

The Nine-Building PM Audit — Generic Checklists, Invisible Failures

BUILDINGS REVIEWED 9	ENERGY OVERAGE 15% Above Standard	ROOT CAUSE Incomplete PM Scope
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WHAT HAPPENED

A client engaged HVAC Asset Management to review preventive maintenance inspections across nine commercial office buildings. Equipment lists were incomplete portfolio-wide, and the checklists in use were generic placeholders — not tailored to the specific type, tonnage, or configuration of the equipment actually installed. Energy usage was running 15% above industry standard for commercial office buildings, with no documented explanation.

The checklists were not serving the portfolio — they were serving the contractor. A generic PM checklist creates the appearance of maintenance without delivering it.

CORRECTIVE ACTION

HVAC Asset Management rewrote the checklists from scratch to match the exact equipment type and capacity at each location, then conducted a systematic audit focused on service call frequency, repair history, and energy performance. Four categories of neglect were identified as the direct drivers of the energy overage:

- 1. Air Balance & Static Pressure Testing:** Contractors change filters but never measure static pressure across the coil. Undetected restriction causes fans to ramp up — driving energy waste, premature motor failure, and persistent comfort complaints.
- 2. Economizer & Damper Calibration:** Economizers and outdoor air dampers are the most ignored PM components. A damper stuck open 20% during summer forces the chiller to fight the outside atmosphere — the primary driver of unexplained energy waste and humidity complaints.
- 3. Sequence of Operations (BAS/BMS) Logic Audits:** "Temporary" control overrides become permanent with no audit trail. Units begin fighting each other — one heating while another cools — generating constant service calls and accelerated mechanical wear.
- 4. Heat Exchanger & Coil Forensic Cleaning:** Coils rinsed with a hose leave contamination embedded in the matrix. A 1/16-inch layer of dirt can reduce heat transfer efficiency by over 20%, forcing extended compressor cycles and compounding repair frequency.

5. VFD Bypass: Variable frequency drives were being bypassed, causing equipment to operate at 100% continuously instead of modulating to demand.

KEY TAKEAWAY

Contractors neglect these inspections because they are labor-intensive and don't generate high-margin part sales. It is more profitable to wait for a component to fail and then quote a replacement. A generic PM checklist creates the appearance of maintenance without delivering it. Across a nine-building portfolio running 15% above energy benchmarks, the gap between what was being inspected and what actually needed inspection was the direct cause of excessive service calls, unnecessary repairs, and accelerating equipment wear. A PM agreement is only as good as the scope behind it — and the validation that it is being completed as indicated.