Curriculum Vitae

Ahmed A. Y. Freewan

Jordan University of Science and Technology
College of Architecture and Design

Tel: +962772049713
Email: ahmedfreewan@hotmail.com

Education

2008 PhD; Green Architecture and Building Technology, The school of the Built Environment, University of Nottingham, UK
1999 MSc; Architecture, University of Jordan
1994 BSc; Architectural Engineering, Jordan University of science and Technology

Experience

Countries of Work Experience: Jordan, UK, UAE

2011-2015 Chairman School of Design- Jordan University of Science and Technology
2015-2017 Chairman department of Architecture - Jordan University of Science and Technology
2015-2017 Vice dean, college of Architecture and Design - Jordan University of Science and Technology
2019-2021 Vice dean, college of Architecture and Design - Jordan University of Science and Technology

2008 - Present associate professor Jordan University of Science and Technology-Jordan
& Architect and designer
projects:
Jordanian Hamma tourism complex in association with ERADA
Housing and commercial buildings
2004-2007 teaching assistant University of Nottingham-UK
2006-2007 Eco houses volunteer (student architect) University of Nottingham-UK
1999-2004 Architect and Instructor United Arab Emirates University-UAE
1994-1999 Architect Rasem Badran Association-Jordan

Publications, Journals and Researches

Journal of publications

- **Solar Energy**
- **Renewable Energy**

- **Energy Conversion and Management**
- **Sustainable Cities and Society**
- **Buildings**
- **Advances in energy research**
- **International Journal on Energy Conversion**
- **Alexandria Engineering Journal**
- **Journal of Daylighting**
- **Smar,t Innovation, Systems and Technologies**
- **Jordan Journal of Civil Engineering**

Publications

Freewan, Ahmed A.Y. 2022. "Energy-Efficient Solutions Depending on Building Forms Design with Tilted South and North Facades" Buildings 12, no. 6: 753. https://doi.org/10.3390/BUILDINGS/MDPI 12060753

Freewan, A. A. , 2019, 'Advances in Passive Cooling Design: An Integrated Design Approach', in G. Hailu (ed.), Zero and Net Zero Energy, IntechOpen, London. 10.5772/intechopen.87123.

Ahmed A.Y. Freewan, Jackline A. Al Dalala, Assessment of daylight performance of Advanced Daylighting Strategies in Large University Classrooms; Case Study Classrooms at JUST, Alexandria Engineering Journal/ Elsevier, Volume 59, Issue 2, 2020, Pages 791-802,

Freewan, Ahmed A., Neda'a M. Jaradat, and Ikrima A. Amaireh. 2022. "Optimizing Shading and Thermal Performances of Vertical Green Wall on Buildings in a Hot Arid Region" BUILDINGS /MDPI 12, no. 2: 216. https://doi.org/10.3390/buildings12020216

Freewan, A., Kan'an, R., Assessment of Energy Efficiency of Retrofitting Existing Residential Buildings Using Multiple Energy-Saving Measures, (2021) International Journal on Energy Conversion (IRECON), 9 (4), pp. 125-139.
doi:https://doi.org/10.15866/irecon.v9i4.20276

Abu Alatta, R. T. And A. A. Freewan (2017). "Investigating The Effect Of Employing Immersive Virtual Environment On Enhancing Spatial Perception Within Design Process.ARCH NET IJAR /EMERALD " 2017 11(2): 20

Ahmed A. Freewan And Lina W. Shqra (2017) Analysis Of Energy And Daylight Performance Of Adjustable Shading Devices In Region With Hot Summer And Cold Winter, Advances In Energy Research Volume 5, Number 4, December 2017, Pages 289-304

Freewan, Ahmed. A. Y. 2014. Impact of external shading devices on thermal and daylighting performance of offices in hot climate regions. **Solar Energy**, 102, 14-30.

Freewan, Ahmed. A. 2015. Developing daylight devices matrix with special integration with building design process. **Sustainable Cities and Society**, 15, 144-152.

Freewan, Ahmed. A. Y., Gharaibeh, A. A. & Jamhawi, M. M. 2014. Improving daylight performance of light wells in residential buildings: Nourishing compact sustainable urban form. **Sustainable Cities and Society**, 13, 32-40.

Freewan , Ahmed A., 2014 Maximizing the Performance of Laser Cut Panel by Interaction of Ceiling Geometries and Different Aspect Ratio, **Journal of Daylighting** 1 29-35. http://dx.doi.org/10.15627/jd.2014.4

Freewan, Ahmed A, 2016, Using Tubular Daylighting Technologies to Improve Daylighting in Double Loaded Corridor in Educational Buildings, **Jordan Journal of Civil Engineering**, Accepted

Freewan, Ahmed. A. 2011. Modifying Courtyard Wall Geometries to Optimize the Daylight Performance of the Courtyard. **Smart Innovation, Systems and Technologies**, 7, pp. 57-64

Freewan, Ahmed A. (2010) Maximizing the lightshelf performance by interaction between lightshelf geometries and a curved ceiling Original **Energy Conversion and Management**, 51 (8): 1600-1604

Freewan, Ahmed. A., L. Shao, et al. (2009). "Interactions between louvers and ceiling geometry for maximum daylighting performance." **Renewable Energy** 34(1): 223-232.

Freewan, Ahmed. A., L. Shao, et al. (2008). "Optimizing performance of the lightshelf by modifying ceiling geometry in highly luminous climates." **Solar Energy** 82(4): 343-353.

Conferences

Freewan, Ahmed A, 2013, Using Tubular Daylighting Technologies to in Double Loaded, SET2013, Honkong

Freewan, Ahmed. A. (2011). Improving Daylight Performance of Light-well in Multi-story Apartment Buildings. SET2011, Istanbul – Turkey.

Freewan, Ahmed A (2011). Improving thermal performance of Offices in hot climate regions. WREC, Linkoping, Sweden.

Freewan A. Ahmed, 2012, Recreating Social and Urban Place in Irbid to enhance sustainable development, in Designing Place; International Urban Design Conference, Nottingham, UK

Freewan, Ahmed. A. (2010). Modifying courtyard wall geometries to maximize daylight performance of courtyard. SEB-10, Briton - UK, Springer.

Freewan, Ahmed, S. Riffat, et al. (2006). Optimising performance of lightshelf by modifying ceiling geometry. World Renewable Energy Council 2006, Florence - Italy

Freewan, Ahmed (2002) Reinvention of tradition Architecture, Architecture in deserts regions symposium, Riyadh, Saudi Arabia

Funded Project and Research grants

Funded Project

1- sustainable development and tourism; gamification for Memorable tourist experiences, EU fund, ENI CBC MED Program (2 million Euros) 2019
2- Cultural Routes for Sustainable Social and economic Development in Mediterranean EU fund, ENI CBC MED Program (1.8 million Euros) 2019
3- RESMYLE: supporting citizens and youth-led environmental local projects EU fund, ENI CBC MED Program (1.9 million Euros) 2019
4- REvitalization of Sustainable Tourism Across Regions in The MEDiterranean, EU fund, ENI CBC MED Program (1million Euros) 2021
5- JADE: Jordanian Action for the Development of Enterprises EU fund Jordan , entropies program (7 million euros) 2017
6- Prototyping of energy efficiency pre-tested devices for passive and low energy architecture : shading devices and anidolic systems, Grant No. Com 36, SRTD
7- Governance for Achieving Local Strategies for tourism – GOALS Participants; Italy, Spain ,Greece, Jordan, and Palestine ENPI-CBCMED European Union
8- IAM; International Augmented Med Participants; Spain, Italy, Egypt, Jordan, Palestine, Tunisia, and Lebanon ENPI-CBCMED European Union

Research Grants

1- Lighting inner spaces in residential buildings
2- Developing architectural education toward sustainable design
3- Improving thermal Performance of offices buildings Using fixed shading devices
4- The impact of shading devices on the aesthetic evaluation of building facades and user's psychological satisfaction of the interior
5- Optimizing green wall shading effect for a campus housing building at hot arid region

6- Improving the Thermal Performance of Double skin facade using Phase Change Material
7- Acrylic Glass Applications for Daylighting Utilization in Buildings in Jordan
8- Retrofit of Residential Buildings in Jordan to Improve Building Energy Efficiency, Developing a Model for Energy Saving
9- Investigating the effect of employing immersive virtual environment on enhancing spatial perception within design process

Postgraduate Research Thesis's

1. •Lighting Core Spaces In The Multi-Story Residential Buildingsin Hot And Arid Regions2010/08
2. Improving Micro-Climate of Selected Areas in Irbid Through a Modified Urban Layout Design2013/01
3. Interchangeable influence of Video Game and Architectural Design Processes: Exploring the Role of Architecture in Video Game Design2014/12
4. The Impact of Courtyards Design And Microclimates On The Patterns Of Use At Jordan University Of Science And Technology Campus2015/03
5. Optimize the Natural Ventilations System Based on Yemeni Vernacular Architectural-Mukalla (Hadramout-Yemen) Experiment and Simulation Study.2015/08
6. Investigating the effect of employing immersive virtual environment on enhancing spatial perception within design process2016/01
7. Optimizing Thermal and Visual Performance Of School Buildings In Jordan2015/05
8. •Retrofit of Residential Buildings in Jordan to Improve Building Energy Efficiency, Developing a Model for Energy Saving2017/01
9. Maximizing the Efficiency of Shading Systems in Regions with Hot Summer and Cold Winter2016/08
10. The Effect Of Shading Strategies And Natural Ventilation On Thermal Comfort And Indoor Air Quality Of The Classrooms Compound At JUST University2017/05
11. Advanced Daylight Technologies: Improving The Daylight Performance of The Classrooms Compound Of JUST University2017/05
12. Improving the Thermal Performance of Double skin facade using Phase Change Material(PCM) Louvers/05 2019
13. Acrylic Glass Applications for Daylighting Utilization in Buildings in Jordan2019/01
14. Implication of human behavior scenarios on architectural design for energy efficient buildings 2020/05
15. •Introducing new prototype for energy efficient public buildings, using design of experiments202/01
16. Comparison between Setbacks Buildings and and Courtyard Buildings in Hot Climates: Nourishing Compact and Sustainable Cities.2020/06
17. Study the performance OF Natural ventilation by implementation horizontal wind catcher in residential building in hot region / case (Irbid - Jordan)2020/06

18. Modifying courtyard wall geometry to optimize thermal performance natural ventilation and daylight performance in regions with hot summer and cold winter2020/08
19. •Optimizing green wall shading effect for a campus housing building at hot arid region2021/06
20. key factors affecting the diffusion and adoption of green building technologies (GBTS) in developing countries, the perspective of Jordanian designers. 2022/01
21. The impact of shading devices on the aesthetic evaluation of building facades and user's psychological satisfaction of the interior spaces 2021/06

Reviewer:

1. DIRASAT; the scientific journal of the University of Jordan
2. KSUJ: King Saud University Journal, KSA
3. Sustainable cities and societies
4. Solar Energy
5. Buildings
6. Building and environment
7. Architectural science review

Conference committee and organization

1. SET: Sustainable Energy Technology International Scientific Committee and advisory board, it is international annual conference. It has been held in many countries like, UK, Canada, Turkey, and China
2. JIEC: Jordan International Energy Conference, Organization

Area of interests/competencies, including:

- Sustainability and sustainable development framework,
- Strategy planning, Policy development and design, and tools,
- Assessing and monitoring Strategy and setting KPIs,
- Strategic Environmental Assessment (SEA),
- Environmental Guidelines and Regulations,
- Health, Safety and Environment (HSE),
- Low Carbon Society, Scenarios, and Green Economy,
- Eco Friendly and Sustainable Cities,
- Green Building Policies and Guidelines, and
- Renewable Energy and Climate Change.
- Daylighting,
- photovoltaic,
- computer simulation for building energy performance

Current Research and projects

1- Developed the green campus of JUST

   - Setting strategic objective and themes based on baseline assessment and understanding of current trends,
   - Review best practices and existing policies, and identify the gaps as well as conduct an outreach,
   - Set policy intents and barriers, and finalize policy targets and limitations,
   - Assessment factors and policy analysis, including: suitability, feasibility, clarity, finance, impact, size, marketability, technicality and readiness. etc, as well as building capacity to monitor, evaluate and control,
   - Developed Awareness campaign and program, execution plan and implementation including action plans Multi stages project including the following

2- Evaluation of current buildings energy performance
3- Suggestion of environmental tools and design options to improve buildings performance
4- Application of renewable energy applications
5- Energy Management in Building
6- Renewable energy for domestic scale
7- Develop a Daylighting and Ventilation System in Multi Story Housing Buildings

Entrepreneurship and future development

- Founder of Green construction incubator at JUST
- Founder of daylight and energy lap
- Hackathons consultant; conducted more than 30 hackathons across Jordan in themes of sustainable development, energy, green construction IoT and recycling

Community and society services

1. Three workshops on total quality management criteria to improve sustainable development and tourism in Ajloun City/Jordan
2. Design of Al hamma SPA complex in association with ERADA and Al hamma municipality
3. Workshop on design for sustainable behaviour for energy saving buildings in association with Jordanian Engineer Association
4. Lectures on Design methods; Al Zaytouna University and Al Yarmouk University
5. Restoration of Kharja historical mosque
6. Gerona/Spain festival for computer application on historical Site
7. Develop an advance augmented reality application for Dar Al Saraya museum in Irbid/Jordan
8. Develop a virtual tour for historical Cities; AlSalt and Madaba /Jordan

Membership

1. WSSET; World Society of Sustainable Energy Technology, UK
2. JEA; Jordanian Engineer Association, Jordan
3. JAS; Jordanian Architects Society, Jordan

Academic

Courses:

Low energy architecture, renewable, environmental and climatic design energy, Architectural Design, Basic Design, Design Methods and creative thinking, Building Construction, Building Technology, y Design Theory, Building Physics Computer Aided Design; Sustainable and Climatic Design Theories, AUTOCAD, ARCHICAD

Curriculum: developed courses program for sustainable design

- Building energy simulations programs
- Low energy architecture design and features
- Energy awareness program
- Energy consumption and human behaviour
- Advanced lectures on LEEDS and other rating standards