

BAKHT ZAMAN

Senior Mechanical Engineer (HVAC, Plumbing & Fire Protection)

Riyadh, KSA (Transferable Iqama) | +966-569213581 | zamanbarq@gmail.com

SCE Membership ID: 1119824

PROFESSIONAL SUMMARY

Results-driven **Senior Mechanical Engineer** with over **14 years of extensive experience** in the installation, operation and maintenance of large-scale infrastructure projects, including **Riyadh Metro, International Airports and Healthcare facilities**. Expert in HVAC, Plumbing, and Fire Suppression systems with a proven track record of leading multidisciplinary teams and ensuring compliance with local and international standards such as ASHRAE, NFPA, SBC, SASO and SMACNA etc.

CAREER HIGHLIGHTS

- **CAA Appreciation:** Honored with a formal **Appreciation Letter from the Pakistan Civil Aviation Authority (PCAA)** for maintaining exceptional safety and O&M standards at Islamabad International Airport.
- **45% Downtime Reduction:** Achieved up to 45% reduction in downtime by developing comprehensive critical spares list and lead-time-based procurement strategy.
- **30% Energy Savings:** Optimized facility utility costs by fine tuning HVAC setpoints and equipment schedules with real-time passenger traffic and flight data, resulting in significant energy savings and extended asset lifecycle.
- **System Reliability Boost (20%):** Solved long-standing water supply issues and recurring leaks by optimizing pressure setpoints across high-rise building levels.
- **Large-Scale Leadership:** Currently overseeing a **90-man workforce**, including engineers and supervisors, ensuring seamless operations across the Riyadh Metro project.

TECHNICAL SKILLS & TOOLS

- **Software:** AutoCAD (2D/3D), Pro/Engineer Wildfire 4, Ansys Workbench, **Advanced MS Excel**, CMMS (Videntium RM, Gimmi Line 3, ONSite).
- **Codes & Standards:** ASHRAE, NFPA, SMACNA, IPC, UPC, ASME, API, ASTM, SBC, SASO.
- **Core Competencies:** HVAC & Plumbing, Fire Suppression (FM200, Sprinklers, Hydrants), Failure Mode Analysis (RCA), Project Management, Energy Conservation, STP Operations.

PROFESSIONAL EXPERIENCE

Senior Mechanical Engineer | ArRiyadh New Mobility (ANM).

Riyadh Metro Project (Line-03: 8 Deep Underground Stations & Iconic Qasr Al Hukm Station)

Sep 2024 – Feb 2026

- **Operations Leadership:** Executed O&M for complex mechanical facilities across 8 major metro stations, ensuring 100% system reliability.
- **Team Management:** Supervised 90 personnel (3 Engineers, 6 Supervisors and technicians) for preventive and corrective maintenance.
- **Asset Management:** Administered 18+ water/air-cooled Chillers, 120+ AHUs, 8 Cooling Towers, FM200 and 150+ Pumps (Primary and Secondary, Condenser, Booster, Sump and Fire Pumps).

- **MEP Due Diligence & Delivery:** Categorized HVAC, Plumbing and FLS tasks (Work In Progress, Material, Tagging, Disputes) and delegated teams to secure client approvals. Managed procurement for material gaps to ensure a seamless, compliant project handover.
- **Digital Integration:** Utilized Videntium RM and Gimmi Line 3 for work orders, permits and compliance reporting.

Lead Mechanical Engineer | Greaves Air Conditioning Pvt. Ltd.

Islamabad International Airport, Pakistan

May 2018 – Aug 2024

- **Airport Infrastructure:** Managed O&M of mechanical facilities for the Passenger Terminal, ATC Tower, Radio Radar Building, Fire Crash and Rescue Building and 15 Boarding Bridges (10 International, 5 Domestic).
- **Utility Management:** Supervised Sewage Treatment Plant (STP) operations and water pumping stations (BOD, COD, TSS, pH monitoring).
- **Fire System Readiness:** Maintained fire hydrants, sprinklers, pre action and control valves in strict adherence to NFPA standards.
- **BMS Troubleshooting:** Resolved complex issues within Johnson Controls and Honeywell platforms to optimize energy use.

Mechanical Site Engineer | Manazel Construction Co.

SMC Building & Cardiac and Imaging Center, NGHA, Riyadh, KSA (300 Beds / 7 Buildings)

Jun 2015 – Oct 2017

- **Healthcare MPF Installation:** Led installation of HVAC, fire sprinkler & hydrant and plumbing systems for hospital infrastructure projects.
- **Technical Documentation:** Verified BOQs, technical specs. and shop/coordination drawings against hydraulic and heat load calculations to guarantee full compliance with technical standards and project requirements.
- **Supervision & Testing:** Witnessed critical hydrostatic pressure tests, ductwork light/smoke leakage tests and system flushing.

HVAC Site Engineer | Captive Aire Pvt. Ltd.

Oil & Gas Processing Facilities, Makori Site, Pakistan

Jan 2012 – Jun 2015

- Managed HVAC system installation for oil & gas facilities per SMACNA, ASHRAE and API standards.
- Conducted airflow balancing and pneumatic tests to optimize performance.

QA/QC Engineer | Haier Pvt. Ltd.

Lahore, Pakistan

Jul 2011 – Jan 2012

- Ensured foam density compliance and conducted defect analysis at production stations.

PROJECT SCALE & ASSET SUMMARY

Project	Scale / Capacity	Key Assets Handled
Riyadh Metro	8 Deep Underground Stations (1 Iconic)	18 Chillers (Max. cap. 1000TR/Unit), 126+ AHUs, 150+ Pumps, ERUs, FCUs, 8 Cooling Towers, 34 Fire Water Pumps and water supply pumps, Sump Pumps, FM200 System.

Islamabad Airport	Terminal + ATC + RRB+ FCR+ Data Centers	8 Chillers (Max. cap. 1200TR/Unit), 70 AHUs, 50 CRAC Units, FCUs, 6 Cooling Towers, 9 Fire Water Pumps (EDJ), 8 VRF, Sprinkler and Pre-action Systems, 2 Boilers, Total Gas Flooding System (TGFS), Sewage Treatment Plant (STP).
NGHA Hospital	300 Beds / 7 Buildings	8 Chillers (1000TR cap. Each), 90 AHUs, HRUs, Pumps, Pneumatic Tube System, Boilers, Fire Sprinkler and Pre-action Systems.

EDUCATION

B.Sc. Mechanical Engineering

NWFP University of Engineering & Technology, Peshawar (2007 - 2011)

References available upon request.