

## EDUCATION

**Ph.D., Civil Engineering, May 1996 (GPA 4.0/4.0)**

*Rice University, Houston, Texas.*

Thesis: "Nonlinear seismic response of earth dams using a coupled boundary element - finite element formulation."

**M.S., Civil Engineering, May 1996**

*Rice University, Houston, Texas.*

**B.Sc., Civil Engineering, June 1989 (GPA 3.9/4.0)**

*Alexandria University, Alexandria, Egypt*

Rate of Appreciation: Distinction with honors (Top 1%)

Special Topic: "Geotechnical Engineering".

## BACKGROUND

- ♦ Geotechnical engineering; Foundation system design; Infra-structure design and Safety assessment.
- ♦ Structural engineering; advanced numerical analysis; Engineering dynamics, High-rise Building Design.
- ♦ Offshore and Marine design.
- ♦ Design and execution of industrial/large facilities.
- ♦ Expert knowledge of finite element analysis, numerical engineering analysis and development/application of engineering software.

## EXPERIENCE

**Associate Professor, May 2005 - present**

**Lecturer, January 1998 - 2005**

*Structural Engineering Department, Faculty of Engineering, Alexandria University, EGYPT*

- ♦ Teaching post graduate courses:
  - Advanced geotechnical engineering.
  - Geotechnical earthquake engineering.
  - Infra-structure Design.
- ♦ Teaching under graduate courses in geotechnical engineering.
- ♦ Supervising graduation projects in Geomechanics and Foundations for final year students.
- ♦ Supervised 14 M.S. degree and 2 Ph.D. students.

**Principal & Director, January 2010 – Present**

*Geotechnics, Engineering Consulting Office*

- ♦ Foundation design of Elbahr High rise building (60 floors), Kuwait.
  - ♦ Foundation design of Burj Alshaya High rise building (45 floors), Kuwait.
  - ♦ Foundation design of Kuwait Investment Authority High rise building (40 floors), Kuwait.
  - ♦ Foundation design of Burj Khalifa High rise building (45 floors), Kuwait.
  - ♦ Design of Elevated Water Tanks, Kuwait.
  - ♦ Structural design of Lamirada Luxery Compound (42 Buildings), Cairo, Egypt.
  - ♦ Structural design of Porto Luran Building (16 floors, 2 Basements), Alexandria, Egypt.
  - ♦ Structural design of Sharawi Building (14 floors, 2 Basements), Alexandria, Egypt.
  - ♦ Participated in designing Domyat Military Harbour (Sheet pile Wall).
  - ♦ Design review and supervision of Alexandria Shipyard South Berth, Alexandria, Egypt.
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- ♦ Design review and supervision of Alexandria Shipyard North, East and West Wharfs upgrade, Alexandria, Egypt.
- ♦ Design review and supervision of Alexandria Shipyard Facilities upgrade, Alexandria, Egypt.
- ♦ Design of Alexandria Shipyard New Dry Dock upgrade, Alexandria, Egypt.
- ♦ Design of Alexandria Shipyard Mechanical Dry Dock upgrade, Alexandria, Egypt.
- ♦ Marine and Structural design and supervision for 50ton maintenance platform and 3 quay walls Algabana, Yemen.
- ♦ Marine and Structural design and supervision for maintenance of Alhodaida Port, Yemen.
- ♦ Participated in designing Alexandria Shore Protection Project, Eastern Section, Alexandria, Egypt.
- ♦ Participated in designing Seafront Protection of Police and Teachers Club, Alexandria, Egypt.
- ♦ Numerous dewatering projects.
- ♦ Numerous retaining wall designs.
- ♦ Numerous Foundation system designs.
- ♦ Numerous Geotechnical Reports.

**Senior Engineering Consultant, Partner**, November 2005 – January 2010

*Abouelfadl-Elhadary-Elkholy Consultants, Alexandria, EGYPT*

- ♦ Participated in preparing a number of geotechnical reports.
- ♦ Participated in designing a number of residential buildings and resorts.
- ♦ Participated in designing a number of high-rise buildings in Saudi Arabia and Kuwait.
- ♦ Participated in designing Elevated water tanks in Iraq.
- ♦ Participated in designing Ganna Bay Touristic Compound-Alhodaida-Yemen.
- ♦ Participated in designing and project management of the following projects:
  - Filmar Textile Factory, Borg-Elarab, Alexandria, Egypt.
  - Delta Dying Factory, Borg-Elarab, Alexandria, Egypt.
  - Alexandria Glass Factory, Borg-Elarab, Alexandria, Egypt.
  - Deeb Textile Factory, Kafr-Eldawar, Egypt.
  - Airliquide Oxygen/Nitrogen facility, Dekhela, Alexandria, Egypt.
  - Airliquide Hydrogen/Nitrogen facility, Alein Alsokhna, Egypt.
- ♦ Separate CV for office work is available.

**Engineering Consultant**, January 1998 - present

*Engineering Center for Community Services, Alexandria University, EGYPT*

- ♦ Participated in designing foundations for a number of high-rise buildings.
- ♦ Participated in preparing a number of arbitration, evaluation and rehabilitation reports for geotechnical-related projects.

**Director**, 2009 – present, **Technical Supervisor**, January 2006 – 2009

*Soil Mechanics and Foundations Laboratory, Alexandria University, EGYPT*

- ♦ Participated in preparing numerous geotechnical reports.
- ♦ Participated in designing and supervision of quality control programs for earth-work and infrastructure development for numerous projects.
- ♦ Conduct training programs for lab personnel and community engineers.
- ♦ Prepare a number of engineering software for geotechnical applications.

**Senior Engineering Consultant and Partner**, January 1998-2005

*FACB consulting bureau, Alexandria, EGYPT*

- ♦ Participated in preparing numerous geotechnical reports.
- ♦ Participated in designing and supervision of quality control programs for earth-work and infrastructure development for numerous projects.
- ♦ Participated in numerous engineering projects including but not limited to:
  - Advanced numerical analysis of high rise buildings, bridges, industrial facilities.
  - Design and planning of process plants for Alexandria Carbon Black Company.
  - Design of oil storage tanks for Alexandria Oil Company.
  - Design of pipe lines and pipe racks for El-Amreya Petroleum Company.
  - Design of quay walls in Alexandria Harbor extension and Petrojet Harbor at Elmeadia.
  - Design of a new harbors in Yemen (Alkatheeb-Hudaïda, Alkhoka, Midi).
  - Design of many bridges of different types in Yemen (Almokalla Sea Bridge, Pedestrian Bridges, Almokalla canal facilities).
  - Design of Yemen Airways Hotel, Sanaa, Yemen.
- ♦ Participated in a number of offshore related engineering projects:
  - Revision of structural engineering design and the design and engineering of the launch process of Rosetta jacket, offshore Rasheed city, EGYPT.
  - Revision of structural engineering design and the design and engineering of the launch process of Temsah jacket, offshore Suez city, EGYPT.
- ♦ Prepare a number of engineering software for structural and geotechnical applications.

**Senior Consultant**, *October 2001 – September 2002 and May 2003 – January 2004*

**Mustang Engineering, Houston, Texas, USA**

- ♦ Participated in the design of Holstien and Mad Dog top-sides. Performed stress checks, panel buckling checks and connection design. Developed code and performed fatigue analysis. Performed load-out analysis and lift analysis. Client: BP.
- ♦ Participated in the design of Benguela Belize compliant piled tower offshore Angola, West Africa. Performed in-place time domain dynamic analysis and time-domain fatigue analysis. Client: Chevron-Texaco.

**Senior Engineering**, *May 1996 – December 1997*

**Fugro McLellan Marine Geosciences, Houston, Texas**

- ♦ Participated in preparing numerous geotechnical reports for off-shore structures.
- ♦ Participated in supervising boring operation offshore the Gulf of Mexico.
- ♦ Supervised conduction of advanced geotechnical laboratory test such as: resonant column, cyclic tri-axial, and CRS odometer tests.  
Clients: BP, Chevron-Texaco, Exxon-Mobil, Pemex, Petrobras.
- ♦ Responsible for conducting advanced numerical analysis on offshore foundation elements.
- ♦ Participated in a joint project with Amoco Oil Company to develop new design procedure for offshore suction foundations, including advanced numerical analysis using the Abaqus FEM software.

**Research Assistant**, *August 1991- May 1996*

**Department of Civil Engineering, Rice University, Houston, Texas, USA**

- ♦ Assessed the dynamic effects of seismic wave propagation on earth dams.
- ♦ Developed hybrid numerical Finite-Boundary Element codes to study the dynamic response of structures over a half space.

**Consulting** (*part time*), 1993-1996

*Prof. Panos Dakoulas Office, Houston, Texas, USA*

- ♦ Participated in conducting the seismic evaluation of an offshore structure in Lake Maracaibo, Venezuela (1996).
- ♦ Participated in the seismic evaluation of the piers of Tagus River Bridge, Lisbon, Portugal, including seismic soil-structure interaction using the Finite Element code SASSI (1995).
- ♦ Participated in conducting the seismic modeling and analysis of the Evinos earth dam, Athens, Greece (1994).

**System administrator**, June 1995-May 1996

*Department of Civil Engineering, Rice University, Houston, Texas, USA*

- ♦ Administering, maintaining and upgrading the computer network of the Civil Engineering Department, Rice University. The Network consists of fifteen Sun workstations, six personal computers, and four Macintosh computers.
- ♦ Initiating, administering and maintaining the World Wide Web server of the Civil Engineering Department [<http://www.rice.edu/>]

**Teaching assistant**, August 1991 -May 1992

*Department of Civil Engineering, Rice University, Houston, Texas, USA*

- ♦ Assisted in supervising and grading a number of structural and geotechnical engineering courses.

**Teaching assistant**, August 1989-June 1991

*Department of Civil Engineering, Alexandria University, Egypt*

- ♦ Assisted in teaching and grading undergraduate classes in the structural engineering department.

**Structural Engineer**, July 1990- July 1991

*FACB Consulting Bureau, Alexandria, Egypt*

- ♦ Conducted all soil laboratory tests and prepared lab reports.
- ♦ Supervised field geotechnical investigation programs and geotechnical field testing.
- ♦ Participated in analyzing, designing a number of steel and concrete buildings, steel factories and storing sheds, petrochemical installations, crane bridges, and other.

## AWARDS AND HONORS

- ♦ Annual fellowship awardee of the United States Committee On Large Dams (USCOLD) 1992.
- ♦ Fellowship award, Department of Civil Engineering, Rice University, 1991-1992.
- ♦ Member, Chi-Epsilon, American Society of Civil Engineers.
- ♦ Award of distinction, Department of Civil Engineering, Alexandria University, 1984-1989.

## TECHNICAL COURSES

- ♦ Attended advanced training course on the applications of Abaqus finite element package, Detroit, Michigan, 1997.

## **COURSE WORK**

- ♦ Graduate Level, *Rice University*  
Structural Dynamics I&II, Advanced Geotechnical Modeling, Geotechnical Earthquake Engineering, Advanced Mechanics of Solids, Probabilistic Structural Dynamics, Waves in Heterogeneous Media, Concrete Building Design, and Applied Mathematics I&II
- ♦ Graduate Level, *Alexandra University, Egypt.*  
Finite Element Method, Soil Dynamics & machine Foundations, Theoretical Soil Mechanics and Matrix Methods in structures.
- ♦ Undergraduate Level, *Alexandria University, Egypt.*  
Concrete Design I, II&III, Steel Design I&II, Structural Analysis I, II&III, Soil Mechanics I&II, Foundation Engineering, Material Testing I&II, Surveying I&II.

## **COMPUTATIONAL SKILLS**

**Environments:** Sun, IBM, SGI (UNIX), Personal Computers (PC and MAC).

**Operating Systems:** Unix, Windows, VMS, MacOS.

**Languages:** Fortran, C++, .Net Architecture, Visual Basic, Matlab, Mathematica.

**Engineering Software:** Abaqus/Standard, Abaqus/Explicit, Ansys, Plaxis, Nastran, Patran, Marc, Sap2000, Etabs, Safe, Robot, Staad, Cap-seastar, etc.

**Drafting Software:** Solid works, Autocad, Pro-E.

**Miscellaneous:** 3D modeling (3D Studio Max), Vector and raster graphics (Corel, Adobe), Web Development tools (Dream weaver, Go Live).

## **PERSONAL DATA**

Date of Birth: December 9,1967.

## **PUBLICATIONS**

Available upon request.

## PROJECTS (*off-shore*)

### BP Holstein, GOM



The Mustang scope of work included the evaluation and selection of development scenarios followed by the execution of the Topsides Engineering for the chosen configuration. Mustang also provided project management support and procurement services to BP for the duration of the project up to, and including, commissioning. In addition to full topsides design responsibility for the projects Mustang also managed project interfaces with other contractors on behalf of BP. First oil achieved December 2004. Holstein was the first project to use spar-supported individually tensioned risers — a new technology that will allow spar structures to venture into deeper waters.

### BP Mad Dog, GOM



Mustang was responsible for the topsides design, including detailed design and fabrication support. The floating facility hull, moorings, and marine systems will be classed as a Floating Offshore Installation (FOI) truss spar arrangement. Mustang also provided project controls support and interface coordination of hull, riser, and drill rig systems. In addition to full topsides design responsibility for the projects Mustang also managed project interfaces with other contractors on behalf of BP.

### Chevron Benguela-Belize Compliant Piled Tower, Offshore Angola



Conceptual and costing studies, front-end engineering, detail design for a compliant tower in 1,300 feet of water. Mustang was the winner of a five company design competition for the FEED work that included entries representing various deepwater concepts. The tower was the first compliant tower structure to be installed outside of the Gulf of Mexico. The Benguela-Belize tower supports more than 40,000 short tons of topsides and 40 well slots. Mustang was awarded the design after performing front-end engineering design as well as pre-feed services. The bottom-founded structure, chosen over a floating facility, is a cost-effective design in deepwater environments. The tower was installed in April 2005, with topsides installation May 2005. Benguela-Belize was selected as the Project of the Year for the industry's **2005 Offshore Energy Achievement Awards**.

## PUBLICATIONS (*Partial*)

### [Non-linear dynamic earth dam–foundation interaction using a BE–FE method](#)

[H Abouseeda...](#) - [Earthquake engineering & ...](#), 1998 - [Wiley Online Library](#)

A general, rigorous, coupled Boundary Element–Finite Element (BE–FE) formulation is presented for non-linear seismic soil–structure interaction in two dimensions. The BE–FE method is applied to investigate the inelastic response of earth dams to transient SV waves. The dam body, ...

[Cited by 17](#) - [Related articles](#) - [BL Direct](#) - [All 4 versions](#)

### [Effect of construction procedures on the performance of bored piles](#)

[...](#), [H Abouseeda](#) - 2002 - [link.aip.org](#)

The load-displacement performance and the working load of bored piles are critically affected by its construction procedure; nevertheless, current design methods do not take into account these effects. These effects include relaxation of soil due to excavation of the borehole, ...

[Cited by 2](#) - [Related articles](#) - [BL Direct](#) - [All 5 versions](#)

### [Response of Earth Dams to Rayleigh Waves Using Coupled FE-BE Method](#)

[H Abouseeda](#) - [Journal of Engineering Mechanics](#), 1997 - [link.aip.org](#)

The effects of Rayleigh waves on the response of earth dams are examined, with emphasis on the importance of the foundation flexibility and the spatial variability of the ground motion. The study is based on a rigorous hybrid numerical formulation that combines the efficiency ...

### [Response of earth dams to Rayleigh waves using coupled FE-BE method](#)

..., **H Abouseeda** - [Journal of engineering mechanics, 1997 - cat.inist.fr](#)

The effects of Rayleigh waves on the response of earth dams are examined, with emphasis on the importance of the foundation flexibility and the spatial variability of the ground motion. The study is based on a rigorous hybrid numerical formulation that combines the efficiency ...

[BL Direct](#) - [All 5 versions](#)

### **Efficient finite element techniques for limit analysis of suction caissons under lateral loads**

**B. Sukumaran<sup>a</sup>, W. O. McCarron<sup>b</sup>, P. Jeanjean<sup>b</sup> and H. Abouseeda<sup>c</sup>**

<sup>a</sup> Rowan University, 201 Mullica Hill Road, Glassboro, NJ 08028, USA

<sup>b</sup> Amoco Worldwide Engineering and Construction, Houston, TX 77058, USA

<sup>c</sup> Fugro-McClelland Marine Geosciences, Inc., Houston, TX 77274, USA

Received 10 August 1998; revised 20 November 1998; accepted 4 December 1998. Available online 29 March 1999.

### **On Modeling Isolated Footings on Reinforced Sand**

by **F. M. Abdrabbo**, (Professor, Faculty of Engineering, Alexandria University E-mail: [f.m.abdrabbo@excite.com](mailto:f.m.abdrabbo@excite.com)), **H. M. Abouseeda**, (Associate Professor, Faculty of Engineering, Alexandria University E-mail: [hseeda@yahoo.com](mailto:hseeda@yahoo.com)), **K. E. Gaaver**, (Lecturer, Faculty of Engineering, Alexandria University E-mail: [khaledgaaver@yahoo.com](mailto:khaledgaaver@yahoo.com)), and **A. Z. Elwakil**, (Lecturer, Faculty of Engineering, Alexandria University E-mail: [Elwakilamr@hotmail.com](mailto:Elwakilamr@hotmail.com))

### **Behavior of Strip Footings Resting on Sand Reinforced with Tire-Chips**

by **F. M. Abdrabbo**, (Professor, Head of Structural Engineering Department, Faculty of Engineering, Alexandria University, Alexandria, Egypt, P.O Box 21544), **H. M. Abouseeda**, (Lecturer, Structural Engineering Department, Faculty of Engineering, Alexandria University, Alexandria, Egypt, P.O Box 21544), **K. E. Gaaver**, (Lecturer, Structural Engineering Department, Faculty of Engineering, Alexandria University, Alexandria, Egypt, P.O Box 21544), and **M. A. El-Marassi**, (M.Sc. student, Structural Engineering Department, Faculty of Engineering, Alexandria University, Alexandria, Egypt, P.O Box 21544)