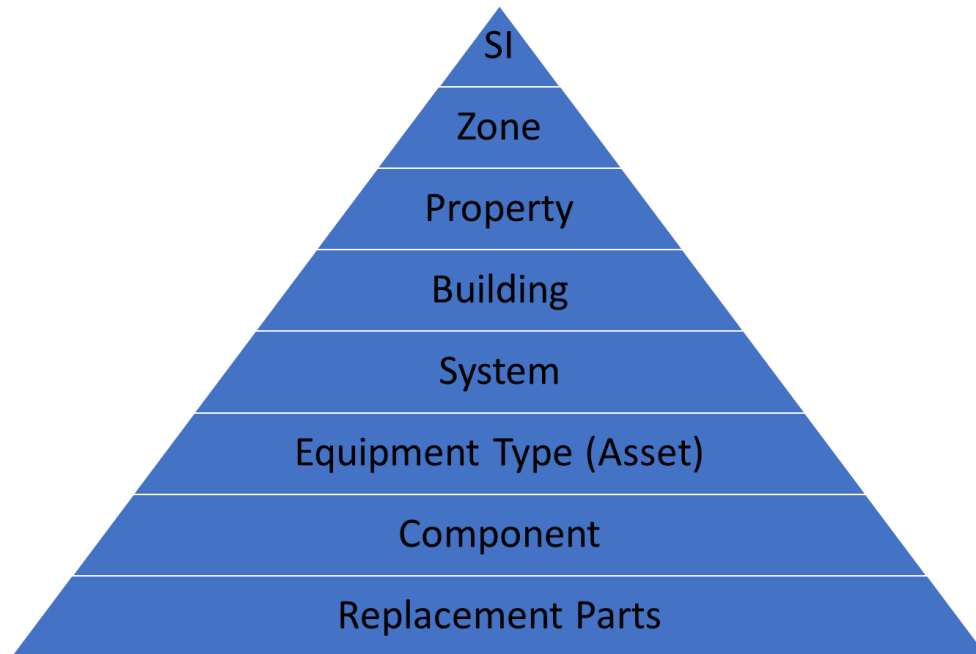


## ASSET HIERARCHY

The Smithsonian Office of Facilities Management and Reliability (OFMR) Asset Hierarchy follows the CSI Master Format System to the Equipment Type Level as shown below:



## KEY DESCRIPTIONS AND DEFINITIONS:

1. System: Includes the major systems that make up a facility, such as electrical systems, HVAC systems, and plumbing systems.
2. Asset: A building asset is a key piece of capital equipment used in a building (such as an air handler unit (AHU) Chiller, boiler, etc) that has potential or actual value to the organization.
3. Component: An item or subassembly such as a motor, pump, fan assembly, etc, of an asset, usually modular and replaceable, sometimes serialized depending on the criticality of its application may be interchangeable with another asset.
4. Replacement Parts: A part is the smallest replaceable unit in an asset or component necessary to keep the major systems and assets in good working order. This includes belts, bearings, bushing, switches, etc.

The Asset Hierarchy for HVAC, Electrical, and Plumbing Systems is detailed in Attachment A “Asset & Component List by CSI Code” and Attachment B “Asset Hierarchy Diagrams”

## CRITERIA FOR DESIGNATING ASSETS VS COMPONENTS

The following is the procedure and criteria for defining and designating what an asset is, what a component is and what should be included in the asset inventory in TRIRIGA.

### ***Criteria 1: Maintenance requirement***

All maintenance plans and schedules are associated with the main asset. This includes any plans or schedule for any components.

If a component is geographically dispersed and/or can be shut down independently of its main asset it can be listed as a main asset and have associated work plans and schedules.

Work plans should include all work required so that multiple work is not required on the same system. Components will be listed under the main asset in the “Notes and Document” tab and WILL NOT retain unique ASSET IDs. All components should be maintained as part of the larger asset to ensure a minimal amount of downtime for the equipment.

Example 1: A variable refrigerant flow system supported by one condenser and multiple evaporator units. Each equipment (condenser and evaporators) will be considered main assets, retain unique ASSET IDs and be maintained separately.

Example 2: Chillers; motor, chiller control, evaporator, condenser, purging system, disconnect are all listed as components of the Chiller and will be maintained as a whole unit.

### ***Criteria 2: Equipment that are part of a large systems, function or very large equipment***

A system or large equipment are divided into smaller units before the maintenance criteria described above is applied. A system of equipment that can be isolated electrically in the control panel while still maintaining function of the system will be listed as a main asset and retain its unique asset ID. If the entire system is controlled by a single breaker and must be taken out of service for scheduled maintenance or repair, the whole system is listed as a main asset and will retain a single ASSET ID. All the smaller equipment within the larger unit will be listed as components and WILL NOT retain unique ASSET IDs.

Example 1: Submersible pump pit

Submersible pump set up with multiple pumps within a pit each controlled by designated controller. All equipment in the sump pit will have a single asset ID for the entire system.

Example 2: Air Handler Unit (AHU) as a system

The AHU will be listed in the asset inventory as a main asset and retain its unique asset ID. Fans, motors, belts, VFDs or motor controller, disconnect, heating coil, cooling coil, pre-heat coil, pre-filters, electrostatic filters and controller, dampers, actuators, and controller are all



components of the AHU. A VAV (Variable Air Volume) is listed as a main asset and will maintain its unique ASSET ID.

***Criteria 3: Criticality (See notes below)***

If an equipment does not meet Criteria 1 or 2 above but is highly critical to the operation of the building because its failure could result in death, injury, loss of collections, environmental non-compliance or building closure, such equipment will be designated as a main asset with its unique ASSET ID.

***Criteria 4: Useful life (See notes below)***

If an equipment has a short useful life and will typically be replaced every so often, and does not meet Criteria 1, 2 or 3 above, the equipment not be considered an asset for inventory purpose (threshold frequency is set by the department/division/end user)

***Note:***

***Please coordinate with the Reliability Engineering/Life Cycle Branch for Criteria 3 and 4 above.***

BUILDING SYSTEM	ASSET NAME	CSI Code	Notes	PLANNER		
ELECTRICAL	Medium Voltage Transformers	26 12 00		Clifford Dean Bertram Johnson		
	Cable (Verify with High Voltage team)	26 05 13				
	Low Voltage transformers	26.22.00				
	Secondary Unit Substation Cables Tie Breaker/Switch Disconnect	26.11.16				
	Switch Gear Cables Tie Breakers/Switch Disconnet Feeder Breaker PEPCO Test Equipment	26.13.00				
	Generator Generator assembly Louvers/Dampers Day tank/Belly tank Battery/charger Load bank	26.32.13				
	Automatic Transfer Switch	26.36.23				
	Emergency Circuit - Identified critical systems	N/A				
	PLUMBING	Incoming water valves Valve assembly	21 05 23 22 05 23		General-Duty Valves for Water-Based Fire-Su General-Duty Valves for Plumbing Piping	Long-Son Nguyen Derrick McCorkle
Building incoming pressure reducers PRV assembly		22 05 23	Couldn't find a better CSI for PRV			
Main shutoff valves (Floor/major sections) Valve assembly		21 05 23 22 05 23	General-Duty Valves for Water-Based Fire-Su General-Duty Valves for Plumbing Piping			
Fire Pump Pump, motor		21 30 00				
Septic/Sewage ejector Pump, motor, controller		22 13 00				
Facility Storm Drainage Pump, motor, controller		22 14 00				
Fountain Plumbing Systems Pumps Water Treatment Aerators Filters Controllers Disconnects Water tanks		22 52 00				
MECHANICAL		Chillers Motor Fans Chiller VFD Evaporator Condenser Chiller control Purging system	23 64 00			
		Cooling Tower Cooling Fans Cooling fans VFDs Basing heaters Fan motors Fan bells Disconnects Tower cell	23 65 00			
		Boilers Burner Draft system (fan, motors) Flue gas Disconnect Controller	23 52 00			
	Feeding water system Feeding water Pumps Disconnect Feeding water Pump controllers DA Tanks	23 53 00				

BUILDING SYSTEM	ASSET NAME	CSI Code	Notes	PLANNER
HVAC	<b>Steam Station</b> <i>Isolation valves</i> <i>PRVs (pressure reducing valve)</i> <i>Safety relief valve</i> <i>Steam traps</i> <i>Strainers</i>	23 22 00		Nhan Truong Edmond Qari
	<b>ERV ( Energy Recovery Ventilator)</b> <i>Fans</i> <i>Motors</i> <i>motor VFDs</i> <i>Heating Coils</i> <i>Cooling Coils</i> <i>Filters Rack</i> <i>Dynamic Filters</i> <i>UV light Fixtures</i> <i>Dampers</i> <i>Energy recovery wheel/Box</i>	23 72 00		
	<b>Air Handler Unit</b> <i>Fans</i> <i>Motors</i> <i>Motor VFDs</i> <i>Heating Coils</i> <i>Cooling Coils</i> <i>Filters Rack</i> <i>Dynamic Filters</i> <i>UV light Fixtures</i> <i>Dampers</i> <i>Energy recovery wheel/Box</i> <i>Humidifier</i>	23 73 00		
	<b>Hydronic Pump (HVAC related pump)</b> <i>Pump</i> <i>Motor</i> <i>VFD or Motor controller</i> <i>Disconnect</i> <i>Suction guide/strainer</i>	23 21 23		
	<b>VAV (Variable Air Volume)/CAV (Constant Air Volume)</b> <i>Reheat coil</i> <i>Humidifier</i> <i>Damper</i>	23 36 00		
	<b>Humidity control equipment</b>	23 84 00		
	<b>Reverse-osmosis system</b> <i>Pump</i> <i>Motor</i> <i>Membrane</i> <i>Filters Rack</i> <i>Controller</i> <i>UV light</i> <i>Brine tank</i>	40 23 00		

**Note:**

The CSI code above are the parent codes. Use the applicable code for specific equipment.  
Components are listed in italics.

**Legend:**

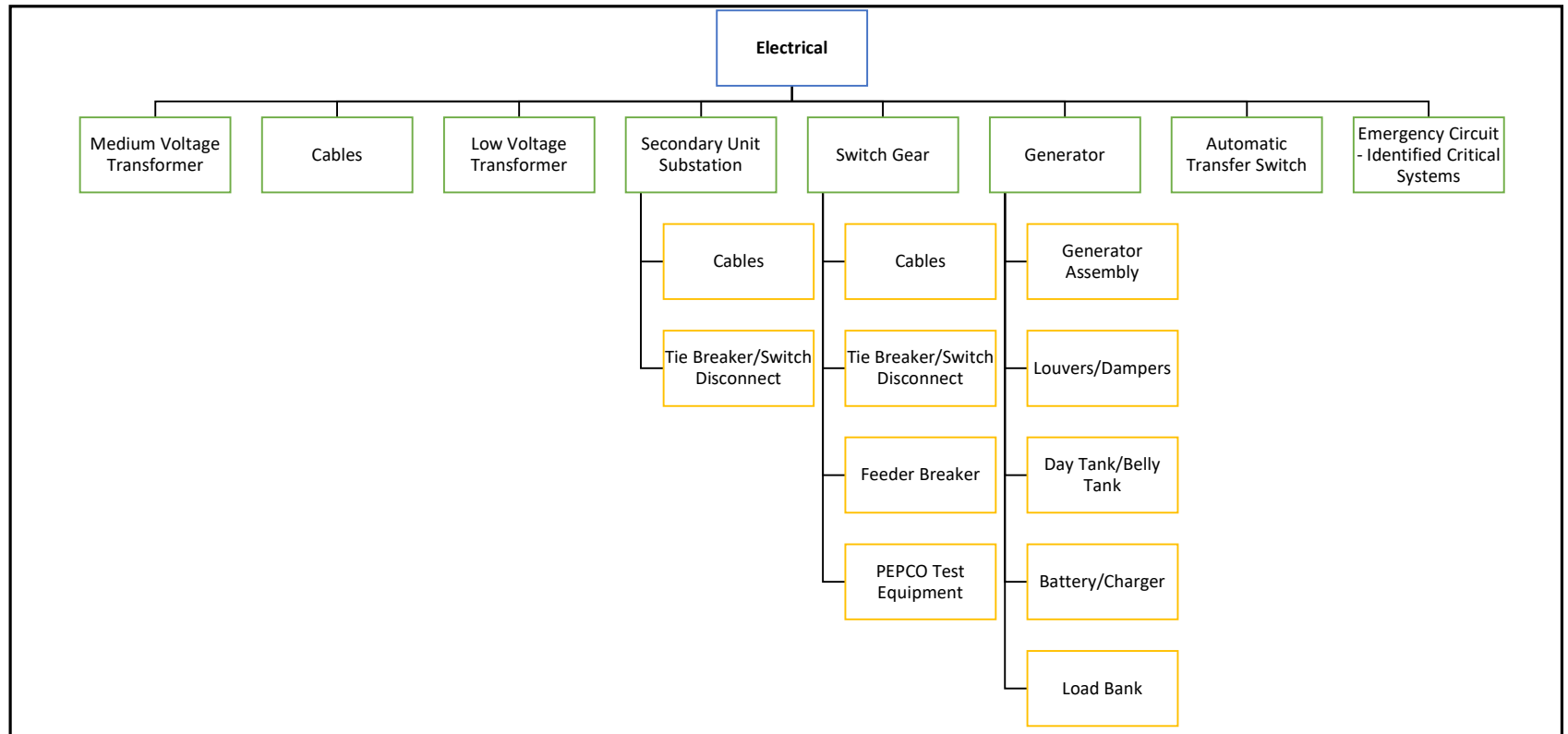
Level 1  
System

Level 2  
Asset

Level 3  
Component

\*Level 4  
Spare/Replacement Parts

\*Level 4 not shown



**Legend:**

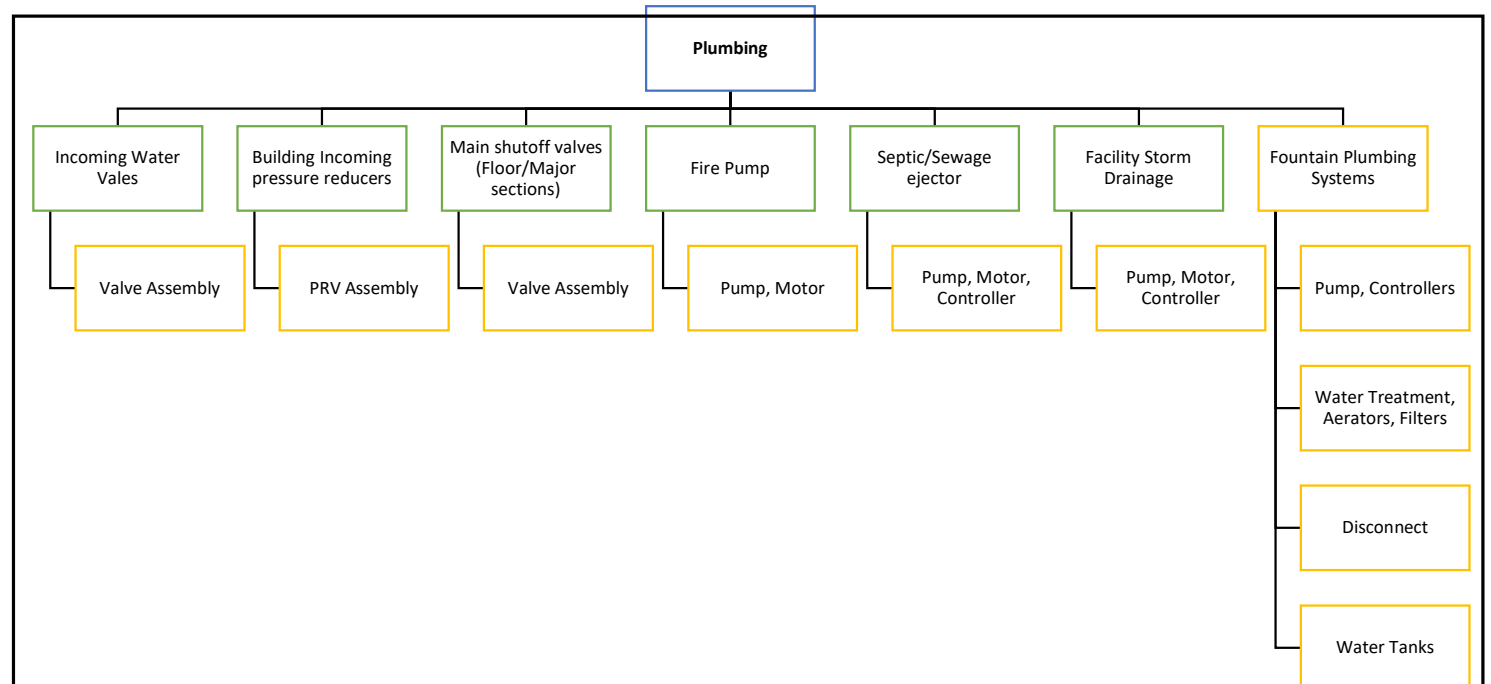
Level 1  
System

Level 2  
Asset

Level 3  
Component

\*Level 4  
Spare/Replacement Parts

\*Level 4 not shown



Legend:

Level 1  
System

Level 2  
Asset

Level 3  
Component

\*Level 4  
Spare/Replacement Parts

\*Level 4 not shown

