

EXECUTIVE SUMMARY

Results-driven **Plumbing & Fire Protection Engineer** with **10 Years of Professional MEP Experience (Nov 2016 – Present)** in mechanical building services design, hydraulic calculations, BIM LOD 350 coordination, and authority approvals across Kuwait, Saudi Arabia, and India. Proven track record leading multidisciplinary Public Health Engineering (PHE) and Fire Protection Systems (FPS) packages for prestigious 792-bed healthcare complexes, high-security US Army military bases, oil & gas non-process infrastructure, high-bay ESFR logistics warehouses, and multi-tower residential masterplans. Skilled in automating engineering workflows using pyRevit and Python, authoring comprehensive DBRs, CSI MasterFormat specifications, and securing statutory approvals under **Kuwait Fire Force (KFF), MEW, MPW, KEPA,** and **US Army UFC**.

CORE TECHNICAL COMPETENCIES

Public Health Engineering (PHE / Plumbing)

- Water Supply & Pumping:** Multi-pump VFD booster sets, DHW generation & circulation, water treatment (softening/filtration/UV).
- Healthcare Water:** High-purity Reverse Osmosis (RO) distribution and deionized (DI) loops for central laboratories & CSSD.
- Specialized Drainage:** Hospital radioactive waste delay tanks, acid-resistant piping (PP/PVDF), biohazard containment drainage.
- Submersible Lift Stations:** Duplex basement sewage lift stations, platform lift pit pumps with oil-sensing automatic cutoffs.
- Stormwater & Trade Effluent:** Siphonic roof drainage, API oil/water separators, sand/grit interceptors, KEPA discharge compliance.

Fire Protection & Life Safety Systems (FPS)

- Automatic Sprinklers:** NFPA 13 ceiling-only ESFR (K-25.2), CMSA, and In-Rack sprinkler hydraulic modeling with flue alignment.
- Standpipes & Hydrants:** NFPA 14 Class I/III standpipe risers, pressure regulating valves (PRV), external NFPA 24 ring mains.
- Fire Pumping Infrastructure:** NFPA 20 electric & diesel split-case fire pumps, jockey pumps, flow meter test headers.
- Dedicated Storage:** NFPA 22 sectional bolted steel and concrete dual-compartment water reservoirs (60–240 min supply).
- Clean Agent & Life Safety:** NFPA 2001 total flooding (FK-5-1-12/FM-200), NFPA 101 occupant egress travel distance audits.

PROFESSIONAL WORK EXPERIENCE

Plumbing & Fire Protection Engineer — Al Habshi Engineering Consultants Office

Nov 2022 – Present | Kuwait

- Lead PHE and FPS engineering delivery for major Kuwaiti healthcare, military, industrial, and oil & gas projects through all design phases from Design Basis Reports (DBR) to authority approvals and construction administration.
- Perform comprehensive hydraulic calculations: Hunter's Curve WSFU conversion, domestic booster TDH/NPSHa, NFPA 13 sprinkler hydraulic calculations, NFPA 14 standpipe pressure profiles, and siphonic stormwater runoff.
- Interface directly with statutory authorities, obtaining approvals from **Kuwait Fire Force (KFF), MEW, MPW, and KEPA**.
- Standardized departmental Revit MEP templates (LOD 350) and developed automated pyRevit/Python calculation workflows.
- Kuwait Children's Hospital (MOH):** 19 stories, 3 basements, 4 podiums, 792 beds. Engineered domestic cold/hot water booster pumping, laboratory RO/DI loops, radioactive waste decay systems, acid waste neutralization, wet sprinklers, and standpipes.
- US Army Military Complex, Kuwait:** High-security base. Engineered vehicle maintenance washdown drainage, oil/water separators, high-hazard sprinkler networks, external fire ring mains, and pillar hydrants compliant with US Army UFC and NFPA.
- K-790 Industrial Logistics Warehouse (2026):** High-bay ambient warehouse (14m+). Engineered ceiling-only ESFR sprinkler protection (K-25.2), NFPA 20 electric & diesel pump house, 120-min dual water reservoir, duplex sewage lift station, and siphonic drainage.
- CTW Camps (Al-Tahreer & Al-Somoud):** Military vehicle technical workshops, oil separation, and trade effluent containment.
- KGOC Onshore Facilities (P124OPF) & KNPC Fire Station:** DBRs and suppression for non-process buildings per Shell DEPs and NFPA.
- KFF Unified Codes Digital Portal (2026):** Authored technical translation and deployed interactive digital life safety portal.

Mechanical Engineer — BuroHappold Engineers India Pvt. Ltd.

May 2019 – Jul 2022 | Mumbai, India

- Managed multidisciplinary MEP engineering delivery for international mega-developments and luxury high-rise residential towers.
- Designed complete mechanical, plumbing, and firefighting packages from concept design to tender documentation and site support.
- Prepared HVAC heat load calculations (Carrier HAP), air distribution layouts, ventilation/extract sizing, and chiller/VRF plant selection.
- Engineered water supply, booster pumping, centralized WTP/STP integration, gravity drainage, and NFPA fire fighting networks.
- RCRC Theme Park, Saudi Arabia:** 11 sq.km development. Engineered site-wide utility water networks, pumping stations, deep gravity sewer infrastructure, and district fire ring mains from schematic through tender stage.
- Piramal & Godrej Luxury Residential Towers:** 11 premium high-rise towers in Mumbai. Engineered multi-zone booster pumping, high-rise gravity drainage, acoustic pipe isolation, and combined sprinkler/standpipe risers with multi-level podium parking.

BIM Engineer — Tata Housing Development Company Ltd.

Nov 2016 – May 2019 | Mumbai, India

- Spearheaded 5D BIM model creation and integration (Revit, Navisworks, RiB iTWO) linking 3D geometry with schedules and cost estimation.
- Conducted multidisciplinary clash detection across MEP, structural, and architectural models, yielding **documented cost savings of Rs. 8.20M**.
- Award:** Stage Winner as team member for project "*5D BIM - Disruption in Construction*" at prestigious **Tata Innovista Awards**.
- Led corporate implementation of Autodesk BIM 360 platform and conducted hands-on technical training for design engineers.

EDUCATION, CERTIFICATIONS & TECHNICAL TOOLS

Education	Bachelor of Engineering (B.E.) in Mechanical Engineering — University of Mumbai (First Class, 2015)
Certifications	- PG Diploma in Plumbing & Fire Fighting Systems Design (IPC / NFPA) — IPEBS (2015) - PG Diploma in HVAC Systems Design (ASHRAE) — IPEBS (2015)

	• Certified Professional in MEP BIM Technologies & Autodesk Revit / AutoCAD — XS CAD (2016) • Project Management Professional (PMP) Methodology Course — Tata Housing (2018)
Software Stack	BIM / CAD: Autodesk Revit MEP (LOD 350), AutoCAD, Navisworks Manage, BIM 360 Automation: pyRevit (Python), Dynamo for Revit, Git / GitHub, Static Web Architecture (Cloudflare Pages) Calculations: Elite Fire (Sprinkler Hydraulics), HASS, WaterCAD, Pipe Flow Expert, Carrier HAP, RiB iTWO
Codes & Standards	NFPA (13, 14, 20, 22, 24, 72, 101, 2001), IPC, UPC, BS EN 12056, ASPE Data Books, CIBSE Guide G, Kuwait Fire Force (KFF), MEW, MPW, KEPA, US Army UFC, Shell DEPs.