

MEP ASSET MANAGEMENT PROTOCOL

GENERAL INFORMATION

- 1.1 Columbia University employs a Computerized Maintenance Management System (CMMS) to manage the physical assets of their campuses. The assets tracked in CMMS include equipment and major building components - mechanical, electrical, plumbing, and fire life safety. (See Exhibit A for a list of Facilities assets tracked.) This section establishes the format and responsibilities of the Project Team (Project Manager [PM], Consultants, Contractor, CU Commissioning [CU Cx], and Maximo Administrator [MA]) in updating project-based changes in the asset inventory, including deactivating of demolished assets and identifying new assets, uploading data, and tagging of the physical asset.

DESIGN REQUIREMENTS

- 2.1 Schematic Design: Based on a CMMS Asset Inventory Report (Exhibit B) for the project area provided by the MA, the MA and Consultant shall survey the project area and its associated mechanical systems to identify and flag the assets that are likely to be impacted by the project.
- 2.2 Design Development: A preliminary MEP Equipment List will be submitted by the Consulting Engineer with the Design Development Review Package. The Equipment List will include both assets to be removed as part of the project, and new asset information, as much as is known, on the proposed assets. The MA will assign Equipment Identification Numbers (EID #) to all new equipment and return the list to the Consultant with the DD phase comments. The Consultant shall use the EID#'s provided to identify equipment in the construction drawings.

CONSTRUCTION REQUIREMENTS

- 3.1 Equipment submittals and Shop Drawings shall be labeled using the assigned EID#.
- 3.2 Approved equipment submittals shall be forwarded to the MA by CUF Cx. At Project Substantial Completion, the MA will populate all CMMS asset data fields, including the duration of the warranty.
- 3.3 A copy of the fire alarm as-built drawings shall be provided to the MA for asset naming of all devices.
- 3.4 The MA will furnish EID# Asset Tags, as coordinated on the shop drawings and submittals, to the Contractor to be adhered to each MEPFP asset by the Contractor during a walkthrough with the MA. Location of tags on the equipment to be per the MA's instructions.
- 3.5 CUF Cx will verify appropriate asset labeling during pre functional and functional testing and verification.

END OF SECTION

Exhibit A

FACILITY ASSETS TRACKED IN CMMS

Assets include but are not limited to the following:

Mechanical: All Heating and Cooling generation, heat rejection, distribution, and terminal equipment such as:

- Boilers
- Furnaces
- Chillers
- Cooling towers
- condensing units
- heat exchangers
- pumps
- circulators
- Steam PRV stations
- condensate return pumps and receivers
- flash tanks
- AHU's
- Fans
- heat pumps
- Terminal AIR boxes and AIR valves
- Fan Coil Units
- Chilled Beams
- Cabinet Unit Heaters
- Humidifiers
- steam generators
- CU owned utility meter
- Fire and fire smoke dampers

Items currently not considered Mechanical assets are: steam traps, volume dampers, and valves.

Electrical: All switches in:

- main switchgear
- service switchgear
- substations
- distribution boards.
- All buckets in MCC's
- local lighting and power panels
- generators
- ATSs
- UPS supporting CUF loads

Items currently not considered Electrical assets are: lighting fixtures, emergency lighting, light switches, receptacles and local panel circuit breakers.

Fire Protection/Fire Alarm:

- Hose Rack assemblies
- main and floor valves
- fire pumps
- jockey pumps
- Siamese connection
- backflow preventers
- main panels
- sub panels
- strobe panels

Items currently not considered Fire Protection/Fire Alarm assets are: sprinkler heads, initiating devices (such as: smoke, heat and water flow) and notification devices (such as: horn, bell strobe and speaker).

Plumbing:

- RPZ's
- house pumps
- pressure booster systems
- hot water heaters
- HW circulators
- sump pumps
- ejectors
- RODI
- CU owned utility meters

Items currently not considered Plumbing assets are: valves, fixtures and fittings.

Vertical Transportation:

- Elevators
- Dumbwaiters
- Escalators
- ADA lifts
- materials lifts

Exhibit B
Sample Asset Report
Avery Asset Inventory (Partial)

Asset Number *	Asset Description	Asset Classification	Location	MSI / Position
5889	(CON) Condenser (DX)	D3030 \ D3030.10 \ D3030.10.03	MH\NC\AVER	MH/AVER/ROF-CON-5889X
5890	(DS.LL) Disconnect Switch (208Y/120V)	D5020 \ D5020.30 \ D5020.30.06	MH\NC\AVER	MH/AVER/ROF-DS.LL-5890X
5891	(CON) Condenser (DX)	D3030 \ D3030.10 \ D3030.10.03	MH\NC\AVER	MH/AVER/ROF-CON-5891X
5892	(DS.LL) Disconnect Switch (208Y/120V)	D5020 \ D5020.30 \ D5020.30.06	MH\NC\AVER	MH/AVER/ROF-DS.LL-5892X
5893	(PL.LL) Low Voltage Power Panel (208Y/120V)	D5020 \ D5020.30 \ D5020.30.43	MH\NC\AVER\7	MH/AVER/007-PL.LL-5893X
5894	(DPP.LL) Distribution Power Panel (208Y/120V)	D5020 \ D5020.30 \ D5020.30.41	MH\NC\AVER\7	MH/AVER/007-DPP.LL-NP1
5895	(PL.LL) Low Voltage Power Panel (208Y/120V)	D5020 \ D5020.30 \ D5020.30.43	MH\NC\AVER\7	MH/AVER/007-PL.LL-AC7
5896	(PCU) Power Filtering and Conditioning	D5010 \ D5010.60	MH\NC\AVER\7	MH/AVER/007-PCU-5896X
5897	(DS.LL) Disconnect Switch (208Y/120V)	D5020 \ D5020.30 \ D5020.30.06	MH\NC\AVER\7	MH/AVER/007-DS.LL-5897X
5898	(T.LV) Low Voltage Transformer (480Y/277 - 208Y/120)	D5020 \ D5020.10 \ D5020.10.10	MH\NC\AVER\7	MH/AVER/007-T.LV-5898X
5899	(DPP.LL) Distribution Power Panel (208Y/120V)	D5020 \ D5020.30 \ D5020.30.41	MH\NC\AVER\7	MH/AVER/007-DPP.LL-007
5900	(PL.LL) Low Voltage Power Panel (208Y/120V)	D5020 \ D5020.30 \ D5020.30.43	MH\NC\AVER\7	MH/AVER/007-PL.LL-5900X
5901	(EM) Electrical Meter	D5020 \ D5020.10 \ D5020.10.12	MH\NC\AVER\7	MH/AVER/007-EM-5901X
5902	(WDS) Water Intrusion Detection and Alarm	D7050 \ D7050.60	MH\NC\AVER\7	MH/AVER/007-WDS-5902X
5903	(MS) Motor Starter	D5020 \ D5020.90 \ D5020.90.01	MH\NC\AVER\7	MH/AVER/007-MS-5903X
5904	(AHU) Air Handling Unit	D3050 \ D3050.50 \ D3050.50.01	MH\NC\AVER\7	MH/AVER/007-AHU-5904X
5905	(PL.LL) Low Voltage Power Panel (208Y/120V)	D5020 \ D5020.30 \ D5020.30.43	MH\NC\AVER\6\600S	MH/AVER/006-PL.LL-6BS1
5906	(PL.LL) Low Voltage Power Panel (208Y/120V)	D5020 \ D5020.30 \ D5020.30.43	MH\NC\AVER\6\600S	MH/AVER/006-PL.LL-6BS2
5907	(DS.LL) Disconnect Switch (208Y/120V)	D5020 \ D5020.30 \ D5020.30.06	MH\NC\AVER	MH/AVER/ROF-DS.LL-5907X
5908	(PL.LL) Low Voltage Power Panel (208Y/120V)	D5020 \ D5020.30 \ D5020.30.43	MH\NC\AVER\6	MH/AVER/006-PL.LL-5908X
5909	(PL.LL) Low Voltage Power Panel (208Y/120V)	D5020 \ D5020.30 \ D5020.30.43	MH\NC\AVER\6\600S	MH/AVER/006-PL.LL-06D
5910	(STU) Split Type Air Conditioning Unit (DX)	D3030 \ D3030.70 \ D3030.70.03	MH\NC\AVER\6	MH/AVER/006-STU-5910X
5911	(PL.LL) Low Voltage Power Panel (208Y/120V)	D5020 \ D5020.30 \ D5020.30.43	MH\NC\AVER\6\600N	MH/AVER/006-PL.LL-06E
5912	(LPLV.LL) Low Voltage Lighting Panel (208Y/120V)	D5020 \ D5020.30 \ D5020.30.45	MH\NC\AVER\6\600N	MH/AVER/006-LPLV.LL-06A
5913	(PL.LL) Low Voltage Power Panel (208Y/120V)	D5020 \ D5020.30 \ D5020.30.43	MH\NC\AVER\6\600N	MH/AVER/006-PL.LL-5913X
5914	(RAF) Return Air Fan	D3060 \ D3060.20 \ D3060.20.01	MH\NC\AVER\6\600N	MH/AVER/006-RAF-AHU7-1
5915	(RAF) Return Air Fan	D3060 \ D3060.20 \ D3060.20.01	MH\NC\AVER\6	MH/AVER/006-RAF-AHU7-2

*Note: Asset Number = EID# on asset tag