
HISHAM HAMDY ABDELMOHSEN

CONSULTING ENGINEER

EXPERIENCE SUMMARY

Registered Professional Engineer with over than thirty - five (35) years of experience in geotechnical and structural design and analysis of heavy industry, machinery foundations, and residential and commercial buildings. Experience also includes teaching and research. Responsibilities included design of earth retaining structures, dewatering systems, and water structures.

Extensive experience is in the application of the Finite Element Method in Structural / Geotechnical engineering and the use of computer codes.

Responsible for the design of all types of foundations including piles, and mats subjected to special loading and site conditions, and design of earth dams with the associated hydraulic /structure elements. Experience also included writing technical specifications, and contract terms and conditions.

Extensive experience as a consulting Engineer is in the layout, analysis, design and construction, supervision of residential commercial buildings, industrial facilities, and water structures.

HISHAM HAMDI ABDELMOHSEN
Academic Summary

Professor of Soil Mechanics & Foundations Engineering
Civil Engineering Department
Faculty of Engineering
Alexandria University

201 Abdelsalam Aref, Apt. Loran, Alexandria, Egypt
(203) 529 - 3003 (Work) / 012768 6647 (Mobile) - (203) 5853920 (Home)

Personal Information

Material status: Married
Nationality: Egyptian
Place of Birth: Egypt

Education

1975 **University of Alexandria, faculty of Engineering, Department of Civil Engineering**
Alexandria, Egypt
B. Sc., Civil Engineering.

1981 **University of Alexandria, faculty of Engineering, Department of Civil Engineering**
Alexandria, Egypt
M. Sc., Structure Engineering

1983 **University of Wisconsin-Madison, Department of Engineering Mechanics**
Madison, WI, USA
M. Sc., Engineering Mechanics.

1986 **University of Wisconsin-Madison, Department of Engineering Mechanics**
Madison, WI, USA
Ph.D., Engineering Mechanics.

Experience

1976-1981 **University of Alexandria, faculty of Engineering, Department of Civil Engineering**
Alexandria, Egypt
Teaching/ Research Assistant

1976-1981 **Applied Superconductivity Center, University of Wisconsin- Madison**
Madison, WI, USA
Research Assistant

Technical/ Experimental/ numerical studies on Super Magnet Energy Storage Unit (SMES)
SMES unit is electrical/ mechanical/ structural unit used to store excess electrical power of stations at very low temperature to minimize heat loss. The supporting structure of the unit has a horseshoe shape of 1500m diameter, 30m depth and 10m width and embedded into rock.

1986-1989 **Applied Superconductivity Center, University of Wisconsin- Madison**
Madison, WI, USA
Research Assistant

Theoretical and experimental aspects of applied Superconductivity systems: magnet configuration, system optimization, stress analysis, and material selection.
Design/ analysis/ modeling of SMES unit for space applications

1989 - 1998 **University of Alexandria, Faculty of Engineering, Department of Civil Engineering**
Alexandria, Egypt

Professor

Teaching Soil Mechanics & Foundation (Undergraduate Level), Numerical methods / Mathematical Modeling / Computer Simulation, Probabilistic Methods in civil Engineering (Graduate level)

Research interest involves theoretical analysis, mathematical modeling, computer applications, stochastic analysis and optimization for various engineering applications.

1994-1995 **Civil Engineering Department, Faculty of Engineering, Beirut Arab University**
Alexandria, Egypt

Visiting Professor:

Teaching: Soil Mechanics and Foundation Design

1998 - Current **University of Alexandria, Faculty of Engineering, Department of Civil Engineering**

Alexandria, Egypt

Professor

Teaching Soil Mechanics & Foundation (Undergraduate Level), Numerical methods / Mathematical Modeling / Computer Simulation, Probabilistic Methods in civil Engineering (Graduate level)

Research interest involves theoretical analysis, mathematical modeling, computer applications, stochastic analysis and optimization for various engineering applications.

2008 - Current **University of Alexandria, Faculty of Engineering, Department of Civil Engineering**

Alexandria, Egypt

Director of Soil Mechanics Laboratory

Consulting work

Professional consultant Engineer

1977-1980 **Camp Dresser & Mikey int'l**

Alexandria, Egypt

Civil Engineer, Assistant team Leader

Feasibility study for the city of Alexandria Water Supply and Waste Water systems, financed by USAID

Site investigation, Geotechnical survey, preliminary studies of discharge lines, force main, pump stations, primary and final treatment processes.

1977-1978 **Abu – Qir Fertilizer and Chemical industries Co.**

Alexandria, Egypt

Consultant Engineer

Construction of large diameter pumping station in difficult subsoil conditions/ Monitoring and testing of construction materials

1991-1995 **Saudi Diyar Consultant SDC**

Saudi Arabia

Senior Consultant

Design Technical support, Specifications, Tender Documents, Consultation and/ or supervision for projects: Al harm Al Meckky/ Al harm Al Meddany expansions, car park at Maddinah (to house 8000 buses). High Rise Buildings, Special royal and governmental projects

1994 Design of Tarhuna- Weshetata Earth Fill Dam, to store water received from the Great- Man-Made River, Libya. (Sub-consulting); Analysis, Design, Specifications, Materials Selection, tender Documents

1990- 2005 **Bibliotheca Alexandria Project**

(The Revival of Ancient Library of Alexandria project)

Alexandria, Egypt

Employer Consultant / Head of Engineering Monitoring Unit

Employer's Geotechnical Report (2400m of boring lengths). Technical Support: Construction of 160m diameter diaphragm wall- 600 piles of diameters.1.00, 1.20 and 1.50m with and without bells- complete insulation layers, dewatering and ground water control systems, 1.22m thick raft, super-structures: columns, pre-cast beams, waffle slabs, roof; steel trusses, aluminum cladding, stone cladding, E/M systems; AHU, HVAC, chillers, pumps, fire detection, fire fighting, PAVA, generators, transformers, UPS, BMS, Access Control,....

1990- Current **Professional Consultant Engineer**

Design, supervision, and Technical support in the Field of Soil Mechanics & Foundations, Structure Engineering, and various Projects: Private, Public, and Industrial.

Selected Publications

L.O. EL-Marazki, H.H. Abdelmohsen, et al, "Cryogenic properties of Boron and Graphite Aluminum Composite", Advances in Cryogenic Engineering, Vol. 36B, P 1037-1044, 1989, Plenum Press, NY

H.H. Abdelmohsen, "Analysis of non- linear flexible fiber composites", Advances in Cryogenic Engineering, Vol. 36B. p 965-968, 1989, Plenum Press, NY.

- H.H. Abdelmohsen, "Effect of fiber anisotropy on tensile strength of unidirectional Fiber reinforced composites at low temperature", *Advances in Cryogenic Engineering*, Vol. 36B, p977-984, Plenum Press, NY
- H.H. Abdelmohsen," prediction of tensile strength of fiber reinforced composites at low temperature", *Advances in Cryogenic Engineering*, Vol. 36B. p 965-968, 1989, Plenum Press, NY.
- H.H. Abdelmohsen, and M.K Abdelsalam, "Optimal design of Cryogenic Cylinder for Space Borne Torodial Magnet", *Advances in Cryogenic Engineering*, Vol. 36B. p 965-968, 1989, Plenum Press, NY
- H.H. Abdelmohsen, "Tensile strength of discontinuous fiber reinforced composites at room and low temperatures", *Advances in Cryogenic Engineering*, Vol. 36B. p 965-968, 1989, Plenum Press, NY
- H.H. Abdelmohsen, "Simulation of tensile strength of an isotropic fiber reinforced composites at low temperature", *Cryogenics*, Vol. 36B, p 965-968, 1989, Plenum Press, NY.
- H.H. Abdelmohsen, Y.M. Huang, and R. E. Rowlands, "Hybrid Electrostatic and Thermostatic Analysis from measured data ", Vol. 36B.p 965-968, 1989, Plenum Press, NY
- Y.M Huang, H.H. Abdelmohsen, and R.E. Rowland, "Determination of individual stresses thermo elastically" *Experimental Mechanics*, p88-94, March, 1990
- H.H. Abdelmohsen, "Minimum specimen size for composite testing at low temperature" *Cryogenics*, Vol. 31, p 715-719, 1989
- X- Huang, YM Eyssa, M.K. Abdelsalam, L. EL. Marazki, H.H. Abdelmohsen, et al, " Structure optimization of space borne torodial magnets", *Applied conductivity conference*, San Francisco, CA, USA, 1988, and *IEEEEMAG-25*, No.1, p 179, 1989
- Y.M- Huang, H.H. Abdelmohsen, et al, "Determination of Individual Stress Components from Spate Isobathic only", *Proc. 6th Int. Cong. On Experimental Mechanics*, p 578-584, June 1988
- H.H. Abdelmohsen and R.E. Rowland, "Hybrid Stress Analysis of Flexed Isotropic and Composite Plates", *Computers & Structures*
- H.H. Abdelmohsen, M. K. Abdelsalam, and R.E. Rowland, "A model for fatigue strength degradation including temperature effect", *Advances in Cryogenic Engineering*, Vol. 3.2, p339-346,
- H.H. Abdelmohsen- Han, and R.E. Rowland, "Fatigue of Glass- Epoxy Composites at 77K and 300K: Observations and Prediction, *Advances in Cryogenic Engineering*, Vol. 30, p 17-24.
- K.S Han, and H.H. Abdelmohsen, "Fatigue life scattering of RP /C", 38th Annual conf. On Reinforced Plastics / Composites Institute, the Society of the Plastics Industry, Paper No.12
- H.L. Lau, H.H. Abdelmohsen, and M. K. Abdelsalam, " Testing Methods and Fracture Energy of

Composites at Room and Cryogenic Temperature”, *Advances in Cryogenic Engineering (materials)*, Vol. 34, Plenum Press, NY, 1988.

H.H. Abdelmohsen, “Beams rest on thin electrometric foundation”, The 6th Arabic Conference for Structure Engineering, Damascus University, Syria, 21- 24 Oct, 1995.

H.H. Abdelmohsen, “Optimal Beam rests on two- parameter, non- uniform elastic foundation” *Alexandria Engineering Journal*, Vol. 35, No. 3, section C, May 1996, C109-C117.

H.H. Abdelmohsen, and M. Sharki “Hybrid solution for axial piles in layered supporting media” *Alexandria Engineering Journal*, Vol. 36, No. 2, section C, March 1997, C169-C174

A.E. Alansary and H.H. Abdelmohsen, “Optimal Hydraulic / Geotechnical design for an Earth Fill Reservoir: Case study”, *Alexandria Engineering Journal*, Vol. 36, No. 2, section C, March 1997, C125-C133.

H.H. Abdelmohsen,” Stresses developed in quarter Space, Part I; theory”, *Alexandria Engineering Journal*, Vol. 36, No. 3, section C, May 1997, C207-C210.

H.H. Abdelmohsen,” Stresses developed in quarter Space, Part II: Parametric Study”, *Alexandria Engineering Journal*, Vol. 36, No. 3, section C, May 1997, C211-C218

H.H. Abdelmohsen,” Micro buckling of Reinforced Element Embedded in Soils”, *Alexandria Engineering Journal*, Vol. 36, No. 3, section C, May 1997, C201-C216.

H.H. Abdelmohsen,” Structures on Random Elastic Support, Part I: Beams”, *Alexandria Engineering Journal*, Vol. 36, No. 4, section C, July 1997, C317-C324.

H.H. Abdelmohsen,” Structures on Random Elastic Support, Part II: Thin Plates”, *Alexandria Engineering Journal*, Vol. 36, No. 5, section C, September 1997, C245-C254.

H.H. Abdelmohsen,” Super Magnet Energy Storage System (SMES)”, *Alexandria Engineering Journal*, Vol. 36, No5, section C, September 1997, C237-C244.

H.H. Abdelmohsen,” Scale Effect of Compressive Strength of Rock Deposit”, 3rd Alexandria Engineering Conference. Alexandria, December 1997.

H.H. Abdelmohsen,” Simulation of Tensile Failure Strength of Reinforced Vertical Cuts”, *Alexandria Engineering Journal*, Vol. 36, No. 5, section C, November 1997, C487-C496.

H.H. Abdelmohsen, and Naema Ali” Analysis of Circular Tank Foundation Supporting by Three Parameters Elastic Medium”, 4th Alexandria Engineering Conference. Alexandria, March 2001.

H.H. Abdelmohsen, A. S. Abdeaziz and A. Zeineldin” Geological / Geotechnical Map of Alexandria Governorate” in progress

H.H. Abdelmohsen, A. S. Abdeaziz, A. Zeineldin” Statistical Analysis of Subsurface Layers in Alexandria Governorate” in progress

A. Mousa, M. Fawzy and H.H. Abdelmohsen," Analysis of Full Scale pile Load Test" Accepted for publication, 17th International Conference on Soil mechanics & Geotechnical Engineering, Alexandria, Egypt, 5 – 9 October 2009

H.H. Abdelmohsen and N. A. Ali" Field Study on Collapsible Soil Borg El Arab Region - Egypt", 8th Alexandria International Conference on Structure and Geotechnical Engineering, Alexandria, Egypt, 14 – 16 April 2014

H.H. Abdelmohsen and N. A. Ali" Improvement of Collapsible Soils", 8th Alexandria International Conference on Structure and Geotechnical Engineering, Alexandria, Egypt, 14 – 16 April 2014

Major Technical Reports

“Super conductive Energy storage Volume IV”, Contract No. DE- Aco2- 76 ET 26602, DOE, 1983.

“Design Studies for Cryo - resistive and Super conductive Magnetic Energy Storage for Space Use” Contract No. DE- Aco3- 85SF 15934, DOE, 1987

Professional Societies

Professional Engineer, Egypt
Society of Geotechnical Engineering, Egypt
Society of Experimental Mechanics SEM, USA
Society of American Cryogenic Engineering, USA

Awards

Alexandria University of Technical Excellency for the year 1993- 1994
Bibliotheca Alexandrina Achievement Award 2004