Dr. Ahmed ElHamahmy CEng CMarEng

Lead Principal Structural Engineer | Chartered Engineer (CEng, CMarEng) | Ph.D. Project Management | PMP | PMI-RMP
Offshore Structural Engineering Expert | EPCI Engineering Leader | Float-over & Heavy-Lift Specialist | Bid & Proposal Strategist
Published Author (Springer Nature) | Carbon Footprint Consultant | Certified International Trainer

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Location: Al Khobar, Saudi Arabia Dubai, UAE	**Nationality:** Egyptian	**Residency:** Saudi Premium Residency (Special Talents)	**Notice Period:** 1 Month

PROFESSIONAL SUMMARY

Lead Principal Structural Engineer with over 19 years of offshore and onshore oil & gas experience, currently leading the engineering team on the **ADNOC Umm Shaif (US) Khuff Gas Surface Pressure Boosting (SPB) Platform project (>US$1 billion)** — the SPB topside, at approximately 32,000 MT, is one of the largest float-over installations in the Middle East. Proven leader of multidisciplinary EPCI engineering teams delivering greenfield and brownfield mega-projects for Saudi Aramco, ADNOC, QatarEnergy, and KJO, with a track record of converting FEED studies and optimization strategies into winning EPC bids.

A **Chartered Engineer (CEng, CMarEng)** combining deep technical authority in structural analysis, integrity management, bid engineering, and float-over/heavy-lift installation with certified project and risk management (PMP, PMI-RMP) and a Ph.D. in Project Management. Published author, peer-reviewed researcher, and international conference presenter, passionate about driving efficiency, sustainability, and developing the next generation of engineers. Seeking to apply this combination of technical authority and project leadership in an engineering management role within a major offshore contractor.

CAREER HIGHLIGHTS

- **Leading a >US$1 billion ADNOC mega-project:** Head of the structural engineering team for the Umm Shaif (US) Khuff Gas Surface Pressure Boosting (SPB) Platform topside — a ~32,000 MT float-over installation — directing design, weight control, installation engineering, and client interface.
- **Won three ADNOC mega-projects:** Personally performed and endorsed the FEED-stage structural studies and bid engineering for SARB (D7321), Al Nasr, and Umm Shaif (US) Khuff Gas SPB; the optimization concepts and winning strategies developed underpinned McDermott's successful award of all three projects.
- **Aramco greenfield detailed design:** Detailed design of greenfield Saudi Aramco jackets and topsides — the Safaniya Phase 6 Electrical Distribution Platform (EDP) and SSS-series platforms across the Safaniya, Zuluf, and Marjan fields.
- **KJO platform requalification:** Requalified the KJO Y3 & Y4 platforms via skirt-pile jacket strengthening — achieving RSR > 1.6 in pushover analysis to SAES-M-005, with no production shutdown and no vibration exposure to live risers.
- **Portfolio leadership:** Led engineering teams of 30+ professionals across a combined portfolio exceeding US$500M, with three concurrent Saudi Aramco EPCI projects at Ras Tanura and Ju'aymah.
- **Measurable value:** Reduced project risk exposure by 30% and delivered 15–20% cost savings through value engineering, recognized by Saudi Aramco and multiple McDermott quality and innovation awards.
- **Bid & proposal leadership:** Led numerous onshore and offshore bid studies — scopes of work, deliverable lists, man-hour estimates, execution plans, bid clarifications, and PROM — turning technical optimization into competitive, winning proposals.
- **Technical authority:** Chartered Engineer (CEng, CMarEng); full offshore structural analysis suite (SACS, SESAM, ANSYS), API RP 2SIM integrity assessment, float-over, heavy lift, and brownfield modifications with zero operational disruption.
- **Breadth of delivery:** 40+ offshore structures delivered across greenfield and brownfield scopes — 25+ jackets, multiple topsides, wellhead, auxiliary and flare platforms, plus onshore plant, OHTL, and control-room scopes — many on fast-track, schedule-critical programs.

PROFESSIONAL EXPERIENCE

Lead Principal Structural Engineer

2013 – Present

McDermott Arabia Ltd. | *Clients: ADNOC | Saudi Aramco | QatarEnergy | KJO*

Al Khobar, Saudi Arabia

Current Assignment — ADNOC Umm Shaif (US) Khuff Gas Surface Pressure Boosting (SPB) Platform (>US$1 Billion)

- Leading the structural engineering team for the Umm Shaif (US) Khuff Gas Surface Pressure Boosting (SPB) Platform topside — approximately 32,000 MT, installed by float-over — covering in-place, pre-service, load-out, transportation, and float-over installation engineering.
- Directed the SPB topside structural weight-reduction program, developed the Basis of Design, and led the geophysical/geotechnical survey scope definition through RFQ readiness.
- Primary structural interface with ADNOC and the installation contractor on float-over methodology, mating analysis, and marine-operations structural requirements.

FEED Studies & Bid-Winning Strategies — ADNOC Portfolio

- Performed and technically endorsed the FEED-stage structural studies for SARB (D7321 — topsides, jacket, riser platform & bridge), Al Nasr (NASR 115 MBD Phase-2), and Umm Shaif (US) Khuff Gas SPB; all three projects were subsequently awarded to McDermott on the strength of the optimization ideas and winning strategies developed.

- Developed client-facing technical justifications (e.g., sled anode systems versus direct attachment on NASR platforms, grounded in SACS unity-check data) that shaped ADNOC's technical acceptance.
- Prepared and reviewed engineering bid documentation for multiple onshore and offshore tenders: scopes of work, lists of deliverables, man-hour estimates, execution plans, bid clarifications, and PROM.

Leadership & Project Delivery

- Lead multidisciplinary engineering teams of 30+ professionals across offshore and onshore projects with a combined portfolio exceeding US$500M.
- Concurrently leading three Saudi Aramco EPCI projects (BI-10-01624, BI-10-01028 & BI-10-00815) at Ras Tanura and Ju'aymah fields.
- Primary technical interface with Saudi Aramco CSD/PMT and ADNOC; deliver high-level presentations and strategic planning sessions to client leadership.
- Implemented risk management strategies across all project phases, reducing risks by 30%; delivered 15–20% cost savings through value engineering.
- Coordinate all engineering disciplines and interface with marine, hook-up, CSE, and fabrication teams through pre-construction, construction, and installation phases; lead 60% and 90% design reviews and interface meetings with FEED contractors to verify design and secure critical-path activities.
- Track progress and productivity across all project phases; mentor and develop structural engineers and drive quality, innovation, and lessons-learned programs across the engineering organization.

Key Achievements

- **Aramco Greenfield Detailed Design:** Delivered detailed design across the full greenfield scope — jackets, topsides, and deck framing — for the Safaniya Phase 6 Electrical Distribution Platform (EDP) and SSS-series platforms in the Safaniya, Zuluf, and Marjan fields, covering in-place, lift, transportation, load-out, and on-bottom stability analyses to API RP 2A and Saudi Aramco SAES criteria.
- **KJO Platforms Global Assessment & Requalification:** Performed global structural assessment of the Y3 and Y4 platforms and led their requalification through jacket strengthening with skirt piles. Specified a vibro-hammer driving methodology in place of impact driving to eliminate vibration risk to live risers, keeping the platforms on production throughout; non-linear pushover analysis confirmed an RSR above 1.6, satisfying Saudi Aramco SAES-M-005.
- **Brownfield Excellence:** Managed 6 PDHMS, Marjan cable upgrades, and Marjan platform modifications with zero operational disruption; developed an innovative counterweight design for brownfield topside lifts (Marjan helideck).
- **QatarEnergy NFS & WHP13N:** Led as-built engineering and design phases with full regulatory compliance.
- **Onshore Scope:** Led structural engineering for Saudi Aramco onshore projects — SAF6 Overhead Transmission Lines and Manifa onshore plants — including foundations, pipe racks, warehouses, shelters, and multi-storey concrete design (STAAD, SAP2000).
- **International Coordination:** Coordinated with McDermott Chennai office for MRJN Package 1 (D7068) and NFPS WHP10N (D6978) topside design.
- **Installation Engineering Support:** Performed installation studies, clash checks, and constructability-driven design optimization for brownfield projects.

Technical Scope

- Full structural analysis suite: in-service, pre-service, lift, transportation, load-out, float-over, pushover, on-bottom stability, ship impact, seismic, fatigue, and time-history using SACS, SESAM & MicroSAS.
- Platform integrity assessment per API RP 2SIM; re-qualification including reliability analysis and joint inspection plans.
- Vibration dynamic analysis for rotating equipment; damage analysis and dropped-object studies; FEA using SACS & ANSYS.
- Held survey lead position for structural fabrication quality verification for 11+ years — zero major rework incidents.

Selected Project Portfolio (Fast-Track / Challenging Schedule)

ADNOC	Umm Shaif (US) Khuff Gas Surface Pressure Boosting (SPB) Platform — topside float-over (~32,000 MT), >US$1B (current) • NASR 115 MBD Phase-2 (Al Nasr) • SARB (D7321) topsides, jacket, riser platform & bridge
Saudi Aramco — EPCI	BI-10-01624 Metering System Upgrade (Ras Tanura) • BI-10-01028 Fire Protection Upgrade (RTSI) • BI-10-00815 Fire Protection Upgrade (Ju'aymah) • Safaniya Phase 6 Electrical Distribution Platform (EDP) • BERRI 432 & 700 (2 jackets + 2 topsides) • MRJN Package 1 (D7068) • D7268 Control Room • D7358 Marjan Upgrade • D6327 Marjan Cable Project (12 jackets) • 13 Jackets • SAF6 OHTL • Manifa (onshore & offshore)
Saudi Aramco — Brownfield / Greenfield SSS	6 PDHMS — Safaniya Phase 2 • KARAN 45/46, 49, 51 platforms & auxiliary jacket • Flare jackets FSS1 & FSS2 • SFNY 1040/1049 wellhead platform • SFNY 216/221 auxiliary platform • SSS-series platforms — Safaniya, Zuluf & Marjan fields
KJO	Y3 & Y4 platforms — global structural assessment and requalification (jacket strengthening with skirt piles, vibro-hammer driving methodology, RSR > 1.6 pushover, SAES-M-005 compliance)
QatarEnergy	NFS jacket facilities (D7482) — engineering as-built • WHP13N jacket (D7571) — engineering as-built • NFPS WHP10N topside (D6978)

Civil / Structural Engineer **2008 – 2013**

Eni Progetti (Tecnomare) | Clients: ENI | Petrobel | AENR | UGDC *Italy & Egypt*

- **Amelia C Platform Requalification (2012):** In-service static, fatigue, and reliability analyses using SESAM; joint inspection plan — Caspian Sea (ENI).
- **Seth Platform (2011):** Supervised deck & jacket fabrication, material inspections, and technical yard support — Mediterranean Sea (Petrobel).
- **Seth Platform Conceptual & FEED (2010):** Six-month Venice office assignment; structural modelling with Genie v5.1, lifting, load-out and transportation analyses.
- **Denise B & Tuna Platforms (2008–2009, Petrobel):** Structural calculations and local checks for main/secondary deck beams under modified loads (SAP2000); two-month on-the-job training in Venice.
- **UGDC Plant Development (2011–2013, Port Said & Damietta):** Structural design of HVAC bracing, steel supports for soil-settlement damage, foundations, and pipe sleepers per ACI, AISC, and Eni standards.

Site Civil Engineer **2007 – 2008**
Amer Group *Egypt*

- Supervised construction and finishing works of a 22-floor reinforced concrete tower — Porto El-Sokhna Resort, Pyramids Stage; managed client-driven unit modifications.

EDUCATION

2022 – 2026	Ph.D. in Project Management	*Cairo University*	95.7%
2020 – 2022	MBA — Business Administration (Strategic Management & Operations)	*Arab Academy for Banking & Financial Sciences*	96.2% — Honours
2009 – 2011	M.Sc. Civil Engineering	*Helwan University*	GPA: B
2002 – 2007	B.Sc. Civil Engineering — Graduation Project: "Behavior of Steel Fibers inside Concrete"	*Helwan University*	72% | Project: 94%

PUBLICATIONS & RESEARCH

Full publication record: *orcid.org/0009-0009-9547-8966*

Books

- ElHamahmy, A. (2025). Advances in Offshore Structural Engineering: AI Design, Vibration Control, and FRP Retrofit Solutions. Eliva Press. ISBN: 978-9999328821. elivabooks.com/en/book/book-3878598651
- ElHamahmy, A. (2025). Mastering Offshore Giants: The Complete Guide to EPC Project Management for Offshore Platforms. Amazon KDP. ISBN: 979-8273286009. amazon.com/dp/B0G1TWD5PN

Peer-Reviewed Journal Articles

- ElHamahmy, A. (2026). A comprehensive review of emerging underwater repair techniques for offshore structures to enhance structural integrity and extend service life. Discover Applied Sciences (Springer Nature), 8, 447. https://doi.org/10.1007/s42452-026-08394-7
- ElHamahmy, A. (2026). Overview of shock absorbers for boat landings on fixed offshore platforms. Marine Systems & Ocean Technology (Springer Nature), 21, 3. https://doi.org/10.1007/s40868-025-00198-5
- ElHamahmy, A. (2025). A review on the use of steel fibers in concrete slab repair and recommendations for enhanced performance. Discover Civil Engineering (Springer Nature), 2, 184. https://doi.org/10.1007/s44290-025-00346-1
- ElHamahmy, A. (2025). Integrating Artificial Intelligence in Offshore Platform Design: Enhancing Efficiency, Safety, and Structural Integrity. International Journal of Scientific Engineering and Science (IJSES). https://doi.org/10.2139/ssrn.5317547
- ElHamahmy, A. (2025). Integrating Artificial Intelligence into Governance Systems: Opportunities, Challenges, and Ethical Considerations. International Journal of Scientific Engineering and Research. https://doi.org/10.5281/zenodo.15600870
- ElHamahmy, A. (2025). Advancing Offshore Structures with FRP: Performance, Durability, and Sustainability. International Research Journal of Modernization in Engineering Technology and Science. https://doi.org/10.56726/IRJMETS76607
- ElHamahmy, A. (2025). Innovative Structural Retrofit Solutions for Vibration Mitigation in Offshore Platforms Induced by Rotating Equipment. IJERT, Vol. 14, Issue 05. https://doi.org/10.5281/zenodo.18053161
- ElHamahmy, A., Gohar, H.T.H., Galal, A., & Elnaggar, A. (2025). Smart planning for sustainable projects: Leveraging AI in offshore, infrastructure, and pharmaceutical sectors. International Journal of Advanced Research Publications, 1(3), 1–30. https://doi.org/10.1555/ijrpa.1565
- ElHamahmy, A., Gohar, H.T.H., & Galal, A. (2025). Sustainable Project Management in Renewable Energy and Infrastructure Projects: Challenges and Opportunities. IJERT, May 2025. https://doi.org/10.5281/zenodo.18053169
- ElHamahmy, A. (2025). A Comparative Review of Team Management Software in Modern Project Management Practices. IJRASET. https://doi.org/10.22214/ijraset.2025.71852
- Gohar, H.T.H., Elhamahmy, A., & Galal, A. (2025). An Integrated Framework for Sustainable Structural Design, Construction Planning, and Supply Chain Optimization. International Journal of Research Publication and Reviews, 6(5), 18266–18279. https://doi.org/10.55248/gengpi.6.0525.2020

Conference Papers

- ElHamahmy, A. (2026). Enhancing Structural Integrity of Aging Arabian Gulf Platforms through API RP 2SIM — A Brownfield Case Study. ADIPEC 2026, Abu Dhabi, UAE, 2–5 November 2026 (SPE-235713-MS) — accepted for presentation.
- ElHamahmy, A. & Refai, A. (2026). Redefining Offshore Lifts: Innovative Counterweight Design for Brownfield Topside Upgrades. EGYPES Technical Conference 2026, Cairo, Egypt — Session 17: Transforming Offshore Operations: Automation and Optimization. doi.org/10.13140/RG.2.2.12248.05121

Active peer reviewer for international journals including Journal of Engineering and Applied Science, ICE Management, Procurement and Law, Cureus, and Business Strategy and the Environment.

PROFESSIONAL CERTIFICATIONS

2026 Chartered Engineer (CEng) & Chartered Marine Engineer (CMarEng) — IMarEST

2025 Carbon Footprint Consultant — NTEC ID: CM/23/07

2024 Certified International Trainer — ID: CIT/339

2024 Digital Transformation Certificate — Cairo University

2023 Statistical Data Analysis using SPSS — Cairo University, ID: 196188

2023 Scientific Research Certificate — Cairo University, ID: 195642

2020 Project Management Professional (PMP) — PMI ID: 2861749

2020 PMI Risk Management Professional (PMI-RMP) — PMI ID: 2901414

2014 Graduate Member, IStructE (UK) — Passed PRI No: 078389679

2013 Offshore Emergency Training — OPITO Approved Course: 5858

2013 H2S Training Certificate — OPITO Approved Course: 9014

2012 TOEFL — Cairo University

2008 Basic Oil & Gas Training — Eni Corporate University, Milan

TECHNICAL SKILLS

Structural Software: SACS • SESAM (Genie) • ANSYS • STAAD • SAP2000 • MicroSAS

Design & Drafting: AutoCAD • Navisworks • Microsoft Project • Microsoft Office • PDF Professional

Research & Data: SPSS • Statistical Analysis • PRISMA Systematic Reviews

Codes & Standards: API (RP 2A, RP 2SIM) • AISC • ACI • AWS • ISO • ICAO • DNV • OCIMF • Saudi Aramco SAES • ADNOC AGES & AGPS

Engineering Specializations: Fixed offshore platforms • Jackets & topsides • Float-over & heavy-lift installation • Brownfield modifications • Platform re-qualification • API RP 2SIM integrity assessment • FEA • Fatigue & vibration analysis • Value engineering & risk management • Bid & proposal engineering • Offshore surveys

AWARDS & RECOGNITION

- Customer Satisfaction Award (2025) — Ju'aymah Offshore Brownfield Structural Scope
- Saudi Aramco Certificate of Appreciation (2024) — Engineering phase of BI-10-00815
- McDermott Internal Design Competition Winner (2024) — MOE Winner Team
- Quality Spot Awards — McDermott (2021, 2022, 2023, 2025) — Value Engineering & Innovation Excellence
- Ideal Student Award — Helwan University (2005–2006)

PROFESSIONAL MEMBERSHIPS

- Chartered Engineer (CEng) & Chartered Marine Engineer (CMarEng) — Institute of Marine Engineering, Science & Technology (IMarEST), No. 8128631
- Institution of Structural Engineers (IStructE) — No. 078389679 | Passed PRI for Chartered Engineer
- American Institute of Steel Construction (AISC) — Member
- Saudi Council of Engineers — No. 164255
- Engineers Syndicate, Egypt — No. 11/3400166/2007/3

LEADERSHIP, COMMUNITY & LANGUAGES

McDermott Toastmasters Club | 2015 – Present

- Charter Member & Advanced Speaker — VP Membership and VP Public Relations; led recruitment strategies, external communications, and mentored junior members in professional communication.

TEIMUN — The European International Model of United Nations | Netherlands | 2005 – 2006

- Represented Helwan University at a 15-day international diplomacy conference; developed negotiation and cross-cultural communication skills.

Early Career Training

- 2008 — Tecnomare, Milan: Two-month on-the-job training in the Milan office (Eni Progetti).
- 2006 — Yemen: Cement factory construction supervision (University Students Exchange Program).
- 2003 – 2007 — Al Nisr for Construction: Job training in design and construction, including structural design of two villas in Al-Obour and Al-Sherouk (FEED and detailed design).

Languages: Arabic (Native) • English (Professional Proficiency) • Italian (Elementary) • French (Elementary)

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