

**ASHRAF MOHAMED ELMOUSTAFA**

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**WORK EXPERIENCE**

**★STORM DRAINAGE SPECIALIST**

- Performed and was responsible for engineering design of stormwater drainage systems for residential, commercial, and industrial land planning and development projects
- Performed and was responsible for stormwater drainage system analysis and design, and sizing and selection according to the standard engineering practices.
- Performed hydrologic and hydraulic analysis for urban pre- and post-development drainage using different softwares.

- AlKhor city master plan 13000 hectare, Qatar.
- Khiran city master plan, 14000 hectare, Kuwait.
- Al Bateen Airport, Abu Dhabi.
- Khalifa Cities storm drainage network evaluation 1200 hectar, Abu Dhabi.
- Al Yasmeen compound, Khartoom 500 hectare, Sudan.
- New Apron for PSA at Alnozha airport, Alexandria, Egypt.
- Sidi Krir, West Cairo, El Sokhna and El Tibeen Power plants drainage systems, PGESCO, Egypt
- Storm drainage system for 31 locations at Khamis Meshait, KSA.
- King Saud University for Health Sciences. (Saudi Arabia).
- Hawadi Village1, KAEC, Jeddah, KSA.
- AlWaha Village, KAEC, Jeddah, KSA.
- AlAnaaam Market, 700 hectare, Riyadh, KSA.
- Interchanges, Ministry of Transportation, KSA.
- Maseru Internal road network (20 km), Lesotho.
- Interchanges, Ministry of Transportation, Tanzania.
- Dar ElSalam Airport, Terminal 3, Airside and road side, Tanzania.

**★HYDROLOGIST AND GIS SPECIALIST**

Conducted all tasks related to the flood protection works starting from digital elevation models interpretation and adjustment, catchment delineation, morphological analysis, rainfall analysis, rainfall-runoff calculation, estimation of design flow and hydrograph, hydraulic design of flood protection works (i.e. culverts, channels, ditches, bridges,...) using advanced (1D and 2D) modeling techniques to the prepare of tender documents and drawings and bill of quantities and specifications.

- Design of flood protection systems for railways:
  - Saudi Land Bridge (1200 km) railway line (Jeddah-Riyadh, Dammam-Jubail).
  - Haramain High speed Rail line HHR (450 km), Saudi Arabia.
  - Luanda Railway Rehabilitation (100 km), Angola.

- Flood protection Dams proposal for Jeddah City (client SGS)
- Produce Technical proposal documents for Coporolo river basin and Cuanza river basin water management plan projects, including 3 Dams concept design.
- Design and safety review of hydrological projects,
  - AutoRoute Est-Ouest, Lot East, 250 km, Algeria.
  - Boda- Dandi Lake Mountain Road Project, 60 km, Ethiopia
- Design of flood protection system for touristic locations in Eastern Sinai, Dahab for touristic investment, Egypt.
- Design of road drainage systems in rural and urban areas.
  - Mekka – Qaseem expressway, 120 km starting from Mecca end, Saudi Consult, KSA
  - Quba interchange, Medina Ring road, Medina, KSA.
  - King Khaled Underpass, Makah, KSA.
  - Tabouk – Ras Al Shaikh Hemaïd Expressway (225 km), Saudi Consult, KSA
  - Interchanges on Khamis-Mushait Al Houtah Duwal road, KSA
  - Interchanges on Jeddah-Jezzan Highway, KSA
  - Infrastructure Construction Program of Boavista Roads, 350km, Angola
  - Luanda - Viana Expressway, Quinta Avenida, Setima Avenida, Avenida N'gola Kiluange.....and others, 70km. (Angola).
  - Luanda first Ring road, 55 km, Angola
- Flood protection studies and system design for Prince Salman Bin Abdel Aziz University, AlKharj, KSA.
- Design of flood protection system for pipe line and intake structure, Shaqlawa – Salahedine, 60 km, Water Supply Project (Iraq).
- Hydrology and GIS support for city master plan:
  - Luand, 300 km<sup>2</sup> Angola.
  - Khawr Al-Batah, 6500 hectar, Sur, Oman.

Plan and design of flood protection works for,

- Porto Agadir touristic resort, Morocco.
- Ranya and Zakho Universities, Kurdistan, Iraq.
- AlGalalah Mountain Road, 100km, Al Sokhna, Egypt.
- (Siwa – Gaghboub) and Gara Highways, 200 km, Al Wadi Algeded, Egypt.
- Bani Swaif – Zafarana Highway, 160 km, Egypt.
- Mafeteng – Mount Moorosi road, 120 km, Lesotho
- Alkamel University, Jeddah, KSA
- Dodoma Airport, Tanzania
- Sohag Airport, Sohag, Egypt, Ministry of Defense.
- Technical review of Sohar Airport, Sohar city, Sultanate of Oman, Hamza and partners.
- Private road (20 km) and a phosphate factory against flash floods, Upper Egypt, PortSaid Engineering consultants.
- 500 km Gas pipe line "Assuit-Aswan", Ennpi Gas Company, Egypt.
- Extension of 15<sup>th</sup> of May city, 3000 hectar, Helwan Governate, Egypt.
- The 2<sup>nd</sup> ring road-Phase 1,2 and 3, 240 km, Cairo, Egypt.

- Safaga-Assuit Expressway, 250km, Egypt.
- Dodoma Airport, Tanzania
- Suez – Zafarana Expressway realignment, 15km, Egypt.
- Hurgada – Safaga – Luxor 200 km railway line, Egypt, Hamza and partners.
- Taba International Airport Extension, Egypt.
- Braida University and Al Ras University locations, KSA
- Technical review Swaziland-South Africa Border expressway, Swaziland, Hamza and partners.

#### ★HYDRAULIC MODELING SPECIALIST

Conducted advanced studies and modeling for hydraulic simulation, water quality and sedimentation studies for several entities such as bridges and lagoons using the most up-to-date tools and techniques in such filed.

Part time engineer at the Water Resources Research Institute (WRRI), Ministry of Irrigation. (2005 - 2007)

- Hydrodynamic modeling.
- Capacity building (Training of junior engineers).
- GIS support.
- 2-D hydrodynamic for water Intake location, New Assuit city, Egypt. client: Nile Research Institute (NRI).
- 2-D hydrodynamic for water Intake location, the White Nile, Sudan.

Part time Senior Engineer at DAR Group Engineering and consultants, Shair and Partners, Resources and Environment Department. (2006 - 2012)

- Water quality modeling for inland lagoons
  - King Abdullah Economic city - Saudi Arabia,
  - Lobito lagoon - Angola,
  - Atlantic Eko City – Lagos - Nigeria,
  - Bridge on the M Bridge River - Angola,
  - Bridge on Wadi Dayqah - Sultanate of Oman,
  - Gamsha bay II – Jeddah – Angola.
- 2-D Hydrodynamic simulations for bridges on rivers and water ways (M-Bridge river bridge and Cacawaco river bridge - Angola, Wadi Dayekah bridge- Oman).
- 1-D Hydrodynamic simulations of water structures such as bridges, culverts, Intakes and channels (Algeria, Angola, Saudi Arabia, Oman, Iraq).
- Assuit Barrage and Ibraheimia head regulator modeling during bidding phase.
- AlKharj city flood risk assessment study, Prince Salman Bin Abdel Aziz University, AlKharj, KSA.

Others;

- Concept design for the hydraulic system proposed for the circulation of a 100,000 m<sup>3</sup> inland lagoon, Abo Dabab, Marsa Alam, Egypt. Concord For touristic industry.
- Network design and modeling for lowering the groundwater level of AlFustat Islamic city, Moharam-Bakhoum Consultants.

**★(DAMS ENGINEERING)**

- Flood protection Dams proposal for Jeddah City (client SGS)
- Irrigation Dams, Integrated Rural Development Project for Middle Plateaus, Yemen (Yemen Ministry of Agriculture).
- 3 Dams on Coporolo River, Angola (Proposal for River Basin Management, DAR).
- Detention Dam for Sohag Airport, Corps of Engineers, Ministry of Defense.
- 3 Dams for flood protection, Private road and a phosphate factory against flash floods, Upper Egypt, PortSaid Engineering consultants.
- Detention Dam for 15<sup>th</sup> of May City extension, Ministry of Housing, Egypt.

**★(ENVIRONMENTAL STUDIES)**

- EIA reporting pre and post the seismic tests for Balleem Petroleum company.
- Design of protection works and measures for oil and solid waste in power stations at Sidi Krir, Al Tebeen, and West Cairo, PEGSCO.
- Water Quality modeling for Golf Course ponds (King Abdullah Economic city, Saudi Arabia).

## **PUBLICATIONS**

- ★ “Impact of High Dam on Nile Flood Wave Routing”, ASCE-EGS, III International Symposium on Environmental Hydrology 2002.
- ★ “A 2D Model of Aswan High Dam Reservoir For The Purpose of Flood Management”, ASCE-EGS, IV International Symposium on Environmental Hydrology 2005.
- ★ "2D Hydrodynamic Model of Aswan High Dam Reservoir"; International Conference on Environmental Hydrology, USA, July 2006.
- ★ "2D Hydrodynamic Model for Reservoirs: Case Study High Aswan Dam Reservoir", ASCE-EGS, V International Symposium on Environmental Hydrology 2007.
- ★ "Hydrological Model for the High Aswan Dam Reservoir Management", ASCE-EGS, V International Symposium on Environmental Hydrology 2007.
- ★ "Floods risk assessment using multi criteria analysis", ASCE-EGS, IV International Conference on Environmental Hydrology and Port Engineering, 2009
- ★ "Hydraulic Performance of Inland Ponds Circulation Systems", ASCE-EGS, IV International Conference on Environmental Hydrology and Port Engineering, 2009.
- ★ "Evaluating of Muskingum Hydrological Model Parameters Using 1-D Model", Journal of Engineering and Applied Science – Cairo University, Vol. 57, No. 1, Feb. 2010.
- ★ "Morphological Changes Analysis for Nile Bed at Aswan Bridge Area Using GIS", Ain Shams Journal of Civil Engineering, March 2010
- ★ “Developing Intensity-Duration-Frequency Curves in Scarce Data Region: An Approach using Regional Analysis and Satellite Data”, journal of Engineering, March 2011
- ★ “Adaptation of Surface Water Modeling System for Sediment Transport Investigations in Lake Nasser”, Nile Water Science & Engineering Journal, May 2011
- ★ “Assessment of Flash Floods Flowing To Nile Main Stream Between Aswan And Assiut”, Al Azhar Journal, Oct. 2011.
- ★ "Flash Flood Risk Assessment Using Morphological Parameters", ASCE-EGS, VI International Conference on Environmental Hydrology and Port Engineering, 2012
- ★ "Reliability Assessment of Water Structures Subject To Data Scarcity Using The SCS-CN Model", Canadian Society of Civil Engineering (CSCE) 2013 Annual Conference, May-June, 2013
- ★ "Sustainable Water Management for seasonal rivers deltas, Case study: Coporolo River, Angola", International Journal of Research and Reviews in Applied Sciences, Vol. 15, Issue 3, June, 2013
- ★ "Flood Plain Mitigation in Arid Regions Case Study South of Al-Kharj City, Saudi Arabia", International Journal of Research and Reviews in Applied Sciences, Vol. 16, Issue 1, July, 2013

- ★ "Flash Flood Risk Assessment Using Morphological Parameters In Sinai Peninsula ", Open Journal of Modern Hydrology (OJMH), Vol.3, No.3, July, 2013.
- ★ "Development of a GIS Tool For Rainfall-Runoff Estimation", Al Azhar Journal, May 2014.
- ★ "Evaluation of Integrated 1D&2D Storm Drainage Model", Al Azhar Journal, August 2014.
- ★ "Evaluation of water intake location suitability using hydrodynamic modeling", River flow the 7th International Conference on Fluvial Hydraulics, September 2014, Switzerland.
- ★ "Sensitivity Analysis For GSSha Model Parameters", Al Azhar Journal, October 2014.

**Reviewer for;**

- **The International Journal of Hydrology Science and Technology (IJHST).**
- **Journal of Water Resource and Protection (JWARP)**
- **British Journal of Applied Science & Technology (BJAST)**
- **The Egyptian Journal of Remote Sensing and Space Sciences (EJRS)**
- **Journal of Environmental Science. (J.Env.Sci.)**
- **Journal of Scientific Research and Reports (JSRR)**
- **Open Journal of Modern Hydrology (OJMH)**

### **ATTENDED COURSES**

1. Sustainable Management of Hydrological Systems in Arid and Semi-Arid Regions, **Karak, Jordan** (2013).
2. Sustainable Water Management In African Countries, UNESCO, **Kisumu, Kenya**. (2012)
3. ENPM First National Workshop, **Alexandria, Egypt** (2012)
4. Water Resources Planning, UNESCO-IHE, **Delft, Netherlands**. (2008)
5. Application of GIS in water resources, Department of Engineering Hydrology, RWTH **University, Aachen, Germany**. (2007)
6. Arc GIS Intensive course, Braunchwiegh University, Institute of water resources, **Braunchwiegh, Germany**.(2006)
7. Soft Skills short courses: (Creative Thinking, Self-Management, Problem Solving, Communication Skills and Mind Mapping). **Cairo, Egypt**. (2004-2006)
8. Enhancing Data Analysis and Presentation Skills for Engineers, Ain Shams University, **Cairo, Egypt**.(2005)
9. Arc GIS Introduction, Basic and Advanced Courses, Ain Shams University, **Cairo, Egypt**.(2004/2005)

## **TRAINING AND TEACHING EXPERIENCE**

Teaching undergraduate and postgraduate students since 1998:

- Design of Water Structures. (Culverts, Bridges, Siphons, Aqueducts, Regulators, Navigation locks and retaining walls of different types)
- Engineering Hydrology and Storm Drainage.
- Geographic Information System "GIS".
- Irrigation and Drainage Engineering.
- Fluid Mechanics and Hydraulics.
- Dam Engineering.

★**(2007 UP TILL NOW)**

Assistant Professor, Faculty of Engineering Ain-Shams University, Water resources Department. (Undergraduate and Postgraduate students).

★**(OCTOBER 2008, JAN 2011, FEB 2013)**

"Infrastructures, Waterfronts, and Coastal Protection" course instructor for Abu Dhabi National Oil Company (ADNOC) - ADMA-OPCO, National Consulting Bureau (NCB), Abu Dhabi.

★**(MARCH 2009)**

"GIS Mapping and Remote Sensing" for Saudi National Authority members, ECO Man, Consultancy, Training and Solutions, Cairo.

★**(JUNE 2010)**

"Design And Management Of Surface Irrigation Systems" for Saudi National Authority members, ECO Man, Consultancy, Training and Solutions, Cairo.

★**(JULY 2010)**

"Designing and analyzing Water Networks using Computer Applications" for Saudi National Authority members, ECO Man, Consultancy, Training and Solutions, Cairo.

★**(2004 UP TILL NOW)**

Arc GIS instructor at Ain-Shams University  
Faculty of Engineering for both undergraduate and postgraduate students.

## **CERTIFICATES**

- 1- University Teacher preparation Course Certificate (September 2001).
- 2- Arc GIS Introduction Course Certificate (Sep. 2004).
- 3- Arc GIS Basic Course Certificate (Oct. 2004).
- 4- Arc GIS Applied Course Certificate (June 2005).
- 5- Human Development program Certificate (March 2005).
- 6- Arc GIS Intensive Course Certificate, Braunschweig, Germany (August 2006).
- 7- Application of GIS in water resources, Aachen, Germany (August 2007).
- 8- Water Resources Planning short course Certificate, UNESCO-IHE, Delft, Netherlands (March 2008)

## **MULTI NATIONAL PROJECTS**

★ Tempus projects "New curriculum for training courses in GIS - NCGIS" for establishing GIS unit at the Irrigation and Hydraulic department, Faculty of Engineering Ain Shams University (2004-2006). During which I participated in the training of undergrad students and some of my colleagues to use the geographic information system as a new technique in engineering application.

★ Tempus projects "Water Resources Management and Environmental Engineering Program – WATEN" for Developing of curricula and courses for a new postgraduate program at the Irrigation and Hydraulic department, Faculty of Engineering Ain Shams University (2007-2009). During which I participated in preparing and upload on the Aachen University server two courses in the field of Hydrology. These courses will also be uploaded on our faculty server for the under and post grad students.

★ Tempus projects "Technology Management and Integrated Modeling in Natural Resources" Developing of curricula and courses for Hydro-informatics Masters at the Irrigation and Hydraulic department, Faculty of Engineering Ain Shams University (2009-2011). During this project the project team is planning to add a hydro-informatics Joint Degree in our faculty post grad list. I am participating in preparing the courses for this degree and will participate in teaching few course of my field of experience.

★ Joint research project U.S.-Egypt Science & Technology Joint Fund Program "Flood Risk Map for Sinai Governorates" at Iowa Flood Center at IIHR-Hydro science and Engineering (2012).

★ Excellence Center for Development Cooperation Sustainable Water Management in Developing Countries (EXCEED). (2009-2013)

★ Mobility to Enhance Training of Engineering Graduates in Africa (METEGA) is one of the Intra-ACP Mobility Scheme supported projects with 12 partner universities in Eastern, Central, Southern and Western Africa. Applications are invited for METEGA mobility scholarships. METEGA is designed to provide resources and opportunities for students mobility from four regions of Africa, offering support for Master and Doctoral studies as well as staff exchange among the consortium partners. (2013 – up till now)



## **AWARDS**

- ★ MSP fellowship to attend short course in UNESCO-IHE, Delft, Netherlands (April 2015).
- ★ NFP fellowship to attend short course in UNESCO-IHE, Delft, Netherlands (March 2008).
- ★ 4<sup>th</sup> best conference paper, ASCE-EGS, VI International Conference on Environmental Hydrology and Port Engineering, 2012.
- ★ 2<sup>nd</sup> best conference paper, ASCE-EGS, IV International Conference on Environmental Hydrology and Port Engineering, 2009.
- ★ The University Award as one of the best demonstrators (2001).
- ★ Egyptian Engineers Syndicate Awards for Graduated students (1998).
- ★ Graduated Students Certificate (non official) as the best Teacher Assistant in the Civil Department, Faculty of Engineering, Ain Shams University (2003/2004 and 2004/2005).