

**ROBERT BALES, P.ENG., LL.B.**  
**CONSTRUCTION EXPERIENCE LOG**

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[www.adjudicate.ca](http://www.adjudicate.ca)

- Residential • Commercial • Institutional • Condominiums • Building Envelope
- Municipal • Infrastructure • Environment • Manufacturing • Engineering & Technology

**Owner Representation**

- Owner representation and project management - over 600 single, semi- and multi-family units - land development, design, project planning, construction management, commissioning and turnover, deficiencies - post-completion owner assistance

**General Construction - New Buildings, Renovations, Refit**

- Concrete, insulated concrete form (ICF), preserved-wood foundations
- Steel, concrete and light-wood framing - heavy timber construction, stressed-skin and structural insulated panel systems - thin-shell concrete structures - framing details
- Roofing systems - shingle - EPDM - built-up roofing - structural performance of deck
- Mechanical & electrical systems - HRV & HVAC - special systems - swimming pools, elevators
- Roads - water, sewer, storm installations - building construction - multi-unit and commercial projects

**Design, Performance, Scope, Delay, Changes to Work**

- Canada and Ontario Building Code review - site and building design analysis - material and system evaluation and selection - architectural, engineering and contractor selection - contract development - contract and project management - site supervision - commissioning
- Contract disputes - nature of the contractual relationship - fixed price vs. cost plus - scope of work - scope creep - design errors - scheduling and delay - allowances - changes and claims for extras

**Municipal & Infrastructure**

- Water, sanitary, storm installations for multi-unit buildings, condominiums, subdivisions
- Transmission watermain - Ontario Provincial Standards - interpretation of specifications, plans and contract - conflict between profile, drawing notes, contract general conditions
- Quarry operation - rock crushing - road bed installation - sensitive soils
- Road construction - weather delays - rock removal & blasting - grading, paving, culvert replacement - OPSS100

**Planning, Surveys**

- Municipal applications - consents, variances, subdivisions, site plans, zoning, official plans, condominium applications
- Survey error - rock excavation- incorrect topographic information - foundation re-design - contract interpretation regarding unit costs, allowances
- Aerial photogrammetry - road planning - subdivision layout - field work - data interpretation - relationship to existing subdivision plans

## **Roofs**

- Commercial roof failure - EPDM - failure at parapet, air leakage, building envelope failure
- Built-up roofs - deck failure, Code compliance
- Shingle roofs - non-compliance with standards - fishmouthing - inadequate back-coating

## **Building Envelope Assessment**

- Mid-rise commercial to residential conversion - air leakage: interior walls - mechanical system; exterior walls - fire stops - insulation - air barrier - vapour barrier
- Row dwellings - air leakage - masonry party walls - walls - ceilings - mansards - moisture degradation
- High rise - brick masonry walls - air leakage - spalled brick - rebar deterioration
- Commercial - building envelope - depressurization and thermographic analysis
- EIFS - flashing details - non-compatible materials

## **Geotechnical and Foundation Conditions**

- Pile Installation for 88-unit Mid-rise Apartment - porewater pressure buildup at nose of pipe pile causing anomalous pile set - failed load test - retap 150 pile bed twice to meet set criteria - contract interpretation - geotechnical reports - contractor request for change to piling methodology - performance specification
- High groundwater site - dewater - raft footings - special drainage design
- Marl deposits with boulders disturbed during excavation - additional excavation - foundation re-design
- Low bearing-capacity soil - steel-reinforced footings - engineered backfill (EPS)
- Design for sensitive soil conditions - permafrost - monocoque building envelope with three-point foundation - model structure
- Design for seismic conditions - framing, foundation ties, roof diaphragm
- Residential - subsidence due to leda clay

## **Environmental**

- Contamination - asbestos removal - mould remediation
- Fuel storage containment facilities - spill abatement - liners - remote site
- Pollution control equipment - asphalt fumes and dust control
- Conservation area - flood plain - foundation re-design - site storage
- Production boiler systems - energy analysis - manufacturing systems
- Asbestos handling and abatement - existing conditions - manufacturing operations
- Contaminated soil - Ontario Environmental Protection Act and regulations - chloride concentration - road salt - geotechnical reports - interpretation of contract - Ontario Provincial Standards (OPS)

## **Manufacturing**

- Process design and operations - system maintenance - plant management - system optimization - operational analysis
- Pulp and paper - screening and cleaning - groundwood - system analysis - research
- Operation and management of prefabricated building system plant - functional analysis - plant layout - personnel administration - plant & site quality assessment - marketing & sales