

# Glas Trösch

## GLASS SOLUTIONS FOR CARBON-NEUTRAL PASSENGER SHIP

The generous window strips underline the dynamic architecture of the MS Diamant



Photo: © Schifffahrtsgesellschaft des Vierwaldstättersees AG

The MS Diamant is a project of the company Shiptec AG in Lucerne with the support of the Institute for Building Technology and Energy. During the planning phase, the building technology findings were transferred to the requirements on a ship and implemented within a research project supported by the Commission for Technology and Innovation (CTI) of the Federal Government. All in all, the energy consumption of the motor

ship should be reduced by 20 per cent compared with the former average consumption of a conventional scheduled boat. Amongst other things, an optimum hull shape, low weight and an environmentally friendly hybrid drive contribute to the lower consumption and an efficient use of the energy.

### CUSTOMIZED INSULATING GLASS

In addition, the insulating glasses provide a pleasant room climate with a low

heat loss and high-performance sun protection. The glasses are custom products, which have been individually adapted to the various dimensions. In addition, the glass elements also score when it comes to aesthetics. The façade was designed as a Structural Sealant Glazing System (SSGS), which, thanks to the specially developed SSG bonding, makes the substructure almost invisible. From the outside, this feature conveys the impression of continuous window strips, which give the ship a modern and buoyant appearance.

### STYLISH INTERIOR

The MS Diamant also has a stylish interior: The light-

flooded passenger area is dominated by light shades, enhanced by natural wood panelling, creating a warm and friendly atmosphere. The MS Diamant offers ample possibilities to enjoy the view from its five decks. In addition, the visitors delight in the view of the world below the water in the "Nautilus Room" or take a lake water foot bath on the water terrace. The glass domes not only captivate by their design, they also give the salon a particularly airy appearance. The canopies additionally convince by their crystalline supporting structure, the connections of which were realized using the most modern SSG bonding technique.

Energy efficiency and luxury? The first carbon-neutral passenger ship from Switzerland shows just exactly how that fits. The motor ship (MS) Diamant sails on Lake Lucerne and not only does it comply with the highest demands on energy efficiency, it also offers its guests a stay in luxury. For instance, the inside of the ship impresses with two extraordinary glass domes, which enhance the salon with a diamond-shaped construction, and which provide plenty of daylight. The double-insulating glasses were also adapted to the circumstances in accordance with the high requirements on energy efficiency. Hence, the glass elements not only guarantee a clear view, but also offer efficient protection against too much heat and cold thanks to the SILVERSTAR COMBI Neutral 61/32 coating from Glas Trösch.

Thanks to the Structural-Glazing bonding, the supporting structure is almost invisible, and the glass elements join together in a flush-mounted manner

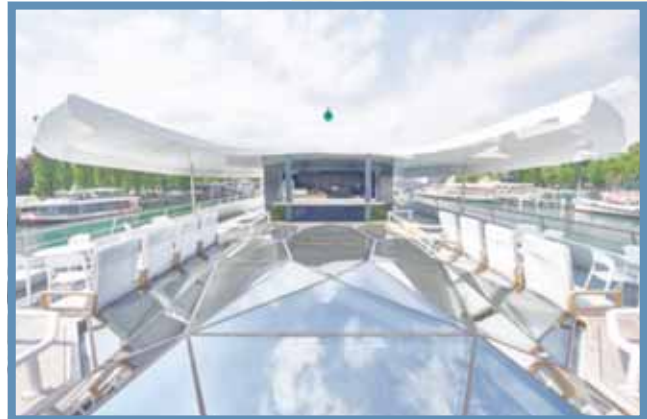


Photo: © Simeta AG

### CONSTRUCTION PANEL

<b>Project:</b>	MS Diamant
<b>Location:</b>	Lucerne, Switzerland
<b>Completion:</b>	2017
<b>Planning:</b>	Shiptec AG/ Institute for Building Technology, Lucerne, Switzerland
<b>Owner:</b>	Schiffahrtsgesellschaft des Vierwaldstaettersees (Lake Lucerne Shipping Company)
<b>Product:</b>	SILVERSTAR COMBI Neutral 61/32

### FLOOR-TO-CEILING GLAZING

Floor-to-ceiling elements were used for the glazing on the side walls, allowing plenty of daylight to reach the ship's interior in addition to the glass domes. The high level of light transmission of 61 per cent and a very good colour rendering index of 94 contribute to allowing the outer area to generously flow into the interior of the ship, so that the view can be enjoyed all the way round. With a g-value of 33 per cent, the insulating glass protects against extreme solar radiation and also ensures that the high level of room comfort is maintained even during the

winter, thanks to the low  $U_g$  value of 1.0 W/m<sup>2</sup>K.

As the passenger ship is used in regular service, the experience of travelling on board the MS Diamant is open for everyone to enjoy – and adds a further attraction to the already highly popular Lake Lucerne.



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The interior of the luxury scheduled boat impresses with its radiant brightness