

SAMIR DEKKO, P.Eng., ing.

Mechanical Design Engineer | HVAC, Plumbing & Fire Protection

Mississauga, ON L4Z 1B8 | 437-269-6660 | samirdekko@gmail.com

PROFESSIONAL SUMMARY

Dual-licensed mechanical engineer, P.Eng. (Ontario) and ing. (Québec), with 15+ years designing HVAC, plumbing, and fire protection systems for ICI, residential, healthcare, hospitality, and industrial projects across Canada, the Middle East, and Africa. Delivers complete sealed design packages and building permit submissions: load calculations, equipment selection, hydraulic analysis, Revit MEP construction documents, and specifications, in compliance with OBC, NPC/CCQ, ASHRAE, NFPA, and CSA standards. Builds custom BIM automation (pyRevit/Python, Revit API/C#) that accelerates modeling, quantity takeoffs, and QA.

CORE COMPETENCIES

- HVAC load calculations and equipment selection (Carrier HAP, ASHRAE psychrometrics)
- Plumbing and drainage design to OBC Part 7, NPC 2020 / CCQ Chapter III, and CSA B64 cross-connection control
- Fire protection design and hydraulic calculations (NFPA 13, Elite Fire)
- Hydronic, steam, and compressed air network analysis (AFT Fathom, AFT Arrow with ANS module)
- Revit MEP production: system configuration, families, routing preferences, and sheet setup
- BIM automation: pyRevit (Python) scripting, Revit API add-ins (C#), BIMLink quantity takeoffs
- Estimating, project scheduling, value engineering, and change management (SI / CCN / PCO)
- Specifications and construction documents (CSI MasterFormat), bilingual English / French
- Design review, QA and peer review, commissioning support, and AHJ coordination

TECHNICAL SOFTWARE

Design & analysis: Carrier HAP, Elite CHVAC / RHVAC, Elite Fire, AFT Fathom, AFT Arrow (ANS), McQuay Duct Sizer, LG LATs, Daikin Xpress, Carrier VRF selection

BIM & CAD: Revit MEP, pyRevit (Python), Revit API (C#), BIMLink, AutoCAD, Autodesk BIM 360 / ACC, Bluebeam Revu, Adobe Acrobat Pro, SolidWorks

Project & estimating: Procore, MS Project, Primavera P6, CostX, Power BI, Excel (advanced formulas and automation), MS Office

PROFESSIONAL EXPERIENCE

Mechanical Design Engineer & Project Manager

2024-Present

Côté Expert en mécanique du bâtiment, Québec, Canada

- Perform design checks on consultant drawings and specifications for ICI projects across Québec: verify load calculations, equipment sizing, and compliance with CCQ / NPC 2020, OBC, ASHRAE, and NFPA, and resolve discrepancies before construction.
- Prepare detailed estimates and bid packages: quantity takeoffs (BIMLink, pyRevit), labour and material pricing, schedules of values, and comparative material studies that drive bid strategy.
- Develop and maintain project schedules in MS Project aligned with general contractor master schedules, including milestone tracking and progress forecasts.
- Rebuild complete MEP systems in Revit from consultant PDF and CAD documents, configuring systems, families, and routing preferences to produce constructible, quantifiable models.
- Recalculate hydraulic and load designs to generate value engineering proposals and design RFIs, securing engineer approval for material substitutions and system optimizations backed by documented cost comparisons.
- Author project specifications (CSI MasterFormat) covering general instructions, piping, and accessories, and build product and material schedules derived from specifications.

- Manage change orders end-to-end (SIs, CCNs, PCOs): scope analysis, pricing, negotiation, and correspondence with general contractors and consulting engineers.
- Develop execution strategies and standardize estimating and BIM workflows through custom automation tools (pyRevit / Python, Excel).

Freelance Mechanical Engineering Consultant

2024-Present

Independent practice, Canada & Middle East

- Deliver complete mechanical designs (HVAC, plumbing, fire protection) with drawings, calculations, and specifications, sealed as engineer of record (P.Eng. / ing.).
- Prepare and file building permit packages: sealed plans, load calculations, equipment schedules, and code compliance documentation for AHJ approval.
- Provide Revit MEP modeling, automated pyRevit quantity takeoffs, and overflow design support to contractors, architects, and engineering firms, including commercial fit-outs and tenant improvements.

Assistant Project Manager

2023

Multiplex, Toronto, ON

- Represented Multiplex as Construction Manager under CCDC 5B on The Quay, a \$130M high-rise residential tower.
- Managed Procore workflows (SIs, CCNs, PCOs, RFIs, submittals, minutes) and led cross-functional sessions to resolve design clashes, agree changes, and hold milestones.
- Oversaw procurement and contracts; conducted site inspections for conformance with specifications and schedule.

Senior Mechanical Engineer, Co-Founder

2012-2022

Impact Engineering & Contracting SARL, Beirut & Dubai

- Led a mechanical design team delivering residential, ICI, healthcare, and hospitality projects with consistent regulatory approval, on projects valued \$250K to \$180M.
- Designed ASHRAE-based HVAC systems: load and ductwork calculations, psychrometric and energy assessments, and humidification and environmental control solutions for healthcare, industrial, and high-rise projects.
- Engineered fire protection systems to NFPA standards (Elite, PIPE-FLO) and prepared technical submittals and permit documentation.
- Directed multidisciplinary teams, mentored engineers and draftsmen, and implemented QA and peer review procedures.

Mechanical Design & Estimation Engineer *(concurrent role)*

2009-2022

Mezher Steel Structure, Beirut, Lebanon

- Designed cold storage facilities (chillers and freezers) with complete refrigeration load calculations covering product, infiltration, defrost, run-time, and safety factors.
- Specified PU/PIR panel systems and produced coordinated shop drawings for panels, evaporator and condensing units, refrigerant piping, drainage, and controls; managed vendors and verified installation compliance.

SELECTED PROJECTS (PORTFOLIO VALUE \$1.2B+)

- **The Quay Residential Towers, Toronto, \$130M:** high-rise RC towers; consultant coordination, procurement, QA, and cost control.
- **Québec ICI portfolio, \$99M+:** Tim Hortons, Walmart, Bombardier, McDonald's, IGA, Wendy's, Pizza Hut, and Metro locations, plus industrial and warehouse facilities.
- **Rafic Hariri University Hospital ER renovation, Beirut, \$930K:** HEPA filtration, medical gas, negative pressure isolation, phased works in a live hospital.
- **Radisson Blu Hotel, Kinshasa, DRC, \$90M:** hospitality project with specialized climate control and energy-efficient infrastructure.
- **La Gare Centrale, Kinshasa, DRC, \$180M:** mixed-use development (mall, offices, hotel, cinema); execution oversight and coordination with FRAME consultants.

- **General Security firefighting systems, \$2.7M:** NFPA-compliant design of pumps, networks, hydrants, and facility tie-ins.

EDUCATION & LICENSURE

- P.Eng., Professional Engineers Ontario (PEO)
- ing., Ordre des ingénieurs du Québec (OIQ)
- Mechanical Engineering Consultant, Order of Engineers & Architects (OEA), Lebanon, since 2009
- BEng, Mechanical Engineering, Notre Dame University, Lebanon, 2008
- Ontario safety training: Worker Health & Safety Awareness, Working at Heights, WHMIS

CODES & STANDARDS

Canada: OBC 2024 (Parts 6 and 7), NPC 2020 / CCQ Chapter III, ASHRAE 62.1 / 90.1, NFPA 13, CSA B64, IPC, ASPE

International: ICC, EN, ISO; Saudi Building Code (SBC), QCS (Qatar), UAE Fire & Life Safety Code

Languages: English, French, Arabic