

# Village of Southern View

## Commercial Building Department Info

### Description of Engineers

All commercial construction projects rely upon architects and engineers to design safe and long-lasting structures. Architects are primarily concerned with the form and function of a building. They want the structure to look good and meet the intended function of the owner's needs.

Satisfied with the design, the architect then turns to a group of engineers to make his or her artistic design buildable. The engineers take the architect's design ideas and apply accepted construction standards to bring the architect's concepts to workable fruition.

The group of engineers the architect calls upon usually consists of (5) five separate engineering disciplines. Electrical, Plumbing, Civil, Structural and Mechanical. Mechanical is also known by its acronym as HVAC (heating, Ventilating & Air Conditioning). While there may be overlap in scope by some engineers, usually each engineering discipline is a specialty of its own and is practiced separately, similar to specialists in the medical community.

**ELECTRICAL ENGINEER (EE)** Overall Focus: All things electrical/electronic – electronic devices, electrical systems, electrical energy, etc. Note: Given the number of potential applications, Electrical Engineering is a very broad discipline. Primary Areas of Specialization: 1. Communications (transmission and processing of information via various means – wires, cable, fiber optics, radio, satellite etc. ) 2. Computer Engineering (see separate entry) 3. Digital Systems (digital-based communication and control systems) 4. Electric Power (generation, transmission, and distribution of electric power) 5. Electronics (electronic devices and electrical circuits for producing, detecting, and controlling electrical signals for a wide variety of applications) 6. Robotics and Control Systems (machines and systems that perform/control automated processes)

**PLUMBING ENGINEER:** Responsibilities overlap into the professional engineering areas of Civil Engineering, Mechanical Engineering, Chemical Engineering, Fire Protection Engineering, and Process Engineering. Traditionally the Plumbing Engineer performs the calculations, sizes the equipment, and prepares the plumbing design and construction documents under the supervision of a licensed Mechanical, Fire Protection or Civil, Professional Engineer.

In most states the Mechanical Engineer supervises the Plumbing Engineers' responsibilities in the following areas:

- Design of Process and Fluid Flow Systems
- Design of Plumbing Systems
- Design of Heat and Energy Transfer Systems

**CIVIL ENGINEER (CE)** Overall Focus: “Public works”/ Infrastructure and buildings/structures. Note: Given the number of potential applications, Civil Engineering is a very broad discipline. Primary Areas of Specialization: 1. Construction Management (combining engineering and management skills to complete construction projects designed by other engineers and architects). 2. Environmental Engineering (see separate entry) 3. Geotechnical Engineering (analysis of soils and rock in support of engineering projects/applications – building foundations, earthen structures, underground facilities, dams, tunnels, roads, etc.) 4. Surveying (measure/map the earth’s surface in support of engineering design and construction projects and for legal purposes – locating property lines, etc.) 5. Transportation Engineering (design of all types of transportation facilities/systems – streets/highways, airports, railroads, other mass transit, harbors/ports etc.) 6. Water Resources engineering (control and use of water, focusing on flood control, irrigation, raw water supply, and hydroelectric power applications)

**STRUCTURAL ENGINEERS** (design of all types of stationary structures – buildings, bridges, dams etc.) and fall under the purview of the Civil Engineer.

**MECHANICAL ENGINEER (ME)** Overall Focus: Machines, structures, devices, mechanical systems, and energy conversion systems. Note: Mechanical Engineering is often considered the broadest of engineering disciplines, with overlap into many of the other existing engineering disciplines, including Civil, Electrical and Chemical Engineering. Primary Areas of Specialization: 1. Solid Mechanics (analyzing the behavior of solid bodies subjected to external loads, stress, and/or vibrations and using that information in the design and manufacture/construction of such bodies) 2. Fluid Mechanics (analyzing the behavior of liquids and gases and using that knowledge in the design and development of machinery and systems that can and/or do influence that behavior – pumps, fans, turbines, piping systems, etc.) 3. Thermodynamics (analyzing the conversion one form of energy into another and using that knowledge to design and develop energy conversion devices and systems – power plants, engines, Heating, Ventilation and Air Conditioning (HVAC) systems, etc.) 4. Mechanical Design (covering the full range of mechanical-based products and systems)

### **Village Engineers**

The Village of Southern View is currently employing (2) two engineering firms, that together specialize in all major engineering disciplines required to carry out our preconstruction Plan reviews and perform our Commercial Inspections Process.

Kuhn & Trello - Civil & Structural Engineers 217-679-0044

Evan Lloyd Associates Inc. – Electrical, Plumbing and HVAC 217-789-7011