

ASSOCIATE MECHANICAL ENGINEER

DEFINITION

Prepares mechanical engineering drawings, specifications, and cost estimates for school buildings and grounds, and supervises lower-level employees as assigned.

TYPICAL DUTIES

Determines the type of mechanical installation and computes sizes and capacities of equipment and piping for heating, ventilating, air-conditioning, plumbing, water, refrigeration, and sewer systems.

Prepares preliminary designs and layout sketches for projects involving major alterations to mechanical installations.

Prepares specifications, cost estimates, and material lists for large projects and reviews those prepared by others for small projects.

Reviews and checks working drawings for conformity to sound engineering practice, District mechanical engineering standards, and applicable codes and ordinances.

Coordinates projects with personnel in other design units and checks finished work for conflicts with other engineering and architectural features.

Checks information on file and visits project sites to analyze existing conditions and to study mechanical engineering problems.

Assists in preparing technical reports on conditions, and recommending design solutions for deficiencies to outline scope for critical repairs and major alterations.

Confers with personnel in other branches and divisions, public agencies, and utility companies concerning details of mechanical engineering projects.

Confers with commissioned mechanical engineers and manufacturers' representatives concerning District requirements for mechanical systems and their installation.

Checks and approves factory shop drawings and lists of mechanical equipment submitted by contractors for conformance to contract plans and specifications.

Represents the District on assigned projects in negotiations with contractors relative to change orders, contract time extensions, and payment requests, and in verifying final compliance with construction plans.

Determines design and performance characteristics of mechanical equipment and assists in preparing and revising District mechanical engineering guides.

May provide technical supervision on mechanical engineering construction work.

Performs related duties as assigned.

DISTINGUISHING CHARACTERISTICS AMONG RELATED CLASSES

An Associate Mechanical Engineer performs and supervises activities of mechanical engineering design work for District structures and provides technical advice to engineering personnel.

A Mechanical Engineer performs mechanical engineering planning and design work; provides technical direction to District engineering personnel, commissioned architects, and consulting engineers; and may sign drawings and specifications as a registered engineer.

SUPERVISION

General supervision is received from the Supervising Mechanical Engineer and/or Mechanical Engineer. Supervision is exercised over lower-level employees as assigned.

CLASS QUALIFICATIONS

Knowledge of:

Terminology, symbols, and sources of mechanical engineering drafting and design information pertaining to building construction
Mechanical engineering principles and practices in expressing ideas, designs, and data in drawings as they relate to Heating, Ventilation, Air Conditioning, and Refrigeration, plumbing, and fire sprinkler design, including energy conservation applications
State and local codes pertaining to mechanical engineering features of building construction
Design principles, mathematics, and construction industry practices relative to mechanical engineering problems
Mechanical engineering design standards of the District
AutoCAD or other recognized major computer-aided design software system

Ability to:

Analyze mechanical engineering problems and formulate solutions
Effectively utilize AutoCAD software to create and update mechanical engineering plans and designs
Make accurate calculations in determining proper size and capacity of mechanical equipment
Interpret architectural and engineering plans and specifications
Identify problems in designs prepared by others
Work effectively with public officials, commissioned architects and engineers, and District personnel
Supervise effectively

Special Physical Requirement:

Ability to climb ladders and scaffolds, walk on roofs, and move safely in partially completed buildings and crawl spaces.

ENTRANCE QUALIFICATIONS

Education:

Graduation from a recognized college or university with a bachelor's degree in mechanical engineering that included completion of at least one course in a recognized, major computer-aided design software system, or possession of an Engineer-in-Training Certificate issued by the California State Board for Professional Engineers, Land Surveyors, and Geologists.

Experience:

Three years of experience in planning, designing, and preparing working drawings and specifications for mechanical systems for commercial, government, or school buildings that included the use of at least one recognized, major computer-aided design software system.

Special:

A valid license as a Professional Engineer in Mechanical Engineering issued by the California Board for Professional Engineers, Land Surveyors, and Geologists is preferable.
A valid driver's license to legally operate a motor vehicle in the State of California and the use of a motor vehicle, or the ability to utilize an alternative method of transportation.

This class description is not a complete statement of essential functions, responsibilities, or requirements. Entrance requirements are representative of the minimum level of knowledge, skill, and abilities. To the extent permitted by law, management retains the discretion to add or change typical duties of a position at any time, as long as such addition or change is reasonably related to existing duties.

Revised
05-08-25
MHO