

---

# DAVIDSON & ASSOCIATES

CONSTRUCTION ANALYSTS, INC.

---

## Executive Park V Construction Document Review & Quality Assurance During Construction



Phase V of a commercial office complex originally constructed in the 1990's, this 4-story, steel frame building is clad with glazed CMU and an exterior insulation and finish system (EIFS) installed over cold-formed metal framing, glass mat faced gypsum sheathing and a fluid-applied air barrier. Fenestration consists of ribbon windows and curtain wall at the full-height entrance atrium. The project is located in Mechanicsburg, PA.

**Challenge:** Provide overall technical review of the construction documents related to waterproofing, building envelope (air barriers, cladding, fenestration and roofing) at critical design phases while emphasizing constructability and economy. Implement construction phase quality assurance program to address building envelope components and system installations.

**Value Added:** Davidson's technical review of the construction documents identified the need for continuous insulation behind the glazed CMU veneer in order to comply with the energy code. The original design also excluded an interior vapor retarder in the exterior wall assembly. Hygrothermal analysis of this design identified build-up of detrimental moisture within the interior gypsum sheathing, but that incorporation of a "smart" vapor retarder, which becomes vapor-permeable at elevated humidity levels and permits bi-directional drying of the assembly, reduced the moisture levels within the normal range. Timely on-site reviews at critical stages ensured integrity of building envelope was maintained.

**Services performed:** Technical review of construction documents (drawings and specifications); quality assurance during construction.

**Client/Owner:** Select Capital Commercial Properties

**Contractor:** Wholsen Construction Company

**Architect:** JWF Collaborative, Inc.

**Duration:** 2015 – 2018