BUILDING ANALYST PROFESSIONAL JOB TASK ANALYSIS

Domain 1: Analyzing Collected Data	
Task 1: Evaluate Combustion Safety Testing Data	
Knowledge of:	
•	appropriate recommendations to be made given visual and numerical data collected from combustion analysis and safety testing in accordance with current version of ANSI/BPI-1200
Ability to:	
•	determine the need for further evaluation when combustion safety testing data is inconclusive
Task 2: Evaluate Blower Door Test Data	
Knowledge of:	
•	blower door-guided air sealing techniques
Ability to:	
•	prioritize envelope and duct system air sealing opportunities (location, method and materials) based on blower door/pressure pan/zonal test results
•	determine the need for further evaluation when blower door test data is inconclusive
Task 3: Evaluate Mechanical Ventilation Data	
Knowledge of:	
•	ventilation standards and codes of Authority Having Jurisdiction (AHJ)
•	types of ventilation
Ability to:	
•	identify ventilation duct system improvement opportunities based on observed conditions
•	assess the need for additional mechanical ventilation based on diagnostic testing and existing building attributes
•	calculate the building ventilation requirements
•	determine the size of the affected space
•	compare measured flow with ventilation requirements
•	determine the mechanical ventilation needs (e.g., repairs, replacements, additions, make-up air) and controls
Task 4: Evaluate HVAC Distribution Systems Data	
Knowledge of:	
•	HVAC distribution testing protocols (e.g., duct leakage, airflow, pressure drop, heat rise, pressure matching with duct pressurization device, dominant duct leakage, strip heat)
•	distribution system design and materials
Ability to:	
•	identify duct sealing and duct/hydronic pipe insulation opportunities based on collected data
Task 5: Evaluate Fenestration Data	
Knowledge of:	
•	fenestration types, components, and nomenclature
Ability to:	
•	identify opportunities for fenestration upgrades including modification or replacement based on collected data
Task 6: Evaluate Thermal / Pressure Boundary	
Knowledge of:	
•	the benefits of infrared thermography
•	building locations requiring the use of noncombustible materials and clearances to combustibles
Ability to:	
•	determine thermal boundary and pressure boundary alignment
•	determine conditioned, unconditioned, and unintentionally conditioned spaces
•	determine if the location and type of an existing vapor retarder is appropriate

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•	determine methods and materials for sealing and insulating specific locations (e.g., crawlspaces, basements, attached garages, attics, conditioned/unconditioned areas, other areas of the building)
Task 7: Evaluate Heating, Cooling and DHW Equipment Data	
Knowledge of:	
•	equipment control strategies for maximizing occupant comfort and minimizing energy consumption (e.g., electronic and setback thermostats, demand-circulation, and circulating-type DHW systems)
Ability to:	
•	evaluate the HVAC system data collected and determine health and safety concerns, fuel switching options, and justification for recommending replacement or upgrades
•	evaluate heating and cooling distribution system(s) loads, sizing, operation, condition, and efficiency and identify opportunities for improvement
•	evaluate domestic water heating appliance(s) operation, condition, and efficiency and identify opportunities for improvement
•	evaluate domestic water heating distribution system* operation, condition, and efficiency and identify opportunities for improvement *Distribution system includes pumps, piping and terminations (e.g., faucets, showers, etc.)
Task 8: Calculate Baseload	
Knowledge of:	
•	baseload reduction strategies
Ability to:	
•	determine heating loads, cooling loads, and baseloads through utility bill analysis
•	disaggregate baseload energy use
Task 9: Evaluate Water Conservation Data	
Ability to:	
•	assess opportunities for water conservation devices and strategies
Task 10: Evaluate Health and Safety Data	
Knowledge of:	
•	industry standards for health and safety requirements relative to indoor air quality in residential buildings
•	combustion appliance safety standards (ANSI/BPI-1200, Section 7)
•	moisture mitigation and control strategies
•	ventilation standards for acceptable indoor air quality (ASHRAE 62.2-2013)
•	visual electrical hazards including knob and tube wiring
•	health and safety concerns that may require further investigation (e.g., mold, lead, asbestos-containing materials, radon, confined space)
•	foam plastic installation and fire safety requirements
Ability to:	
•	determine combustion air requirements (e.g., ANSI/BSR Z223.1/NFPA 54: National Fuel Gas Code, Combustion Air Requirements)
•	identify the need to address occupant-controllable pollutants in the home
Task 11: Evaluate Construction Details	
Ability to:	
•	determine crawlspace and attic ventilation requirements
•	determine structural integrity and needed repairs of wall(s) to be insulated
•	determine structural deficiencies and needed repairs of any building components to be addressed in the work scope
•	calculate the area of building surfaces
•	calculate the cubic feet of building spaces and cavities

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Domain 2: Modeling and Work Scope	
Task 1: Use Energy Modeling Software	
Knowledge of:	
•	the purpose of modeling
•	resources available for pricing
•	energy modeling software principles
Ability to:	
•	determine pertinent modeling data
•	analyze the output from the software
•	produce a cost and savings report
•	input data and to analyze the completed model
•	recognize potential errors on completed model
•	use modeling software to determine heating and cooling loads and estimated energy consumption
•	calibrate the computer model based on utility bill analysis
Task 2: Generate a Recommended Work Scope	
Ability to:	
•	determine the recommended health and safety measures
•	determine the recommended building and durability measures
•	determine the recommended energy efficiency measures (EEM)
•	calculate the payback period and savings to investment ratio (SIR) for potential measures
•	evaluate financial calculations for potential measures
•	anticipate potential health and safety impacts from recommended retrofit measures
•	specify measures to ensure thermal and pressure boundary integrity and alignment
•	assemble work specifications