

Eng. Orwa Khalid Ahmed
Expert, civil structural engineering ,bridges & tunnel design , evaluation and supervision

Name of Firm: Gulf Engineering House
Name of Staff: Orwa Khalid Ahmed
Profession: Civil Engineer (Structures)
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Key Qualifications:

Structural Design , Design of the bridge ,Manager, Planning & Controlling , Supervising

Education:

Degree	Specialization	University	Graduation Year
M.Sc	Civil Engineering (Structures)	Sudan University of Sciences & Technology	2003
B.SC	Civil Engineering (Structures)	Sudan University of Sciences & Technology	1998

Membership of Professional Societies:

- Member of the Sudan University Council, 2007 – 2011
- Registered in Sudanese Engineering Council
- Member of the Khartoum Engineering Union
- Member of Department of Civil Engineering Council, 1998 – 2011
- Member of College of Technology Council, 2007 – 2009
- Member of College of Engineering Council, 2009 – 2010

Employment and Experience Record:

Period: From July 2011 to September 2018
Position: Manager of Structural Design Unit & lecturer at the Gulf House Institute
Employing Organization: Gulf Engineering House, KSA

Responsibilities include:

The Structural Design Unit (SDU) is one of the main departments in Gulf Engineering House (GEH), which provides engineering consultancy services in the form of structural design of projects that are awarded to the company from both the public and private sectors, which includes design of highway bridges, tunnels, and culverts. In addition, auditing and supervision of all projects of construction of bridges and tunnels that are awarded to the company as site supervision. Also the Structural Design Unit leads the design of commercial and residential

buildings, as well as, inspection and safety assessment of existing facilities including proposing programs for rehabilitation and proper maintenance of these facilities. The Unit implements its tasks through highly qualified technical staff with long experience; wide scientific knowledge and professional distinctive competence in the company's headquarter office in Riyadh/Saudi Arabia and its regional office in Amman/Jordan. SDU has achieved excellence and leadership in the performance of advisory services through number and level of projects carried out and fulfilled within the specified period of the contract.

On the other hand, during above period Manager of Structural Design Unit also worked as a lecturer at the Gulf House Institute, he taught in various Training courses organized by the Institute especially in the analysis, design, specifications, inspection, evaluation and maintenance of bridges, tunnels and culverts.

Consultancy Services Provided by Manager of Structural Design Unit:

- Prepare Concept and Scheme design and detail design of bridge & building structures, model, analyze and design structures and prepare design construction documents and calculations reports.
- Carry out multidisciplinary coordination.
- Coordinate with other departments, building services engineers, and other structural engineers
- supervise structural engineers and draughtsman and allocate work to the team to achieve maximum productivity

- Take an active role in work winning, and supporting business development activities, including development of client relationships

- Carry out arithmetical checks and independent design review of other engineer's design.
- Carry out value engineering exercise by studying alternative solution.
- Liaise with local authorities, sub consultants clients, contractors and sub-contractors

- Provide technical training, mentoring and line management to other team members

- Collaborate with multidisciplinary design teams; provide leadership in the assessment and development of detailed designs for all bridge structures

- Guided and coordinated the engineering team's efforts to achieve highest technical quality thoroughness of project deliverables and strived to maintain project schedules within budget.

- Implemented practical QC review and checking procedures for different steel and concrete bridge projects regarding foundation submissions, design calculations checking and final plans preparation.

- Analyzed / designed highway bridge substructures (pile / spread / caisson foundations, single-column drilled shafts, hammerhead piers, concrete abutments & wing walls, elastomeric

bearings) and superstructures (reinforced concrete deck slabs, p/s box beams and I-beams, steel plate girders).

-Supervised / mentored / trained junior engineers regarding technical aspects of bridge structural design, quality control, contract plans development and ethical aspects of general engineering work.

Academic Experience:

Period: **From 2009 to July 2011**

Position: **Manager of engineering training center**

Employing Organization: **Sudan University of Science & Technology**

Period: **From July 2007 to October 2009**

Position: **Head of the Department of Training & Continuing Studies**

Employing Organization: **Sudan University of Science & Technology**

Period: **From January 2003 to June 2011**

Position: **Lecturer, Department of Civil Engineering**

Employing Organization: **Sudan University of Science & Technology**

Period: **From 1998 to 2003**

Position: **Assistant Lecturer, Department of Civil Engineering**

Employing Organization: **Sudan University of Science & Technology**

Instructor and Examiner for Civil and Structural Engineering Subjects, Supervisor of Graduation Projects, Researcher in the field of Structural Engineering

Courses teaching:

- Concrete design (I & II)
- Steel design (I & II)
- Structural Analysis
- Computer Application in Structural Engineering (STAADIII , STAADPRO , SAP2000 , ETABS, SAFE)
- Planning & Controlling of the Project with Primavera Program
- Design of Special Structures
- Concrete Technology
- quantity Surveying

Practical Experience:

Gulf Engineering House, KSA_Experience

I- DESIGN OF BRIDGE , UNDERPASS & OTHER STRUTURES

Design of Prestressed Concrete Girder, Steel Plate Girder, Post-Tensioned Box Girder and Steel Box Girder Bridge with both the AASHTO LRFD Bridge Design Specification and the ASSHTO Guide Specification for the Seismic Design of Bridges.

Also design with both the MOT & MOMMRA Saudi Specifications

These major interchanges in Makka,Jazan,Hail,Taif, Madinah, Abha, Jazan, Khamis Mushayt and Bureida, below is samples of these interchanges .

- Design intersection of Al Dahi road with King Abdullah road – ksa - Buraidah
- Studies necessary for the implementation of the scheme proposed by the secretariat of the capital, fever within the holy sites and the free intersection at the intersection with the Taif through Muzdalifah – ksa - Makah
- Design intersection of king tunnel road with ayyad street – ksa – Makah
- Design the intersection of Hada Taif with alehsaan Street – ksa - Makah
- Design intersection of al madinah al monawara road with alhijra markets road – ksa – Makah
- Design intersection of altawheed roundabout – ksa- jazan
- Design intersection of petromin – ksa – jazan
- Design intersection of king faisal road with prince sultan road – ksa – jazan
- Design intersection of king Abdul-Aziz road with prince sultan road – ksa – jazan
- Design intersection of king fahad road with al mutalla road – ksa – jazan
- Design intersection of airport road with prince sultan road – ksa – jazan
- Design of 6 pedestrian bridges – ksa - jazan
- Design intersection of king faisal road with King Abdullah road - ksa – buraidah
- Design intersection of king Saud road with althamanyen street – ksa – khamis mushayt
- Design intersection of king Abdullah road with alragy – ksa - khamis mushayt
- Design intersection of king Khalid road with Khalid ibn-walid road – ksa – taif
- Design intersection of Hassan bin thabet road with 25 – ksa – taif
- Design intersection of Hassan bin thabet road with al maared road – ksa – taif
- Design intersection of algamaria – ksa – taif
- Design intersection of Khalid ibn-alwalid road with wej valley road – ksa – taif
- Design intersection of airport road with wej valley road (aldalal) – ksa - taif
- Design of bridge at aladayra valley – ksa – hail
- Design of bridge at aladayra valley with prince Megren road – ksa – hail
- Design of bridge at aladayra valley with al haraj road – ksa – hail
- Design of bridge at aladayra valley with marefa road – ksa – hail
- Design of bridge at aladayra valley with alsuivelh – ksa – hail
- Design of bridge at aladayra valley with almonfak roundabout road – ksa – hail
- Design intersection of king Khalid road with link of king Abdulla road – ksa - khamis mushayt
- Design intersection of king Fahad road with Alkhurmah road – ksa – Alkhurmah
- Design of Road Institute Building - ksa- riyadh
- Design of Gulf Building - ksa - makah
- Design of Albakreya mosque - ksa - Qaseem

II - The evaluation and supervision of the projects

- Inspection and evaluation of culvert ksa – buraidah
- Inspection and evaluation of wadi waj road culvert ksa- taif
- Inspection and evaluation of many bridge & underpass in Riyadh
- Technical supervision of all projects of the Ministry of Transport in Saudi Arabia, which is supervised by the GEH company

Sudan University of Science & Technology Practical Experience (From 1999 to 2011)

- Designer & Supervising Engineering of the Department of textile Project - Sudan
- Supervising Engineering of the Lecturer Rooms Project of Engineering College (ABM Roof System). - Sudan
- Supervising Engineering of the Drawing Rooms Project of Engineering College (Portal Frame System). - Sudan
- Check & Redesigned & Supervising of the Electrical Towers of Sudan University.

Khartoum Irrigation Company Experience

- Planning & Controlling Engineering in Khartoum Irrigation Company, 2006 – 2007.
- Planning & Controlling & Supervising of AL Selate Dam Project (in Khartoum State), 3/2006 – 8/2006.
- Planning & Controlling of AL Masader ALganobea Projects (in North Khordufan State), 2006.- Sudan
- Designer & Construction Engineering of many Building in Khartoum

Publications & Research:

- Structures Analysis and Design, Concrete Design, Theory & Design of prestress concrete, Design of the bridge, Steel Design, precast concrete.
- Analysis of Box Girder Using Equivalent Section

Computer Skills:

Familiar with the basic computer software (Word, Excel, Power Point etc.) in addition to the following specialized structures Software

- Computer Application in Structural Engineering (STAADIII, STAADPRO, SAP2000, ETABS, SAFE, CONBOX , Rc-pier ,Csicol, Prokon)
- Planning & Controlling of the Project with Primavera Program

Training Courses :

- Computer Application in Structural Engineering (STAADIII, STAADPRO, SAP2000, ETABS, SAFE, CONBOX , Rc-pier ,Csicol, PROKON)
- Application of the General Specifications for Road Construction
- Design of Bridges by the New AASHTO LRFD Method
- Inspection, Evaluation, and Rehabilitation of bridge & underpass
- Planning & Controlling of the Project with Primavera Program

Languages:

- Arabic (Native Language)
- English (fluent in all skills)