

ROBERT BALES, P.ENG., PMP, LL.B.
EXPERIENCE LOG

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

General Construction - New Buildings, Renovations, Refit

- Concrete, insulated concrete form (ICF) and preserved-wood foundations
- Steel, concrete and light-wood framing, heavy timber construction, stressed-skin and structural insulated panels, thin-shell concrete structures
- Roofing systems, exterior cladding systems, interior finishes, mechanical & electrical systems
- Road, water, sewer, storm installations and building construction, multi-unit projects

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
- Transmission Watermain Installation - contaminated soil - Ontario Environmental Protection Act and regulations - chloride concentration - road salt - geotechnical reports - interpretation of contract - Environmental Protection Act
- Quarry operation - rock crushing - road bed installation - sensitive soils

Planning, Surveys

- Municipal applications - consents, minor variances, subdivisions, site plans, zoning, official plans
- Survey error - rock excavation- incorrect topographic information - foundation re-design - contract interpretation regarding unit costs, allowances

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 unit
- Design for seismic conditions - framing, foundation ties, roof diaphragm
- Residential - subsidence due to leda clay

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

Roofs

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

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 - repair and replacement
- Asbestos handling and abatement - existing conditions - manufacturing operations

Manufacturing

- Process design and operations - system maintenance - plant management