international DESIGN JOURNAL
Print ISSN 2090-9632
Online ISSN 2090-9640

Environmental Standards for Sustainable Interior Design of the Airport Building in Al-Hodeidah Governorate (Yemen)

Manal Abdo Ahmed Modhfar
PhD researcher at the Department of Interior Design and Furniture, Faculty of Applied Arts, Helwan University, mamodhfar@gmail.com
Prof. Ismail Ahmed Awad
Prof. Emeritus and former head of the department in the Department of Interior Design and Furniture, Department of Interior Design and Furniture, Faculty of Applied Arts, Helwan University Ismailawaad1943@gmail.com
Prof. Asmaa Hamed Abdel-Maqsoud
Prof. Department of Interior Design and Furniture, Department of Interior Design and Furniture, Faculty of Applied Arts, Helwan University, Asmaa_hamed@a-art.helwan.edu.eg

Abstract:

Yemen is the charm of the Arabian South because it has a long and complex history, it was an important center in ancient times, and it witnessed a number of civilizations such as Sheba, Himyar, Qataban and the ancient city of Zabid ... This leads to the growth of environmental awareness for the sustainable design of environmentally friendly airport systems to keep pace with environmental requirements and needs to stay away from negative effects on the environment surrounding the airport on a larger scale; to reduce energy consumption and not to use polluting substances for the environment, so as not to help the environmental imbalance on the ground. Biodiversity in Yemen represents an opportunity to apply environmental standards for sustainable interior design of the airport building in Hodeidah Governorate, by taking advantage of local resources that are in line with climatic conditions that affect improving the quality of life, and reducing the environmental impact of architectural projects (of the airport building) in Hodeidah Governorate. Focus on the elements that affect environmental performance These standards include the optimal use of environmentally friendly building materials, the application of energy-saving technologies, and the promotion of natural ventilation to achieve a suitable airport equal to the environment, and this improves the functional performance of the airport through the Energy Leadership and Environmental Design Assessment System and the extent of its impact, and this reflects the efficiency of the internal environment (for green airports - zero energy - solar energy) in terms of resource consumption, and improving the required materials according to the LEED evaluation system.Successful international experiences in this field were also reviewed to benefit from in the development of local standards. The criteria that must be taken into account when making a sustainable design for the airport building are to raise the efficiency so that the LEED system contributes to a comprehensive assessment of environmental design research Association (EDRA), rationalization of energy consumption and the exploitation of natural resources to obtain the necessities of life, and this is called the development process.

Search problem: - Some designers in Yemen neglect environmental strategies and lack of application of interior design standards in order to obtain a sustainable building.

Research Objective: -Explore the environmental strategies stemming from Yemen Vision 2030 and guide the standards of sustainable interior design for the airport building for Hodeidah Governorate according to the LEED system while preserving the urban identity.

Research hypothesis: The research assumes the following: - If the proposed environmental standards are applied within the space spaces of the terminal building, this will lead to the functional preparation of the occupants, and the arrival of an interior design for the terminal building that is effective and effective.

Research Methodology: Theoretical Approach: Use in determining environmental standards to be adopted in the research and explain the main points therein. Descriptive and analytical approach: This is done by conducting an analytical study of the most important models of interior designs to determine what can be applied in our country by clarifying the impact of environmental standards on the sustainable interior design of the airport building, which was established in accordance with environmental design standards (environmentally friendly).

Paper History:

Paper received January 17, 2024, Accepted March 07, 2025, Published on line May 1, 2025

Keywords:

Environmental standards, sustainable interior design, environmental design, zero energy airport, solar airport, green airports

References:

1- Osama Abdel Nabi Qanbar-Ahmed Alaa Ahmed Lebdeh, Sustainable Interior Design Criteria in the Light of the Green Pyramid Evaluation System, Al-Booth Engineering Journal (ERJ), 2019, vol.4.
2- Esraa Adel Abu Attia, Developing the Concept of Interior Design in the Modern Era, Journal of Applied Arts and Sciences, Volume Five, Issue Four, October 2018.
3- Asma Mahmoud Ali Himaya, Sustainable Architecture and its Impact on the Architectural Design of Secondary Education Schools in Egypt, Research Article, Journal of Research in Art Education and Arts, Volume 21, Issue 2, 2021.
4- Amal Mohamed Fayek, Smart Design Systems for Sustainable Outdoor Landscaping, Ph.D., Department of Interior Design and Furniture, Faculty of Applied Arts, Helwan University, 2022.
5- Aya Fikri Mustafa Al-Balshy, Green Architecture Strategies to Reach Zero-Energy Buildings, Journal of Engineering Research, Volume 41, Issue 3, 2018.
6- 6. Salah Al-Din Al-Fitouri Al-Werfalli, The Role of Interior Design in the Quality of Architectural Design (AJSP), Arab Journal For Scientific Publishing (AJSP), Issue 16, 2020.
7- Ali Dhouri Mohammed, Prospects for Establishing Environmentally Friendly Green Buildings, Department of Building and Construction, Faculty of Engineering, University of Technology, published research.
8- Saudi Building Code (Sustainable Building), published research, 2019.
9- Lubna Mahmoud Mubarak and others, Embedding Sustainability Principles in Urban Design, Journal of Engineering Sciences, Faculty of Engineering, Aswan University, 2018.
10- Majd Fayyad, Zero-Energy Buildings: Dream or Reality, published article, 2020.
11- Mutasim Babaa et al., Green Building Guideline - State of Palestine, Issued by the Engineers Association - Palestine, Palestinian Higher Council for Green Building, First Edition, 2013.
12- Maysoon Mohi Hilal and others, Sustainability in Architecture: Research on the Role of Sustainable Design Strategies in Reducing Impacts on the Built Environment, Civil Section, Samarra University, Al-Azhar International Engineering Conference, Issue 13, 2014.
13- Namir Qasim Khalaf, Alif B Interior Design, Diyala University, Dar Al-Kutub wal-Wawathiq Baghdad, first edition, 2005.
14- Hind Rashid Saeed bin Hussein, Sustainability in Building Design Term and Dimensions, published research.
15- Yahya Waziri, Environmentally Friendly Architectural Design Towards Green Architecture, Madbouly Library, First Edition, 2003.
16- Airport Engineering Planning Design ,and Development of 21 st Century Airports, Fourth Edition 2011 Norman J.Ashford , Saleh Mumayiz , Paul H. Wright , 2011
17- Hanan Ali And Pip Norris, Nafural Interios: Using Natural Materials and Methods to Decorated Your Home-Book. Habor Publishing, Vancouver, Canada, 2009.
18- Mesial Ari, Leed Materials Aresource Guide to Green Building Princeton Architectal Press, New York, 2010.
19- Alex Wilson, Mark Piepkorn, Green Building Products: The Green Spec Guide To Residential Building Materials-3rd Edition, Mark Piepkon, New Society Publishers, Canada, 2013.
20- ASHRAE Green Guide: The Design, Construction and Operation of Sustainable Buildings.
21- Jerry, Yudelson, Green Building Through Intergarated Design, Mcgraw Hill Companies Inc., USA, 2009, P50.
22- P.Vander Lugta, A.A.J.F. Vandan Dobbelsteena, J.J.A. Janssenb, Anenvironmental, Economic And Practical Assement Of Bomboo As Building Material For Supporting Structures, Construction And Building Matenals, ELSEVIREPRESS, Feb. 2005.
23- Raafat Ab Del-Sayed Bekheit, Sustainability Stanadards And Their Impact On The Interior Design Of Green Hotels, Design Heritage Magazine, Volume II, Issue 10, 2022.
24- Sam Kubba, Handbook Of Green Building Design And Construction: LEED, BREEAM, And Green Globes, Butter Worth-Heinemenn.UK, 2012.
25- Stephen Pentak, Richard Roth, David Laue, Design Basics: 2D And 3D, Cengage Learning 2012.
26- Sustainable city team, Sustainable building design and construction, Bristol council, February 2006

27- USGBC Member Approved November 2008(Updated July 2012), LEED 2009 For New Construction and Maiar Renovations Rating System, The U.S Green Building Council, U.S.A, 2009.
28- William Mcdonough And Michael Braungart, The Next Industrial Revolution- Book, The Alternative Monthly Company, University Of Virginia, Usa, 1998.
29- http://www.arch-news.net/images/The-Jewel-by-Utopia-Arkitekter_arch-news.net_784_3.jpg
30- http://www.hctgreennest.com.png
31- https://ar.mapssingapore.com/%D9%85%D8%B7%D8%
32- https://ar.maps-singapore.com/%D9%85%D8%B7%D8%A7%D8%B1-%D8%B3%D9%86%D9
33- https://ar.tripadvisor.com/Attraction_Review-g294265-d8152168-Reviews-Butterfly_Garden-Singapore.html
34- https://ar.wikipedia.org/wiki/%D9%85%D8%B7%D8%A7%D8%B1
35- https://ar.wikipedia.org/wiki/%D9%85%D8%B7%D8%A7%D8%B1_%D8%AF%
36- https://daleelalmatarat.com/a/
37- https://daleelalmatarat.com/a/%D9%85%D8%B7%D8%A7%D8%B1-%D8%B3%D8%A7%D9%86-
38- https://en.wikipedia.org/wiki/Denver_International_Airport
39- https://encryptedn0.gsatic.com
40- https://graconllc.com/wp-content/uploads/2017/08/Leed-Certification-Badges.jpg
41- https://mawdoo3.com/%D8%A3%D9%83%D8%A8%D8%B1_%D9%85%D8
42- https://new.usgbc.org/leed
43- https://onlinepubs.trb.org/Onlinepubs/trcircular/445/445-002
44- https://parkingnearairports.io/blog/view
45- https://pbs.twimg.com/media/DQ3dHW_VQAE3_eu.jpg
46- https://qafilah.com/%D8%B3%D9%8A%D9%83%D9%88%D9%84%D9%88%D8%AC%D9%8A%D8%A9-
47- https://sirbtrips.com/%D8%B3%D9%8A%D8%A7%D8%AD%D8%A9-%D8%B3%D9%81% 7
48- https://s-raha.com/%D9%85%D8%B9%D9%84%D9%88%D9%85%D8%A7%D8%AA-%D8%B%/
49- https://tamimi.own0.com/t47252-topic
50- https://upload.wikimedia.org/wikipedia/commons/4/43/SFO_Map.svg
51- https://www.almrsal.com/post/65559
52- https://www.almrsal.com/post/65559
53- https://www.cleartrip.ae/tourism/airports/ar/san-francisco-airport.html
54- https://www.eremnews.com/economy/travel/2qe7cch0f4
55- https://www.eremnews.com/economy/travel/2qe7cch0f4
56- https://www.facebook.com/ChangeAndHarvest/posts/%D9%85%D8%B7%D8%A7% -%0
57- https://www.ingentaconnect.com/content/hsp/cam/00000002/art00006
58- https://www.pinterest.com/pin/27866091437859609
59- https://www.planradar.com/sa/sustainable-architecture-benefits-for-sustainable-development/
60- https://www.usgbc.org/credits/retail---new-construction/v4.1
61- http://www.hctgreennest.com.png

CITATION Ismail Awad, et al (2025), Environmental Standards for Sustainable Interior Design of the Airport Building in Al-Hodeidah Governorate (Yemen), International Design Journal, Vol. 15 No. 3, (May 2025) pp 263-284