

# Element D Services

Heating, Ventilating, and Air  
Conditioning

## D300001 HVAC - Renovation General Design Guidelines

### PART 1 - GENERAL

#### 1.1 OVERVIEW

- A. This section supplements Design Guideline Element D3000, with specific criteria for projects involving construction of alterations to existing buildings.

### PART 2 - DESIGN CRITERIA

#### 2.1 GENERAL

- A. The A/E is responsible for surveying existing buildings to confirm location, type, and condition of existing utilities, equipment, HVAC controls, and associated components, including but not limited to: air handling equipment, exhaust fans, ductwork, air devices, dampers, and temperature sensors. In addition, the A/E must determine if adequate space is available for proposed ductwork, piping, and equipment. The A/E must not rely upon Owner furnished as-built drawings alone.
- B. Early in the design phase, the A/E shall make arrangements in advance with the Owner's Project Manager for access above ceilings to determine the above noted field conditions and to locate existing HVAC components and utility services.
- C. Contact and coordinate with Owner's Environmental Health and Safety (EH&S) Department to identify existing fire, smoke and fire/smoke dampers within the Project Boundary and to determine acceptable actions to be taken. Clearly communicate this scope of Work within the Construction Documents.
1. The following table represents typical conditions and actions regarding existing dampers. Verify actual scope of Work required with (EH&S) prior to finalizing Construction Documents:

Criteria	Action
Compliant and Needed	Maintain
Compliant and Not Needed	Remove Completely
Deficient and Needed	Replace with New or Repair
Deficient and Not Needed	Remove Completely
Access Issue and Needed	Repair
Access Issue and Not Needed	Remove and Document

- D. When zoning and selecting air handling systems, consideration must be given to the following:
1. Space availability for equipment, piping, equipment floor drains, and ductwork.
  2. Construction phasing requirements.

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3. Present capacity and condition of the existing HVAC systems, and components if any, serving areas to be renovated.
  4. Determine current HVAC load requirements prior to calculating the revised HVAC loads for the renovated Project area.
  5. Impact of renovation activities on adjoining areas not included in the Project.
- E. The A/E shall examine the existing building envelope and recommend improvements to enhance thermal efficiency if proven economically and technically feasible.
- F. Investigate the feasibility; both capacity and physical location, of connecting to existing steam, hot water, chilled water, and condensate return piping that serve the Project area. Notify the Owner's Project Manager if existing utilities do not support loads within the new Project area.
- G. Indicate on the Drawings for new work, new isolation valves for utilities, if such valves are not currently installed.

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### PART 3 - SPECIAL CONTRACT DOCUMENT REQUIREMENTS

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#### 3.1 GENERAL

- A. Required demolition of existing HVAC systems must be indicated on the Drawings. For clarity in work scope, demolition work should be indicated on a separate drawing from new work.
- B. Specific detailing of interfaces between alterations and existing to remain shall be clearly indicated on the Drawings.
- C. Where existing equipment must be modified to be physically used on a project, evaluate if initial and operational cost savings will be realized by modifying the existing equipment rather than installing new. Provide recommendations.
- D. Provide drawing section(s) to resolve conflicts. Location of new equipment and services must be coordinated with all involved construction disciplines. Phasing of construction work must be coordinated with all involved parties. Phasing of construction work must be coordinated with operation of the facility and Owner's staff and be accounted for in the design.
- E. If Owner wishes to retain existing HVAC equipment considered obsolete as a result of modification, the A/E should note this on the demolition drawings; otherwise, the contractor in accordance with General Conditions of the Contract will dispose of the equipment.
- F. Note on the Drawings if applicable to the Project, that other services passing through areas of renovation shall be maintained throughout the construction period.

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### PART 4 - PRODUCTS

#### 4.1 GENERAL

- A. Refer to Master Construction Specifications.
- B. New equipment shall be compatible with existing components and systems to which they interface.
- C. If the A/E has determined that existing equipment will be reused, the A/E shall verify the availability of spare parts.

### PART 5 - DOCUMENT REVISION HISTORY

Issue	Date	Revision Description	Reviser
	20190301	Original Issuance	
Rev. 1			

END OF ELEMENT D300001