

# 1.4 Equipment

*Appendix material, which appears in shaded boxes at the bottom of the page, is advisory only.*

## 1 General Considerations

Equipment will vary to suit individual construction projects and therefore will require careful planning.

### 1.1 Applicability

The provisions of this chapter shall apply to all health facility projects.

### 1.2 Equipment List

An equipment list shall be included in the contract documents to assist in overall coordination of the acquisition, installation, and relocation of equipment.

**1.2.1** The equipment list shall show all items of equipment necessary to operate the facility.

**1.2.2** The equipment list shall include the classifications identified in Section 1.4-2 below.

**1.2.3** The equipment list shall specify whether the items are new, existing to be relocated, owner provided, or not-in-contract.

### 1.3 Drawing Requirements

#### \*1.3.1 Provisions for Equipment

**1.3.1.1** The drawings shall indicate provisions for the installation of fixed or movable equipment that requires dedicated building services or special structures and illustrate how the major equipment will function in the space.

**1.3.1.2** An equipment utility location drawing shall be produced to locate all services for equipment that requires floor space and mechanical connections.

#### 1.3.2 Not-in-Contract (NIC) Equipment

Some equipment may not be included in the

construction contract but may require coordination during construction.

**1.3.2.1** Design development documents. Equipment that is not included in the construction contract but requires mechanical or electrical service connections or construction modifications shall, insofar as practical, be identified on the design development documents to provide coordination with the architectural, mechanical, and electrical phases of construction.

**1.3.2.2** Construction documents. Such equipment shall be shown in the construction documents as owner-provided or not-in-contract for purposes of coordination.

#### 1.3.3 Final Equipment Selections

Adjustments shall be made to the construction documents when final selections are made.

## 2 Equipment Classification

Equipment to be used in projects shall be classified as building service equipment, fixed equipment, or movable equipment.

### 2.1 Building Service Equipment

Building service equipment shall include items such as heating, ventilating, and air conditioning equipment; electrical power distribution equipment; emergency power generation equipment; energy/utility management systems; conveying systems; and other equipment with a primary function of building service (e.g., humidification equipment, filtration equipment, chillers, boilers, fire pumps, etc.).

### 2.2 Fixed Equipment

Fixed equipment includes items that are permanently affixed to the building or permanently connected to a service distribution system that is designed and installed for the specific use of the equipment. Fixed equipment may require special structural designs, electromechanical requirements, or other considerations.

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**A1.3.1** Design should consider the placement of cables from portable equipment so that circulation and safety are maintained.

### 2.2.1 Fixed Medical Equipment

This includes, but is not limited to, such items as fume hoods, sterilizers, communication systems, built-in casework, imaging equipment, radiotherapy equipment, lithotripters, hydrotherapy tanks, audiometry testing chambers, and surgical and special procedure lights.

### 2.2.2 Fixed Nonmedical Equipment

This includes, but is not limited to, items such as walk-in refrigerators, kitchen cooking equipment, serving lines, conveyors, mainframe computers, laundry, and similar equipment.

## 2.3 Movable Equipment

Movable equipment includes items that require floor space or electrical and/or mechanical connections but are portable, such as wheeled items, portable items, office-type furnishings, and diagnostic or monitoring equipment. Movable equipment may require special structural design or access, electromechanical connections, shielding, or other considerations.

### 2.3.1 Movable Medical Equipment

This includes, but is not limited to, portable X-ray, electroencephalogram (EEG), electrocardiogram (EKG), treadmill and exercise equipment, pulmonary function equipment, operating tables, laboratory centrifuges, examination and treatment tables, and similar equipment.

### 2.3.2 Movable Nonmedical Equipment

This includes, but is not limited to, personal computer stations, patient room furnishings, food service trucks, case carts and distribution carts, and other portable equipment.

## 3 Equipment Requirements

### \*3.1 Major Technical Equipment

Major technical equipment shall include specialized equipment (medical or nonmedical) that is customarily installed by the manufacturer or vendor. It may require special structural designs, electromechanical requirements, or other considerations. Therefore, close coordination between owner, building designer, installer, construction contractors, and others shall be required.

## 3.2 Electronic Equipment

### 3.2.1 Protection

Special consideration shall be given to protecting computerized equipment such as multiphasic laboratory testing units, as well as computers, from power surges and spikes that might damage the equipment or programs.

### 3.2.2 Constant Power

Consideration shall also be given to the addition of a constant power source where loss of data input might compromise patient care.

## 4 Space Requirements

### 3.1 Fixed and Building Service Equipment

Space for accessing and servicing fixed and building service equipment shall be provided.

### 3.2 Movable Equipment

Facility planning and design shall consider the convenient and dedicated placement of equipment requiring floor space and mechanical connections and the voltage required for electrical connections where portable equipment is expected to be used. (See paragraph 1.4-1.3.1.2 for drawing requirements.)

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**A3.1** Examples of major technical equipment are X-ray and other imaging equipment, radiation therapy equipment, lithotripters, audiometry testing chambers, laundry equipment, computers, and similar items.