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Cover boat Artefact

Cutting-edge research and huge imagination have made Artefact the smartest supervacht afloat. Cecile Gauert gets a lesson in the art of seaborne science

PHOTOGRAPHY FRANCISCO MARTINEZ





with a DC bus (a direct-current-based diesel-electric system, also known as a DC Grid) that integrates lithium batteries, Azipods and a full dynamic positioning system. The captain loves the flexibility this provides. "You're limited only by your imagination," he says.

By the time this magazine comes out, it will have been five years since the contract was signed for the construction of an 80-metre yacht that will no doubt become a benchmark. Artefact, which has been cruising nonstop since leaving chilly Germany in early 2020, is like haute couture: one of a kind and perfectly fitted to its owners, but some of its features will inspire others. They already have.

The frameless glass that serves as the outer wall in the VIP cabins, for instance, motivated a client to ask for more glass in his own project, says Fadi Pataq, sales and marketing director for builder Nobiskrug. And diesel-electric pod systems, which were but a trickle over the years in the supervacht market, are more in demand than ever. "In a way, it started a trend," he says. It could also be that we have come to a tipping point

motivated by better stewardship of the planet and regulations that restrict emissions. What is certain is that behind Artefact are change-makers, whose knowledge and imagination have produced a thoroughly enjoyable home on the water.

Building the yacht has been a family affair, but while every family member contributed to the creation of the boat that would become *Artefact*, the impetus and driving force was an engineer whose company supports breakthrough technologies in quantum information sciences. His family had great memories of holidays on yachts they had chartered, and by 2013 he began to think about building a home able to travel the world. Inspiration also came from glossy publications casually placed by a friend on a coffee table. "It's your magazines that did it," he says with a laugh, of his decision to build Artefact. But it took some time to bring everyone on board, especially as a couple of family members suffer from motion sickness.

Along the way he met Captain Clark, a New Zealander who got into yachting in his early twenties and built a successful career as a charter yacht captain. Complementing the owner's big-picture ideas and deep engineering knowledge were Clark's understanding of the sea, yacht operations, project management and his undeniably impressive people skills.

gainst the green, hilly coast of St Lucia, birds swoop in daring arcs while flashes of silver leap over deep turquoise water. Occasional outboard-powered launches hug the coast, leaving freshly stirred foam behind them. Artefact, by contrast, is moving silently and slowly, allowing the splendid spectacle of nature to take centre stage through walls of near-invisible glass. The warm light of the subtropics bathes the quiet and high-tech bridge.

Captain Aaron Clark switches power from two small generators to batteries, and we keep moving silently at just six knots for several minutes, listening

to the birds. Artefact is equipped with an ABB diesel-electric system





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The total amount of glass on board is 750m<sup>2</sup>, some of it, incorporating invisible anti-fog heat strips, put to good use in the guest-friendly bridge. Work in acoustics extends to the beach club, which combines bleached oak, teak and 3D panels in Majilite used for aesthetics and their sound-damping qualities

Before even knocking on the door of a vacht designer or a shipvard, they started researching the latest technology and solutions available to address the issues of efficiency and motion sickness. They looked into multihulls and SWATHs before embracing the practicality of a monohull. They saw numerous yachts with a keen eye on what worked and what didn't. They also went to trade and equipment shows to investigate the latest forwardlooking technologies.

Very early on, it became clear that they would go to diesel-electric propulsion and embraced the idea of ABB's DC Grid, which thus far had only been done on a few commercial vessels. One of the major wishes for the design was that it should feature abundant glass, not only because it is visually pleasing but because seeing the horizon helps mitigate motion sickness. The owner also had a lot of experience with the material. The home he built on the shores of Lake Huron in Ontario is a marvel of engineering, with major sections of laminated glass - at the time among the largest ever made - cantilevered over open space. To realise this amazing structure, designed by architect Siamak Hariri, they had to do extensive work in acoustics to minimise the transfer of noise and vibrations that can occur with glass.

"I really enjoy the house we built. I love the views and the feeling that you are floating. I kept thinking it would be great if I could change the view, so when I had a chance to design Artefact, I wanted to bring that experience as much as I could," the owner says.

One day, Clark saw a rendering of a 50-metre yacht concept from Gregory C Marshall Naval Architect (GCMNA). It had unusual lines and lots of glass. He forwarded the concept to the owner and it struck a chord with him too. "We knew we were building an electric boat, so we wanted to make sure it had a bit more of a futuristic look and I thought it looked like an electric boat," he says of the original concept by Geoff Harrington, a senior designer in the innovative GCMNA studio.

"Artefact has evolved quite a bit from that original concept. The pieces were there: the narrow waist of the superstructure, the full-length glass, the way the overhangs were split, but Artefact is fundamentally bigger and more elegant," Harrington says. "The intent of the design was to create multiple private spaces and points of view forward, aft and on the sides."

While finessing the exterior, GCMNA also worked with the owners and captain on defining all interior spaces. They built a full-size mock-up inside a vacant warehouse, using wood and Tyvek construction wrap for key









SPACES AND POINTS OF VIEW

The Tai Chi room (above and opposite page, bottom right) and spa pool are part of the wellness/bridge deck; glass is used to minimise wind and maximise the views no matter where guests are





In the saloon, art glass by DKT Artworks conceals storage beneath windows. The original artwork features Su embroidery. The wood flooring is a straight-grain dark walnut while the walls are in a Taupe ripple fiddle-back sycamore. Below: the crafts room on the family deck

spaces from the bridge, to the galley, the owner's deck and an extraordinary comfort. The Azipods and DP system allow a great deal of fine tuning in Tai Chi room. An adult holding a Tai Chi sword overhead defined the height positioning the yacht to minimise the impact of waves and wind on the hull. The DC bus permits more efficient use of power, drawing from any available of this particular space. Artefact's layout bucks the current trends. It's a very different approach source on the grid, such as redundant variable-speed DC generators, and from that of many yachts afloat today. The forward area of the yacht, the ability to store surplus energy in banks of batteries. "This eliminates the except for the owner's panoramic office on the owner's deck, is dedicated need for energy-wasting load banks, which are needed to dissipate the excess power produced by a traditional yacht's fixed-frequency AC to operations. "Everyone says they want the minimum of crew, but they don't design generators," the owner explains. The modular design also allows future upgrades to new power sources, such as fuel cells. One challenge is that, combined with Tier III-compliant engines and the Selective Catalytic the forward end of the main deck (spacious pantry, galley, stores and a Reduction system that accompany them, the whole set-up is space intensive.

the boat for it," Captain Clark says. "The key is to minimise footsteps," he adds. He concentrated the very well-designed and appointed crew area on light-filled and spacious crew mess) with a lounge and cabins in the same position one deck below. The guest spaces are primarily in the aft to centre section, identified as the least subject to pitch and roll. The owner's deck includes a panoramic office and a fully equipped crafts room, just like they have at home. The primary guest circulation throughout the

yacht is via a central staircase and a lift. The only exterior stairs connecting decks are between the beach club and the main deck. It has the advantages of providing privacy and allowing the yacht to be secured easily.

One major decision was to go with ABB's dieselelectric system and the first ever DC bus installed on a superyacht. Efficiency was a big driver in the selection of this system, which builder ABB says optimally saves 30 per cent of energy over a conventional system, as well as emissions, but so was

### **DINE WITH THE STARS**

The formal dining space is a world of its own. In the daytime, the eye wanders to the panorama behind invisible walls of glass on both sides. For the centrepiece, **Reymond Langton Design** commissioned Silverlining to make a stunning dining room table inspired by the owner's love of astronomy. The "Cosmic Table" seats 14 guests. On the tabletop, cantilevered over a sculptural base made of steel clad in composite, is an artistic representation of the cosmos. The planets are finished in a textured bronze, metallised resin while smaller satellites, made in black mother of pearl, orbit a planetary compass. Laser-cut metallised inlays chart their movements around the sky. Continuing the theme is the dining room chandelier, made by interior outfitter List. The light-up domes represent the planets on their path around the solar system.











RLD incorporated window shapes in the guest cabins (below) and allowed the panorama to shine on the family deck. The silk panels were designed by RLD - those in the owner's cabin (bottom) were made using Su embroidery, while those in other areas were made by artisans such as Project Art London and Sabina Fay Braxton. Geometric patterns in the guest corridoo (opposite page, bottom) play off the window shapes





Another important piece of the puzzle was the toy garage. The largest of *Artefact*'s three tenders, a custom tender built by Lloyd Stevenson Boatbuilders is 11.7 metres in length. It had to be both easily loadable onto the yacht and stored out of sight. By the time they had finalised the spaces, *Artefact* had grown to 75 metres in length and the brief they had prepared was 85 pages long. They had already chosen key suppliers, including ABB, Caterpillar, Hug Engineering, Quantum and GLY for the glass.

"The owner and Aaron were very determined that this was the boat they wanted to build. This is a truly custom boat," Harrington says.

This appealed to Nobiskrug, builder of *Sailing Yacht A*, which the owner calls one of his favourite yachts. "After *Sailing Yacht A*, we noticed there is a gap in the market for people who do purely custom and since then we have been really focused on that. When *Artefact* came around, we realised it was one of these projects again," Pataq says.

During the engineering phase, requirements of technical spaces primarily determined the final length of 80 metres. The hull was tank tested and refined to achieve better efficiency and Nobiskrug identified the best method to build *Artefact*, which involved combining a steel hull with a superstructure built in composite with a steel core. "As we went deeper and deeper into the technical specifications, and due to the curvy shape of the superstructure, it was evident we needed to do that in composite. Today a lot of airliners are made of composite, so why not superyachts?" Pataq says.

Right around the time that the *Artefact* team was speaking with shipyards, they also interviewed interior designers, among them Reymond Langton Design (RLD). "Reymond Langton really understood the interior design challenge that *Artefact* presented because they realised how difficult it is to compete with the outside views in a house that is made out of glass," says the owner who accurately describes the design as "radical yet minimalist".

The designers freely admit that working with so much glass changed their approach because acoustics were such a leading consideration. To avoid the effect of an echo-filled glass box, everything had to be shaped in such a way that it would not reverberate noise. "The glass is not straight, there is always a tilt on it, every surface has unusual finishes and a dual direction," Pascale Reymond says.







"THE OWNER AND CAPTAIN WERE DETERMINED THAT THIS WAS THE BOAT THEY WANTED TO BUILD. THIS IS A TRULY CUSTOM BOAT"





Top: playing off the exterior features, the staircase's panels have a geometric pattern; leather work is by Sinn Living. Top right: the television room has Atmos surround sound. Right: RLD turned day heads into an experience. Opposite page: the owner's office, like the rest of the yacht, has windows made of two panels of bronze glass and one layer of mirror, which cuts heat without distorting views





The owner demonstrates what they achieved with a noise metre he keeps in his office, which is fronted by a stunning curved floor-to-ceiling window. With *Artefact* docked in the shadow of Gros Piton and waves crashing on the shore, the noise level is 28dB, "quieter than a library", he says.

Of course, not all of it is attributable to the interior materials. Soundproofing the yacht went from the bottom up. However, what is easily visible are ubiquitous wave patterns in walls and ceilings, which are interesting and soothing. The main saloon's ceiling, made of carved oak over acoustic panels wrapped in Majilite, looks like it is finished with meticulously matched driftwood, a finish inspired by the owner's house.

"You can affect the acoustic of a room massively by the finishes that you choose and the angles that you've used," says RLD's Jason Macaree, who worked closely with sound consultants on testing various materials, down to the type of perforations to use.

"We did not just put in an interior, we really [strived] for the interior to work with the outside, the acoustic and the volume. It is one of the cleverest designs we've done. It is a smart boat," Reymond says.

It is also very personal. An armillary sphere in the saloon represents the owner's love for science. Before Galileo, he explains, "armillary spheres were super complicated and not that accurate, but once humans realised the earth was not at the centre, the armillary became very simple. This one helps you navigate the earth and figure out where all the constellations are."

Reymond Langton worked with DKT Artworks and a Swiss horologist on this marvellous object that catches the light as the sun sets behind the horizon, casting a golden glow throughout the saloon. The colour gold is a bit of a theme in the art glass that lines lower portions of the walls, and in a stunning reproduction of Gustav Klimt's *The Kiss*, handmade in an ancient silk embroidery technique perfected in China. A companion piece on the opposite wall is based on a famous Chinese painting.

Just like every element of *Artefact*, from her imaginative form to her cutting-edge function, the artwork is a perfect marriage of art and science.

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## "WE REALLY STRIVED FOR THE INTERIOR TO WORK WITH THE OUTSIDE, THE ACOUSTIC AND THE VOLUME. IT'S ONE OF [OUR] CLEVEREST DESIGNS"





Beam 16.82m

Draught (full load) 4.2m

Gross tonnage 2,999GT

#### 2 x CAT C18 ACERT SCAC;

1 x CAT C9 Propulsion 2 x ABB 2,200kW Azipod 1 x 219kVA

Fuel capacity

260,000 litres

55,000 litres

Freshwater capacity

Speed (max/cruise) 17.8/15 knots

Range at 15 knots 5,300nm

Boatbuilders; 1 x 7.1m Sealegs;

#### 1 x 7m Novurania Chase 23 Owners/guests 14

Crew 24

Classification Lloyd's ₱ 100 A1 SSC Yacht Mono G6; ♥ LMC UMS

composite superstructure Naval architecture Nobiskrug

## Exterior styling Gregory C Marshall

Naval Architect

#### Interior design

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