



Integration of Design Elements in Exhibition and Conference Centers in Egypt

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Abstract

As the world grapples with environmental challenges, expos must take a proactive stance in minimizing their ecological footprint. The paper will emphasize the pressing need for sustainability in expo design. By prioritizing eco-friendly materials, energy-efficient technologies, and waste reduction strategies, expos can serve as sustainable models that inspire long-lasting change and environmentally conscious practices. Through an in-depth exploration of technology integration, spatial re-imagination, and sustainability, this research aims to provide insights and recommendations that can revolutionize the design of expos. By embracing these enhancements, expo organizers and participants can unlock new realms of creativity, engagement, and impact, ensuring that these global showcases remain at the forefront of innovation and inspiration.

Key words: Exhibition and Conference center, Enhanced design, Expo.

1. Introduction

Exhibitions, the word has a broad meaning, but it is usually used to describe the international exhibitions that participate in the progression of civilization. Art and industry are the most important activities that encourage setting up of the exhibitions. Then science and industrial inventions are engaged in this field. The purpose of the exhibitions is to raise the level of general manners and to promote international understanding.

Over the past decades, exhibition and conference centers have substantially increased in number, with various purposes including enhancing the aspects of domestic culture & history, domestic recreation opportunities, domestic economy, and domestic tourism businesses. There is an increasing importance of exhibition and conference centers as attractions. Image makers and animators of static attractions are recognizing them as a new wave of alternative tourism, which contributes to sustainable development, and improves the relationship between host and guest. It is essential such scope, for the following reasons:

- Finding solutions to the global issues and challenges in such scope.
- Facilitating the process of technology transfer and identification of innovations.



- Connecting countries with each other by providing a platform for displaying the latest innovations and inventions.
- promoting international understanding
- Focusing on new architectural icons, such as (the Crystal Palace in London - the Eiffel Tower in Paris - the Space Needle Tower in Seattle).
- Opening new investment areas through developing and increasing exhibition center projects.
- Creating an area to attract tourists in order to achieve occupancy rate for the hotels, villages and tourist resorts established.

The research will study the importance of reimagining spatial arrangements within expo design. Traditional layouts often consist of static pavilions and exhibition halls, which can limit engagement and exploration. By adopting flexible and adaptable spaces, with incorporating and unconventional architectural designs, and embracing fluidity in exhibition arrangements, expos can create an environment that encourages serendipitous discoveries, facilitates networking, and promotes cross-cultural exchanges.

2. Problems and Threats

1. Economic problem :
 - Egypt is facing major economic challenges as a result of the development processes that are taking place in the country in this period to raise the standard of living for the citizen.
2. Tourism problems :
 - Tourism is one of the main sources of national income. However, there is a tourist problem; tourism in Egypt is based on the presence of natural areas, which are seasonal.

3. Research Methodology

The research is based on a comparative study between three internationally constructed Exhibition and Conference Centers, with subsequent evaluation of these case studies according to the indicators chosen from the theoretical study.

This was followed by a set of recommendations on how developing Expo Centers in Egypt and use of this technology to design our Egyptian Expo.

4. Studied Cases

4.1. SECC (Saigon Convention and Exhibition Center project)

The Scottish Exhibition and Conference Centre (SECC) is situated on a 64-acre site on the banks of the River Clyde in Glasgow (figure 1). It is the UK's largest integrated exhibition and conference center.

It designed by award-winning architects Foster and Partners. It can accommodate up to 3,000 delegates, yet it has the ability to adapt to much smaller meetings, whilst maintaining its feeling of intimacy. It is supported by 16 breakout-rooms seating from 30-300 and a second auditorium. It provides tiered and floor level seating for up to 624 delegates.

Norman Foster was interested in separating the audience entrance from the VIP entrance. So he made the VIP entrance to the far right of the ground floor, while the public entrance was on the far left of the first floor. In figure 2, the analyzed plans of SECC.

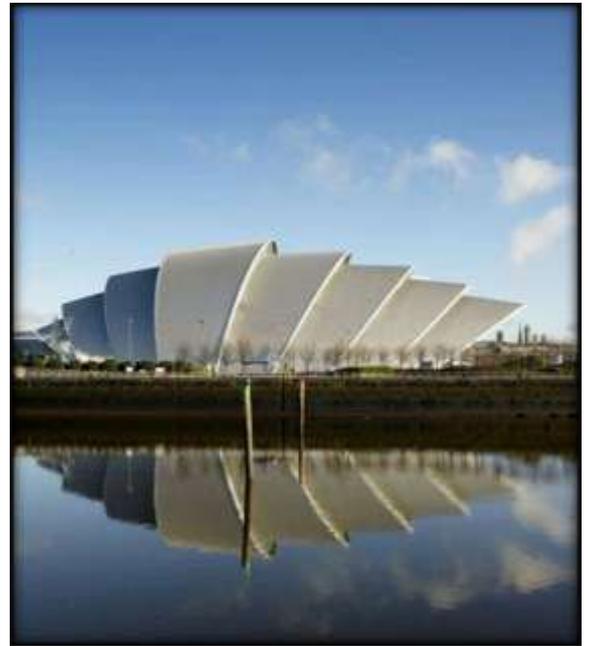


Figure 1: SECC (Saigon Convention and Exhibition Center)

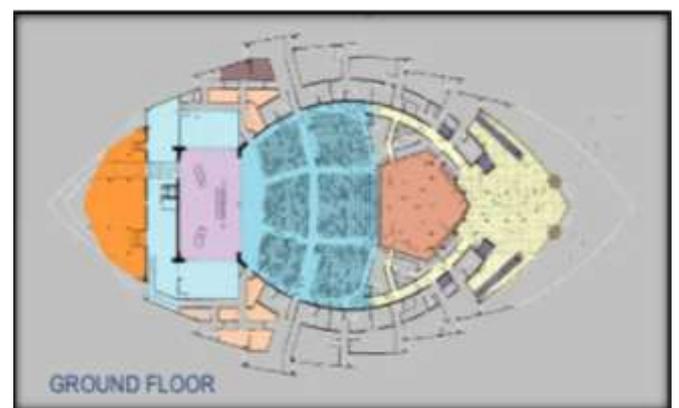
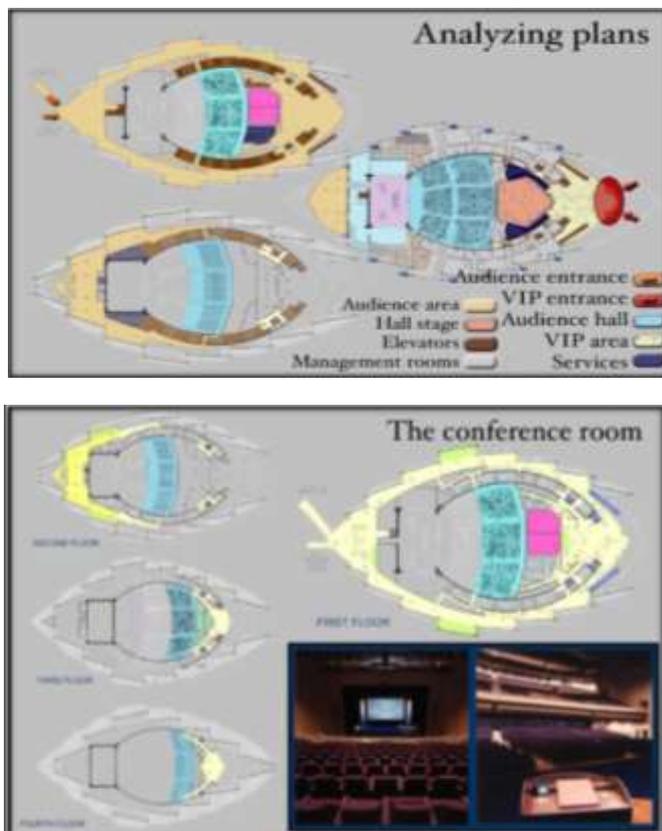


Figure 2: Plan analysis for SECC.

4.3. Qatar National Convention Center

Qatar National Convention Centre (QNCC) is one of the most sophisticated convention and exhibition centres built to date. It is boasting iconic design ‘Sidra Tree (figure 5). The spectacular façade resembles two intertwined trees reaching up to support the exterior canopy.

The tree is a beacon of learning and comfort in the desert and a haven for poets and scholars who gathered beneath its branches to share knowledge. QNCC was conceived with a focus on sustainability. The Centre was successfully built according to U.S. Green Building Council’s Leadership in Energy and Environment Design (LEED); gold certification standards. The building is designed to operate efficiently with innovations such as water conservation and energy-efficient fixtures. In figure 6, , the analyzed plans of QNCC.



Figure 5: Qatar National Convention Center

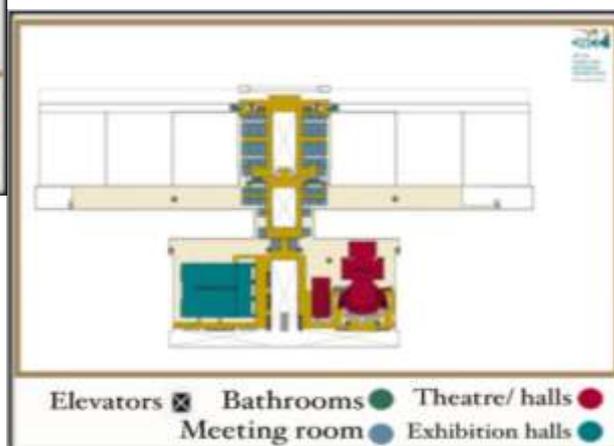
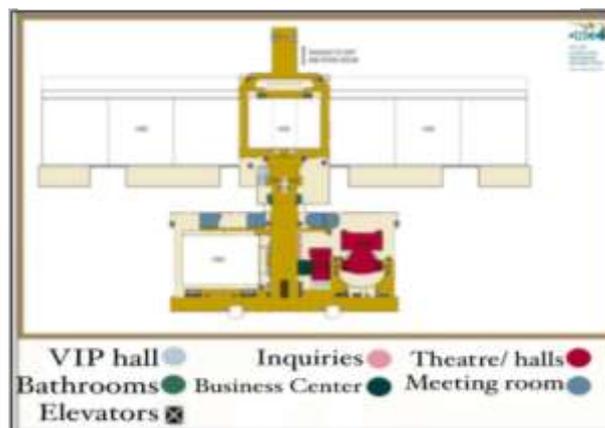
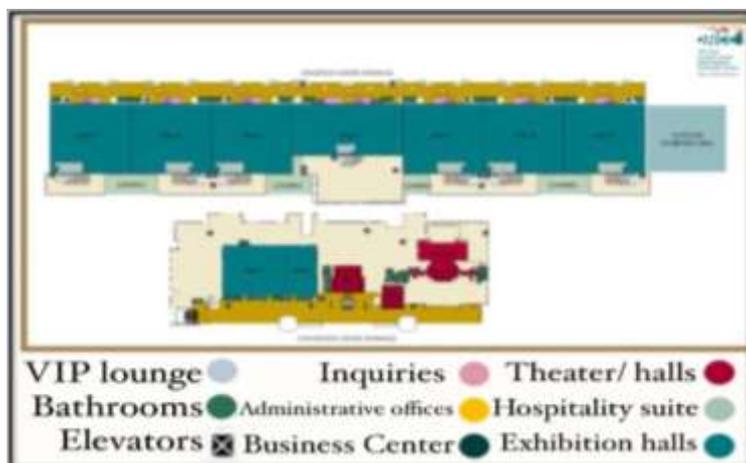


Figure 6: Plan analysis for Qatar National Convention Center



5. Comparison Between the Three Studied Cases (table 1)

Table 1: Comparison between the three case.

	SECC (Saigon Convention and Exhibition Center project)	Cairo International Exhibition and Conference Center	Qatar National Convention Center
LOCATION	Located in the heart of Glasgow, Scotland	Nasr City, Cairo, Egypt	Located in Grafa al-Rayan on the Dukhan Highway.
DESIGNER	Foster and Partners, Sir Norman Foster.	Shanghai Architectural and Civil Engineering Design corporation.	Yamasaki Architectural Group, Arata Isozaki
AREA	64-acre	58,000 square meters.	177,000 square meters.
CONCEPT	The system of curved rooms; the meeting points at which the arched surfaces slide over each other, allowing to the light to insert and form all the day. The building shape is as a huge ship. Moreover, turning this dark metal oyster into several beams of light scattered at night radiating out the sparks of life inside, which is the most important thing.	Based on the assembly of conference halls around the press center. The main entrance leads to this halls while the secondary entrance leads to services like ballrooms, kitchens and cafe shops.	the spectacular façade resembles two intertwined trees reaching up to support the exterior canopy. The tree is a beacon of learning and comfort in the desert and a haven for poets and scholars who gathered beneath its branches to share knowledge.
PROJECT ELEMENTS	A hall can accommodate up to 3,000 delegates, yet it has the ability to adapt to much smaller meetings whilst maintaining its feeling of intimacy. It is supported by 16 breakout-rooms seating from 30-300 and a second auditorium provides tiered and floor level seating for up to 624 delegates. Exhibition halls are directly linked to 22,355 m ² of exhibition space in five interconnected halls, providing flexible space for concurrent exhibitions, banquets, concerts, large-scale events or additional meeting halls for up to 10,000 delegates.	The project have a hall with 2500 seats having an area of 2700 m ² for international conferences that is equipped to be used as a cinema or theatre, a meeting room with 800 seats, a meeting room with 600 seats, meeting room with 1250 seats and 120 offices for the visitors, media center and apartments specially for the presidents.	The Qatar National Convention Center has a 4,000-seat conference room, a 2,300-seat theatre, three lectures halls and 52 flexible meeting rooms to accommodate having a wide range of events. . It also has 40,000 square metres of exhibition space in nine halls and is adaptable for 10,000 conference seats. It is the first one of its kind to be built according to the standards of the gold certificate of the United States Council for Green Buildings in energy and environmental design.

6. Results and Discussion

The study focuses on the importance of having the following elements in order to develop sustainable exhibition and conference centres in Egypt, by having the followings:

Design Elements :-

- Exhibitions :-

a) *The Entrance :*

- entrance lobby.

b) *Exhibition :*

- Guidance area.
- Main showroom.
- Showrooms.
- Lecture hall.
- Library.
- Storehouses.
- Shops.
- Workshops.

c) *Management*

- Office of the General Director.
- Secretary Office.
- Office of the Deputy Director.
- Meeting room.
- Public Relations Director Office.
- Office of the Director of Administrative and Financial Affairs.
- Security.

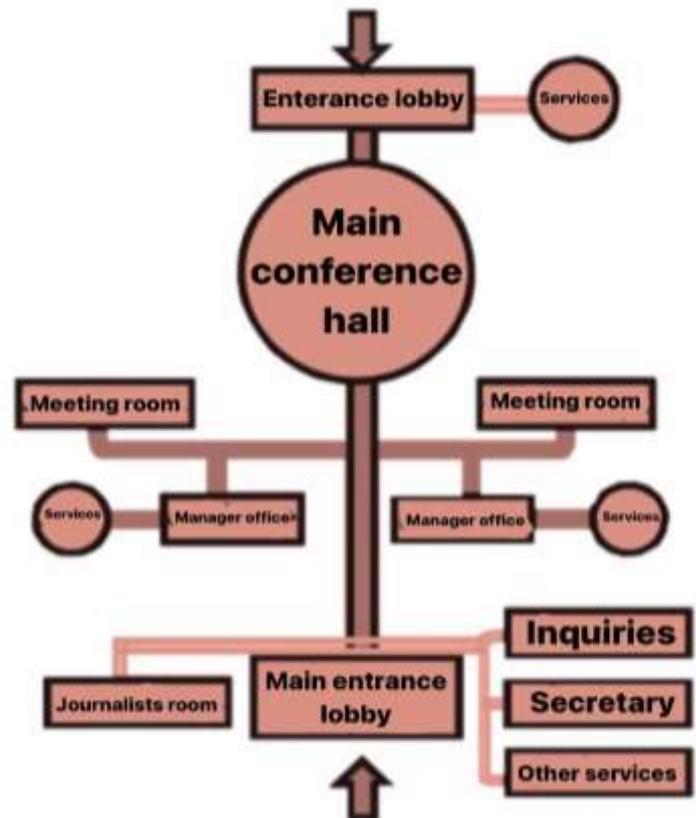


Figure 7: Exhibition hall elements

- **Conference Hall :-**

a) Front section (public lounge)

- The entrance lobby.
- Conference Hall.
- Baths.
- Inquiry office.

b) The rear section (hall platform)

- President's Room.
- Meeting room.
- Members Room.
- Management rooms.
- Services.
- Translation office.

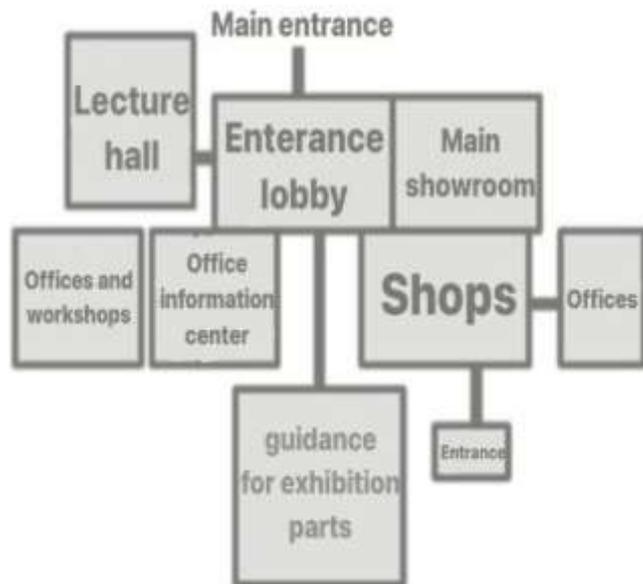


Figure 13: Conference hall elements

7. Conclusion

By prioritizing eco-friendly materials, energy-efficient technologies, and waste reduction strategies, expos can serve as sustainable models that inspire long-lasting change and environmentally conscious practices. Exploration of technology integration, spatial re-imagination, and sustainability should be integrated with design elements of such centers to revolutionize the design of expos. By embracing these enhancements, expo organizers and participants can unlock new realms of creativity, engagement, and impact, ensuring that these global showcases remain at the forefront of innovation and inspiration. By having a group of integrated elements, Egypt could have a developed expos.

8. Recommendations

According to theoretical and practical studies, as tool for developing exhibition and conference centers in Egypt. It is recommended the followings:

- At the national level: Scientific and executive institutions must cooperate to apply technology and sustainability to benefit from it at the national scale, with the help of research and studies that empower the investment in this technology to achieve economic and environmental returns in the long term.
- On the social level: the community must be involved at every stage of the project (planning, designing, and implementation).



The research recommended that it is necessary to establish a new and a developed exhibition and conference ground that supports sustainability in all its aspects. It is recommended to be at the city of Galala that is one of the best cities to establish this project according to the following reasons:

- The city is supported with facilities and service, including an international medical city, tourism residential areas, and a well-developed commercial mall.
- The city has an excellent geographical location overlooking the Red Sea.
- Work on the implementation of Egypt's express train project, which has a speed of 250 km / h.

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