On Exterior Design of Cruise Ship on the Li River in Guilin from the Perspective of Regional Culture

2020, Vol.1 No.3
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DOI: 10.37420/j.adr.2020.015
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Abstract

In response to the municipal government's call, the Lijiang Golden Tourism Industry Belt and the cruise ship on Li River should be ungraded. As a means of transportation, the cruise ship is vital for tourists to enjoy the beauty of Li River. Having analyzed the visitors' preference, comments, suggestions and expectations, I design a cruise ship with regional characteristics. My design highlights the regional feature, the unique style and traditional interior decorations. Moreover, the design will stimulate the interest of tourists for its integration of the specific cultural elements of Guilin. The projected appearance and interior layout will impress the tourists and attract them come again. Thereby, the increasing number of visitors will flow into Guilin so as to drive the development of local tourism economy and underpin the construction of national tourist destinations.

Keywords

Li River Cruise Ship Design; Elements of Wind and Rain Bridge; Layout; Landscape and Cultural Elements; Upgrade

Introduction

Guilin, a tourist city, is famous for its natural landscapes and has the reputation of "landscapes of Guilin are the best in the world". Guilin's picturesque mountains, waters, caves, and stones are all distributed in different areas of the Li River. Cruise tourism has become an important niche in the last four decades, since it may provide comfortable service and unique enjoyment with complete amenities and rich entertainment activities (Yan, Zhang, Long, Wang, Liang, Song & Yu, 2019).

Thus, the cruise ship is an important tool for tourists to appreciate the scenery of Li River. However, it is very important to design a cruise ship with regional characteristics and ethnic cultural elements because the current ships are not ideal enough for promoting tourist industry.

In the document (Guilin Municipal Committee of the CPC and Guilin Municipal People's Government's Opinions on Accelerating the High-Quality Development of the Cultural Tourism Industry; No.6 document implemented by municipal government in 2020), there is a plan relating to the development of the cruise ship in terms of advancement of tourism in Guilin: to upgrade the Lijiang Golden Tourism Industry Belt, which includes the upstream of the Lijiang River (Nanzhou Island) to the lower reaches of Yangshuo (Liugong Village). In this way, a world of natural heritage and a tourist destination will be created because the Golden Tourist Waterway can be extended to Pingle. As for the upgrading of the cruise ship, its operation is supposed to be diversification-based, customized and high-end oriented; furthermore, the supporting facilities of the cruise ship terminals along the Li River should be improved with high standard and characteristic-based guidelines.

Under the premise of protecting the core values of the world heritage, it’s imperative to upgrade the world's top landscape tourism belt, innovative the construction of an exquisite international holiday paradise and design of the special cruise ship on Li River.

Existing Deficiencies

Despite it’s a world tourist paradise with a history of more than 2,000 years, Guilin has some problems including excessive pursuit of economic benefits, overload visitors, small observation decks, and old hulls. All the problems have reduced its attraction to tourists. I’ll elaborate main problems as follow:

(1) The style of the cruise ship is too plain and ancient.

Owing to the lack of regional features, the style of cruise ships is so tedious for visitors. Moreover, their design is too old and just like that in 1990s, which is similar to the most cruise ships around the country. These cruise ships of scenic spots are seriously inconsistent with the image of Guilin, the International Tourist Resort.

(2) The space layout is unreasonable and the visitors have a poor visiting experience.

The current cabin layout lacks flexibility and characteristic. The interior seat layout has made the aisle narrow and will cause congestion. And it’s inconvenient for tourists to move around when viewing the scenery, resulting in a poor tourist experience for them. The tourists have to turn around

to appreciate the scenery, which is bound to have negative impact on visitors' experience.

Exterior Design of the Cruise Ship on Li River in Guilin

The Li River cruise ship design, under the perspective of Regional Culture, is not merely to improve Li River cruise ships' function, but also takes human beings as a design object to achieve differentiation.

Wan Li, Lv Jiefeng amd Xu Sheng (2015) systematically proposed five characteristics in the ship topside design by applying the methodology of modern industrial design, aiming at ships' demands and features, which are the identifiability, the communicability, the artistry, the experience and the economy.

Analysis the Design Elements of the Cruise Ship

Under the three dimensions of "shape", "use" and "technology", artistic design guid-ance is provided for modern ship modeling design, painting and functional design, by means of drawing on the wisdom of ancient ship design, and integrating the aesthetic mode and behavior habits of the Chinese people (Pan & Zha, 2019).

(1) User Group: the normal visitors, tourists from package tour and consumers with high requirements for visiting.

(2) Color: the exterior design of the cruise ship tends to be more dynamic, and the color of hull should match the interior color. The design should adopt the tone of bright, high-purity, warm to attract visitors. Because the part of the cruise ship is often soaked in water and is easy to be corroded and dirty, the hull should be painted into dark blue or iron red with antisepsis and anti-corrosive paints. The bottom can be painted into brown, black or the same color as the waterline area.

(3) Material and Coating: Innovative developments are constantly being used for the construction of modern cruise ships, with changes not only in the dimensions of vessels and their contents but also in their materials and technology (Parnyakov, 2014). The materials used for cruise ships can be divided into three categories: alloy metal, fiberglass, wood and composite materials (Xi, 1991). Composite materials have good performance in corrosion resistance and mechanical properties, so it has occupied a dominant position in the yacht manufacturing industry. The composite material has integrated the advantages of steel and glass including the high resilience, light weight, harness, shiny glass and stable performance. The most important thing is that it can withstand electric

heat and corrosion (Xi, 2015). FRP is light and hard with the glass luster, high strength and stable performance in all aspects. Furthermore, FRP can insulate the electric heating and has good performance in corrosion resistance, such as the corrosion of acid and alkaline liquids as well as a variety of solvents and oils.

The surface of the cruise ship is painted with an environmental protection method—layered painting. Polyurethane topcoat is used on the part of hull above water, because it can resist corrosion under various conditions for adding various anti-rust pigments. Chlorinated rubber anti-corrosive primer is used on the part of hull under water due to its better performance in water resistance, better adhesion to the substrate, and better interlayer adhesion with the antifouling paint. Moreover, the paint with anti-pollution treatment that can protect the water should always be given priority (Yu, 2011).

Sustainability of cruise ship fuel systems: Liquefied natural gas (LNG) is becoming a viable, green alternative to marine fuel oil for ship propulsion (Iannaccone, Landucci, Tugnoli, Salzano & Cozzani, 2020). The LNG-based fuel system technologies show a better sustainability performance than the conventional marine fuel technologies (Iannaccone et al., 2020).

(4) Layout

A detailed ship model was developed by means of TRNSYS Type 56, coupled to Google SketchUp TRNSYS3d plug-in (Barone, Buonomano, Forzano, Palombo & Vicidomini, 2020). The interior space of a cruise ship should be equipped with the following facilities (See Figure 1).

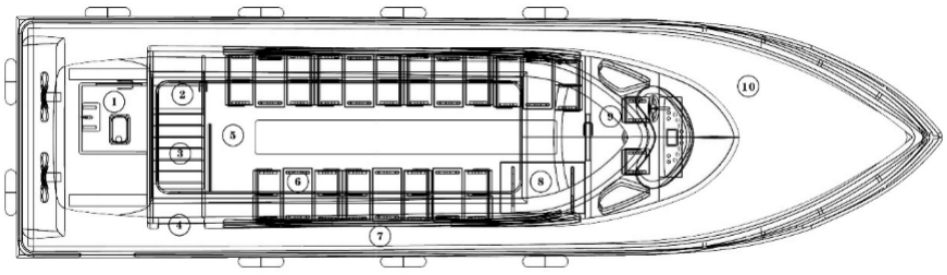


Figure 1. The interior space of a cruise ship in sketches
(① Toilet, ② Storage room, ③ Stairs, ④ Doorway, ⑤ Aisle, ⑥ Cabin Seat, ⑦ Outer Aisle, ⑧ Storage Table, ⑨ Cab, ⑩ Observation Deck)

To Endow Implied Cultural Meaning for Cruise Ships

Chinese scholars presented the design concept of a "fusion of Chinese culture and contemporary

spirit", and summarized the design principles and processes of a cruise ship from the perspective of design art (Zheng, Wang & Luo, 2020). The main principles are: appearance and internality coordination, entirety and elements coordination, characteristics and framework coordination, rationality and perception coordination.

The appearance of the cruise ship is of great attraction to tourists and it is the visual focus for them (See Figure 2). The cultural elements that can be selected for the shape design of the cruise ship are: the Wind and Rain bridge of Dong minor ethnic group (a unique symbol of Dong villages), Guilin Kars, Elephant Trunk Hill, Sun Moon Pagoda, terraces, Zhuang brocade, etc (See Table 1). the Win and Rain Bridge is known as one of the ten bridge wonders in the world. The elements of the Wind and Rain bridge can be extracted for the design of the cruise ship, giving the visitors a feeling of vintage. Such design combines the symmetrical style of Chinese architecture with the graceful landscape of Guilin, giving visitors a feeling that the wind and rain bridge are moving. Moreover, it brings the tourists a visual feast, reflects that the Dong culture has a long history and fully demonstrates the wisdom of the Dong people.

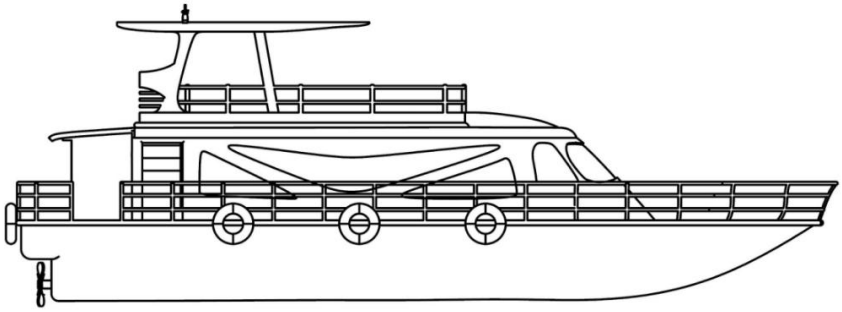


Figure 2. The appearance of a cruise ship in sketches

Table 1. Analysis of the Exterior Design Elements of the Cruise Ship on Li River in Guilin

Design Category	Design Elements	Explanation
Style/craving decoration	The Wind and Rain Bridge in Dong ethnic group; Guilin Kars; Hydrangea; Zhuang Brocade, Zuojiang Huashan Rock Art Cultural Landscape.	The dry rail is designed as a handrail in the cabin; the double-layer roof structure is designed as the roof; Landscape and dynamic color bar to decorate; Lighting design; Decoration on mast and deck.
Color	Black, White and Gray	The main color is a combination of classic black, white and gray, and the auxiliary color is red. The cabin is mainly combined with warm and cold colors, so that a limited space can present a visual sense of progress.

Material	Composite material	Adopt FRP, FRP, wood
Man-machine	Viewing	Can meet the maximum demand of sightseeing without reduce the rest time.
Artistic conception	Landscape of Li River	Extract the regional cultural elements of Guangxi in design to ease the visual fatigue of tourists.

To Upgrade the Cruise Ship through Changing its Design

(1) The design should solve the problem of lacking Guilin characteristics, and integrate regional elements reasonably. In addition, it has to integrate Guilin cultural and landscape elements into the shape and interior decoration of the cruise ship, such as: terraces, hydrangeas, Zuojiang Huashan Rock Art Cultural Landscape, etc. In this way, the problem that the ship is designed plainly can be addressed.

(2) The new design should tackle the problem that visitors might have poor experience of visiting because of its layout. Meanwhile, it should solve the functional difficulties when the layout of cruise ship is reasonable. The internal layout of cruise ship should take the form of salon party, allowing visitors change positions more casually, communicating with others more conveniently and expanding their circle of friends during the journey more easily (See Figure 3-5).



Figure 3. The Cruise Ship Renderings

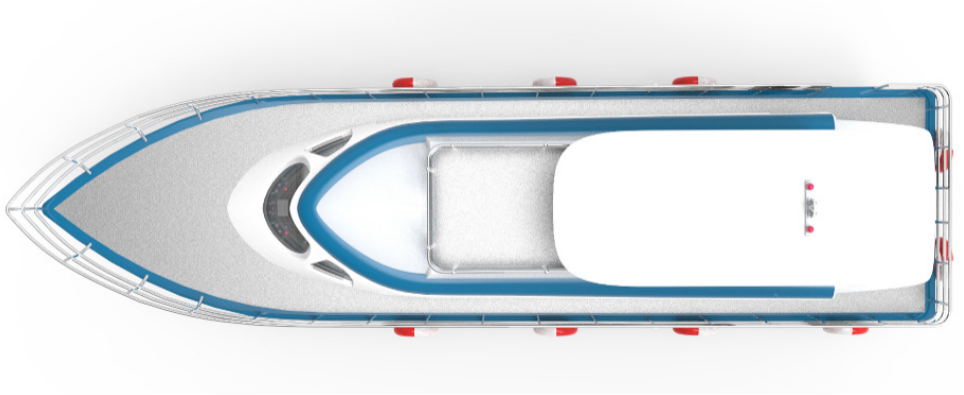


Figure 4. The Cruise Ship vertical view

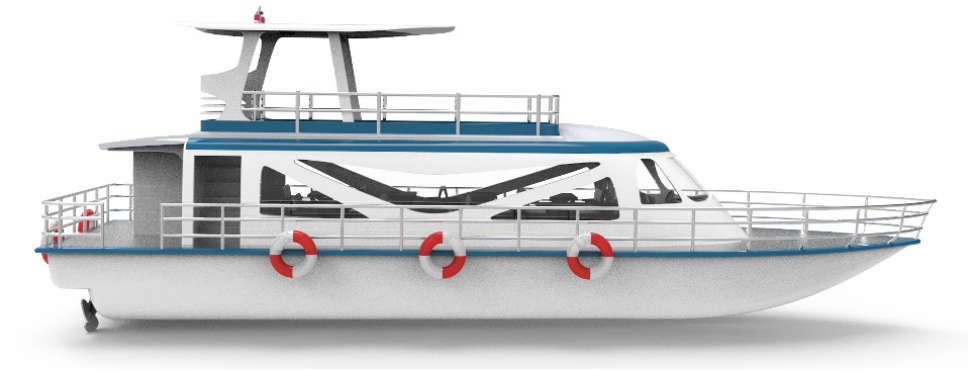


Figure 5. The Cruise Ship side view

Conclusion

According to the "Outline of Guilin International Tourism Resort Construction and Development", Guilin has to become China's first world-class tourist city and international tourist destination by 2020. Furthermore, the cruise ship of Li River should be upgraded, and improve its design with the concept that integrating the cruise ship into the Lijiang river landscape. After upgrading, the cruise ship, without any doubt, can become another scenic spot of Li River. At the same time, visitors will have more profound information about the Guilin culture as well as the landscape. Such improvement can be viewed as a way for displaying the positive image of Guangxi during exchange with other countries.

Funding

This research is supported by National Social Science Fund in 2019: Under the Strategy of Rural

Revitalization, the Protection and Inheritance of Ancient Villages in Southwest Minority Areas with Digital Method [No. 19 XMZ068].

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