking a lead in the adoption of marine emissions regulations, and, with emerging industries such as offshore wind changing the landscape of maritime activity

off the East Coast, it's great to see a regional institution like the University of Vermont take the initiative with the adoption of hybrid technology. There are certainly lessons to be learnt from this project that will be highly beneficial in the development of hybrid vessels for the offshore wind market in the US and further afield."

"Derecktor Shipyards has become an industry leader in the development and construction of hybrid vessels, and this will be our fourth such build," said Justin Beard, Marketing and Sales Development Manager, Derecktor Shipyards. "While the concept is similar to previous builds, this particular vessel includes berth space, as well as more dedicated space for research. The finished product will be a truly unique research vessel built to foster the education of future scientists and engineers."

Patricia A Prelock, Provost and Senior Vice President for the University of Vermont commented: "Going to market for the next vessel tender enabled us to explore new opportunities in hybrid vessel design, with Chartwell Marine offering a number of operational benefits. UVM's [Amplifying Our Impact](https://go.uvm.edu/vision) strategic vision (go.uvm.edu/vision) underscores the University's prioritization of research and initiatives that strengthen healthy environments and healthy societies. Our partnerships with Chartwell Marine and Derecktor Shipyards support that vision. We look forward to the journey of the vessel's construction and its delivery in 2022 when the ship will arrive at the Rubenstein Ecosystem Science Lab on Lake Champlain."

-Ends-

About Chartwell Marine

Chartwell Marine is a pioneer in next-generation vessel design. A reputed naval architect with an industry-leading track record designing award-winning high-speed vessels, Chartwell Marine supports ambitious boat builders and vessel operators around the world with specialist, independent design and consultancy services.

To find out more about Chartwell Marine, please visit: <http://www.chartwellmarine.com/>

About University of Vermont

Since 1791, the University of Vermont (UVM) has worked to move humankind forward. UVM's strengths align with the most pressing needs of our time: the health of our societies and the health of our environment. Our size—large enough to offer a breadth of ideas, resources, and opportunities, yet intimate enough to enable close faculty-student mentorship across all levels of study—allows us to pursue these interconnected issues through cross-disciplinary research and collaboration. Providing an unparalleled educational experience for our students, and ensuring their success, are at the core of what we do. As one of the nation's first land grant universities, UVM advances Vermont—and the broader society—through the discovery and application of new knowledge.

UVM is derived from the Latin “Universitas Viridis Montis” (University of the Green Mountains)

About Derecktor Shipyards

Founded in 1947, Derecktor Shipyards has since become a worldwide leader for excellence in the construction, repair and refit of yachts, commercial and military vessels. Today, four Derecktor facilities span the Eastern Seaboard of the U.S. from Maine to South Florida, offering vessel owners and operators everything from marina space to megayacht construction.

For more information about Derecktor Shipyards, visit www.derecktor.com, email jbeard@derecktor.com or call 772-595-9326