

Prof. Khaled A. Al-Sallal

Resume

EDUCATION

1991-95 TEXAS A&M UNIVERSITY, Ph.D., (Supervisor: Larry Degelman)
1987-88 ARIZONA STATE UNIVERSITY, M.Sc., (Supervisor: Jeffrey Cook)
1977-82 AIN SHAMS UNIVERSITY, B.Sc., Architectural Engineering

ACADEMIC EXPERIENCE

2012-... UAE UNIVERSITY - Professor in Dept. of Architectural Engineering (since Sep. 1st, 2012).
2001-12 UAE UNIVERSITY - Assoc. Prof. in Dept. of Architectural Engineering (since June 19th, 2001)
2005-08 UAE UNIVERSITY - Director, Research Support & Services Unit, Research Affairs
1996-01 UAE UNIVERSITY - Assist. Prof. in Dept. of Architectural Engineering
1993-94 TEXAS A&M UNIVERSITY - Research Assistant/Teaching Assistant in Dept. of Architecture
1987-88 ARIZONA STATE UNIVERSITY - Research Assistant in Department of Architecture

ADMINISTRATIVE ASSIGNMENT

Director of Research Support and Services, Research Affairs, UAEU, Sep. 2005 – Sep. 2008.

Delegated responsibilities:

- Establishing an applied research program linked to community needs.
- Establishing formal mechanisms to receive timely information from external stakeholders on their research needs.
- Establishing partnerships and sponsorships with key public and private groups and increase funding support for research.

TEACHING EXPERIENCE & COURSE DEVELOPMENT

Undergraduate Teaching, UAE University (1996–Present)

- Architectural Design Studio: mainly intermediate & advanced levels; emphasis on Carbon Neutral Design approach
- Graduation Project: emphasis on Carbon Neutral Design integrated with building performance simulation
- Building Science & Technology: Environmental Control, Architecture of Hot Arid Zones.
- CAAD: Advanced CAAD Application, 3D modeling using form-Z

Graduate Teaching, UAE University (2009-Present)

- Courses: Building Performance Modeling, Illumination & Daylighting Design, Sustainable Design, Advanced Topics.
- M.Sc.: Supervising 2 M.Sc. students in the area of energy performance of buildings
- Ph.D.: Supervising 2 Ph.D. students in the area of energy performance of buildings

AFFILIATIONS

- **IBPSA** (International Building Performance Simulation Association): Board of Directors member; Founder & President of IBPSA-UAE Affiliate (IBPSA-UAE) since 2005.
- **CTBUH** (Council on Tall Buildings and Urban Habitat): UAE Chapter Founder & Representative 2010-12.
- **WSSET** (World Society of Sustainable Energy Technologies): Vice President, Middle East since 2009.
- **ASHRAE** (American Society of Heating, Refrigerating and Air-Conditioning Engineers): ASHRAE full member; ASHRAE Falcon Chapter: Vice President since 2011, Research Promotion Committee Chair in 2010, Chapter Technology Transfer Committee Chair in 2009, & Member of Board of Governors since 2009.
- **WREC/WREN** (World Renewable Energy Congress/Network): Member of the International Steering Committee of the WREC.
- **SBSE** (Society of Building Science Educators): Member
Also, previous member of ASES, ISES, ACADIA, CAADRIA, Emirates Green Building Council

EDITORIAL BOARD MEMBER IN SCIENTIFIC JOURNALS

- Sustainable Cities and Society, Elsevier
- The International Journal of Low-Carbon Technologies, Oxford University, UK.
- International Journal of Arab Culture, Management and Sustainable Development, Inderscience, UK.
- Emirates Journal of Engineering Research, UAE University, UAE (Associate Editor)

SCIENTIFIC RESEARCH & PUBLICATIONS

Some of my published papers with citations can be seen in:

- Thomas Reuters Web of Knowledge Database using this URL: <http://www.researcherid.com/rid/K-8137-2012>.
- Google Scholar: <http://scholar.google.ae/citations?user=nl28nF4AAAAJ&hl=en>

Publications in International Refereed Journals (Total: 17; Shown: past 5 years only)

- 2012 Mitigating Heat Gain Using Greenery of an Eco-House in Abu Dhabi. International Journal of Environment and Sustainability Vol.1-3 (2012) Special Issue, Science Target, Canada. [Available online June 2012]
- 2012 A Novel Method to Model Trees for Building Daylighting Simulation Using Hemispherical Photography. Journal of Building Performance Simulation (2012) 1-15, Taylor & Francis. [Available online 22 Jun 2012].
- 2012 Designing a Sustainable House in the Desert of Abu Dhabi. Renewable Energy (2012) 1-5, Elsevier. [Available online 13 February 2012].
- 2012 Outdoor airflow analysis and potential for passive cooling in the modern urban context of Dubai. Renewable Energy 38 (2012) 40-49, Elsevier. [Available online 5 August 2011]
- 2011 Indigenous buildings' use as museums: Evaluation of day-lit spaces with the Dreesheh double panel window. Sustainable Cities and Society, 1 (2011) 116– 124, Elsevier.
- 2011 Outdoor airflow analysis and potential for passive cooling in the traditional urban context of Dubai. Renewable Energy, Renewable Energy 36 (2011) 2494-2501, Elsevier.
- 2010 Daylighting and Visual Performance: Evaluation of Classroom Design Issues in the UAE. International Journal of Low-Carbon Technologies, Sep. 2010 5 (3), Oxford University Press, UK.
- 2009 Effects of Shade Trees on Illuminance in Classrooms in the United Arab Emirates. Architectural Science Review, 52 (4), 295-311, 2009

Publications in Edited Books (Total: 7; Shown: past 5 years only)

- *Energy and Carbon Emissions of Buildings*. A chapter in K. Al-Sallal (Ed.) Low Carbon Low Energy Architecture, CRC - Taylor and Francis [in progress].
- *Passive and Low Energy Cooling*. A chapter in K. Al-Sallal (Ed.) Low Carbon Low Energy Architecture, will be published by CRC, Taylor and Francis [in progress].
- *Integrative Approach for Desert Sustainable Eco-house Design*. A chapter in I. Dincer (Ed.) Progress in Sustainable Energy Technologies, Springer [in print].
- 2013 *Energy Construction and Housing Sector*. A chapter in Technology and the Future of Energy, Emirates Centre for Strategic Studies and Research (ECSSR), ISBN (Hardcover): 978-9948-14-740-4, Abu Dhabi, UAE, 2013.
- 2013 *Vernacular Tower Architecture of Sana'a: Theory and Method for Deriving Sustainable Design Guidelines*. In A. Sayigh (Ed.) Sustainability, Energy and Architecture: Case Studies in Realizing Green Buildings. Elsevier, 2013. <https://www.elsevier.com/books/sustainability-energy-and-architecture/sayigh/978-0-12-397269-9>

Editor of Books

- Editor of "Low Carbon Low Energy Architecture", a book in the new book series "Sustainable Energy Developments" which will be published by CRC, Taylor and Francis [in progress].
- Advisory editorial board member of a new book series "Sustainable Energy Developments" which will be published by CRC, Taylor and Francis [in progress].

Publications in International Refereed Conference Proceedings (Total: 33; Shown: past 5 years only)

- Modeling Interception of Trees' Canopies on Indoor Daylighting. IBPSA 2013 in Chambéry, France, 25-28 Aug., 2013 [in progress].
- 2012 Integrative Approach for Desert Sustainable Ecohouse Design. Proc. of 11th International Conference on Sustainable Energy technologies (SET-2012), Vancouver, Canada, September 2-5, 2012.
- 2011 Modeling the Cooling Effect of a Bioshader in the Hot Arid Climate. Proc. of Sustainable Energy Technologies 2011, Kumburgaz, Istanbul, Turkey, 3-7 Sep. 2011.
- 2011 Mitigating Heat Gain Using Greenery of an Eco-House in Abu Dhabi. Proc. of World Renewable Energy Congress 2011, Linköping University, Sweden, 8-13 May 2011.
- 2010 Designing a Sustainable House in the Desert of Abu Dhabi. Proc. of World Renewable Energy Congress XI, Abu Dhabi, UAE, 25-30 September 2010.
- 2010 Outdoor Thermal Comfort Analysis in the New Urban Context in Dubai. Proc. of SET2010 - 9th International Conference on Sustainable Energy Technologies; Shanghai, China, 24-27 August, 2010.
- 2009 Practical Method to Model Trees for Daylighting Simulation Using Hemispherical Photography. Proc. of IBPSA 2009 in Glasgow, Scotland, 27-30 Jul., 2009.

Publications in Regional and Local Conference Proceedings (Total: 13; Shown: past 5 years only)

- Energy Construction and Housing Sector. In Proc. of 18th Annual Energy Conference: Technology and the Future of Energy, Emirates Center for Strategic Studies and Research (ECSSR), Abu Dhabi, UAE, Nov. 12-13, 2012 [in progress].
- 2012 Energy Saving in the UAE Residential Buildings: Eco-house Design Concept. Ajman 2nd International Environment Conference: An innovative approach to Sustainability, Ajman, UAE, June 4-5, 2012.

Research Projects Granted (Total: 14; Shown: past 5 years only)

- 2011 *Novel Building Facade Integrated with Phase Change Materials to Reduce Cooling Load of Buildings for Climate of UAE.* 750,000 DHS granted through 3 years, National Research Foundation, UAE.
- 2010 *Increased Performance of Building Integrated Photovoltaics Exposed to High Temperature Environment Through Cooling by Phase Change Materials.* 30,000 DHS granted, UAEU.
- 2009 *Heritage & New Technologies: Sustaining and re-vitalizing the internal Environment and spatial attributes of Qasr al-Hosn in Abu Dhabi.* 10,500 DHS granted, UAEU.

BUILDING SCIENCE LABORATORIES' ACTIVITIES

Establishing Building Science Laboratories

- Submitted proposals for establishing the building science laboratories at UAEU. Proposals approved for two labs: Daylighting Design Lab (DDL) and Building Sustainable Energy Lab (BSEL).
- Carried out and supervised the spatial and furniture planning of the proposed building science laboratories.

Leadership of the Daylighting Lab

- Maintained communication with suppliers, prepared the needed budget to purchase the laboratories equipment, solicited funds, and supervised the equipment purchase orders.
- Scheduling the laboratory work hours for scientific research, graduate and undergraduate students use, and teaching classes.
- Equipment purchased: Artificial Sky, HDR analysis tool, Heliodon with robotic fluent movement, Heliodon model 126 for manual use, Luxmeters, Illuminance meters, Photometric sensors, Hemiview, Computer simulation.

OTHER SCIENTIFIC ACTIVITIES

Conference Organizing Committees/Conference Scientific Committees (Total: 20; Shown: past 5 yr only)

- 2013 SB13 Dubai Conference; as part of the International SB 2013 Sustainable Building Conference Series, Dubai, UAE (8-10 Dec.)
- 2013 SB13 Coventry Conference as part of the International SB 2013 Sustainable Building Conference Series, Coventry University UK (3-5 Jul.)
- 2013 2013 CaGBC Annual Conference and Expo, Technical Stream: SB 2013 Vancouver as part of the International SB 2013 Sustainable Building Conference Series, Vancouver, BC, Canada (4-6 Jun.)
- 2013 International Building Performance Simulation Association BS-13 in Chambéry, France (25-28 Aug.)

- 2011 International Building Performance Simulation Association BS-11 in Sydney, Australia (14-16 Nov.)
- 2009 The 98th ACSA Annual Meeting, Tulane University, New Orleans, Louisiana; Reviewer for the session "Energy and Environmental Simulation in the Design Studio (Mar 4-7 2010)
- 2009 International Building Performance Simulation Association BS-09 in Glasgow, Scotland (27-30 Jul.)

Journals & Books Reviews

Reviewed many papers submitted for publication or for the purpose of academic promotion:

- Sustainable Cities and Society, Elsevier
- The International Journal of Low-Carbon Technologies, Oxford University, UK.
- Building and Environment, Elsevier.
- Journal of Construction in Developing Countries, CIB, International Council for Research and Innovation In Building and Construction
- Emirates Journal of Engineering Research, UAE University, UAE
- Dirasat (Studies), a refereed Journal, University of Jordan: Review a paper titled "Dialectic of High rise Buildings in the World and its Particularity in Jordan", 2007.
- Book review: titled "Urban Development of Riyadh City" for the purpose of academic promotion in Jordan University for Science and Technology, 2007.

Invited Speaker in Conferences or Lectures (Total: 25; Shown: past 5 years only)

- 2012 "Energy Construction and Housing Sector". 18th Annual Energy Conference: Technology and the Future of Energy, Emirates Center for Strategic Studies and Research (ECSSR), Abu Dhabi, UAE, Nov. 12-13, 2012.
- 2012 "Integrative Approach for Desert Sustainable Ecohouse Design". 11th International Conference on Sustainable Energy technologies (SET-2012), Vancouver, Canada, September 2-5, 2012.
- 2012 "Energy Saving in the UAE Residential Buildings: Eco-house Design Concept". Ajman 2nd International Environment Conference: An innovative approach to Sustainability, Ajman, UAE, June 4-5, 2012.
- 2012 Invited by Prof. Dr. Josep Lluís Mateo, Chair of Architecture and Design, Swiss Federal Institute of Technology Zurich (ETH), to give a lecture "Desert Sustainable Design Guidelines" and act as critic of students' project "A Hotel Project in the Khor Al-Adaid Desert, Qatar", March 6th 2012.
- 2011 "Modeling the Cooling Effect of a Bioshader in the Hot Arid Climate". Sustainable Energy Technologies 2011, Kumbargaz, Istanbul, Turkey, 3-7 Sep. 2011.
- 2011 "Mitigating Heat Gain Using Greenery of an Eco-House in Abu Dhabi". World Renewable Energy Congress 2011, Linköping University, Sweden, 8-13 May 2011.
- 2011 "Desert Sustainable Design in the UAE: Emergence of New Architecture" in the IESCO/WREN International Seminar No. 84 in Britain, 3-9 July 2011, Brighton, UK.
- 2011 "Desert Sustainable Design and the Emergence of New City Identity". Ajman Urban Planning Conference: City Identity in the 21st Century, Ajman, UAE (21-25 Mar.)
- 2010 "Designing a Sustainable House in the Desert of Abu Dhabi". Proc. of World Renewable Energy Congress XI, Abu Dhabi, UAE, 25-30 September 2010.
- 2010 "Investigating comfort ventilation in waterfront urban environments: the case of Dubai". Ajman Urban Planning Conference: Waterfront: New Trends in Urbanism and Architecture, Ajman, UAE (29-31 Mar.)
- 2010 "Thermal Comfort Analysis in the New Urban Context in Dubai". Proc. of SET2010 - 9th International Conference on Sustainable Energy Technologies; Shanghai, China, 24-27 August, 2010.
- 2009 Invited keynote speaker in "Power, Control and Optimization in Kucing, Borneo Sarawak Malaysia, 2-4th December 2010.
- 2009 Invited to give a seminar on the conclusion of an externally-funded project "Dynamic Breathing Building in the UAE", organized by Dubai Municipality (project sponsor), May 20th, 2009.
- 2009 Invited to give a presentation of a pre-proposal of externally-funded project "Eco-sustainable Buildings: Carbon Neutral Design and Zero-energy Buildings", organized by Dubai Municipality, April 9th, 2009.

ATTENDANCE OF COURSES & SUMMER SCHOOLS

- 2011 eQuest Simulation Program Training and Workshop, Jan. 26th, 2011 held in Radisson Blu Hotel, Yas Island, Abu Dhabi; organized by ASHRAE Falcon Chapter.
- 2009 ASHRAE USGBC-IES 189.1 Standard "High Performance Green Building" held on October, 2009 at Le Royal Meridian Hotel Abu Dhabi, sponsored by ASHRAE Falcon Chapter.
- 2009 LEED Green Associate Exam Preparation Course (14 Hours of LEED Training 1.4 CEUs, 14 Learning Units, held in August 2009, Dubai.
- 2009 EnergyPlus Simulation Program Training and Workshop on Jul. 27th-30th July 2009 held in University of Strathclyde, Glasgow, Scotland; organized by IBPSA.
- 2005 Industrial Computational Fluid Dynamics (CFD) 1st Engineering & Physical Science Research Council (EPSRC) Summer School on June 20th-29th 2005 at The University of Nottingham, UK.

ARCHITECTURAL CONSULTATION AND DESIGN

- Submitted a bid for consultancy services during Detailed Design Stage for Credits: NS-R1: Natural Systems Assessment, NS-R2: Natural Systems Protection and NS-R3: Natural Systems Design Management Strategy of the Pearl Building Rating System Estidama. Proj. estim. cost: AED 3.4 Billion.
- Judged an international design competition for design of five stars Jebel Hafeet hotel and spa, Al-Ain UAE in Nov. 2010. Clients: TMKN Properties. Estimated project cost: 500 Million Dhs.
- *Revitalizing and Development of Al-Ain Traditional Market and Oasis*. Proposal for a cooperation project between UAE University and Abu Dhabi Culture and Heritage. Project value: 400,000,000 AED.
- *Renovation of Al-Ain Museum*. Proposal for a cooperation project between UAE University and Abu Dhabi Culture and Heritage. Project value: 10,000,000 AED.
- Design, Construction, and Monitoring the First Dynamic Breathing Building in the UAE, an international cooperation project. Partners: Dr. K. A. Al-Sallal (PI), UAE University, Dr. Mohammed Imbabi, University of Aberdeen, UK, Al-Hamad Contracting Company, UAE (sponsor and fund provider). Project value: 1,500,000 AED.
- Judged an international design competition for a mixed-use towers complex included an office building, hotel, serviced apartments, residential tower, shopping mall, and multistory parking in Al-Khalidiyah, Abu Dhabi. Estimated project cost: 600 Million Dhs.
- Judged an international design competition for the project: A Shopping Mall and 5 Stars Hotel in Al-Ain. Estimated project cost: 500 Million Dhs. Consultants: eminent firms including APG, Shankland & Cox, Junglim & Arak.
- Participated in Judging a design competition of a park in Abu Dhabi based on a request from Abu Dhabi Municipality.
- Participated in Judging a design competition of a Abu Dhabi Central Market based on a request from Abu Dhabi Municipality.
- Judged a competition for *Female Student Dormitories* project in UAEU Al-Maqam Campus
- Judged a competition of *UAEU Campus Master Plan* project
- Judged a competition for Students' Activities, Educational Facility, and Department of Architectural Engineering, UAEU
- Redesigned the *University Conference Hall* in the Islamic Institute of the UAEU
- Consulted in preparing the initial program of *Dubai Airport Businessmen Club*
- Consulted in Improving Space Efficiency and Facility Management of the College of Engineering, UAE University
- Judged a competition of Low-Income Housing Design Project, cooperation with Department of Planning in Al-Ain, UAE

HONORS, AWARDS, & SCHOLARSHIPS

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| 2010 | Certificate of Participation in the ESTIDAMA Fareej Design Contest from Abu Dhabi Urban Planning Council. |
| 2007 | Received best internally-funded research award in the College of Engineering, UAE University for 2007. |
| 2004 | Certificate of Participation for the development of virtual learning environment course: Architecture of Hot Arid Zones from the UAE Educational IT Challenge. |
| 2000 | Received <i>Award of Excellence in Teaching for the Year 1999/2000 College-wide level then University-wide Level</i> , UAE University. |
| 1999 | Awarded as <i>Best Faculty Member in the Department of Architectural Engineering</i> , UAE University for the year 1998/1999 by the Student Section of the UAE Engineers Society |
| 1994 | Awarded membership in <i>Phi Beta Delta</i> , Honor Society for International Scholars, USA |
| 1993 | Awarded membership in <i>Tau Sigma Delta</i> , Honor Society for Architecture and Allied Arts, USA |
| 1993 | Recipient of <i>William W. Caudill Graduate Research Fellowship</i> from Texas A&M Univ. and CRSS Inc. (\$8000) as support for Ph.D. Diss. |
| 1991 | Recipient a scholarship for tuition and living from the <i>U.S. Agency for International Development</i> to study Ph.D. in Architecture |
| 1988 | Recipient of <i>Ralph Burgess Haver Scholarship</i> from Arizona State University (\$500) as a support to complete Master's Thesis |
| 1987 | Recipient of Fullbright scholarship (1-year) from the <i>U.S. Information Agency/Fulbright Program</i> to complete Master's study. |
| 1986 | Recipient of one-year scholarship from the <i>World Bank</i> to study Master's degree in the USA. |