

The Modern Sustainable Concepts in the Design of Free Markets

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Abstract:

Free markets are considered one of the most important factors for encouraging fugitive foreign and national investments, because of the privileges and facilities such as taxes and customs exemption, allowing investors to offer their products at competitive prices and attracting customers locally and internationally. However, the design of Egyptian free markets has traditionally been devoid of creativity, under that the importance of activating the role of interior designer to design free markets is important. The use of modern sustainable technologies to make the most of the available resources and potential to become a role in the local and global map.

The research problem arises in the following questions: How does interior design improve the efficiency of free markets? What factors influence their design? Is it possible to integrate modern technologies and the environment in the design of free markets? and the extent of achieving compatibility between them? From this point on, the research aims to make the interior designer aware of the importance of paying attention to the environmental and technical aspects in order to achieve efficient internal environment by correct integration between them for the convenience of users.

The research is divided into five themes; the first axis: It recognizes the concept of free markets, their importance and the most important factors influencing their design. The second axis: Includes a presentation of the concept of sustainability and the most important criteria applicable to free markets through the LEED Environmental Leadership System. The third axis: Includes smart building technologies and how to use them to achieve sustainability in free markets. Fourth Axis: Interested in learning about green nanotechnology and how to achieve sustainability through them and work to raise the efficiency of local free markets. The last axis: Analysis of a sustainable model of a global free market in order to reach an integrated design vision.

Key Words:

Free markets – Sustainability - Smart technologies - Green nanotechnology.

Introduction:

Design local free markets is one of the most prominent problems that is being overlooked by the role of interior design, this has made it appear traditionally and it does not keep up with environmental requirements and modern technologies, so it was necessary to stand on them to infer design standards that make them environmentally compatible and use technology, to help the Egyptian free market to keep abreast of the development in this field.

Research problem:

Research problem is concentrated in neglecting the environmental and technological sides the absence of innovation in the elements of interior design in free markets in Egypt, and resort to traditional methods of design forcing to stand and focus on them because of their role in the preservation of the environment and energy saving to create a comfortable environment for leisure users, all this through a study of a sustainable free market with modern technologies.

Research Objective:

1. Raise the efficiency of the internal environment of free markets by achieving the concept of sustainability to reduce harmful emissions and energy consumption.
2. Familiarity with the concept of sustainability and modern technologies to integrate them, and designer's awareness of the importance of this and how to achieve and evaluate in the free markets.
3. Analysis of a global model in order to benefit from it in the design of local markets through the integration of technology and the environment and achieve a balance between both of them.

Research Importance:

The importance of the research lies to clarify the importance of designing free markets with modern sustainable technologies that are compatible with the environment to achieve efficient internal environment by properly integrating materials and systems with the environment to provide convenience for users and reduce energy consumption and harmful emissions which urging the Egyptian free market to be kept abreast of the development in this field.

Research hypotheses:

1. The interior designer is able to employ his/her tools to create a comfortable indoor environment for users of the space.
2. The integration of technology and the environment and creating a balance between them leads to raise the efficiency of free market design.
3. Modern technologies are able to achieve the concept of sustainability in interior design more efficiently than the currently used methods.

Research Methodology:

Research is addressing the problem of the study based on the descriptive and analytical methods, by adopting an appropriate theoretical framework for the study and analysis of some models of global free markets to reach a sustainable market.

Scope of the Research:

1. **Objective limits:** a study of the concept of sustainability and modern technologies and how to integrate both of them to achieve a balance between them in the interior design of free markets.
2. **Time Limits:** Time of the research preparation.




Analysis of some terms:


1. **The definition of free markets:** They are retail outlets which are being exempt from government intervention; they do not apply local taxes and fees, also called "retail travel," a term refers to sales in travel environments, these markets exist in seaports, airports, cruise ships and ferries in international waters, as well as on aircrafts during flights, it may be in some countries far away from ports and airports, but the purchase requires specific conditions; customers are required to show a proof of traveling.
2. **Definition of sustainability:** The concept of sustainability means the continuity of interaction between society and the ecosystem. It is a term that starts from a human perspective that calls for attention to the future of man and then to preserve the environment that gives continuity to humans. Sustainability is how natural resources are best used while preserving them.
3. **Definition of smart building techniques:** They are the use of computer technologies, means of communication and knowledge in the integration of building systems and coordination between them in order to raise the efficiency of the building and rationalize the cost of maintenance and use while achieving interactive and dynamic building systems to provide comfort to users and improve their productivity.

Analytical model of a free market:



Sydney Airport Regionals Heinemann Duty Free
[https://www.dexigner.com/news/29212\(28-8-2019\)](https://www.dexigner.com/news/29212(28-8-2019))

Element	Analysis
<p>Design Idea</p> <p>Achieve sustainability</p>	<p>Inspired by the sandstone rock formations of the world-famous Sydney Harbor, the designer wanted the visitor to remember through its unique location on the harbor. The design is a distinctive representation of some of Sydney's most famous and beautiful landmarks.</p>  <p>Rock formations of Sydney Harbor <u>https://australia51.com/article/ (28-8-2019)</u></p>
	<p>The design of the display units is as if an aerial view of the Sydney port terrain was taken. The curved display units are unique in shape, height and size. They are ten units ranging from low to shelf pointing to highly corrosive caves and then shallow beaches. Among these units are a tuft of Australian living plants, referred to as green plants on the highest slopes of the harbor .</p>  <p>Curved display units and Australian plants <u>https://worldarchitecture.org/architecture-news/cgpfe/lava-(30-8-2019)</u></p>
	<p>The display units are composed of 250 shelves made of environmentally friendly recyclable plywood. The rich and varied shapes of the various layers of sandstone are reflected in the birch veneer colors .</p> <p>The use of live Australian plants the highest supply units helps to purify the air from carbon dioxide and thus achieve the quality of the internal environment.</p>  <p>Plywood in units covered with birch veneer <u>https://www.dexigner.com/news/29212(28-8-2019)</u></p>
	<p>The use of white color in the walls, floors and ceilings gives the breadth of the place and gives a sense of comfort to the user while being in the free market, which achieves the quality of the internal environment.</p>

<p style="text-align: center;">Smart technology</p>	<p>-The use of intelligent systems such as control systems, fire, sound and lighting control and others.</p> <p>-Use daylight panels Daylight panels in some parts of the ceiling that achieve privacy without blocking natural daylight and thus reduce energy consumption.</p> <p>-Using coated aluminum panels, aluminums laminated panels which helps in the process of acoustic insulation and storage of excess heat and then radiation when the heat decreases, which achieves the quality of the internal environment and reduce energy consumption .</p> <div style="text-align: center;">  </div> <p style="text-align: center;"><u>Coated aluminum panels and the idea of daylight ceiling panels</u></p> <p style="text-align: center;">https://www.dexigner.com/news/29212(28-8-2019)</p>
<p style="text-align: center;">Nano technique</p>	<p>Self-cleaning property of surfaces and glass and thus achieve the quality of the internal environment of the market.</p>

Results:

1. The need to take into account the various design factors in the design of free markets because of their significant impact on the user.
2. The process of integration between the environment and modern technologies works to protect the environment and achieve compatibility with it to achieve maximum efficiency and maximize its economy.
3. Modern technologies have the ability to achieve the concept of sustainability in interior design more efficiently than traditional methods which are currently used.
4. Knowing the most important criteria of sustainability and the concept of smart technology and green nanotechnology, after the analysis of the free market referred to in the research, environmental and technical standards can be reached to enable us to design a sustainable local market with modern technologies.

Recommendations:

1. Reviewing the design of local free markets and paying attention to the environmental and technical aspects.
2. The importance of the role of interior designer in finding solutions and design vision to neglect the environmental and technological aspects and the absence of innovation in the elements of interior design in local free markets.

3. The authorities responsible for free markets in Egypt should enforce laws that take into account environmental and technical factors when establishing any local free market as a contribution to make the Egyptian market keep pace with the global free market.

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