



# OSK-SHIPTECH IN DRIVING SEAT OF PASSENGER SHIP DESIGN

In the highly competitive world of passenger ship design and engineering, OSK-ShipTech, the Danish naval architect and marine interior designer, has always emerged as a frontrunner. Looking at its long-established, solid relationships with its clients, its broad expertise, and its vision, among others, one can easily understand the reasons why it enjoys the enviable leading position in the field where so many others also excel.

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As a core segment of the ubiquitous OSK Group, OSK-ShipTech offers a wide range of expert services, including maritime design, naval architecture, concept development, project and risk management, etc.

Prior to the pandemic, its passenger ship design businesses were going from strength to strength, largely driven by the boom in the cruise industry. By the spring of 2020, OSK's cruise-related businesses alone represented about twenty per cent of its total annual turnover.

Sadly, by the end of March of the same year, all of its remaining cruise-related businesses were cancelled because of the outbreak of the pandemic, forcing the company to take the drastic and gut-wrenching action of laying off seven of its valuable staff.

This may sound terrifying, but, in reality, COVID-19 has barely affected the company's overall business. It has now a substantial and growing volume of work in the ferry design sector. "We have since re-hired a similar number of staff and we have so many good and solid

customers all over the world," Anders Ørgård, Chief Commercial Officer at OSK-ShipTech, told Shippax in a recent exclusive interview.

This is, after all, a long-established naval architect and marine interior design firm with a global presence and an unassailable reputation for quality and excellence. "We have not seen any downturn in terms of our business volumes," said Ørgård, who is also a proud board member of Interferry. "On the ferry side, we were quite lucky. In the early period of the COVID-19

pandemic, a number of clients called us about developing new concepts. They wanted to know how new fuels and so on could affect their future businesses. We have done an awful lot of concept design works in the last fifteen months or so. I see it more as a venture to establish a knowledge-based concept on new fuels — how would they affect ship design, operations, and logistical thresholds, etc. That has been an exciting journey, also very interesting support from our customers.”

Indeed, among multiple other reasons for its success, OSK’s well-established relationships with its customers have served as one of the most powerful forces that have propelled it to the current market position.

### Relationship well-established

The relationships between ship designers and their clients, both owners and builders, are always intimate, quite simply because of all the design and operational details involved demand intense and close cooperation over a period of time. This must also transcend cultural differences and geographical divides.

No one understands the importance of this better than OSK. In Europe, OSK’s footprints are found everywhere, from East Mediterranean to the Baltic. As we write these lines, Ørgård is attending to businesses in Greece and forging further links with clients.

One step ahead of most, OSK has been working with Chinese shipyards long before the wholesale migration of ferry building business to that country. “We have been active in China for more than 20 years,” said Ørgård. “Our relationship with China goes back to 1998 when the first Destination Gotland

ship was being designed and built. My colleague Kristian Lind and I spent three years working at GSI (Guangzhou Shipyard International) for this project. We have developed a lot of relationships and have a lot of friends there.”

In 2019, Ørgård travelled to China fourteen times on his company’s business. He believes in a profound cultural understanding to be key to OSK’s success. In fact, his personal relationship with China goes back to his student day. “In 1992, I took a six-month break from my university studies and spent five months backpacking in China. I consider that to be my best investment, ever.”

So, being one of the first to become part of the international ferry building scene in China, the company stays ahead of the curve and has been sharing the growth journey with the as yet still nascent Chinese passenger ship building industry. To maintain its footing in China, perhaps more than in anywhere else, there has to be a deeper empathy. “For OSK, as a business, we have to have a strong cultural understanding. That is fundamental to our success in China,” said Ørgård.

This on its own would secure OSK a firm position among the luminaries of modern-day ferry construction industry. But this alone is not sufficient to propel OSK onto its present position. It needed much more than that. Indeed, OSK’s competitors also understood the importance of relationships and cultural empathy. OSK needed other advantages in this competitive arena, and it has them in abundance.

### Unique combination

Established in 1966, with more than 50 years of experience, OSK prides itself with its unique combination of technical

and commercial expertise. The company also specialises in risk management. It has therefore a wider perspective when it comes to offering its services and can base its design ideas upon a bigger platform.

“What makes us different from our competitors first of all is that we offer both naval architect and interior design services in one company,” said Ørgård. “That underlines our business model, which is based on understanding such fundamental issues as why a ship is making money and why another ship is losing money and what are the parameters. You have to focus on designing an efficient ship.”

With a wider range of expertise, OSK has been able to offer maritime design and vessel concept services beyond what a traditional ship designer can offer. As well as technical aspects, it can offer commercial advices.

“The most important part of my role, when I participate in developing the tonnage strategies together with the shipowners, is to look at, of course, the fuel strategies, as well as making sure that the asset value is not depreciating more than normal over the lifetime of the vessel,” said Ørgård. “That means we have to ensure that the asset has a second life, so to speak. During the first part of its life, it is operated on one fuel and it will have the option of swapping to an alternative fuel during the second part of its life. This flexibility in fuel strategy is most important. We have a proactive and flexible view on the fuel strategy, which means that we always start by focusing on diesel electric as power source and then look at what will likely be the Plan B for the ship. So, we think in terms of both the second-hand value and the fuel strategy.”

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By looking at longer term in this manner, OSK is answering one of the most fundamental questions of the industry in the era of rapid changes, especially in terms of future fuels: how to prevent the newbuilding from becoming obsolete too soon? This kind of vision is an important driver of the shipbuilding industry, for it affords confidence to shipowners who are thinking and hesitating about ordering newbuildings. Being able to offer a more holistic approach to ship design is certainly one of OSK's major strengths. But this also requires the company to be flexible in responding to the multifarious needs of its clients.

### Flexible offering

While the centre of ferry-building gravity is rapidly shifting towards the East, principally to China and, to a lesser extent, South Korea, there are still European owners who prefer to build their ships closer to home if finance is less of a consideration.

"We see examples of both types of clients," said Ørgård. "There are a lot of clients who want to build in Europe, but, of course, finance is sometimes a challenge. As a business we can handle both types of clients. We don't see this as a big challenge. We have done a lot to be more flexible."

With so much of its business now in China, the long supply chain challenge is very real. This is often the reason some shipowners choose to build in Europe despite the higher costs. Ørgård is emphatic that long supply chain is not an issue for OSK. Besides having a branch office located in Hong Kong, the company's working method is changing, aided by technology.

"I don't think we will need to travel so much in future," Ørgård told us. "On the design side, our approach is now much more web-based and we have developed all our designs in virtual reality. This means that we can interact with our clients all over the world [without physically being there]. We design in a completely different way today. We develop the general arrangements in virtual reality. That means travel costs is much lower and cross-border cooperation is much simpler."

With multiple projects in three shipyards in China and South Korea (GSI, CMI Jinling, and Hyundai Mipo), involving no fewer than ten major ro-pax newbuildings (ordered by DFDS, Moby, P&O Ferries, TT-Line, and KiwiRail) between now and 2026, more are likely on their way, further increases in flexibility must be key to OSK in the coming years.

"We have many projects in China right now, with Jinling newbuildings for TT-Line, and Moby, DFDS, and P&O Ferries projects at GSI," said Ørgård. "For TT-Line we have developed the concept design, the tender and contract designs, and the basic design on the technical side and a minor interior tender package. This is more of a technical project for us. At GSI, we have developed the concept and interior designs for DFDS, part of the basic design and all the interior designs for Moby, and concept and part of the basic and interior designs for P&O Ferries' two Dover-Calais double-enders."

In addition to these, OSK has recently finalised the interior design project for the 641-passenger GLOBAL MERCY, Mercy Ships' new hospital vessel, with the beleaguered Tianjin Xingang Shipyard. Beside Stena's E-Flexer's and Viking Line's VIKING GLORY, OSK is

actively involved with all other major European ferry construction projects in China. "And we now also have the KiwiRail project at Hyundai in South Korea," added Ørgård.

### Visionary designer

All these projects have different requirements. They also demand agility and vision. OSK is rising to these challenges. Not just looking at the ship design per se, before proposing a design, OSK examines many aspects in a much wider context, including efficiency, cost, and commercial considerations.

"We look at both the port layout and ship design to see if we ought to spend money on the ship design or on altering port layout and how they will all work together," said Ørgård. "That is beneficiary. If you look at the P&O Ferries project, the saving on fuels we have achieved would not be possible if you just copied the previous designs on the route and then just changed the layout of the accommodation areas, so to speak. That would never achieve the intended business objectives, which were fuel efficiency, operational efficiency, and better passenger experience. Those three elements are fundamental to designing a double-ender where you have the opportunity of shortening your port stay and reducing manoeuvring times in order to save a lot of fuel. This is very much in line with environmental thinking of today's world."

Through its well-considered designs, OSK is thus closely participating in the shipowners' future business successes and financial strategies. This requires clear vision and insight into the world of shipping as a whole, past and present. To ensure its continuing driving-seat position, OSK needs to think about future

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design dynamics in relations to technological and fuel type developments.

Here, OSK's competence is abundantly demonstrated by Ørgård's firm grasp of design trends. There is now a growing belief among industry insiders that technology in the form of Internet of Things (IoT), for instance, will fundamentally change the passenger ship design in the not-too-distant future. But Ørgård was cautious about this assertion. "We will not see the changes that fast," he said. "I think we'll see a similar situation as we did with SOLAS 2000, for instance, where ship designers were little uncertain about how to interpret the new rules and regulations. We then saw some designs that were challenging conventional ideas. I believe we will see a lot of ideas not so much different from what we saw with LNG-powered ship designs, which was also a design change, but not a significant one. It was more to do with the logistics on board in relations to alternative fuel changes."

Ørgård sees the development of fuel types as a key driver of future ferry design. "Take a look at the STENA ELEKTRA, for instance, a pure battery-operated ferry," he said. "There is an opportunity to look at the design and to see how we can change things. Depending on the development of fuel types. We are participating in some projects now with developing methanol as marine fuel, for instance. This fuel uses the traditional tanks. So, there is not much change to tank design there. And engines will be

the same; just different technologies. For hydrogen, in compressed or liquified form, on the other hand, the tanks are located lower down, just like with LNG."

Ørgård is also aware of design challenges ahead, which OSK is keenly aware of and is constantly proposing new solutions and ideas. "From logistics point of view," he said, "when you look at the ferry, you still have this large main deck, which is the bottleneck of onboard cargo logistics. So, it is more about how to utilize the space below the main deck, especially in short-sea shipping where we are looking at, for instance, hydrogen as the main propulsion energy source and battery solutions. Utilizing this space available below the main deck [for storing fuels] is too troublesome for the cargo logistics. I don't think we will see the utilisation of the space for this purpose, even though it is available, because it will lengthen the port turnaround time too much and thereby increase the fuel consumption."

It is this kind of detailed, logical, and forward thinking that gives his clients confidence. "I see much bigger design changes in the accommodation areas," continued Ørgård. "Here we already see a change toward a simpler food service, more grab-and-go, more street food type approaches, and more COVID-19 prevention friendly offering. We also see more IoT applications in booking, in ordering food, and so on. I think these will change the way we design ships. This change had already started before

COVID-19 was known, but the pandemic has had a positive effect on that trend. Also, we will see more features offering more flexibility for winter and summer operations."

## Looking ahead

The future is hard to predict, especially in the era of the pandemic. But Ørgård is under no illusion about certain trends. "I can definitely see hydrogen-powered ships on the ten-year horizon," he told us. "I think it is clear that the picture we see at the moment is: for ferries operating on a crossing time of less than two to three hours, batteries and maybe hydrogen will be the next option as the power source; for crossings lasting more than three hours, we will see a combination of batteries and hydrogen; and for deep-sea operations, we will need to use other alternative fuels, such as methanol. We have already enabled methanol to achieve up to 400kW, and we have the fuel cells just around the corner for marine applications."

OSK is at the forefront of research and development in this area, too. "We are involved in a lot of projects with fuel cells. But that is just for short-sea shipping for now," said Ørgård.

It is not difficult to imagine that OSK, with all its well-cherished design leadership, its combination of expertise, and its vision, will continue to stay ahead of the game, however it evolves in the coming years. ■

## Selected projects



ILLUSTRATION: OSK-SHIPTECH