

the architects of BS Delos

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Good news from Greece at last

During the past year, Greece has been in the news for all the wrong reasons. We are therefore delighted to bring you some good news from that country and this is not a moment too soon. With a myriad of beautiful, sun-spoiled islands, genuine hospitality and excellent cuisine, Greece will always be an ideal holiday destination. If you haven't made any summer holiday plans yet, may we recommend Greece? Instead of flying directly to your favourite island, perhaps you could consider taking a short detour via Athens and catch a ferry from Piraeus. Not convinced? Well, then we strongly suggest you reading the following pages.

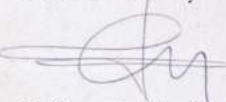
The days of Greek operators plying the Aegean with obsolete former Northern European and Japanese tonnage have long gone. Actually, the average age of the Aegean fleet is way below that of the Baltic fleet. The Baltic had long been regarded as THE place where the ferry action is; but during the last fifteen years, operators in the Mediterranean have pointed the way.

Blue Star Ferries has been instrumental in rejuvenating the Greek domestic fleet and has further raised the bar with the introduction of the BLUE STAR DELOS, soon to be followed by the BLUE STAR PATMOS.

The owner and all the people involved in the project have every reason to be proud of what are undoubtedly the right ships for the routes they serve. We travelled to Greece to sample the Blue Star Ferries experience and to see the new vessel with our own eyes. How impressed we were! With her high capacity, splendid accommodation and plenty of power on tap, the BLUE STAR DELOS is the ship for the current market. We took a return trip from Piraeus to Santorini (via Paros, Naxos and Ios) and were welcomed on board by Costis Stamboulelis and Chris-Alexander Korfiatis of Attica Group, as well as by Apostolos Molindris of Molindris + Associates. They followed the project from the first sketch to the delivery and went to great lengths to show us all the details that set BLUE STAR DELOS apart.

The ships represent a huge investment in these challenging economic times. But it gives Greece a spark of hope as Blue Star Ferries clearly demonstrates that it's not all doom and gloom out there.

Piraeus, February 2012



Philippe Holthof



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WHAT A STAR!

BLUE STAR DELOS MAKES WAVES IN THE AEGEAN

For those who think that the GA plan of the BLUE STAR DELOS has been copied and pasted from that of the earlier generation, think again, because she is every inch a different ship. The modern, clean and stylish interior design with softer colours also reflects the company's change of ownership since the last ferries were built in 2002. Blue Star Ferries, their consultant naval architects Knud E. Hansen and the interior designers of Molindris + Associates have every reason to be proud of their new generation of ships.

By Philippe Holthof



For the untrained eye, the BLUE STAR DELOS may appear to be a bigger sister of the BLUE STAR ITHAKI-class of vessels. Nothing could be further from the truth. The funnel shape is very similar because this has become a Blue Star Ferries trademark, but the similarity ends there. Instead of beginning with the GA plans of the BLUE STAR ITHAKI-class and making some modifications, Blue Star Ferries deliberately started with a clean sheet. The newbuilding team, headed by Costis Stamboulelis, took into consideration comments from the everyday ferry users and the people working on the ships. Needless

to say, the new ships also incorporate all the lessons learned from operating the BLUE STAR ITHAKI-class.

Introduced in 2000, the BLUE STAR ITHAKI was the first real newbuilding in a long time for the Greek domestic market. In 2002 she was followed by the modified sister ships BLUE STAR PAROS and BLUE STAR NAXOS. These ships were based on the hull form and dimensions of the BLUE

STAR ITHAKI, but were in a class of their own with an improved lay-out. All three ships were built by Daewoo Shipbuilding & Marine Engineering (DMSE), the builder of BLUE STAR DELOS.

Purpose-built for the lucrative Piraeus-Paros-Naxos-Ios-Santorini route, the BLUE STAR DELOS is probably the epitome of what a Greek domestic ferry should be: combining a high vehicle and passenger

BLUE STAR DELOS timetable (summer timetable in italics)

From Piraeus					
	Dept. Piraeus	Arr. Paros	Arr. Naxos	Arr. Ios	Arr. Santorini
Daily	07:25	11:40	12:40	14:05	15:10
	07:25	11:25	12:30	14:05	15:10
To Piraeus					
	Dept. Santorini	Dept. Ios	Dept. Naxos	Dept. Paros	Arr. Piraeus
Daily	15:30	14:15	18:00	19:15	23:25
	15:30	16:40 (*)	18:15	19:25	23:25

(*) Calling at Ios again on the way back to Piraeus only in the mid-June to mid-September period



► capacity with a 23 to 26-knot service speed (depending on the season). Competition is fierce; on the Cycladic milk run Blue Star Ferries competes head-to-head with a major operator of fuel-thirsty lightweight fast craft. These ships have traditionally only limited freight space. Their passenger accommodation consists of rows and rows of airline-style seats. With Blue Star Ferries slightly increasing its speed and its competitor being forced to reduce the speed of its fast craft to save on bunker costs, speed is no longer an advantage in ticket sales. Hi-speed tickets still come at a premium price and the cost of the ticket determines the passenger choice more than the duration of the crossing. Since passengers vote with their feet, BLUE STAR DELOS with her high capacity and lavish accommodation will likely be the clear winner on the Aegean.

The conceptual design of the BLUE STAR ITHAKI-class was made by Del-tamarin. For the BLUE STAR DELOS, the Attica Group appointed Knud E. Hansen to develop the project, continuing a long-standing relationship stretching back to the days when Panagopoulos controlled Royal Cruise Line. The basic design of BLUE STAR DELOS was further refined by DSME; but the exterior lines are more muted and less dynamic than on the BLUE STAR ITHAKI-class, which boasts a more

raked forward superstructure. There are other differences that are very obvious when you see the ships berthed next to each other in their Piraeus homeport. BLUE STAR DELOS is bigger (20 metres longer and 4.3 metre wider), has an additional passenger deck, more well-protected outside deck space and huge windows wrapped around the ship's shell.

The project for two more newbuildings was initiated shortly after the introduction of the BLUE STAR NAXOS. For a number of reasons, it took more than six years before the order was effectively placed. In the meantime, with shipyard activity at an all-time high, newbuilding prices were soaring. There was a shortage of equipment such as engines, crankshafts, propellers, etc., which led to even longer delivery times. Because Blue Star Ferries did not want to waste too much time, they ordered the engines for the first ship two years before signing the contract with DSME. The fact that Blue Star Ferries had waited so long with the double-order ultimately became a blessing in disguise as newbuilding prices plummeted in the aftermath of the 2008 credit crunch. With DSME being eager to re-enter the market of high value-added passenger ships, they offered Blue Star Ferries an attractive price. Perhaps the order with DSME did not really come as a surprise because, after all, the BLUE STAR ITHAKI-class was also built by DSME. Even so, all the shipyard employees who had been involved in the construction of the previous vessels were no longer there so there was a steep learning curve for the new team. Blue Star Ferries had also talked to many European yards, but none of them could meet the delivery time requirement and beat the offer from DSME.

Blue Star Ferries wanted to build in as much flexibility as possible in an effort to make the new ships also suitable for short international voyages. For this reason, they initially wanted a double freight deck configuration. This required a longer and more powerful hull form which was eventually not an option because the current 145.9 metres length is "Cycladic max" size. From the outset, Blue Star Ferries specified a 2,400-passenger capacity, an increase of more than 900 from the predecessors.

Utilitarian boutique ship

Unlike the fast craft of Blue Star Ferries' rivals, BLUE STAR DELOS serves the Cycladic islands of Paros, Naxos, Ios and Santorini on a year-round basis. Apart from having a lifeline function throughout the year, she is meant to be a workhorse during

the holiday periods, as Blue Star Ferries expects to lure many passengers away from the fast craft.

BLUE STAR DELOS leaves Piraeus daily at 07:25 in the morning, spending 16 hours at sea with only very short stops at the islands. Even in Santorini, which is the last stop on the route and the port of departure for the return trip, the vessel docks for twenty minutes only. Specifically designed for this high-density route, extremely robust, durable and easy-to-maintain materials have been used throughout. DSME first proposed to use local materials, but Attica Group decided to source European furniture and fabrics because this would make later replacement easier. Potocco from Italy supplied all the furniture. Most of the lighting came from equally Italian Artemide.

The interior designers of Molindris + Associates were involved in the project from day one. Ever since the construction of the SUPERFAST V and all the other ships that followed, the architects of Molindris + Associates have formed a close-knit team with Costis Stamboulelis and his department.

Things have changed at Attica since the delivery of the last real Superfast ferry back in 2002, with Petros Vettas having taken over the reins from Pericles and Alexander Panagopoulos. This is also reflected in the ship's interior design. The cherry wood decor made way for a fresh and clean interior atmosphere, with white and off-white being used for most of the ceilings and walls. The carpet colours are light and have a warm cast with grey tones. The use of imitation wood has been reduced to a strict minimum.

One of the main considerations was to give the ship as much light as possible. This has been successfully achieved thanks to the use of large floor-to-ceiling windows. The front lounges on decks 6 and 7 further benefit from a row of picture windows that overlook the bow.

"Nature" is the ship's interior theme, underlining the green corporate image of Attica Group's parent company, Marfin Investment Group (MIG). There are many references to the theme, all the way from the large black and white pictures of leafless trees to mauve flower patterns in the ladies' toilets.

Efforts have been made to reduce the ship's ecological footprint. Strong halogen lighting has only been used where necessary or where it is required by regulations. Thanks to low voltage and LED lighting as well as the new generation T5 fluorescent tube lamps, energy use for lighting is reduced by 30 percent. Clearly, less heat is radiated from these lamps, which, together

with green tinted windows, saves on AC energy.

Apostolos Molindris is a typical perfectionist architect and interior designer who pays much attention to details. AC diffusers, for instance, are not visible but rather hidden behind the ceilings.

The ship

BLUE STAR DELOS has a single freight and three separate car decks, two of which are below the main deck – Deck 3. The upper car deck occupies almost two thirds of the superstructure length. The forward section of Deck 5 houses the crew's accommodation and mess rooms. Typical for Greek ferries, foot passengers embark via a stern ramp, which connects with the upper decks. The stairs are letter-coded from A to E, with the large deck numbers being displayed in the stair halls. Clear signage and "you are here" panels further ease navigation around the ship. For certain facilities, such as cabins and airline-style seats, their names are shown at the entrances in large, vertically oriented characters.

There are one service/crew and two passenger elevators. The forward passenger elevator connects the lowest car deck with all the upper decks. The aft elevator has been specifically designed to carry a stretcher and gives almost immediate access to the three-bed hospital on Deck 7. Although not required, a doctor is permanently on board. BLUE STAR DELOS can transport patients in the best possible nautical way between the islands and the Greek mainland.

The addition of an extra public space deck is a big improvement from the BLUE STAR ITHAKI-class, reflecting the higher passenger capacity. The entire Deck 6, including the front lounge, is Economy Class accommodation. The Business Class lounge has been moved one deck up. Cabins on Deck 7 have been retained.

Straight, if somewhat narrow, inboard parallel walkways link the ship's front with

Molindris + Associates

After leaving AMK, Apostolos Molindris started his own business in 1997 with a small team of very young and enthusiast architects. Attica Group was the most important client of the new office. Through the years, with the exception of the BLUE STAR ITHAKI (which was ordered by Srintzis Lines), Molindris + Associates have designed all Attica Group's ferries, from the SUPERFAST V onward. In addition to marine projects, the team of architects- interior designers also works on a wide variety of land-based projects. The team consists of: Apostolos Molindris, Evangelia Kintou, Panayiota Kainari, Mara Korompilia and Konstantina Alipranti.

Molindris + Associates carried out the following projects for the Attica Group:

- SUPERFAST I + II: complete redesign of all public spaces on decks 7 and 8
- SUPERFAST III + IV: redesign and remodelling of shop & boutique areas
- SUPERFAST V – XII: newbuilding - complete interior design
- BLUE STAR 1 + 2: newbuilding - complete interior design
- BLUE STAR ITHAKI: partial remodelling of public spaces, addition of shop and outdoor bar and signage
- BLUE STAR PAROS + NAXOS: newbuildings - complete interior design
- BLUE STAR DELOS: newbuilding - complete interior design
- BLUE STAR PATMOS: newbuilding - complete interior design

BLUE STAR DELOS versus BLUE STAR PATMOS

BLUE STAR DELOS will soon be joined by the BLUE STAR PATMOS. Because she will likely serve the longer Dodecanese routes, the ship's GA plan has been modified with more cabins in lieu of bar facilities.

What are the main differences?

- The central Goody's/Flocafé area has been completely redesigned. A 163-seat self-service restaurant replaces the fast food style Goody's. A small à la carte restaurant and wine bar has been created on the portside of the casing.
- With 90 cabins boasting a total of 330 berths, the Business Class Lounge & Bar has been moved one deck down at the expense of the Economy Class Bar & Lounge.

aft end, uniting in the forward and aft lounges. The staircases are a bit cramped, but, admittedly, the passenger flow is mainly horizontal.

Deck 6 is divided into four fire zones. The aft zone contains the Snack Bar, which also provides access to the outer deck. The portside walkway connects the Snack Bar with the reception lobby and, beyond that, with a coffee shop and the forward bar. The starboard walkway leads past a

reclining lounge and the inboard shop to the Goody's restaurant and the forward bar. Deck 7 is the "quiet" deck with the tranquil forward Business Class lounge and a cabin block in the midship section. At the rear of Deck 7 there are reclining lounges on either side of the central casing and, further aft, there is an indoor/outdoor café. Behind the bridge on Deck 8 are the Captain and officers' cabins, as well as a few more passenger cabins.

A comparison of the BLUE STAR DELOS with the BLUE STAR ITHAKI and BLUE STAR PAROS

	BLUE STAR DELOS	BLUE STAR PAROS	BLUE STAR ITHAKI
Builder - year	DSME - 2011	DSME - 2002	DSME - 2000
Contract price	USD 90.5 million	USD 37.5 million	USD 31 million
Length o.a.	145.9m	123.8m	123.8m
Beam mld.	23.2m	18.9m	18.9m
Gross Tonnage	18,498	10,438	10,193
Passenger capacity	2,400	1,474	1,313
Number of cabins/berths	32/118	35/120	5/20
Total car capacity (lanemetres main deck)	427 (600)	230 (365)	225 (365)
Number of main engines - output	4 MAN B&W - 32,000 kW	4 Wärtsilä - 17,400 kW	4 Wärtsilä NSD - 16,560 kW
Service speed	26 knots	24.5 knots	24 knots

ShipPax Database

Selection of suppliers

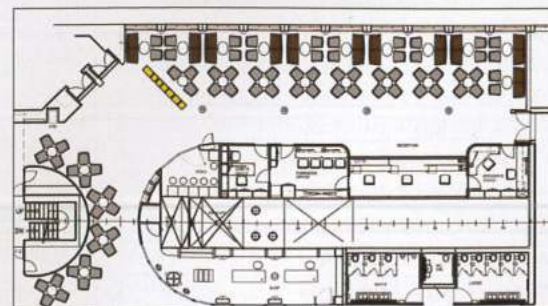
Molindris + Associates	Interior designer
B+V	Fin stabilizer
Dansk Wilton	Carpets
EVAC	Vacuum toilets
Hamworthy	Sewage plant
IMO	Screw pumps
Koja Marine	Air condition
KONE	Elevators, Escalators
Kvadrat	Fabrics
Lautex	Ceiling
Loipart	Galley
MAN B&W (STX)	Main/Auxiliary engines
Marioff	Sprinkler
Nordic Flooring	Vinyl floor
Renk	Reduction gears
RFD	Evacuation system
Rolls-Royce (Finland)	Deck machinery
Rolls-Royce (Norway)	Steering gear
Rolls-Royce (Sweden)	Side thrusters
Saint-Gobain Marine	
Applications	Fire resistant glazing, energy saving glazing
Schat Harding	Life boats
TTS Marine	Access
Uson Marine	Garbage system
Vacon	Frequency converters



► Welcome

As opposed to the BLUE STAR ITHAKI-class, the BLUE STAR DELOS has only a single access for foot passengers, located on the portside. This is definitely a change for the better, because the embarkation hall is exceptionally wide with an escalator and two sets of stairs. The modern "Kao" suspension and ceiling lamps give the impression of a three-dimensional sculpture.

The shell-side wall is decorated with framed, whitish glass panels, something that is repeated on other stairways. The angled wall that separates the embarkation hall from the reception plaza is yellow/orange coloured and displays the company's logo, a feature duplicated on the or-



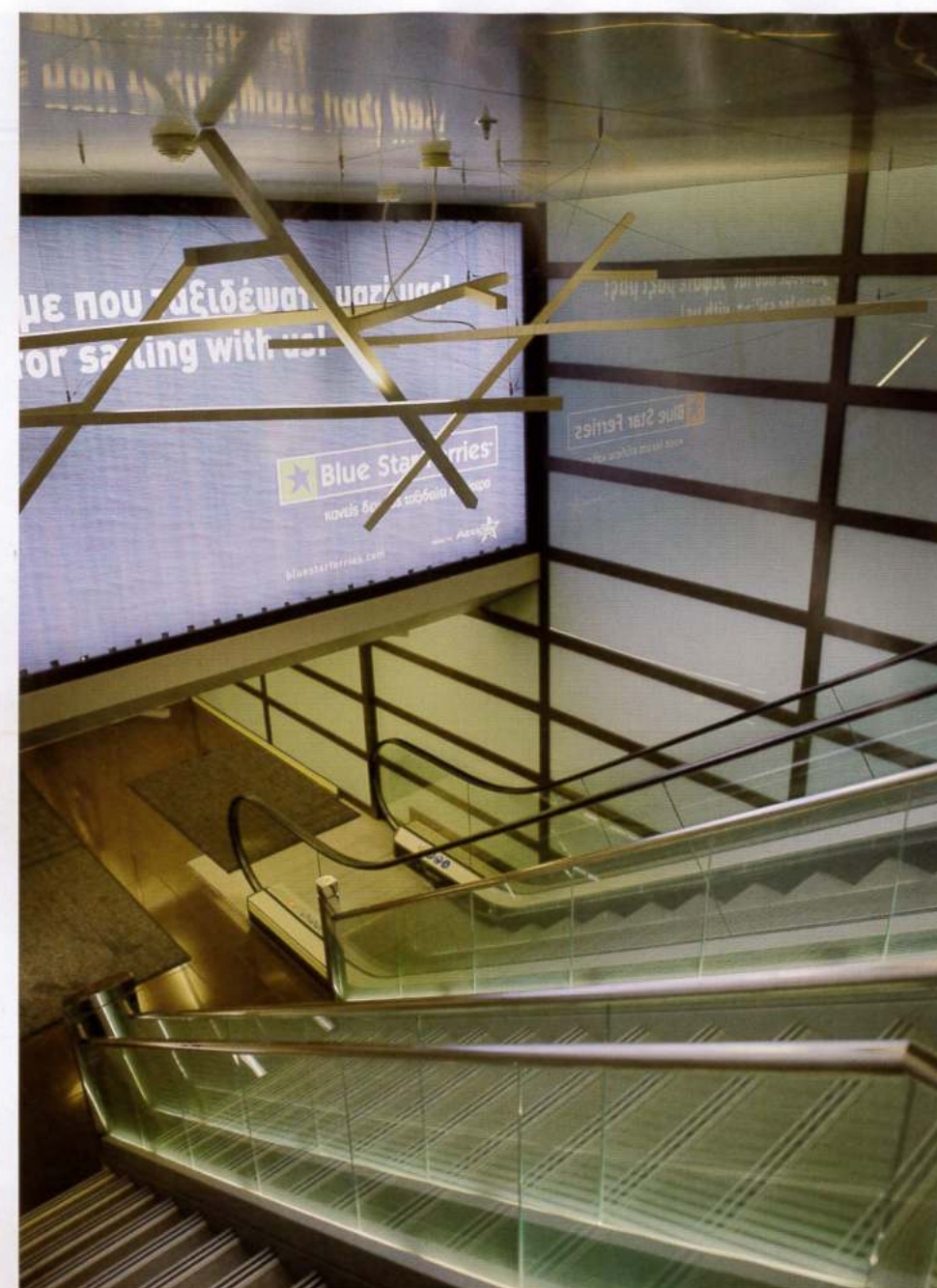
RECEPTION LOUNGE PLAN, DECK 06

ange glass wall behind the reception desk. The eye-catching WELCOME lettering at the entrance attract a lot of attention, especially from children who climb on them, using the "C" and "O" as tunnels. The letters are made of Corian, an extremely solid and easy-to-clean surface material created by DuPont. Made from a plastic resin that can be pigmented to practically any colour, Corian has many advantages and is completely seamless. Similarly, a material called Pyrolave, a volcanic lava stone glazed with enamel, is also used. Produced in Volvic, France, it is extremely durable and vandal resistant. Apostolos Molindris first learned about Pyrolave when visiting the Acropolis in his native Athens, where Pyrolave slabs are used for permanent outdoor signage. It is believed that the use of Pyrolave on board this ship is an industry first. Apostolos Molindris has made extensive use of both Corian and Pyrolave, amongst others, for bar counters and partitions.

Water, the beach and the sea are the theme of the ship's aft part, which includes the reception area and the Snack Bar. The wall pictures clearly refer to this theme and, according to Feng Shui, the giant frog in transparent water brings prosperity and money. It is a hidden message, not in the least to the Greek passengers boarding the ship. The seating section in the portside reception hall has a living room atmosphere, with the sand colour of fabrics and curtains referring to the beach. The beige carpet, a product of Dansk Wilton, is simply an act of genius: the printing on it is a sea chart that shows the route of BLUE STAR DELOS between Piraeus and Santorini. Even the smallest detail is depicted. To enhance the cosy living room atmosphere in the lobby, the inside wall is panelled with zebrano wood effect laminate, one of the few darker wall coverings on board.

Entering the lobby from the embarkation hall, a compass rose on the tiled floor points the way to the front, side and aft lounges. The starboard mirror view of the main entrance lobby has a tiled sextant on the floor.

Mobile phones can be used throughout the voyage. However, passengers can also use one of the fixed phones close to the main entrance. Next to the telephone booths there is a video games room.



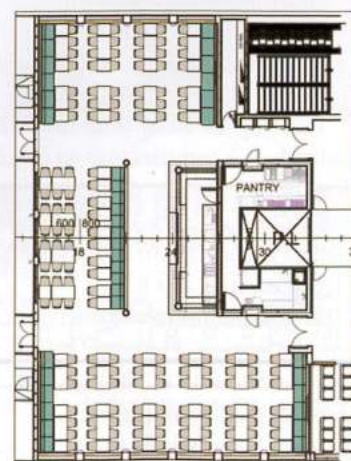


► Snack Bar

The "sea" theme continues in the 182-seat aft Snack Bar, with its furniture and decorations being turquoise, deep green and blue tinted. The low plexiglass partitions and the walls are adorned with sea waves. The ceiling has also a wavy profile that continues on the outside deck. Vintage pickup trucks were added as a curiosity during a presentation to the owners. This feature was retained because it is well liked.

The Snack Bar is the ship's secondary restaurant. The "Micrososia" suspension lamps from Castaldi of Italy are the same as those found in the main self-service restau-

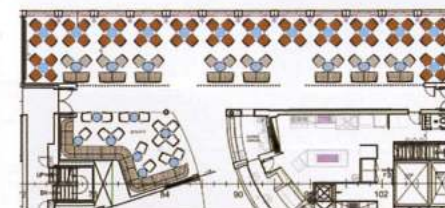
rant, Goody's. In keeping with the theme, the lampshades are blue, whereas those in Goody's are red. With the exception of the Goody's, all bars and snack bars are operated by Flocafé. Both Goody's and Flocafé are affiliates of Vivartia, a subsidiary of MIG to which Attica Group also belongs. These high street brands are extremely popular in Greece and their recognisability factor helps to boost the onboard expenditure. The Flocafé snack bar offers a selection of cold and hot snacks, such as pastas and chips with Greek meatballs, prepared in a small galley.



SNACK BAR PLAN, DECK 06

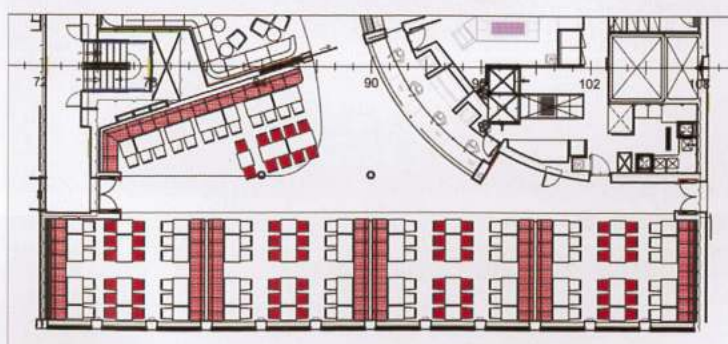
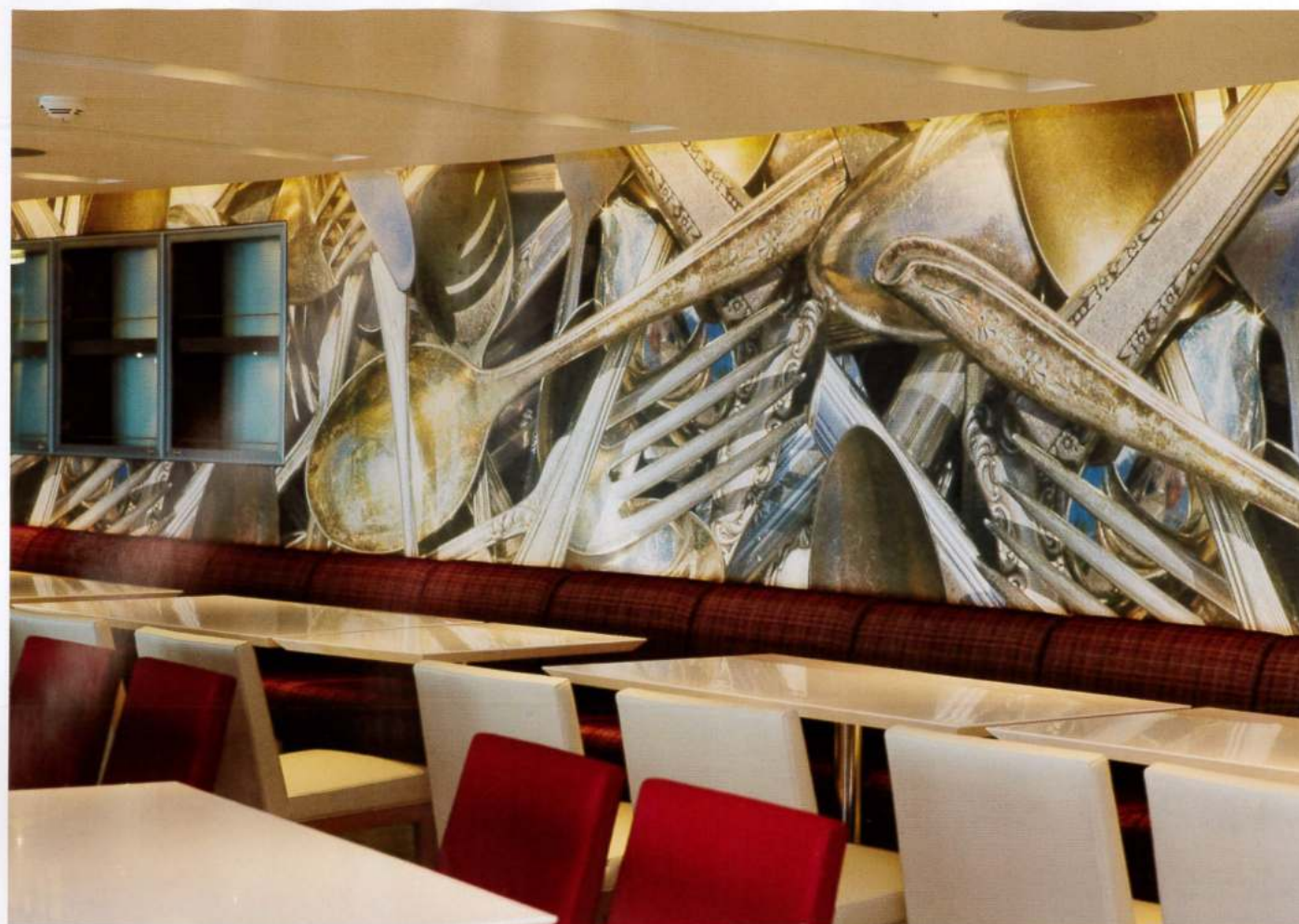
Central café

The midship section on Deck 6 combines the Goody's restaurant on the starboard side with the Flocafé on the portside of the centreline. Cleverly, thin pillars split the Flocafé area in two separate rooms. The fully carpeted window-side lounge exudes a tranquil atmosphere with tasteful wall lamps and comfortable seating. Many passengers read books or watch TV whilst sipping fresh coffee. For the decoration, the interior designers were inspired by the Prespes lakes in Northern Greece. This nature reserve is the temporary home for a wide variety of migrating birds. The large images of birds, reeds and sand flats speak for themselves. Described by Apostolos Molindris as "the water land", subtle references can be found in the partitions and the carpet. The partition between the Goody's and the inboard coffee corner depicts waving reeds, whereas the carpet motif in the side lounge is reminiscent of ripples blown by the wind in the sand. It leaves an overall relaxed impression, as do the Prespes lakes.



COFFEE BAR PLAN, DECK 06



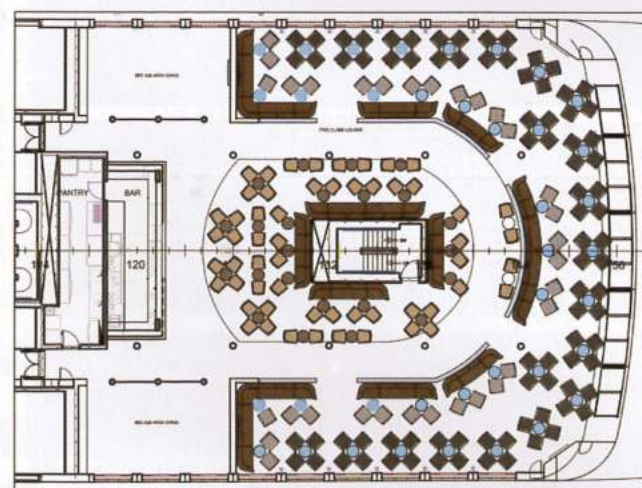


SELF SERVICE RESTAURANT PLAN, DECK 06

► Goody's restaurant

In stark contrast, the Goody's restaurant has bright colours mainly because the background of the Goody's logo is vivid red. The chair and couch upholstery is a combination of red and off-white. The various cutlery decorations are very appropriate: a giant picture of scattered cutlery decorates the diagonal wall that separates the coffee corner from the dining section. Goody's offers fast food style menus and the idea is to "eat & go", with passengers leaving immediately after the meal. Couches are placed back-to-back, thus creating dining alcoves, some of which are cordoned off with stretch barriers on not-so-busy sailings. The Goody's counter has three service stations.

Passengers form a queue to order their meals at the counter. Queues can be long on busy sailings, but customers can have a quick look at the menu on the TV screens in the corridor outside the restaurant, on the walkway separating the starboard reclining lounge from the shop. Only food can be ordered at Goody's; drinks can be obtained from the adjacent Flocafé counter.



FORWARD LOUNGE PLAN, DECK 06

Front lounges

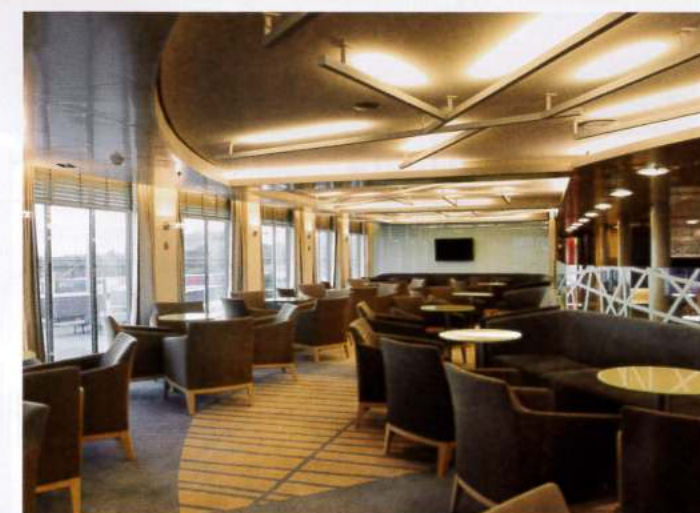
With large windows on both sides and one end, the two main bars on decks 6 and 7 benefit from being in a prime location, offering unrivalled 270-degree panoramic sea views. The Economy Class Bar & Lounge on Deck 6 is different from the Business Class Lounge & Bar on Deck 7 in style and layout. The nature theme prevails in both lounges, with the lower bar being decorated with large images of tree trunks floating in a river. The architects have subtly played with the geometry of these floating trunks for the partitions, the carpets and ceiling lights. Left luggage lockers are at either entrance to the Economy Bar. Upon embarkation, pas-

sengers can also drop their luggage in stores on decks 3 and 5, but these remain closed whilst at sea. Entering the front lounge on Deck 6, there is a small reclining lounge on either side. The "trunk pattern" of the Corian partition perfectly blends with the typical Greek windmill images depicted on the front walls of these lounges.

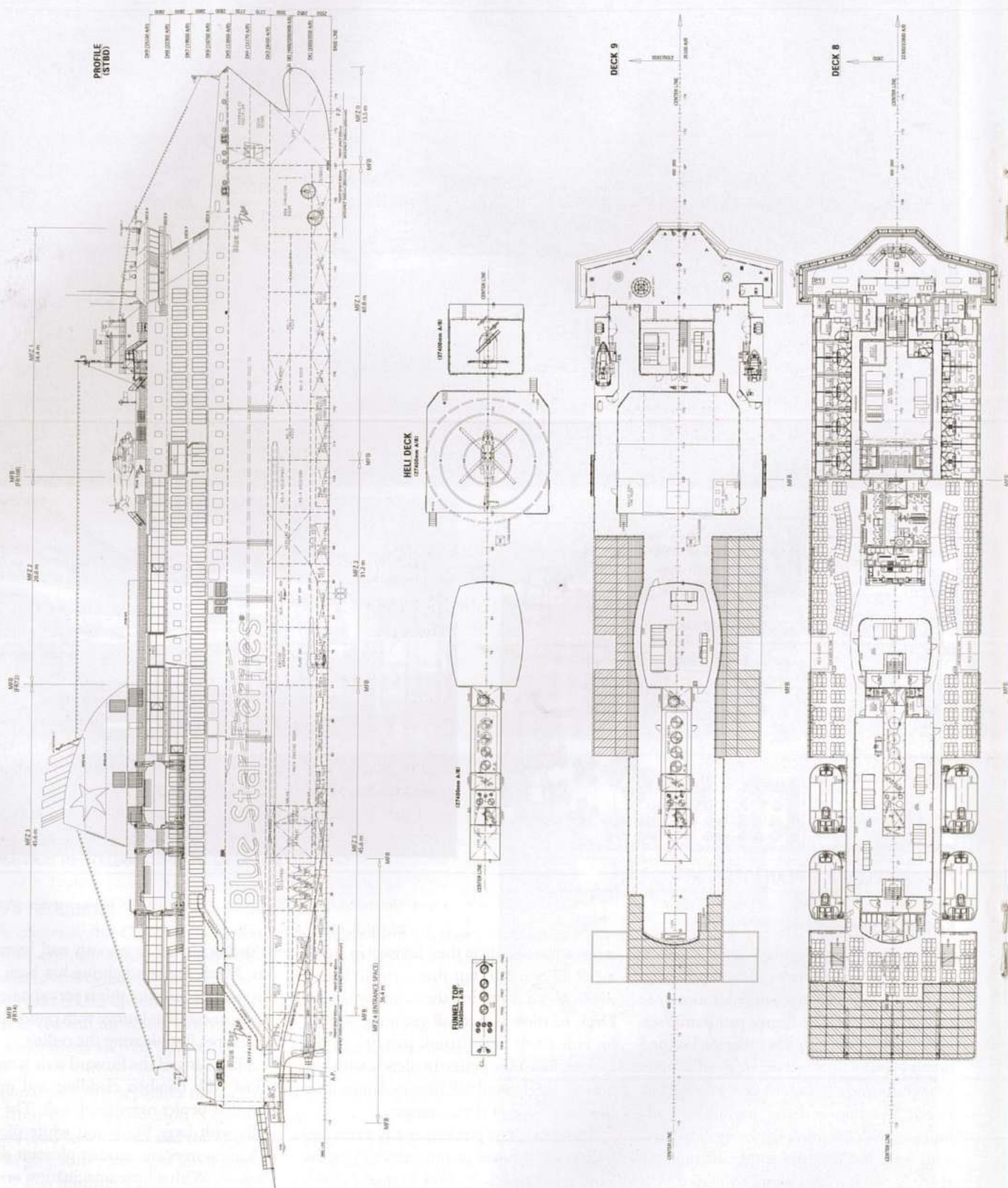
Business Class passengers pay extra and tickets are checked at the entrances to the Lounge on Deck 7. This lounge extends behind the stair hall, offering a total of 402 seats. The whole area feels extremely light and airy, enhanced by the soft colours of the furniture and fabrics. The transition

to darker shades is smooth and harmonious. Much indirect lighting has been used throughout the ship; this is very apparent in the Business Class lounge with upside-down light tubes illuminating the ceiling.

The casing of the forward stair is embellished with bamboo cladding and mosaic tiles that depict oversized leaves. The glass walls with large black and white pictures of leafless trees are another pleasant design element. With a little imagination one can also see the shape of a leaf in the decorative "Cadmo" lamps. To make themselves more comfortable, Business Class passengers can leave their luggage in one of the stores. ►



BLUE STAR DELOS • Scale 1:750

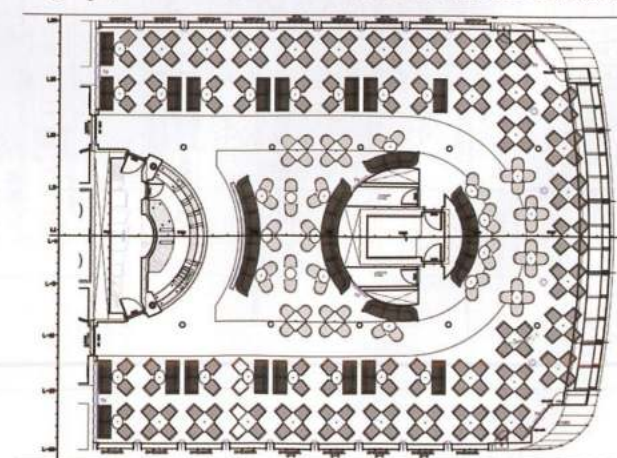


Sit back and relax

The ship has 468 reclining seats, spread over three lounges on Deck 6 and two more on Deck 7 aft. The seats come with a small surcharge. A large black and white picture of sailing yachts covers the inner walls in the reclining lounges on Deck 7. The lounges have fairly large overhead TV sets and between each row of seats there are electric sockets to meet the needs of passengers with laptops, tablet PCs, mo-

bile phones, etc. So they are found everywhere and passengers can plug in their devices even on the outer decks. There is Wi-Fi access throughout the ship; a two-hour credit costs EUR 3 which is really cheap compared to what hotels charge.

Opposite the starboard reclining lounge on Deck 6 there is a well-stocked shop operated by Dufry. Extensive use of Corian has again been made for the shelves and the counters.



BUSINESS CLASS LOUNGE BAR PLAN, DECK 07



► Flowers and grass

The toilets have gotten special attention. Typically smelly and dirty, toilets on ferries often have an ordinary utilitarian design. However, the toilets on BLUE STAR DE-

LOS are anything but that. The nature theme continues in a very pleasant way with vibrant colours of mauve for the ladies' toilets and lime green for the gents'. The gents' toilet

cubicles are decorated with fresh grass motif, while ladies see a bouquet of daisies reflected in the mirror. The black and white tiled floor further adds to the clean and modern design.



Modern and elegant cabins

There are 32 cabins in total: 24 on Deck 7 and eight on the deck above. All cabins have four berths, except the two disabled cabins, two deluxe cabins and an inside cabin on Deck 8. They are well appointed, albeit rather small. Although the ship does not sail during the night, cabins are in high demand, with an average occupancy rate of 80 percent. It's a combination of a few design details, such as the headboards with imitation leather upholstery, the "Aqua Cil" table lamps and other light fittings which make the cabins look very elegant indeed. The white writing desk and bedside tables in the standard cabins are made of Corian. The

inside cabins are identical in size and layout to the outside ones. A sea view picture covers what would otherwise be a bland inside cabin wall. It gives an impression of depth with indirect ceiling lighting and fluorescent lights hidden behind the headboards.

In line with the price tag and for the more discerning customers, the deluxe suites are roomier and come with a seating corner, wider writing desk, bigger bathroom and a larger-than-normal window. Instead of twin beds, the suites have double beds with a picture of a Greek yacht harbour on the headboard. The bathroom unit, supplied by Korean BN BIP, is wrapped in bamboo

cladding, as opposed to PVC panels in the standard cabins. All cabins have TV sets and vinyl Amtico Marine flooring, which is both easy to clean and allergy friendly. Cabins on most ferries have PVC panelled walls. Not so on the BLUE STAR DELOS; its walls are covered with grey three-dimensional vinyl which is more expensive, but easier to maintain. In case of damage, small pieces can be cut out and easily replaced. The finishing of the cabin corridors is also of a high standard with bamboo cladding, decorative glass cabin signs, porthole-like wall lamps and a large printed photo of green and red grass leaves.

► Generous outdoor deck space

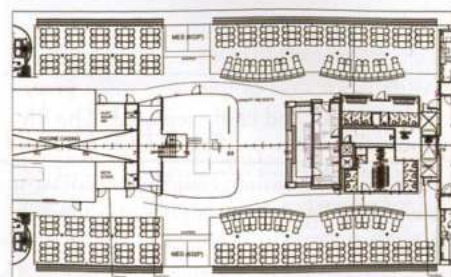
Outside decks are an important feature on any Mediterranean ferry. On Greek ferries, many passengers stay outside throughout the voyage. Here the BLUE STAR DELOS excels once again, offering probably the most attractive outside decks in the ferry industry. To protect passengers from intense heat, the decks are covered with a rigid awning. The glass windscreens have ventilation openings and the large louvered roof vents on the top deck are a fine design detail.

On Deck 7 the ventilation tubes have purposely been painted yellow to highlight the industrial look. It also matches with the yellow frontage of the bar counter. Much attention has been paid to details, making a stay on the outer decks an experience in its own right. Ceilings are panelled and the soft lighting makes the outer decks very inviting indeed. Even the stairs that connect the terraced aft decks are illuminated at night by halogen spots mounted on one of the sides. There are also outdoor waterproof TV sets.

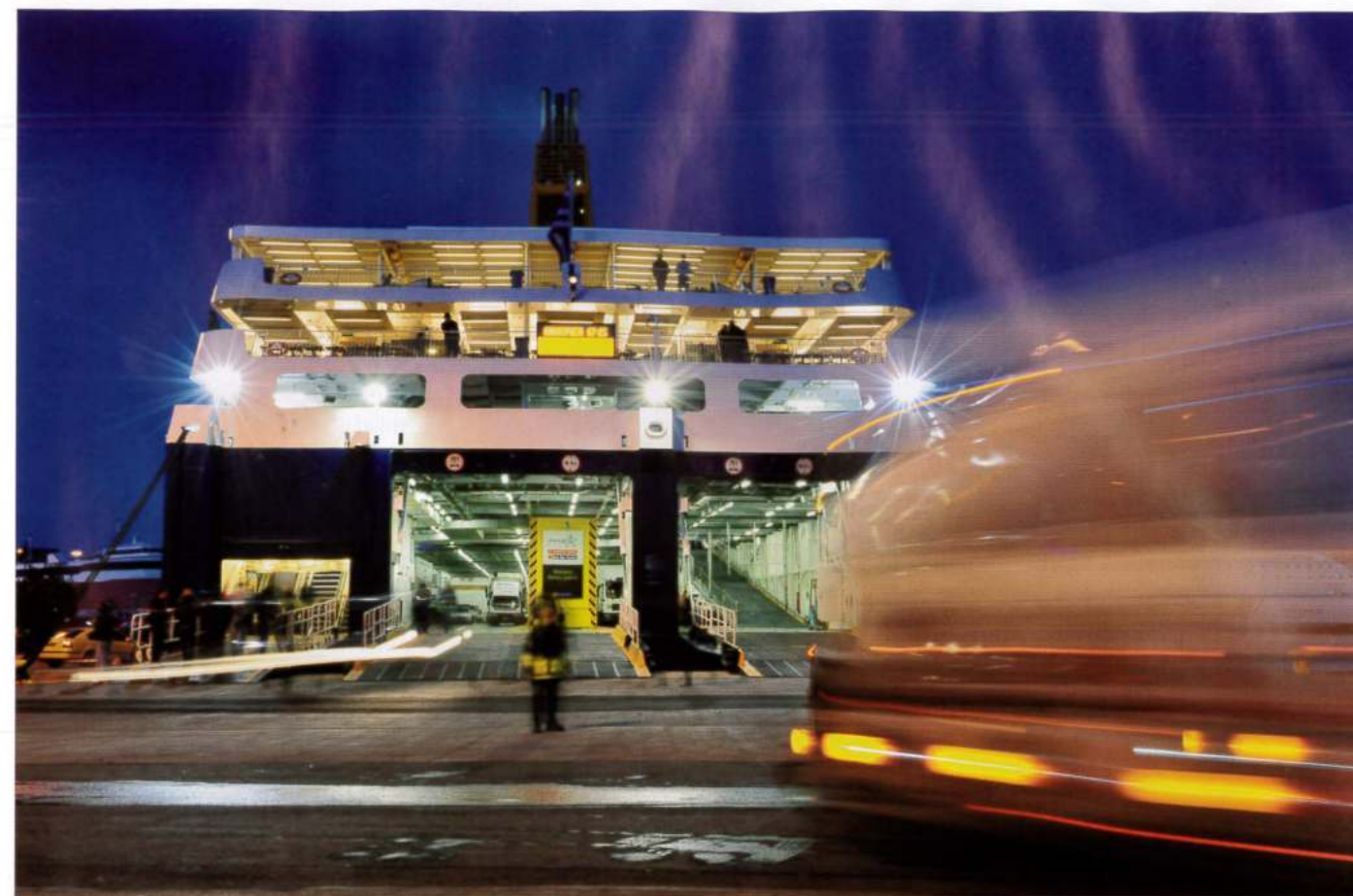
The deck furniture is a combination of curved sofas and high-quality all-weather stackable armchairs that are arranged around fixed tables. It is definitely a much more elegant solution than cheap plastic chairs and uncomfortable lifejacket benches.

Smoking inside the ship is not allowed, but the Flocafé aft on Deck 7 has glass folding doors facing the outside deck. When the doors are folded open, smoking is allowed. In addition, smokers have the impression of still being inside.

On Deck 8, there is a second outdoor Flocafé in a wide corridor that links the portside seating area with the one on the starboard side. The picture of wind turbines is printed on lava using silkscreen technique, which has a lifetime guarantee on colours. The outer decks have separate toilet facilities and there are also shower rooms on Deck 8. On the aft of the same deck there are two small kennels that accommodate up to 12 dogs.



OUTDOOR AREA PLAN, DECK 08

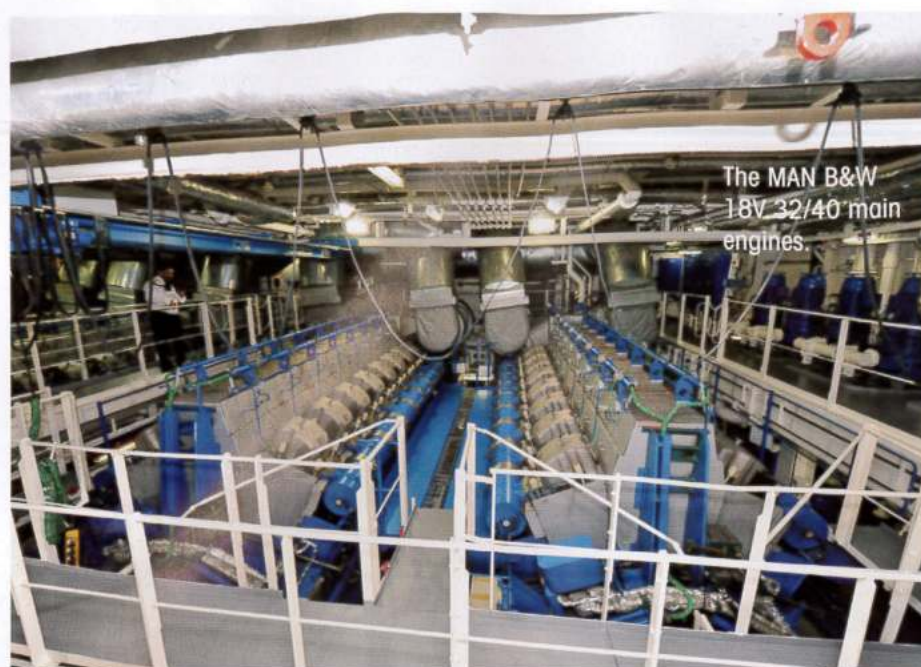


On the technical side

One of the main drivers for the newbuilding project was the need to increase vehicle capacity both for freight and passenger cars. Within the overall dimensions, two small car decks have been included below the main deck forward, eking out the greatest possible use of available space. The main deck is where the freight is parked, but includes six hoistable deck panels, three each side of the centreline casing which are employed during the busiest holiday seasons only. The most useful area, as far as passenger cars are concerned, is the fixed car deck above, occupying the aft part of Deck 5. For the majority of sailings, passenger cars will be directed to this level as it is closest to the passenger facilities on Deck 6.

Access into the vehicle decks is via twin stern ramp/doors, supplied by TTS. The third ramp on the portside is the dedicated passenger access. The starboard ramp is 8.0m long by 4.5m wide and the portside ramp is slightly larger with a clear width of 6.0m. The ramps and adjacent deck areas have been coated with Bimagrip type anti-slip material. The arrangement is a significant improvement compared with the smaller BLUE STAR ITHAKI-class which were equipped with a central vehicle stern ramp and two passenger ramps outboard of it. In practice, only one of the passenger

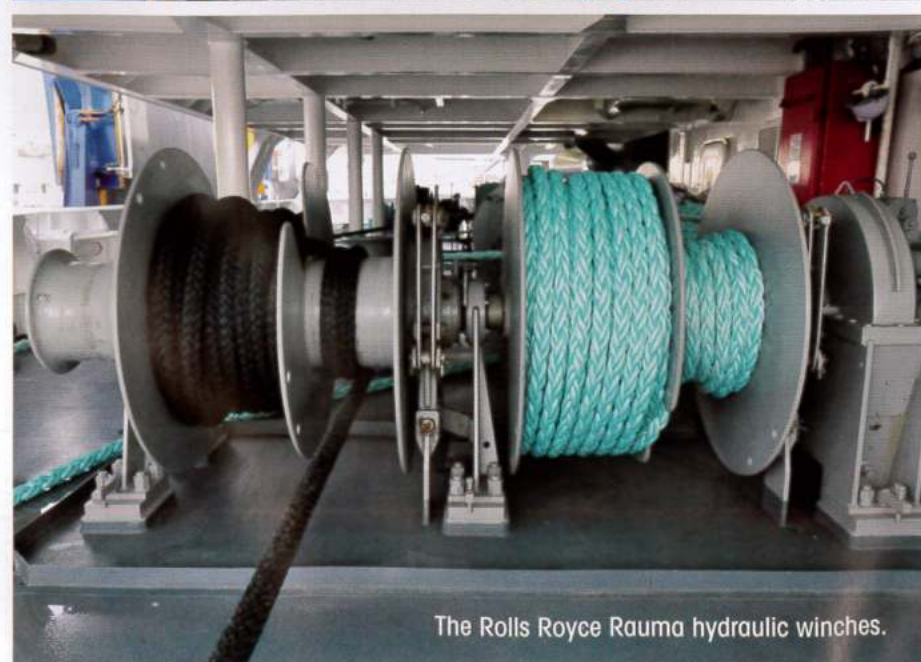




The MAN B&W 18V 32/40 main engines.



The STX-MAN gensets.



The Rolls Royce Rauma hydraulic winches.

► ramps is normally employed. The passenger ramp on the BLUE STAR DELOS is double the width with a double flight of Kone escalators transferring passengers from Deck 3 to 5 and 5 to 6 as well as a 3m wide stairway. This is the widest we have encountered on a ropax of this size and will help cope with the rush of passengers leaving and entering the ship.

A perennial problem on the island routes are all the suitcases dragged on board by the passengers. Rather than taking them into the accommodation area where they obstruct access, a dedicated baggage area has been provided aft on the main deck underneath the escalator casing and on Deck 5 adjacent to the escalator. Also, temporary shelves have been recently retrofitted along the portside of the main deck to boost the baggage storage area when necessary. It is not a simple problem to solve considering the number of ports that are called daily. Uniquely, several freezer units have been provided for passengers who regularly send or take food packages to or from the islands.

As the design was conceived without bow access, vehicles enter on one side of the ship and exit via the other, making the turn at the forward end of the central casing. The maximum freight intake is 600 lanem with three 3.0m wide lanes on either side of the centreline casing. The clear headroom underneath the car decks is 4.5m although it is a surprise to see piping and ventilation ductwork protruding beneath the structure. All kinds of trucks are regularly transported including unaccompanied trailers, refrigerated tractor-trailers as well as smaller trucks. The BLUE STAR DELOS is a lifeline for people living on the islands but also for freight. As the tourist industry on the islands is now almost year-round, freight traffic also follows suit but there obviously is an increased demand during the summer months. The freight traffic generally peaks midweek with less transported at the weekends. This balance suits Attica very well, gaining income from passengers at the weekends and freight during the week.

No time to loose

One of the unexpected consequences of the recession has been the growth in unaccompanied trailers, now reaching a share of 80% as transport companies seek to minimise their costs. This causes problems for the line in the smallest ports as there is such little area reserved for trailer parking. The trucking companies use their own tractors for trailer shunting rather than purpose-built tugmaster type tractors which are much more manoeuvrable and have far better visibility. So the unloading and loading of the trailers

can cause delays. The turnaround times are kept as short as possible, so any delays have to be compensated with higher sea speeds and the inevitable increase in fuel consumption.

There is very little that Attica can do to improve or even influence changes in the port infrastructure. Of course, the increased capacity of the BLUE STAR DELOS exacerbates the problem. Hundreds of passengers use both the dedicated passenger ramp as well as the stern ramp to get ashore as quickly as possible followed closely by cars and freight, all jockeying for position in the limited port confines. Much responsibility is on the shoulders of the deck officers to make some sense of the ensuing pandemonium.

The two small car decks underneath the main deck are accessed via a fixed ramp on the portside. Covered with an end-hinged hatch, the ramp is dog-legged to fit within the B/5 bulkhead as it curves inward towards the bow. Attica admits that the 2.3m high spaces are not really intended for large Mercedes or BMWs but rather smaller cars, a maximum of 23 being parked on Deck 2 and 21 on the tanktop. The ramp to the tanktop is nested underneath turning around a central access area with a lift and stair casing. This turn is tighter than one would find in a typical underground

or multi storey car park rather limiting the usefulness of the space. However, it will only be used on the busiest summer sailings.

For most of the year outside of the holiday periods, even the hoistable car deck will not be used as it is realistically used only in its entirety or just the starboard side accessed via the hoistable ramp. The most efficient use is when vehicles drive up to the hoistable deck on one side of the ship and turn around the front of the casing, exiting via the opposite side.

The 2.3m high, 100 car capacity car deck on Deck 5 is used on all sailings as the passengers have the shortest distance to climb to the passenger decks. With openings along the sides and aft, the deck is naturally ventilated. The 21.0m long by 3.0m wide access hoistable ramp is tilting which allows a relatively fast flow as the cars circulate around the central casing area.

The whole concept of small fast ropaxes was started with the BLUE STAR ITHAKI in 2000. Up till then, only hi-speed vessels could make a daily roundtrip on the Santorini route. To maintain a daily service in the past, two conventional passenger/car ferries were required or a single vessel with overnight accommodation. The new concept has certainly been a winner for Attica. It can even be said

that all their most successful routes are operated with 23-26 knot ships.

The BLUE STAR DELOS has been designed according to IMO's SOLAS 2009 rules but the keel was laid before the new safe return to port (SRTP) regulations entered into force. The compartmental layout allowed by the probabilistic subdivision rules have permitted a somewhat more flexible arrangement. Many of the compartments are inside of the B/5 longitudinal bulkheads, including the large engine control room aft of the genset room. The HFO and LO treatment rooms are on the tanktop level aft of the main engine room. The Blohm & Voss fin stabilizers flank the pump room forward of the ME compartment.

Designing a fast small ropax with high Froude number is significantly more complicated than a larger ship. Waterline length is critically important to maintain the best possible fuel economy so Attica examined the whole range of island ports to determine the maximum possible length. 145.9m was the best compromise which, although excluding a number of islands, would also offer good economies of scale. Knud E. Hansen developed the initial hull form which was tested at MARIN's Wageningen model test facilities before any contract was signed ►



► with DSME. Initial tests did not achieve the desired speed so a range of ducktails and trim wedges were investigated, first by CFD analysis and later in the towing tank, before arriving at the final lines. Seakeeping tests were also conducted as there was some concern about the vulnerability of the panoramic front windows. In service, the vessel has exceeded expectations with a slightly better speed than expected and low vibration levels.

Machinery

Because of the problems in obtaining delivery slots for main engines, Attica took the highly unusual step of ordering them before signing a contract with the yard. After an extensive investigation, the technical department chose MAN B&W 18V 32/40 engines, each with an output of 8,000 kW at 750 rpm. The engines have been manufactured by MAN's prolific South Korean licensee, STX and are of the latest common rail type. The turbochargers of all four engines are mounted at the forward end without causing any congestion problems in the exhaust casing. The engines are coupled to Renk twin input single output gearboxes which have a pro spur, coupled to Hyundai 1,254 kW generators. The length of the engine room has not required the location of the shaft generator in another compartment. The 4.6m diameter CP propellers have been supplied by Wartsila Lips.

Directly aft of the M.E. room, the genset compartment houses three STX-MAN 6L 21/31 gensets, each having a 1,320 kW output. The unique feature of the BLUE STAR DELOS is that the gensets can be used in parallel with the shaft generators.

Frequency converters supplied by Vacon are able to synchronize the output of the shaft generators regardless of the propeller rpm. This gives much greater flexibility to adjust the main engine rpm and propeller pitch for the most economic operation.

With so many port calls in very small harbours and frequent strong wind conditions, the manoeuvrability of the BLUE STAR DELOS is of primary importance. Twin spade rudders are fitted, supplied by DSME themselves, with a twisted leading edge adapted to the water flow from the propeller. Two 750 kW Rolls Royce bow thrusters are considered sufficient given the windage area of the ship.

The mooring and anchoring equipment was of particular concern to Attica as the vessel berths stern-to the quay in most if not all ports. The anchor winches are therefore used on average sixteen times daily. A separate mooring winch is also provided at the bow. Similarly, the aft mooring gear is over specified with two double drum winches and a third single drum winch giving a minimum of three lines aft. The constant use of the equipment has led Attica to specify Rolls Royce Rauma hydraulic winches rather than the ever more popular electric variety. Special care was also given to the design of the anchor pockets and anchor locker bearing in mind the intensive use of the equipment.

In the very challenging economic environment that all the Greek ferry operators find themselves in, there has been a call for the new Greek Shipping minister to change some restrictive rules governing the domestic ferry scene. Rather than asking for more subsidy, more flexibility is required in the

manning rules and operating conditions to at least give the ferry operators a chance of survival. These onerous conditions can even be seen on the design of the BLUE STAR DELOS. The crew accommodation, located forward of the car deck on Deck 5, is larger than on comparable ferries operating in Northern Europe. A total of 52 cabins are provided for the crew.

Uson has supplied the waste treatment system. A garbage chute is arranged from Deck 6 down to a special container housed in the centre casing on the main deck. In Piraeus, the container is slid into the cargo lanes and exchanged by truck. The food waste unit is located on the main deck forward on the starboard side.

The lifesaving equipment on board comprises four RFD Beaufort Marin-Ark MES units, each with a 632 passenger capacity. Attica chose this new generation system as they wanted to avoid using any davit launched rafts. The Marin-Ark has a relatively small footprint at the same time as offering fast evacuation times. Schat harding has supplied four 150 passenger partially enclosed lifeboats. While lifeboats are not required for the route to Santorini, they are required if the vessel would sail on Adriatic or Cretan routes.

As would be expected from such a reputable shipbuilder, the standard of workmanship on the ship is very high even though the ship type was very unfamiliar for the shipyard design and outfitting team. DSME has certainly gained a lot of experience from building the ship. It is also notable that the vast majority of equipment is from European suppliers. ■

ATTICA GROUP

A DOUBLE INTERVIEW WITH SPIROS PASCHALIS AND MICHAEL SAKELLIS



Michael Sakellis



Spiros Paschalis

With the introduction of the new BLUE STAR DELOS, soon to be followed by near sister vessel BLUE STAR PATMOS, Blue Star Ferries shifts into a higher gear at a time when the Greek economy is in reverse. Even so, Greece's number one domestic ferry operator is pretty confident that its EUR 140 million investment will pay off in the long term.

By Philippe Holthof

With the Greek economy still in the doldrums, the timing for introducing new tonnage is hardly auspicious. When the contract was signed with Daewoo Shipbuilding & Marine Engineering (DSME) in June 2009, the world was still licking its wounds from the 2008 credit crunch. Actually, the double order represented the first significant ferry newbuilding contract since the credit crunch. With hindsight, the timing of Blue Star Ferries' order was very appropriate, with DSME offering an attractive price and a prompt delivery. The project had

already been initiated in 2003, but the not yet fully liberalised Greek domestic market made Blue Star Ferries hesitate to push the button. The 2007 takeover of Blue Star Ferries' holding company, Attica Group, by Marfin Investment Group (MIG) did not prove to be the right timing either. With the strong financial muscle of MIG, which has Southeast Europe's biggest buyout fund, Blue Star Ferries and Superfast Ferries are in a much better shape than a few other Greek (domestic) ferry operators whose future looks very bleak indeed. Standing at the helms of Blue Star Ferries and Super-

fast Ferries are Michael Sakellis and Spiros Paschalis respectively. During this interview they voiced their opinions on the state of the Greek ferry market.

Due to the Greek sovereign debt crisis, uncertainty continues to prevail in Greece. How tough is it to operate in the current Greek environment and how hard has the Greek ferry industry been hit by the crisis?

Spiros Paschalis: The first signs of depression came in late 2008 mainly on the Greece-Italy trade. For three consecutive years, ►

► **DELOS led to a drastic fleet reshuffle?**

Michael Sakellis: In anticipation of the introduction of the BLUE STAR DELOS, the ageing SUPERFERRY II was disposed of. Her place on the Rafina-Andros-Tinos-Mykonos route has been taken by the BLUE STAR ITHAKI which in turn has been replaced by the BLUE STAR NAXOS on the Piraeus-Syros-Tinos-Mykonos route.

The BLUE STAR DELOS will serve the isle of Ios year-round. Will it attract extra business?

Michael Sakellis: Of course! The BLUE STAR NAXOS only called at Ios during the off-season. Due to heavy traffic and, consequently, longer port stays we had to skip Ios in the summer in order to be back in Piraeus in time to connect with the last metro to Athens. But the 26-knot service speed of the BLUE STAR DELOS allows us to stop at Ios also during the summer. During the off-peak season we reduce speed to 23 knots and only call at Ios on the southbound journey. Yes, we have high expectations of Ios as a summer destination and we are convinced that it will further boost business.

How was your experience with DSME?

Michael Sakellis: DSME had built our earlier generation of ships and absolutely wanted to re-enter the market of specialised passenger ships. They considered our two vessels as the start of a new learning curve. They largely followed our suggestions and there were

very few disputes. Our own on-site staff did a great job and we are extremely proud of their performance. Unfortunately, the ship was delivered five months late and missed the 2011 summer season.

Was DSME your first choice?

Michael Sakellis: No! The project started in 2003 and during 2004 talks began with at least 10 to 15, mainly European, shipyards. There was also a brief contact with Samsung Heavy Industries. The main problem with the European shipyards was the long delivery time which really made our plans impossible. In those days there was a shortage of equipment, which gave rise to us ordering the engines for the first ship even before a contract was signed. The newbuilding plans were eventually put on hold because the liberalisation of the Greek market took too long. On paper it had already been liberalised, but the actual process took much longer. In the meantime, discussions with various yards were ongoing and we were in really advanced talks with Astilleros de Sevilla and Singapore Technologies Marine (ST Marine). Following the takeover of Attica by MIG we ended up with DSME.

The BLUE STAR PATMOS will take up service this spring. What route will she ply?

Deputy Technical Manager Chris-Alexander Korfiatis considers the BLUE STAR DELOS as his baby.



As Director Operations, New Projects & Development, Costis Stamboulelis has been the maestro of all Attica's newbuildings including the BLUE STAR DELOS.

Is there still an option for a third ship in the series?

Michael Sakellis: The BLUE STAR PATMOS has been designed for longer over-night services. As her name suggests, she will most probably serve the Dodecanese islands. The option for a third ship expired six months after signing the contract in June 2009.

Last but not least, how important is the investment in these two state-of-the-art ferries for the Greek community?

Michael Sakellis: This investment makes us really proud because it represents a Greek investment in a very challenging economic climate. It proves that Greek companies can perform and deliver very good products for their customers. Representing a total investment of EUR 140 million, the two ships are ahead of their time and represent a big step forward in securing our company's future.

In conclusion, I dare say that the Greek domestic fleet is one of the most modern in Europe. Eighty percent of all passengers travel on ferries - both conventional and hi-speed - that are less than 10 years old. ■

